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THE BOOK OF

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THE BOOK OF DISSERTATIONS BY THIRD YEAR STUDENTS OF SAUL UNIVERSITY OF LIMERICK 2009–2010

The book of dissertations

This volume includes all History and Theory dissertations written by the Third Year students of SAUL in the academic year 2009-2010.

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THE   VERNACULAR

Piaras Ó Bolguidhir

THE VERNACULAR

1, 2, 3
Paul Oliver, preface to *Built to Meet Needs: Cultural Issues in Vernacular Architecture*, by Paul Oliver. Oxford: Architectural Press, 2006.

Studies of vernacular architecture began in the 1880s, and were slowly pursued in the early twentieth century, although often in dispersed and unrelated ways, depending on the training and pursuits of the investigators.[1] However, it was not until the late 1960s that serious syntheses (such as Bernard Rudofsky's *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*) were published of research which related the buildings to the cultures that produced them. Broadly speaking, the term vernacular (also called anonymous, primitive or indigenous architecture) refers to architecture of and by the people.[2] The vernacular dwelling is designed by a craftsman, not an architect, and is built with the local environment in mind: its climate, its traditions, and its economy (predominantly agriculture). Vernacular technology is closely related to 'know-how,' acquired as efficiency is tested over time. Sustainability is achieved through independence rather than dependence, and innovation and change result from diffusion and experiment rather than from inducement and intervention.[3]

4
Monica Platzer, introduction to *Lessons from Bernard Rudofsky: Life as a Voyage*, ed. Architekturzentrum Wien. Basel: Birkhauser, 2007.

5, 6
Bernard Rudofsky, *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*. Albuquerque: University of New Mexico Press, 1964.

If vernacular buildings are understood as an example of collectively and locally produced architecture, then they become comprehensible for our time and function as examples of how future architecture can become socially compatible.[4] As Bernard Rudofsky observes in *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*, in conventional architectural history, the emphasis is on the work of the individual architect, while in vernacular architecture the accent is on the communal enterprise. Pietro Belluschi defined communal architecture as "a communal art, not produced by a few intellectuals or specialists but by the spontaneous and continuing activity of a whole people with a common heritage, acting under a community of experience."[5] Vernacular architecture does not go through fashion cycles. It is almost immutable, indeed, unimprovable, since it serves its purpose to perfection. As a rule, the origin of indigenous building forms and construction methods is lost in the distant past.[6] However, elusive though it's meaning may be, vernacular architecture is never erected on a whim and is not intended to impress, but only helps satisfy the psycho-social and physical needs of the users.

7
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

The vernacular, in its narrow definition, describes conditions that are local (specific rural or small-town dwellings). However, in a globalising society, it is important to envisage an extended definition of the vernacular. The following chapters explore how vernacular architecture might acknowledge the stretched, extended and ever changing condition of our existence in this world. How can the vernacular make sense of the increasingly wide split between places which inevitably stay where they are and people who are increasingly on the move? What relation can one envisage between houses and roads in Connemara? And generally? How does the vernacular encompass technological networks (which are more accessible, more ubiquitous, and more mobile every day), which are restructuring our sense of spatiality and sense of place? Is there, as John Brinckerhoff Jackson suggests, such a thing as a prototypal landscape, or more significantly landscape as a primitive (vernacular, anonymous or indigenous) idea, of which all landscapes are merely so many incomplete manifestations?[7] What can we mean today by the vernacular? What influence, if any, do local conditions still exercise upon us?

Vernacular architecture

As used in connection with architecture, the term vernacular (also called anonymous, primitive or indigenous architecture) indicates a type of architecture or general style of building which uses local materials and traditions to address local requirements. This definition is largely the product of architectural scholars, who are said to have discovered the vernacular. The vernacular dwelling is designed by a craftsman, not an architect, and is built with the local environment in mind: its climate, its traditions, and its economy (predominantly agricultural).[8] Here tradition is acknowledged as the passing on of technical know-how (knowledge often achieved by trial and error), and is respected as the standards and values of a society embodied in its built structures, be that domestic, functional or symbolic. Such tradition is a complex continuity inherited from the past, lived in the present and sustained in the future.[9]

If vernacular buildings are understood as an example of collectively and locally produced architecture, then they become comprehensible for our time and function as examples of how future architecture can become socially compatible.[10] Here, pragmatism predominates, and the "lack of style" is based on years of practical experience.[11] This evolution over time consistently reflects the historical, cultural and environmental context in which the architecture exists. Vernacular architecture (especially in Europe) has had a history of its own, distinct from that of formal architecture, and far from being "timeless" (a word much used to describe vernacular architecture because it is not subject to fashion and is little influenced by history in its wider sense) and determined by ancient archetypes, it has undergone a long and complicated evolution.[12] In a way this architecture becomes a spatial embodiment of life; the definition of spaces, the means and methods of construction, the forms and features of dwellings, together constitute the way of life and habitats of diverse cultures over time.[13]

In his book *The Savage Mind*, Claude Lévi-Strauss discusses the term *bricolage* as distinct from engineering. Lévi-Strauss suggests that *bricolage* is an activity which gives us quite a good understanding of what a science we call primitive (vernacular, anonymous or indigenous) could be on the plane of speculation.[14] The Oxford English Dictionary defines *bricolage* as: "construction or creation from a diverse range of available things, or something created in this way."[15] Therefore, the *brico-leur's* universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand,' a set of tools and materials which is always finite (having definable limits) and is also heterogeneous (consisting of parts or aspects that are unrelated or unlike each other).[16] The first practical step is that of retrospective. The *bricoleur* turns back to an already existent set made up of tools and materials, to consider or reconsider what it contains and, finally and above all, to engage in a sort of dialogue with it.[17] According to Lévi-Strauss, this marks a definite distinction between *bricolage* and engineering, in that the bricoleur by inclination or necessity always remains within the constraints imposed by a particular state of civilisation while the engineer is always trying to make his way out of and go beyond them.[18] Therefore, the characteristic feature of *bricolage*, and vernacular architecture, is that it builds up structured sets by using the remains and debris of events (odds and ends) fossilised evidence of the history of a society.[19]

8
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

9
Paul Oliver, *Built to Meet Needs: Cultural Issues in Vernacular Architecture*. Oxford: Architectural Press, 2006.

10, 11, 13
Monica Platzer, introduction to *Lessons from Bernard Rudofsky: Life as a Voyage*, ed. Architekturzentrum Wien. Basel: Birkhauser, 2007.

12
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

14, 16, 17, 18, 19
Claude Lévi-Strauss, "The Science of the Concrete," in *The Savage Mind*, by Claude Lévi-Strauss. Chicago: The University of Chicago Press, 1966.

15
Oxford Dictionary definition, http://www.askoxford.com/concise_oed/bricolage?view=uk

The vernacular landscape

20, 21
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

The vernacular, in its narrow definition, describes conditions that are local (specific rural or small-town dwellings). However, in a globalising society, it is important to envisage an extended definition of the vernacular which acknowledges the stretched, extended and ever changing condition of our existence in this world. Much work has been done by geographers, social historians, and archaeologists, contributing to broader, more prosaic definition of vernacular architecture which cannot be ignored. In *Discovering the Vernacular Landscape*, John Brinckerhoff Jackson discusses how the commonplace aspects of the contemporary American landscape, the streets and houses and fields and places of work, could teach us a great deal not only about American history and American society but about ourselves and how we relate to the world.[20]

22
John Brinckerhoff Jackson, *A Sense of PLACE, a Sense of TIME*. New Haven and London: Yale University Press, 1994.

23
Tim Robinson, *Connemara: Listening to the Wind*. London: Penguin Books Ltd, 2007.

Importantly, Jackson envisages the vernacular as the entire landscape, not as singular buildings arranged on the land. By studying the vernacular (identified with local custom, pragmatic adaptation to circumstances, and unpredictable mobility), Jackson sought to attain a comprehensive definition of landscape and of landscape beauty.[21] It is important, here, to understand that landscape is never simply a natural space, a feature of the natural environment; it is always artificial, always man-made, always subject to sudden or unpredictable change. Since the beginning of history, humanity has modified and scarred the environment, sometimes by greed and destructive fury, but more often in order to survive, to stay alive.[22] As Tim Robinson remarks in *Connemara: Listening to the Wind*, our powers of creative destruction and destructive creativity, as to our effects on the ground we stand on, are enmeshed inextricably.[23]

24, 27, 29
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

25, 26
John R. Stilgoe, "Landschaft and Linearity: Two Archetypes of Landscape," in *Out of the Woods: Essays in Environmental History*, ed. Char Miller and Hal Rothman. Pittsburgh: University of Pittsburgh Press, 1997.

28
European Environment Agency definition, http://glossary.eea. europa.eu/terminology/concept_ html?term=landscape

The word *Landscape* is not easily defined. As far back as can be traced the word meant a defined space, one with boundaries, though not necessarily one with fences or walls, and always implied a space defined by people.[24] In the 16th century *landschaft* defined a compact territory comprehensively modified by permanent inhabitants, a self-sufficient, fully realised construct of fields, paths, and clustered structures.[25] *Landschaft* entered the English language as landskip, used in reference to pictures imported from Holland by 17th century English merchants and sea captains.[26] It soon defined any natural or rural view. *Landscape* endures and thrives in the English language today, often used (perhaps abused) metaphorically to indicate a kind of environment or setting which can give vividness to a thought or event or relationship; a background placing it in the world. Jackson argues that there is a fallacy to such metaphorical use of the word, and that it should not be used to describe our private world, our private microcosm.[27] The European Environment Agency defines *landscape* as: "The traits, patterns, and structure of a specific geographic area, including its physical environment, and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in similar form."[28] It seems that whatever definition of *landscape* we adopt, it must take into account the ceaseless interaction between the ephemeral (lasting only a short time), the mobile, the vernacular on the one hand, and the authority of legally established, premeditated permanent forms on the other. As Jackson rightly acknowledges in *Discovering the Vernacular Landscape*, a landscape is a concrete, three-dimensional shared reality.[29]

30, 31, 32
John Brinckerhoff Jackson,
*Discovering the Vernacular
Landscape*. New Haven and
London: Yale University Press,
1984.

For Jackson, the greater the number of landscapes he explored, the more it seemed that they all had traits in common and that the essence of each was not its uniqueness but its similarity to others.[30] The suggestion is that there might be such a thing as a prototypal landscape, or more significantly landscape as a primitive (vernacular, anonymous or indigenous) idea, of which all landscapes are merely so many incomplete manifestations.[31] It is through such an understanding that we can define an individual landscape (in this case that of South Connemara) and explore to what extent permanence and change have struck a balance. According to Jackson few landscapes have achieved this and fewer still have managed to maintain it for any length of time.[32] But all landscapes, it seems, seek it.

33
Tim Robinson, "Space, Time
and Connemara," in *Connemara*,
by Tim Robinson. Roundstone:
Folding Landscapes, 1990.

Connemara

Surprisingly, there is no official (political) boundary to the land under the name Connemara. *Ó Bhearna go Carna* (from Barna to Carna), is the description favoured by *Gaeilgeoirí* to delimit this linguistic homeland – but most Barna people would direct you back westwards if you asked for Connemara there, being close enough to Galway city to share its sense of Connemara as wilderness.[33] In fact, there are three separate regions (Connemara, Joyce's Country, and Iar-Chonnacht) in the general geographic locality.[34] However, the problem is that place flows into place, or holds rigidly distinct from it, according to one's mode of thought. Much of our understanding of the Connemara landscape comes from Alexander Nimmo (1783-1832), a Scottish born engineer of acknowledged genius and erudition who, by all accounts, was a phenomenon. Following his Inverness survey of 1807, Nimmo developed a keen eye for landscapes and their potentialities, reflecting his profound geological understanding of place and the way in which the underlying bedrock determined the surface topography, the soil and ultimately the way of life of the people.[35] It also demonstrates an ability to look on an area of land and set it in a far wider geographic and economic framework.

34, 35
Noel P. Wilkins, *Alexander
Nimmo, Master Engineer 1783-
1832: Public Works and Civil
Surveys*. Dublin: Irish Academic
Press, 2009.

36
Tim Robinson, *Connemara:
Listening to the Wind*. London:
Penguin Books Ltd, 2007.

37, 38
Noel P. Wilkins, *Alexander
Nimmo, Master Engineer 1783-
1832: Public Works and Civil
Surveys*. Dublin: Irish Academic
Press, 2009.

In 1809 a parliamentary commission was established 'to enquire into the nature and extent of the several bogs in Ireland and the practicability of draining and cultivating them,' and the Commissioners engaged Nimmo as one of their nine engineers.[36] All the Commissioners required were a general examination and general reports to be compiled accompanied by such maps as the engineers could provide.[37] Nimmo recognised immediately that Larkin's map (which he had been given) was neither accurate nor adequate, and remedied the deficiency through a quick but exact survey of the Connemara landscape (starting even before his full instructions from the Commissioners were received in November 1812).[38] Nimmo's report (titled, 'The Report of Mr Nimmo on the Bogs in that Part of County Galway to the West of Lough Corrib') appeared as Appendix 12 in *Fourth Bogs Report* of the Commissioners. Geology took up nine of the twenty-three pages in the report. By no means was Nimmo's report the last word on the geology of Connemara; however it was an excellent first word (Nimmo's account, even today, illustrates accurately the fundamental geological structure of the region) that deserves greater recognition than it has received. The remaining fourteen pages provide an informed and valuable insight into Connemara life and its condition at the start of the 19th Century.

39
Tim Robinson, *Connemara: Listening to the Wind*. London: Penguin Books Ltd, 2007.

40
Noel P. Wilkins, *Alexander Nimmo, Master Engineer 1783-1832: Public Works and Civil Surveys*. Dublin: Irish Academic Press, 2009.

41
Tim Robinson, "Space, Time and Connemara," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

42
Tim Robinson, *Connemara: Listening to the Wind*. London: Penguin Books Ltd, 2007.

43
European Environment Agency, Fisheries introduction, http://www.eea.europa.eu/themes/fishery]

44
Tim Robinson, "Space, Time and Connemara," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

45
Tim Robinson, *Connemara: Listening to the Wind*. London: Penguin Books Ltd, 2007.

Nimmo not only recorded what was, he prescribed what should be, and through his optimistic eyes Connemara was not the field of desolation so often described and recorded with fastidious relish by those who passed through it.[39] He did, however, understand the challenges of undertaking the general improvements and cultivation of Connemara, as outlined by the Commissioners. In his report, Nimmo remarked: 'The district appears, not undeservedly, to be considered as one of the most uncultivated parts of Ireland. On a general view, indeed, it seems one continued tract of bog and mountain, the quality of arable land not amounting to one-tenth, perhaps not one-twentieth of the whole'?[40] Undaunted, Nimmo decided that opening up the whole landscape was warranted, feasible and likely to be profitable. Little could Nimmo have known that one day he would be charged with public works that would enable him to realise much of the plan he had conceived in Connemara.

The vernacular of Connemara

In the case of the vernacular architecture of south Connemara, local materials such as local stone (predominantly granite), thatch and whitewash had been used in the construction of buildings. These dwellings had a very definite engagement with the landscape, often being sited in relation to the sea, the bog, and arable land. This established a pattern of a populated coastal fringe and empty interior (which largely obtains today).[41] Fishing from the smaller harbours (apart from Ros an Mhíl) has always been limited to the size of the boats; few are large enough to follow the winter shoals of herring once they have left the coast. In *Connemara: Listening to the Wind*, Tim Robinson recalls a 1836 account of the fisheries busy in Connemara at the time: cod, ling, whiting and turbot were taken from December to March; gurnet, mackerel, bream and Pollock from May to August; sunfish (basking shark) in May; oysters from March to November; and lobsters and crabs were abundant.[42] This account shows us the teeming, undepleted seas of those days, and demonstrates the importance of catching and selling fish, which yielded a cash return that did not increase the rental value of land. Today the fishing industry is waning, and under the European Union's *Common Fisheries Policy* measures are being taken to avoid 'fishing out' Europe's remaining stocks and instead develop an industry that is sustainable for both the environment and those making a living from it.[43] In Connemara, smaller boats (traditional currachs) still fish lobster and shrimp, and dredge for scallops in the bays, and in summer net the incoming salmon. Also, fish farming, of salmon and sea trout predominantly, has developed in the sheltered inlets of the south coast.

The farming economy in Connemara is based around raising livestock, and comparatively few crops are grown. This has been the pattern for most of history (the earliest settled farming in Connemara began approximately 6000 years ago) due to the poor soil quality.[44] Except the coastal fringe, the land is largely uncultivated and virtually uncultivable. At best it is the commonage land, where the households nearby have the right to graze a certain number of beasts on it. Land near the shore was often unenclosed and it was difficult to keep livestock out of the few growing crops (predominantly potato, with some barley and wheat), so the grassy patches of the mountain, accessible in the better weather, were a resource not to be neglected.[45] Alexander Nimmo, in his report for the Commissioners, suggested that the use of seaweed as a fertilizer was the reason for success along the coast, and found it difficult to under

46, 47, 48
Noel P. Wilkins, *Alexander Nimmo, Master Engineer 1783-1832: Public Works and Civil Surveys.* Dublin: Irish Academic Press, 2009.

49
Tim Robinson, "Space, Time and Connemara," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

stand why the proprietors of the land (not the tenants) did not ensure that seaweed was always used as fertilizer, instead of making kelp.[46] Here we see that, although he held that the poor people of Ireland were perfectly capable of relieving their own distress by doing thus and thus according to his succinct recommendations, Nimmo's sense of social justice was imperfect. For the tenant, to improve the soil quality would only see the rent raised in consequence, while kelp-making (certain seaweeds were burnt to produce soda ash [sodium carbonate] which was used as fertiliser) could yield an independent cash return.[47] Nimmo also suggested that the Connemara population had always been concentrated on the coast, a conclusion he deduced from the fact the ancient churches and chapels were all on the shore.[48] Tim Robinson sheds some light on this in his essay *Space, Time and Connemara*, wherein he suggests that Connemara's radiating peninsulas and many offshore islands must have answered to the misanthropy of the 6th Century, when every hermit wanted a desert to himself.[49]

50, 52, 53
Tim Robinson, *Connemara: Listening to the Wind.* London: Penguin Books Ltd, 2007.

51
Tim Robinson, "Space, Time and Connemara," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

As Robinson rightly observes in *Connemara: Listening to the Wind*, today the small farmer is dying out and tall straggling furze bushes overrun former grazing land. Perhaps, in the past the farmer's duties included, as Robinson suggests, care for the minor arcana (secrets or mysteries known only to those who have been initiated) of the skies and landscape.[50] However, today farmland is more often sold as building sites. Most households (even today) have an allotted strip of bog from which to cut their yearly supply of turf.[51] However, year by year fewer and fewer people cut their own turf, because it is hard work and because other fuels give more heat and less flying ash. Also, there is some official recognition of the fact that lowland blanket bog is too rare and distinctive a landform to be strip-mined for low-grade fuel.[52] Turf-cutting by machine is forbidden for the most part, and hand-cutting is being phased out. Soon, Robinson regrets, the words and ways of generations of turf-cutters will be lost.[53]

54
Michael Gibbons, "Beginnings," in Connemara: *Visions of Iar Chonnacht*, by Michael Gibbons and Reingard Gahan. Donaghadee, N. Ireland: Cottage Publications Ltd, 2004.

55
Tim Robinson, "Paróiste Charna," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

56, 57
Tim Robinson, "Space, Time and Connemara," in *Connemara*, by Tim Robinson. Roundstone: Folding Landscapes, 1990.

South Connemara, and in particular *Iorras Aithneach* (stormy peninsula) is a low-lying, glacially scoured, boggy landscape containing numerous irregularly shaped lakes of different sizes. This type of landscape is often referred to as *Cnoc agus Lochán* (hill and small lake) terrain. The coastline is broken up by sea inlets and many offshore islands.[54] This peninsula in south Connemara, encapsulates the previously stated pattern of a populated coastal fringe and empty interior. However, the relationship to the sea, the bog, and arable land is no longer relevant. This is apparent in the random location of dwellings within the landscape, the use of sites that would previously have been regarded as unsuitable, and abandonment of locally available construction materials and traditions, and the loss of certain building crafts. The area consists of a number of small villages scattered linearly along the R340 road (proposed by Alexander Nimmo as a new road in his report to the Commissioners, and completed, under Nimmo's superintendence, during the public works of 1822), from *Derryrush* (*Doire Iorrais*/the wood of the peninsula) in the East to *Gowla* (*Gabhla*/forked estuary of the two rivers) in the West.[55] Although people may choose to live in south Connemara, a dependence on transport (cars) now exists, as people commute to Galway city. Dwellings continue to be built in the area, however their relationship with the landscape is tenuous at best, and the meaning of the term

58, 60
John Brinckerhoff Jackson,
*A Sense of PLACE, a Sense
of TIME*. New Haven and
London: Yale University Press,
1994.

59
FKL Architects, curators,
SubUrban to SuperRural.
Dublin: Irish Architecture
Foundation, 2007.

vernacular architecture has become stretched and difficult to fully comprehend. The development pattern which has emerged, the much criticised development of scattering cottages and bungalows linearly along the road networks, is often misidentified as urban sprawl.[56] In his *Space, Time and Connemara*, Tim Robinson suggests that this evolution is traceable from the breakup of the estates (clusters of hovels), which were replaced by isolated cottages on their own strip of land, and now these households move down to the road due to the dependence on the car in order to commute.[57] The people of south Connemara have (rightly) acknowledged that the road is a very powerful space. However, despite being capable of generating its own patterns of movement, settlement and work, the road has so far not produced its own type of landscape beauty.[58] Architectural scholars, geographers and environmentalists often tell us that Ireland is driven by an obsession with the car and an innate desire to live on the land.[59] Rather than cherished as a status symbol, as it is often criticised for, it seems that the car is thought of in more economic terms by the majority of people. There is no other way, for many people (particularly in isolated landscapes such as south Connemara), to look for a job, and when it has been found, to commute to work.[60] Therein lies the problem.

The road

61
FKL Architects, curators,
SubUrban to SuperRural.
Dublin: Irish Architecture
Foundation, 2007.

There is an unprecedented road-building programme underway in Ireland today, which will quadruple the length of motorways and dual carriageways by 2015. By contrast, the length of rail track is less than it was a century ago and (apart from light rail in Dublin and the objective to reopen 70km of disused track) there is no new rail on the cards.[61] Investment in public transport infrastructure, in general, has been insufficient. In *Systems Gone Wild: Infrastructure after Modernity*, Kazys Varnelis discusses how infrastructure, globally, has changed radically and often exists in a state of perpetual overload, under massive stress from pressures we place on it.[62] The Oxford English Dictionary defines *infrastructure* as: "The basic physical and organisational structures (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise."[63] Infrastructure was idealised by modernist architecture, and captured the popular imagination. It was seen as the means by which society tamed the frontier, harnessing untameable nature to transform it into paradise for man.[64] However, it seems that this is no longer the case. Varnelis suggests that infrastructure conforms to an S-curve during its growth: As money is invested in infrastructure, its efficiency leaps ahead radically, but at a certain point returns begin to diminish. Thus, while investment initially delivers handsome benefits, as the S-curve flattens, returns invested lessen greatly.[65] It is clear that bias towards a car-based infrastructure, forsaking other public transport infrastructure, poses a serious dilemma in Ireland. Mobility has improved but also, the disconnect between home, school, work and social life has increased. The speed at which we move through the landscape on the road means we lose contact with the land.[66] The traditional function of the road was to serve us by taking us home. It was believed that without specific destination, a road had no reason for existing.[67] This is no longer the case. John Brinckerhoff Jackson rightly observes in *A Sense of PLACE, a Sense of TIME*, that the new kind of road, a vast network leading to various destinations, means that there is no longer one right way. Roads no longer merely lead to places; they are places.[68]

62, 64, 65
Kazys Varnelis, *Systems Gone
Wild: Infrastructure After
Modernity*, http://www.c-lab.
columbia.edu/0162.html

63
Oxford Dictionary
Definition, http://www.
askoxford.com/concise_oed/
infrastructure?view=uk

66
Bucholz/McEvoy Architects,
"Learning land," in *SubUrban
to SuperRural*, curated by
FKL Architects. Dublin: Irish
Architecture Foundation, 2007.

67, 68
John Brinckerhoff Jackson,
*A Sense of PLACE, a Sense
of TIME*. New Haven and
London: Yale University Press,
1994

Roundstone

69
FKL Architects, curators,
SubUrban to SuperRural.
Dublin: Irish Architecture
Foundation, 2007.

If we accept, as Jackson suggests that roads belong in the landscape, but that perhaps they no longer belong to dwellings, what relation can one envisage between dwellings and roads? How can the vernacular make sense of the increasingly wide split between people who are increasingly on the move and places which inevitably stay where they are? A pressing issue it appears is that, encouraged by government tax incentives, many new dwellings, particularly along the coast, have been built as tourist accommodation or second homes.[69] Tourism is a vital aspect to the survival of many communities, particularly coastal areas, where the decline of the fishing industry, small farms and vernacular industry depletes the landscape of its popula-tion and economic means of existence. The problem is that such dwellings lack any definite engagement with the landscape. Despite remaining vacant for most of the year, these buildings are visible 100% of the time. *Roundstone* (*Cloch na Rón*/the stone of the seals) is an example of such a coastal village where tourism has replaced the fishing industry, small farms and vernacular industry as an economic means of existence. Nowadays, Roundstone is a favourite place with visitors, for its superb views, and for its regattas featuring the traditional workboats, the Galway hookers.[70] Roundstone is uniquely Alexander Nimmo's foundation.

70
Tim Robinson, "Parish of
Roundstone," in *Connemara*,
by Tim Robinson. Roundstone:
Folding Landscapes, 1990.

71, 72
Noel P. Wilkins, *Alexander
Nimmo, Master Engineer 1783-
1832: Public Works and Civil
Surveys*. Dublin: Irish Academic
Press, 2009.

William Larkin's map of 1819 shows very little habitation in or near the present village of Roundstone. Prior to the 1820s this area was known simply as *The Quay*, because of the little pier and old store, and the nearest settlement (five cottages and a chapel) was *Coogaula* (pronounced *Coogla* these days) to the west. In his 1813 report to the Commissioners Nimmo had recommended the building of a port where the Ballynahinch River opens into the head of Roundstone bay, but later on he decided to situate it a few miles south of the river mouth. In 1822 Nimmo was appointed engineer to the 'Western District,' and he soon had thirteen piers being built in Galway and Connemara. Like all Nimmo's Connemara marine works, Roundstone pier received famine-relief funds (£400) in 1822, when work began by day labour.[71] By the winter of 1822 the harbour works had been completed to spring tide level.[72] Nimmo's harbour consisted of a 150-foot wharf along the south side, with a 60-foot jetty running north from its seaward end. Most of the harbour is of local granite, but the coping stones along its rim are blocks of hewn limestone, shipped from the Aran Islands.[73]

73
Tim Robinson, *Connemara:
Listening to the Wind*. London:
Penguin Books Ltd, 2007.

74, 75, 76
Tim Robinson, *Connemara:
Listening to the Wind*. London:
Penguin Books Ltd, 2007.

Having set in motion the building of the harbour, Nimmo went on to develop the village, and according to Tim Robinson in *Connemara: Listening to the Wind*: if he had a heart he must have invested a little of it in this project.[74] His new road was to run boldly along the cliff overlooking Roundstone bay, so that the village which has grown up along this road boasts an almost uninterrupted panorama of the bay and the hills that enfold in it.[75] Nimmo outlined some of his ambitions for Roundstone in his *Coast Report of 1826* when he remarked: [I] expect soon to have a tolerable fishing village; several people are already settled there, and I am building a store for the purposes of the fishery.[76] The herring fishery in particular [not to mention the many other fisheries that were also busy] was much improved during the Nimmo era. As previously stated tourism has replaced fishing industry, small farms and

vernacular industry as an economic means of existence, and today Roundstone is a favourite place with visitors, for its superb views, and for its regattas featuring the traditional workboats, the Galway hookers. But what can be meant today by the vernacular in Roundstone, when the relationship to the landscape is no longer relevant, in that people no longer rely on the sea, the bog, and arable land? Perhaps it is no more than a quality that addresses itself to photographic, touristic observations before it does to rational understanding?

Learning from the existing landscape

77, 78
Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*. Cambridge, Massachusetts: The MIT Press, 1977.

Robert Venturi, Denise Scott Brown, and Steven Izenour's *Learning from Las Vegas: the Forgotten Symbolism of Architectural Form*, famously calls for architects to be more receptive to the tastes and values of "common people," calling for an architecture which gains insight from the commonplace. According to Venturi, Scott Brown, and Izenour learning from the existing landscape (by questioning how we look at things) is a way of being revolutionary for an architect.[77] *Learning from Las Vegas* contains a study of the Las Vegas Strip undertaken as collaboration among three instructors (Venturi, Scott Brown, and Izenour), nine students of architecture, and two planning and two graphic students in graduate programs at Yale in 1968. The group spent three weeks in the library, four days in Los Angeles, and ten days in Las Vegas. Ten weeks were then spent analysing and presenting the discoveries at Yale.[78]

79, 82
Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*. Cambridge, Massachusetts: The MIT Press, 1977.

80, 81
Robert Venturi, "Re-learning from Las Vegas Interview," in *Content*, by Rem Koolhaas. London: Taschen, 2004.

Las Vegas is analysed only as an incident of architectural communication, and the research project placed a particular interest upon finding a graphic means, more suitable than those which had been previously used by architects and planners, to describe "urban sprawl" and the commercial strip. According to Venturi, Scott Brown, and Izenour, the graphic sign in space has become the architecture of this landscape.[79] Apparently, architecture is not enough. In this landscape it has become symbol in space rather than form in space. Learning from Las Vegas constituted a manifesto for the shift from substance to sign, acting as a historical marker of the shift between Modernism and Postmodernism as the prevailing architectural style and pedagogy. In an interview with Rem Koolhaas and Hans Ulrich Obrist, titled *Re-learning from Las Vegas*, which appeared in Koolhaas' *Content* in 2004, Venturi reiterated his belief that signs are more relevant/significant than buildings, claiming the American commercial vernacular is what is relevant and should be the inspiration.[80] If not then architecture is dead.[81] However, in the current economic climate, should the American commercial vernacular really be the inspiration for architecture? Is this really what is relevant today? It seems not. That's not to say that Venturi, Scott Brown, and Izenour's argument that architecture should enhance what is there rather than change the existing environment is not an important one.[82] Perhaps architects should cultivate an approach to architecture today where things are seen as they are, and anything built only adds to this condition? In this way a new meaning can be achieved in architecture, particularly vernacular architecture, making the common uncommon.

As previously stated it is important, in a globalising society, to envisage an extended definition of the vernacular which acknowledges the stretched, extended and ever changing condition of our existence in this world. However, while much has been

83
Philip Ursprung, "Building
in Empire," in *Caruso St John,
Almost Everything*, by Philip
Ursprung. Barcelona: ediciones
poligrafa, 2008.

84, 85, 86
Kazys Varnelis and Anne
Friedberg, *Place: Networked
Place*, http://networkedpublics.
org/book/place

87
Philip Ursprung, "Building
in Empire," in *Caruso St John,
Almost Everything*, by Philip
Ursprung. Barcelona: ediciones
poligrafa, 2008.

88
Philip Ursprung, "Building
in Empire," in *Caruso St John,
Almost Everything*, by Philip
Ursprung. Barcelona: ediciones
poligrafa, 2008.

89
Irénée Scalbert, "The city of
small things," in *Building
Material* Issue 12 (2004): 4.

said and written about the causes and effects of globalisation, we know little about the interrelation of economic change and spatiality.[83] There is no architectural theory of architectural space. But there are some general theories, which can be transferred to architecture. Marc Augé, in his *Non-Places: Introduction to an Anthropology of Supermodernity*, came to the conclusion that our sense of place, as old as humanity, is coming to an end. Augé distinguishes *places* – locations in which individuals with distinct identities form human relationships that in turn accrete, creating the sediments of history – from *non-places* – locations of transition absent of identity, human relationships, or traces of history.[84] If modernity, Augé concludes, was deeply tied to place and history, supermodernity leaves us in realm finally devoid of history. Places are filled with individual identities, language, references, and unformulated rules; non-places are spaces of solitary individuality. Augé does, however, issue a disclaimer, noting that place and non-place are only conceptual poles. He admits that there is no such thing as pure place, nor is there pure non-place.[85] Nevertheless contemporary life is undoubtedly dominated by the pervasiveness of the network. Technological networks are more accessible, more ubiquitous, and more mobile every day, linking specific locales to a global continuum, and restructuring our sense of spatiality and sense of place.[86] Heinz von Foerster, a pioneer of cybernetics and thus one of the forerunners of the Internet and global networks, cast some light on this condition in an interview given to the German artist and filmmaker Lutz Dammbeck in 2002 shortly before he died. Dammbeck asked: "What will happen? How is this going to develop?" Foerster answered: "Constantly continue to deduce." Dammbeck: "Yes, but there are limits somewhere?" Foerster: "Not at all, this is the beautiful thing, one can always go on further." Dammbeck: "Logically!" Foerster: "Exactly!" Dammbeck: "But in reality?" Foerster: "Where is reality? Where do you have that?"[87]

What can we mean today by the vernacular?

It seems that, in order to make sense of the stretched, extended and ever changing condition of our existence in this globalising world, vernacular architecture (and architecture generally) must deal with the immediate context of daily life rather than with abstractions and diagrams; the actual materials we touch and smell rather than our perception of phenomena seen at a great distance; the paths and detours we make to get from one storey to the next, one room to the other, the outside to the inside, rather than the hierarchical organisation of corporate power.[88] Architects design buildings, and the majority of buildings exist in cities where things are big. According to Irénée Scalbert, in *The City of Small Things*, architects tried to make their peace with the greater powers of modern cities. Humbled but liberated, they sought, as Venturi, Scott Brown, and Izenour put it in the context of Las Vegas, to learn rather than to control.[89] However, it seems the city is no longer the main context of architecture. The reality of climate change has conferred an unprecedented importance upon nature, weather and the atmosphere. Climate change will be very real, perhaps not as apocalyptic as some have predicted, but nonetheless major changes will be in the works. Nature has acquired a new fragility, hence architecture demands a new sensitivity, a vernacular (anonymous, primitive or indigenous) sensitivity. As Bernard Rudofsky rightly observed in his 1964 exhibition *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*, shown at the

90, 91
Bernard Rudofsky, *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*. Albuquerque: University of New Mexico Press, 1964

92
Irénée Scalbert, "The city of small things," in *Building Material* Issue 12 (2004): 4.

Museum of Modern Art, there is much to learn from architecture before it became an expert's art.[90] The untutored builders in space and time demonstrate an admirable talent for fitting their buildings into the natural surroundings. Rather than try to "conquer" nature, they welcome the vagaries of climate and the challenge of topography.[91] Rudofsky adds that the beauty of this architecture has long been dismissed as accidental, but we should be able to recognise it as the result of rare good sense in the handling of practical problems. In the globalised climate of big science, new technology, big business and the endless flow of workers and tourists, it is important that architecture retain an interest in the detail, in the fragmentary, in smallness. As Irénée Scalbert rightly acknowledges, the interest in smallness is not an invitation to make everything cute or domestic but rather to create an architecture which is vast and infinite.[92] It is a way of imagining space as a concrete, three-dimensional shared reality.

93
John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*. New Haven and London: Yale University Press, 1984.

94, 95
Simon Schama, *Landscape & Memory*. London: HarperCollins Publishers, 1995.

96
Bernard Rudofsky, *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*. Albuquerque: University of New Mexico Press, 1964.

Recently revived together with other ideas current in the 1950's, the notion of the vernacular is undoubtedly a precarious one in the increasingly globalised world. Places inevitably stay where they are while people are increasingly on the move. John Brinkerhoff Jackson's suggestion that there might be such a thing as landscape as a primitive (vernacular, anonymous or indigenous) idea, of which all landscapes are merely so many incomplete manifestations, appears key to any understanding of the vernacular.[93] Vernacular architecture might mean nothing more than the way buildings are currently put together in a given landscape. In this way the architecture cultivates the approach that consists in seeing things as they are. Accordingly, there is no such thing as an uninteresting landscape: architecture simply adds to the condition. Through such an understanding we can define an individual landscape, as has been done here in the case of South Connemara, and explore to what extent permanence and change have struck a balance. In this way vernacular architecture provides an opportunity to make our senses more sober, to face our real condition of life and our relations with our kind. As Simon Schama observes in *Landscape & Memory* the point of vernacular architecture and landscape tradition is not to perpetuate tradition in the name of historical continuity.[94] It is rather, by revealing the richness, antiquity, and complexity of tradition, to understand what we stand to lose.[95] The strength of the links which bind architecture, culture, landscape and nature together, are often hidden beneath layers of the commonplace. To quote Johan Huizinga (Dutch historian and one of the founders of modern cultural history) as Rudofsky did, "the expectation that every new discovery or refinement of existing means must contain the promise of higher values or greater happiness is an extremely naive thought... It is not in the least paradoxical to say that a culture may founder on real and tangible progress."[96]

PHOTOGRAPHS

1 The vernacular dwelling, designed by the craftsman, not the architect, and built with the local environment in mind. In this case local materials such as local stone (granite), thatch and whitewash had been used in the construction.

2 The vernacular landscape, never simply a natural space, a feature of the natural environment; it is always artificial, always man-made, always subject to sudden or unpredictable change.

3 The Connemara population has always been concentrated on the coast, a conclusion Alexander Nimmo deduced from the fact the ancient churches and chapels were all on the shore. This remains the case today, despite the waning fishing industry and lack of definite engagement with the sea.

4 Despite being capable of generating its own patterns of movement, settlement and work, the road has so far not produced its own type of landscape beauty. The speed at which we move through the landscape on the road means we lose contact with the land.

5 Roundstone, uniquely Alexander Nimmo's foundation, is an example of a coastal village where tourism has replaced the fishing industry, small farms and vernacular industry as an economic means of existence. But what can be meant today by the vernacular in Roundstone, when the relationship to the landscape is no longer relevant, in that people no longer rely on the sea, the bog, and arable land? Perhaps it is no more than a quality that addresses itself to photographic, touristic observations before it does to rational understanding?

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Selling Identity

Philip Dawson

This is a map of limerick city
which shows the location of all the
shops that are mentioned.

Introduction

The population of limerick city was 55912 in 1966. It has dropped to 52539 people in 2006. The city boundary was also extended in this forty year period. There are less people living in a bigger area. Only 200 hundred new jobs were created in the retail, wholesales sector. This small increase is due to the new shopping centre opening on the periphery of the city, while the retail in the city dies out. As this once industrial city loses its shops and people it loses its character too.[1]

Future retail development in limerick should consist only of small scale specialised traders. Limerick was once a lively city of industry. Limerick was one of the main centres of trade in the country. Now 2010 what has it got to show of this special character. Old grain silos dot the city, the docks are empty, a once thriving market industry reduced to once a week meeting in a car park. The only hope I believe, that's left from this character is the retail industry.

These small scale industries provide a wide range of jobs for the city. They provide skilled jobs whether it's cutting up the carcass of a cow or cooking a meal. Modern outlook look is against labour. More labour equals more costs. Businesses are becoming automated. The employee becomes nothing more than a servant to the machine. His contribution is insignificant. The machines become "destroyers of culture" as Schumacher phrased it. With closure of dell we saw the loss of over 2000 jobs in little less than 24 hours. Employment should not be concentrated in such high numbers under the same employer. [2]

Local corner shop holds a special place in most communities. A shop keeper knows his regulars. Jane Jacobs says shops provide a street news system. Social life from the streets pours in the shops.[3] They become extensions of the public realm of the path. The role that the pub has played Ireland as the centre of social activities cannot be ignored. The pub acts as the unofficial community centre in Irish towns.

Small scale businesses are more flexible, than their multi-national counterparts. The traders can respond more easily to the market and develop a better product. As Schumacher pointed out in his analysis of the ford factory in Detroit. Automation made changing the product very expensive. This flexibility also allows the employees to be more creative. [4]

Interdependencies play a large role in cities. A retail street needs a variety of shops if it is to be deemed successful. Shops benefit from each others customers. They can sometimes benefit from each other directly. The speed of the closures will only increases as their numbers decrease. There are also a lot of primary producers who depend on the small scale traders.[5]

The physical interiors and exteriors of the small specialised traders are better designed than the larger chain shops. The attention to detail is careful and considered. This elaborate decoration and furniture has created jobs for sign makers and carpenters.

Limerick city centre is predominatly made up of three storey red brick georgian buildings. Once the majority of the buildings were residential. Now the its predominatly retail. there is a distinct change in the city as you move from the ridgid

(1) Central statistics office. *census of population of Ireland*
(2) E.F Schumacher, *small is beautiful a study of economics as if people mattered* (London: Blond and Biggs Ltd, 1973), 49-50
(3) Jane Jacobs, *The death and life of great American* cities (New York: Modern library, 1993). 91
(4) E.F Schumacher, *small is beautiful a study of economics as if people mattered* (London: Blond and Biggs Ltd, 1973),
(5) E.F Schumacher, *small is beautiful a study of economics as if people mattered* (London: Blond and Biggs Ltd, 1973),

grid of newtown perry to the old irish town,

The main body of this text is made up of interviws with various people who own or wok in shops in Limerick. Its similar to the methods used by Studs Terkel in "Hard Times: An Oral History Of The Great Depression". The people who are interviewed are choosen based on the shop with which they are associated. The interviews have been edited, so that only information that relates to the character and identity of a shops remains.

Shops

Hogan's Butcher.

Hogan's butcher on William Street stands out as something special. On a street of red brick Georgian buildings this bright red terracotta structure catches the eye. On the ground floor the shop in a modern font and interior. Clean sharp lines and polished surfaces go well with the rich luxurious red of the terracotta. The internal layout is simple. A long counter which runs parallel to two walls separates the customer and the shopkeeper. This long counter allows the shopkeeper to display all his products. In this interview frank Hogan the owner of the butcher talks about the importance of small traders in limerick.

Frank hogan owner of hogans butcher on william street. Notice that all the materials are modern.

It was in founded in 1978. This was originally the daffodil dairy in 1880. It burned down in 1930 and reopened in the early 30s used to be part of Boyds. They sold any thing from Waterford glass to tractors. My part of the building used to be paint department. My brother Kevin and I run the business. Seven people work here. I have been working here since 1977. I like working here. You would want to, otherwise you wouldn't put up with it for that length of time.

There are things that you will only get in limerick or cork and they would be skirts and kidneys, package and tripe, and offal. Because when the big factories were producing especially the pork factories, they had an awful lot of breastbones, eye bones, and tails, which was collectively known as offal. It used to be very cheap. Factories were almost giving it away just to get rid of it.

Employees are trained on the job. We get in full carcasses cut them all up ourselves. All the work is done by hand. There isn't a machine that would be able to do it to the same spec as a human like deboning for example. There is no way a machine could bone out a carcass like a man does. Everyone is a different shape.

There were five meat producers in limerick. There was O Maras bacon factory Shaws, and Mattersons. Then there was Hengeons, which was beef and lamb. There was another one as well. I mean it was huge in limerick. Now there all gone. By comparison nowadays they were all small operators. A lot of them were city centre, so they closed in the city centre and opened up bigger factories outside

the city.

It has changed a huge amount with technology but that change is world wide. A lot of the manufacturing jobs are gone. Hey are just too expensive. All of these factories are setting up in Eastern Europe and Asia. Wages in Ireland are too high. It costs so much to run a business in Ireland.

We know the names of 90 percent of our customers. The reason that people come into shops like this is because of that relationship. People come in and say hello missus Murphy how are you? They would be asking "how's the husband". We know their husbands, and their kids. Butchers are almost like hairdressers or the confession box. We hear an awful lot of stuff. There are woman giving out about their husbands and husbands giving out about their wives. The two girls that work here probably know every woman in the city and I would say half the time they come in for their messages the other half the time they are in for a chat. That's why people come into shops like us rather than a supermarket you go into a supermarket nobody knows you nobody gives a damn. Personal relationship is their main advantage over the chain stores. They can screw us on price if they want. Give away roast beef for two euros a kilo there is nothing that I can do about it. Customers that go and get a special offer one week will probably be back to you the following week.

There used to be a lot of people living in the city. I suppose there still are a good few but no families. Down at the back of me we have the Watergate flats so there are lots of people around me. There still is families in city centre limerick but not as many as there used to be. Some of these buildings here could have had as many as ten families living in them. Depends on how far back you go that's kind of gone since the fifties.Anybody who could moved out to the suburbs.

If something is selling you try to get in more of that product. It happens regularly that things which were selling well two or three years ago have dropped so you drop those and get in something else. If the customer asked for something we try to accommodate. We do get asked for odd things especially since there is now a large population of foreign nationals in limerick now. Recently a whole load of people have been asking us for chicken livers they are something we never sold before. There were some people looking for rabbits.

We sell beef lamb pork chicken all Irish and fresh. There are a lot of places selling foreign meat that can't be traced. We only sell Irish

There is a critical mass of shops. It is quit difficult to be on your own. There have been quit a few shops in limerick that have closed down in the last 12 months or so. And if a huge amount more of them do go then there is less reason for people to come into town. If you look around there are 4 vacant units on the bottom of William Street here. There are six vacant units in Cruises Street and there are more to come. So there is a critical mass but we have not reached it yet.

They still seem to be building units. City centres traders are always giving out about the shopping centres. The amount of shopping centres that have been built around limerick is remarkable. Do you know what they call Waterford the donut because mass evacuation of shops from the city centre of Waterford. The trouble with retail parks is that you have to drive from one to another. It's not sustainable. The planners shouldn't have allowed this to happen. There is a similar case to be seen in the housing industry. There is no need for the mount of shop units that have been built in limerick in the last ten years. Limerick hasn't reached the same stage as Waterford. There were great hopes for the new opera centre in Rocklin

Street. There was going to be something in limerick to draw people back. I can't see anything happening there in the next 5 years. That building is only going to get worse. They need to do something with it even if they demolished it and made it a free car park so that people could get into the city centre.

City centre living isn't Irish. City centre living is big city New York. Most Irish people want a house and a garden where the kids can grow up. It's grand when you're young free and single. Pop down the pub or the take away. But once you settle down and start having kids, you want playing pitch near by you want playground nearby. City centre living I don't think is really compatible with Ireland.

The street that we are on is quit successful *(William Street),* because we have the busses outside our door. If they take the busses out of William Street, William Street will drop dead. The council have done a fantastic job on Bedford row. They look very good. But ask any of the businesses down there they haven't come back up to where they were before the renovations. Limerick will look very good when it's finished but to be honest it scares the shit out of me. They are supposed to be starting here in William Street. It looks good but it's empty. William Street is almost all small independent traders like me. It has good variety so I hope that continues.

We supply a number of shops in the city with fresh meat. We buy from wholesalers who buy from farmers around Tipperary and limerick. we also sell to Enzos, The Wild Onion, and The Golden Grill.

O'Connell's butcher
On approach to the butchers it appears as though there is two separate butchers side by side on little Catherine street competing for business. This is actually the same butcher. In the twenties it because of the unions the butcher was split into pork and beef. There is two different entrances but they both operate under the same name P. O'Connell. The award winning butchers has a original carefully painted façade. Paddy O'Connell is third generation of his family to run the business.

O'connells front is an original. It was painted by Tom Collins. In this image it has been dcorated for Christmas

This butcher is here since the early 20s. It was owned originally by a man called paddy o Connell, and was taken over by my father back in 1973. This was one of the first shops in limerick to have glass. It was also one of the first butcher sops to have refrigeration. Paddy Connell used to live in America came back with glass in 20s and He was a very well known person in limerick.

There are ten employees working here. The employees used to do an apprenticeship for 4 years. Now it's training on the job. All our employees are from limerick. Most of the employees have been with me for over 20 years. We bring in basic full carcass and cut them up and debone them and sell them of the counter. We kill mostly our own cattle, but sometimes we buy from farmers, and kill them in abattoirs outside the city. It's all basically from farm to fork. We full control over the cattle we buy. Supply a lot of restaurants like the sage cafe. We have our own meat we just won the British journo award 2010

Four or five pig factories n limerick and every one of them have closed. All the manufacturing in limerick is gone. There used to be a lot of factories here involved in the food industry like the old Toffee factories. That is totally gone now. Early 70s there was a lot of factories in the food industry now they have totally been wiped out.

Most of our customers are repeat customers. There are families who have been coming here for generations. We are very lucky in that sense. We provide a better service than supermarkets. It's a very one on one service. We know every customer by name. Where do you go to get that any more?

Products changing all the time we need to change our product every 6 weeks. Peoples tastes are always changing and we have to be able to adapt to that. We have introduced guineas and beef pies and it's all prepared freshly. You don't get that in supermarkets.

The more shops around the more people it attracts. Passing trade is going to go if you don't get people coming into the city. All you have to do is look at every street in limerick and see the amount of closures, O'Connell Street has been decimated same on William Street. We are very lucky we have a pedestrian street. Even some of the pedestrian streets aren't doing so well. At the end of the day it's a recession. A major factor is parking. Go to the crescent or the park way. Drive out there and go in and do your business, in the city you're being driven into a car park.

The milk market

Early on a Saturday morning people can be seen putting up the thin metal frame for the stalls. These frames are then covered with a light waterproof canvas. Within an hour the car park and surrounding street are taken over by the market. A wide variety of different products are sold and this attract different types of people. The market isn't clean or organised. There is an atmosphere of industry and work. These are some interviews carried out at the market.

This is one of the larger stalls to be found at the market. This photo was taken 7a.m. By 1p.m traders and people had taken over the entire street.

Rene Cusack is fishmonger is located in the actual building of the milk market. John martin is manager of this shop and he agreed to give an interview.

Most of the fish comes in from Castletown. Half of it is wild and the other half of it is farmed. Do a lot of shell fish here as well muscles, caucles. We don't do much whole fish here its all fillets. All the customers would be local, a lot of passing trade.

We first started off in Bedford row with and the place on Alfonses street it been there about two and a half years. It was on the dock road. Then it moved around the corner. It has gone a bit quiet now because of the recession but no too quite. It's very busy here on a Saturday morning. When the market building reopens it should only get busier. And I should get more staff when that happens.

Once the market gets going on a Saturday morning, the place gets packed with people. It's organised to a certain degree, but when you get that many people on the street thing can become messy. But that's all part of the atmosphere. There is nowhere else like it in limerick when it's busy.

We pay more rent for a place in the building than people who rent spaces on the street outside the market or people who rent spaces in the square.

Paddy McCarthy rents a space on the street outside the milk market.

My name is Paddy McCarthy. I have been coming to the market for the last 20

years. All my produce is home grown. I own three acres of land on which I grow my product. I learned how to grow my own food. All my customers would be regulars. I would be on first name terms with most of them.

I don't know where I would sell without the market. A lot of people depend on the market to sell their products. You don't have the same expenses as someone who owns or rents a permanent premise. It's ideal for some like me who depends on the seasons and isn't fully stocked the whole year round. Most supermarkets are always fully stocked. They use a lot of preservatives and packaging though.

This part of the city benefits a lot from the market. Local government has plans to redevelop the milk market. Construction has started already. They are going to put a roof on the old building and there are also plans to install pluming for the stalls. It's good to see money being invested around here. Other shops benefit from our presence here on a Saturday morning.

I like not having a permanent building. We can invade the city for a few hours and leave before it gets dark. It doesn't suit the way I work. I'm a farmer not a business man. I don't think I would have time to manage a shop and manage the farm. It would be nice to get some more protection from the whether on those frosty mornings.

European shops

Here are interviews with people who moved to Ireland during the boom. Limerick city has a very strong foreign community. The city has benefited from their presence a lot. They inhabit building that would otherwise be vacant, because of the low rents. They can't afford to have elaborate fronts and interiors, so they usually have cheap painted thin. Rather than detracting from the area it fits into the context. Originally fronts were simple and made from the cheapest materials. It's just in the last forty years that things got elaborate. Because there are so many European shops in limerick, it would be a mistake to ignore them.

Polski Smak is one of five other polish shops in limerick.

Polski smack is a polish shop located on parnell street.

My mother and I (Aneta Piotrowska) run the business. We both moved here from Poland about five years ago. When we set up the business then it was a lot easier. Before the recession there was more polish people living I limerick. And we face competition from other polish shops. The recession has hit us very bad.

Our customers are predominantly polished. They come here to buy they got in Poland, but also I believe a lot of them come here to talk. This is one of the few public places in limerick where predominantly polish is spoken. Most of them are fluent in English yet when they come here we talk polish. There are about ten thousand polish people living in limerick. All our products are sourced in Poland. Occasionally we get Irish people here who want to try some polish food.

Slovakian and Czechoslovakian is shop is located on the corner where high street meets William street. Lubo the owner of the shop talks about what it s like to awn a European shop in limerick.

It's a Slovakian and Czechoslovakian shop. Our customers are Slovakian and Czechoslovakian, Latvian, polish, Hungarian, Russian, and some Irish. There isn't a large Slovakian community in limerick anymore. One year ago there was more. When the recession hit people began to leave. They had no jobs.

All the products that we sell here in the shop are from Czechoslovakia. There are a number of European shops in limerick to cater for large the community. There is one polish shop on this street, there is a larger east European shop, and two more shops over there on Parnell Street. I think there are six or seven polish shops in limerick. There are a large community of polish people living in limerick. Poland is a big country.

It a family run business. At the moment it's a very bad situation for all the business. Many people have lost their jobs. They can't live of the social welfare.

Most of my customers are regulars. I usually talk Slovakian to the customers. It's a place where people can come and talk Slovakian.

I started one and a half years ago. In the beginning things were very good. It was an easy start now it's much harder. I choose limerick because it's the only city in Ireland without a Slovakian shop. I was working in Ireland before I opened this shop. Tahts why I choose to set up a business in Ireland.

vThe Wild Onion

Ruth and bob DiGirolamo moved to limerick from America and established the wild onion. This American style café is located on high street which slopes gradually towards the recently renovated milk market. The building is mock Georgian. Living spaces on the upper floors and retail spaces on the ground floor. The blue shop front isn't over elaborate but it has been considered. The simplicity is similar to the original fronts around limerick. The café is similar on the inside. There is no lavish display of money but it's clear that the decisions that were made were careful and considered. Over a mug of coffee Ruth talks about her shop.

This is a view into the kitchen of the wild onion from the entrence.

80% of our customers are regulars. On Saturdays we tend to get groups say 4 to ten fellows together. It's a Family run business me and my husband. All work is rewarding. Your always contributing to the economy contributing either to the health of your country or your city. That's a reward. It might be a cultural difference. It could be an American ethic as opposed to European. Have you heard the expression Americans live to work and Europeans work to live? There are four people working here. Not all full time. They come from Dublin, morocco, South Carolina limerick, and Florida originally. The building was built 1998. It was part of an urban renewal project.

We prepare all the food here ourselves. There is an advantage to this. If there are dietary restrictions the customer knows exactly what's in the food. So the person can make the decision for themselves. They have to have the skill all they learn here is our menu. Everyone else just learns on the job. People don't come any more asking for jobs. Almost a year ago it stopped.

My business would not survive here on it own. Because we are a noted destination but if people have business at the courthouse. People will say as long as we are in this wide area we should go up to the wild onion. We are too small. No one would depend on use, but we are treated very well by our suppliers. The butcher buys it. What I think helps the food business is more food business. So people have a choice when they go out to lunch if one place is to full they are not stuck. Parking is the main advantage of the large scale shopping centres.

I think it's a lack of municipal energy. The absolute hotel, across the street from that there is a little row of houses that are just falling apart. You could just stand there and just watch them falling apart. That's a disgrace. This is a hotel bringing people in and this is what directly across the street and yet planning permission was granted for them to put up the hotel without them doing something about the house that was a missed opportunity. Planning should have been required that those buildings be at least propped up and then painted to look cute. Vacant buildings that are not maintained that is a municipal expansibility.

Bob: I have got an example for you, the city of Columbia North Carolina there is a rule that a house or a building is unoccupied in a year then the building has to be knocked down and the owner has to pay for it to be knocked down. See the incentive that is for people to maintain their property rather than letting it fall down. Look how bad Catherine Street is. Those buildings are boarded up. If it's just that the traders that are in there in the business are down market that's one thing, have you travelled to the continent. Planning there requires there that if you put out a sign that it is in keeping with the street.

They desperately need to finish the opera centre, if you go to the crescent any day of the week the place is packed. It's a modern indoor shopping mall. They can't say author's quay is the answer it certainly is not. They can't give away the retail space here either.

Sage café
It is one of the few new shops to open in limerick. It is recognised now as one of limerick finest cafes. It has won a number of different prestigious awards. There is a contrast between the old and the new. Te lettering and the colour scheme of the café is modern. The front itself is constructed using the traditional methods.

My name is Louise Barry. I'm the manager of the sage café. There are eight people working here at the moment. The small traders are very important to limerick. They have a much more personal approach. Most of our customers are regulars. We were the downturn in the economy didn't effect us to much. We have a strong base of regular customers. I believe there are so many empty building in limerick because the rates are so high. The sage café opened in 2006. There was a cloths shop here before it opened. All the meal are prepared and cooked freshly in the kitchen.

Chain stores are successful brand names that people recognise and people tend to stick with them. We are able to spend more time with the customers and that's why they come back. Our service is much more personal than multinationals. We put so much care into the appearance because people will always come back if hey feel welcome and comfortable in the café.

Leonard's menswear

A modest sized street fronted building on O'Connell distinguished by a rare vitrolite shop front, with Art Deco detailing, and parapet name plaque, which give architectural variation to this historic streetscape. This detailing, both externally and internally, are intact and are kept in impeccable condition.

Leonard's interior is original and completly constructed from wood.

My father when he bought the place it was a men's drapery shop before this, so possibly some of the furniture might have been there then. He put his own touch on it. The shop front was put in 1935 by my father. There was a mahogany front here first and he took it out and put in this thing called vitrolite lighting, which was the aluminium of the 30s, so it was a very modern front for the 30s.

John, eamon myself and my wife work here. Eamon is from Tipperary john is from county limerick. The wife and I are limerick. I do the buying for the stock that comes in and I can get suites Taylor made if necessary. I don't find the work rewarding anymore, because Business is very bad. Used to be very rewarding, but there is a down turn in the market at present.

Small traders are the life blood of any city, because they give variety and they normally are specialist retailers rather than big department stores. Small retailers are very personal and one to one with their customers.

A lot of the small independent retailers have gone out of business, because the overheads are so high. Rents, insurance, wages, and commercial rates. Competition has gotten much greater and there is a problem in the city with parking. The numbers of spaces have been reduced and it is too expensive. Then people can go out to these outlets and get free parking.

At present there are over forty percent of the units vacant in limerick. Cruises street seven shops have closed there since Christmas. Sarsfield Street has a number of vacant units; O'Connell Street has a number of vacant units empty also. Then they have units where they were proposing to build the opera centre, that's all vacant. Id say the recession the rent and the cost of commercial rates. The city centre doesn't have enough buildings that would accommodate larger stores.

Our biggest competition now would be the internet. Or people going off

abroad to New York or Boston. I have been here 25 years and I have seen shops closed and reopened and closed. When I started to work here there were many more people working and living in the same premises. And then you would have known the majority of the traders because they would have been independently owned, but now a lot of them are chains so you don't know those people. There are very few people living in the city now. They are hoping to regenerate that but I can't see that happening in my lifetime. That's why we need a boundary extension its very important that the city boundary is extended beyond Raheen and castletroy because we would get a much better funding from central government. At the moment you could say that thee are three separate councils running the city. Clare county council, limerick county council, and Limerick city council.

Helene Modes

Again this shop presents itself elegantly to the street through its façade. The front is constructed using traditional techniques and materials. They have managed to use all the floors in this Georgian building, which I haven't seen anywhere else in the city. Terrance Cusack

My name is Terrance Cusack. The shop was set up by my parents about seventy years ago. I began to work here when I was twenty-one. The shop front is thirty years old. It was done in the traditional style. This was two buildings number ten and number eleven. Number ten was actually a cloths shop. It was called the Tipperary house. Number eleven was a chipper. At the moment we have seven people working here. About two years ago we would have had fifteen people working here. We used to have our own dress making department on this floor. We don't do that type of work anymore. All of our staff is trained here.

The recession has affected us our customers don't have the money they used to have. We are all victims of our corrupt government over the years.

There is too much retail space being created over the years. Places which have been prepared for demolition like the opera centre. That will never be built yet those buildings will be an eye sore for generations to come. Any place that's closed will be much less attractive than a place that's open and vibrant. There isn't going to be any investment in retailing in the next thirty years. They will knock retail space rather build it. What they did was criminal. They were building all over the place. And there was never a market there.

Small independent traders have some advantages over the larger chain stores and multinationals. We can be more selective in what we do. Because we are not part of a chain we can be much more specific and actually target our customers. We have a greater range of sizes too. Our cloths are more exclusive than what the multiples would be selling. Our products would be medium to up market ladies clothing.

Don't really get regular customers. We get a lot of people who travel from cork and Galway. We do a lot of occasion ware and things like that. Most of our supplies are from Germany or France.

There was a lot of clothing industry in limerick. There was Danas tailoring and there was crescent clothing. When I started here first the clothing industry in limerick was huge especially on the outskirts of the city. There was a large shoe factory there on Elbert street. Danas was one of the biggest menswear. They made the cloths. Cost of the production and labour went up.

South's pub

South's pub could be described as an institution in limerick. People who have never been there have heard stories about it. The pub doesn't grab your attention from the outside. The front has been carefully painted, but it doesn't stand out in the crescent. The interior is what has made this pub famous. It's rich and luxurious. With marble counters and velvet seats it's the closest I have seen to a loosian interior. David hickey talks about the importance of pub in Irish society today.

The interior of souths is one of the most unique of any shops in limerick

I have owned south's since 1972. I bought it at a record price at 53000 euro. It was a very old mans pub. There was only ever about three or four woman in here when I walked in. it was a pub for professionals the gaurdai, politicians accountants solicitors, business people and the ordinary white collar workers. It was very exclusive. It was an old type of a pub. It was run down a bit but. Main part of the sale was forty thousand and then a few bits and pieces added up to the 53000. They said at the time that this man will never get his money back. Since then I have spent a couple of million in the place. There was a small shop here at the back. At that time in 1972 there was no ladies toilet here so that was the first thing that had to be done. I also put in a new heating system. I remember I went to the bank to get 50000 but all they would give me was 25000. That time money was very tight and hard to get. We redeveloped it again, at that stage we had an off licence in the front and at the time there was so much business in the bar the on trade I got rid of the off sales. And I put that into the bar and spent another 100000 at the time. I revamped it again and I spent another 600000 and then I revamped it again and I spent another 700000.and I revamped it again and I spent another 500000. In 1986 I borrowed money at 23%. The mayor at the time said we were very brave people. The recession that time in 1986 is worse than the recession that's there now. The building was originally established in 1909.

At that time there was only snugs in the bar. We had a front bar that white collar men like teachers or people from the E.S.B would use. There was a snug in the middle that old men used. The middle bar that's there now carpenters and plumb-

ers went in there. Here at the back, we called this the back carriage. I don't know why. The professional people all mingled and drank there together. We still have that cross section of society in the pub today. At that stage each of them nearly had his own chair. If you came in as a stranger and you were sitting down in some seat and a local came in he might give a look at you. You wonder why he is looking at you and I'll tell you are sitting in his seat.

We have fifteen people working here now counting everyone even the kitchen staff. There has been a big change since the downturn. Trade has defiantly dropped. We are lucky. We are in an area where there is a lot of office space, a church across the road, and two schools. There is a lot of activity around here. But trade in general is down a good bit. We are very well known pub for rugby, G.A.A, and racing. Like Cheltenham we have a betting shop next door. There are people who take a half day off for the races.

We never changed the name of the pub after we bought it. Its still called south's. The pub is often packed for certain events like the rugby match tomorrow. We also do a bit from the G.A.A grounds if there is a big G.A.A match like a Munster final. It used to be huge. Years ago we used to get 60 or 70000 people now it has gone down to about 50000.we don't get as many matches as we used to get in the Gaelic grounds. This year we have a big match coming up with the Australian rules game. There are a few concerts coming to the new Thomand park stadium too.

When I was doing it up the last time it wasn't my intention to go as far as I did. I always liked quality and standards and I wanted the highest standard I could get. When we set out to do the job we gutted the place and I said hear it goes we will put everything into it. And that's what turned up. I'm very proud of it. My time here is coming to an end. I think I have renovated it about five or six times. There is care in everything the customers are taken care of and the place is taken care off. I have been in the trade for the last 51 years. I started in 1959. I have been in the trade so long and I have loved every minute of it. There is always a jovial atmosphere here with the customers. The one thing this pub has is atmosphere. In the last Irish rugby match, when Ireland beat England and Tommy bow went over for that try, the roof nearly lifted off of this place. The atmosphere that evening there was men nearly crying. Ireland had beating the old enemy. Even before the matches begin when the anthems are being played we turn them up. There are people nearly crying with the excitement. Heineken cup matches could start at 5 and we would be packed at 2. I remember saying to my wife. How in the name of god are we going to control this and we never had a word.

The recession has affected the pubs. The leased ones especially they have no hope. They will have to face a new challenge in the coming weeks with the new law the dail is bringing in. the legal blood alcohol rate is going to come down from .8 to .5. At the moment you are allowed about two points when this law comes in you will be able for lees than one. That will have a Hugh bearing on the trade. At the moment we get a lot of customers who come in after work for their two points.

In a lot of areas the pub is the local hostelry for everybody. One can chat to people about G.A.A, politics, unions, Price of cattle. It's a discussion. The day that that goes it's a sad day.

We think that drinking at home is totally wrong. Its ok for a few drinks but people are bringing in vast amounts of alcohol into their houses there is no closing time there is no measures. It is there where the gaurdai are running into a lot of

trouble. There is Trouble with students and violence in the home. Home drinking should be banned or what we call cheap drinking.

Cloone's tobacco

Cloones tobacco store was never designed as a Georgian house. The differences are obvious on its façade. It's a shop which people remember as being unique. It's a welcome change to the regulated repetitive Georgian houses. The interior is crafed from wood. The majority of it is original. It has a very unique character, something that's lost in a lot of the new shops. Eleanor pencil was interviewed in a new shop she just opened on William Street. She owns the tobacco shop.

The interior of Cloones is original. all the furniture and fittings are crafted from wood.

The tobacco shop was first established as a tobacco and snuff factory in 1870. It continued to produce snuff until 1930. That function ended and then it continued to sell both wholesale and retail cigars, cigarettes, tobacco and snuff of course. Cloone's was established about five years after Cahill's and cloone's became quite a large producer, whereas Cahill's always remained relatively small.

We have a very established trade. Eighty percent of our customers would be regulars. Fortunately the shop has become quit a curiosity, so we get quit a few tourists and we get people from all over the country looking for products that they cant get anywhere else in the country. Garyown is no longer produced for the past year. And Thomand clog that Cloone's made hasn't been made for the past twenty years.

There are three people working. The shop was built by carpenters from Adare in county limerick. We are the only tobacco shop left in limerick. And we are one of only three shops left in Ireland that can still display its tobacco.

A lot of tobacco shops have closed. The law intervenes and its no longer permissible for them to display tobacco. I have an exemption to that law. Prior to that peoples practices have changed. More people are using shopping centres.

The shop is very unique. It is such a shame that many of the specialised shops have closed. Commercial overheads for sole traders have its just not viable. You see chains of shops they come along and they try to replicate the more individual

Limerick once produced its own tobacco. These are some original limerick cigars.

shops. It all comes down to you have to make a profit.

The life of a shop keeper is quite a good life. You are your own boss. For the shop keeper it has great benefits. For the customer it has limitless benefits. Rather than customer care being a policy, it is a reality. You do care about your customers. In the past ten years I would say that number of people living in the city has increased. We were very happy to see all the European people come to limerick, because they were very good for business. It seems to have become part of local government policy to encourage shoppers to go to the retail centres outside the city.

It's very difficult to start a shop in limerick. There are no incentives for people to open shops in the city, instead there are a number of disincentives by people in local government.

Bean-a-tí

This bakery shop located on little Catherine street is one of only three bakeries left in limerick. The building is simply render and panted cream and red. The front itself is more elaborated to grab the attention of passers-by on the pedestrian street. The display window achieves this. Internally the shop is kept to the same high standard. A long counter is used as a display case. The customers can also get glimpses of the kitchen which is always busy and this adds to the experience. Declan Canty takes some time of his busy schedule to talk about the shop.

View of Bean-a-ti looking towards william street.

. It's here since 1966. It was always a bakery. I'm managing director. I do the baking. We bake all kinds of confectionary bread and confectionary items. There are seven people working here at the moment. All of them were trained and qualified before they began to work here. The downturn in the economy has affected the business a lot. It has gone down 25%. It's a family run business. More and more people are moving towards the suburbs away from the city centre.

There are no craft people around. They have been replaced by pound shops. Manufacturing industry is finished in limerick. Ill tell you why. Take this business people don't want to start at 4 in the morning. Nobody wants to do that anymore. You're making decisions all day. We can only make a certain amount everyday. If the donuts are gone they are gone. You have to eat them fresh. Most of our cus-

tomers are regulars. Over time you get to know the customers. They want fresh food not food that has been packaged. There are very few people going into the craft industry. There are only three bakeries left in limerick. There was fourteen here at one time. It was a big industry in limerick. There are only three left now. All our produce is hand made there are no machines used it's a craft. It is a skill that has to be learned over time. I worked in Switzerland, I worked in Germany, in Holland, cork, and I have vast experience of this business.

O'Neill's vegetable store

O'Neill's is a traditional grocer. They don't use packaging all their fruit and vegetables are fresh and organised carefully onto a large number of shelves which cover all the walls. It no more than 3m wide by 5m back. One is surrounded on all sides be smells and colours and because of the small dimensions you are forced to interact with the shopkeeper. The simple but well maintained. This interview was carried out with Miriam O'Neill.

vegetables and fruit line the interior of oneill's general store.

Since 1932 C O'Neill's general store has been a family run business. It closed in 1976 due to illness in the family and eventually they died in 1988. The grandson of Charles O'Neill opened a greengrocers in the same building. The shop used to sell hardware, bicycles, paint, paintbrushes etc. you could get a needle to an anchor.

Well the years went on people died some moved out, but those of who stayed on the premises try to keep up the tradition and carry on the family name. Two sons run the shop today Charles O'Neill and David O'Neill, and of course I am still here living on the premises. At the moment due to the recession we are feeling the pinch and there is a lot of competition out there so we are just hanging in.

The customers become the shops family. You hear all their ups and downs. Good and bad. Its not the same when you go into a supermarket. We do the shop up for different occasions like valentines, Christmas, and St Patrick's Day. All the customers love these occasions. It the atmosphere it creates among ourselves and the public. I think it's very hard today to hang in there but hopefully we will be there for another few years.

People associated with the industry

Tom Collins: Sign maker
In a small workshop on Ersons lane Tom Collins has painted some of limericks best shop fronts. In this interview he gives his view on the shops around limerick and the effect they have o the city.

Tom Collins standing in his workshop. pictures and painted signs cover the walls.

I am a humble sign writer. Basically I produce bespoke signs and traditional hand painted signs for businesses in limerick and Munster.

I set up this business myself. As a mature student I decided to go to Art College in cork. I decided that the type of work that I was really interested in was graphic design also what I worked at would be out in the elements not stuck in an office in front of a computer screen. I always loved poster art from the art deco period to the Second World War. That kind of imagery I loved it as a kid. It was a way to get to do street art. Performance art in a way, because sometimes you're there people come up to you and give you an immediate response if they like or don't like it. As a creative person, it's great to have that relationship with people. I have lived abroad I have lived in other cities but I mean I love limerick. I am from limerick, and I think we have this fantastic architectural legacy that needs to be protected. I cant stand in the way of progress and we have to embrace the modern world I get all of that but you know I think we have some really beautiful and unique architecture and it could be much nicer.

People now don't have as much money. They need to attract business and are looking at how they can stand out from the crowd. If the crowd is a lot of cheap mass produced signage or shop fronts really the only way to go is the alternative to that.

Some of the shop fronts are original. Some of them are Georgian and they are still holding up. I know some for example Tom Collins which is an original front. I can tell you a bit about that, because it's my home place. It's our family business and we are there from 1932, but there was a bar there before that. That bar probably existed there 20 or thirty years before that. Sections of it have needed to be replaced over the years but for the most part it's the original front and you know they made them well they used quality woods not always hardwoods they just primed them really well sealed them really well, and painted them really well, and they weathered really well. Obviously maintenance is key. If you don't stay on top of it pollution car fumes rain speeds up all that decay. But to say who makes them carpenters guys who are highly skilled making great shop fronts and there are some beautiful ones around and their ones that have been thrown together on a very low budget still look adequate.

Leonard's is a particular favourite because of the fact that I love that art deco period and the style of front and letters are very art deco. At the time it would have been a big departure from the typical Georgian architecture that limerick has all over the place and you know originally these letters were chrome plated letters they were silver and over the years they oxidised and tarnished. I had to remove the letters and have them striped and preserved. I gilded them with 23 and a half carrot Italian gold leaf. The glass is called vitrolite I don't think its being made any more. Small little details for the grills for the air vents and the like they are just beautifully detailed. You know we added this hanging sign a few years ago. The bracket has this kind of scroll shape which I copied from the top of the building as a scroll shape. They are nice people to work for inside they have a lot of old mirrors that

needed to be regilded and so that was a lot of fun to do. Leonard's was a good one to do. Nancy Blakes is another one another favourite of mine. I have been working on the signs in Nancy Blakes for over 15 years. And over the years we have added small details embellishments trying to bring out little architectural features in the building that's already there. I am trying to enhance it without making it busy or gaudy.. I quit like the sage café quit a nice front as well. That Used to be a close shop when I was a kid. I'm from Cecil Street only a block away so that's where I would have been sent to get our school uniforms. It was called Joe Walshes. Now to go in there and have lunch is really unusual. O'Connell's butcher is lovely.

There are fourteen sign companies in limerick. Thirteen of them do pretty much the same kind of thing which is plastic computer produced signs. That are, they seem to lack any individuality, quirkiness. *They look flat.* Yeah but not only that they end up looking very generic looks like it could be in Birmingham. Limerick is unique it has its Georgian architecture. It has a medieval quarter from king johns castle. It has this modern aspect to it. You might drive through a town a not realise why you like it it's probably because of the little things like the colour schemes baskets of flowers the energy that all of these things seem to emit. Subtle and not everyone is aware of it. I have worked in these places and it's what really draws me back to them. They are not afraid of colour. They don't always get it right but you know it is part of trying something different. I think we can be very conscious of you know what's the cheapest sign out there and going with that you know people are conscious of money putting that ahead of aesthetics. It's not all about money and plus you know you get what you pay for.

Nick Griffin: carpenter and builder
Nick Griffin is a furniture maker, sign painter, and a builder. I interviewed him I his home. It an old Georgian house which he gutted and renovated himself. It's a good example of his skills. Its good to get another view from someone who is tied up In the industry but not a associated with a shop.

Nick Griffin in the basement of the house he recently renovated

I was in the sign business for a long, and then I got out of the sign business. I was on a crusade to do everything. I spent about 10 years sign writing then I began to make shop fronts. The reason I started to make shop fronts was because that in the 70s and the 80s you couldn't get to do the signs anymore. There was the revival of the shop fronts. And I would miss out on the opportunity because the guy who was making the shop front would also get some one to make the sign to. That would be in the workshop and it would be all done there.. I got into making shop fronts. I bought

Machinery I bought mortisers and I was making my own shop fronts and suddenly there was lots of people making shop fronts and I also had an interest in making furniture so I moved into he furniture side of things. I did a couple of pubs and I would do the furniture as well there. Doing pubs took me into building. I was Building for about 12 or 14 years

If I was going to make a shop front I would use marine plywood or red deal. Its all hand made and it's mostly all plant ons. If it was necessary I would do all the hand carving, or even a Corinthian capital. It takes longer to paint it than it does to make them.

There are shop fronts here dating back traditionally from the 1900s.20 century.

From the 1920s up to the 1970s there were good shop fronts. You know that In the 70s Perspex signs came in here and buildings started to get modernised old buildings started to look modernised. The traditional shop front in a lot of cases, take wolf tone street for instance there are a few originals out here families would move into the house and say ok we will open the front room and turn it into a shop.

In the 70s and 80s was this thing came back lets put in a traditional shop front but nobody could in fact have bothered to see how they were originally made. What was pilasters became something that looked like a pilaster but wasn't. it had a lot of rounds then the advent of routers you could make something very quickly in the factory out of flat timber you didn't need any great machinery to do it you would router around to put a mould on it, but routers don't go into corners so you get round corners. Everything became kind of round. Then people started to use hardwood. They think it will last better, which is rubbish. When you paint a hardwood, you get a hard edge. Aesthetically it doesn't look good to the eye. Softwood you have to prime it sand it fill it sand it again it again. Coat it and prime it enamel glaze or maybe you varnish it. But each time you do that your sanding it down so the edges become rounded and soft, where as on teak or mahogany or something like that edge is to hard. If you study even the good ones they all look wrong a little bit because they are not soft to the eye. They are too sharp.

I don't think there are any original ones left in limerick. Tom Collins would be an original. It's pretty plain and simple. It might have been changed from time to time but it's pretty much an original. Irwin's jewellers on Patrick Street that might be an original. South's pub, Leonard's is a beauty because that's an art deco from the 1930s there would be few and far between. They stopped doing traditional ones pretty much in the 20s. Some body in the family was taken by this art deco movement so that's what they had. The white house, that's an original. It's kind of like an institution in limerick.

One of the things which have killed shop fronts is the use of polished limestone on the facades. It gets dirty very quickly. It looks terrible and they make it so quickly you can still see the marks of the saw. They look horrendous.

The city is evacuated at night time it should be a very good thriving city centre. Do you know Merrit Bucholz. He got a lot of scrutiny from the council when he was doing his house I was at that lecture that he gave down in the city gallery. I done Georgian stuff for years and I studied Georgian for years and I was in the selvedge business for a long time. I rescued a lot of things.

Conclusion

Limerick has a diverse social texture. This is helped and encouraged by the small scale traders. Streets like William Street and Parnell Street. These streets have a wide variety of shops. This attracts different type's people. Rich and poor, Irish and Romanian rubbing shoulders without a second glance. Peripheral indoor shopping centres are worrying developments for Limerick. They lack the life and diversity that these older streets have. They promote segregation.

The arrival of a large foreign population showed hope for limerick city. Unfortunately with the downturn in the economy, a lot of these people are now unemployed. Many have moved away from limerick. This is a large part of inner city limerick community. They have brought their own shops and they have integrated well into the existing society.

Limerick lost a lot of its character when it lost the majority of its industry. From the markets to toffee factories, limericks once vibrant industrious character has nearly disappeared. It was a centre of trade which supported many people outside the city too. [6]

Offices and cars have replaced families and homes. Similar to the developments in Spitalfield. Old Georgian family houses have become premises for many doctors, lawyers, dentists. The houses are maintained to a high standard, but this type of development holds bleak future for city dwelling. This problem is obvious in johns square and in the crescent. "Office blight" is the term that Raphael Samuel uses.

Family houses are falling apart in front of our eyes. Empty derelict houses plague limerick city centre. Entire streets like Parnell Street are caving in on themselves. These broken buildings can destroy whole streets, by discouraging investment.

The market and the small independent traders are the only hope for the sustainable secure future of limerick. They provide a seed of hope that the life and character of limerick will survive. Or are we to give up on the existing city and hope that multinational companies will come to the rescue.

Limerick has a mixture of people using the city. It hasn't yet been segregated to any noticeable level. Limerick is in a stage of transition. It's not a yet a city, but it's too large to be considered a town. It's at a vulnerable part of its development.

"The character of a district is determined not by its buildings, but by the ensemble of different uses to which they have been put, and above all by the character of the users and occupants".7 Here Raphael Samuel expresses every thing I have been trying to say. It is not about conservation of buildings, it is more about conservation of the whole.

(6) Made in limerick: a history of trades, industry & commerce. Edited by David lee & Debbie Jacobs. Limerick civic trust. 2006.

(7) Raphael Samuel "the pathos of conservation" the saving of spitalfield edited by Douglas blain, Paul Duncan, Elizabeth McKay, Emma o Reilly, and Dan Cruickshank. W.W Hawes Suffolk. 1989, 169

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Individual Insignificance, Collective Significance

The Insignificance of the individual , The architecture of a collective

Úna Breathnach HIfearnáin

What is communism? How did communism affect architecture? Did the communists know something we don't know? Is there a connection between architectural ideologies and communism?

Melnikovs Pavilion for the first "Green City". A space where laborers could absorb the rays of the sun, particularly those who worked all day in mills, starved of sunlight.

Individual Insignificance, Collective Significance

The Insignificance of the individual , The architecture of a collective

Memento Park, Budapest, Hungary.

This statue in the background shows the collective nature of this society, in its extremity. This place through its exhibiting of communist emblems condemns the super powers and praising the ordinary, rebelling citizens of this time.Source : Photo taken by myself

"There are only two conceptions of human ethics, and they are at opposite poles. One of them is Christian and humane, declares the individual to be sacrosanct, and asserts that the rules of arithmetic are not to be applied to human units. The other starts from the basic principle that a **collective** *aim justifies all means, and not only allows, but demands, that the individual should in every way be subordinated and sacrificed to the community"*

Arthur Koestler [1]

1 Darkness at Noon Arthur Koestler Pg 128

PREFACE

Communism is a stage in economic development and our world's history as envisioned by Marx and Engels and probably one of the most complex topics anyone could choose to study. I was oblivious to this whole reign of terror which the communist regime created, along the iron curtain and also to a certain extent success which took place in my own continent and truly only ended during my lifetime. While I was playing on swings at the age of three, the Berlin wall was being torn down, the Iron curtain was being removed and the people who lived along it were experiencing a new freedom. What shocks me even more is that during my entire education I have heard so little about this period. Hence, I now wish to unravel the workings of the Communist doctrine. Reading some of the great works of Marx and Engels has proved difficult

at times then trying to relate such findings back to architecture, during the communist period is no less difficult. To completely work this out may need many more years and many pages. So, in this dissertation I make no claim to have exhausted the topic but, moreover I have merely started research on this colossal task, which I don't plan to end at the conclusion of this writing. My dissertation is a search for the essence of the Communist doctrine and its connection, ideal as well as actual, with architecture and architectural thinking.

INTRODUCTION

Section 1 – the manifesto and other readings

IDEOLOGIES

So what was the Communist manifesto and indeed what was Communism? The communist manifesto was just that, a manifesto which was aimed to tell the people what communism

Illustration (above) of a possible settlement plan during the communist regime .

"When it ended they had laid the foundations of a world movement which had a well integrated philosophy of history and a clear method of action for the future directly born of that philosophy."[2]

"In proportion to the bourgeoisie capital is developed in the same proportion as the proletariat, the modern working class, developed- a class of labours, who live only so long as they find work, and find work only as their labour increases capital".[3]

"The free development of each will be the condition of the free development of all" [4]

"Private property …. abolished and in its place must come the common utilization of all instruments of production and the distribution of all products according to common agreement – in a word, what is called the communal ownership of goods. …..and for this reason it is rightly advanced by communists as their main demand. " [5]

2 Harold J Laski on the communist manifesto – Introduction Pg 7
3 Harold J Laski on the communist manifesto – Pg 140
4 Harold J Laski on the communist manifesto – Pg 33
5 Quote from Frederick Engels 1847 The Principles of Communism

was about. It was originally written in the form of a series of questions and answers in the Principles of Communism by Friedrich Engels in November and December of 1847. However, this was thought of by Karl Marx as not forceful enough to convey their message and was thus, rewritten by him in the document called the Communist Manifesto. This was truly one of the most powerful manifestoes ever written. The first time I read the manifesto it informed me as someone who had never entered into any conversations or learning's in communism, as to what it was hoped to be, what its ideology was and how they hoped it would be executed.

In its most simple form, the manifesto states what communism is proposed to be. It is a movement of the Proletariat, these people being the working class, the lowest rank in society next to slaves. It aims to emancipate them and in so doing to create a classless society where private property no longer exists and all people are therefore equals. A society where everyone works, everyone is educated, everyone is equal. There is a certain air of nostalgia associated with their ideas and the overall notion of creating an equal society. So how did they propose to do this? Where did it go wrong and why did it result in a loss of individuality and a focus on collective life. It was based on the notion that ,"the whole history of mankind (since the dissolution of primitive tribal society-land in common ownership) has been a history of class struggles, contests between exploiting and exploited", this needed to stop to be replaced with, " the self conscious, independent movement of the immense majority in the interest of the immense majority".

(Harold. J Laski : On the communist manifesto pgs 127/ 32)

An illustration from *Anatole Kopp -Town and revolution.*
I find it interesting that the individuals in the photo are
labeled as numbers of the collective with some people not
given any labeling at all, is this illustration of society and the
insignificance of the individual?

1. Gurevich
2. A. S. Nikol'sky
3. Victor Vesnin
4. Alexander Vesnin
5. R. Shilov
6. Alexis Gan
7. M. Sinyavsky
8. Nabel'baum
9. Mal'ts
10. Ya. Kornfel'd
11. V. Kratyuk
12. R. I. A. Khiger
13. G. Vegman
14. Ivan Leonidov
15. Nina Vorotyntseva
16. V. Vladimirov
17. L. Slavina
18. T. Chizhikova
19. Nadyezhda Krasheninni
20. M. Gaken
21. M. Barshoh
22. G. Orlov
23. I. Milinis
24. S. Levitan
25. Moses Ginzburg
26. F. Yalovkin
27. N. Sokolov

The original ideologies of the Principles of
Communism by Engels which consisted of a
series of questions , answered and then better
executed by Marx in the manifesto, they were as
follows: They proposed an abolition of private
property this being the most important thing
they felt to the development of a said communist
society. They also planned an expropriation
of industry, a confiscation of property from
emigrants and rebels in society and then they
planned to organise proletarian employment
on lands now owned publicly and also in
factories and workshops, where in some cases
owners still existed and where such happened
the owner was expected to pay the workers
the same high rate as the state would pay. The
members of societies within in each country
would have to work until all private property
had been abolished. All monies were planned

to be centralised by the state. An increase in
general cultivation of lands was planned.
All children were to be educated in national
establishments at national cost, education
and production would thus be inextricably
linked. The construction of so called "palaces",
communal dwellings for the workers were to be
constructed on the now publicly owned lands,
these housing blocks were to have the benefits
of both urban and rural living and to coincide
with the destruction of any existing buildings
which were deemed unhealthy. Another change
proposed was that children born out of wedlock
would have inheritance rights and the means of
transportation would be dealt with nationally.
These changes were what would inevitably
create this equal communist society; however,
they were to take place over time and probably
in the order thus described here. When all are

"Let the ruling classes tremble at a communist revolution, the proletarians have nothing to lose but, their chains, they have a world to win. Working men of all countries, unite!" [6]

6   Closing line of the Communist manifesto by Karl Marx and Friedrich Engels.

"We are what we are because of him: without him we should still be sunk in a slough of confusion".

"The 19th century contains many remarkable social critics and revolutionaries, no less original, no less violent, no less dogmatic than Marx, but, not one so rigorously single-minded so absorbed in making every word and every act of his life a means towards a single, immediate, practical end, to which nothing was too sacred to sacrifice". [8]

"Men, even capitalists, are amenable to a rational argument and under suitable conditions will give up power which they have acquired by birth, or wealth, or ability for the sake of a moral principle, to create a juster world" [9]

7   The Red terrorist doctor pg 229 Friedrich Engels quote, Karl Marx : His life and his Environment - Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition - London / New York / Toronto - Oxford University press 1948

8   Pg 19 Para 2 Karl Marx : His life and his Environment - Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition - London / New York / Toronto - Oxford University press 1948

9   Pg 140 Para 2 Karl Marx : His life and his Environment - Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition - London / New York / Toronto - Oxford University press 1948

complete what is envisioned is a society where classes will disappear and all those educated will put their comprehensively developed faculties to full use, in being able to complete a number of careers in their lifetime. All of these ideas as concepts are good, visionary, maybe, even brilliant. If only their execution had been as stated above and instigated the quote as above.

(Information as adapted from Selected Works, Volume One, p. 81-97, Progress Publishers, Moscow, 1969;Frederick Engels 1847 The Principles of Communism)

CHAPTER ONE

The Insignificance of the Individual

Section 2 - My understanding and investigation of what 'Communism 'means   INVESTIGATE

Living in 19th / 20th century communism

I

So what actually happened? The ideological

view was not created as Marx and Engels both ended up completing their lives in England, where Marx lived a dwindling existence and Engels continued to support him in more ways than one up until his death in 1883. He worshipped him and was always a loyal friend of his. The level of respect I feel was also much deserved, this we can establish when we read Marx's texts, I'm sure he was more than admirable. Marx's life was dedicated to communism as Isaiah Berlin beautifully scripts.

He truly believed and ever envisioned that communism would work and that it could work in the way he wrote as shown in the quote above. This knowledge makes me even more confident on the subject and my belief that this system was visionary. Society today should learn if not just even from the manifesto, from the courage that these two men had and the

"Ideas rather than armies, cultures rather than economies, nations rather than political systems and, above all, individual men and women rather than amorphous collectives." [10]

10 Vii Preface on the priorities of the debate in Central Europe, The Uses of Adversity - Timothy Garton Ash

"Individuals confirm the system, fulfil the system, are the system"

Pg 171 Para 2 The Uses of Adversity - Timothy Garton Ash

"His mission in life was to contribute in one way or another to the overthrow of capitalist society….to contribute to the liberation of the present – day proletariat which he was first to make conscious of its own position and its needs." [11]

"All we ask is that you will outwardly and publicly conform : join in the ritual 'elections' vote the prescribed way in the 'trade union' meetings, enrol your children in the ' socialist' youth organisation, keep your mind to yourself" [12]

"Beyond this question about the future of individuals there is a larger question about the collective future. How can a country prosper when the best part of its educated class refuses, or feels unable to collaborate in running it?, (unable that is on the terms offered by the state)". [13]

11 The Last Years Pg 271 Engels funeral Karl Marx : His life and his Environment - Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition - London / New York / Toronto - Oxford University press 1948

12 Pg55 Czechoslovakia under ice - blatant crack   The Uses of Adversity - Timothy Garton Ash

13 Pg55 Czechoslovakia under ice - blatant crack   The Uses of Adversity - Timothy Garton Ash

faith they held in humanity, ever optimistic. as illustrated vy the quote above.

The idea however, did not die with Marx and Engels but these ideologies had spread internationally and become enforced in countries in Middle-Eastern Europe and now I will look at the period for which I am focusing attention due to its influences on the architectural doctrine which I would like to investigate. This period from the late 19th century to early and mid 20th century.

II

What is the new communist society like, how do people feel? What do they have to do? If the concept of the above quote is true then where is the place for the individual in the actual communist system? What Marx and Engels had foreseen was an equal society but, one where everyone was valued. In actual fact what was

created wasn't truly communism as had been written but, moreover a socialist dictatorship. One where the power was taken from the current government and instead of being bestowed on the proletariat was just formed into a new type of government. This society was where all people were expected to conform to the ideals of the "party,' which were only loosely based on those originally developed.

What was formed was a communist society where all the citizens had to work for little money and where there were no incentives for achieving high standards and so those educated in specialist areas did not feel the need to work as hard as they had. They did not feel the need to be creative; it was not encouraged in this new "equal" society. There was no place for the intellectual, for the philosopher, for the individual, private self.

"Communism is a phenomenon of underdevelopment….. A generally relatively backward environment". [15]

15   Communism and the politics of development - Persistent Myths and changing behaviour John H. Kautsky 1968 John Wiley and Sons Inc, New York.   Intro Page 1 - what the communist era was seen as - just because all people were employed and all people had what they needed - does by no means mean that they had a in any way stable economy.

"Czechoslovakia today can be compared to a lake permanently covered by a thick layer of ice on the surface nothing moves. But, under the ice among the philosopher labourers, the window cleaning journalists and night – watchmen monks – here things are on the move."[14]

14   Pg 57 the Uses of Adversity - Timothy Garton Ash. This quote tells us of the stark reality in where people worked and what those educated did during the communist regime.

So where is the individual? What did the intellectuals do? In the communist society there was no place for the individual, everyone worked and no one truly expressed themselves. People lived in fear of the party and in many situations they ended up living in communal housing with a number of other families, in an actual commune. Intellectuals I feel are an extension of the individual in so far as they are those who express themselves clearly, with what they express being their own opinion. This was by right disallowed and intellectuals had no place unless, they wished to write for the Party or give up their souls to the party, in retrospect through writing under strict conditioning. In this society, philosophers, journalists and monks took on the most basic careers.

The equal society encouraged a lack of reward, a lack of true achievement. The people were like puppets whose strings were operated by their respective leaders. These Leaders were those such as, Ceausescu, Jaruselski and Kadar. The societies had many disadvantages but, really in a number of countries what are remembered by the people are moreover the advantages. This society which was truly socialist on its way to communist more than an actual communist one, ensured that all people were employed, ensured that all people had what they needed, ensured that its citizens would be entertained and would have communities to live in. It ensured that capitalism would not pollute their minds and their society would ensure that their lifestyles, while under the regime would always remain the same, provided they remained loyal to the Party. However, all of these advantages had disadvantages linked to them, there were food

"Living here and now, you must pretend that you live elsewhere and in other times and at best fight with the dead, through the iron curtain of clouds".[16]

16   About Poland pg 95/96 of All that is solid melts into air – the experience of modernity Marshall Berman Verso UK London – 1983 – I think it truly shows what life was like behind the curtain and the peoples feeling of wanting to escape yet being bound to their own lands and to the communist system.

"Memory is selective, memory is partial, memory is amoral".[17]

17 Pg109 Life of Death- Para 1 Pg 109 on Heimat Edgar Reitz – of All that is solid melts into air – the experience of modernity Marshall Berman Verso UK London – 1983 – Heimat was a film by Reitz on the German condition it is made in black and white, in colour and in Sepia, depending on what is remembered, how vividly it is remembered. I think this has relevance here in that when I talked to people or when I have read accounts, perhaps these people are choosing to forget some parts of living under communist rule which are vital to the truth about it. *"Remember, remember this is a film about what Germans remember. Some things they remember in colour, some in sepia others they prefer to forget. Memory is selective, memory is partial, memory is amoral"*.

shortages a lot of the time and although people now had enough money to purchase the food it simply wasn't there, people had to constantly watch what they said about the party, free will was not necessarily existent. Members of the party were treated much better than the average citizens and were even allowed to shop in special stores and those set up for tourists, so discrimination was prevalent. Travel to the western countries was difficult and even travel to other countries behind the iron curtain wasn't so easy for its citizens.

        The strange thing however, is from what I heard from hearsay, in conversations with my friends in these countries and in accounts I've read is that a large portion of people miss the communist era and some wish that they were still communist. Why would they want this? Well, I think that the simple reality

here is what they miss is the feeling of security and the feeling of having everything they need without necessarily having to work too hard to achieve it . This gave them time to really enjoy family life and that of their communities, but, it still neglected the individual. The philosophers and those highly educated usually took up the most menial posts in the communist era and many of these then left their writing to their evenings and nights and times that they had free, that is if they hadn't all together given up. A number of thinkers would meet up together and discuss ideas they had and some of these may even have been published thereafter, illegally of course. They longed for a society in which intellectuals matter, in which being individual is a good thing. Instead of one in which individuals were merely used for the collective goal.

"They are used as individuals for the purposes of the regime. But, this does not prove that the Communists are still at heart proletarian anti – capitalists. It merely indicates that to be crushed and manipulated by the regime is the fate of all classes including the proletariat once the communist party has attained power"[18]

18   Pg 47 para 1 Communism and the politics of development - Persistent Myths and changing behaviour John H. Kautsky 1968 John Wiley and Sons Inc, New York.

"All fixed, fast-frozen relations with their train of ancient and venerable prejudices and opinions are swept away all new formed ones become antiquated before they can ossify. All that is solid melts into air, all that is holy, is profaned and men at last are forced to face with sober senses the real conditions of their lives and their relations with their fellow men."[19]

19   Found on page 136 of Harold J. Laski on the communist manifesto, but also from Pg 21, quote 2 of all that is solid melts into air - the experience of modernity Marshall Berman Verso UK London - 1983. This quote to me is of the idea of this struggle to get to a communist society and what needed to be done to get there it seemed to be somewhat lost in translation by the leaders who instigated this society.

"a truly infinite pursuit of wealth for everyone, not wealth in money ' the narrow bourgeois form' – but wealth of desires, of experiences, capacities, sensitivities, of transformations and developments".[20]

20   Pg 335 Notes of All that is solid melts into air - the experience of modernity Marshall Berman Verso UK London - 1983 "Marx wants a truly infinite pursuit of wealth for everyone, *not wealth in money ' the narrow bourgeois form'* - *but wealth of desires, of experiences, capacities, sensitivities, of transformations and developments*"

Yet, people still enjoyed the idea of living somewhere, where the society was changing and they hoped manipulating to become the true communist society as had been proposed by the manifesto. The society in which they lived, in which everyone was "equal", was just bridging the gap. It was a means on the way to the ideological end; it just became corrupted along the way and never quite got there.

In this society where individuals became insignificant, people lived for a common, collective aim as sought for by Marx. An aim that they hoped would mean eventually, they would all be equal, wealth would not be of the capitalist kind but, a wealth in pursuit of the ultimate happiness. A land where all people would be catered for, in which every need would be met and where society would be common and equal for all, the ultimate commune.

"Culture One (in communism), due to its egalitarian tendencies, rarely acknowledged the individual person, it focused instead on the collective. If the individual did somehow become the object of attention, he or she had only two choices: either understand the direction of the collective's movement and join it, or misunderstand it and risk being crushed by the masses " [21]

21 Architecture in the age of Stalin : Culture two - Vladimir Paperny : Cambridge University press UK 2002Pg 105 Section 5 : Collective/ Individual

"What matters to him is the processes, the powers, the expressions of human life and energy : men working, moving, cultivating, communicating, organizing and reorganizing nature and themselves – the new and endlessly renewed modes of activity that the bourgeoisie brings into being."

22   Marshall Bermann : All that is solid melts into air Verso , London UK 1983

"If we were to stick to the precept that the individual is sacrosanct and that we must not treat human lives according to the rules of arithmetic"[23]

23   Darkness at Noon - Arthur Koestler Pg127 The second hearing

CHAPTER TWO

The Architecture of a collective

Section 3 /4 - Scientific Ideologies of architecture and its possibility as a social art / Finding examples of Communist architectural works and linking the ideologies of such to that of architecture and those of the communist party

I

Architecture is a social art, a science, a way of making buildings or spaces which denote a bigger picture, an ideology. While architecture can be striking and moving creating spaces which relax the user and tell a story of a time, place or overarching concept. Architecture also has another angle; architecture may be used to oppress and to deny the individuality of the individual in making urbanism. Architectural ideologies, particularly those of communism, create an urbanism which oppresses the values of the individual and pays tribute to those of the collective.

This chapter will look at the architectural ideologies associated with the communist period and soviet architecture. Architecture, in the communist era had little or no room for the individual. It was designed and executed to make a commune in a both actual and ideal sense. What then do we regard as the attributes of architecture as a social art? How do these Ideologies relate back to those of Architecture in the age of Stalin and under the rule of the communist party? Ideological architectural aspects such as repetition, size, austerity and rhetoric can be mirrored to values in Marx's works.

1.REPETITION

Marx had an idea of a repetitive nature of

"Others before him had preached a war between classes but, it was he who conceived and successfully put into practice a plan designed to achieve the political organisation of a class fighting solely for its interests as a class". [24]

24   Pg 273 Karl Marx : His life and his Environment - Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition - London / New York / Toronto - Oxford University press 1948

society, everyone was to be equal everyone was to get the same amount of money, live in the same way and be part of this collective whole. There was no room for individuality in such a system, you must conform to this system and in actual fact, be the system. This repetition was of utmost importance, it was the control needed. It was communism.

Repetition in an architectural sense is also equally important. In studying architecture you learn to build structures. Such, will not only support your design but, have an overarching idea and something else there, that denotes what the particular sense of repetition may be. The choices we face are on material, size of the member and what repetitive way the elements are assembled. This then can also relate to fenestration, its order and the treatment of the facades of the buildings skin, all these things

are generally repetitive processes, no more or less than that of creating a homogenous society of repetition of values such as that of Marx. In communism, such may have been used to create the feeling of institution and also of all treatments to facades being equal in such, this of an equal society, taking away the right to individuality on the road to making mechanical, machine-like architecture.

2.SIZE

The size of the movement in the communist ideology was vast. It required a revolution of large scale to allow for it to be implemented and for it to be a success. It needed entire societies to be equal to one another and henceforth, meant the sheer scale of the movement was to be huge. However, in the same sense it did begin with a number of individuals who were to become a collective, but, in actual fact the movement

"The function of art in these societies was to 'serve as a means for the total dissolution of the individual'."[25]

25   *Architecture in the age of Stalin : Culture two – Vladimir Paperny : Cambridge University press UK 2002 Xviii Preface*

"They are moved at once by a will to change – to transform both themselves and their world – and by a terror of disorientation and disintegration of life falling apart. They all know the thrill and the dread of a world in which 'all that is solid melts into air '". [26]

26   All that is solid melts into air – the experience of modernity Marshall Berman Verso UK London - 1983 - Preface Pg 13

"Private architectural practice became impossible and architects were forced into newly formed state project offices" where *"ideological mobilization against western values was initiated."[27]*

27 Pg 279 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

was to start off very small scale. It was all planned in accordance to the proletariat class and there emancipation from the control of the bourgeoisie.

Architecture as a social art uses the idea of size continuously. A lot of the matters to do with size are not only of that but, also relate to the scale of a building or space in relation to the individual, how such may be used to make the user feel in a certain way and to express the conceptual ideals of the architect. In communist architecture such tactics may have been used to oppress the individual and not only oppress but, to force the individual into a collective nature of space. Communism thus, being a prescriptively, collective society.

3. AUSTERITY

There was a strictness associated to the idea of the manifesto, a need for change and without

this change the regime may have not taken place. Karl Marx thought it was necessary for materialist dialectics to take place in order for the regime to be a success. The hypothesis based itself on all things in the world, all successes happening as a result of conflict. It was an idea for a primitive and a sober Communism.

In architectural ideology, austerity is frequently used in relation to brutalist architecture. Architecture stripped off all ornament and exerting a strength and hold on its site of execution. This type of architecture is stern and usually is of a large scale to an individual. During the communist regime, austerity in architecture was exercised. Buildings lacked largely in ornamentation and their scale forced the individual into a collective relationship with others something which had been planned for by Marx in the

" Marx had no new ethical or social ideal to press upon mankind ; he did not plead for a change of heart; a change of heart was not necessary but, the substitution of one set of illusions for another"

28. Pg 6 Para 1 Karl Marx : His life and his Environment – Isaiah Berlin MA EBA Fellow of all souls college, Oxford Second Edition – London / New York / Toronto – Oxford University press 1948

"Socialist realism is what is socialist in content and national form".[29]

29   Pg 279 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

"Repetitive forms and inhuman scale make their effect before one notices the classical trimming, sometimes pompous, sometimes whimsical". [30]

30   Pg 281 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

manifesto wording. Though, not necessarily being a bad thing.

4.RHETORIC

Marx's style of carrying out the manifesto was very particular and this we know from what I have written in the first half of this dissertation, regarding the first draft of the Principles of Communism which was written by Engels. This was drafted in a form of questions and answers which Marx felt lacked the urgency that they required in the execution of such a document. Henceforth, it was rewritten by Marx as a manifesto, as a number of thoughts and urgent tasks which must be carried out by the people; if they are to achieve emancipation from the bourgeoisie. His Manifesto was prescriptive and it followed a quite definite rhetoric; one which was in no sense coincidental.

The architecture was of *"pompous*

public exteriors and cramped, poorly designed residential interiors", *"contradictions expressing the very essence of the Stalinist period"*. Architecture was an interpretation of the enigmatic words of the Stalin's Axiom. (as quoted above, quotes in text also from source above)

Rhetoric in architecture is always present, no matter the period. The architectural language and expression of communist architecture, does follow the period style at the time, if only vaguely. The style in the communist era was very much a combination of what I have discussed above. There was a strong presence of repetition being a way of creating a collective architectural space; out of generally pre fabricated concrete and other sections, assembled together to create a whole

Other elements of rhetoric exist in size and austerity. Architecture in the

"Machine as liberator of both architecture and humanity at once".[31]

31 Robert Harbison Thirteen Ways Machines Pg 33 "Machine as liberator of both architecture and humanity at once

The photograph below, taken by myself , shows a statue which epitomizes the collective nature of this society

"Architecture and city planning played the part of a 'social condenser'. In many projects functionalism had already been left far behind. A 'utopian reality' – the very essence of communist revolutionary ideology – was contained in the conceptualization of the rebuilt environment"[32]

32 Anatole Kopp Town and revolution -Double day Canada publishing – Foreword by I. Schein 1967

"As politics became uglier, architectural conflict grew"[33]

33 Pg 274 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

Stalin's boots as the only surviving part of a large monument of him which was torn down by this same collective society; as they gained emancipation from the individual.Photo taken by myself.

communist era was as quoted, of a large collective exterior face, made up of individual elements of standard production of sternness. All architecture had a strict style, which was based on the interpretation of Stalin's axiom. The architecture of this period largely consisted of machine like collective spaces

From the establishment of these elements of architectural and Marxist ideology I will now examine briefly works of communist architects in this era, namely Molnár Farkas (Hungary) and Konstantin Melnikov (Russia) who both advocated the creation of collective spaces with varying public reactions, the overall execution of these spaces being something we can learn from this era.

II

COLLECTIVE SPACE IN ARCHITECTURAL COMMUNISM

My initial interest in the communist era and its relationship to architecture began last Summer, as a result of three months that I spent living in Hungary, termed to have been the, 'happiest barracks' of the Iron curtain during communism. Following from this, my interests in the Communist countries as a whole began however, when I started working on this section to do with architecture, the majority of my observation is from what I witnessed in Hungary and what I researched since about its communist architecture.

Consequently, in this section I have chosen to firstly look at an architect who worked in the communist period in Hungary and died in 1945 in a communist bombing. Namely,

Perspective view of the design for Fourier's Phalanstery as the Kolhaz Kolvaros scheme was based on. Image from Wikipedia.

A collective housing scheme y Molnar Farkas in Budapest, where the individual houses make up a collective living situation.

"The strength of Hungarian architecture lies in its ability to adopt by judicious acceptance and assimilation from many sources current ideas to contemporary solutions." [34]
34   Pg 297 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

"In 1931, they (Molnár Farkas and Joseph Fischer) came up with the idea for the Kolház-Kolváros (Col (llective) house / Col (llective) city plan.... "A name that played on the word, 'collective', perhaps a deliberate reference to Russian terminology and soviet community lifestyle. They actually constructed a few rooms of Kolház for the 1931 international autumn fair held in Budapest. One can imagine the reaction of the visitors on seeing the 9m2 cells furnished with tubular metal furniture, one for each person and each unit separated from the other, that meant men and women only met when they shared a small washroom – A system strongly resembling Fourier's nineteenth century Phalansteen." [35]

35   Pg 255 The architecture of historic Hungary Edited by Dora Wiebensson and Jozsef Sisa The MIT press , Cambridge Massachusetts 1998

Molnár Farkas followed by an architect working in Russia around the same time, Konstantin Melnikov. Finally, I will examine the notion of urbanism in the Communist regime and how this was organised by the architects and minds of this period alike.

Molnár Farkas (1897-1945)

Molnar Farkás was a quite successful architect however he only worked on single dwellings. His largest project being a collection of individual houses but, still expressing the individual as illustrated below. The most important work for me that I discovered by Farkas was an idea for a collective house / city plan. It does not appear however too frequently in press as it caused some controversy. It was one where a number of individuals could come together and live, where the men and women were kept separately, institutionalised apart from at shared washrooms. They were trying to find a way of creating a collective space or society but, it was taken as an insult on communist society by the party and their prototype was confiscated and Farkas himself was arrested following its exhibition. The idea of this type of scheme I feel is something quite visionary and something we still haven't quite worked out today this notion of a successful collective space of individuals.

Konstantin Stepanovich Melnikov (1890-1974)

Melnikov was an architect practising in Russia at the same period. He was an architect who did not want to abide to the strict confines of the communist government run architecture offices and so when they were started he disappeared off the architectural scene. However, prior to the offices being formed and still within the age of Stalin. One of Melinkov's greatest works was

"At night….. The family turned into a collective of sleeping people, no different to the collective of 600 people to whom Melnikov dedicated his 'sleep sonata'".[37]

37   Pg 107Architecture in the age of Stalin : Culture two - Vladimir Paperny : Cambridge University press UK 2002

Above is a Plan of Moscow in 1930's S.S Sheskatov from Sotsgorod The problem with socialist cities.

Photographs and plans of Melinkovs own residence, where his ideas for the Sleep Sonata originated.Source : Town and revolution : Anatole Kopp.

in fact the design of his own home house. Where in the bedroom, the individuals of the family came together and slept as a collective entity. In 1929 Melinkov designed an entry for a perfect socialist city outside of Moscow. The project was entitled "Green City". His design was of a recreational, collective space which was not devoted to production but, ended as a radical criticism of the communist work regime. His design program was a retreat with a number of hotels with large rooms and corridors in which people may have met and socialised. It allowed labourers to be in a direct intimate relationship with nature.

The main building in his design, which truly encompassed his conceptual ideals, was a "sleep sonata", where a collective of 600 people would sleep. It affected all elements of the human senses. Its beds were built in like laboratory tables and the floors sloped gently so that pillows would not be needed. The walls were largely pierced with sheets of glass as the sleep laboratory was intended to be used at all times of the day, in full sunlight as much as in darkness. The temperature, humidity, air pressure and even scent of the space was planned to be regulated to allow for the optimal environment for sleeping. The space was to be filled with sounds associated with the act of slumber. This space was truly to allow for full psyche rehabilitation.These ideas for space and for the collective nature of the space are truly aspirational and certainly in keeping with Marx's idea of the boundaries between town and country being removed. This is most certainly a fascinating notion for architecture today.

URBANISM

A Plan of collective nature was the aim for

"Represents a unique effort to draft a physical plan that is the embodiment of a modern social, political and industrial creed".[39]

39 Introduction - Sotgorod – The problem of building socialist cities – NA Milyutin The MIT press Cambridge , Massachusetts 1974

"Cure by sleep and thereby alter the character…. Anyone thinking otherwise is sick".[38]

Konstanin Stepanovich Melinkov

38 Town and revolution Anatole Kopp -Double day Canada publishing

"The city and the town stretch out their hands to one another: thus these arguments will be solved" [40]

40 3. Urbanisation/ De-urbanisation Pg 60 Sotgorod – The problem of building socialist cities – NA Milyutin The MIT press Cambridge , Massachusetts 1974

Below image of Melinkov's sleep Sonata Image taken from Frederick Starr : Melinkov : Solo architect in a mass society.

urbanism during communism. Urbanism which made sure that production was ever more increased and promoted. The plans were laid out in such a way that they would be ever productive. Elements of living and producing were separated by green belts, yet close enough together to maximise the amount of working hours that one person could do a day. These were also places where Marx's ideology of, "the elimination of the differences between the city and country is one of the first conditions of collectivization" . These were places where urbanisation and de-urbanization met. The city was to create the organisation of life that was required in a communist society. It was to express moreover, the origins of the communist thought in dialectics.

Communist urbanism arranged industrial living quarters around their grouped, individual hearts, the cultural clubs and their general quarters, with all these smaller urban plans forming one overall collective and so once again we see the idea of the collective equal society emerging. The collectivisation of life was of utmost importance as it would mean the freedom of woman from domestic slavery, the elimination of a flow of new workers into each city, a reduction in the demand for construction of residences, an increase in the productive capacity of the workforce, an increase in standard of living and a higher cultural level for all of mankind. Thus, creating an ideological, utopian society such as that as hoped for when Marx and Engels first drafted the manifesto.

An illustration of another green city proposal by M Shirov "continuous park of culture". Illustration from NA Milyutin - Sotsgorod the problem with socialist cities.

CONCLUSION

What may we learn from Communist society and moreover communist architecture?
In my opinion, communism is not just a fascination anymore, but, having studied its ideals and works over the past few months it has made me realise a number of things. Firstly, that Marx and Engels and their followers in that period were well before their times as far as their theoretical ideas on society, collectivism and inclusion. These are traits many of us struggle to achieve today, not even just personally but, as nations. When it comes to architecture they also had some very noble and really interesting ideas. Konstantin Melnikov is in my opinion, the most fascinating architect who was practicing during this period. His work has a certain success in execution of communal space which I would like to use

in my own architectural formulation. This dissertation has most certainly opened my eyes to these visionaries, both in a theoretical and architectural sense.

If all this is so utopian however, then what went wrong? The only simple answer I have for this is that a new form of dictatorship took over and replaced their utopian system. This in turn, warped their ideologies and left the resulting society in a reign of terror. Consequently, this is what people remember of communism. Except for a number of people, who could be described as extremists in the other sense, this being Marxism, living their lives by strict following and sometimes also misinterpretation of Marx. Somewhere in the middle of these two belief systems would be ideal. The communist ideas in both ideology and architecture were unarguably visionary.

"The ideal is nothing more than the material transformed and redone in the human head"[42]

Karl Marx

42   Pg 75 Sotgorod – The problem of building socialist cities – NA Milyutin The MIT press Cambridge , Massachusetts 1974

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Dry Stone

The architecture of death in the Burren

Cian Pidgeon

In the first part of this essay I will look at how primitive peoples inhabited their landscapes, and how they created "vernacular" dwellings or houses for their dead. How did they experience their environment? How did the interaction with that environment, and their ways of understanding the world, lead to the creation of their dwellings and monuments: in particular, I am interested in the way death is inscribed by people in their landscape, what we can learn from that about how they lived and how we live. This may seem like a strange interest, as it is also the focus of my studio project, but I agree with the Tibetan lama Sogyal Rinpoche that much of what is wrong in Western society arises from the denial of death, from the fact that we try to hide death away and rarely speak of it:

> I feel this denial of death actually complicates problems that exist in Western society … It is why there is no long-term vision, not very much thought for the consequences of actions, little or no compassion. (reported in 1993, Franklin)

I will use prehistoric structures in the Burren, Co. Clare and other examples from around the world, to consider the different experience of life and death reflected in the architectural remains left by these people. The purpose is to learn new lessons from the experience that preceded the period of European mainstream architecture, or what Jackson described as 'counterenvironments', 'an environment designed to resist the assaults of the world outside and above and beneath' (1994, p.37). I will be looking back to a period where people understood themselves as part of the cosmos, intimately related to the movement of the planets, and to the landscape around them, not the dominant overlords of all creation who had to stamp their control on the elements around them.

In the second part of the essay I hope to look at some examples of building for death in modern architecture and I will try and relate these to my earlier observations and statements on the prehistoric experience of the world and the environment.

In Europe today most of the population is concentrated on only one percent of the

PLATE 1. Mullaghmore mountain in the south-east of the Burren (photo OSI)

ren has attracted much attention from poets and painters because of its special landscape and 'aura': the British Poet Laureate John Betjeman described the

Stony seaboard, far and foreign,
Stony hills poured over space,
Stony outcrop of the Burren
Stones in every fertile place,
Little fields with boulders dotted,
Grey-stone shoulders saffron-spotted,
Stone-walled cabins thatched with reeds,
Where a Stone Age people breeds
The last of Europe's Stone Age race.
(2001) from Ireland with Emily

land (Antrop, 2005). But this was not always the case; from prehistoric times the peoples of Europe lived in scattered pockets in many unlikely places. One of these was the Burren in north Co. Clare, a strange and beautiful, almost lunar landscape of limestone pavements and rocky terraces and escarpments which I have visited since my early childhood. [Plate 1] (Aalen, Whelan and Stout 1997, p. 290). Its name comes from the Irish word 'Boireann' which means 'of the rocks'; it extends over an area of approximately 360km², and it is related geologically to the Aran Islands directly across Galway bay. Its geological description is a karst landscape, that is one underlain by limestone which has been eroded by dissolution producing fissures and sinkholes where the water disappears underground, and an extensive network of underground caves. It contains many 'turloughs', that is lakes which disappear completely in the summer as the water runs underground. It is considered as one of the finest examples of karst topography in western Europe (O'Rourke, 2005). The Bur-

This highlights the very romantic view which this landscape seems to provoke: in *The Necessity for Ruins*, Jackson states that ' A society which sees itself as having slowly evolved, beginning with the very first settlements in its own environment , is more likely to celebrate its legendary, half forgotten origins in the landscape; it looks back not to a specific event, but to a golden age when it was at one with its environment' (1980, p. 100). Such looking back is encouraged by the Burren, because everywhere we find traces in stone of the presence of people as early as 6000 BC: this attracts many tourists to the area. The irony is, of course, that this interest in the ancient past inscribed in the landscape tends to kill the very thing it loves: the pollution of the scarce surface water resources and the problems of agricultural and human effluent are evident in the Burren today: the Ailwee cave, just one 'attraction', with an environmentally sensitive stone building at its heart by architects A. and D. Wejchert, brings over 100,000 visitors annually into the heart of the Ballyvaughan area, with the consequent impact

PLATE 2. Archaeological map showing the density of surviving Bronze Age and Early Christian monuments in the Burren (Map Aalen, Whelan and Stout p291.)

PLATE 3. Stone fort and caher at Bally kinvarga from the prehistoric or early histoic period age (Photo D Pochin-Mould)

on the environment. It is the traces of past civilisations that interest me, specifically the impact of death and the rituals of burial and their impact on the landscape and culture, but I wish to look at them without sentimentality, and without assuming that we have a natural, spontaneous understanding of them.

The area is now very poorly populated, and is preserved as a National Park, which adds to its 'mystique': to an uneducated or unobservant eye it appears to be a timeless landscape with almost mystical qualities. By 1991 the total population was only 2,500 people (Aalen, Whelan and Stout, 1997). But in this 'empty' landscape there are an astonishing number of monuments still identifiable: you cannot walk 1 kilometer in any direction without passing one. Tim Robinson's map of the Burren (1977, new ed. 1999) catalogued this density with, for example, 450 cashels and similar enclosures, 74 megalithic tombs. The profusion of archaeological monuments suggests that early humans found the Burren an attractive environment for settlement, and it is be-

lieved to have been one of the most densely populated parts of Ireland in that far-distant period. An idea of the impact of this dense population on the landscape over the period of 8,000 years can be observed from [Plates 2 and 3] (from Aalen, Whelan and Stout, 1997, pp.291-292).

Now we may think this was somehow 'natural' that prehistoric man would produce stone monuments, because of all the stone lying about, but this is not so: the truth is that the peculiar landscape of the Burren was created not by nature, but, to a large extent by human habitation and cultural practices. In the prehistoric .period the Burren looked very different, and was covered with forests of hazel, yew and pine, and even some oak. Current evidence suggests that the Burren witnessed a large scale reduction of its forest cover sometime in the late Neolithic, and a subsequent loss of soil in the Bronze Age (O'Rourke, 2005, p.72). This wood cover was steadily stripped back for materials with which to build firstly using the bent sally wood for a type of tent structure, then by using timber for the roofing of stone

buildings. Secondly clearance was carried out to make room for the grazing of animals: This type of farming has dominated in the Burren since earliest known times. When *Cahercommaun*, one of the most important ringforts in the Burren, was excavated within its ramparts the archaeologists found the remains of vast quantities of animal bones, 97% of which originated from cattle, and the remaining 3% from sheep, goats, pigs, horses and red deer (O'Connell and Korff, 1991, pp. 119–134). This farming in some form existed for many millennia: the subsequent over-grazing left the thin soil cover loose and it was washed and blown away by the stormy conditions of the west coast, leaving the limestone uncovered. So the landscape people admire so much was an early example of the mismanagement by man of a delicate ecology, not a mystical place created by a Great Designer.

There were some positive effects however. The mass of limestone became a thermal mass changing the year round temperature of the Burren; it took on heat from the sun through the summer and released it through the winter, creating good winter grazing for cattle. The cattle that were reared in the Burren where highly sought after as they were known to be sturdy and put on weight rapidly when brought to good pastures, this was because what little grass there was is rich in calcium which made them sturdy and when faced with an abundance of food they grazed intensively. The farmers in the area established a unique pattern of 'inverse transhumance(or *booling* in Gaelic)' (O'Rourke, 2005): whereas in most European habitats the cattle are brought down from the heights for the winter, in the Burren they are brought up to the heights, where the rain runs off quickly and the stone keeps the temperature suitable for the grass to grow and the cattle, sheep and goats to survive. This had an effect on the architecture of the homesteads in the area as barns were not required to house the cattle for the winter. This situation made it possible for this seemingly barren land to support farming for many thousands of years although the population went into severe decline after the famine (1840s).

In turn this pattern of grazing, by keeping down the rough grasses, helped to encourage the growth of the flora for which the Burren is world famous, and marketed as a 'Botanists Paradise' The combination of Alpine, Arctic and Mediterranean species to be found in the fissures of the rock is to be found no where else in the world: alpine blue Gentians and rock-roses mix with arctic Mountain Avens and various species of Orchids, and beside them we find flowers which normally grow in the Mediterranean (Nelson and Walsh, 1991).

To finish this quick tour of the landscape history : the Burren remained densely populated until the famine decimated the poor cottier class. Their one-roomed cabins declined from 23,000 to 5000 between 1841 and 1851 (p. 8). Emigration and celibacy were to replace the high population density and early marriages of pre-famine times. As O'Rourke says:

> The famine left a major psychological wound in the Irish psyche, as well as leaving its mark on the landscape. Along with the megalithic tombs, the landscape of the Burren is dotted with

the remains of hundreds of deserted cabins and stone cottages, as well as 'lazybeds' (ridges used to grow potatoes), famine relief work such as the *Boíthrín an Ghorta* (famine roads), and a field network system which stands as testimony to the teeming population which inhabited the district in the 19th century.

The earliest known, and most impressive stone monuments in the Burren were not habitations at all, but burial monuments: so these ancient peoples put their most sophisticated technology, and their best, most durable materials into houses for the dead, not the living. This was a new stone age, where the people of the Burren, who would before have been nomadic gatherers of fruit, berries, fish and birds eggs, though none of their camps have been identified, began to settle as farmers. They became tomb builders: the oldest of these are the portal tombs, which date from approx. 6000 years B.C., from the Neolithic period. They usually have two imposing portals or entrance stones at the front of a relatively small rectangulat chamber. The capstone, which rests just on the end stone and on the portal stones, is often very large. There are two of these in the Burren, the most famous, used as a symbol of the Burren itself, being the dolmen at Poulnabrone. (which means 'the hole of sorrow' in Irish ... so later people were aware that this was a burial site) [Plate 4]. The archaeologist who excavated

Plate 4 Poulnabrone portal dolmen (Photo Cian Pidgeon)

this dolmen suggested that it may not have been completely covered by a mound of soil of stone, as would have been common with these prehistoric tombs: 'it would seem that the soaring capstone was designed to be seen'. . (O'Connell and Korff, 1991, pp. 61-62). In the tomb the unburnt but fragmented remains of between 16 and 22 adults (most dying under 30 years of age), 6 juveniles and a newborn baby were found. 'As the bones – apart from those of the infant – consisted of a complete jumble of disarticulated bones, it is likely the bodies were either deliberately defleshed or were initially interred (or left exposed to decay) elsewhere and later transferred to the tomb'. We don't know why many ancient peoples adopted this custom, but it is widespread throughout the world: for example the Southeastern Indian tribes in America practiced secondary bone burial. They dug up their corpses, cleansed the bones, and then reburied them. (*Encyclopedia of Death and Dying*). Was the fact that they left the flesh to rot off their bones before in-tombing a way of immortalising them as the relic would never go through a state of change? In any case it seems to me there is a parallel symbolism between Dry Stone and Dry Bone: the bare under-structure left behind after the soil/flesh has being removed from the bones/landscape.

The relatively small number of corpses found at Poulnabrone and other such tombs, and the massive amount of labour involved in their construction suggests that they were more than just burial places: it would have taken many men, and huge physical effort, to heave the massive capstone at Poulnabrone into place. It is believed therefore that such constructions had a symbolic role in the life of their communities. They may have contained the bones of 'special dead', perhaps the remains of revered ancestors who served some function as intermediaries with the gods or spirits who were believed to control the natural world' (O'Connell and Korff, 1991, p. 63). This is even clearer with a later development which was the Court Tomb (c.4,000 B.C.): here a forecourt is marked out in front of the burial chamber, and it is assumed that these were used for ceremonial purposes but the nature of the rituals is unknown. (O'Connell and Korff, 1991, p. 61). [Plate 5.].

Over 90% of the Burren tombs are classified as Wedge Tombs, and The High Burren has the densest concentration known. in this country. Westropp (1860–1922), the undisputed father of Burren archaeology, is said to have referred to Roughan Hill, in the south eastern commons of the High Burren, as a 'dolmen factory' (O'Connell and Korff, 1991, p. 64). They date from c. 3000 years B.C., and they have a wedge-shaped ground plan; half of them show traces of double-walling. Their orientation was roughly south-west to west towards the setting sun. The use of the readily available slabs of

PLATE 5 Reconstruction drawing of a Teergonean Court Tomb, near Doolin. (Drawing, Anne Korff)

PLATE 6 Parknabinnia Wedge Tomb (Photo by Anne Korff)

limestone gives these structures a box-like appearance. (O'Connell and Korff, 1991, p. 64 [Plate 6] These tombs are mainly found on the higher ground, 400 – 700 ft. above sea level, and it is assumed that the population were availing of the pastures at that level as people still do today. None of them have been excavated, so we are still vague about the circumstances that brought them into being and the significance they held in the society that built them. Many of them would have been covered by mounds of earth and stone (cairns), so their appearance was not quite that of the stone structures we see today. But I think they were intended to have a structural and symbolic relationship with the surrounding area, as well as with the communities that built them.. From an early age I have always noticed a sort of beacon on the top of almost every hill in the Burren, they interrupt the skyline at the summit of every hill so as to almost take ownership of that hill. They are actually Cairns, which is a stack of rocks covering a slab box containing bones of the dead and dating from the Neolithic period also. (O'Connell and Korff, 1991, p. 67 [Plate 7] The stacks of rocks have been added to over time by hill walkers and tourists this has greatly increased their size.

These mounds in the landscape were not haphazard or casual: they were planned by people who understood the terrain, and probably also understood a great deal about the cosmos, the movement of the planets, and perhaps other forces in nature (like the movement of underground waters) which

Plate 7 Poulawack cairn (Photo Anne Korff)

we are now oblivious to. We know that the tomb-builders had an extraordinary understanding of light and of the cyclical nature of the seasons, as well as engineering skills, from the studies made of the great passage grave at Newgrange in Co. Meath which dates from the Stone Age. When hundreds of rounded river stones were removed from the roof above the passage entry they yielded information about the constructional intelligence of the tomb-builders. For example, on the upper face of the corbelling of the chamber and the roof of the passage, narrow channels had been etched into the surface: these served to drain off any water that might seep through from the top of the mound, and the dryness of the burial chamber to this day is proof of the soundness of this technique. (Harbison, 1976, p. 34). But most impressive of all was the proof that they were an intellectually sophisticated people who had as accurate a calendar as their near contemporaries, the pyramid builders of Egypt. There is a sort or roof-box above the capstones at the entrance to the

Plate 9 Roden Crater, James Turrell (Photo by Florian Holzherr)

passage, and a gap in the capstones themselves: O'Kelly discovered that on Midwinter day every year, as the sun starts to lift over the Eastern horizon, a narrow beam of sunlight comes in through the roof-box and the gap in the capstones, and creeps its way briefly into the innermost recesses of the chamber. Seventeen minutes on that day, and for a few less on the days immediately preceding and following, are the only days in the year when the sun can penetrate Newgrange, and it does so through the specialy-engineered roof box. This is truly what we might call an 'architecture of light' : the ingenuity applied showed how important the sun's light was to these people. It was a ritual method of marking the shortest day of the year, important in the agricultural calendar, as they would know that a certain number of days after this they should sow the new year's crops. Thus they tied the concerns of the living and the dead together, in one meaningful cycle. The careful orientation of the tomb showed that the builders had a grasp of astronomy, the movements of the sun and the moon: otherwise they could not have plotted the exact alignment needed. The mound at Newgrange was surrounded by a large circle of standing stones, from which it is generally accepted they must

Plate 8 Astronomical observatory at Casa Grande (Photo by Tom Danielsen)

Plate 9 Light well to the centre of roden crator, James Turrell.

have made their astonomical calculations. It is interesting that the ancient Indian people of New Mexico, about which Jackson has written a great deal, also had astronomical knowledge: the Hohokam people of Arizona left behind a four-storey structure, the Casa Grande ruin, which is thought by archaeologists to have been an astronomical observatory [Plate 8] (Walker, 1994, p.14). I think that James Turrell, who designed the Roden Crater project in Arizona, must have been influenced in his thinking by a knowledge of the monumnets not just of the Arizona Indians, but of monuments like Newgrange, though I have not found any reference to this: not only does the crater look like a burial mound [Plate 9], but the way he has used light to penetrate into the heart of the crater through tunnels and holes in the roof (what he calls 'skyspaces,) is very similar to the practice at Newgrange and other tombs. (Kimmelman, 2002, pp. 39-47) [Plates 10 , 11]

The tomb-builders would undoubtedly have chosen a site for the building that was already special or sacred to them in some way: in *The necessity of Ruins* Jackson quotes Martin Nilsson who studied Greek piety: 'We make a spot holy by putting a sanctuary there, but in Antiquity the holiness belonged to the place itself, and a sanctuary was erected there *because* the spot was holy'. Jackson concludes that 'the *place* in antiquity came first: the deity and his or her shrine came later ' (1980, p. 78-79). I think this is a very important point: something was not *imposed* on the landscape: it grew out of a complex relationship between the people, the place and their understanding of the cosmos. If we think of a Romanesque or gothic chapel in Ireland, for example, they have come from abroad as a concept and sit dominating a landscape, urban or rural, with which they did not have a close symbiosis. The monuments of the Burren, or the burial mound at Newgrange, however, are the exact opposite: they are tied into the place, the people, the landscape.The pyramids are one of the best

Plate 11 Light well entrance to passage tomb

Plate 12 The Glenisheen collor

examples of architecture to house and worship the dead. It is not by coincidence that they were built in Egypt in the fertile crescent where the first cultivation of crops occurred. Jared Diamond speculates that this happened almost by accident a little over 8000 BC when after the ice age the climate of south west Asia changed dramatically into desert with only the area around the Nile remaining fertile. It was here that there was a high density of wild cereals growing, and also technology such as drying methods for storage, tools like baskets and sickles to aid in the harvesting were invented. After these advances the leap to cereal cultivation was not a large one: this was the start of modern food production which went hand in hand with a population explosion in the region. Over the space of 5000 years the fast-growing populations organised into many political centres and the Egyptian dynasty was born. When all of these factors were brought together, combined with an advanced belief system, the situation was created where the Pyramids were constructed (Diamond,

1997, pp. 179-181). They were constructed of stone, cut or chiselled with copper tools. It took an army of twenty to thirty thousand people around eighty years to complete the pyramids at Giza. (*National Geographic*). The massive structures were intended to house the family of the pharaohs and represent their greatness; they stood as the most important monuments of their civilization.

The two constructions, Newgrange in Ireland and the pyramids in Egypt have many of similarities. While they were on a different scale completely they were built around the same time, Newgrange being a little older. They were both burial sites for people of special significance, religious or political or both. The ideology surrounding the building was heavily related to the sun in both cases: in the case of the ancient Egyptians the cycle that represented life was the rising and setting of the sun, this was associated with the pharaohs, while at Newgrange the cycle that was emphasised was the yearly cycle of the sun and the perceived rebirth at the winter solstice. The carvings in the Newgrange tomb are also comparable to the hieroglyphics of the Egyptians. The most important thing is that they both represented the largest building projects and expenditures undertaken by their respective societies, both with the intention of raising the status of particular dead at a point of rapid advance in their civilization.

The most significant point I want to make about this study of Burren remains, is the contrast with the way we deal with death in our society. Nowadays, we paint the corpse with makeup to pretend they are still alive, i.e. to make them look as they

Plate 13 Leon city morg by BAAS architects.

looked when they were living. This seems to me to be a superficial approach, concentrating on surface and appearance; whereas the Neolithic people seemed to search for what was core, what was under the surface, when they cleaned the bones for reburial in the final tomb. They may have attached to this some concept of mortality or immortality in the same way as the Egyptians mummified the bodies so that they would not be exposed to corruption. The superficial modern approach to death is well represented by our 'Funeral Homes'. In the first place, the pretence that this building is in any sense a 'home' for the body which is generally left alone, this is a way of disguising what is happening: the old tradition of waking the body in the person's own home has been replaced by this moving the body to a place where no-one has to see it until the last minute, when it has been dressed up for a brief viewing. The architecture of the funeral home reflects this function of hiding: they are generally characterless, insipid buildings hidden discreetly in side streets or suburbs of our towns or villages. No-one wants to notice them or be reminded of them except if forced to do so. Likewise, our cemeteries are more and more characterless: in many of the modern versions built monuments are banned, and only flat plaques laid on the ground are permitted: again, the dead are

asked to keep their place, and not intrude into our landscape or consciousness. All of this contrasts with the imposing tombs and monuments left by our Stone Age ancestors, in which they invested the very best of their engineering and building skills, time and resources. The very forms of the landscape still speak to us loudly about their society, their values, their lives. Yet we tend to think of them as 'primitive', lost in the mists of time: I think that sentiment was actually expressed in Betjeman's poem; in fact, I find it very reductive almost racist in the implication that the people of the Burren are somehow the 'dregs' left of a dying, less-than-impressive breed! In fact a recent RTE TV programme carried out an experiment by having DNA extracted from stone-age human remains found in the Burren, and tested it against a class of school children living in the area. They found that two of the children did indeed carry the same DNA, and were descended form the same people. But that is not the same thing as implying that they are somehow therefore 'Stone Age', ie primitive people; or, conversely, that there Stone Age ancestors were 'primitive, either: it denies the proven expertise in the structures and artifacts they created. One of the most beautiful artifacts in the National Museum was found hidden in a grike in the Burren in the 1930s, and dates form the Bronze Age: the Glenisheen Collar. [Plate 12] The people who produced such a thing were skilled craftsmen, who had a sense of aesthetics…why should we think of them as 'primitive'?

I have searched to find any equivalent efforts to recognise and relate to the dead through architecture in modern society.

Plate 14 Leon city morg by BAAS architects.

I have found it very difficult to find examples, and I have just one to point to here, the city morgue in Leon Spain which I like very much. In this case a new site was identified, and the morgue was built as the centre of it. It was embedded in the ground, but reflected the sky and the surrounding buildings on the surface of the water [Plates 13 and 14]. There is symbolism in what looks like a hand coming up out of the ground, as if the represent a constant link to the dead.

When we look at how we have been dealing with the dead in the modern era, I think we could learn a lot from the past, including the monuments of the Burren and the pyramids, about the positioning of the dead among us. We are at a point of evolution that is faster than at any other point in history as the speed of information being exchanged hits the speed of light and we think we are on the verge of almost conquering death itself (for the very rich) with the advances in stem-sell research. Maybe we could benefit from an architecture that reminds us of our mortality.

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Cinema
and
Architecture

Alan Hilliard

Cinema's documenting and influencing of cultures around the world has made it one of the most significant art forms of the 20th century. There is an inherent ability in the making and viewing of this art to bring into focus specific conditions of emotional interaction with the space around us. This ability along with other similarities in the concepts and processes of cinema bind it with architecture in a reciprocally informing relationship. There is clearly then a vast potential within the art of cinema for informing architects, offering rich learning possibilities for the making of space partly due to its unrestricted spatial viewpoint and choreographing capabilities. Exploring and researching social 'plays' acted out on specifically determined spaces with deliberately set up interactions, be they visual, verbal, suggested, forced, glimpsed etc, could reveal the consequences and opportunities of the space, what it suggests to its users and the feelings it encourages. Discovery in this area has the potential to aid in releasing space from purely physical constraints to become playful, responsive, emotional, suggestive and interactive. Not in a physically interactive user determined sense, but in a poignant emotional sense.

This essay began as an attempt to discover some of these spatial qualities through analysis of the intense, forced view of films which could then be used to inform architectural space, and though I will still discuss this in the first chapter in reference to Yann Samuell's 2003 film Jeux d'enfants as it is a worthy pursuit, I begin to wonder if this is missing an opportunity. We must be aware that although there is a heightened spatial sense in film viewing, where a shot can be carefully selected and filmed at a certain time of day to capture a particular light, it is captured and viewed as a two dimensional frame of space. While it is a moving image which gives the impression of three dimensional space, it remains however a sequence of two dimensional images constructed to portray three dimensions. Is it then possible to capture the true sense or feeling of space one has when one is immersed

in it through the medium of film? A field of vision may be mimicked by a camera but the space becomes something else, something closer to a distant memory in which only certain details are remembered, usually the ones we want to remember, similarly the director shows only what he wants us to see. The fragments glimpsed in peripheral vision, the context of where one has just come from; lunch with a friend at a place back down the street on the right opposite a bookshop that smelled of coffee, the memory of the space or threshold you have just passed still lingering and adding to the scene, the breeze coming in the door behind you - these are the separating elements and point to the possible failings of the medium of film as a tool for questioning architecture.

To discover possibilities in cinema for informing architecture, the film sequences could be questioned beyond the immediate image making, whether it be an image of space, light, failing society, childhood, love or the countless other issues explored in film. Seeking a method of thought or a philosophy has greater potential to yield discovery in the making of space than an analysis and replication of choreographed images. These thoughts are developed in the second chapter with the aid of a short student film Neopolitan Dreams and Jacque Tati's 1967 classic Playtime, questioning whether the processes of image making and underlying thought concepts in film sequences can truly inform the making of architecture or if the art is confined to deceptive image making and set design.

To focus the ideas and point towards possible further study chapter three explores a closer analysis of one specific element in cinematic storytelling - soundscape. Through examining Wim Wenders 1994 film Lisbon Story soundscape is discussed as a means of understanding space and place.

Chapter 1: Moods, Montage and Eisenstein

Jeux d'enfants (Love me if you dare)

Between the idea
And the reality
Between the motion
And the act
Falls the Shadow

For Thine is the Kingdom

Between the conception
And the creation
Between the emotion
And the response
Falls the Shadow

(T. S. Eliot, 1954)[1]

1.   T. S. Eliot, "The Hollow Men," in *Selected Poems* (London: Faber and Faber,1954) .

2.   Yann Samuell (dir.), Jeux d'enfants (video recording) (2003)

Fig. 1. Juliens mothers halo in Yann Samuell's Jeux d'enfants

The precise choreographed nature of images in cinema undoubtedly produces opportunities for a clearer portrayal of concept – of the story the space is trying to tell. A mood can be vividly captured and an emotion, reaction or a memory can be evoked in the viewer. For example in Yann Samuell's film Jeux d'enfants (or Love me if you dare) from 2003 we see each scene set with a distinct and graphic language to aid in telling the story that unfolds within it.[2] The scenes in which we see the young boy Julien interact with his mother for example convey to us the image he has of her as an angel, a protector and an almost heavenly presence by way of a constantly emphasised light falling over her bed from the window in the form of a halo. Though simple and possibly overly literal we begin to believe these images of her before we know her or even hear her speak.

These visual 'storytellers' are however not always achieved through a single framed image such as this with particular mood, intimacy or other space characterizing elements but rather through an often more successful technique of sequence or montage. In this method each frame adds a layer of detail until we are aware of an overall sense of the tone of the scene. This montage can be built up over one scene or develop throughout an entire film to aid in the development of the whole story. In Jeux d'enfants there is a development of montage throughout the entire film which helps the viewer in understanding and involving themselves in the story and hearing things that are never said. A change in the overall tone and colouring of the scenes as the story develops and the childhood friends Julien and Sophie grow up is one such device. The early scenes in which they are eight years old there is a vibrant almost cartoon like colouring and movement to the scenes. It seems as though we are being shown a memory rather than a present in which, similar to most of our own memories of childhood, everything is bright, colourful, new and limitless. The fast unrealistic movement of the camera viewpoint adds to this sense of freedom and

Fig. 2. Tonal montage in Yann Samuell's Jeux d'enfants

3.   Kurt Koffka, *Principles of Gestalt Psychology* (London: Routledge and Kegan Paul Ltd, 1955), 176.

playfulness. As the story develops and the pair grow up the tone and the camera movements change to a more realistic depiction. Views are from eye level and move as would be expected while walking and the colouring of the image loses its vibrancy to become real. This later develops to a gloomy almost grey tone and then to a sepia tint in old age. These slight changes evoke memories and highlight symbolic attachments in the viewer to convey a story without words.

Another layer of montage storytelling that Yann Samuell employs can be seen in the repetition of time-lapse shots of specific scenes, some examples of which are shown in figure 3. The camera position remains static while the characters continue to interact. Their thoughts, feelings, positions and interactions are changeable elements in a static world. In the closing scenes of the film the opposite occurs. The lovers Julien and Sophie embrace and their kiss remains the constant in a montage where both time and place change around them. They are now the constant.

These elements of montage do not relate to specific set design and mood creation in a scene but rather to a technique of background thought evoking and a process of layering that involves the viewer. It is clear that each shot without the other would be meaningless and uninformative. Each informs and changes the others. This theory of montage and juxtaposition on which the director Sergei Eisenstein has written extensively and developed to a successful technique in the 1920's and 30's is of obvious interest to architects. Some of its potential lies in the realization that the adding of two parts becomes a new creation which differs from the sum of its parts.

"It has been said that the whole is more than the sum of its parts. It would be more correct to say that the whole is something else than the sum of its parts, because summing is a meaningless procedure, whereas the whole-part relationship is meaningful....... the result is qualitatively distinguishable from each component element viewed separately."   *(Kurt Koffka, 1935)*[3]

Fig. 3. Timelapse montage of movements and constants in Yann Samuell's Jeux d'enfants.

These ideas give rise to thoughts of space montage in architecture where a complexity and meaning can be arrived at through the sum of the whole. Wide studies of architectural sequence such as can be seen in the works of Le Corbusier or as discussed in Gorden Cullen's book Townscapes describe the importance of contrast in alerting the human mind to the spaces around it.

"The human mind reacts to contrast, to the difference between things, and when two pictures (the street and the courtyard) are in the mind at the same time, a vivid contrast is felt and the town becomes visible in a deeper sense. It comes alive through the drama of juxtaposition. Unless this happens the town will slip past us featureless and inert."

(Gorden Cullen, 1971)[4]

Similarly architectural montage informed by cinema holds the same importance while speaking of an experience which serves no t to better understand the physical space but the meaning of the space.

4.   Gorden Cullen, Townscape (London: The Architectural press, 1971), 9.

Discoveries in cinema which look beyond image making and seek out methods of thinking or imbedded philosophies could provide even more valuable knowledge for the making of architecture. Thought of in a more in depth manner films often suggest a philosophy that is essential to their own creation. It could be any number of thoughts which stem from personal influences on the director or from things which the film itself suggests in its conception and which could be as diverse in their scope as ideas on the way things are made, on ownership, on materiality, permanence, etc. Whatever the philosophies or methods of thought might be they can be essential to the conception and realisation of every aspect of the film, from the script to the casting and the set design to the budget, although it could also be said that some philosophies found in films are often influenced and invented by the viewer themselves after the event. It can be a matter of personal reading.

To explain this idea we can study some examples. A short film created recently by architecture students in Canada called *'Neopolitan Dreams'* provides a good starting point for exploration of background thoughts due to its simplicity and brevity.[5] For me this film suggested a notion of a universal importance given to both space and occupant, active and static, object and subject. This is a way of seeing the world from a neutral viewpoint in which everything is important and their relationships are reciprocally impacting and equal. It explores ideas of space inhabitation and the impacts the users have on a space as well as the reciprocally impacting limits a space allows or insists on its users. The first point to note in explaining this philosophy and how it is found in the film is the union of surrounding space with the user, the active with the static, to create an image of equal importance and emphasis between them. Though we instinctively watch the actors and their movements when viewing a film, there are moments of merging in *Neopolitan Dreams* that allow the two to become similar and equal. A merging and crossing over of

5. Chris Mosiadz and Kevin Lisoy (dir.), Neopolitan Dreams (video recording) (2009).

Fig. 4. Sequence from 'Neopolitan Dreams'

layers. One sequence shows a man leaping from a high wall then continuing to jump down the steps of the flowing space. His union with the scene is described before his jump when he is aligned with the tree behind. With outstretched arms and then the throwing of leaves which fall to the ground he mimics both the form and the life of the tree behind. This resemblance makes him a part of the surrounding space before he moves through it to have his own impact on it. This also works to maintain the trees emphasis in the scene after he has moved from alignment with it.

Some of the interior sequences show a man spinning in the space and hitting balloons in all directions. The distances they travel relate to the strength which man has, the dynamics of the air in the room and the lightness of the balloons, all of which have equal significance. It describes ideas about materiality, both visible and invisible, alive and static, which directly relate to human interaction with the space. The sequence continues with the man jumping in the space and a balloon is created beneath where he stood, marking his route and impact in the space. The colouring of this scene is important to note. Although the surrounding space is visible, its monochrome colouring fades its form to the background of the image and the space is allowed to be described to us by the movements of the users which are emphasised and brought to the foreground with vibrant red colouring. At the peak of his jump in this scene he ducks slightly to avoid hitting the low ceiling making us aware of its height by his movement. He is restricted by and describes the space in a reciprocal relationship.

The film displays ideas about this mutual relationship between people entering a space, interacting with it, animating and altering the perception of the space, as well as what the space sets up in terms of possibilities and restrictions; how high can you jump from before you will be hurt, what movements are encouraged in the space, etc. The reverse bursting of the balloons emphasises the reciprocally impacting relationship,

Fig. 5. Describing and being restricted by space in 'Neoploitan Dreams'.

with every step bursting a balloon both the impact of walking through the space and the steps or routes which the space forces or doesn't force the user to take are highlighted.

Some of these ideas involving human space interactions are also explored in Jacque Tati's Playtime.[6] Throughout the film the users of the space merge with their surroundings, impacting to change it, becoming a part of it as essential as a door handle, and making the most of chance happenings to create new and unexpected spatial relationships. These reactions to surroundings reveal a much more complex philosophy than discussed in Neopolitan Dreams, one of bricolage, which not only impacts on spatial configurations but on the way things are made. There is an inhabitation of the built environment in a way which is unplanned in the conception of the space and chance alterations in its perception occur through inhabitation and use. Many examples of this are seen in the sequences taking place in the restaurant which appears to be still being built as the first customers arrive. A tile from the floor which has just been finished becomes stuck to the waiter's shoe. This of course must be fixed immediately but the workman cannot be seen by the guests so a waiter becomes the repairman – walking out from the kitchen with the tile and tools as if he is carrying a dish *(see Fig. 6)*. Back in the kitchen a large dish of fish is ready but the opening between the chefs and the waiters is of unsuitable size. The dish is then used as a measurement by the carpenters to enlarge the opening. These carpenters are making things through experience of the actual events occurring *(see Fig. 7)*. Other entertaining and descriptive moments of merging between humans and space, alive and static, are seen when the floor lights illuminating the steps become faulty. Every time a person is going up the steps the waiter must kick the light to make it work for a moment. One of the most comical scenes in the film shows Mr. Hulot break the transparent glass door while still holding the large handle in place. As more guests arrive they don't notice the missing

Fig. 6. Bricolage in Jacques Tati's 'Playtime'.

Fig. 7. Bricolage in Jacques Tati's 'Playtime'.

Fig. 8. Bricolage in Jacques Tati's 'Playtime'.

6.   Jaques Tati (dir.), Playtime (video recording) (1967).

glass and open door using the handle in Hulot's hand. The doorman then takes over this duty and for the rest of the film, holding the handle in his hand, he becomes the door without anyone noticing *(see Fig. 8)*.

The last major occurrence pointing towards a philosophy of bricolage, both in complementing the script and its humour as well as in describing how things are made, that I will describe is the creation of an entirely new space within the previously recognised space. Mr. Hulot accidentally pulls down some of the ceiling of the restaurant which hangs dividing the space into two. The people inside the new smaller space continue to dance and socialize and even invite others into their new-found space. It becomes almost like an exclusive VIP area into which you must be invited. This is a comical chance occurrence in the making of space *(see Fig. 9)*.

A possible pointer or comment by Tati on our modern attitude towards bricolage and the unexpected could be read from the short sequence of a waiter welcoming guests at the door. He motions with his hand behind their backs to guide them one by one without even looking. When a very short man is next in line the waiter's gesture goes completely over his head. The waiter was not expecting the unexpected or allowing himself to be informed by the events around him which have the potential to be much more diverse and interesting than a standard and expected reading of space *(see Fig 10)*.

Though used here by Tati for comic purposes, this philosophy can be applied deliberately to achieve diverse yet specific desired results. For example the documentary director Karl Sabbagh points to this notion of chance happenings being used in his films to much better effect than rigorously planned scripts. His method of working seeks to record things that happen by chance at the time he happens to be there. He works on a time rather than an event basis - setting times to be on location filming and capturing whatever happens rather

Fig. 9. Bricolage in Jacques Tati's 'Playtime'.

Fig. 10. Comments on the unexpected in Jacques
Tati's 'Playtime'.

than endeavouring to capture specific events. In this manner
he is able to build up an honest image of the subject which is
clear, more personal, in-depth and informative than standard
methods of scripting. The resulting films offer an extensive
knowledge of the subject from start to finish, from small
details to large events, which work together to give a better
understanding of the overall concept of the subject.[7]

The philosophies discussed here are examples which are
not intended to be exhaustive but to give an understanding of
the vast possibilities that the reading of cinema can illuminate
for the questioning and conception of architecture. These
thoughts can be broad or specific and can point to ways of
thinking about every stage of an architectural project.

7.   Bob Fear, ed., Architecture and Film II
(Wiley - Academy, 2000).

Chapter 3: Specific Soundscapes

Lisbon Story

*"Thought was born blind but
thought knows what is seen"*

(Fernando Pessoa)[8]

To discuss further the suggestions of cinema as an influence on the techniques and questioning of architecture, both in terms of thought process as described in chapter two and experiential space/place making as shown in chapter one, we could focus on some specific elements employed in cinema that have influence in architectural space. Soundscapes for example both enhance and alter the experience of a space. Sound gives an understanding of space that we are often unaware of but our knowledge of which has accumulated since childhood with particular connotations attached. Imagine for a moment walking and hearing the sound of a wooden floor for example, with a slight murmur of voices surrounding you though not echoing, while a fan buzzes side to side somewhere nearby. These sounds could begin to describe a particular type of space to us without our eyes. The scale and dimensions of sounds and their attached symbolisms awake certain thoughts in us.

Cinema has often explored and tested these ideas which are inherent and essential to their storytelling. Wim Wenders 1994 film Lisbon Story pushes these ideas more than most.[9] With the film being based around the sound engineer Phillip Winter who attempts to add the sound to a film on Lisbon without the presence of the director the soundscape becomes of obvious importance. Wim Wenders explores the possibility of seeing the world through sounds, often depicting scenes which are completely transformed by a change or addition of sound; a scene at a barbershop in which Mr. Winter is about to be shaved develops many layers with the help of the soundscape to become almost comically confusing. As the barber raises the blade to Mr. Winter's neck tense dramatic music is heard and he begins to quiver and whimper as if scared. The children in the background filming the events with handheld cameras reinforce this soundscape by creating the possibility of a second film; although we know in the film we are watching Mr. Winter is safe and just getting a shave, the second film is a horror story which is being shot by

8. Fernando Pessoa, "Sonnet XXI", in, Lisbon Story (video recording), Wim Wenders (dir.), (1967).

9. Wim Wenders (dir.), Lisbon Story (video recording) (1994).

Fig. 11. Shaving sequence in Wim Wenders 'Lisbon Story'.

the children. We are viewing one but hearing the sounds from the other. Mr. Winter's quivering and whimpering results in a sneeze which was what he was building up to, comically reassuring us of the correct scene *(see Fig. 11)*.

These ideas of soundscape are of significant importance to architects in understanding that the right sounds make a space work while the wrong ones transport you somewhere else making the activity and the visual sit uncomfortably with the heard. I am not suggesting that there are specific right and wrong sounds which must be heard in specific spaces but highlighting that there are certain connotations with soundscapes that provoke thoughts and symbolisms in the user, an awareness of which can provide a knowledge that can help to create specific, complex and meaningful places.

The ideas explored here around these specific films and the concepts surrounding their making have aided in highlighted potentials in the art form to inform the discourse of architecture. Through the close examination of image making in cinema, both in terms of the specific and the montage, we can extract meaningful ideas for the conception and questioning of architectural space. Explorations of filmed space can point towards ideas of symbolic mood creation within a specific place while learning from montage sequences in cinema allows a deeper understanding in the layering of meanings and emotions that can be explored within a space.

Specific studies of the individual elements involved in film making such as the soundscape then allow a further layer of detail and exploration to be added to the discussion between architecture and cinema, opening up further potential for the creation of memorable places.

To further the discourse, discovering philosophies in cinema allows its relationship with architecture to be extended beyond the realm of the experiential to include all areas of architecture from the conception to the making and beyond. These philosophies can then provide an approach to thinking which could yield more diverse, inclusive and meaningful methods in architectural work. These methods and explorations are then informants of the next generation of cinema as the existing built environment, the experiences of living within it and the social interactions it induces, provides for and informs much of the films we see in a reciprocally informing relationship between architecture and cinema.

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Colony

By Ashling Geary

Introduction

When I chose 'Sustainability' as the topic for my dissertation I was not expecting it to be such a multilayered subject. Before I set out to write this paper I saw Sustainability as a term which I thought was solely related to the environment and how us humans should ideally live in 'harmony' with our surroundings. Sustainability, the term itself is used now regularly in our everyday language. I feel it is often thrown around by the media and business-related enterprises in order to sell products to our now 'environmentally conscious' society.

In my dissertation I seek to find a true understanding as to what the term 'Sustainability' really means in society today. I feel compelled to learn more about this mysterious subject on a practical level. How this new thinking and attitude towards our environment seems to signify a great change in the field of the built environment, the very discipline I have chosen to study and some day hopefully will have a more direct and beneficial relationship with.

The 'environment' is a term which is also frivolously used now days so much so that it has become ambiguous and arbitrary. However I consider this term to have an immediate association with the conception of 'Sustainability'. To me the envi-

ronment has always conjured impressions of the world around us on a local level to include the natural world and the built environment. Therefore in order to get an understanding of the idiom 'sustainability' I deem it important to also obtain an understanding of the word 'environment' and what it means today.

I have been struggling to come to terms with the idea of writing a dissertation on sustainability. This was predominantly to do with the fact that I was finding it very difficult to settle on one specific topic of discussion as it has become such a wide-ranging term that can be applied to almost every facet of life. My breakthrough came after having a 'discussion' which my less environmentally sympathetic veterinarian sister. The subject of this discussion was primarily based in and around the wide-spread and largely uncontrolled use of pesticides and insecticides in the Irish countryside today, thus serving as a pivotal point in my thinking.

I began to look at sustainability not on a global scale but instead on a more immediate local level. I set out on a quest trying to gather any information that related to the miss-use of these harmful chemicals. This was when I became very interested in the Irish honey bee and its mysterious disappearance.

I first became aware of the disappearance of the honey bee from the Irish countryside about two years ago when I read an article in the Farmers Journal. The article was centred on an apiary science mystery known as "Colony Collapse Disorder" whereby the bees abandon their hive for reasons unknown. As I am quite partial to my honey, this article stirred a feeling of grave unsettlement within me. Yet two years on and I find myself questioning this significant change in the balance of one of the natural cycles which is so closely related to human society.

I am keen to find out, on the one hand more about this interdependence between ecology and humans and how these both form an essential relationship and lifeline. Adverse to this I am interested in examining the current state of disconnect with our environment which we live in today. The average consumer has no idea where things originally come from, not even something as vital as our food. I would like to question how this dissociation came to being and what it means for our future if this trend is set to continue.

As a young student architect I find this revolutionary new thinking centered around the notion of the environment, stimulating and very exciting. I feel it is imperative that I use this opportunity to explore how this idea of sustainability can be directly linked back to architecture and the built environment. This direct connection with the world around us allows us to have as much or as little impact on our surroundings. For me architecture is an extensive study of how we humans inhabit the earth, our relationship and interaction with our surroundings and our indirect overall effect on the globe as a whole, past, present and future, hence transcending the boundaries which it is typically assigned.

Further from this I would like to find out the views of what this sudden and alarming disappearance of the bees means on a local level among beekeepers and farmers and then on a more national level among scientists and government agencies. And with this crisis can an opportunity for growth and change arise? As the bees die, can we demand more sustainable approaches to living? Biodynamic and organic farming are on the rise so what does this mean for the future of the built environment? By exploring the disappearance of the honeybee I hope to show the greater meaning it holds about the relationship between mankind and mother earth and what this may mean for my future as an architect.

"Pollinators are the unseen engines driving an ecosystem.
They couple plant to plant and plant to animal,
Spinning the verdant world through endless cycles and feedback loops,
Providing fuel and fuses and safety valves.
Unless we provide a seat belt for the pollinators,
We may drive ourselves into a cul-de- sac."

"The Forgotten Pollunaters"
by Stephen L. Buchmann, Gary Paul Nabhan

The buzzing of honeybees is one of the quintessential sounds of summer. They are not just darting from flower to flower collecting nectar; they are working tirelessly to keep our whole ecosystem in order. I begin my study into sustainability with the story of the honey bee, a little bee in a big world, bringing us sweetness and the spark of life.

Bee's arrived on earth 20 million years before man[1]. They live in colonies and build hives of wax where they raise their young and store pollen. Honeybees make honey by collecting nectar from flowers'; it's their reward for carrying out one of the most important tasks in nature, pollination. Without bees many plants would be unable to any flower or fruit.

"The individual honeybee and the flower have a very intimate relationship, maybe even described as a sexual relationship, certainly a sensual one. If you observe a bee arriving into a flower, it is an act of making love of sorts and that brings about the birth of that which sits on our dinner tables", Dolores Keaveney is a longtime environmental activist, children's book author and part-time organic beekeeper in Mullingar, Co. Westmeath.

The real gift that honeybees give to us, which for the large part of history was unknown, is pollination. Commercially these prime pollinators are responsible for one third of the food we eat. We are dependent on this furry insect for the pollina-tion of most of the fruits, vegetables, nuts, seeds, even coffee, cotton and alfalfa (one of the most important legumes used in the agricultural industrial worldwide, grown as feed for cattle).[2]

Evolving alongside flowering plants all this time, they eat only pollen and nectar, both of which become scarce during our Irish winter. Other insects respond to this by hibernating over the winter, usually as single individuals, living on their one body mass. The honeybee has found another way, they work collectively as a group, gathering more food than is needed in the summer which is then stored for the winter. The whole colony stays awake throughout the winter, taking advantage of any good days and enabling them to make an early start pollinating in the spring. This puts honeybees into a tiny group of animals that store their winter food - humans only joined this group since we started farming just 10,000 years ago.[3]

The honeybee is our most ancient alley on the earth. This relationship between bee and man is a symbiosis which made the very earliest cultivation of crops possible whereby ancient Egyptian farmers floated beehives on rafts down the Nile to pollinate their crops.[4] For us humans this sudden break in this essential and fundamental cycle disrupts the potential for our long-term maintenance of wellbeing, thus making our future potentially unsustainable.

The history of humans and honeybees is also a history of ideas, taking us through the evolution of science, religion, and politics, and a social history that explores the bee's impact on food and human ritual. A colony of honey bees has often been used by political theorists as a model of human society. This metaphor occurs in Aristotle and Plato; in Erasmus and, there's this piece from Shakespeares the Tempest:

Where the bee sucks, there suck I;
In a cowslip's bell I lie;
There I couch when owls do cry.
On the bat's back I do fly
After summer merrily.
Merrily, merrily shall I live now
Under the blossom that hangs on the bough.

The Fable of The Bees: or Private Vices made Public Benefits, a book by Bernard Mandeville, consisting of the poem The Grumbling Hive: or, Knaves turn'd Honest. The poem elucidates many key principles of economic thought which in turn influenced Montesquieu and Marx.

These highly social and sophisticated creatures are known to act as one. Cooperation is the key to a colony. Every bee works for the good of the whole, they care for the queen, raise their young, defend the hive from invaders and collect pollen and nectar. All the workers are female and make up to 99% of the population. Males, only a handful, serve to mate with the only queen.

Myths and legends about honey bees are widespread throughout the world, and to some extent they still colour the way we view the golden liquid and the insects which produce it. The queen and the honeybees were associated with the goddess, representing the female aspect of the divine. Bees were thought to be prophetic, the behavior of bees and swarms were seen as omens. If bee swarms would settle on houses or temples that was seen as a message or blessing.

Without the tireless work of bees our food production would collapse and we may be on the breech of that catastrophe. Here and across the world bees are dying. In Ireland last year we have lost 1/3 of our honeybees. If the bees were prophetic in ancient times what message do they hold for us today?

A hugely complex story, the reason why the bees are in such crisis is intricately tied with the way in which we have changed our planet. As more and more development projects disrupted native habitats, specialized pollinators were driven to extinction.[5] The honey bee filled in for a time, pollinating a wide range of plant species and working hard to produce over 90 crops, but now even the honey bee is at risk. The decline of a single species, even one as important as the honey bee, would not usually have such far reaching effects, but with the crisis in biodiversity, the loss of even one keystone species can bring down several others.

[1] *Land of Milk and Honey: The Story of Traditional Irish Food and Drink; Brid Mahon*
[2] *The Forgotten Pollunaters; Stephen L. Buchmann, Gary Paul Nabhan*
[3] *Honey: From Flower to Table; Stephanie Rosenbaum*
[4] *Vanishing of the Bees; George Layworthy, Maryam Henein*

I will arise and go now, and go to Innisfree,
And a small cabin build there, of clay and wattles made:
Nine bean-rows will I have there, a hive for the honey-bee,
And live alone in the bee-loud glade.

Lake Isle of Inisfree by W.B Yeats

Ireland; The Land of Milk and Honey

Before entering on the consideration of honey as food, I would like to make a few observations on the relationship that bees had with the ancient Irish. Ireland has been noted for its abundance of honey since ancient times, when wild bees were much more plentiful due to the extent of woodland.[1] Beekeeping was central to rural life in Ireland, every comfortable householder kept hives in his garden. Wild bees too, swarmed everywhere - much more plentifully than at present. Before cane-sugar came into general use in the sixteenth century, the bee industry was considered so important that a special section of the Brehon Laws* is devoted to it.

Under Brehon Law, if a man found a swarm in the faithche or green surrounding and belonging to a house, a quarter of the produce to the end of the year was due to the finder, the remaining three-fourths of the honey went to the owner of the house.
If a swarm was found in wasteland (the common property of the tribe), the bees and honey belonged to the finder, but one-ninth went to the chief of the tribe.
The Irish name for a bee is bech, a swarm is called saithe (saeha). The hive was known by various names, but the term now universally in use is corcog. Hives stocked with bees wore sometimes given as part of a tribute to the chieftain of a tribe.

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Honey was enormously important in Ireland's native diet. A mixture of milk and honey was sometimes drunk. A mixture of lard and honey was a common condiment. Honey was sometimes brought to table pure, and sometimes in the comb. Often at meals each person had placed before him on the table a little dish, sometimes of silver, filled with honey; and each morsel whether of meat, fish, or bread was dipped into it before being carried to the mouth. Stirabout was very generally eaten in the same way with honey as a delicacy. Honey was used to baste meat while roasting, as well as salmon while broiling.[2]

In one of the old tales we read that Ailill and Maive, king and queen of Connaught, had a salmon broiled for the young chief, Fraech, which was basted with honey that had been well made by their daughter, the Princess Findabair, from which again we learn that the highest persons sometimes employed themselves in preparing honey. It has been already stated that honey was the chief ingredient in mead; and it is probable that it was used in greater quantity in this way than in any other. Honey was also used as an antiseptic, antibiotic and antifungal remedy.[2]

Ireland's bee fauna is less than half the size of that in Britain, which has about 260 species, and is very depauperate in comparison to central Europe. This is due to Ireland's oceanic climate, small surface area and isolated location at the western periphery of Europe. Within Ireland, there are clear regional differences in the native fauna, which are assumed to reflect climactic variation with the country. The south east of Ireland, in particular, is richer in species number for solitary bees. This is not the case for bumblebees, which are less influenced by small differences in climate. The west of Ireland (particularly areas around the Burren, the Aran Islands and the Mullet peninsula) is richer in bumblebee species numbers, as many of the rare species have been lost from the east of the country.[3]

Honey is individual to the country and its vegetation with the bees foraging on native flora and fauna. The high quality of the honey produced in Ireland has been constant. In modern day Ireland, we have a reputation for some of the best honey in the world. Quiet often it takes top places in international honey competitions. Honey, being a complex organic substance arising from natural sources[4] and varying in small but significant degrees from flora to flora, county to county and soil to soil. Our unique climate and variety of wildflowers, many of which are protected[5], enable the bees to produce the finest quality honey but the bees are now in jeopardy and protecting plants without their pollinators is pointless.

A shudder went through the beekeeping sector earlier this year when a study found that one in three of Ireland's honey bee colonies had vanished in the last year putting not only Tipperary's €55 million a year apple industry at risk, but many more like it. Not only are these vital creatures dying in Ireland, but all over the world they are literally disappearing. Something is happening to our honey bees in staggering numbers. And, it is not just honey bees that are under threat so,

too, are their cousins, bumble bees.

Nearly half of the island's bumblebee species are in serious decline and several of them face extinction. Ireland's hedges and meadows used to support 18 bumble bee species, but surveys are only regularly finding three nowadays. The abundance and diversity of bees, birds and other species of insects and plants have suffered serious losses due to changes in farming practices and the explosion of development over the past 30 years.

[1] *Bees and Biodiversity; Tim Rowe*
[2] *Land of Milk and Honey: The Story of Traditional Irish Food and Drink; Brid Mahon*
[3] *Trinity College Dublin Zoology Research Department*
[4] *Honey: From Flower to Table; Stephanie Rosenbaum*
[5] *Ag-Biota project, a five-year scientific study conducted by University College Dublin (UCD) on behalf of the Environmental Protection Agency (EPA)*

Disruptions in Fragmented Habitats

The bee's natural habitat of deciduous forest with the occasional clearing has been utterly transformed by people. The vast northern temperate forests have all but gone, locally here in Ireland in the last few hundred years. Incredibly, they've adapted to the new landscape of woods, fields and hedges very well, though finding a suitable home is a big problem.[1] Many have been forced to resort to the roofs of houses, something that neither suits the people inside, or the bees. Modern roofs get too hot in the summer and often all the bees' best efforts ends up with sticky honey dripping through the ceiling.

Today bees account for 80% of insect pollination. Fifty years ago the countryside would have been abuzz with an abundance of wild bees and other pollinating insects. Bees like all pollinators must forage for food. Meadows supply plentiful amounts of nectar from wild flowers. But wild meadows are a rare site in our modern countryside. As farming methods have changed, these have become largely irradiated.[2]

Approximately 80 per cent of agricultural land in Ireland is devoted to grass-based farming systems.[1] The increased use of machinery, the removal of hedgerows and ditches, and the greater use of chemicals has led to landscape simplification, degradation and the inevitable destruction of natural features of the countryside, as elsewhere in much of Europe, a reduction in the diversity of species across the Irish countryside.

While wild Irish bees as a group are still readily found on typical farmland, findings from a five-year Ag-Biota project reveal that their abundance and diversity on moderately-to-intensively managed farmland may have declined by at least 50 per cent over the past 20-30 years. Where the ecological quality of the hedgerows has been reduced due to the intensification of farming, there has been a marked decline in the diversity of bird and bee species in the breeding season.[3]

The rise and rise of industrial mono production in agriculture doesn't help either. With the price of cereal crops increasing more and more acres of land are being dedicated to monoculture farming. The commercial nature of farming is slowly destroying the natural foraging ground for honeybees; flowering meadows have been replaced by large fields of a single crop. To produce just one jar of honey, bees have to visit two million flowers and fly 55,000 km, and now they have to contend with field upon field of mono culture, oilseed rape and pesticides.

Farms in the Irish countryside were traditionally diverse, allowing the family to be almost totally self-sufficient, growing fruits and vegetables seasonally for use in the kitchen. Growing up I was often told stories of how my great grandparents grew all their fruits and vegetables in their back garden in the centre of Tralee town. My grandmother who grew up in rural Donegal told stories of a family beehive on their small acreage. In her married years she recalls flour being the only store bought ingredient in her kitchen-where she had to feed a dozen hungry mouths.

As agriculture became more mechanized and more closely tied to commodity markets, the countryside depopulated in the path of the machine and the land consolidated in the hands of a fewer families. This revolution in agriculture grew concurrently with the developing capitalist system.[4] The values and attitudes towards the natural world that had developed in industry spilled over onto their dealings with the land. Although agricultural productivity increased and the amount of food production per agricultural worker gained significantly, the system its self was inhumane and therefore flawed.

The self image of the famer changed. Farmers began to see themselves as agricultural businessmen and farming as the production of agricultural commodities. The concept of stewardship, the partnership with careful tending of the land, faded. Because of capital costs, the new technologies have forced farming to function according to constraint of the market economy, thus leaving behind values based traditionally on family and land care. This has led to the exploitation of both land and farm laborers.

Today large sways of countryside have been devoted to growing huge acreages of a single crop creating monocultures where a lot of intervention and artificial support is needed to maintain them. Pests and dieses love monocultures. Every plant or animal has its pest and when a pest encounters a monoculture it's a feast, there is so much food that its population explodes

and once they get established all that they need is there. In order to up hold monoculture farming, we spray our crops and douse the soil with deadly chemicals known as pesticides, insecticides, herbicides and fungicides.

Many experts are now claiming that bee colonies in the countryside are struggling to sustain themselves as their natural food sources are replaced to make way for our own.[5] Only finding fields of cereal crops, the hive will eventually die from starvation as bees cannot feed from these self pollinating plants. Ironically other farming methods rely entirely on the work of the honeybee.

On the countless berry farms, apple orchards and vegetable fields across Ireland the flowering plants need bees in order to reproduce. In fact it is estimated that bees have a role in the production of around 1/3 of food in our diets. Honeybees generate around 150 million euro per year for the Irish economy through farming.[6]

Greens Berry Farm in Gorey, Co. Wexford and many more like it across the country are concerned as they rely on honeybees to grow the greater majority of their crops. Their disappearance will put the Green families livelihood and hundreds of other farmers in jeopardy.

Honeybees also occupy a very important position in our planets eco-systems. The survival of thousands of plants and animal species is threatened by the decline of the honeybee.[6] At the Eden Project in Cornwall, it becomes obvious how much they contribute to our environment. Over 80% of the plants in the centre's famous domes would seize to exist if bees became extinct, highlighting just how important insect pollination is to life on our planet.

Jo Thomas, a horticulturist with Eden Project understands the devastation the loss of this little creature could have on the future of our ecosystem. "The flowers have evolved at the same time as those insect that visit them. They lure them with their nectar and pollen" In fact evolutionary history suggests that bees and flowering plants have closely co-evolved throughout the last 100 million years, "which obviously the insects and especially the honeybee need for their growth. We have evolved at the same time as well so what you have to imagine is the period of time over which the world has developed and everything has done that in and around the same time so without one you wouldn't have the other, without the honeybee you wouldn't have the apple and without the apple you wouldn't have us."

* Prior to English rule, Ireland had its own indigenous system of law dating from Celtic times, which survived until the 17th century when it was finally supplanted by the English common law
[1] *Bees and Biodiversity; Tim Rowe*
[2] *Report by Dr Gordon Purvis; UCD School of Biology and Environmental Science*
[3] *The Honey Bee Special Report; Nick Smiffy*
[4] *Bioshelters, Ocean Arks, City Farming: Ecology as the basis of Design; Nancy Jack Todd and John Todd*
[5] *Bees and Biodiversity; Tim Rowe*
[y] *The Honey Bee Special Report; Nick Smiffy*

The Pesticide Era

Discovering the insecticidal properties of substances like DDT through chemical warfare research during WWI, it was decided to make peaceful use of research originally conducted to kill. When some of the deadly nerve gases were discovered to be effective insecticides, they were quickly approved by for widespread use with little or no testing.

Agrochemical popularity soared with the discovery of the effects of synthetic pesticides such as DDT (dichloro-diphenyl-trichloro-ethane), BHC, aldrin, dieldrin, endrin, and 2,4-D.[1] These products were effective and inexpensive. DDT, the most popular quickly becoming the new "wonder insecticide" because of its broad-spectrum activity, profoundly changed the lives of farmers around the world. Hence 1940s and 1950s have been coined the start of the "pesticide era".

DDT was easy to use, appeared to have low toxicity to mammals, and reduced insect-born diseases, like malaria, yellow fever, and typhus; consequently, in 1949, Dr. Paul Muller won the Nobel Peace Prize in medicine for discovering the insecticidal properties of DDT. Unfortunately, in 1946, the first report of insect resistance to DDT in houseflies occurred in Sweden. Soon after, in the 1950's and 1960's, widespread resistance to DDT and other pesticides was documented.

When Rachel Carson's book, Silent Spring, was released in 1962, it generated a great deal of controversy over the use of chemical pesticides. In her book Carson's intent was to warn the public of the dangers associated with pesticide use. She described how DDT entered the food chain, remained toxic in the environment even after it was diluted by rainwater, and caused cancer and genetic damage after accumulating in fatty tissues of animals. Carson's conclusion that DDT and other pesticides had contaminated the entire world food supply sparked concern about pesticides. The controversy sparked by Silent Spring led to the enactment of environmental legislation and the establishment of government agencies to better regulate the use of these chemicals in the United States of America.

Going from a savior to a scourge, DDT was eventually banned, but it opened up a long line of new organic chemical insecticides that would change agriculture forever. New 'modern' pesticides are continuously coming onto the market. The more traditional form of insecticide

which was sprayed onto the plant is now being taken over by systemic pesticides. Systemic pesticides are designed to be taken up by the plant and incorporated into its tissues, flower and then berries.

It's partly to do with pesticides that we have been able to develop large monocultures because without them large areas dominated by a single crop would quickly become blighted by the pests that feed on them. Pesticides are by their very nature killers. Early pesticides like DDT killed somewhat indiscriminately which had a devastating effect on wild bees and other wild life. However more modern chemicals have been designed to target specific plants and specific pests – that's the theory at least.

Most conventional insecticides would have been sprayed directly onto the outside crops, now systemic pesticides are applied to seeds. These chemicals are designed to spread throughout all parts of a plant as it grows, remaining in the plant throughout its life and is expressed in the leaves and even the pollen. These new systemic pesticides were meant to target pests more accurately, they weren't meant to kill bees. Unfortunately bees have often been caught in the cross fire between farmers and pests. As more sophisticated chemicals have been developed it has become harder to asses when they might be in danger.

Rachel Carson warned that the overuse of pesticides could be the death knell for the pollinating insects, including the bees. She began Silent Spring by telling a "Fable of Tomorrow", about a small town wasted by the blight resulting from pesticides, predicting the disappearance of the bees:

> *…The apple trees bloomed but no bees droned among the blossoms,*
> *so there was no pollination and there would be no fruit..*

She explains that a chemical designed to kill any insect it encounters will of course affect both destructive and beneficial creatures. Indeed such powerful pesticides literally destroy the ecosystem itself, from 'pests' to birds to fish to critical insects like the bees. Will humanity, in the end, suffer the unintended consequences of this high-impact technology?

Today as a result of infiltration by agricultural chemicals, organic fertilizers and slurry, many surface and ground-water supplies across the country are unfit to drink. They are responsible for 73% of the phosphorous pollutants in Irish lakes along with forestry.[2] The trend has been for fertilizer use to increase while yields have dropped, thus causing eutrophication* in our Irish waters.

Rachel Carson also predicted in her book that many 'pests' would become poison resistant and her fears came true. New and increasingly toxic pesticides are being developed to control the growing super-pest populations, a strategy that seems highly unsustainable in both ecological and economic terms.

Tim Rowe, a beekeeper from Ballylickey near Bantry has battled for a greater understanding on the impact of these chemicals on bee health for many years. As his bees began to die he became convinced of a connection, "I'm not an extremist, I understand that pesticides are going to be used but I think they need to be used with good care and judgment… I am concerned that we may be seeing some very subtle consequences of this chemical environment

that we have been forced to live in".

"What has happened is that we have new pesticides that have appeared on the market that haven't been properly evaluated independently to determine what impact they have on the bees." Although this new pattern of bee colony collapse seems to have appeared from out of the blue, which suggests a particular trigger, it is likely that some biological limit in the bees has been crossed. There is no shortage of evidence that we have been approaching this limit, quickly, for some time. The fear is that bees are being affected by feeding on nectar and pollen, tainted by these new pesticides.
 and around the same time so without one you wouldn't have the other, without the honeybee you wouldn't have the apple and without the apple you wouldn't have us."

Eutrophication is a syndrome of ecosystem responses to human activities that fertilize water bodies with nitrogen (N) and phosphorus (P), often leading to changes in animal and plant populations and degradation of water and habitat quality

[1] Silent Spring; Rachel Carson
[2] Lake Pollution in Ireland- what lies beneath?; Joanne Blennerhassett

To Bee or not to Bee

"At last we are finally realising just how much we depend on bees, just how much human life as we know it wouldn't exist without the bees. The only good thing I can see coming out of this terrible loss of honeybees is that maybe we will finally redress the balance and feel a bit more gratitude toward bees."

The Hive, Bee Wilson

The monoculture of bee-keeping and pollination on an industrial scale, coupled with industrial agricultural monoculture, is a systemic problem. It is highly susceptible to massive

wipeouts and die-outs. A problem in one system causes comorbidities involving the other system[1]. Modern food production has yielded a highly efficient, but also fundamentally weak system.

The true characteristic of our modern agriculture are the new varieties of plants and breeds of animals. Both plants and animals have been developed which are scarcely capable of fending for themselves without help from an extensive agricultural infrastructure.[2] In exchange for such dependency lies in the unprecedented yields that are produced per acre.

It's clear that to help the bee we have to think about the environment and ways that we can change our own behaviour. When I think of the problem facing the bees and why they've been brought to the verge, I have to wonder whether they are the modern day canary in the coal mine, an early warning about the state of our affairs.

It's not only about getting honey or bee keeping as a hobby it's about protecting vital sources of food for all of us. We need to create an environment which bees can survive not just for now but for generations to come. After all a world which is kind to the honey bee has to be good for the rest of us too.

France applied the 'Principal of Precaution'; they were able to find sufficient scientific evidence forcing IMD use to become suspended. Thanks to beekeepers and the support of large agricultural organizations, for the first time the 'Principal of Precaution' had been used in an environmental decision to remove a product from the French market. The chemical industry must now be able to show that all neurotoxins are safe for the environment and therefore bees, before they are used massively on food and feed stocks.

The Farming industry in Ireland remains largely unregulated, ironically, as it is the major contributor to water pollution, soil pollution and destruction of habitats. Farming practices overall need to improve. Intensification of farming is more of a concern and this will not be alleviated by REPS. the problem up until recently has been enforcement. There was no single body policing environmental pollution.[3] Here again are Rachel Carsons words at the end of Silent Spring:

"We stand now where two roads diverge...the road we have long been travelling is deceptively easy, a smooth superhighway on which we progress with great speed, but at its end lies disaster. The other fork of the road, the one "less travelled by", offers our last, our only chance to reach a destination that assures the preservation of our earth.
The choice, after all, is ours to make. If, having endured much, we have at last asserted our "right to know" and if, knowing, we have concluded that we are being asked to take senseless and frightening risks, then we should no longer accept the counsel of those who tell us that we must fill our world with poisonous chemical; we should look about and see what other course is open to us.
A truly extraordinary variety of alternatives to the chemical control of insects is available... They are biological solutions, based on understanding of the living organisms they seek to control... Only by taking account of such life forces... can we hope to achieve a reasonable accommodation between insect hordes and ourselves."
Forty five years ago when, when Silent Spring pleaded us to avoid disaster, to phase out pesticides and avoid the environmental side effects caused by the miss-use and abuse of high-

impact technologies in powerful agro-chemicals, and go to biological controls, we did not listen. Will we heed her warning this time?

With each major innovation in the history of agriculture, the wild landscapes that are celebrated here on our island are become increasingly domesticated. Although this has been the dominant trend, the beginnings of a very different form of agriculture and general lifestyle are discernible, one that is restorative, ecologically inspired, and applicable to the design of future settlements. It is agriculture and a way of living based on the values of stewardship and involves both ancient and modern knowledge.

 Instead of exploding outward as the other innovations have, with biology as the model it will implode, turning inward and moving in the direction of miniaturization and efficiency. This type of agriculture will break with the past in that the culture of food will be more closely interwoven with the fabric of settlements. The division between agriculture and culture could in fact begin to heal as our villages, towns and cities become more agriculturally conscious and therefore ecologically aware. The shear separation between rural life and urban life, the polarization of each, makes each other an unsustainable system.

The concept of stewardship in agriculture is steeped in different values than the present business perspective. The land has become objectified. All our land, which was so revered and sacred to our ancestors, countryside and 'waste space' are in fact living, vital entities held now in our trust, to be nurtured and protected for the greater good. We must seek to find that delicate balance between ecological necessity and economic carefulness. To achieve such a balance, such a stewardship starts on a small scale, applying the precepts that underlie biological design.

There are the scientists like James Lovelock who see the biosphere as a living, self-regulating entity, a fragile being that could become sick and perish. Then there are the chemists, toxicologists, government administrators, who view the Earth as an inanimate rock, a dead thing that can be manipulated in endless ways without concern for the future.

When it comes to designing a future for ourselves we need to look at the immediate and think with a biological model of the universe rather than the old machine model, like in 'The Turning Point' by Fritjof Capra. A creative balance between individual and collective interests, we must do all we can to be healers of the land. The wounds made by our use of poisons and bad land practices can then be used as the materials of re-creation. The work is to restore "waste places" and "non-places".

The social forms of farming can change from very large, isolated farms to smaller holdings. Ecologically based and comprised of diverse interacting components founded on horticulture, orchardy, livestock husbandry, entomology (study of insects) and field crops all linked to create three dimensional landscapes. Peter Raven in The Biology of Plants gives the following description of ecological succession as:
In ecology, the slow, orderly progression of changes in community composition during the development of vegetation in any area from initial colonization to the attainment of a climax typical of a particular geographic area.[4]
In the Fundamentals of Ecology Eugene Odum extends the meaning of succession to include the implications for human activity and agriculture. He states:

In a word the 'strategy' of succession as a sort term process is basically the same as the 'strategy' of long term evolutionary development of the biosphere, namely increased control of, or homeostasis with , the physical environment in the sense of achieving maximum protection from its perturbations. The development of ecosystems has many parallels in the developmental biology of organisms and also in the development of human society.[5]

Studies of ecosystem strategies like those of Eugene Odum create design proposals for stewardship agriculture and lifestyle, promoting a dimension of self repair and sustainability. An ecological farm is most likely to be a small acreage farm, intensively worked. It would be the opposite of monoculture, using a number of diverse elements to establish the symbiotic relationships which lead to overall system productivity, health and integrity, Marketable vegetables, fruits, herbs, bees, feed crops, poultry, livestock, and even economic trees.

Models based on wild ecosystems make it possible for the landscape to retain ecological integrity even as it becomes increasingly agricultural. It is possible to achieve this in our Irish countryside, based on our past we have all the skills; gardening skills, an understanding and knowledge of orchardry and animal husbandry and an ability to identify insects. Will we shift the view to a more biological model science, transcend the Mechanistic Dilemma, and choose the road of change, the road that will undoubtedly lead to our survival and the survival of our islands natural beauty and diversity?

Hopefully we will hear their familiar buzz for a long time to come.

[1] Bioshelters, Ocean Arks, City Farming: Ecology as the basis of Design; Nancy Jack Todd and John Todd
[2] Beyond Silent Spring; H.F. van Emden, David B. Peakall
[3] Silent Spring; Rachel Carson
[4] The Biology of Plants; Peter Raven
[5] Fundamentals of Ecology; Eugene Odum

going underground

Séamus Bairéad

Chapter 1
Before the Tube

The public perception of the underground has long been strained, associated with death, crime and poverty. However since the industrial revolution a far more positive relationship has developed, primarily due to subterranean transport systems that draw more than workers, criminals and fugitives to the urban underground. Not only did it turn these new networks into a valid necessity for a huge percentage of a cities population but it also acted to bridge a social divide. It sparked new interactions within the city and gave it a multi-layered depth. The considerable impact of metro systems has broken the fears the general public have held towards the underground, Benson Bobrick argues in his book 'Labyrinths of Iron'[1] that the train systems allowed for 'people to reconcile themselves to living in the Underworld.' This has allowed for further subterranean development within cities, which could alleviate some of the density issues and create another dimension to the urban experience.

When we look at the history of the underground we see how it turned from a place of security and safety into what Louis Heuzé described as a necropolis.[2] Caves and burrows offered protection from predators and from the elements to prehistoric man. As humans developed they made their own constructions above ground and began burying the dead below. As civilisations progressed they became increasingly reliant on using the underground for burial and storage, and the extraction of valuable minerals. This last use, the mine, is the only precedence for underground transport; Lewis Mumford describes our relationship with this form of underground in 'Technics and Civilisations' — 'Apart from the lure of prospecting, no one entered the mine in civilised states until relatively modern times except as a prisoner of war, a criminal, a slave. Mining was not regarded as a humane art: it was a form of punishment: it combined the terrors of the dungeon with the physical exacerbation of the gallery'.[3] This explanation of the public stigma towards the mine also explains the objections and opposition that proposals for underground transport faced. Also the fact that much of the technology which made underground transport possible was originally developed in the mines strengthened the association people made between this lowest form of labour and a public amenity — 'From the mine came the escalator, the elevator which was first utilized elsewhere in the cotton factory, and the subway for urban transportation. The railroad

1. Bobrick, Benson. Labyrinths of Iron: A History of the World's Subway. New York: Newsweek Books, 1981.

2. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005.

3. Mumford, Lewis. Technics & Civilizations. New York: Harcourt, 1934.

likewise came directly from the mine'.[4]

As with most aspects of the industrial revolution this movement towards a cleaner image of underground inhabitation began in Britain. Writers such as Rosalind Williams describe the 'pleasing images of technological magic'[5], a significant progression from the dark and damp catacomb generally associated with the underground. It was in London primarily that the fascination with a possible subterranean culture began.

The collaboration of two leading engineers at the time, Marc Isambard Brunel and Thomas Cochrane, resulted in the construction of the Thames Tunnel. Construction started in 1825 and the project was completed in 1843. It led to the invention of a new tunnelling shield technology patented by Brunel. It was a slow process and the project faced many difficulties, including financial droughts and flooding. There is no doubt of the significance of technological developments made by Brunel in constructing the Thames Tunnel. It was immediately recognized as a huge engineering success. The Thames Tunnel was generous in its dimensions, measuring 11 meters in width, 6 meters in height and approximately 396 meters long.[6] It was the grandeur of the design that led to its public success and made it a popular attraction for tourists and locals of all social classes. William Allen Drew, an American visitor to the structure, describes 'the floor laid in mosaic work of blue and white marble' in his book 'Glimpses and Gatherings During a Voyage and Visit to London and the Great Exhibition in the Summer of 1851'.[7] He goes on to describe the well lit and well ventilated tunnel —

'The Arches are lighted with gas burners, that make it as bright as the sun; and the avenues are always crowded with a moving throng of men, women and children, examining the structure of the Tunnel'.

The Thames Tunnel at the time of its opening in1843, closer to the portrayal of William Allen Drew than that of Hawthorne.

The success of the Thames Tunnel was short lived however and it fell into disrepute as a haven for prostitutes and thieves. Nathaniel Hawthorne included a less favourable view of Brunel's tunnel in his book documenting his trip through London, 'Our Old Home'.[8] In the chapter 'Up the Thames' he describes his journey into the Thames Tunnel — 'Descending a wearisome succession of staircases, we at last find ourselves, still in the broad noon, standing before a closed door, on opening which we behold the vista of an arched corridor that extends into everlasting midnight'. Hawthorne contradicts Drew's appraisal of the lighting as 'dusky gaslight' and describes it as the dark and damp 'deeper than tomb-like interment' of young women tending the stalls. From this description we are given the impression that

4. Mumford, Lewis. Technics & Civilizations. New York: Harcourt, 1934.

5. Williams, Rosalind. Notes On The Underground. Cambridge: The MIT Press, 1990.

6. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

7. Drew, William Allen. Glimpses and Gatherings During a Voyage and Visit to London and the Great Exhibition in the Summer of 1851. Boston: Homan & Manley, 1852.

8. Hawthorne, Nathaniel. Our Old Home: A Series of English Sketches. Boston: Houghton, Mifflin and Co., 1883.

the project suffered from its subterranean setting.

Further developments in tunnelling technology followed with Peter William Barlow who patented a cylindrical tunnelling shield that improved on Brunel's original design. This was employed in the construction of the Tower Subway, a tunnel that ran under the Thames from Tower Hill to Vine Lane.

Despite the shortcomings of the Thames Tunnel, that seem to have erupted with the waning interest, it inspired a greater faith in underground construction. According to David L. Pike 'the first urban underground railway, inspired by the opening of Brunel's Thames Tunnel , was proposed by Charles Pearson for London in 1843'.[9]

Chapter 2
The Environment of the Underground

Traffic congestion, slums and other poor living conditions were quickly increasing from the beginning of the 19th century. Pearson had proposed, in a pamphlet published in 1845, an underground train line running down the Fleet Valley as far as Farringdon to combat the over-crowding.[10] He suggested a system using atmospheric pressure to propel the trains, which realistically was impossible at the time. This was quickly dismissed by the Corporation of London which was uncompromising on allowing further rail development within the city limits.[11]

 In 1846 the Corporation recognized that action was necessary to alleviate the congestion, the Royal Commission was established to study the prospect of a new London rail system. Charles Pearson again tried to campaign for a central station at Farringdon that would allow workers to commute to the city from better quality satellite developments. He was eager to promote his subterranean solution and conducted studies of the traffic coming into London.[12] This survey realised that the 'increase in the population and area of the surrounding district' was the primary cause of the growing traffic problems but also recognized the influx of 'provincial travellers' as a significant contribution.[13] Pearson also received two thousand signatures of leading London business men in support of his proposal. The opposition was still too great how-

9. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005.

10. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

11. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

12. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

13. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

ever and the scheme was ridiculed by Punch magazine to add further humiliation. It was still believed that people would not willingly venture underground for the sake of public transport. The Punch cartoon made a sinister comparison between Pearson's vision and the coal bunkers of residential blocks.[14]

It was unfortunate that the proposal for an underground railway came about in an era completely preoccupied with glass construction. Joseph Paxton had been hugely commended for his contribution to the 1881 Great Exhibition, the Crystal Palace. Paxton had also proposed a scheme for the Royal Commision's 1854/5 inquiry; 'a twelve-mile railway built above ground but within a glass arcade', the scheme created a large light filled boulevard with shops and houses on either side. Another forerunning contender for the Commission's study was architect William Moseley's 'Crystal Railway'. He suggested a line twelve feet below street level encased in glass with a pedestrian route overhead.[15]

Joseph Paxton's proposal for the 1854/5 inquiry. Glass and transparency were incredibly fashionable at the time. This scheme also offered large commercial boulevards.

Pearson's continued pressure was rewarded following the 1854/5 inquiry when his plan was approved. There was a long and drawn out period in which there was much debate within the House of Commons over the passing of the Bills. In August of 1854 the Metropolitan Railway received Royal assent. Originally travelling from Edgware Road to King's Cross the line was extended a year later to Farringdon.[16] These underground lines were excavated using the cut and cover method however this method comprises less than eight percent of today's network.[17] The Metropolitan Line was officially opened on the 10th of January 1863 following a banquet at Farringdon Street Station. Unfortunately Pearson had died in September of the previous year. Huge crowds amassed to experience the new transport system and its popularity continued – 'by 1864 the line was carrying 11,720,000 passengers annually which had risen to 20,770,000 ten years later.'[18]

What is truly surprising is the scale at which people accepted underground inhabitation. It is possibly thanks to the climate of experimentation and a new found trust in engineering brought about by the industrial revolution. The initial response to the underground no doubt paved the way for further development. If people were happy to dwell in a new environment which was still exploring the limits of an artificial climate, then developments such as controlled ventilation, heating, insulation and lighting could surely create a comfortable setting for a much wider range of functions than transport. The tentacles of the

14. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005.

15. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

16. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

17. London Transport Museum

18. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

Tube continued to spread with an increasing public demand.

The Hammersmith and City Railway followed in June 1864, and an extension of the Metropolitan to Moorgate was completed in 1865. The network of subterranean railways grew incredibly rapidly. A line from Baker Street to Swiss Cottage was opened in 1868 and continued to extend northward reaching Harrow by 1880. In 1868 the District Line was opened and stretched as far as Blackfriars by 1870 and Mansion House by 1871.[19]

Tunnelling began in October 1886. Peter Barlow, who had previously worked on the Tower Subway, was charged with the task of tunnelling a route from Elephant and Castle in Southwark to King William Street. Barlow's pupil, James Greathead, was responsible for furthering the development of the tunnelling shield. His design was an adaptation of Brunel's original tunnelling mechanism. The new system was far more effective and within fifteen weeks Greathead had managed to

tunnel beneath the river. This new method allowed for the network of tube lines to expand more freely; they no longer needed to follow the roads above. It also meant that there was less disruption to city life.[20] London is fortunately seated on a bed of clay which is much easier to burrow through than the chalk or rock which other cities encountered while trying to develop underground networks.[21] A layer of gravel lies on top of the clay which prevents the surface from collapsing in on the tunnels as it did in Paris in Couronnes in 1903, killing 84 people.[22]

Tunnelling has allowed the London Underground to grow into a web of layered routes. However as the system became more complex with lines running deeper underground it became much more difficult to maintain any sort of relationship with the surface. The huge escalators which we associate with the underground highlight the depth of the system, the longest of which is 60 metres long with a vertical rise of 27.5 metres at Angel.[23]

Men working in James Greathead's tunnelling shield. It enabled them to move much quicker, and learning from Brunel's mistakes it was also much safer.

Notting Hill Station. The grandeur and brightness of the station was an obvious atempt to dispell the public's preconceptions of underground space.

19. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

20. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

21. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

22. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005.

23. London Transport Museum

When facts such as this are considered it does seem bizarre that passengers are comfortable with the disassociation with the surface, particularly in the early days of underground transport when the stations were dirty, damp and dark, with the exception of the very first examples which were set out such as the Notting Hill Gate Station. It seems that at the time of the construction of the first lines the underground was just that; an extension of the natural world underground. The poor lighting and ventilation combined with the steam from the trains proved that this was an environment which was not controlled; it was closer to the space which 'Punch' had described than to Charles Pearson's vision. Even after the first tube lines were built and large numbers of workers were commuting on them every day 'Punch' and other publications continued to question the system.[24] Although not to the same extent as Paris where large numbers were still appalled at the prospect of underground inhabitation, many Londoners viewed these developments as a degradation of society. To many it was the first step towards the nightmarish retreat from the natural world envisioned in stories such as 'The Time Machine' by H.G. Wells which was published in 1895.[25] However the success of the new system at the beginning was firmly based on necessity, had it not been for the gridlocked streets above the underground would surely have been avoided. It would take many years and a greater technological understanding before commerce and retail submerged themselves in the stations eventually giving birth to underground malls.

Electrification came as one of the most significant technological break-throughs of the development of the underground. This was achieved in 1905 and allowed the Tube to free itself of the steam that continuously clouded the platforms. 'Despite the Underground's success in attracting custom, until electrification travelling on it remained an experience which ranged from broadly acceptable to downright awful'[26] Once the steam was replaced with live rails the Tube became far more accessible. Now its passengers could avoid the congestion on the streets without the discomfort that had been so far associated with Pearson's underground and without potentially putting their health at risk. Advertising campaigns showed people from every tier of society using the Tube at the fixed price of two pence.[27] According to David L. Pike this may have even acted in breaking

A poster advertising the 'Two-penny Tube'. The images show members of the upper classes using the Tube in a clean and orderly environment.

24. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005.

25. Wells, H.G. The Time Machine. London: Peacock, 2008

26. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

down social barriers as there was no class system employed in the carriages[28] (with the exception of the Metropolitan line which had a first class carriage from 1915 to 1934).[29]

The London Underground demanded its own artificial environment. Lewis Mumford described the mine as 'the first completely inorganic environment to be created and lived in by man'.[30] The environment of the mine was created to accommodate labour, public transport on the other hand had a far greater variety of users; it needed to have more control over the conditions within the network to enable a more welcoming environment that the citizen could relate to.

Much of the technology of the underground derived directly from the mine and therefore brought with it many negative associations. To take all these elements which warned people against using underground transport; the fear of subterranea, the connections to working class technology, the disassociation with the natural surface world and the general distrust towards the Tube, and to create the most successful public transport system which is loved by the cities inhabitants and adopted in other metropolis' all over the world required a brilliant and comprehensive quality of design.

Chapter 3
Design and the Public

From its conception there was an understanding that design would have a large part to play in the success of underground transport. Charles Pearson was keenly aware of its importance if his proposal was to appeal to the public at large; in his descriptions of underground transport he said it should be 'as lofty, light and dry... as the West End Arcades'.[31] However the only visible precedence, the tunnels under the Thames, had all set out with a similar image in mind and, according to reports, had fallen short of all of these aspirations. Hawthorne's description of the Thames Tunnel portrays it as the antithesis of what Pearson hoped for his network – 'At present, it is illuminated at regular intervals by jets of gas, not very brilliant, yet with lustre enough to show the damp plaster of the ceiling and walls, and the massive stone pavement, the crevices of which are oozy with moisture, not from the incumbent river, but from hidden spring's of the earth's deeper heart'.[32]

Pearson's vision for the underground rail was of stations with generous proportions, lit from above, and built using high quality materials. They followed the common Victorian style which no doubt was intended to create a sense of familiarity in an unfamiliar environment. His original proposal was to use atmospheric pressure to propel the

27. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

28. Pike, David L. Subterranean Cities: The World beneath Paris and London. New York: Cornell University Press, 2005

29. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

30. Mumford, Lewis. Technics & Civilizations. New York: Harcourt, 1934.

31. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

32. Hawthorne, Nathaniel. Our Old Home: A Series of English Sketches. Boston: Houghton, Mifflin and Co., 1883.

carriages in order to keep the subterranean spaces clear. This was never achieved and in hindsight was unlikely to ever come to fruition. The result was large amounts of steam clouding the stations with chimneys at regular intervals to release the steam. The carriages themselves were quite claustrophobic; they had no windows and were commonly referred to as 'padded cells'.[33] At the early stages of the system it is easy to see why many people were horrified by the idea of underground travel. The Prime Minister, Lord Palmerston, turned down his invitation to the opening ceremony on the 9th of January 1863; in his mind there was still a definite relationship between the underworld and death.[34]

After the construction of the stations included in the original plan the quality of the architecture declined. The stations at Notting Hill Gate and Earls Court relied on natural light. The lines were still being constructed using the cut and cover technique and therefore the stations were not far underground and could easily open entire facades to the sky. They were well lit using gas lamps and achieved wide spans and generous spaces necessary to compensate for the psychological phobia of subterranea. However when further stations were designed within the rigid confines of the urban grain it became more difficult to maintain a relationship with the street.

Leslie W Green was appointed Architect for the Underground Electric Railways Company of London Ltd (UERL) in 1903. He adopted a very distinctive arts and crafts style which had grown popular in Britain at the end of the nineteenth century. The stations were two storey structures with a steel frame. They were clad in an identifiable red glazed terracotta block. Large semi-circular windows allowed light into the ticket halls which were

connected by lift to the platforms below. Green repeated the same design for each station, altering them slightly to adapt to the site. He gave each station a flat roof with the intention that offices could be constructed above them by connecting to the steel frame, this ambition has been realised in a small number of stations, such as Oxford Circus Station.

Leslie Green's stations failed to achieve the sense of public room that was so coherent in the original examples. The subterranean platforms, halls and corridors seem to have done little to compensate for the disengagement

Earls Court Station Was constructed during the cut and cover period. The platforms are above ground due to the shallow tracks.

Oxford Circus with offices extending upwards from the steel frame.

33. London Transport Museum

34. Clayton, Anthony. Subterranean City: Beneath the streets of London. London: Historical Publications, 2000.

from the surface which is all the more evident in these buildings due to the use of lifts and the absence of any connection to the surface. Also, whereas the other generations of station designers would try to make a focal point of the stations, Green's repeated formula gave little to the identity of the location. On the other hand his signature style and use of unique materials meant that his underground stations were immediately identifiable, this unity of design was a trait that both Albert Stanley and Frank Pick maintained throughout their revolutionary leadership.

Albert Stanley, a talented planner and administrator in the area of transport, returned from the US in 1907 to join the UERL which was in huge financial difficulty. Before his departure to America he had suggested standardized signs outside every station illuminating the word 'UndergrounD', this gave a slight indication of his ambition to unify London transport under one management. He immediately took to this process again bringing all the lines under the UERL together into a common PR program. He took a bank loan of £50,000 to launch a huge publicity campaign which would reignite the interest in the underground network. Stanley began by distributing six million free leaflet-sized maps of all the various tube lines. He proved to be a PR genius drawing public attention through clever and original methods; he published a 14 year old boy's winning slogan from a competition in the Evening News under the maps which he had posted in the stations – 'Anywhere Quickest Way Cheapest Fare'. He created a game called 'How to get there?' to encourage an understanding of the underground network. Actions such as these brought the Underground back into the public eye.[35]

The Roundel however was one of his greatest achievements. In 1913 Stanley introduced the logo to allow the station names to be more clearly discernable amongst the advertising that littered the station walls. The symbol also acted as a unifier, although there were a number of variations on the general concept. In 1925 Edward Johnston redesigned it to much more specific standards. He kept the larger 'U' and 'D' but created an entirely new font that would be used for all London Underground publications, the Johnston type face.[36] Features such as this

The development drawings of the Roundel by Edward Johnston, giving specific dimensions.

35. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

36. London Transport Museum

ensured that the footprint of the Tube was immediately recognizable and there is no doubt that both Stanley and Frank Pick appreciated the importance of this subtle branding.

Albert Stanley revealed his administrative talents through his study of 'the passenger experience'. He revolutionised the train system through small but effective moves; such as line diagrams in the trains, coordinating lift departures with train arrivals, timetabling the trains and issuing strip tickets which were valid for a number of journeys. He also increased the amount of trains running at peak times. His continued efforts to unify the transport system in London had moved from strength to strength. With a number of different lines under his management he now looked to connect them.

At Charing Cross three lines passed each other, each with its own station – the Baker-loo, Hampstead and District lines. The new station that was constructed, now called Embankment, was the first of the multi-layered stations. The plans of these stations are far more complex as escalators reach from platform to platform and long corridors connect lines coming from each direction. These subterranean labyrinths can be very daunting and one can easily forget their geographical relationship to the street which they entered from. Design plays a significant role in ones orientation within the station. If we study the axonometric of Piccadilly Circus Station we see that there are larger rooms at junctions where different routes can be taken. This allows passengers to slow down or stop long enough to study the maps. The higher ceilings in these spaces also provide a relief from the narrow tunnels.

Chief executive of the UERL, Frank Pick, proved to be one of London's most influential patrons of the art. He launched huge poster campaigns, showcasing the work of

local and international artists. The London Underground soon became known as a central figure in the promotion of the arts. This solidified its stance as a primary institute within the city and also had a in posters for all styles... it is possible to move from the most literal representation to the wildest impressionism as long as the subject remains understandable to the man on the street'. It is obvious from the slogans used on the posters that Pick was acutely aware of the task of presenting the underground as a safe and welcoming public space. During the bombing raids of the first world war the Tube stations opened their doors to be used as shelters, he used this opportunity to release posters that

Piccadilly Circus' network of corridors, escalators and platforms. Larger spaces give the passengers a sense of release and a chance to orientate themselves.

37. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

Posters portraying the positive aspects of the artificial environment in the Underground. Pick realised the importance of good quality advertising in the relationship with the 'man on the street'.

would promote the security of the underground, such as – 'Never mind the dark and dangerous streets/ Underground/ It is warm and bright/ Be comfort in well-lit trains and read the latest war news.'[37]

Another key moment in the improvement of the public's relationship with the underground was the creation of Harry Beck's iconic map in 1933. Beck's understanding of how people interact with the subterranean network was the basis for his design proposal. He recognized that geographical distance and direction were not the primary concerns of underground transport; more important to their understanding was the clarity of the stations and junctions. Beck ignored geographical accuracy in place of clarity and convenience. He enforced a number of rules, primarily that all lines would be represented as running vertically, horizontally or diagonally at a forty five degree angle. He colour coded the lines to make them easier to follow, and also expanded the city centre where there were many stations closer together to make each station more discernable and compressed the sprawling suburban lines

Harry Beck's Underground Map

38. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

in order to fit them on a small pocket sized map. This came as a huge boost to the public perception of underground travel; it made it easier to make sense of the overlapping network and imbued its passengers with a greater sense of confidence.[38]

However forsaking geographical orientation makes it difficult to understand the city. Following the map and travelling by underground make it almost impossible to grasp the layout of the city; we only have a rough estimation as to how far and in which direction we have travelled. Bill Bryson gives an apt example explaining that under the map's instruction in order to get from Bank to Mansion House one would travel to Liverpool Street on the Central Line and switch onto the Circle Line as far as Mansion House rather than walking the 200 yards between the two stations.[39]

A geographically acurate Underground mapv

Following Leslie Green's early death his assistant, Stanley A. Heaps, continued to design stations following many of the same principles as his predecessor. By this stage escalators were being used and Heaps was the first to design specifically with this new technology in mind. They allowed him to create single storey structures as the second storey was no longer necessary for the work-ings of the lifts.

The use of escalators helped in maintaining a link from the platforms to the ticket office on the surface, the passenger's natural under-standing of distance and space could make more sense of their route than it had with the lifts. It also allowed for a visual connection in many cases, however most significantly it gave the opportunity for a form of ventilation known as the piston effect. This is something that anyone who has travelled by tube is aware of; as the train approaches through the tunnel it pushes the air in front of it up through the escalators, as the train leaves it draws fresh air back in to fill the vacuum which it has left.[40] The underground trains are designed with this in mind which explains their flat front.[41]

This fortunate design feature compensated for the disengagement from the fresh air of the surface by creating an artificial breeze. However it still lacked the warm lighting that was needed for passengers to be completely at ease in the stations. This came with the architect Charles Holden. Holden and Pick travelled Europe to familiarize themselves with international movements and trends. Upon his return Holden began developing a

Subterranean hall at Gants Hill Station

39. Bryson, Bill. Notes from a Small Island. 1995. London: HarperCollins Publisher, 1995

40. The Kings Cross Tube Station Fire - RTÉ

41. Wolmar, Christian. The Subterranean Railway: How the London Underground was built and how it changed the city forever. London: Atlantic Books, 2004.

new attitude towards underground design. His stations were firmly based on light and also were designed to act as a focal point for many of the satellite towns and villages which were drawn closer to London by the Tube. The ticket halls were large, light-filled rooms with a very recognizable public aspiration. Aspects of the design introduced in these generous halls were continued down to the platforms linking both the subterranean and the surface parts of the building. He also designed a new light that accompanied the escalators. It faced upwards towards the vaulted ceilings with a reflective bowl underneath to prevent direct glare. The light is a diffuse light and gives a warmer more natural feel to space.

Up lighting in the escalators; Charles Holden.

This marks another step in the struggle to turn the underground into a comfortably inhabitable environment, where the control over the ventilation and the lighting creates an artificial atmosphere that is far more inviting than the labour driven environment of the mines described by Mumford. Holden's new station at Piccadilly Circus epitomizes all these developments of design. His remarkable aspiration to make the station appear to be the centre of the world may have been overambitious but it was certainly the centre of the underworld. The large, circular ticket hall situated under the busy traffic junction of Piccadilly had large murals of the world on its walls displaying the times in various capitals all over world. What was most significant about this station however, was the reintroduction of retail into the system.

Following the failure of the businesses situated in the Thames Tunnel people abandoned the prospect of busy market streets underground. However now with the improved environmental conditions subterranean became a viable option for shops and stalls. Holden's generous open plan ticket hall was the perfect opportunity for underground retail to take foot again. This has given birth not only to the large subterranean shopping streets; it is a definite contributor to the vast shopping malls that have developed above ground too. Lewis Mumford's understanding of underground is a place separate from nature that imposes its own artificial environment.[42] In 'Notes on the Underground' Rosalind Williams expands on this point claiming that enclosed environments such as shopping malls are an extension of the underground environment upwards.[43] In this way subterranea has freed itself from its geographical location under the earth's surface and is now projecting itself in the form of man-made structures.

42. Mumford, Lewis. Technics & Civilizations. New York: Harcourt, 1934.

43. Williams, Rosalind. Notes On The Underground. Cambridge: The MIT Press, 1990.

Chapter 4
The Effects of the London Underground

The London Underground has changed the face of London completely. What began as a proposal to alleviate traffic congestion on the busy streets has had a much more significant impact on the city, on other cities and on those that live within the limits of the extending lines. These wide spreading routes have drawn satellite towns and villages closer to London. Suburbs have seen remarkable growth with the introduction of Tube stations, Morden for example had approximately 1,000 inhabitants before the construction of the station, after five years the population had grown to 12,600.[1] 'Metroland' was the term given to the growth of these towns around Tube stations.

Central London is also able to sustain a much larger population thanks to its use of underground space. The complex sewer system of London has delivered better sanitary conditions, allowing for a larger population, similarly underground transport has relieved congestion on the streets above.

In this way it has completely altered London in a physical sense, beyond its intended more immediate impact. However it has also changed how we experience London; as a megalopolis of disorientation. Without a clear understanding of direction or distance while travelling under the city we struggle to grasp the city as a whole, rather it presents itself to use as a number of centres; nodes which seem almost independent of each other. Combined with the geographical indifference

of Harry Beck's map, which is discussed in Chapter 3, the city becomes alien to both our instinctive and intellectual abilities of orientation.

The depth that the network has added to the city is another factor which has noticeably affected the public's relationship with the city. It is the most physical representation of Italo Calvino's argument regarding the various webs of activity that exist within the metropolis. Lines of the city overlap and create a greater complexity of movement and use. It is ever expanding in all directions; outward, upward and downward. As a whole London is far more difficult to read due to the subterranean extension of the city.

The London Underground has had such a huge altering effect that it has, in many ways, become a symbol for the city. It is immediately identifiable as a defining feature of London. This is physically represented by the use of the Edward Johnston's Roundel design in souvenirs and other branding of London. Although many Londoners complain about the Tube it is obviously an excepted part of

Johnstons Roundel is used on many London souvenirs highlighting the international recognition of the underground as a key part of the city.

1. Christian Wolmar; The Subterranean Railway: How the London Underground was built and how it changed the city forever (London: Atlantic Books, 2004)

the life of the city. It has also produced some brilliant pieces of architecture within the city, ranging from Charles Holden's innovative station designs to the modernist design of Canary Wharf Station of Norman Foster.

Unsurprisingly Pearson's proposal has resonated around the world with Paris following suit shortly afterwards. London was recognized as the pioneer to the Underground and is a studied precedence to so many of the world's metro systems. Frank Pick received an honorary medal from Joseph Stalin for his work on the Moscow Metro which is remarkably closely modelled on the London system. It consists of a radial route with various other routes emanating from its centre with smaller routes connecting these at points.[2] This similarity is a testimony to the success of the Tube; a system developed over seventy years, driven by private interests, and facing a number of different obstacles and financial droughts, would still be seen as an exemplary model.

As various cities around the world have developed their own subterranean networks they have revealed a number of unique interpretations. Hector Guimard's entrance for the Paris Metro is considered one of the greatest examples of the Art Nouveau period. This design embraces the other-worldliness of the underground. The platforms of Stockholm do not cover up the rough tunnelled rock and leave it exposed as a reminder of the environment which it belongs. The Tokyo Subway has brought underground transport to an entirely new scale with approximately 8.7 million people passing through its tunnels. The largest station, Shinjuku, sees an average of 3.64 million people pass through it every day, more than the entire London network which claims 3.4 million passengers in a single day.

Shinjuku houses much more than train platforms, it has a number of department stores and shopping malls. In the density of the Tokyo megalopolis underground space

Canary Wharf Station by Norman Foster is a great example of modern station design.

2. London Transport Museum

The Paris Metropolitan entrance, designed by Hector Guimard, gives the threshold a sense of significance and fantasy.

This fear is revealed when the complicated system of technologies fail. The King's Cross fire was one such event which showed that we are still not completely in control of this environment. A fire which started in the workings of an escalator was ignited by a cigarette butt and fuelled by the accumulated rubbish and tar was propelled into the ticket hall by a gush of air caused by the piston effect. It killed 31 people and left many more injured. Survivor's accounts of being trapped below ground in the smoke filled station are strangely reminiscent of the original fears which Charles Pearson faced.

In July of 2005 terrorists targeted the stability of the city by conducting attacks on underground trains in London. Following the bombings, which took the lives of 52 people, the city struggled to regain its footing as many were afraid to travel by Tube. Stories of the bedlam within the dark underground tunnels shocked the world and proved that we are still not entirely amphibious. The sense of claustrophobia, which is dispelled by the lighting, ventilation and control over the environment, is immediately reawakened when we the true nature of underground space is revealed to us.

Artist Miru Kim uses the public's fear of the unexplored corners of the underground in her photography to evoke these senses of

becomes far more valuable. In Montreal the ville intérieure, or indoor city, is activated due to the cold weather of the winter months. It acts as a number of interconnected complexes which form an underground city. Here the inhabitants of the city are completely at ease with subterranean life, its artificial environment offers a safety and comfort which is lost in the freezing streets above. However this retreat from nature into a new constructed underworld is still feared by many and seen as an act of humans disassociating themselves with the earth. E.M. Forster's apocalyptic vision of the future describes an artificial world created closer to the earth's core. In 'The Machine Stops', mankind has become increasingly reliant on the machine for survival, they have abandoned the natural world in favour of subterranean and with it their own natural abilities have diminished.[3] This could be seen as a realisation of fears of Pearson's opposition.

An underlying fear remains at the heart of the public's relationship with the underground.

Miru Kim; her provocative photography reveals the true underground environment in a terrifying yet beautiful light.

3. E.M. Forster; The Machine Stops (London: The Oxford and Cambridge Review, 1909)

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claustrophobia and unease. She includes her own naked figure in the shots to highlight the inhumanity of these spaces.

However, as long as we can impose our own environmental needs on the spaces the underground offers a new type of space. Philip Johnson's underground gallery is an example of one function which has found a suitable subterranean setting. In Ireland the Lighthouse Cinema by DTA Architects is one of the most exciting uses of underground space in the country.

Charles Pearson devised the concept of underground rail as a unique solution to a common problem. It resulted in one of the most innovative and pragmatic systems still in use in an increasing amount of cities worldwide. It has engaged the public and has asked them to reconsider their stern relationship with the subterranean world. The success of under-

DTA Architects' Lighthouse Cinema in Dublin's Smithfield. It creates a warm atmosphere through its use of lighting and materials while the ceiling expresses its true subterranean nature.

ground space relied heavily on the success of the London Underground, which through the necessary developments in technology and design, has proved the use of subterranea as an inhabitable space for much more than urban transport.

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IDENTITY: IN SEARCH OF A PHENOMENOLOGICAL VERNACULAR

Jennifer Kingston

Introduction

A Desire for Difference

Irish architecture is in many ways without an identity; materiality and ideas increasingly being drawn from non-indigenous sources. Architecture lacks the means to fully describe trends which are emerging as the dominant strands of thought surrounding the evolution of vernacular architecture. Irish architecture has been predominantly described in terms of how we perceive space through vision, it may however be more appropriate to describe the emerging vernacular in terms of a complete sensory experience, one which encompasses relationships to past and tradition. In doing so one hopes to understand the development of the vernacular and begin to interpret and describe the synthesis of our sensory experience and thus lead to a deeper understanding of what it means to build in and inhabit the contemporary Irish landscape.

Ireland's architectural landscape has become largely characterised by poor developer led projects, which for the most part now lie dormant. Large housing projects with little or no consideration to context or culture now border many Irish towns and cities; one such project designed by CDA associates for the builders and property developers John F Supple Ltd in Ballyvourney Co. Cork, consists of fourteen semi-detached dwellings which act as poor substitutes for the family home. One must only glance in an estate agents window to view the poor building stock whose future is now uncertain. Examples are numerous and aside from lacking in any architectural merit, many schemes actively destroy the landscape and tradition of Ireland. There are between 300,000 and 345,000 vacant houses and apartments in Ireland (total population 4.5 million).[1] That is not to say that a misguided nostalgia is more appropriate, progress

1 Peter Hegarty, "Silence reigns in Ireland's new suburbs", Deutsche Welle, March 09, 2010

Fig 1 & 2. Ballyvourney Housing, CDA Associates, (Photo CDA Associates).

and building are inevitable in a growing economy, what is necessary, however is a consideration of context. Context provides all the cues from which even market driven architecture can be informed, consideration of material and human experience would have resulted in a far more appropriate output of suburban housing. It would be amiss to attribute the problem solely to housing when almost all building typologies fell victim to the onslaught of economic growth. Large office developments and brash shopping centres now populate our cities, aiming for something of an international homogeneity. Perhaps, through examining the alternative, architecture borne of context, both social and economic it would have been possible to avoid the current built environment of both city and country. Certainly, pausing to identify ways in which a phenomenological vernacular has grown in spite of such development, one can learn from the both the mistakes and successes of others.

Chapter 1
Phenomenology and the Vernacular

"We need an architecture that rejects momentariness, speed and fashion; instead of accelerating change and a sense of uncertainty architecture must slow down our experience of reality in order to create an experiential background for grasping and understanding change"[2]

Juhani Pallasmaa

Phenomenology can be seen as a concern which lies at the core of an architecture in which human experience is paramount, it is an attempt to describe the means through which the world is perceived. Merleau-Ponty introduces the idea that there can be no definite distinction between body and mind as the key to understanding our perception of surrounding, if one could clearly define where the mind stops and the body begins the play between them would cease.[3] The body can be explained via various methods and languages, whereas the realm of the mind is much more difficult to describe both clearly and subjectively. One must learn to not immediately separate that which is corporeal and that which is not, as to do so would be denying oneself a way of perceiving the world. It is necessary continue to be both the subject and the object if one is to begin to understand the complexities of the human environment. Phenomenology offers a way of understanding what it is to exist in a space, being both the sensible and the sentient simultaneously, at once perceiving and being perceived.[4] Merleau-Ponty grounds his thought in a temporal condition, "the perceptual synthesis is a temporal synthesis, and subjectivity, at the level of perception, is nothing but temporality, and this is what enables us to leave to the subject of perception his opacity and historicity", Merleau-Ponty is trying to reconcile the inevitable subjectivity of perceptual experience with a more concrete

2 Juhani Pallasmaa, "Six Memos for the Next Millennium", Architectural Review (July 1994)

3 Maurice Merleau-Ponty, The Visible and the Invisible (Evanston: Northwestern University Press, 1968), 137

4 Ibid, 138

Fig 3. Gregory Crewdson, Untitled, 2001.

Fig 4. Steven Holl, Horizon, 2001. The figure could represent isolation or peace depending on the perception of the viewer.

5 Maurice Merleau-Ponty, Phenomenology of Perception (London: Routledge, 1962), 214

6 Steven Holl, Juhani Pallasmaa, Alberto Perez-Gomez, Questions of Perception: Phenomenology of Architecture (San Francisco: William Stout Publishers, 2006), introduction

understanding of human experience as a uniform experience.[5] The human body is not only an object among all other objects but is part of a network of perception, reacting to environmental pressures and contextual influence. To understand the importance of phenomenology in the description of the vernacular is to acknowledge that human experience is part of a process which is modulated by time and cultural context.

Human experience is governed by embodied memory (as described by Gaston Bachelard) and sensory input (sight, hearing, smell, taste and touch). In order to fully appreciate the impact of the built environment on the user one must understand both the conscious and subconscious perception. Places previously experienced, therefore, can influence our future interpretations of places both new and also perceptions of those already visited. Allowing for the inevitable variance in human perception from person to person based on past experience can initially cast some doubt on the logic of constructing architecture on a perceptual basis, however as pointed out in "Questions of Perception: Phenomenology of Architecture", unlike the critic and the philosopher, the architect must embrace the contradictions between perception and logic, doing so allows for the opportunity to create an architecture of the senses.[6] Bachelard argues that only a consideration of the onset of the perceptual image in an individual consciousness can restore the subjectivity to phenomenological thought. To ignore the differences in perception would in fact weaken the architectural experience to the point where all that is left is a hollow shell, void of richness and scope that considered architecture can offer to its inhabitant. When discussing an architecture of the senses one constantly comes up against a method of description which relies solely on sight as the receptor of sensory experience. One can easily lament the hegemony of vision; however it would be foolish to underestimate our reliance on sight. Sight,

Fig 5. In Connemara, Paul Henry (1876-1958)

for many people, dominates this process. Our perception can be completely transformed by adjusting even the most minor of factors, which would suggest that even though perception is, perhaps, lead by vision it is certainly not solely reliant on it. Herein lies the value of architecture built on phenomenological ideals, the user is afforded an opportunity to embrace the complete perceptual process.

The vernacular is inextricably linked to the phenomenological thought process; in essence the vernacular is borne of tradition, but also of a cultural, economic and political situation. The vernacular as described by Paul Oliver "comprises the dwellings and other buildings of the people. Related to their environment, contexts and available resources, they are customarily owner or community built, utilizing traditional technologies. All forms of vernacular

architecture are built to meet specific needs, accommodating the values, economies and ways of living in the cultures that produce them."[7] The vernacular includes the collective wisdom and experience of a society, which points towards a phenomenological tradition, building typology evolves slowly around the experiences and perception of a group of people. Ideas of the vernacular are constantly evolving to try and understand what might constitute the vernacular in a post-industrialised era, no longer is the vernacular confined to the realms of the country cottage or mud hut, now the vernacular can become more encompassing stretching to include all architecture that has the concerns of the human inhabitant and a shared social understanding of cultural norms and standards at its core.[8] It is this definition of the vernacular through which the evolution of certain strands of Irish architecture must be viewed. According to Brunner the vernacular is essentially opposed to rapid cultural and economic change, instead one can track the steady growth of a set of ideals and experiences through the vernacular tradition. To recognise the importance of the vernacular is to also recognise the importance of perception and phenomenology in architecture, doing so allows one to identify with the built environment at an experiential level.

7 Paul Oliver, Encyclopaedia of Vernacular Architecture of the World (London: Cambridge University Press, 1997) 23

8 Simon J. Brunner, Vernacular Architecture in the Twenty-First Century; Building Tradition (New York: Taylor and Francis, 2006), 26

Chapter 2
Vernacular and Time

The idea of an Irish vernacular centres around the homestead, the cottage, the farmhouse; these buildings are at the core of both Irish architecture and culture. The Irish cottage evolved out of a necessity to live in close proximity to the land and soon the rapid expansion of the population and the growth of agriculture in the late eighteenth century ensured that every road and lane was dotted with the unmistakeable white washed walls and thatched roofs.[9] Ideas of home, childhood and family are, for many, contained within the thick walls of these houses and as such the "cottage" typology has been an enduring one. The "domains of intimacy" [10], places to which we ascribe importance are invariably linked to the first home and as a nation Ireland has been slow to let go of the lone house standing on a plot of land, proud, self-assured.

The first cottages were constructed from what was immediately available; rubble stone and mud wall construction with rammed earth floors and sod or thatch roofs. These buildings were undoubtedly vernacular, and notions of the Irish vernacular are still tied up in nostalgia for a time when our existence was inextricably linked to the land and natural cycles. As we, as a nation, moved away from our agrarian lifestyle, the built environment began to shift away from modest cottages purely constructed for practical reasons and soon one desired to live in a house of the so-called "middle size". One cannot however discount the new development from the vernacular; these are still "foirgneamh na daoine", buildings of the people. Where the lines becomes blurred is in building conducted without the person and human experience at its heart, the large swathes of ill thought out housing estates are divorced from

9 Niall Mc McCullough, Valerie Mulvin, A Lost Tradition, The Nature of Architecture in Ireland (Belfast: W & G Baird, 1987), 73

10 Gaston Bachelard, The Poetics Of Space (Boston: Beacon Press, 1994), 12

Fig 6. Bothár Buí, Site Plan,
Robin Walker, 1969

Fig 7. Robin Walker in Bothár Buí, (Photo
John Donat, The Lives Of Spaces)

11 Shane O'Toole, "Building a Lasting Legacy,"
The Sunday Times, February 12, 2006

all notions of the vernacular. In order to track the development of architecture with a link to the vernacular one must look slightly closer.

Scott Tallon Walker are often thought of as the architectural practice that brought "modern" architecture to Ireland, Walker having worked for Le Corbusier and studied under Mies Van Der Rohe.[11] It is, however, in Walker's opus that one can find a successful fusion of old and new, the vernacular pulled into a new chapter of its existence in Ireland. Bothár Buí was built by Robin Walker between 1970 and 1972, located on the western extremes of County Cork; it is here where one can see a new stage in the evolution of Irish vernacular architecture. Walker reinterpreted the existing Irish vernacular and rooted his ideas in the site. The site at its most basic was the physical plot of land upon which Bothár Buí was constructed; however the site was also the historical, social and political context into which the house was placed. Buildings are perceived through the context of their site and often in order to understand the intentions of the architecture we must look at the site (both physical and the site in time). Walker established a strong relationship to site by addressing the site in a way which links the house to both the physical landscape and also to the social and psychological motivators of the 1970s in Ireland, Walker created a building which allowed its inhabitants to enter about, both, what it means to live on the Kenmare River and also how Irish people were redefining their cultural identity as they entered the 1970s.

Bothár Buí consists of six separate buildings, three of which are original farm outhouses and three which were added between 1970 and 1972. The three traditionally constructed buildings house the kitchen, a double bedroom and the utility room, one of the newly constructed blocks contains a large living room whilst the remaining two each contain two bedrooms and a bathroom. In order to travel

Fig 8 & 9. Bothár Buí, 2009,
(Photo Laura Evans).

between one room and another it is necessary to go outside, a fact which seems perverse considering the Irish climate however the house was only to be used for three months during the summer. The site plan shows the differing construction of the two types of buildings, on one hand a traditional thick wall and on the other a much lighter steel and timber construction. All the buildings face the sea offering links with the landscape, links with are furthered by the fact that you must go outside in order to reach another part of the house. The constant moving between inside and outside allows for the building to be experienced as a phenomenological sequence, the changing temperatures and surface underfoot all serving to strengthen the houses relationship to its site.

Bothár Buí marked a new stage in the Irish vernacular, new materials and construction techniques were used while still maintaining a fundamental connection with traditional building methods. That is not to say that this was an isolated occurrence, throughout Ireland the vernacular was being adapted to a changing people, who required different things from indigenous architecture. Many architects operating within the realm of domestic architecture in Ireland today have similar concerns about the importance of the vernacular and the role of phenomenological thought in their work. Ryan Kennihan speaks of his desire to return to the values of the well proportioned room and a material sensibility that is borne of the evolutionary process of the vernacular. Ryan's contemporaries Clancy Moore a practice formed in 2006 have similar values at their core, speaking often of the pitfalls of constantly striving "to reinvent the wheel". Of their work, which could be regarded as vernacular in its intention, "we, as contemporary architects, are not worried about the vernacular associations of rammed earth or the historicist associations of brick. These associations are to be worked with, reinforced or challenged".[12] The ver-

12 Andrew Clancy and Colm Moore, SofA
Lecture, April 12ᵗʰ 2010

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nacular is not about appearance but about presence. It is a physical artefact which contains within itself the continuously evolving social and technological situation in which it was built. The way in which the vernacular develops, through agglomeration and addition, the slow and steady way in which technology is tested and absorbed into a tradition are of utmost importance to giving a gravitas to the emotional experience of buildings and developing an understanding of how fabrication and the vernacular can hold an emotional weight in the psyche of a nation. Anything that can contribute to the continuity of the rich vernacular tradition can only be worth the effort as it is only in reflecting on the past that architecture can continue to be relevant to an evolving social and cultural situation.

Fig 10 & 11. Bothár Buí, 2009, (Photo Laura Evans). The fusion of building and landscape.

Chapter 3
Vernacular and Space

Space as both a medium and an experience is elusive; one can repeatedly try to pin down what it is to inhabit and create space, often to no avail. Iain Borden suggests that the very act of utilising space in turn contributes to the production of space.[13] Architecture, according to Borden, is not just space itself but a way of looking at space. Our spatial experience can be described in terms of the outgoing and the incoming, every space must both be experienced and experience.[14] One's life is influenced by the space around us, how it is modulated, trapped, explored. Moving through a space redefines it, by one's very presence in that space. Our bodies relay the experience to us but also alter the space, partake in the moulding and shaping of that space. Space, therefore, is in some ways constantly being subtly adjusted and changed. Space is not in a state of unalterable permanence, it is constantly being eroded by the movement and lingering of its inhabitants. Each of us carries with us a map etched on our being of our spatial experiences, as well as adding to one's own map we add to those of the spaces we inhabit.[15]

The role of memory in understanding architecture cannot be underestimated; memory can no longer be considered a private individual experience, but, can instead be understood as a shared collective experience. In Ireland, collective memory plays an important role in the development of an indigenous architecture. Civic and cultural buildings can too reflect a vernacular thought process, buildings which capture the spirit of collective memory and have grown out of an appreciation for tradition and context. O'Donnell Tuomey see themselves and their architecture as a reaction to the blandness and decontextualised nature of the prevailing architecture in

13 Iain Borden, *Skateboarding, Space and the City Architecture and the Body* (Oxford: Berg, 2001)

14 Edward S. Casey, "Between Geography and Philosophy: What does it mean to be in a Place-World?," *Annals of the Association of American Geographers* 91(4) (2001): 683-693

15 *Ibid*, 684

Fig 12. Letterfrack Pavillion in Venice, 2004, O'Donnell Tuomey

Fig 13. An Gaeláras, Derry, 2009, (Photo Jenny Kingston)

16 O'Donnell Tuomey, O'Donnell + Tuomey: Selected works (New York: Princeton Architectural Press, 2006)

17 http://architetture.supereva.com/ files/20030320/index_en.htm, Elena Carlini and Pietro Valle in conservation with Shelia O Donnell and John Tuomey in Dublin

Ireland at the time, the end of the 1980s. Upon their return to Ireland from working with James Stirling in Britain, O' Donnell and Tuomey were determined to re-engage with the Irish urban context, self described as having "a deep appreciation for the heroic period of modernism with a concern for context and the use of historical precedent".[16] O'Donnell Tuomey view the vernacular tradition as the possibility to relate to nature and culture via ecology and craft; in short they see themselves as engaging "in history as a living cultural presence".[17]

O'Donnell Tuomey entry to the 2004 Venice Biennale concerned with the history of place at Letterfrack manages to provide an overview of the history, culture and landscape of the West of Ireland. The architecture unveiled its thinking through its use, the way a body moves through the building. Six years on the practice have just completed "An Gaeláras", a culture and Irish language centre in Derry. John Tuomey, at a site visit, spoke of the architecture as echoing the vernacular ideals of the Irish tower house (a link which is certainly not explicit) although, it is not necessary to force direct comparisons to a vernacular typology in order to appreciate the importance of this building to a vernacular tradition. What one finds is that the building unravels itself in its use, the circulation wraps around a central void, invisible, yet omnipresent. Moving through the space redefines it. The architecture embraces the fact that its central void is constantly being altered in its deliverance of its occupants to their various destinations. An Gaeláras cannot be judged in photographs, or through drawing, to understand it one must engage with it through movement and use. The use of finely cast board-marked concrete, each angle ending in a fine point implies care and skill in the maker, one can appreciate the apprenticeship, the passing on of knowledge from one generation to the next, and here in the detail one finds the vernacular.

Fig 14. Concept Sketch, An Gaeláras, O' Donnell Tuomey.

Fig 15. Material in An Gaeláras, understanding of building methods.

18 Gaston Bachelard, *The Poetics Of Space* (Boston: Beacon Press, 1994),210

O'Donnell Tuomey, undoubtedly, have had a huge impact on the dominant trends in Irish architecture, they have brought to the fore the importance of building with phenomenology and the vernacular context in mind. Contemporaries of O'Donnell Tuomey, Grafton Architects immediately come to mind when searching for others who extol the virtues of an architecture deeply rooted in context, however, there are many others too: Dominic Stevens, CAST and McCullough Mulvin to name but a few. The multifarious nature of the emerging vernacular is evident in the vast spectrum of work produced across the architectural firms; the importance of human experience is, however, a constant.

Memory can be employed as a means of connecting to a phenomenological vernacular, Bachelard underlines the importance of the house as an influential factor in human existence, "a house that has been experienced is not an inert box".[18] The house is the first shelter of the human; it acts as ones first container of spatial memory. TAKA, an architectural practice set

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Fig 16. Dining Table, House 1, TAKA (Photo
Jenny Kingston).

Fig 17. Room created on staircase, House 2,
TAKA, (Photo Jenny Kingston).

up by Cian Deegan and Alice Casey in 2006, who in
their 2009 entry to the Venice Biennale explore the
role of memory in a recently completed project in
Dublin. House 1 and 2 are built for two generations
of the same family, constructed through memory and
ritual. In the essay accompanying the piece in The
Lives of Spaces, TAKA explain how the houses were
constructed around pre-existing ritual and memory
of their future occupants. The living quarters of
both houses are centred on memories of activities in
the previous family home, a large concrete dining
table becomes an indicator of meals shared and the
creation of a room on the stairs recalls childhood
memories of the occupants. The houses are also a
play on vernacular use of material and construc-
tion methods. The Flemish brick bond, no longer
functional in an age of layered construction, is pulled
apart to create a brick screen to the rear of the house
and a protrusion to the front. By pulling apart the
brick bond and assigning a new function to each part
TAKA are exploring the ways in which vernacular
building methods can be adjusted to suit contempo-
rary situations.[19]

Tradition can be viewed as the conscious and
creative adaptation of past experience and collec-
tive memory to the needs and circumstances of the
present.[20] The vernacular is inextricably linked to
the role of memory in the creation of space and thus
to a phenomenological tradition. In order to create
architecture in which it is possible for the occupant
to identify with a lineage of cultural and social events
and actions, one must consider the ramifications of
memory in the space.

19 Irish Architecture Foundation, The Lives Of
Spaces (Belfast: W & G Baird, 2008), 149

20 Simon J. Brunner, Vernacular Architecture
in the Twenty-First Century; Building Tradition
(New York: Taylor and Francis, 2006), 83

Conclusion
A Need For Change

Fig 18. Fireplace with architectural model, House 2, TAKA, (Photo Jenny Kingston)

Ireland has in some ways held on to its traditions, culture, and vernacular, however there is an increasing move towards a universality of approach. This universality of approach has lead to a disconnect between context and the built environment, striving for a homogeneity instead of searching for difference. As Emmett Scanlon points out, what is lost is any instinctive understanding of our social or psychical environment, a fundamental of our vernacular.[21] No longer is architecture created with the occupant in mind; capital and profit are now seen as more important than any long term benefit to the Ireland's culture or population. One must advocate a return to a phenomenological architecture, in which the life of a building is measured in centuries instead of decades. The legacy of a building must augment a vernacular tradition, connect to an existing lineage. In fact, context is key to creating places in which culture and tradition can continue to flourish. Essentially there are two schools of thought at work, one which is based on the study of place, culture and tradition and another who (to quote Will Alsop) think that "history is bullshit".[22] Both, perhaps are, valid however as an architect it is impossible to escape a responsibility to culture and place, history is of the utmost importance, and in the end context and human experience are all once has to base ideas on. Even a rejection of history is borne of a knowledge of history and a human reaction. Memory and feeling create rich architecture, where the user can flourish and in turn add to culture and tradition. In the search for identity one can only turn to phenomenology and the vernacular for meaning and it is this, identity which is worth the effort.

21 Irish Architecture Foundation, *The Lives Of Spaces* (Belfast: W & G Baird, 2008), 158

22 See Patrick Lynch's article "The pseudoscience of the starchitects makes them the real Roundheads", he expresses far more eloquently than I the issues with operating outside of cultural context, AJ December 13 2007

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F**K CON-TEXT..

...THE SKY IS FALLING!

Life & architecture in the Market Ecology

Dave Nealon

Ingredi-ENTS:

Introduction... section I, Aqua **, The sky is Falling... & I want my mommy!...** section II, Colourants; sunset orange **, F**K Context...** section III, Natural preservatives **, Rabbits!!...** section IV, Salt **, I remember when all this was fields...** section V, Flavourings **, They shoot horses... Don't they?...** section VI

introd-uction;

section i

"Let us congratulate ourselves, because the task of colonisation which constitutes the glory of our age would be only a sham if nature set definite, rigid boundaries, instead of leaving a margin for the work or transformation or reparation which it is within man's power to perform" - Vidal De La Blache circa 1918 (1)

"Now we live in the period of a new geological evolutionary change in the Biosphere we are entering the noosphere. This new elemental geological process is taking place at a stormy time, in the epoch of a destructive world war. But the important fact is that our democratic ideals are in tune with the elemental geological process, with the laws of nature and with the noosphere. Therefore we may face the future with confidence. It's in our hands. We will not let it go." - W. I. Vernadsky January 1945. (2)

These two wonderfully optimistic quotes were from two eminent scientists towards the end of two different world wars. Maybe it was the impending defeat of evil, the triumph of the good, that led to this optimism in the future, but this confidence was, to this point of time, entirely unfounded.

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The age of the consumer arrived and limited resources were being extracted at an alarming rate. Fossil fuels used to provide energy and facilitate transport release millions of tons of carbon dioxide and many other air bourne pollutants into our atmosphere, possibly leading to an irreversible rise in the planets temperature that will doom us all to a fiery Armageddon of biblical proportions.

If this scenario seems a bit far fetched then let us examine a more likely outcome, one that we are currently experiencing, the quality of the air we breathe, the water we drink. Just breathing the air in Mumbai is the equivalent to smoking to smoking 20 cigarettes a day. In Guangzhou the average age of death for traffic police is 38, this has nothing to do with violence or accident but more down to air quality, 52% die of lung cancer, more alarmingly, 47% die of lead poisoning! (3)

Thankfully we in the west no longer add lead to our fuel, but there are plenty other air bourne irritants leading to a marked increase in chronic lung conditions such as asthma. With the age of consumerism the demand for more cars, more gadgets, more product and more energy is contributing more pollution into the biosphere tat is already on the brink of saturation point.

This is the Market Ecology, it is an ecology that exists by supplanting the natural ecologies of this planet through the activities commonly associated with the supply and demand nature of modern consumerism. The Market Ecology is distinct from, but still part of human ecology by virtue of the fact that it would not exist with out mankind. Man has co-existed with the earth for millenia living within that boundry of balance that exists which was capable of supporting ourselves as well as the various other species that inhabit this world with us as long as we only used what was totally necessary. This is human ecology and is one of survival and even some reasonable element of comfort.

TOXIC WORLD

(3) Future City, Image of the Metropolis, NEXT Architects. page 275

X-Ray of diseased lung.

Since we as a species switched to agricultural activites and more recently industrial and commercial activities we have been pushing the limits of these boundries, driving consumerism and the need for "MORE". The Market ecology is therefore an ecology of excess driven by mankind's lust for power and demarkation of the landscape. It could be seem as an blight on the planet but for the fact that it is of human inception, there is also the potential of this market ecology to exist within the biosphere in mutually benefical symbiosis.

Fossil Fuel Burning power stations at the mouth of the Shannon Estuary

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If the economics that fuel this Market Ecology fail (as they have in recent months) the natural ecology is afforded some breathing space. The recent down turn in the global economy has meant that consumer demand as dropped in all economic sectors leading to a marked reduction in the output of carbon dioxide since the beginning of this global recession.

With the emergence of many major economies out of this difficult economic period, demand for the planets natural resources are yet again on the rise, so is it to late to curb our demand for these precious commodities and reverse the possibility of the doomsday scenario?

There are some in the scientific community that believe we have already past the point of no return, that it is too late to reverse the damage all ready done. Like the smoker who, had they given up before the age of thirty, they may reverse the damage done and regain full breathing capacity. For every year after this age that they remain smoking the prognosis declines until the inevitable occurs.

fROM bLUE pLANET to dESERT wORLD

The sky is fall-ing.... And I want my Mommy!!!

The world is bitterly divided over the correct course of action to take in tackling preceived climate problems, this being highlighted by the failed Copenhagen summit on climate change last year, developing nations demanding exemptions on carbon output where on the other hand many first world nations barely acknowledging that there is even a problem to begin with.

Couple this with the announcement that hackers had broken into the climatic research unit at the University of East Anglia (4) main frame idiscovered internal e-mails highlighting that the figures used to back up claims of global warming were massaged to give extra credence to the apparent facts. This flies in the face of good science which is all about correlating all available data in an unbiased and scientific manner to arrive at a conclusion that either supports or refutes a theory, anything else is borderline conjecture or just hypothesising, putting forward a theory that may have a grounding in fact after extensive further scientific research an analysis has been done.

The real difficulty with this revelation is that the hard work of many other research teams has now been put to question, how credible is everyone else's data? The global warming cause also hasn't been helped by the reaction to the hacking by the team in Leeds.

(4) For further information and the reaction from the scientific community to this event got to: http://www.channel4.com/news/articles/science_technology/ten+scientists+on+climate+change+aposemailgateapos/3450137

section ii

Their indignant outrage that somebody had hacked into the personal e-mails of these researchers rather than credible or detailed explanation of why certain figures were omitted or adjusted is a cause for concern.

The role of the world media also has a lot to answer for with each media agency from every part of the globe having some sort of agenda. Be it a political or a market driven motivation that puts a distinct "spin" on the whole debate , a prime example of this was with BBC world news (5) recently had an in-depth report with climatologists studying the Antarctic ice sheet after it was discovered a gigantic Iceberg had slammed into a glacial peninsula, shearing it away from the rest of the ice sheet.

The climatologist interviewed described it as a once in 50 or 100 year event which by no means was a direct a result of the global warming phenomena but at the same time acknowledging that rising sea temperatures are affecting certain areas of the South Pole. Compare this with Ireland's main broadcaster's (RTE 1) reporting of the incident (5) using edited highlights of exactly the same interview cleverly edited to sensationalise the report by inferring a direct link to global warming. This isn't the first time that sensationalist reporting and out landish claims from the scientific community has occurred.

(5) BBC World News
26/02/1010

(6) RTE 1 6-One News
26/02/1010

A NASA satellite image of the fine horizon line of our athmosphere protecting us from cosmic elements

Image of the Antartic from NASA satellite survey

In the 1980's James Lovelock reported that CFC's (Chlorofluorocarbons) had been discovered in the earths atmosphere and after further investigation discovered that this was depleting the Ozone Layer, the atmospheric portion that shields us from UV radiation, and a cause of several types of cancer. CFC's are entirely man made and therefore conclusive proof that man was causing immediate damage to the environment at all levels. Good scientific fact, that is until media hype, big science(CFC research became a multi million dollar industry after Lovelock's initial discovery) doomsday events ranging from the extinction of man through various incurable cancers to an impending ice age were bandied about.

After a rational examination of the situation was undertaken the way forward proved far more simple than had previously been anticipated, ban CFC's and the situation could be reversed, which was the eventual co-ordinated global action taken. What intrigues me in this debacle was that most of the monitoring of UV radiation of the Earth's surface was done around airports close to air polluted cities, where it was shown levels of radiation were actually decreasing .

Combined daytime NASA satellite image of the earth

Rather than believe their instruments the scientists unilaterally declared that the instruments were obviously faulty and therefore the results incorrect. It was only after the technology had been carefully examined was it shown that these results were in fact correct, even if they were inexplicable.

Lovelock surmises this wonderfully when he commented that "I should not like to be a passenger aboard an aircraft with these scientists as pilots, if that was how they reacted to messages from their instruments.". (7) At this point in time the language of impending world catastrophe is changing, the term Global Warming has been put into early retirement in favour of the new an even more vague term "climate change". The fact that the climate periodically changes every 2 to 7 years due to the effects of El Ninio, and major meteorological events occur every 50 to 100 years.(sometimes several times in the one day here in Ireland).

Carbon levels in the atmosphere have increased from 180ppm to 366ppm from the depths of the last ice age to the present day, in temperature terms we are talking about an increase 5°c, 2°c of these occuring in the last two hundred or so years (according to anecdotal evidence and meteorological records. Sea levels are rising the, evidence of this has been highlighted by the residents of the Maldives Atoll where this group of low lying Islands are quickly being overwhelmed by the sea. This may also explain why after 700 years Venice suddenly started to sink, it didn't, the water levels are rising there also! We also know from glacial records that rapid warming due to increased carbon dioxide levels triggers a cooling or glacial period on earth, this is the wonder that is Gaia (the name Lovelock refers to the Biosystem that is the planet Earth).

The Earth seen as Gaia is a simpler entity to comprehend than explaining away the earth as a collection of separate entities inhabiting a floating rock in space. The this concept sees the earth as a biosphere of interdependent biosystems working together to maintain a climatic and therefore ecological balance in an ideal world. Unfortunately this balance has been upset and the damage maybe done irreversable. Exclude the current debate on global "what ever it is they happen to be calling it at present", and take a cold clinical look at our recent [de-]evolution.

The Market Ecology is a recent phenomenon, it supports little or no life other than mankind even though it mimics nature and it's ultimate aim appears tobe the consumption of every useful natural resource despite the consequences. The Market ecology seems to be at odds with Gaia at every level, domestic, industrial, agricultural, and even the built environment.

Our domestic waste fills virgin tracts of land, poisoning the groundwater, releasing methane and fowl odours into the atmosphere, the energy we use to heat our homes releases carbon dioxide into the atmosphere at some stage of the process.

Industry releases waste into the air and water systems, digs or pumps natural resources from the ground, these are irreplaceable and at some point will no longer be there.

Agriculture is by far the worst offender in the new Market Ecology, clearing natural balanced ecologies, over populating the land with livestock and inappropriate crops that eventually poison the land, starving the rivers and lakes by introducing excessive quantities of nitrates feeding algae that sucks all available oxygen out of the water systems, forming an impenetrable scum, ending photosynthesis, killing fish and insect life, destroying natural ecologies.

And then there is the built environment, in many ways the iconic symbol of the market ecology in recent years, from creating landmark corporate headquarters to designing residential housing with little or no consideration of the natural ecology of the site provided, bending completely to the whims and short cut policies of the client or not standing up and saying current planning practices are a joke and building standards entirely inadequate . It is unfair to tarnish every architectural practice with the same brush but I believe that ecologically considerate practices are by far and away the exception rather than the norm and to imply that the market ecology can be

Tulip Farming in the Netherlands.
http://www.backgroundpictures.org/p/nature/aerial_view_of_tulip_flower_fields.jpg

solely attribured to the corporate worlds activities would simply be untrue. the Market Ecology has been created by mankind and not any particular sector.

Consider this, Gaia is capable (barely) of supporting 1 billion of us at western standards of living, there are 6+ Billion (8) of us relying on this Biosystem for survival. Can you imagine what would happen if the throw away culture we are accustomed to was suddenly available to every man, woman and child we would be extinct in a matter of years due to the pressure on the land to provide enough

Natural?

food not just to feed ourselves but to wastefuly discard as we do herein the west. The provision of adequate food supplies would require us to plant every fertile sector of the planet, requiring the levelling of Tropical rain forests, woodlands etc.

Current models show that the rain forests have their own micro climates that have been shown to collapse when deforestation exceeds 70% which we will examine in greater detail later. Perhaps there may be an alternative to the knee-jerk reactionism that currently grips the world, maybe even offering an alternative to the nonsensical directive driven policies of the EU and other nations that lead to so called the "0 Carbon" cities currently being proposed and built around the world.

The "0 Carbon" or "Carbon Nuetral" concept aims to buildings buildings that, through their design, and construction produces schemes when all the materials and the energy consumed in the manafacture, tranport and construction as well as the energy required to run these developments is added up the carbon output over the life time of the building should equal 0.

SWECO Proposal for "0 Carbon" Caofeidian City, China

This would require the building to produce most of if not all it's own energy, heating, water conservation, waste management as well as having a high level of recycability of building fabric materials at the end of it's life time. The projected figures for some of these "0 Carbon" cities, like the climate data from Leeds, have been massaged to give better than achievable forcast data. They don't take into account the inherent carbon figures of manufacture and transport of materials, they also require the purchase of Carbon Credits from other nations (more of this directive driven nonsense) and they assume that each person would limit themselves to 200 litres of water per day (the "0 Carbon" Norman Foster scheme currently under construction in Masdar City, Abu Dabi) (9).

(9) Detail Magazine. Green Issue

This is not the fault of the designers themselves but the systems and guidlines that allow this offsetting to occur, the practice of Carbon credit purchasing makes no sense in the natural world as we should be aiming to minimise our carbon dioxide levels in a co-ordinated global manner. The current global assumption is that the majority of 1st world countries would come well within their carbon dioxide output targets and be in a position to sell on their extra credits to the bigger, this is all well and good if it works but what if the situation occurs that the majority find that it makes more financial sense to purchase credits rather than actively strive to reduce emissions?

We then end up with a situation akin to the recent economic meltdown which occured largely due to the over exposure of banks and investors to stocks linked to the subprime lending market. Put very simply the subprime market was an extremely risky mortgage system based on high risk, high intrest and therefore high yield loans (requiring little or no deposit and unvarifyable or limited income on the part of the borrower) that relied on the steady performance of prime (reliable) loan books. These schemes are only viable when a strict ratio of high risk to prime loans was observed. The problem was this ratio was not observed due to poor regulation and greed.

The similar could be said about the buying and selling of carbon credits, but at what point can you no longer purchase these credits and how well is this system going to be regulated.

The alternative nay, requires a change in how we look at Gaia and how we work in unity with Gaia or find ourselves facing extinction as a species. Gaia has experienced and survived catastrophes that wiped out 95% of life on earth, the last of these happening 65 million years ago after a large meteor strike, but yet the planet survived and continued to support life. There is a distinct possibility that we have left it to late to completely reverse all the damage done but we can slow the degradation.

This combined night time NASA satellite image shows what the world would look like if the sun suddenly decided to switch itself off. the light eminating from our urban fabric highlights how much of the planet mankind has occupied.

If we look at mankinds habitation of the earth using the analogy of a parasite and host. There are four possible eventual outcomes:

1. Gaia's natural defences destroy the parasite.
2. Gaia and the parasite fight an on going campaign of attrition indefinitely.
3. The parasite kills the host.
4. The host and the parasite enter a new relationship of symbiosis thus benefiting each.

The road that we currently find ourselves on will eventually lead us to kill both Gaia and ourselves, or the just as likely scenario of Gaia will restoring the natural balance by eliminating us. The ideal solution would be to live in symbiosis with Gaia but we have extended our population base far beyond that which is sustainable, and the damage we have inflicted maybe too great. This is a goal to aspire to in the long term but one that will not be achieved in my lifetime. The only option left is that of the chronic illness with the aim of achieving symbiosis, which if treated swiftly and regularly kept in check the damage could be limited and eventually may even be reversed. The patient going on to live a fruitful and fulfilling life, say that similar to a person suffering from say Diabetes or Asthma the latter being an affliction that is ironically enough on the rise in mankind due to the increase of carbon dioxide and other air bourne pollutants in the atmosphere.

F**K CON-
text!......

Context, what is it and why is it so important in architecture?. As students of architecture we are taught that the new should be in context with the existing but we have to ask ourselves what do we contextualise with? What if the existing context was inappropriate or not suited to the ecology it originally supplanted? Could this be classed as poor context? There may have been buildings there all along, and they may have be of significant architectural quality or historical importance but this should not mean that a new development should be allowed to proceed purely because it fits with the existing built conditions. The context of ecology should also be given weight, not just the ecology of site but also the surrounding ecology and the effects of any such development would have on it. The following examples highlight what can happen when the context of ecology is ignored.

This first example is from Lovelock's "Gaia-Medicine for an ailing planet" where he describes a forest in Harrapan, Western Pakistan. The region had enjoyed regular rains during the monsoon season, the self sustaining forest ecosystem regulating the cycle perfectly. What happens next is something that is currently happening worldwide, from the tropical region of the Amazon to the central jungles of Africa.

section iii

The local farmers started to clear the forest ,slowly at first, to sow grass for their livestock, the rains came and went as expected. After 70% of the trees had been removed, the rains no longer came, the grass land dried up and turned to dust, the remaining trees withered and died. What had happened was at 30% of the original forest density it could no longer support or maintain the ecological balance leaving nothing but a semi arid desert unable to support all but a handful of inhabitants. Just imagine if this approach to forestry (mis-)management was to be repeated on a global level, the consequences of ignoring these warning signs are frightening and borderline criminal.

The previous example was from what would be described as a developing country where restrictions on deforestation could be seen as rather relaxed to put it mildly. The following example is a little closer to home. Just before Christmas 2009 Ireland experienced unprecedented levels of precipitation, many describing the levels that fell as the once in fifty year event.

The river Lee in Cork burst it's banks with devastating consequences. The Glucksmann Gallery on the grounds of UCC was flooded along with other parts of the campus. The new city Library and Archives were also flooded with the loss of priceless and irreplaceable documents and books. The ironic thing was the building was due to open officially the next morning. One of the main city water treatment plants was also flooded rendering it out of operation for several weeks affecting the city's ability to afford it's citizens the luxury of safe drinking water.

The terrible thing was if the ecological and geographical context had been observed then many of the documents that were lost would never have been in harms way in the first place. Country wide complaints were made about overgrown river banks, blocked streams and the main electricity supplier's indecisiveness in

releasing the extra volumes of water through its dams. It could have been far worse by all accounts. Had the storm water not been released it could of led to the collapse of the Inniscarra dam in the case of the Cork city flooding. This scenario is actually unthinkable, the death, destruction and mayhem unimaginable, what needs to be asked was why the dam hadn't been opened up sooner, the extreme weather had been forecast and they should have been aware of the tidal situation.

Flooding
in Cork City,
winter 2009

Looking at the geological and topographical context of the area, city centre Cork is generally a collection of low level Islands in the midst of Marsh. The River Lee has a record of flooding on occasion so why did someone see fit to design a basement in a building near a river that has flooded before and then decide to fill this basement with some of the rarest books and documents in the city's possession? This, even to an architecture student, seems non-sensical regardless of the technology or construction techniques available, playing with nature especially when water is involved, is a foolish endeavour destined to failure as Cork city library shows.

This final example is not from a developing nation but from the worlds largest economy, it but it has, I am glad to say, a somewhat happier ending. This is a tale of greed, infrastructure gone wrong, bitter splits amongst neighbours and missing mountains. The area I'm referring to was formerly Reseda Ridge located between San Fernando Valley and central Los Angeles. The ridge at 1,100 feet in height was levelled to make way for highway the summit removed to fill a neighbouring valley to accommodate a real estate development. The local ecology was destroyed communities were divided and conquered by elements interested in capital gain and little else. Fraud and corruption was found to be at the heart of the scheme and the project was stopped in it's tracks by state legislation .

Resdea Ridge restored
to a natural ecology

Caballero Canyon had been partially filled, this was a rather large water shed and was prone to flooding. Flash flooding had the unexpected action of destroying other smaller surrounding ecologies by uprooting mature trees and erasing local stream banks, and all in less than a year. By ignoring the context of the local ecology the immediate habitat and also some of the surrounding biosystems were destroyed .

The city decided that the highway should not go ahead but the cost of restoring the summit was prohibitive until nature & the Market ecology presented the solution. Gauze fires the previous year had left the soil of the neighbouring hills exposed to the elements resulting in landslides blocking some of the surrounding road networks. A dirt contractor was approached to take the landslide material and relocate it to the neighbouring Reseda Ridge. Had it not been for the adverse effects on these networks the natural cycle of events may have lead to the emergence of of new natural ecologies in this area.

The contractor submitted a tender package that came in 4 times lower than the nearest competitor due to the fact that he had cut his transport milage and time to a fraction of what it was. The roadways were cleared and a saving of 50 million dollars huge savings in carbon dioxide emissions. The flora and fauna was reintroduced from near by sources mammal and bird life were also reinstated. Thankfully the ecology of this area was recovered and high amenity area introduced for the city and surrounding neighbourhoods.

 What these three examples illustrate is that working against the natural order of things can have unforeseen consequences. They demonstrate that nature is a force to be reckond with and not to be taken lightly, we can push Gaia before she pushes back with devestating results and it is incredibly naive of us to believe we can have control over her.

RAB-Bits!!..

The Rabbit is dead....., long live the Rabbit! A very odd remark to make, almost as odd as the Rem Koolhaas declaration that "Rabbit is the new beef" made in Junk Space. In my quest to understand the Market Ecology we must turn to the great Market Ecologist, Master planner, Architect, Rem Koolhaas, who has been a prolific commentator on market ecology in the urban context, he has an unenviable understanding of the urban branch of the market ecology as evident in the following statement:

(10) Mutations,
Rem Koolhaas

"Shopping is an ecology in its own right. Shopping is a complicated and interactive system, working in an organic relationship based on the quasi-biological behaviours articulated among organisms and their shopping environments, if shopping is an endless web of flows and exchanges of shoppers, retailers, goods, information, humanity and money. Fluidity and flexibility, connectivity and continuity are crucial in this ecological web of shopping." (10)

There in lies the remarkable similarity between the natural ecology of the biosphere and the "quasi-biological" ecology of the shopping mall, it's a pity that they are so completely at odds with each other, the latter being the opposite of the former.

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The market ecology has at its very core the concept of shopping. Shopping has permeated into every facet of modern life, from the obvious shopping mall (a 1950's concept that could be attributed to the sprawl of suburban living) right through to our very living rooms via the television and Internet. We are consistently bombarded by news of the latest revolutions in domestic hygiene!

RE 002

AIRPORT?

We don't travel anymore. We go to the airport, ferry port, train or bus station, we shop then we travel... and then we shop some more. The museum, that paradine of culture, we shop there also.. the art appreciation book or that life size Pollock reproduction!.... Shopping have made nature redundant, obsolete even, the shopping malls adorned in resplendent glory of mummified nature, no surprises, no pesky bugs, life ready to pounce unexpectadly at any opertunity ! Oh how gloriously sterile! And there in lies the tragic truth, the future we

How to make a Mall tree? Take one live tree, perfect it when it is at it's healthiest & therefore aestethicsally most pleasing by extracting the living mater, embalming the remains and mounting indoors by melding the (ex)-living mater with engineering

should, according to Vernadsky, have been facing with confidence has arrived, it doesn't look good. Shopping is a commercial activity, it requires product, stock, things to sell.

These things are manufactured, the require raw materials, some from natural resources, more from man made synthetics, all require energy at some point in there production and transport. This energy needs to be generated, so at every stage do we see consumption of natural resources, the destruction of natural ecologies occur through the supplanting of existing biosystems by shopping systems and then the further destruction more natural ecologies to service these shopping systems.

Koolhaas, in his discussion of "bigness" he declares:
"Together, all these breaks-with scale, with architectural composition, with tradition with transparency, with ethics-imply the final, most radical break: Bigness is no longer part of any urban tissue.
It exists; at most, it coexists. Its subtext is fuck context." (11)

Bigness, it seems, in the absence of a "theory of Bigness" is the icon of the market ecology. From Corporate headquarters to expansive shopping malls the landmarks of the market ecology mark out their territory both in the vertical and the horizontal, consuming all, respecting none. It also seems that the vagueness of the term "bigness" adds to the confusion. Perhaps the theory of bigness should be less about size or ignorance of context and more about encompassing the Whole and the Real, more about the humanist term "honesty". It's not just about recognising the bigger picture but acknowledging there is a bigger picture there to begin with, embrassing the positive side of the Human Ecology and by extention the rehabilitaion of the Market Ecology.

Le Corbusier may have been on to something with what Koolhaas terms the Cartesian Rabbit. He proposed 200 metre high towers

(11) S,M,L,XL: OMA,

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repeated at regular intervals of 400 metres facade to facade, the space between brimming with with all mannere of life. Every city is proud of it's identity and it's identity isn't the streets or spaces of these streets (to a lesser extent) it's about the iconic buildings that line these streets, we recognise New York by the Empire State, Chrysler buildings and Rockfeller centre, London by big Ben, St Pauls Cathedral and the Gerkin, so Le Corbusier failed to take into account the power of identity and where ever he went to sell his rabbit he was turned away.

Sketches and models of Le Corbussier's 'Cartesiean Rabbit'

The Lesson here is never underestimate the power of identity, wars have been fought over, won and lost over identity. Perhaps Le Corbusier would of been more successful if he had taken urban identity into account and proposed that the buildings standing on the edges of these spaces should be allowed develop their own personality instead of the glass towers he dreamed of installing everywhere. Thus setting in motion the conditions in which a potential merger of the Market Ecology with the Natural Ecology may be possible.

Do we need to level our cities, remove ourselves from the countryside and start from scratch? Probably not, the first challenge really is to not scrap the Market Ecology but to integrate it with the Natural ecology of the Biosphere (but we need not go to the extremes Le Corbussier proposed), after all, every thing within the realm of the biosphere is part of it and should aim to work in synergy together.

SWECO Proposal for
Urban Green house

In every city on the planet there are vacant lots, brown field sites, some lying idle longer than living memory can recall. As the city is the physical representation of the Market Ecology would it not be prudent to incorporate some of natural ecology into the city by converting these undesirable non-Spaces to something desirable, that are capable of harbouring all levels life from insect to small mammal and adding an aesthetic not often seen within city boundaries. It is, after all, well known that ecologies are most rich and diverse at there intersection or overlap. Examples such as Central Park in New York and the earlier mentioned example of Reseda Ridge are a testament to what is possible when some good rational thinking is applied to a problem.

There is also the question, in Ireland in particular, of the suburban wasteland of half built retail parks and shopping centres and what to do with these? The fact that the majority of these are most likely going to end up in national ownership and exist as they do, at the intersection of the market ecology and natural ecology the opportunity exists to reoccupy these shells as parks and horticultural ventures. Assuming that water supply is generally in place, we could, at a little, expense glaze the levels between first floor and roof and use these glazed areas as green houses for food production (SWECO, a environmental Swedish firm has proposed a similar type of scheme that is specifically designed for this purpose) (13), the ground floor becoming a storage/distribution purposes thus cutting transport costs, refrigeration costs, reliance on food imports (most of what we import could be grown under glass), and inevitably cut carbon dioxide emissions.

In terms of our planning and building standards we have the opportunity to make real progress here in Ireland. Ecological and geographical mapping of each site should be part of every planning application in rural locations. The minimum requirement for building in rural areas should be increased from 0.5 acres to 2.5 acres with

a stipulation that reed bed waste handling be implemented and 1.5 acre of the site to be planted with indigenous trees and plant life, to be maintained as required to ensure a rich and diverse ecology on the site which may offset some of the evasiveness of the building process. In cluster settlements of several dwellings would have the added benefit of creating small pockets of native woodland that would otherwise never have existed. It's a simple case of , yes you can live in the countryside but you have to do it in a sustainable and ecologicaly sensitive way.

A similar proposal made by FKL Architects for Irish enrty to the Architectural Venice Biennale 2006

The current building regulations are also in drastic need of overhaul. As we are in the grip of a major recession the wise thing would be rewrite the book from scratch making the passive house the basic specification for the future. The domestic building industry has collapsed with 5 years of over supply waiting to be sold. A passive house is one that requires very little extra heating or in the more advanced examples no heating systems water so ever to keep the ambient tempature at a comfortable level (14°C -18°). The testing procedures need to be revisited, the current practice of rating the buildings efficiency off the plans being left wide open to abuse. This new era of strict guidelines and testing should ensure that Ireland could become a world leader in energy conservation.

I Remember when all this was fields....

Ireland has a problem, in fact it has several problems. High level corruption, back room dealing, weak planning legislation and nationwide obsession with owning a house in the country. We have discussed what happened in Cork in the previous chapter, unfortunately Cork wasn't the only part of the country affected by the severe rain. The weather highlighted problems that were caused not only by poor waterway maintenance but also poor planning regulations, permissions were granted all over the country in areas that should never even been considered for building on, water tables were built on (the Waterways estate in Hazel Hatch, outside Cellbridge, Co Kildare is fine example), flood plains were considered as fair game and the virgin farm land that surrounded our larger towns was swallowed up by suburban housing estate and soulless retail parks, many of which lie unfinished or unoccupied.

We have to accept that flooding is going to be a regular occurrence that we are powerless to prevent in its entirety but we can limit future damage. By identifying areas along the length of our water ways that we could deliberately flood and the water retained until it is safe to released, severe flooding throughout the country could be reduced. The multi-agency management of our national

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waterways is absurd, ineffectual and wholly in adequate as the events of late 2009 have shown. Flooding not only causes untold financial damage and hardship, it also destroys natural established ecologies, poisons our rivers by introducing nitrates (a by product of agriculture), raw sewage and even affecting our essential drinking water supply.

Water ground water contamination in the Shannon Region. (image from SAUL IU. http://www.saul.ie)

Nitrate pollution is a problem that thankfully seems to be on the reverse. It is longer a problem of over nitrating the fields with artificial fertilisers but more a case of over intensive farming, too many animals in too few fields means silage poisons the land and the resulting run off pollutes our rivers and lakes. The ground water quality of Ireland has been adversely affected in large part due to this practice. Introducing a buffer zone between intensive farming activities and river edges consisting of indigenous plant and tree species may absorb some of this runoff and encourage a rich a diverse river ecology which may even help with drainage and associated flood problems .

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Poor planning regulation stems back to the industrial revolution which largely bypassed Ireland. At the foundation of the Free State of Ireland in 1922 50% of the population was involved in agriculture and accounted for 75% of all national exports (13). This can explain the dispersed settlement pattern in Ireland due to this agricultural history and weak tradition of industry based urban development.

Example of the dispersed settlement paterns in the Shannon Region.
(image from SAUL IU. http://www.saul.ie)

Having a deep set tradition of rural living is not in itself the source of the planning problem, a number of other factors could be seen to be at work, in the seventies and eighties the popularity of an "off the shelf" approach to building was adopted courtesy of the publication of "Bungalow Bliss" and absolutley no appropiate design guidlines to refer back to that may have led to a more sympathetic settlement of our rural areas.

Energy conservation and production is something that affects us all and is accountable for the highest proportion of carbon dioxide released into the atmosphere. It is also the simplest problem to

address if looked at logically. When discussing energy production it is wise to think in terms of decades when dealing with the integration of the market ecology with the natural ecology.

Nuclear power is probably the cleanest safest option available to us a present, the only by products are steam and of course highly radioactive spent rods which need careful disposal. Unfortunately groups have rubbished this idea citing adverse environmental affects, which to tell the truth is in itself rubbish. The Chernobyl nuclear event ion the 26th of April 1996 had an adverse effect on the human inhabitants who were permanently evacuated.

The anticipated mutations amongst the wildlife that we were all foolishly hood winked into believing never materialised, in fact the wildlife population exploded and increased in diversity. Free from the interference of man species that had been extinct in this area returned and started breeding in peace.

Nuclear fission is the latest advance in energy production, in its infancy it will decades before it is commercially viable but the science and more importantly the engineering works. It is cleaner as the nuclear reactions are continuous, the nuclear waste is required to trigger the next reaction and therefore is expended, the only by product being is water.

Wind turbine generators are an unpredictable means of producing energy, the generators(windmills) themselves are mechanical and

face the elements in the most adverse weather conditions. They also require regular maintenance and replacement parts. Outside of the inherent energy consumption involved in the manufacture process, transport and maintenance, there is also the question of energy storage when there is excess power production. This form of energy production is only viable when used with other types of energy production. Tidal energy is another option that is similar in many ways to wind power but it is predictable and therefore reliable. It still suffers from the manufacture process, transport and maintenance problems but this is more acceptable it is a constant and reliable source of energy supply.

The PV (photo voltaic) cell which has no moving parts and only requires the sun to generate energy. Needles to say it only generates energy during daylight hours so really is only suitable for supplementing supply in conjunction with other energy sources.

The final form of energy production is biomass generators, where organic material is burned to produce energy. The problem with this form of energy production is the temptation to exclusively produce crops to feed these generators at the expense of food production This could put extra pressure on our all ready over stretched biosystem. These generators really are only viable when adequate organic waste or material is available without the need to plant supplemental crops.

Energy conservation is an activity all of us can contribute to, from the simple task of changing to low energy bulbs and switching off appliances instead of switching to standby helps to insulating our homes to a high standard all helps.   By adding insulation the amount of heat required to warm the home is significantly less and heat retention considerably greater thus saving energy and the amount of carbon dioxide released. The up shot for the consumer is that you save money also.

Our track record in waste management has up to quite recentley been deplorable. We have entusiastically buried mountains of waste that for the most part will not degrade back into the ecosystem. This waste has been covered over and forgotten for future generations to discover in the future. A damning indicement of our consumer culture, the Market Ecology.

The shame is that a large portion of this waste could be recycled into something usefull, organic waste can be converted to make fertiliser or produce energy. Recycling is an activity that everyone could be involved in and it doesn't require much effort. Most local authorities provide collection facilities for both organic and dry recyclables. Unfortunately here in Ireland we are woefully behind mainland Europe in our organic materials management as we still send most of our organic waste to landfill.

Waste not only exists as what we disgard but also how we choose to travel, where we choose to go and how we get there.

Conclusion: They shoot horses... don't they?

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We have seen through out this discussion that there is a serious problem with the world we occupy and more importantly the way we as a species occupy it. The Market Ecology is something we created. It is an ecology of extreme waste generation, deforestation, pollution, natural resouce exploitation and inherintly and most importantly a by product of human greed. Some may even regarded it as Human ecology except that it has taken on a life of it's own largely down to our inability to collectivity control it. The Market Ecology is now threatening our very existence as a species through the output of unwanted waste, a direct result from our individual demands.

It always pays to work with something rather than against and this practice need not be prohibitive. The natural world by it's nature allows quite a lot of room for manoeuvre before critical tipping point occurs, which in the current state affairs is quite worrying. In the global scheme of things the preservation of natural resources maybe problematic, the lungs of Gaia are located in developing regions where the inhabitants main concern isn't what kind of car they can afford drive but where the next meal comes from, preservation of rain forests is generally not high on the local agenda.

The Human Ecology should be an ecology that strives to operate within the boundaries of the natural ecology which we have learned earlier can be incredibley tollerent. The human ecology should be a considerate ecology where every action is appraised before any action is taken. It is an ecology that most of us contribute to, a large proportion of us individualy don't exploit and pollute the natural biosystems around us. We do it collectively and thus we feed the market ecology. The choices we make as individuals could drive the direction the market ecology takes in the future.

How each one of us function in our own corner of the Biosphere could have an indirect influence on the rest of the system functions. By considering where our food comes from, re-evaluating our puchasing habits by asking "do I really need this?", we could drive the market ecology in a much more ecologically sympathetic direction, after all the market ecology is in every sense and at every level is demand and supply driven. (we demand so therefore it has to be supplied). If we as a species demand a different way of consuming then the market ecology will have to adapt to full fill this need or cease to exist.

As every action has an equal and opposite reaction, we must recognise that although the impending disaster for the developing world may have a large portion of its cause elsewhere we will feel the effects here in the first world, from a little extra rain fall year on year to a complete change of direction of prevailing winds sometime in the future.

We have seen what happens when extra rain falls in Ireland, thanks to poor planning, runaway development and poor waterways management we found our selves up to our necks in water. We have to get out of the habit of saying "if this will happen again" and acknowledge that "it will happen again" before we can move on to preventative action.

We have to introduce the Humanist element of 'honesty' into all the equations when we appraise potential "0 carbon" developments, cities and houses. No more buying carbon credits if the figures don't work out. No more massaging the numbers to get the right answer. We must account for every move we make, from where we are going to build to what we are going to build it out of, where the materials come from and how they are made, how we operate it and how we dispose of it when it is no longer use full to us and when ever possible we should strive to include the methods of nature into our design processes.

(14) Ecodesign, A Manual for Ecological Design.

By embracing natural ecologies (15), learning from these ecologies and how they work with each other and finally, but most importantly respecting these ecologies we may finally be able pull ourselves back from the precipise that we currently find ourselves staring into that oblivion of doubt and uncertaintity from.

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Designing The New World

Ronan O Dea

Introduction

The importance of architecture in video games may seem quite insignificant, and as a result the role of an architect in game design seems pointless. This is because gaming has long being associated with being an escape from reality, the reality in which architecture exists. Architecture conventionally deals with the built form and needs to be experienced through the body. So how does in-game architecture have an effect on the player when their body is not physically experiencing it as you would when walking through Villa Savoye for example? Maybe first we should quickly look at architecture's use in other another entertainment medium, the movies. The use of architecture in film has been around since the early days of Hollywood, when large sets would be built to represent a certain time and place, in which the movie is set. Naturally the study of its architecture's importance in film followed suit. To gain an insight into the success of this use of architecture in early film, one would study the precedents of imagery in these movies and its relationship to the development of early modern architecture. Also in recent films, the contemporary or futuristic worlds that are represented show a vision of future urban form. These studies that are carried out still today would have provided valuable insight into a reaction to built environment. Architects would have learnt from the depiction of buildings in film, whether they had a positive effect on the masses, i.e. the movies audience.

Today the film industry is still booming, and architecture still plays a large role in film-making, but another, newer entertainment industry is set to out-perform the movie industry in popularity. It is the craze-driven industry that is gaming, which consists of video games on pc and games consoles (handheld or television-based). Gaming sometimes seems like a "niche", and the mainstream media certainly treats it that way. However, a comparison of the

New York Street, Grand Theft Auto IV, XBOX360

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gaming market with that of movies shows that gaming is much larger than many people think. Globally the gaming industry is said to be worth around $40 billion[1] whereas the movie industry accounts for about $27 billion worldwide.[2] Maybe now, with the huge increase in gaming, the study of architecture in video games need to be thought of and maybe the role of an architect in the design of computer games can be thought of as a serious notion. Just as architecture was found to be fundamental to film-making, in setting the atmosphere or representing a certain time and place, so too will architecture enrich the experience for gamers when they are fighting through levels or driving their favourite car through the streets of New York.

Architects can become important players in the design of video games, working with the brief to create buildings, cities and worlds that become a place to be explored by the gamer, and experienced through the visual by the gamer. Even with today's technology, it doesn't have to be restricted to a controller and 2D screen because with 3D gaming, touch screen and motion sensors, the experience becomes even more realistic. Architects already know what it is like to have to provide an experience which appeals to a number of the senses, so working with the game design team on these new technologies would be very constructive. These worlds could become the testing ground for so much of the architecture world's theories and notion's that have never been realised or constructed. It would be fascinating to see Le Corbusier's *Ville Contemporaine* built in a virtual world, inhabited by 3 million virtual people, all with real world counterparts who are playing interactively online. His theory would be scrutinised in a way he would never have dreamed of, other than actually building this large city. This approach is may seem farfetched but in reality it can easily happen and be successful.

1 Frank Caron, **"***Gaming expected to be a $68 billion business by 2012***",** Ars technica, http://arstechnica.com/gaming/news/2008/06/gaming-expected-to-be-a-68-billion-business-by-2012.ars

2 Reuters, **"***Global movie ticket saleshit record high***"**, ABC News, http://www.abc.net.au/news/stories/2008/03/06/2181568.htm

Playing Architecture

"All are temporary worlds within the ordinary world, dedicated to the performance of an act apart."[5]

Already similarities begin to arise between how architects work on a building and how they would approach working on the design of a game. These 'playgrounds' become the chosen site, with all its limitations and potential. In terms of video games these playgrounds are the setting where the game narrative takes place. The architect will then decide whether it is suitable to design from precedent and try to replicate a style of architecture from somewhere in history or propose new theories and ideologies. With respect to historical references, sometimes it is fundamental to the game narrative that the setting is based in a certain time so the architect then set's about rebuilding cities and places of old. Other times it might be that the game is set in the future and the architect envisages an architecture that has historical connotations but is ultimately contemporary. All these restrictions or outlines will obviously vary depending on the type of game which is being proposed.

If we are to understand the gaming experience, we should take a look at what it is to play games, or what to play means. According to Johan Huizinga, in his writings about the play element in culture, he states that

"First and foremost, then, all play is a voluntary activity. Play to order is no longer play: it could at best be but a forcible imitation of it."[3]

There is another characteristic of play: its secludedness, its limitedness. It is "played out" within certain limits of time and place. It contains its own course and meaning. These characteristics are important when one thinks of architecture in games as it provides the parameters which will need to be considered in the design process. An interesting characteristic for the architect to take into account when designing for a video game is that all play happens within certain limits either physical or non-physical, which happens deliberately or as a matter of course.[4] The football pitch, the card-table, the chess board and the screen are all play-grounds in form and function. The architect could have the almost godly task of creating these places, as all aspects of a virtual world can come under the heading of architecture.

There are two main methods of game design, one which involves creating certain mechanics that drive the design and the other which uses a narrative to develop the design process along. In a mechanics based game, the designers set a certain restriction that effects the player then build a story around this 'core mechanic'. In the game Super Mario, the 'core mechanic' is jumping as the character uses this ability to explore the game, collect items and defeat enemies.[6] Where the designers use a narrative to push the game through the early stages, they create an environment that allows this story to unfold and develop. An example of this is the very successful game series Final Fantasy[7] which is based on a fantasy story which was written by one of the designers. With this type of game

Showing Jumping 'Mechanic', Super Mario Land, Nintendo

naturally it depends on how descriptive the story is for the environment to be of a high detail. In a way, architects can be useful in the design stage with both processes, first with providing an architecture as a reaction to one core mechanic and in the second instance, taking reference from a story, creating a fantasy architecture.

As well as there being the importance of play in its basic form and the two design tools mentioned above, there is two main different game types, single-player and multi-player, of which the latter has become ground-breaking in recent years. Single player consists of the player playing games on their own where there opponent if any is computer controlled. The other type, which has brought gaming to the next level, something that, you could say, brought the recluses out into the light, is multiplayer gaming. This would have started as extra players on the same console but has grown, with the help of broadband, to provide the possibility of hundreds, thousands maybe millions of players in one game, with the ability to interact, like a large virtual world where every 3D player has a real world counterpart. There are many virtual worlds that internet users can enter and take part in at present,

and they are quite popular, even becoming actual economies with a currency that can be traded for real life currency. So as this industry grows and grows, and people play these games and enter these worlds, whose job is it to create the environment that these worlds contain? Again an architect would be a very useful addition to the design team in this instance.

There are many similarities between single and multi player games in terms of the in-game worlds. In a single player game, the world created either represents a real world environment or a fantasy world created by the designers. With the design of a fantasy world the possibilities when creating these worlds are endless. Games that fall under this banner usually centre on a main character that needs to overcome an enemy who, for example, wants to destroy their home world or endanger its natives. The need for an environment that is deep in detail and very atmospheric is very important to make these games and the stories that unfold in them, have an emotional impact on the player and effect them in a way that makes them feel more involved with the character they control. In a way what needs to happen is replicate reality so

Symmetric Castle, Generic Medieval Game, PC

that it becomes as if the player is within the game, like being able to control the character in a movie. As the graphics get better and better, as 3D and motion gaming becomes more developed, the line between reality and games is weakened. There is another in-game world which falls under the fantasy idea, but consists of architectural clichés so does have a sense of 'real' architecture. An example would be in a medieval game, your standard symmetrical castle that represents these times, which people relate to due to its use in movies and stories in popular culture, even if it isn't exactly what would have been present in the middle ages. These clichés have a certain connotation that the gamer is familiar with and in earlier game design would have been the easiest way of creating an environment related to the storyline. This could be considered a third game world type but as games become more in depth, these clichés are used less and less, as more details can be added nowadays, including better graphics and sound. The designer no longer has to create obvious relations to building types but can create more subtle details in the architecture and the sounds, to provide an atmosphere and experience that is representative of the time that is being replicated.

3 Johan Huizinga, *Homo Ludens,* (The Beacon Press, Boston, 1955), 7.

4 Johan Huizinga, *Homo Ludens,* (The Beacon Press, Boston, 1955), 10

5 Johan Huizinga, *Homo Ludens,* (The Beacon Press, Boston, 1955), 10

6 Christopher W. Totten, *"Game Design and Architecture"*, (Degree Thesis, The Catholic University of America, Washington DC, 2008), 7

7 Hironobu Sakaguchi, *Final Fantasy Series,* Square Enix, 1987-Present

Virtual Travel

Games that contain real world environments do not attempt to entice players away to fantasy worlds but instead try to bring the players back in time to historical event or to a certain place in the present. One of the more popular of these types of games are the war related ones, usually based on the world wars, in the pacific or in Europe. The imagery in these war games can be fascinating and sometimes can be the most effective way of experiencing these horrible times, even more so than movies. In the 'Call of Duty' series of games[8], both World Wars have been represented, with the player being set the task of controlling one soldier in various armies, usually one of the Ally forces. The atmosphere created in these games can be very moving and have an emotional effect on the player. The very high graphic detail of the environment, be it the rubble of a bombed German city or the rolling hills of the French countryside, creates a world which brings the player back in time. This imagery in addition to the realistic soundscapes offers the gamer the chance to experience the action which unfolded from the comfort of their own home. The designers working on these games have the fortune of being able to use historical documents to inspire the in-game environments, as opposed to the fantasy games whose designers have to create their worlds from scratch. One of the

Europe in WWII, Call of Duty: World at War, XBOX360

Virtual NY(Left) and Real NY(Right), Grand Theft Auto IV, XBOX360

best games, in terms of the detail of the environment and the effect that imagery has on the player, is Assassin's Creed II[9], which is based in Renaissance Italy. The city is an open world, meaning the player can roam throughout and is not restricted to certain boundaries as is the case in level based games. This gives one the opportunity to explore parts of the game that are not necessarily fundamental to the game-play or story. In a way you can go sightseeing in a Renaissance city while sitting at home. The cities featured in this game are Venice and Florence and also the Tuscan countryside.

As you wander through the narrow streets of Florence you hear the sounds of a busy town, the shopkeepers shouting, the blacksmith hammering away or the local crier announcing the news. A certain atmosphere is created, with the closeness of the buildings and their height creating dark streets, which then open to the beautiful piazzas, which gives the player the chance to catch a view over the buildings, maybe allowing you to gaze at the 'Duomo'.

The present day stories that are represented in games can be amazing in-

City of Florence, Assassins Creed II, XBOX360

sights into cultures and places that a gamer has never visited. Although the Grand Theft Auto (GTA)[10] series of games has been heavily criticised for its violence and representation of society, its imagery is brilliant, especially in the most recent instalment which is based in New York. The game designers replicate parts of the Manhattan, Brooklyn and other parts of the city. The player has free roam of these environments, be it driving through Times Square, base jumping from the top of the Empire State building or running through the projects in Queens. This experience is probably unrivalled in gaming, as the majority of games restrict the amount movement through the environment, forcing a path of exploration, although making the gamer feel it is their own choice. In GTA the designers provide a world which the gamer is allowed to move unrestricted through the real looking world. What is interesting though is it is mainly an outdoor world, with not many of the buildings allowing entry, but in a way this would be representative of one's experience of New York, as occupants of the real NY will probably never enter these buildings. Essentially what it is portrayed in the game is a series of facades that create volumes that are modelled on real-life buildings. As you walk through the real life Times Square you will see the same things that are experienced in the game version. There is an irony here, as although the game is centred on the car and buildings being approached by the car, the design of the in-game world was not driven by these criteria. As discussed in Learning from Las Vegas, a place designed with the car in mind would end up being the city of Las Vegas with it large signs on the roadside[11], but in the GTA game the designers just set out to replicate New York City and don't try to design specifically for the car. So although the original idea was for the game to centre on the car experience, you find yourself on foot a lot, running through Central Park for example.

8   Infinity Ward/Treyarch, *Call of Duty Series,* Activision, 2003-Present

9   Ubisoft Montreal, *Assassin's Creed II,* Ubisoft, 2009

10   Rockstar Games, *Grand Theft Auto Series,* Rockstar Games, 1997-Present

11   Venturi Scott Brown, *Learning From Las Vegas* (MIT Press, Massachusetts, 1972)

Architecture:
The Game

Multi-player is where the architect can be most expressive in a way they are used to, as the end user is a community of people who are much more free to explore and interact then the players in a single-player game, as usually the only purpose of the virtual world is for social interaction, not chasing a specific goal. The worlds that are created for the multi-player games are designed to provide a possibility of constant exploration, so when you play you see new things or meet new people, but at the same time the world needs to provide for the individual who doesn't want to interact or wants to play without others. In a way this should not be a new challenge for the architect as in building design, the space for the individual and the collective is

Fantasy World, World of Warcraft, PC

hugely important. The environment within these virtual worlds can be permanent, as in the buildings or roads etc, are all designed and created before the players are allowed enter, and they cannot be changed or altered. The players don't have the ability to design there on world around them and instead just exist in this pre-built world, which could be designed by the architect along with the rest of the game design team. Games like this are usually based around a certain theme, maybe the medieval ages or a war. They can involve a goal, for example killing the other gamers, or just be about the social interaction and exploration. In World of Warcraft[12], a very popular massively multiplayer online role-playing game (MMORPG) the

"*players control a character within a game world, exploring the landscape, fighting various monsters, completing quests, and interacting with other players.*"[13]

The other way these worlds are created is where each individual has their own plot or area to build on, so that they determine how the world looks and what 'architecture' is experienced. An example of this type is Second Life[14], where

Architecture by the People, Second Life, PC

"users can explore, meet other users, socialize, participate in individual and group activities, and create and trade virtual property and services with one another, or travel throughout the world."[15]

Although the role of an architect may be less important in the user-designed games, the result and effects of this type of virtual world creation can be very useful to understand a 'peoples architecture'. The modern architect, maybe the graduates who grew up with computer games, should realise that these user designed worlds can be a really useful tool to test theories and test the ideas that fall under fantasy architecture. You may find, given a little push that the normal users that play these games, non-architects, will begin to give valuable feedback to what they would like to see in around them. Even if the results are not viable to be realised in the real world, the ideas put forward will be hugely important for architects to take into account in the future. I feel we should look at these worlds as a source of information on design and urban development, just as if it were a million-people think tank. Already in game design there is a process where unfinished games which

are still in development are released to a number of play-testers, who give feedback which the designers take into consideration and incorporate into the game before the games general release.[16] This approach can be very useful in the design process of a building, whereby users can walk in around it in a virtual sense and give opinions back to the architect. It would also be very interesting to play-test various architectural notions put forward in the past, which remain un-built. As was mentioned before, being able to experience Corbusier's *Ville Contemporaine* within a game format would be intriguing to architects who have seen the drawings. Even to be sitting in Archigram's *Walking City* as it makes its way across the English countryside looking for a new temporary home would be fun and a valuable test for the ideas that the group proposed.

A lot has been written on whether are not this user input is good for the progress of architecture but what harm if at the end of play-testing the user decides on a decorated vernacular house instead of a pure white box. Maybe with this huge interest in gaming, hopefully now paired with architects using games to help with design, the untouch-

Walking City, Archigram

able 'pure' architecture will be preserved in the history of the 20th century and the newer play-tested architecture will be the talk of the early 21st century. It is not that the purity of form is the wrong way to go about design for the people, but there are some notions and theories from the golden era of modernism still being held onto tightly by the architects of today. To design for the people but not take criticism and feedback from them during the design just seems like the success of a project would be left to chance. Like in the Pruitt-Igoe housing projects, which won an award for its architect, with its Corbusian walkways in the air and high rise living that ended up being a major failure. The walkways became magnets to anti-social behaviour and on a final meeting with the remaining residents, many had left, after 17 years the blocks of housing were blown up.[17] This being the result of consultation with the people, remember.

12   Blizzard Entertainment, *World Of Warcraft,* Blizzard Entertainment, 2004-Present

13   http://en.wikipedia.org/wiki/World_of_Warcraft

14   Linden Research, Inc., *Second Life*, 2003

15   http://en.wikipedia.org/wiki/Second_Life

16   Christopher W. Totten, *"Game Design and Architecture"*, (Degree Thesis, The Catholic University of America, Washington DC, 2008), 4-5

17   Tom Wolfe, *From Bauhaus to Our House* (Jonathan Cape Limited, Great Britain, 1982), 81-82

Conclusion

Whether or not the opinion out there with respect to video gaming remains hostile, what matters is that architects begin to realise that there is a virtual world, sometimes far removed from our reality other times not, that needs to be designed with the care and interest that is shown to real world design. People occupy these worlds and this offers similar challenges that need to be faced by the architect in the design process, than can be found in regular building design today. Another fascinating aspect of architecture in games is that the laws of physics do not apply seen as there is no gravity, although this can be replicated in a virtual sense. Removing gravity from design will obviously not be what architects are used to, but it offers very interesting possibilities for design in the virtual world.

In terms of what game design can offer to compliment architect's work in building design in the real world, what is important to realise that the methods used in game design should not be intended to replace skills used by architects in the design process, but instead be just another added tool to help provide more depth in the design. Play-testing architecture and alternating between design by mechanics and narrative are very interesting approaches to design and should definitely be incorporated into the architects work. Hopefully in the future we will see architects on the design team of video games, providing valuable input, and also that game design methods find their way into the thinking of young architects and architecture students, cementing their place in the mind of the designer.

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Animal Architecture:
The Analog and the Digital
Ray Mc Greal SAUL year 3

Introduction

In this paper I am attempting to compare the validity of the digital design process with the physical or analog one. In parallel I am using the paper to examine whether digital morphogenesis in architecture shares any analogous or metaphoric relationship to the process of morphogenesis in nature. I have chosen to use animals and nature as a tool to compare the two processes for a number of reasons. Architectural design offen aims to resolve challenges that have already been solved by nature. Nature also demonstrates growth and adaptation techniques that have parallels in architecture. Futhermore through the use of meta-phors, architecture has become more than a means of providing shelter. It has roots that anchor into the studies of ontology.

First I wish to explain my defintion of the analog and of the digital.

The analog can be explained as something pertaining to a mechanism that represents data by measurement of a continu-ous physical variable, as voltage or pressure. The analogous world displays information through physical relationships. For example a spectator can see who is the winner of a horse race immediately in the relationship of the horses to ea-chother. The timings for the race are not connected in value as do not say whether the horse won by a nose or a length[1].

The digital is represented by computational properties of an entity. Computation functions as manipulation of integers, graphs, programs and many other kinds of entities[2]. But in reality, computation only manipulates strings of symbols that repre-sent the objects. The digital can also be described as relating to a device that can generate, record, process, recieve, transmit, or display information that is represented in discrete numeri-cal form. A digital readout for example can give out only one value however it can provide it as accurately as required[3].

Images of animals have been inscribed in the ancient hyrogl-iphs of the egyptians, they have been used as decoration on gothic style buildings in order to guard and protect and have also been used to inspire form, flows, materials and structure. Animals have occupied an important position in human cul-ture for some time. In many ancient religions animals were reguarded as sacred beings often leading to the attribution of divinity. In egyptian religion many gods have animals' heads and in Hinduism one of the most revered gods is Ganesh, who

1   Otl Aicher, Analogous And Digital (Ernst and Sohn, 1994).

2... CEB Reas, "Process/Draw-ing," Architectural Design, July/August 2006: 26-29.

3... Otl Aicher, Analogous And Digital (Ernst and Sohn, 1994).

4... Gunther Feuerstein, Biomor-phic Architecture (Stuttgart/London: Axel Menges, 2002).

takes the form of an elephant[4]. In Christianity the son of God is transformed into a sacrificial creature, the lamb. The minataur inspired fear in ancient greek mythologies while the trojan horse could be described as a symbol of inginuity.

Animals have inspired human construction since man developed the reasoning to learn from his surroundings. In more recent time this process has been translated from the analog world and adopted into the digital realm where the advent of the computer has changed the nature of the design process. Complex computer programmes devise algorithims which permutate infinate outcomes for given spaces. Much of this architecture is referred to as "organic" or morphological, which connotes animal or living beings however it is inspired by a digital age which is beccomming detached from the physical or analogous properties of the animal architecture it aspires to create.

5 D'Arcy Wentworth Thompson, On Growth And Form (New York: Dover Publications, 1992).

The insight of D'Arcy Wentworth Thompson[5] provides architects with a clue of how to approach a morphological or genetic design process. Their meticulous calculations of animal structures provide us with vital clues as to how to adopt our design processes. However must learn how to evaluate the worthiness of an animal structure or formation before we begin to use it as part of our design process. I am suggesting that animal architecture informs a way of thinking, rather than beccomming the design. It is in fact a tool that becomes an integral part of the process. It is important to explore the use of such a tool in both analog and digital methods. It is also important that we first learn how to design before we learn to manipulate these tools[6].

6 Greg Lynn, "Calculus-Based Form," Architectural Design, July/August 2006: 88-95.

Fig1 Depection of the Trojan Horse. The horse could be viewed as a symbol of inginuity. It also shows mans close relationship with animals and nature.

Form

The form, then, of any portion of matter, whether it be living or dead, and the changes of form which are apparent in its movements and in its growth, may in all cases alike be described as due to the action of force. In short the form of an object is a "diagram of forces"[7] Form is as a result of external forces acting upon a being. For example the shape of a bridge is largely determined by the application of external forces such as spans, loads and gravity. Similarly in order to describe a quadruped D'Acy Thompson use the analogy of a bridge, where the front legs and hind legs represent the piers with the weight of its body suspended in-between[8]. The form of the quadruped is largely as a result of external forces.

There are two methods of generating form that I am going to speak about. The analog method and the digital method. Analog form is form as represented by reality in our physical world. Digital form is form as represented by binary codes in a parallel, contrived universe. We experience form in the duality of analog and digital space because almost every form in the contemporary world can be modeled in cyberspace. With the continued growth of Facebook and various social networking sites people have begun to create a cyber self. This cyber self does not have to comply with the physical boundaries of the analog world. The temporal, physical and geometric laws of the digital and analog environments are incommensurable[9].

Largely natural constructions and physical processes have inspired the analog world. Animals and genetics have inspired form in architecture in numerous ways. They can inspire a plan either by their shape or movement, the shell of the building can be inspired by a particular animal construction, animal characteristics can take a form as shown by Santiago Calatrava[10], even a buildings surface can be influenced by animal skin. They create a sense of physical presence, robustness and inspire fairytales and fantasies. Many of the great designers have observed animals in order to learn new ways of expressing form, function and structure. Leonardo's design for a flying machine[11] displayed mans ability to observe and manipulate nature.

Mans desire to endow himself with a greater knowledge and understanding of the world has led him to utilize the computer as a tool for understanding, mapping and manipulating form. In order to harness the physical properties of animal constructions many architects use computers to model the specific animal

7 D'Arcy Wentworth Thompson, On Growth And Form (New York: Dover Publications, 1992).

8 D'Arcy Wentworth Thompson, On Growth And Form (New York: Dover Publications, 1992).

9 Jean Francois Lyotard, "Domus And The Megalopolis," Essay.

10 Gunther Feuerstein, Biomorphic Architecture (Stuttgart/London: Axel Menges, 2002)

11 Irma Anne Richter and Thereza Wells, Notebooks by Leonardo (Oxford University Press).

characteristics. Frei Otto[12] for example uses computers to aid his design process. His research has provided a link between an analog understanding of form and the digital pursuit of morphology. In the digital design era forms are generated using algorithms[13], which calculate complex mathematical equations and generate a type of "organic" architecture. I plan on exploring the use of the terms that connote an organic being as used to describe digital architecture. An algorithm as defined by the Oxford English Dictionary is: 'a process, or set of rules, usually one expressed in algebraic notation, now used especially in computing, machine translation and linguistics.' Each rule of an algorithm must be open to only one interpretation, which means that no intelligence is required in using the rule. These algorithms have become vital to the process of morphology in digital design.

Analog Form

The work of famous scientist, sculptor, painter, architect and designer Leonardo Da Vinci provides us with an insight into the characteristics and qualities of an analog form. Form is not to be confused with the use of a metaphor. The use of a metaphor attributes certain poetic qualities to an object while form is simply a response to the physical characteristics of the chosen mode of operation or environment.

"The genius of man may make various inventions, encompassing with various instruments one and the same end; but it will never discover a more beautiful, a more economical, or a more direct one than nature's, since in her inventions nothing is wanting and nothing is superfluous"[14]

Leonardo is describing the physical qualities of nature's forms, which are a response to aesthetics, environment and economy of materials and manifested in the form of a living organism. As put by D'Arcy Thompson "form is a diagram of forces[15]." He sees living forms as inspirational beings. They ignite human imagination through their imagery. However their forms are not to be copied but to be studied and adapted to make the human condition more complex, beautiful and pragmatic.

"A bird is an instrument working to mathematical law, which instrument it is in the capacity of man to reproduce with all its movements but not with as much strength, though it is deficient only in the power of maintaining equilibrium. We may therefore say that

12 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

13 Greg Lynn, "Calculus-Based Form," Architectural Design, July/August 2006: 88-95..

14 Irma Anne Richter and Thereza Wells, Notebooks by Leonardo (Oxford University Press)

15 D'Arcy Wentworth Thompson, On Growth And Form (New York: Dover Publications, 1992)

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such an instrument constructed by man is lacking nothing except the life of the bird, and this life must needs be imitated by the life of man.[16]''

The analog form takes into account the physical properties and inner workings of the bird or the biological form. Through scientific and creative endeavour Leonardo has studied the mechanisms for flight, the conditions that regulate these mechanisms and suggests that man is the final key in the activation of this form. Man provides the spark or life force that activates the analog form.

There are many ways by which animals can inspire form. The work of Frei Otto provides a good example. His concern is with the fundamentals of structure. The organisms he studies so meticulously provide him with a living analog structure. By analog structure I mean a structure, which has been defined by the availability of resources such as organs and building materials and has also adapted its expenditure of energy and use of materials[17]. Due to the process of evolution the organism has an inherent physical memory of what it is to exist in the concrete world. Otto's pragmatic approach to structure and lightness is informed by the lightness and efficiency of natures' structures. He allows natures structures influence his work in such a way that it becomes a tool which he uses to form his buildings. During this process he avails of computers to aid the design task however they are a not dominating factor in terms of determining a form. It is Otto's experience of a physical or analog space that allows him to design in this way. His background as a scientist determines much of Otto's success. He has spent much of his life studying the form-finding process in nature[18]. His knowledge of the physical properties that are inherent in all living cells provide him with the ability to design a structure that embodies the lightness of form and efficiency of material he strives to achieve.

Digital Form

Frei Otto's design process has also provided a link between the analog and digital world. Due to the complex nature of the structures he studies he has had to employ computers in his design process[19]. This process sees him investigating complex physical relationships and then allows the computer to do the number crunching. His analysis of the physical environment occupied by the organisms he studies informs the decisions he makes. He regards his role not so much as a designer but as a facilitator for a natural process:

<div style="float:left">Animal Architecture: The Analog and the Digital</div>

16 Irma Anne Richter and Thereza Wells, Notebooks by Leonardo (Oxford University Press)

17 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

18 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

19 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

"The desire to create a deliberate design stands in contradiction to the search for a shape, as yet undiscovered, is nevertheless subject to the laws of nature[20]"

This statement from Otto may overlap with some ideas in Greg Lynn's algorithmic architecture. Similarly to Otto's process Lynn's forms develop under the conditions of a carefully constructed environment. He does not have any preconceived notion of the outcome rather he allows the form to develop subject to the laws of "digital nature". Lynn sees the modes of operation, as offered by the computer limitating. Rather than being constrained by the computer Lynn has created software that breaks free of the reigns of existing computational programs. The software is based on algorithms, which create calculus-based form[21]. The algorithm allows the form to develop under binary constructed laws, which are set to replicate the nature of a chosen site or environment. These forms have endless variations. The overlap and difference with Otto's statement is clear at this point. Otto allows a set of rules or conditions as defined by nature to create his architecture. Similarly Lynn sets up a set of rules that allow him to facilitate a growth of from. However their appropriation of the computer at different

20 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

21 Greg Lynn, "Calculus-Based Form," Architectural Design, July/August 2006: 88-95.

Fig2 sketch for a flying machine by Leonardo Da Vinci. The design is clearly influenced by the form of a flying animal,

stages during the design process has lead to contrasting results.

Lynn's Embryological House is generated using software created by Lynn himself. He describes the house as an;

"Evolving, biological model of embryological design and construction.[22]"This form however does not display physical relationships as encountered by human beings[23]. It is a manifestation of mathematical relationships developed counter intuitively in a digital environment. The model does not evolve as a result of interaction with physical elements but through permutations developed by a two-dimensional computer program. As D'Arcy Thompson explain, something that consists of matter can be deformed by any pressure acting from outside, however slight[24]. In this case however form is not a diagram of forces but a diagram of binary code. Lynn's models do not consist of matter as there is no pressure or force acting outside the prescribed algorithms. There is nothing in this form that reflects a knowledge or adaptation of the physical environment. Therefore the shape of the house provides no real element of evaluation.

"There is no ideal or original embryological house, as every instance is perfect in its mutation[25]"
However if this type of architecture is claiming to be neither ideal nor original yet a perfect mutation it will end the need for the practice of creativity in design. This is a sharp contrast with the evocative creations of people such as Leonardo Da Vinci whose visions became the subject of debate, inspiration, admiration and respect.

One of the abilities of natural forms was to inspire creativity in the human mind. The forms provided to us by nature have inspired us to develop provocative, enchanting things. Our interpretation of form is also open to subjectivity and personal interpretation.

22 Greg Lynn, "Calculus-Based Form," Architectural Design, July/August 2006: 88-95.
23 Otl Aicher, Analogous And Digital (Ernst and Sohn, 1994).

24 D'Arcy Wentworth Thompson, On Growth And Form (New York: Dover Publications, 1992)

25 Greg Lynn, "Calculus-Based Form," Architectural Design, July/August 2006: 88-95

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"Where there are relationships there is comparison, evaluation, quality. Digital perception is very probably more precise, but has no element of evaluation[26]."
If we cannot evaluate a form we cannot learn from it.

26   Otl Aicher, Analogous And
Digital (Ernst and Sohn, 1994).

Fig4   Another example of
algorithm driven architecture as
proposed by Mkie Silver. The re-
sult is a highly ambiguous form

Metaphors

Metaphors have been used in architecture to align geometries with a sense of reason and meaning. Architects like Frei Otto and Santiago Calatrava[27] have carefully chosen metaphors and phrases, which describe their geometry or design process. In some cases even creating their own vocabulary so that it's meaning does not become lost in a maze of the obscure and the absurd. The link between digital architecture and the use of biology as a sphere of reference is irrefutable. The digital age has adopted biological terms with open arms. This seems to imply that the digital realm offers itself to the analog condition.

Analog Metaphors

The use of animal inspired structures is a mathematical endeavour as well as a creative one. This is reflected in the architecture of Santiago Calatrava. His structures require in-depth structural analysis and understanding. Calatrava hides this complex structural system from the observer simply by appropriating a metaphor that embodies his design process and thoughts. In his structures Calatrava recalls the way the body of a complex living organism is put together[28]. The analogy of the Quadruped and the bridge springs to mind. His metaphors allude to the qualities of creatures such as movement, seeing and change. Although his process is predominantly a mathematical one he constructs a sense of robustness in his structures around the poetics and imagery of animals and organisms. The characteristics of movement seeing and change become tangible in the human mind through the imagery he evokes in his structures. Frei Otto coined the term "pneu" to describe a cell structure, which is comprised of fluid filled space and surrounded by a cell membrane[29]. He has developed an architecture around the metaphor of organisms. He appropriates this by acknowledging the fact these organisms have adapted to their habitats by the processes of evolution. This process means that like the organisms he studies, his structures develop deep routed physical connections and relationships with their particular habitat. Due to the complex relationships they create these structures become comparable and comprehensible in the mechanism of the human thought proces[30].

Obviously not all attempts to derive architecture from animal forms are successful. However this is also part of the design process. Despite the many successful allusions to animals in architecture there has been abuse and misuse of metaphors[31].

27 Gunther Feuerstein, Biomorphic Architecture (Stuttgart/London: Axel Menges, 2002)

28 Gunther Feuerstein, Biomorphic Architecture (Stuttgart/London: Axel Menges, 2002)

29 Frei Otto, Frei Otto Complete Works Lightweight Construction Natural Design (Berlin: Birkhauser)

30 Otl Aicher, Analogous And Digital (Ernst and Sohn, 1994)

31 Gunther Feuerstein, Biomorphic Architecture (Stuttgart/London: Axel Menges, 2002).

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Metaphors can provide designers with clever solutions to design problems however in many cases the links to animals and animal constructions can prove absurd and somewhat comical. The literalness of some metaphors can alter our perception of a structure to a degree that it becomes ridiculous. Some of these references are obscure and are often unfounded. Many architects try to inform their work with studies of animal geometry however their attempts can become childlike gestures.

The quest for organic constructions is one reason why animal metaphors have become so obscure. In an attempt to route

Fig5 Artists drawing of Auroville spiralling plan

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their architecture into some deep earthly meaning many architects liken their designs to animals. Their misinterpretation of the analog nature of the animal or organism leads them to inappropriate representations of form structure and use.

One such example is Auroville. Auroville is an, 'experimental township' in the state of Tamil Nadu, India. The town, designed by French architect Roger Anger[32] has a spiraling plan, which resembles that of a spiral or a shell. The purpose of the spiral was such that the centre point would become an area of peace and perfection and that this would radiate outwards, permeating every space within the spiral. It can also be attributed with the characteristics of pureness and cleansing however the validity of such a claim is unfounded. It is worth taking note that this is a place where some public drinking fountains feature 'dynamised' drinking water, which has been 'made healthier' by listening to Bach and Mozart. Clearly the founders of this town have distorted views of everything, including the use of metaphors. However it should be noted that Auroville, despite its shortcomings provides people with a canvas on which to practice cultural, social, moral and political agendas as well as providing them with their basic physical needs. These are things that have yet to be captured in the auto-generative design process as practiced by Greg Lynn[33].

Digital Metaphors

Architecture in the digital realm has become overloaded with metaphors of embryos, genetics, creatures and organisms. The meanings of these words have become lost ambiguity of the digital realm. The characteristics of living things that inspired fables, fantasies, human creativity and science have been disguarded and replaced by ambiguous forms. These forms bear no resemblance to any living thing and are merely mathematical calculations justified by the nonsensical use of metaphors.

32 http://en.wikipedia.org/wiki/Auroville

33 Stanislav Roudavski, "Towards Morphogenesis in Architecture," International Journal of Architectural Computing 07, uimh. 03: 346-371

Fig6 Calatrava sketch of a bridge. He adopts the characteristics of the horse as metaphors such as movement and utilises the inherent structure

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Much of this type of architecture can be branched under the heading of "Morphology". This is the study of form, structure and configuration of an organism. It includes aspects of the outward appearance (shape, colour, pattern) as well as the form and structure of the internal parts like bones and organs[34]. Morphology or morphogenesis is a growing practice among architects and designers.

A man called Haresh Lalvani[35] is practicing an example of such architecture. He has been working on a series of projects where he has been seeking to integrate the shaping and making of metal surfaces into elements that create a seamless whole. He justifies the work by saying, "in nature the two aren't separate." This process involved the use of a "morphological Genome." He describes this as a universal code for manipulating form. He uses a metaphor to compare the properties of the genome with that of a stem cell[36]. When thinking of a stem cell it sparks thoughts about the origins of life. This metaphor allows us to recall the creation of man or the beginning of a life. This use of metaphors is misleading when describing his digital entities. His digital creations are not alive nor do they exist in the physical realm. They do however allude to the poetics of the space he is ultimately trying to create. He wishes for the space to represent a seamless whole whose surface shape and form are unified and perfected. It is not clear though if the digital world has room for the imperfect human condition.

Greg Lynn's architecture also calls us to question the appropriateness of metaphors in digital architecture. While he does not always intentionally use metaphors associated with organic natural forms it is the nature of his design process that they assume some kind of organic shape. Obviously aware of this Lynn has adopted an approach that suggests animalism, growth and evolution[37]: all of which are characteristics of natural beings. The final outcome of his process is something that tries to align itself with the form of a natural being. The visual language of the entity causes it to become shrouded behind a mist of the biological and the mathematical. The inherent characteristics of this kind of architecture do not provide the viewer with a means of physically understanding or relating the shape. In other words the spectator is without an analogy, connection or link to the physical world[38] instead he is asked to compute or calculate in order to derive a relationship. The success of this kind of architecture may depend on the evolution of the human thought process.

34 Karl Chu, "Metaphysics of Genetic Architecture and Computation," Architectural Design, July/August 2006: 38-4

35 Haresh Lalvani, "The Milgo Experiment," Architectural Design, 2006: 52-61.

36 Haresh Lalvani, "The Milgo Experiment," Architectural Design, 2006: 52-61.

37 Stanislav Roudavski, "Towards Morphogenesis in Architecture," International Journal of Architectural Computing 07, uimh. 03: 346-371

38 Otl Aicher, Analogous And Digital (Ernst and Sohn, 1994).

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Architecture Becomming the Animal

There has been a strong movement in architecture from an analog towards a digital age. This digital age coincides with genetic advancements and the two are becoming intertwined.

Architects are carrying out experiments in 'morphogenesis', which itself is a biological term. They are seeking to create something sustainable and invent new technologies. Their intentions are admirable however they are locked in a battle of contradiction and confusion between reality and cyberspace. The boundaries are becoming blurred by the misuse of scientific vocabulary to justify structure form and meaning.

Architects are creating software, which in turn creates its own architecture. These architectures are referred to as living things "creatures" and "organisms". These forms vaguely resemble living organisms and their origins remain ambiguous.

As I described earlier architects like Greg Lynn and Haresh Lalvani are striving to create a morphological architecture. There are people stating that "the goal is to engineer a new species from scratch" this is echoed by Haresh Lalvani who said of this kind of architecture,

"The goal is auto-morphogenesis, human products (including architecture) that design themselves physically, not just virtually out of encoded forms, processes, materials-something the biologists are likely to achieve first as a neat counterpoint to life[39]"

When Da Vinci's quote:

"We may therefore say that such an instrument constructed by man is lacking nothing except the life of the bird, and this life must needs be imitated by the life of man.[40]"

is juxtaposed with Lalvani's it becomes unclear how the computer intends to imitate the life of man. It is possible for the computer to generate mans form however it remains unseen if a computer can create a place for the human mind. With every advance in biology there is an application for digital design. The pace at which this advance is taking place is greater than a pace that we can keep up with. It becomes clear that at the moment digital architecture is striving to become something non-human. Its evolutionary process is taking a separate path to the one present in the natural or analog world. The physical processes that were once scrutinized by man's ability to decipher between the physical, the temporal and the

39 Haresh Lalvani, "The Milgo Experiment," Architectural Design, 2006: 52-61

40 Irma Anne Richter and Thereza Wells, Notebooks by Leonardo (Oxford University Press)

tangible are being reinterpreted in an ever increasingly digital age.

We are already unable to sever the link between ourselves, and the digital world. Almost everyone has a second nature, his existence as a quantity of numbers and values[41]. We represent grades to the education system, policy numbers to insurance company's, figures about family and origin to local authorities. We are becoming generalized and catagorised, which isolates the individual.

41   Otl   Aicher, Analogous And Digital (Ernst and Sohn, 1994).

Animal architecture is a metaphor for everything human and anything that has physical properties, which have been developed as a response to environmental, ecological and sociological circumstances.

The question is do we wish to hold on to everything that is animal in architecture? Or are we ready to embrace a digital age, which is evolving at such a pace that the only certainty is ambiguity?

The digital age must strive to answer these questions. The use of metaphors to validate architecture in the digital age has been weak and misleading. The use of metaphors has a strong relationship with form, however these two elements alone do not legitimate the sole habitation of the digital realm. The manifestation of form is one question that has to be answered in the digital age but as of yet there are many others left untouched. Assming the back-seat in the evolutionary stream is not an option for the animal world. Rather than assuming the role of facilitators of the evolution of the digital world it would be more interesting to think of life as being a hybrid of the analog and digital worlds. Architecture should become the animal. The digital world should be used to aid the design process in order to create living, breathing buildings. This world will have space for the mechanism of the human mind. Creativity will reassume its place thus providing the new digimal age with a canvas on which physical social, cultural and political practices can take place.

Animal Architecture: The Analog and the Digital

Fig7   Photoshopped image of a "digimal" planet

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Tunnel Visions

Seán Feeney

Introduction

"In another moment down went Alice after it, never once considering how in the world she was to get out again.

The rabbit hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well…

…Down, down, down. Would the fall never come to an end? "I wonder how many miles I've fallen by this time?" she said aloud. "I must be getting somewhere near the centre of the earth. Let me see: that would be four thousand miles down, I think-".

-Lewis Carroll - Alice's Adventures in Wonderland

The opening chapter of this book captures brilliantly Alice's fall into 'Wonderland'. Importantly he conveys the tunnel as a transitional space between two places and describes the ceaseless wandering imagination of a child in a space like this. Disorientation is the key subject in this opening scene of the book. Alice wonders how far she has travelled in all directions, vertically and laterally. She thinks that she will eventually exit in Australia or New Zealand. It is exactly this feeling of disorientation that one gets when travelling on a metro. Being idle in a moving compartment far underground, the only way of having an idea of where one is at an instant is by using a metro map. These modern maps are diagrammatic showing metro lines as parallel, and perpendicular colour lines, not showing their true distances. One might use the map sometimes found inside the carriage, where all stations sit on one straight line. Unless the commuter has possession of detailed survey maps, it is impossible for the frequent commuter to know exactly where he is in relation to the streets above; there are no landmarks to spot, no sun to track, only a dark monotonous tunnel with frequent stops.

The same can almost be said for above ground. It is quite difficult to tell where exactly is the train below. One can rely on the ventilation grates on the street or perhaps the station entrances themselves, however some stations are so large, the railway is not always where the entrance is. This disorientation associated with the underground is unique.

Hypothetically, a train could bring the passenger anywhere, perhaps using the wrong track. But it is impossible for one to realise when inside the train if they are going the wrong direction or not without the aid of the name signs at each stop. There is a notion here that is about the public putting their trust in infrastructure. The passenger has no control over what happens. This could be a fear some people may have with the underground, which also adds to the feeling of claustrophobia and panic. Considering feelings inside a train compartment could be quite interesting as variety would be a

It is this extraordinary world beneath cities such as London, Paris or New York which is unnoticed by the millions of passers-by each day. One of the only accessible ways of experiencing an underground space in the city is through the metro system. This bizarre city space should not be forgotten about when dealing with urban architecture. These completely artificial, man-made tunnels have such an importance in the modern city. As populations are expanding rapidly in certain cities, more and more the metro systems cry out for an expansion that requires an architectural attention.

The main focus of this dissertation will be on the architectural properties of underground rapid transit and how it is an important part of any city. The concentration will be on the London Underground in particular as it carries with it a great history. The interest in this subject stems from a personal fascination of artificial spaces and a particular enthusiasm towards the importance of urban transport. The underground is probably the subtlest of all city transport systems. Hidden away deep underground, traffic and pedestrians are not disturbed on the streets above. With limitations, underground railway lines are not always determined by buildings or gridded street patterns, shorter, faster routes can be taken. It is a strange and wonderful space that ought to be considered more in the context of architecture.

The Oddity Of The Underground

Beneath this sun-lit landscape of ours is a world of significant importance everywhere on earth. Layers of antiquity, tales of life and death lie beneath the surface everyday subconsciously to us. The ground beneath us can tell us everything we need to know about this planet, its history and its legacies. Anything could lie beneath us without us ever knowing, from scars of tectonic wars to buried man-made constructions. But this does not mean that the underground is detached from us, the daily affairs of every individual have direct connections with the underground, from turning on a tap to switching on a television. Underground systems of pipes, cables and switches react to these monotonous daily actions. This is the unseen world that individuals on the surface are subconscious to. Richard Trench and Ellis Hillman observe similarly:

Every time we turn on the tap, pull the chain, pick up the telephone, there is an underground movement: a gurgle of water, an impulse along a wire. Sometimes we are conscious of this movement; more often we are not. As we bask in the electric sunshine of our city surface, we are quite unaware of the subterranean labyrinth honeycombing the ground beneath our feet.[1]

Many continue their daily lives without considering how they acquire basic needs like water, heat and electricity. Becoming aware of this idea especially in cities is fascinating. Layers and layers of pipes, tubes, sewers, cables and tunnels buried beneath pavements heavy with preoccupied businessmen and tourists are alive. The underground is animated with electric cur-

London Tube during the War

Andrew Emmerson and Tony Beard, London's Secret Tubes, 2nd Edition (Middlesex: Capital Transport Publishing, 2007), 126

rents, flowing water and most importantly sometimes people. In other words, the city is depending greatly on the life and growth of the technical subterranean city. As the population expands, more and more services are buried below, adding to the thousands more of an unmapped tangle of infrastructure. This idea alone of a jumble of services hidden away from our sight is very intriguing from an architectural point of view.

The modern city is overflowing with infrastructure and technology and clearly underground space is priceless these days. Though it seems today the underground is almost used as a device for hiding undesirable objects and unwanted services that are displeasing to the public eye. However, the underground does not just hide services alone.

The image of the late twentieth and early twenty-first century city is dominated by the underworld beings: prostitutes and pimps, dealers and addicts, sexual deviants, mafiosi, terrorists, illegal aliens, slum dwellers. Homeless children live in sewers, men sleep in stacks of rented cages, another underground locks its doors to these fears, creating sealed-off, climate-controlled downtown cities beneath the open streets.[2]

David Pike makes a clear statement that the underground world was considered a dark and filthy place

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1.   Steve Pile, "The Un(known) city ... or, an Urban Geography of What Lies Buried Below the Surface," in *The Unknown City*, 269

where the only inhabitants are from a low class society. This causes a large social segregation amongst inhabitants of a city. According to Pike, the traditional underground perception was too feminine where "diseased and immoral slum-dwellers" could be found and at the centre was the "figure of the urban prostitute". The nineteenth century new Underground was to not only be clean, bright and safe but it had to be masculine as well[3]. The social interaction of the different classes to take place underground was the challenge for the nineteenth and early twentieth century designers.

The idea of using underground spaces extensively for a transit system may have seemed like an odd idea at the beginning of the nineteenth century, as the perception of underground spaces wasn't at all attractive as illustrated by Pike. However underground spaces for example caves have been sanctuaries for humans for millennia. Seeking shelter in natural occurring underground spaces was instinct. One example can be seen in Dordonge in France, where early neantherdals inhabited a whole cliff face.[4] Later, they began to carve out openings in the façade to allow for light and ventilation. The idea of cutting and tunnelling through earth is evident already from this early age.

A more important example than Dordonge is the underground city of Derinkuyu, located in the Cappadocian region of Turkey. One of many underground sites in the region, it is the deepest and more than 1500 years old[5]. Over eight storeys deep, it reaches depths of approximately eighty-five metres below the surface. This subterranean city could accommodate for between twenty and fifty thousand people, connected to other underground cities in the region with tunnels. This strange underground city was built for protection against a harsh climate and also as a defence against enemies. The self-supporting nature of the rocks provided the opportunity for the construction of the city.[6] The rocks also provided thermal in-

Section of underground city of Derinkuyu.
http://djyimg.com/i6/709130743011456.jpg

sulation from the cold nights. Air-shafts punctured the levels to ventilate all floors. [7] Not only did the people live underground, but animals were kept there also. Living without much light and fresh air may seem impossible, but it reminds us of London during the Second World War when Londoners sought shelter in the Underground.

There is an obvious obsession evident from these early settlements with underground living and construction. Is it the sense of security one gets from being underground, hidden away from the view above? Or perhaps it's a more comfortable place. This point is demonstrated in this extract from Kenneth Grahame's depicted 1908 English landscape, The Wind in the Willows:

> The Mole found himself placed next to Mr. Badger, and… he took the opportunity to tell Badger, how comfortable and home-like it all felt to him. "Once well underground," he said, "you know exactly where you are. Nothing can happen to you, and nothing can get at you. You're entirely your own master, and you don't have to consult anybody or mind what they say. Things go on all the same overhead, and you let 'em, and don't bother about 'em. When you want to go up, up you go, and there the things are, waiting for you."
> The Badger simply beamed on him. 'That's exactly what I say," he replied. "There's no security, or peace and tranquillity, except underground. And then, if your ideas get larger and you wanted to expand – why, dig and a scrape and there you are again! No builders no tradesmen, no remarks passed on you by fellows looking over your wall, and above all, no weather." [9]

2. David L. Pike, Subterranean Cities (New York: Cornell University Press, 2005), 1.

3. David L. Pike, Subterranean Cities (New York: Cornell University Press, 2005), 68-69.

4. Roc de Cazelle, Grottes du Roc de Cazelle, http://www.rocdeca zelle.com/#.

5-8 Reşat Ulusay, Hisataka Tano, Erdoğan Yüzer Ömer Aydan, Studies On Derinkuyu Antique Underground City and Its Implications In Geo-Engineering, (Istanbul: First Collaborative Symposium of Turk-Japan Civil Engineers, 2008), 75-76

This idea of security and safety portrayed in this extract is a very positive perception of the underground life. When 'the Badger' speaks about digging to expand as one needs, it is connected to the way underground infrastructure is built, constantly adding on. Similarly these extra tunnels or spaces that are 'scraped out' can just as easily be closed, just like the voids of the disused stations of the Underground in London.

However pleasant the Mole's underground haven may seem, one cannot forget that the underground is often associated with negative thoughts. In David L. Pike's chapter called the Modern Necropolis, he speaks of the underground as a place of burial, and its association with death. "Because its primary association was with death, the necropolis provided a naturalized image of a timeless and well-ordered space."[10] He makes a point that the Egyptians built their pyramids as second palaces for the pharaohs, the early Christians sheltered in the catacombs with their martyrs, whom they were about to join in heaven. But the modern underground found security in imagining "the complexities of the world perfectly ordered, controlled, and sealed off beneath the ground." This gives the notion of negativity and association with death. Western culture has been for a long time preoccupied with the burying of the deceased. Perhaps this leads to a negative association with underground spaces.

The History

While waiting in a jam-packed Underground carriage for the next stop, it is difficult to wonder how many passengers consider the importance of the of the transit system as they use it. Not many I would presume. The concept of an underground train system is taken for granted by commuters. Each day 2.7 million[11] Londoners use the oldest railway system of its kind on the world[12]. Inching towards its hundred and fiftieth anniversary, the London Underground has demonstrated to the world the greatness of this idea. On the 9th of January 1863, the Underground opened to the public. The opening proved a huge success. The Daily Telegraph reported "Hundreds on each occasion…had to be left behind to take their chances on the next train."[13] Clearly Londoners where excited by this new prospect and had to experience it as if it were a new ride in the carnival. The Underground was built at an advanced stage of the Industrial Revolution. Many creations of this period in history might not have been accessible by the public, which is what distinguishes the importance of the idea of the underground railway for the public. If it were a rail system built for the sole use of industry, the public would not welcome it in the same way. It was a novelty because they could use it whenever they wanted to. It quickly became an integral part of London city life, and soon the novelty wore off.

During the nineteenth century, many different services were being buried beneath the streets of London; over 600 miles of gas pipes were buried by 1834, and then began the electricity cables and by the middle of the century, a new telegraph system had been invented. Also beneath the streets at this time, several miles of a tunnel were built to accommodate the public services such as those mentioned above. These underground labyrinths saved the Council the inconvenience of having to dig up the streets every time a

9.   Kenneth Grahame, The Wind in the Willows (London, 1908).

10.   David L. Pike, Subterranean Cities (New York: Cornell University Press, 2005), 103

11.   Tubeprune, London Underground Statistics, 2003, http://www.trainweb.org/tubeprune/Statistics.htm (accessed April 5, 2010).

12.   Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000), 96

13.   Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000), 101

new cable had to sunken.[14] The Thames Tunnel was opened in 1843, a dual tunnel which ran beneath the River Thames at 76 feet below ground and 1200 feet long which connected the densely packed industrial area of the docklands to the other side of the city. This tunnel was intended for the use of pedestrians and carriages, however it became an attraction for criminals and prostitutes. This tunnel was later converted for the use of the underground railway. Today, the tunnel forms part of the East London Line between the stations of Wapping and Rotherhithe.

Like the underground cities in Cappadocia, the geology becomes very important to the architecture of the underground space. It defines how the space will be constructed. The strength and resistance of the type of rock was critical. London is built on the Thames Basin with many different strata of rock. The oldest layers consist of rock dating from the Devonian Palaeozoic and Jurassic periods. On top lie two layers of clay and sand, followed by an enormous layer of chalk, which reaches up to 655 feet thick. Above this large layer of chalk, are layers of sand and sediments from the river. Eventually, the layer of which most of the London Underground is built in consists of the famous London Clay. The clay comprises of a lot of sandy deposits. Many of the caves and underground spaces are all man-made as the layers of chalk and sand are not suitable for their formation of natural caves.[15]

quire an underground transit system? Many factor such as population growth and urban sprawl play a prominent roll. Concerning London, it is interesting to note how fast industry and technology was developing during the nineteenth century. It was only in 1804 that the first locomotive had been invented[16] and already by 1830, the idea of the London Underground was being developed[17]. London's population had more than doubled to almost two and a half million between 1811 and 1851[18]. Commuting had become a given factor of the London lifestyle as industry was blooming. The streets of the capital of England were already beginning to get congested. Charles Pearson, a solicitor and Member of Parliament for Lambeth, became an advocate for the idea of the underground railway as a solution to this[19]. From the 1830s, Pearson had proposed a basement-level railway with openings along the track for light and ventilation. This new line would stretch from King's Cross to Farringdon Street. The obstinate Corporation of London resisted the idea of building a railway within the city limits, however Pearson eventually managed collect two thousands petitions signed by leading businessmen and investigated many proposals for this new line. It was ill received by the Corporation and Pearson was humiliated. Even during the nineteenth century, politics and relations can be a hindrance on great infrastructural projects. It is also interesting that Pearson did not have to be an engineer or an architect to envision the future of city transit. He finally received approval for his plans in 1850[20] and the future of city transit began.

Pearson's new tunnel under construction
Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 79

Figure 04

14.   Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 79

15.   Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000), 9

16.   ThinkQuest team C006011, Steam Locomotives, http://library.think quest.org/C006011/english/sites/steam_loks1.php3?v=2 (accessed April 5, 2010).

17-19 Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 97

20   Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 99

The Design

An interesting aspect of the London Underground is that it is based on two types of tunnels.[21] Over the developing years of the London Underground, different construction methods were being used. The tunnels changed according to this development of technology. This had major implications on the design of the trains that used the tunnels forming the shape and size of the trains. The first line of the Underground was between Edgware Road and King's Cross. Constructing this tunnel involved a method called 'cut-and-cover'. This method consisted of building a deep trench in the street, enclosing it with thick brick walls and roof. This was then covered over. This method didn't involve problems of a roof caving in but it did cause chaos on the street above as businesses and local traffic were disrupted. This being the first time building such a tunnel, many accidents and mishaps ensued. Builders had to deal with burst water and sewage pipes and exploding locomotives[22]. Despite the fact that there were major health and safety issues, this method did continue to be used for other lines. In the 'Loop' line, tunnels were twenty-five feet wide and platforms were three hundred feet long with an iron-arched roof that spanned fifty feet. Brick, wrought iron and cast iron were the main materials in use for the construction of these tunnels and stations[23]. This type of construction and use of materials gives a certain quality of architectur, especially when compared to modern stations such as the Canary Wharf by Foster and Partners.

The second type used a different method of construction. These tunnels are built at a much deeper level than the first type. By using this method over the 'cut and cover' method as mentioned earlier, the streets were not disrupted. Also, they were constructed deep enough below ground that the tunnels (at a diameter of 3.5 metres) did not interfere with other underground services such as sewers and water mains. These tunnels were named the 'tube tunnels', hence the origin of the nickname 'Tube'. The trains that use this type of tunnel are smaller and can hold a lesser capacity than the other larger type. This method was available early on in the development of the Underground, however it could not be used until a way was found by not using smoke or steam for propulsion.[24]

As important as the design of the tunnel in which the railway system uses, the design of the train itself and its relationship with the users cannot be dismissed, for it is inside the carriages that the public experience the subterranean world. Today, the trains operate on a hierarchical system whereby various types of carriages are used in different formations to give the train what it needs for a specific line. A typical train usually consists of one, two or three units coupled together. Each unit usually contains three or four cars. From that, there are three basic types of cars; a driving motor car, a non-driving motor car and a trailer car.[25]

As mentioned earlier there are two types of tunnels of different diameters, as a consequence, all cars cannot be the same size. This creates an interesting variety in the design of this system of cars. It also causes certain problems for the designers. In order for the carriages to fit inside the smaller diameter, the floor level height is only 600mm above the rail level as opposed to 975mm.[26] This restricts the size and also the layout of the equipment under the floor. The large wheels do not completely fit below the floor, hence it causes an inconvenience in the layout of the interior of the car. Seats must be parallel to the sides of the car instead of perpendicular in order to hide the protruding shape of the wheel, which in turn reduces the amount of seats that can be placed in the car. The dimensions of the cars are crucial. To give an estimate size of the cars, the following example is the latest, 2009 stock; the carriage is just over sixteen metres in length, is

21. Tubeprune, Background to the London Underground, 2003, http://www.tubeprune.com/lu-summary.html (accessed April 11, 2010).

22. Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 99

23. Anthony Clayton, Subterranean City, Beneath the Streets of London (London: Historical Publications, 2000). 106

24. Tubeprune, Background to the London Underground, 2003, http://www.tubeprune.com/lu-summary.html (accessed April 11, 2010).

25. Tubeprune, Units-London Underground Train Design, 2003, http://www.tubeprune.com/rollingstock.html (accessed April 11, 2010).

26. Tubeprune, Units-London Underground Train Design, 2003, http://www.tubeprune.com/rollingstock.html (accessed April 11, 2010).

just over two and a half metres in width and the height is just over two metres.[27] The detail in dimensions are architecturally important as they express the minimum space a certain number of people can actually fit into, being comfortable or not. As a trip on the Underground is only a brief encounter with this tightly packed space, people have conformed to using it without complaint.

Suggesting that an Underground train at rush hour can be claustrophobic is an understatement. However imagining the Underground during World War I and II is almost inconceivable. Throughout the entire duration of the Second World War, a total of 31,000 people were killed as a result of the London Air Raids.[28] Bringing back the notion of security underground from Kenneth Grahame's novel 'The Wind in the Willows', it can be seen here again when fear was spread through London as city dwellers fled to the underground tube spaces. After the First World War, hygiene was a major issue for people sheltering in the Underground. Diseases spread like wild fire. Shelter in the tubes at the beginning of the next World War was forbidden. Brick shelters were constructed above ground instead, which did not suffice to please the public. One Londoner said, "I don't trust them, they wouldn't stand up to an air gun".[29] Eventually, the tube was opened. The following quote is how one person describes it, "I feel completely safe here. No noise, none at all, that's what gives you confidence"[30]. It seems the only place that would be safe enough in the public's eye was the underground. This gives a special attitude towards the space of the Underground, an almost trusting one.

The notion alone of the majority of the population of London seeking shelter in tunnels deep underground is phenomenal. A microcosm of the diverse social, political and racial groups from the great city above forming in the tube is a very appealing thing to imagine, especially for social reasons. Communi-

ties formed quickly in the stations as many carried out everyday duties and life continued as normal underground. It is an extraordinary occurrence for something like this to happen. It attracted artists and photographers alike. The painter and sculptor Henry Moore and Joseph Bato succeeded in capturing the sense of chaos and also sense of community that was found in the tubes.[31] Art wasn't the only creative form that managed to prosper form the underground, publications such as 'The Subway Companion' and the 'Swiss Cottager' began to appear.[32] This idea of different classes meeting together in one confined place is an interesting thought socially and architecturally.

Henry Moore's painting during the War
John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 64

27. Tubeprune, Car Dimensions-Rolling Stock Dimensions, 2003, http://www.tubeprune.com/rs-dimensions.html (accessed April 11, 2010).

28. John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 6

29. John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 16

30. John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 19

31. John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 64.

32. John Cregg, The Shelter of the Tubes (Middlesex: Capital Transport Publishing, 2001), 67

'Plessey Underground'
Andrew Emmerson and Tony Beard, London's Secret Tubes, 2nd Edition
(Middlesex: Capital Transport Publishing, 2007), 112

The Space

Is the Underground considered as an architecture or is it simply taken as granted space beneath the city used in everyday life? It is a strange architecture, one that relates closely to Rem Koolhaas' chapter on 'Bigness' in 'S, M, L, XL'. Here, Koolhaas considers five theorems on Bigness. The first one states, "Beyond a critical mass, a building becomes a big building". The second is the elevator, and such inventions that "establish a mechanical instead of architectural connections. The third considers the idea that the façade and core have little or no relationship with each other, "the façade can no longer reveal what happens inside". The exterior and interior become different projects. The forth is that the impact of buildings such as these "becomes independent of their quality". And the fifth, such buildings lose their relationship with the "urban tissue".[33] Quite frankly, the archi-

tecture of the Underground is this. If considered as a building, the Underground system in a city such as London becomes this 'ultimate architecture'; 'Bigness'. The Underground is based on mechanics of infrastructure. Sizes are all relative to measurements of man-made equipment and abilities. The architecture becomes mechanical. Relative to Koolhaas' third point, the underground has no exterior; it has no façade to reveal what may be on the inside. The only façades of this giant viral building are its entrances. As it has no exterior, a special architecture is formed, one which might almost seem alien and not important to some architects. It is part of the urban tissue in a way that reduces the distance between city centre and suburbia, however generally it is not purely limited to spread in relation with its context.

An interesting occurrence during the war was the usage of the tube tunnels as production space for the 'Plessey Company' that produced telecommunication products, vital during the war. Afraid of being

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33.   Rem Koolhaas, "Bigness," in S,M,L,XL (New York: Monacelli Press Inc, 1998), 499-502

targeted by the Nazis, they decided to bring production underground. A two and a half mile long twin tunnel enabled the company to occupy 300,000 square feet of floor space and employ a total of 2,000 workers[34]. The space almost seems clinical like, an un-ending view of equally spaced bright lights in a circular tunnel, full of machinery and workers. This rises an interesting point about the Underground space as being almost fully generic in a way that it can be adapted for many uses like living and working. The conditions were said to be similar to that of a normal factory above ground as the air conditioning changed six times an hour.

According to Koolhaas in his chapter on 'Junkspace' in Content, infrastructure is junkspace.[35] Koolhaas describes places like shopping centres, airports, and hospitals as junkspace. It's a space where it seems to have lost its architecture. It seems to be almost about the commercialisation of spaces, or even the commercialisation of architecture.

> *Continuity is the essence of Junkspace; it exploits any invention that enables expansion, deploys the infrastructure of seamlessness: escalator, air conditioning, sprinkler, fire shutter, hot air curtain…. It is always interior, so extensive that you rarely perceive limits; it promotes disorientation by any means (mirror, polish, echo)…[36]*

Here, Koolhaas describes the Underground in them exact words. It becomes so large that it is impersonal to the architect: "the architect is no longer condemned to stardom."[37] The tunnels of the underground have become so uniform that it is difficult to tell where one actually is, even across a much larger scale. Tunnels in London might as well be tunnels in Paris, New York or Tokyo. In a way what distinguishes these tunnels apart from each other might be as simple as a certain feature of the tunnel or quite possibly a poster posted on the wall.

Architecture in the Underground has a lot more to offer than just simply being a 'junkspace' beneath the city. It is one monumental building that has no openings, no façade. It is an odd architecture that reminds us uniform construction and engineering. Everything in the underground is designed, from every bolt that connect an aluminium steel plate to the carriage frame to every light on the ceiling. It could be quite possibly an over designed space. However the case may be, the unique architecture of the underground should be appreciated as having a monumental role in the modern metropolis.

Andrew Emmerson and Tony Beard, London's Secret Tubes, 2nd Edition (Middlesex: Capital Transport Publishing, 2007), 80

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34. Andrew Emmerson and Tony Beard, London's Secret Tubes, 2nd Edition (Middlesex: Capital Transport Publishing, 2007), 111

35. Rem Koolhaas, "Junk-Space," in Content, 162-171 (Köln: Taschen GmbH, 2004), 162

36. Rem Koolhaas, "Junk-Space," in Content, 162-171 (Köln: Taschen GmbH, 2004), 162

37. Rem Koolhaas, "Bigness," in S,M,L,XL (New York: Monacelli Press Inc, 1998), 513

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Ronan Farrell
Building an Empire

INTRODUCTION

The focus of my dissertation will be on both Adolf Hitler and his architect Albert Speer. My paper will look at buildings designed by Speer (heavily influenced by Hitler) and identify and discuss the overall aim of their architecture. To this end I will consider a number of themes which will include:
* the idea of 'Empire'.
 * the notion of 'arrogance and pride'.
* the relationship between architecture and war.
These themes are interwoven and reflect in many ways the relationship between Hitler and Speer which I will discuss in more detail.
 Considering these themes I will examine a number of major building works from 1933 to 1944. I will describe a number of different projects to include individual buildings and their influence on the ultimate plan for the re-modelling of Berlin. I will consider both Speer and Hitler's background and will discuss and expand on each of the three themes listed above.

ADOLF HITLER

Born in Braunau, Austria on the 20th April 1889 Adolf Hitler was the fourth of six children of parents Alois and Klara Hitler. We are told he endured a difficult childhood and became

Fig 1. Speer and Hitler in discussion over drawings for one of their many projects.

Fig 2. Adolf hitler at the beginning of his association with the NSDAP.

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involved in German Nationalism at an early age to rebel against his abusive father who had loyally served the Austrian Government. After his difficult early years Hitler wished to pursue a career in the arts. His father, however, had different ideas and wished for his son to follow in his footsteps as an Austrian Customs Official. Hitler was sent to a technical school in Linz in 1900 but was asked to leave this school for continual disruptive behavior. Following the death of his father in 1903 he was also expelled from the Realschule (a form of secondary school in Austria at Steyr in 1904.[1] Following this expulsion Hitler was never to return to any form schooling or education again.

1. Payne, Robert. The Life and Death of Adolf Hitler, New York, New York: Hippocrene Books, 1990

In the years that followed Hitler lived a "bohemian" type lifestyle in Vienna and made two unsuccessful applications to the Academy of Fine Arts in that city.[2] It was during this period that Hitler began to show a strong interest in both architecture and art. After "a few days I myself knew that I should someday become an architect. To be sure, it was an incredibly hard road; for the studies I had neglected out of spite at the Realschule were sorely needed. One could not attend the Academy's architectural school without having attended the building school at the Technic, and the latter required a high-school degree. I had none of all this. The fulfilment of my artistic dream seemed physically impossible."[3] As we shall see Hitler later began to live his architectural dream through his "friend" and colleague Albert Speer.

2. Hitler, Adolf. Mein Kampf.

Hitler went on to serve Germany in World War1 and was twice decorated

3. Payne, Robert. The Life and Death of Adolf Hitler, New York, New York: Hippocrene Books, 1990

for bravery. After the "Great War"
his allegiance to Germany became even
stronger. His allegiances had already
switched from Austria to Germany in
rebellion against his father.

Following the 'Great War' Hit-
ler became a police spy for the
Reichswar and was instructed to in-
filtrate a small political party
called the German Workers Party. On
inspection of the party Hitler found
himself drawn to the ideals of the
party and its leader, Anton Drex-
ler. As a result, Hitler thus became
interested in the politics of the
German Workers Party and ultimate-
ly became a member of their execu-
tive committee. It was in this posi-
tion that Hitler learned many of his
oratory skills. His ability to speak
eloquently and passionately in front
of large audiences became a cen-
tral pillar of his eventual success
in achieving party leadership even
though his rise to leadership was met
with stern opposition along the way.

Buoyed by his early successes
in politics Hitler masterminded an
attempt to overthrow the Bavarian
Government by force. After this at-
tempt had failed Hitler was arrested
for high treason and was sentenced to
five years in prison. He was, how-
ever, released after serving little
over one year of his sentence and was
pardoned by the Bavarian government.
It was during this one year period in
Landsberg Prison that Hitler penned
his first book Mein Kampf .

At the time of his release,
Germany had regained some economic
stability following the first world
war. Hitler and his party did not
hide their ambitions to rule the
country although they did strike an
agreement to do so by legal means.

Following the great depression of the 1930's the sitting government lost much of its support. Hitler sensed an opportunity and ran for President. His campaign ended in disappointment where he finished second to President Paul von Hindenburg. Although Hitler lost this election it place him as a strong alternative to the sitting government.

Shortly after Hitler was sworn in as 'Chancellor' of a coalition government between the NSDAP and the DNVP. A short while later Hitler had succeeded in removing any further limits to his power. Following the death of President Hindenburg Hitler arranged for the role and powers of the President to be transferred to the Leader and Chancellor of Germany. So began Hitler's architectural adventure and journey towards world domination.

4,5. Fest, Joachim. Albert Speer Conversations with Hitler's Architect. Great Britain: Polity Press, 2007

ALBERT SPEER

In contrast to Hitler Albert Speer was a German National being born on March 19th, 1905 in Mannheim, Baden. Born into a middle-class family, he experienced very few of the hardships Hitler had had to endure. After a normal upbringing Speer expressed his wish to study Mathematics in University.[4] However, his father assured him that this choice would "lead to a life without money, without a position or without a future."[5] Following this advice Speer chose to pursue a career in Architecture fol-

Fig 3. Albert Speer

lowing in the footsteps of both his
father and grandfather before him.

In 1923, aged eighteen years
of age, he began his studies in the
University of Karlsruhe, in the South
West of Germany near the German-
French border, and in 1924 changed to
the more prestigious Technical Uni-
versity of Munich.[6] In 1925 he moved
schools once again to the Technical
University of Berlin and continued
his studies under Heinrich Tesse-
now.[7] Tessenow was considered one of
the leading architects from the Wei-
mar Republic and was held in the same
esteem as Mies van der Rohe and Wal-
ter Gropius. On finishing University
he had impressed Tessenow and took up
a position as his assistant. In this
position he lectured some of Tesse-
now's classes as well as continuing
his own postgraduate studies.

Speer joined the Nazi Political
Party in 1931 after attending a rally
and being suitably influenced by the
speech of none other than Adolf Hit-
ler. Speer was greatly impressed by
both the man himself and the ideals
he espoused. Speers first position in
the party was as head of the parties
motorist association as he was the
only member in the area with a car![8]
In this position he reported to Karl
Hanke. Given Speers architectural
background, Hanke subsequently hired
Speer to renovate a family villa he
had bought. Impressed by his work he
recommended Speer to Joseph Goebbels
to help renovate the Party's Berlin
Headquarters. After completing the
job he returned to Mannheim with his
wife. This was at the same Adolf Hit-
ler came into power.(January 1933).
After the Nazi Party took control,
Hanke recalled Speer to Berlin. Goeb-
bels, who held the position of Reich

6. Fest, Joachim. Albert
Speer Conversations with
Hitler's Architect. Great
Britain: Polity Press,
2007

7. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain:
Weidenfeld & Nicolson,
1970 P 9

8. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain:
Weidenfeld & Nicolson,
1970 P 21

Minister of Propaganda in Nazi Germany, commissioned Speer to renovate his Ministry's building on Wilhelmplatz, a well known square in Berlin. This was the first of a number of projects Speer was to undertake for the new Nazi regime.

As it happened, the next project Speer was involved in led to his first interaction with Hitler. He was asked to submit a design plan for a Nazi party rally complex. The rally held annual rallies at Nuremberg. It was not possible for any of the rally organisers to approve the proposed design and thus Speer was sent to Hitler for approval of the design. Hitler passed off on the plans without actually conversing with the young Speer.

In this design Speer made use of large flags bearing the Swastika emblem within the stadium. By the careful positioning of these flags Speer was able to create a much more dramatic feel within the rally grounds.The success of this project led to Speers first major appointment to a position within the Nazi party as "Commissioner for the Artistic and Technical Presentation of Party Rallies and Demonstrations".[9]   From this position Speer was subsequently asked to work with Paul Troost, official Nazi Party Architect, in renovating the Chancellery. The Reich Chancellery was the official office of the Reich Chancellor. As the Chancellor had a residence within the building, Speer was asked to brief Hitler every day on each development as it happened. After one of these briefings Speer was invited by Hitler to lunch. This was the beginning of their 'friendship' and Speer quickly became part of Hitler's in-

9. Van der Vat, Dan. The good Nazi: The lies and lives of Albert Speer. 1997 P 49

ner circle. They began to meet every
day to discuss projects and Hitler's
architectural ideas. This close rela-
tionship with Hitler guaranteed Speer
a number of high profile commissions
from both the government and Hitler's
other high ranking officials includ-
ing Goebbels and Goering. Speer later
confessed "I belonged to a circle
which consisted of other artists and
his personal staff. If Hitler had had
any friends at all, I certainly would
have been one of his close friends."[10]
Following the death of Paul Troost
after illness in January 1934 Speer
was appointed as Chief Party Archi-
tect. His first commission in this
role was the design and construc-
tion of the Zeppelinfield Stadium
which formed part of the Nuremberg
Nazi Party Rally complex. This mas-
sive parade ring which was capable of
holding 340,000 party supporters is
all that survives of Speers projects
from his reign as Nazi Party archi-
tect. This stadium is perhaps best
renowned for Speers use of aircraft
searchlights to create the effect of
a stadium of light.

  After designing the German
pavilion for the 1937 International
Exposition in Paris, (for which he
won a gold medal,) Speer was appoint-
ed Building inspector for the Reich
Capital. This very powerful position
made him answerable to Hitler alone.
Speer went to design an number of
other buildings which I will refer to
later.

  The most extraordinary, and
in some ways most important, part
of Speers involvement with the Nazi
Party was his eventual appointment to
the role of 'Minister for Armaments',
ultimately leaving him in control of
armaments production for much of the

10. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain: Wei-
denfeld & Nicolson, 1970 P

Second World War. The then Min-
ister for Armaments, Fritz Todt,
died tragically in a plane crash
shortly after takeoff from Ras-
tenburg in Eastern Germany in
February 1942.[11]   Coincidently,
Speer was supposed to have been
on the same flight but cancelled
at the last minute citing fatigue
from constant travel. Follow-
ing the death of Todt, Speer was
called to Hitlers office where he
was made Minister for Armaments.
Speer was reluctant to accept
such a high ranking position but
was forced to by Hitler.[12]   This
was a reward for Speers mana-
gerial skills. However, other
high ranking officials put his
appointment down to his close
friendship with Hitler.[13]   From a
background in Architecture, this
role was certainly novel and in
some ways illustrated his bizarre
relationship with Hitler.

THE NOTION OF EMPIRE

        The notion of Empire is
something which is referred to
in most publications relating
to Hitler. His interest in the
Arts and in Architecture is well
documented. Hitler often de-
clared "How I wish I had become
an Architect."[14]   Speer ventured
to say that had Hitler been of-
fered an architectural commission
as a twenty year old in Vienna
he may never have entered poli-
tics. "Empire" in its most obvi-
ous form is associated with the
expansion of the German empire
itself. In the years follow-
ing Germanys invasion of Poland
the German Reich proceeded to

11. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain: Wei-
denfeld & Nicolson, 1970 P
193-196

Fig 4 Speer as Minister for Ar-
maments in 1944.

12. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain: Wei-
denfeld & Nicolson, 1970 P
193-196

 13. Helmer, Stephen Dean.
Hitler's Berlin: The Speer
plans for reshaping the
central city. Michigan:
UMI Research Press, 1980

take over much of Europe. At the
height of its powers it included
in its territory France, Belgium
and Italy including some of the
North African Continent. This new
'Empire' was to be ruled from the
new 'Welthaupstadt Germania' or
'World Capital' based in Berlin.
We will see how Hitler went about
creating this Empire and where
his main influences originated.

    Hitler was a keen student
of the arts as can be seen by his
teenage years spent in Vienna.
Hitler's interest in Roman histo-
ry is well documented. He paid a
number of visits to that city and
many Roman buildings provided the
basis for a number of his archi-
tectural projects. His interest
focused on how significant pub-
lic buildings such as the Roman
Forum and Coliseum could in fact
represent a strong and united
government, which in turn re-
flected an underlying strength of
community.[15] He also noted that
the only legacy that remained of
these great men responsible for
what Rome had become, was their
architecture. 'What would remain
of these great men today if it
was not for their monumental ar-
chitecture?"[16] In this instance
it would appear Hitler is inter-
ested in both creating an Empire
and creating a legacy for him-
self. He wished to give the Ger-
man people something they could
use to represent their history.
He used Mussolini as an example
stating 'he could point to the
buildings of the Roman Empire as
symbolising the heroic spirit of
Rome'.[17]
    Together with Speer he

14. Speer, Albert. Albert
Speer: Inside the Third
Reich. Great Britain: Wei-
denfeld & Nicolson, 1970 P
129

Fig 5 Hitlers early sketches
for the Peoples Hall and the
Arch of victory.

set about designing a new Berlin which he hoped would accurately reflect a new Reich and one which would ultimately celebrate the victorious Nazi political party. This re-modelling of Berlin was the first step in creating a new Empire reflecting the ambition for the expanded German Reich. His goal was to build a city that would "only be comparable with ancient Egypt, Babylon or Rome. What is London, what is Paris by comparison!"[18] Such intentions can be clearly seen in a number of his proposed buildings. The Zeppelinfield Stadium in Nuremberg and the 'Volkshalle' in Berlin are perhaps the best examples of this. Each project represents the key element in a larger complex of buildings.

The Zeppelin Field Stadium was Speers first major Commission in 1934. For this project Speer envisioned a "mighty flight of stairs topped and enclosed by a mighty colonade'.[19] This main grand stand and three lower stands enclosed a square field which was used for party rallies. The field was capable of accommodating over three hundred and forty thousand party supporters. The main rostrum and building were embedded unobtrusively in the middle of the flight of stairs in the main stand. This design was based on the Pergamun Alter which was built in the first half of the second Century BC in Asia Minor.[20] The Zeppelinfield Stadium is also the site of what is perhaps Speers most famous piece of work, 'The Cathedral of Light'. Although

15. Speer, Albert. Albert Speer: Inside the Third Reich. Great Britain: Weidenfeld & Nicolson, 1970 P

16. Speer, Albert. Albert Speer: Inside the Third Reich. Great Britain: Weidenfeld & Nicolson, 1970 P 96

17. Speer, Albert. Albert Speer: Inside the Third Reich. Great Britain: Weidenfeld & Nicolson, 1970

18. Stephanie Kirchner. How Hitler would have rebuilt Berlin. Time Magazine. March 24 2008

Fig 6 Model showing the overall plan for the Avenue of Victory.

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this piece was more aesthetic than physical Speers use of aircraft search lights created an effect that was 'both solemn and beautiful'. With the use of more than one hundred and fifty aircraft searchlights pointing skywards, mile long vertical columns of light encompassed the stadium.

Although the Zeppelin Field stadium is one of Speers better known works, the building that best illustrates this notion of 'Empire' was the proposed 'Volkshalle' or 'Peoples Hall' in Berlin. This is the building hitler regarded as his masterpiece. Hitler claimed he first made sketches of this building as early as 1925. Situated on the North end of the North-South Boulevard, this large domed building was to be over 300metres in height and be capable of holding up to one hundred and eighty thousand people. Based on the plans of the Pantheon in Rome it had a circular plan with a large rectangular portico on the front. The interior consisted of a central round arena with space for one hundred and fifty people standing. This arena was surrounded by three concentric tiers of seating with space for a further thirty thousand. This building, with its large domed roof, was to be the capitals most important and impressive building both in terms of its style and its symbolism.[21] It was intended to be the architectural centerpiece of Hitler's 'Empire'. St. Peters Basilica from Rome would fit into the building numerous times over.[22]

Fig 7 The Zeppelin Field Stadium during a Rally march.

Fig 8. The cathedral of Light created by the aircraft searchlights.

19,20. Speer, Albert. Albert Speer: Inside the Third Reich. Great Britain: Weidenfeld & Nicolson, 1970 P 96

It is clear that Hitler was not interested in accommodating functionality in design or indeed in accommodating the individual. These buildings were to be built as an intimidating force that truly represented the power of his empire. His vision that visitors would be 'overwhelmed, rather stunned, by the urban scene and thus the power of the Reich' had to be realised.[23]   These buildings were designed without a true appreciation of their proportions. On a visit to St Peters Basilica in Rome, Speer noted that the 'size has very little to do with the impression it creates'.[24] Despite this realisation, both Hitler and Speer seemed to agree that bigger was better. Perhaps it was not their size but their sheer lack of consideration for

21. Speer, Albert. Albert Speer: Inside the Third Reich. Great Britain: Weidenfeld & Nicolson, 1970 P 203

Fig 9 A Model of the Peoples Hall

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the human scale that made them so
incongruous. It can also be con-
sidered that Hitler's buildings
were not only pieces of architec-
ture but were also weapons of war.

ARROGANCE AND PRIDE

There is no doubt that Hit-
ler was interested in creating a
legacy for himself. His designs
may well have been driven by ar-
rogance and self-confidence in
his own position of leadership.
In the beginning Hitler's sole
aim seems to have been to erect
buildings which he felt repre-
sented the power of Germany and
the power of the Nazi political
party. He saw Berlin as "a big
city but not a real metropolis"
and refers to it as an "accumu-
lation of buildings".[25] Berlin
at the time lacked dominant pub-
lic buildings and buildings that
could act as a central focus for
community life. However as his
power increased he became more
interested in his own projects.
This notion becomes more and more
obvious with his ascent into
power. Speer once noted about
Hitler that 'since his accession
to power the proportions of his
designs has magnified tenfold.[27]
His architectural projects and
aims now form part of his plans
for German superiority. He of-
ten spent hours carefully study-
ing the future headquarters of
the Reich which would represent
'for hundreds of years to come
the power that had been obtained
in the era of Hitler'.[28] Hitler's
single mindedness, in terms of
his architecture, is best il-

22,23,24. Speer, Albert.
Albert Speer: Inside the
Third Reich. Great Brit-
ain: Weidenfeld & Nicol-
son, 1970

Fig 10

lustrated by his interactions
with Stalin. In 1940 Stalin re-
quested that Speer visit Moscow
as he felt it would be benefi-
cial for both sides. Hitler met
this request with anger and then
amusement. He made clear his fear
that Stalin would catch Speer in
a 'rat hole' from which Speer
would not escape until he had
built a new Moscow. He insisted
that Speers mission was to de-
velop Berlin into the new capital
of the Reich and into a city of
magnificent proportion.[29]

WAR AND ARCHITECTURE

Despite the large monetary
demands of the war Hitler con-
tinually pledged money to his
projects maintaining to the last
that Speers buildings and his own
vision for Berlin would be com-
pleted. In the last two years of
the war Hitler was pledging the
same amount to his building proj-
ects as he had been four years
previously.

Speer, in his roles as both
Reich architect and Minister for
Armaments, was obviously held in
high esteem by Hitler. Just as he
had done as an architect, Speers
influence over Hitler in his role
as Minister for Armaments allowed
him significant sway with Hitler.
Although architecture and war are
seemingly unrelated, in the case
of this subject it can be argued
that there are actually a number
of similarities. Far from only
being pieces of architecture such
buildings could also be seen as
weapons of war. Hitler used his
buildings as weapons of propagan-

25,26,27,28. Speer, Al-
bert. Albert Speer: Inside
the Third Reich. Great
Britain: Weidenfeld &
Nicolson, 1970

Fig 11hitler inspects one
of Speers proposals.

29. Fest, Joachim. Albert
Speer Conversations with
Hitler's Architect. Great
Britain: Polity Press, 2007

da and to instill fear into his op-
ponents. He is said to have quoted 'a
massive physical display might help
convince others that one possessed
superior power and was resolved to us
it if necessary'.[30] They were de-
signed to instill fear into those who
opposed him while representing the
strength of his empire.

In the same way as war has vic-
tims Hitler's form of architecture
also had its victims. In the case of
his particular expression of archi-
tecture the victim was the individu-
al.

The individual is the victim because
each building was ultimately designed
to represent the collective. As pre-
viously mentioned, the sheer size
of these buildings removed all hu-
man scale thus removing any relation-
ship between the individual and the
architecture. Often the individual
does not experience war and in this
case the individual is not supposed
to experience the architecture. Each
building represented a united and
victorious Nazi party along with its
supporters.

CONCLUSION

Hitler's demise towards the
end of World War Two contrasts Speers
survival. Speer died in London in
1981 on his way to carry out an in-
terview for the BBC. The legacy of
both men in the context of this dis-
sertation is hard to define. Hitler's
place in history is assured and for
all the wrong reasons. His friend and
colleague, Speer, was a co-architect
in the rise of the Empire. Despite
the arrogance and pride they exhib-
ited little remains of their combined

30. Helmer, Stephen Dean.
Hitler's Berlin: The Speer
plans for reshaping the
central city. Michigan: UMI
Research Press, 1980

architectural dream. The Zeppelinfield Stadium is a relic of faded glory and is essentially an underused facility that bears little resemblance to the 'Cathedral of Light' that it once housed.

The Chancellery building in Berlin was razed to the ground by Soviet forces and stands now as a war memorial cast in red marble.

Architecture in this case and in this relationship was shaped and ultimately was destroyed by war.

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A Culture of Learning for Rural Ireland

Ruairi O'Neill

A Culture of Learning for Rural Ireland

Introduction:

The Irish Education system has been heralded as one of the more successful systems in Europe. According to statistics 99% of the population is literate, there is an 86.5% enrolment rate in secondary school and 36% of those that leave secondary school enrol in third level education, that's higher than our Scandinavian counterparts, higher than the UK, France, Germany, and Belgium. It's all numbers, productivity and targets. The current Irish Education System was revolutionised in the early 1960's when Dr. Patrick Hillery was the Minister for Education. At the time the primary and secondary schools were controlled by the Catholic Church[1]. The Church took over the running of most institutions that had been initiated under British rule mainly because the new Irish state could not afford to. There were vocational schools brought into operation in 1931 under the Vocational School Act these were like secondary schools but were state operated but more technically than academically inclined.

When Hillery became Minister for Education he was operating under difficult economic constraints and he decided that second level schools should pool resources for certain expensive subjects such as those in the areas of science and technology, he also felt that there was a negative social view of the vocational school system as it was not run by the church and only offered a two year course leading to the Group Certificate in Education. Hillery proposed that the

DR. PATRICK HILLERY

[1] not much has changed, the majority of national schools in Ireland still operate on a Catholic ethos and have a local priest appointed as manager of the school committee

CHARTS: NATIONMASTER. COM

IRELAND TOPS THE LIST FOR PERCENTAGE OF STUDENTS THAT FIND SCHOOL BORING

IRELAND PLACES SIXTH FOR PERCENTAGE THAT DISLIKE SCHOOL

#1	Ireland:	67%
#2	United States:	61%
=3	Australia:	60%
=3	Finland:	60%
=3	New Zealand:	60%
=6	Sweden:	58%
=6	Canada:	58%

#1	Belgium:	42%
#2	Italy:	38%
=3	Canada:	37%
=3	France:	37%
#5	United States:	35%
=6	Ireland:	34%

vocational (state) and secondary school (church) would offer the same two year curriculum leading to Inter Certificate Examination after which students could enter the Leaving Certificate Examination course. The state examinations decided which route students should undertake, depending on results in the exam certain students would go on to study academic subjects while others would study technological subjects, the Leaving Cert split the student body again in to Institutes of Technology and University.

Factory Process

The system was successful and still is, in fact, relatively successful in its simplicity. However Ireland, and the world, has undergone a massive change in the last 50 years. Society is more diverse and complex and this system remains constrained in its own self belief. In my view the secondary school system works like a factory, information is fed to pupils through a stringent curriculum with an end product being realised, or not as the case sometimes may be. The CAO[2] (central applications office for university applications) operates a points system where students need to acquire a certain number of points based on their Leaving Cert results to gain entry to the course they wish to do, further enforcing the "factory ethos" of the second level system. The problem with this is that there is little opportunity for self discovery in schools; an appetite for self learning is not emphatically encouraged[3] and the situation can be incredibly boring. Upon entering university I found that the way I had been "educated" in the previous five years conflicted with the manner of teaching in third level institutions, where one is expected to uncover information for one's self.

[2]Central Applications Office for University Applications

[3] I once recall asking a physics teacher a series of questions relating to a certain, specific area of the subject and then eventually being told that didn't need to know it for the exam as he moved swiftly along with the rest of the lesson.

It is an interesting coincidence that at the time the education system in Ireland was being re-modelled the writings, drafts and projects of Cedric Price in London were proposing a whole new way of looking at education in society. Price believed that education was something as necessary to the common man as "drinking water" or "free teeth". Many of Price's most famous projects feature education or more importantly learning as the driving force of the concept.

IN THE LONG TERM, HOW PRODUCTIVE IS THIS TE-DIOUS PROCESS?

Chapter One: Education, the Cedric Price Way

Cedric Price's most thought provoking work occurred during the 1960's. A post war and, in some areas, a post-industrial Britain. The Swinging Sixties brought with it a new pop culture, a free love vibe, a sense of revolution in the air; political activism, a heightened sense of social awareness, these things in some way either through function, concept etc., manifest themselves in Price's work. He was a man that was very confident in his belief in what architecture *should* do. When one looks at Price's collaboration with Joan Littlewood on the Fun Palace[4] one begins to see where the essence of Price's architecture began to mature. The Fun Palace was a project intended for "a site" somewhere in London. The project was the vision of Joan Littlewood but it was Price who was really able to envision the concept in the real world. The idea was something that was borne out of Littlewoods previous involvement with the Agit-Prop theatre movement that was occurring through some cities in England in the mid 1930's. Agit-Prop theatre groups were like rogue gangs of actors that would perform impromptu scenes (usually politically antagonising scenes) in front of

CEDRIC PRICE

4 Chapter2 Agit Prop to Free Space

JOAN LITTLEWOD

groups of people that may feel victimised, violated or desiring vindication[5]. It was taking theatre from the "pompousness" and "pretentiousness" of the theatre house to the working class on the streets. This concept of bringing theatre and culture to the masses, in such a direct and interactive way, was something that became very dear to Littlewoods heart and it evolved into an idea of creating a "people's theatre". The theatre that she imagined was a place for people to come and enjoy different types of drama, make pieces of art, attend lectures, demonstrations, films, perform, exhibit and so on. A place for people to learn, to observe, to experience and to express. When she first mentioned the project to Cedric Price he quite quickly became enthralled with the idea. His great interest in technology and advancements in various mathematical fields began to drive his ambition in the project. The problem that the Fun Palace recognised and the questions it asked about society are just as relevant today. As Price wrote (in 1962):

> *"We are apathetic people. If we do not now attempt to make a new art of living, instead of escaping from living into rather dreary art. As a temporary measure the proposal has been put forward that every town should have a space at its disposal where the latest discoveries of engineering and science can provide an environment for pleasure and discovery, a place to look at the stars, to eat, stroll, meet and play."*

So the Fun Palace was to do exactly that. The form was indeterminable; the building was a system of cranes and

[5]MANY OF THESE WERE PERFORMED OUTSIDE DOLE QUEUES.

COVER OF AN AGIT-PROP MAGAZINE. NOTE THE COLOURING, SYNONYMOUS WITH COMMUNIST CULTURE. MANY MEMBERS OF AGIT PROP GROUPS WERE AFFILIATED WITH COMMUNIST PARTIES REFLECTING THE SOCIALIST IDEALS OF THE MOVEMENT

gantries and movable modules and spaces. Using computers, cybernetics and game theory the form was to be constantly changing and updated according to the needs of the users. What the Fun Palace really provided was a place for everyday learning about everything and anything. What makes the Fun Palace really stand out is its attitude. Price was not a fan of the self importance and pretentiousness that architecture could become. He was really able to clue into what the layman *needed;* he believed that the Fun Palace required an efficient use and layout of programme and space, thus the pre-occupancy with computers and technology in the design. This was the architecture of the Fun Palace. Not a juxtaposition of concrete and wood with some old hat about the lines that light carves through a space, the Fun Palace was a machine to facilitate learning through leisure. The intended use of the building is what really sets it apart from the realm of institution. Put simply it was a place to "go". Like a park or carnival but things would happen there that could stimulate the mind. The way in which it was used was up to the user. One could enjoy it passively, perambulating along the suspended gantries or sitting down eating a scone in one of the restaurants watching the world go by. Meanwhile there were dance classes, martial art classes, painting, cinema, music happening all around with the option to join in whenever it pleased the user. It works in much the same way as a supermarket; all the activities, classes, workshops etc. are presented or on display in the same way as goods are presented in windows or on shelves. However the part in a supermarket where there's a lady with a stall cooking sausages or filling little medicine containers with fruit juice and offering free samples to the consumer goes into overdrive in the Fun Palace; all the goods can be sampled.

Elevation of the Fun Palace showing moving stairs, cranes and gantries, changable modules and steel truss structure.

Goods on display at the supermarket. How about activities?

This idea of concentrating leisurely activities in one spot seems to suit the world we live in and being able to sample something to see if you like it simply makes sense. The only other place I have seen something close to this is the Clubs and Societies enrolment day in a university where each club or society has their own stall decorated with the tools or hardware they use or with a television screen showing the activity they are involved with[6]. Outside of the university the only other time I have come across this kind of presentation was in primary or secondary school when an athletics coach or music teacher might advertise their business...and this rarely occurred. The method of showcasing allows people to develop personal thoughts (or not) or develop interest (or not) in certain activities or subjects and reinforces the question "how do you know if you don't try?" and answers the question, "Well, where can I try it?" It made the Fun Palace a field trip for personal discovery and this scenario does not exist anywhere that I know of. One might say the Pompidou in Paris, but it falls well short of the ambition of the Fun Palace.

Price felt this condition should exist in every city or town in the world at some scale and realistically it could be achieved in every urban setting in the Western World. It grants opportunities for the user to gain interest in something; some subject, some craft etc. By interest I mean not only grabbing attention but instilling a will to learn. A personal will to learn or practise is a very powerful thing and it has very positive benefits for the person in terms of mental health, motivation etc. and these effects are directly felt by the community around that person. The Fun Palace had that potential to create an intense culture of learning.

A SCENE FROM CLUBS AND SOCS ENROLMENT DAY.

[6] always most striking is the martial arts demonstrations

POMPIDOU CENTRE, PARIS. ONE CAN IMMEDIATELY SEE THE SIMILARITIES BETWEEN THIS PHOT AND THE ELEVATION OF THE FUN PALACE SHOWN PREVIOUSLY.

PLAN OF ONE OF THE FLOORS IN THE POMPIDOU CENTRE.

Many factors hampered the actual building of the Fun Palace; mainly it was down to bureaucracy regarding funding and the attainment of a site. As momentum for the Fun Palace project began to die down, Price embarked on another radical project that could have been easier to implement than the previous. The Potteries Thinkbelt sees Price concentrating more on education. This project revitalises the disused infrastructure of an obsolete industry in Staffordshire at peculiar time in English history, the so-called "Brain Drain" era. The industrial boom of the 18th and 19th century began to decrease in post-war Britain and this moment in history saw a large amount of scientists, engineers and technicians emigrate. It was eventually concluded that the problem lay in education and the practises of the universities in England. The general consensus was that English universities concentrated more on academic subjects such as liberal arts and philosophy whilst ignoring the applied sciences and technology. This was seen as having a knock on effect in the employment sector where new industry was not being created to replace the old. A debate in the House of Lords on education in 1965 caused Lord Aberdare to say this:

PRICE'S VISION FOR HOW THE RAILWAYS COULD BE RE-UTIL-ISED.

> *"I have a feeling that the universities...are still inclined to give greater importance to the arts than to the sciences, and to the academic than to the technological. There still exists a kind of intellectual snobbery that pays greater respect to the man who misquotes Horace than the man who can repair his own car."*

Cedric Price shared this view and his attitude towards universities was quite negative. He abhorred the snobbery and exclusivity. The Potteries Thinkbelt was Prices idea on how a university *should* work. The university would exist on a large scale, woven through the area to create a winding think tank network. This also allowed Price avoid presenting this under the moniker of university and instead call it a ThinkBelt. Different pockets of the region would be inhabited in different ways, some becoming residential, educational etc. The rail lines would transport housing modules, classroom modules, lab modules around the area to wherever they were needed similar to the indeterminate and interchangeable nature of the Fun Palace. Price felt that since education was in "a constant state of flux" then an educational building/area should have the ability to quickly change its organisation or function even. Spreading the "university" like this really begins to connect it to the area, it also allows for a direct relationship to be created with the existing industry who would greatly benefit form the research and provision of a skilled workforce. The direction of the Thinkbelt was therefore in the applied sciences and technical subjects, this was primarily to re-educate the unemployed people of the area but also it was Price's belief that this form of education was the future of Britain. In fact Price believed that education should be considered an industry itself and that the economy would depend on "intellectual production, technical research and continued learning". But let us speculate on the direct social impact such a scheme would have had on the Potteries area; the most striking thing, I find, about the plan of the Thinkbelt is how it seems to address the apathy and laziness that exists in the human character by making the institution work for the user and

PRICE SAW UNIVERSITIES AS A COLLECTION OF, "POWER POINTS IN GENTLEMANLY SECLUSION".

DRAWING SHOWING THE LARGE SCALE OF THE PROJECT. IT ALSO SHOWS HOW THE AREA IS BROKEN DOWN INTO DIFFERENT ZONES.

MODULES THAT CONNECT UP TO CREATE CLASSROOMS, RESIDENTIAL UNITS ETC.

thus directly challenging the people of the area. Because the existing infrastructure "does the work" so to speak in bringing the means of educating to the different parts of the area, it starts to break down the mystery or exclusivity that was associated with further education at the time[7]. Also the constant movement of modules and changing of buildings questions the architectural language of the "institution" and results in an environment that becomes far from boring. It is a scheme consciously planned that recognises and exploits the uneven nature of social environments.

So learning becomes more inclusive and more convenient. The rail network is an architectural metaphor for learning as a connector; in the Thinkbelt it connects the people to the local industry and lends an extra sense of credibility and purpose to the act of learning as both mutually benefit one another and this can in turn benefit the wider area economically.

Many other projects by Price use learning as the focus. His work on the Fun Palace sparked interest in the Lyons Tea Company and he was commissioned to draw up a plan for their main tearoom in London, the Oxford Corner House. The company recognised the attraction that such a place like the Fun Palace could generate and so asked him to create an interactive learning facility within the tea house mixing Price's "learning with leisure" ideals with the leisurely act of enjoying a cup of tea. The resulting draft required a large, powerful computer which was deemed financially unreasonable and the scheme was scrapped. The project was to make extensive use of technology and media in presenting information, with tele-screens displaying various things; it

[7] this is also applicable today to a certain extent; even though, in Ireland, the cost of educating a person is taken on by the state, one still feels that education should become a more readily available resource. In the words of Cedric Price it should be as available as "running water", an absolute necessity for every member of society

Oxford Corner House

The caption says; "diagram of tour of the communications facilities".

was an attempt at making the attainment of information effortless.

One of Price's schemes that was built was the "Inter-Action" centre. This building was similar to the Fun Palace in its role in society although on a much smaller scale. It carried all the regular sentiments of Price's work; indeterminacy, flexibility, a relaxed approach to aesthetics coupled with a direct intent in program and purpose. This was a community centre of sorts for the people of Kent; it was a place to jam music, hang out, make things, leave the kids, enjoy theatre. When a certain activity was no longer popular the walls enclosing the space for the activity could be dismantled by the users and likewise new spaces could be created for a new activity. According to Stanley Matthews this project was a success;

Inter-Action Centre

Steel Frame and Por-ta-Kabins "plugged in" when needed.

"When I visited the centre in 1998, hordes of people of all ages, from the neighbourhood, were swarming all over the building. Activities were taking place in different area. A dance group was rehearsing, children were learning to read, a volunteer lawyer was helping to explain the intricacies of the British legal system to immigrants, someone else was learning digital imaging..."

Locals using the Inter-Action Centre

One can begin to imagine the spaces Price creates, or more importantly the environments he creates. We can speculate that these were energetic places, charged with

the excitement of people pursuing different activities and learning new things. This environment can only have positive benefits for a community in the way that it promotes social interaction; two strangers (or neighbours that have not spoken to one another before) attending a class are on a level playing field in the social realm, a lowest common denominator exists between them, a subject matter of interest for both parties. A similar experience exists in the local pub where the alcohol and dimmed lighting decrease inhibition and may offer an alternative to the awkward few seconds after "hello". This work speaks to me in volumes for it really begins to unravel the fears and inhibitions that people may harness from experiences in the institutionalised form of learning and release human potential in an effortless, modest manner.

Price's architecture is concerned, first and foremost, with people. His sensitive approach to creating environments for humans coupled with his detailed, accurate observation of human behaviour is the real driving force behind his architecture. His work is about improving social conditions and life in general for people and he believed that education was a key factor in living a fulfilling life. His recognition of the individuality of each person and his efforts to cater for every need and situation creates a noble architecture that fires the starting gun on the road to lifelong learning and fills the petrol tank thereafter.

Chapter Two: Changing the way we think?

The education system in Ireland is based on a "parrot learning" system. This is a phrase coined by Rabindranath Tagore the great Indian writer, poet, philosopher, and Nobel Prize winner. It was a critique of the academic based system introduced by the British in India[8], that perhaps tested memory more than tested intelligence. Tagore believed that the body should be engaged more in the act of learning. The scene we associate with the classroom is one of the children sitting still and receiving information and instruction from a teacher at the top of the class stifles the learning experience of the child who is naturally restless;

[8] similar systems exist in most parts of the world

> *"Children can quite quickly acquire the habit of receiving thoughts sitting still. Their minds have then to think unaided by the collaboration of the body. The body, in turn, feels neglected because it is not aiding its great partner, the mind, in its internal work."*

RABINDRANATH TAGORE

Tagore's philosophy on education was put into

practise with his school at Santiniketan in West Bengal. The school was established in a rural area that Tagore believed was losing its way of life and the once decent economic and social condition of the village was descending close to despair. Tagore employed a young scholar named Leonard Elmhirst to assist in the running of this school and with the aid of others set up an "Institute of Rural Reconstrution" later dubbed "Sriniketan"[9]. The ethos of the school was to educate the children of the area on both the academic subjects and the practical subjects that directly relate to their way of life therefore initiating an education system that benefits the community both in the short term and the long term. Classes are taught outdoors and the freedom and restlessness of the child is fully embraced for Tagore felt that movement of the body was necessary for creative expression;

> *"I was trying to get the children to master the idea of "tearing", verb to "tear"... I asked each of them to climb to the top of the nearest mango tree and to tear off a leaf and bring it back to me. The whole process of tearing, when accompanied by such a full body movement, became a living thing"*

Tagore's method makes total sense, even if just speaking from personal experience, the mind memorises better by association and by relating certain facts with certain real live experiences than by reading the same sentence three times and so on. Learning becomes an energetic experience, a stark contrast from the dull memories I have of sitting in the same spot from 9 til'3, save the tea breaks. Tagore's system also recognises and embraces the urge some children may have

[9] Bengali for "Adobe of Grace"

THIS

is surely more effective than

THIS

to release energy;

> *"A boy would say to me, "May I go for a run?", "Yes, of course", I would say, because I knew that by this means some tedium would be broken and when again he felt lively, it would be much easier for him to receive and digest."*

They would also take the children on walks and encourage them to scribble things down on their notebooks, the children are shown how to grow vegetables and carry out various practical tasks that are necessary in their rural environment. An education culture begins to grow where children are taught to learn from the world around them making it a truly holistic learning experience. Indeed the idea of teaching outdoors is reminiscient of the Hedge School system that operated in Ireland in the 18th century. These were schools set up in protest of British rule and the Penal Laws (active between 1702 an 1719) that were in place. One of the laws stated that;

> *"no person of the popish religion shall publicly or in private houses teach school, or instruct youth in learning within this realm"*

It seemed that the British knew the power of education and prohibiting it would be able to keep Ireland, "under the thumb" so to speak. The Irish refused to send their children to British schools as they saw their provision as another attempt to Anglicize the youth and eventually the nation. Defiant on preserving their culture the Irish used the Hedge School system to teach the next

generation about Brehon law. the Irish language, Irish music, history, poetry, and stories. It is believed that at the time approximately 80% of the children enrolled in school attended the Hedge Schools. This displays true grit and determination to preserve an identity. Tagore's project has a lot in common with this system in his efforts try to protect a way of life. His school mixes the knowledge of the meteorologist with the wisdom of the fisherman. The school grew and today it caters for primary, secondary and tertiary education.

Elmhirst, the man that assisted Tagore in setting up the school, brought what he had learnt through his work in India back to Britain where he set up Dartington Hall along with his wife Dorothy. This school again creates a wholesome learning experience with various projects undertaken under the themes of art, sustainability, social justice, enterprise and place. The aims of Dartington Hall and later the Dartington Trust were very similar to Santiniketan;

LEONARD AND DOROTHY ELMHIRST AT DARTINGTON HALL

- *That given the opportunity, everyone has the potential to improve our world*
- *That new initiatives requires both promising ideas and a pioneering person*
- *That a holistic approach broadens perspectives*
- *That learning by doing educates the whole person*
- *That a mastery of craft drives deeper understanding*
- *That true learning comes from the courage to participate and have a go*

- *That individual and collective creativity nourishes human nature and stimulates imagination*

Through this philosophy Dartington has provided an alternative to the "institution" or maybe it is an evolution of such. Dartington existed first as an institute of rural reconstruction similar to the *Visva-Bharati* (Tagore's university). The site on which it is situated has evolved into a centre of creativity and innovation, and the energy of these pioneering endeavours created an energy that has attracted a multitude of scholars, artistes, and thinking professionals to its doors to debate, discuss and share ideas with many of these people working there temporarily or permanently in various different roles. If we consider this environment with a constant flux of enlightened people coming and going perhaps it suggests an alternative to Price's ideas on indeterminacy and movement in the Potteries ThinkBelt.

To create a place in an average Irish town (pop. 5,000 or so) that harbours the same intentions as Price's Fun Palace or Potteries ThinkBelt, realistically we must be looking at the scale of the Inter Action centre coupled with the emphasis on local rural regeneration as suggested above. Instead of cranes moving module to create different spaces, people change the layout of space as was done in the built Inter Action centre. Instead of railways carrying parts of buildings and mobile classrooms we concentrate on nourishing a stimulating, creative environment in neutral spaces that would have the power to attract the attention of intelligent and creative people and thus encourage a flux of these people through it that can share and discuss ideas and concepts with locals. Through this the centre could have access to cutting edge information on technology, art, electronics etc.

Chapter Three: Ideas and Implementations

What we deduce from the previous chapters is that education is more successful through an interactive experience; that empathy, and recognising, and relating what we learn to the world around us together with an active approach can create a fulfilling educational experience. The property that is common to all the afore-mentioned projects is that education starts first and foremost with people. Price's Fun Palace being an almost urban manifestation of the rural based Santiniketan and Dartington, whereas the Potteries Think-Belt occupies that area between the rural (or the indigenous) and the industrial. To create an educational system that begins with people contrasts with the system in place where persons must enter an institution with guidelines and standards based on statistics gathered over a large population area and set out by a government department. A blanket solution to a problem is in place with no possibility of real change ever being implemented. Also the dangers of generalising what is very much a personal experience means that there are substantial numbers of individuals that fall through the system. This is a failure of the system. If education becomes a more locally aware resource, in rural Ireland especially, then, like Dartington or Santiniketan, communities can flourish economically, socially and even politically. So what can be done?

1:

Ideally the way subjects are taught in school can be reconsidered. The philosophy of Tagore seems to me to be an exceptional model to learn from; the emphasis on personal

So,

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A RIGID FOUNDATION FOR THE DEVELOPMENT OF LIFELONG LEARN-ING.

CHALLENGING, BOREDOM, APATHY LETHARGY.

INSPIRING CREATIVITY, ACTION, INTEREST, IN-NOVATION, CHANGE...

creativity in forming an active learning environment makes for a much more interesting classroom situation that both releases human potential and engages the child. As one moves up along the schooling system the practical work becomes intertwined with academic work but most importantly subjects taught to teenagers must have a relevance to the world around them. This is not possible in all subjects, for example mathematics requires absolute involvement with an equation however plant biology might be better understood through planting a garden. Creating a link between what is being learned and what is going on would create a pupil more socially aware and sensitive to the workings of the world. The model at Dartington shows how this can be achieved. The belief that every person has the ability to improve the world is also conscious of the fact that every person is different. People learn at different paces and in different ways so maybe different people advance onto the next phase of learning at different times. This makes sense in that it gives those with learning difficulties time to grasp and understand subjects and concepts while brighter children can advance on to the next phase in the process avoiding boredom. This idea, sadly, is economically unfeasible in the eyes of today's government as it requires a de-standardisation of the education system which means the price to educate each student rises[10]. The irony of this is that if extra care and attention was paid regardless of the cost we could see a new, enlightened, creative generation whose local based knowledge in agriculture, industry etc. would improve local and national working methods and invigorate the economy.

[10] similar to the price rise when using non-standard sizes of building materials

2.

I also envisage a place like the Inter-Action centre in every town in Ireland. A place where further education is freely available in both a formal and informal manner. This could be a facility newly built (the location should be in the centre of the town) or occupying a disused building in a town. To explain this point further I am going to use the case of my hometown of Listowel. The former cattle mart in the centre of town occupies a large space that is now only used for car parking. Its location is perfect for such a facility as it is surrounded by shops and pubs and therefore it would be the only place in the centre of town where one would not feel obliged to pay for their presence in the building. Also it stands as an artefact of a tradition that has since been moved outside the town in favour of a larger facility, this seriously affected the economy of the town for every Thursday farmers and cattle dealers would wheel and deal and spend their money in the local pubs and businesses. Also the location is very familiar to the local people and is affectionately referred to as "The Mart" meaning we can avoid attaching a patronising label on anything else built in there. It could be a place for someone to wander in off the street and partake in a certain activity, or sit down and watch a documentary, read a book etc. Children could arrive after school and learn an instrument, learn to dance or make vases from clay[11]. It could also be a place for a young mother to study for a third level course. If the program starts out small and is successful, the facility could evolve into a focal point of the community and even a place of specialised learning; growing out and up according to demands.

Listowel is a town in the south west of Ireland (very much a rural area) with a strong literary tradition with many

[11]Leaning from Tagore , we can provide an environment that encourages use of the body in order to learn.

writers, poets and playwrights coming from the town and its surrounding area, the most famous being John B. Keane. The town used to have a number of theatre groups although only a handful operate today. There is a festival every year in June called Writers Week where many talented people involved in literature in Ireland come to speak and do workshops. Suppose a school integrated into the "Inter-Action" facility where a focus on literature exists as a starting point[12]. The method of learning would be through workshops and lectures given by travelling lecturers. The project could grow or fail, if it fails in the meantime there would be other subjects that could be more popular and so the impetus is put on that subject and that may grow[13]. The idea is that education and the culture of the people become intertwined. This is what happened at Santiniketan and the school there eventually evolved into a university. How fantastic would that be to have the resources of a university in every town with the social engagement of a pub? Not only would it create more opportunities for the people of the area but if it develops a name for excellence in a certain field it would attract new, bright, young minds to the town which has its own knock on effects with regards to creativity, economy, pride of place etc.[14]

The Open University can provide Third Level education to everyone with an internet connection yet I feel that this is a very tedious form of learning that lacks the interactive situation that is needed to stimulate the mind and especially the body. Learning needs to have that physical attribute for it to be truly successful. Although I do admire the way the Open University makes further education more accessible, I believe that it could be enhanced further with

the placement of a learning facility in each town; again travelling lecturers could do workshops in conjunction with an online course. If such a facility were introduced in every town they could provide a network where resources are pooled together, for example if every facility had a small library an inter-library loan scheme could be set up and it would encourage more wandering lecturers or artists to visit different centres.

3:

In rural Ireland the pub is the main social outlet for many people. In fact for many old farmers it is the only social outlet. Over the past number of years many public houses have been forced to shut their doors following several government decisions that have caused it to be near impossible to sustain a business. Regardless of opinion, it is clear to see that there is a direct relationship between the dwindling number of public houses and the harsher enforcement of the drink driving law along with the tax on alcohol that has been raised practically every year since the dawn of the Celtic Tiger. The pub as a social outlet should not be underestimated or undermined; although the negative connotations associated with alcohol do little to lend credibility to this case. It seems to many people living in rural Ireland, particularly the older generation, that laws have been made in Dublin in response to data with no consideration about how this one law can have a serious effect on the way people live or have lived their lives. This creates another degree of separation between a man and the government. The pub in Ireland is an institution; it is one of the things that defines our culture so maybe we need to think of new ways of using these places. Considering this in the context of Listowel the pubs could act in conjunction with the learning facility where writers doing workshops could recite poetry, compositions, sing songs or

[12]considering the model in place at Santiniketan and Dartington this seems like an ideal starting point. The tradition inspires pride of place and provides a sense of history, also the ethos of such a place should encourage creativity and self expression.

[13]This in itself may become a reflection of local culture

perform pub theatre. I recall some of these activities taking place at certain times in the town usually in John B. Keane's pub and they were great ways of providing entertainment as a celebration of creativity. However these nights are ever only provided by a few local people so I feel that this action should be encouraged and when used in conjunction with a creative and cultural learning facility scenes like this can flourish; bands jamming in the "Inter-Action" centre can play their songs in the pub, artwork can be displayed etc. The pubs can be used as the exhibition space for people to show off what they have learned, a human urge that we all possess at some level.

[14]the idea being that an extra influx of people into the town means more people spend money in the town. Also if certain activities become associated with a place, I believe, it heightens a sense of identity for the inhabitants.

Conclusion:

If we consider the philosophies of Cedric Price and Rabindranath Tagore and combine the ideals of their teachings we can create a solid basis for life long learning. To make education more relevant and readily accessible would mean that the learning culture that exists in cities and universities could become a tangible thing everywhere. The architectural firm Bucholz-McEvoy's entry to the 2006 Venice Biennale suggests ways in re-using post agricultural land in rural Ireland for learning purposes. The scheme offers users the opportunity to learn directly from the environment around them. I feel that this kind of direction with a sensitive approach would not only help to preserve the rural culture but suggest ways in which it can sustain itself in the future.

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Architectural and Artistic Form
Le Corbusier - Michelangelo

Gavin Doheny

Form as Drama

Leonardo Da Vinci's composition sketch of a mechanised gear system. The canvas is the common ground shared between human and built machine. The artist is human, he is not a machine.

1. Focillon, Henri. The life of Forms in Art, New York: Witternborn Art Books Inc. 1948.

The architecture of Le Corbusier is based on form. "The idea of the artist is form."[1] Le Corbusier architectural forms are married with his understanding of artistic form. The life of Le Corbusier turns into form: tenderness, nostalgia, desire along with many other impulses. The artist is immersed in the whole of life. He is human, he is not a machine. His special privilege is to imagine, to recollect, to think and to feel in forms. Form is not an allegory of feeling but rather its innermost activity. Form activates feeling; between nature and man the forms of Le Corbusier intervene. The artist, Le Corbusier, forms this nature; before taking possession of it. Le Corbusier thinks it, feels it, and sees it as a form. The architecture of Le Corbusier receives expression through the medium of form - through the manipulation of composed forms. To compose is to make use of what is known. "Nothing is more engaging than composition, nothing more seductive. It is the true realm of the a rtist"[2] Small forms and functional members are put together to compose buildings – they are assembled to create volumes. Le Corbusier was a creator of forms, a form giver. The relationships concerning architectural form and artistic form are so closely intertwined that it can be difficult to separate and define one against the other. Le Corbusier found it difficult to locate his position on this point. In response to a question posed by Heidi Webber in 1962 regarding Le Corbusier's specialization he replied; "There are no sculptors only, no painters only, no architects only;

2. Banham, Reyner. Theory and design in the first machine age, United States of America; The Architectural Press. 1960.

the plastic incident fulfils itself in an overall form"[3]. Forms are not based distinctly on a single exterior element of creation but rather on a culmination of intert wined experiences.

Ideology regarding the industrial age in architecture have been put centre stage in Le Corbusier's architectural manifesto – Towards a new Architecture. Le Corbusier refers to the house as a "Machine for living" and envisages an idea of mass produced dwellings and the community which such a system may be responsible for. However the issue arises whether Le Corbusier can be   seen as both a product of the Machine age and as an artist – free to express and create forms. "He is not a machine"[4]. The artist is human, he is not a machine. In many respects these machine age ideas have overshadowed Le Corbusier's close attention to architectural form and its importance in the creation of space. Form is based upon mass and surface. "Mass and surface are the two elements by which architecture manifests itself."[5] The complex play of primal forms is the bases of much of Le Corbusier's architectural work. Form can be understood as the foundation of human experience of architectural spaces. "Our eyes are constructed to enable us to see forms in light. Primary forms are beautiful forms because they can be clearly appreciated." Architects today no longer achieve these simple forms which are seen as the basis of good architecture or good art. Working by calculation, engineers employ geometrical forms, satisfying our eyes by their geometry and our understanding by their mathematics; their work is based on the direct line of good art."[6]

The ideology of a mass produced society requires an order which is commanded and given purpose. Mass production may be envisaged as counterproductive and may be seen to be a separation from architectural form. The mass produced cities and towns which have been presented to the reader of Le Corbusier's documents seem limitless and without boundary or edge, continuing into the horizon and beyond mans comprehension of scale. Form exists due to the edge condition which is imposed on an internal or external space. Form relies upon a boundary and is limited by the edge of the shape. Le Corbusier's theory of architectural design can be

3. Webber, Heidi. Le Corbusier – The Artist, Zurich and Montreal. 1988.

4 Baker, Geoffrey H. Le Corbusier, an analysis of form. New York: Spon Press. 1984.

5 Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

6 Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

broken down and divided to reveal two juxtapositions'. The very public persona of Le Corbusier is centred on his ideology of mass production and the modern industrial design age. The often forgotten or overshadowed view of Le Corbusier's work is based on the use of form in design. This is reflected in the public recognition of the name by which he is more publically known – Le Corbusier. The name upon which he was born - Charles Edourd Jeanneret may be seen as a simile for the overshadowed nature of this architectural foundation - form.

Le Corbusier like many architects demonstrates artistic qualities as a means of representation in many of his works. The forms of representation between both artist sculptor and architect are closely related and during periods overlap. There exists a relationship between artistic form and architectural form which is often neglected and taken in a less understood manner than the sum of the parts which combine to create dramatic architecture. Dramatic architecture such as that of Jeanneret fails to follow in the footsteps of the period upon which it is engaged with. It is detached from any "style" and sets its own formula for the creation of space. Many of the ideas accepted by architects came not from the architectural side of Beaux Arts instruction but from the painterly. Julien Guadet insisted on composition in architecture. Grammaire des Arts de Dessin, written by Charles Blanc in 1867 had in the preceeding years become commonplace in artists subconscious libraries. "Grammaire des Arts de Dessin emphasised technical methods of expression – brushwork for example as opposed to subject matter"[7] Blancs lack of interest in subject matter is matched by Guadits complete lack of interest in style and realisation in importance of axial planning. For Guadet symmetrical disposition of the parts of a building about one or many axes was the predominant master discipline. Guadet places emphasis upon the axes of a space and did not feel the need to discuss "the clothing of the buildings forms" in one or more recognisable styles. "Architecture has nothing to do with the various styles"[8]. Guadet was the master professor of Auguste Perret – one of the many influential figures in Jeanneret's early architectural pursuits. Guadet has at many times been referred to as a representational figure of abstract architecture. Colin Rowe, in the June art bulletin

7. Banham, Reyner. Theory and design in the first machine age, United States of America; The Architectural Press. 1960.

8. Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

Italian Renaissance Style - one of many identified "styles" in which dramatic architecture aims to avoid being classified.

New York 1953, proposed that he envisaged architecture of pure form. However it would perhaps be truer to conclude that he facilitated the emergence of architecture of pure form through which Le Corbusier found expression. However can it be correct to identify a time period through which architectural form is uncovered as artistic form and architectural form remain inseparable. In this case architectural form has been established with the arrival of the first monuments and sculptures – in the creation of the Egyptian pyramids and Greek temples.

Forms are conceived in a pure fashion independent of the styles of art or architecture which wrap around them and label them in a given 'style'. Julien Guadet often refused to be drawn into the discussion on styles in architecture. Rather he remained rational. The architectural works of Le Corbusier demonstrate this rational approach. Guadets views of symmetrical composition in architectural forms were very strong. As stated e focused on the multi-axially symmetrical plans and mocked absolute axial symmetry. Guadet emphasised the fitting of parts of a building into the axial plan. Axial ordering has formed the basis of monumental architecture since ancient times. It is perhaps this axial logic which forms the 'good art' which Le Corbusier speaks of in Towards a New Architecture. The architecture of many Renaissance architects such as Michelangelo, Andrea Palladio and Giulio Romano are focused

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9. Le Corbusier, The Modular. London. 1954

upon such straightforward axial ideals. Le Corbusier states that "Nature is order and law, unity and diversity without end, subtlety, harmony and strength."[9] In this case the forms in architecture are directly related to nature and are realised through place and without time. To label a building in style is to place a time on the work. Yet every artistic form has in a historical sense a time in a linear position within history. The forms of the Pantheon, St. Peters, and the Villa Rotunda along with the Acropolis and the Ville Savoye are timeless spaces which are not dominated by their labelled architectural styles. Perhaps it is this timeless quality of spaces which is the foundation stone upon which dramatic spaces are realised.

American poet and social commentator Allen Tate states that 'Dramatic experience is not logical; it may be subdued to the kind of coherence that we indicate when we speak, in criticism, of form'. Dramatic spaces are perhaps spaces which excite the mind and perhaps exhibit a lack of coherence with mainstream logic, views and followings. Dramatic architecture involves the creation of passionate spaces which rely on the purity of form. Jeanneret's discussion of St. Peters in Rome provokes the lesser known and perhaps recognised influence of form in his architecture. Le Corbusier, a revolutionary in modern ideology, was very much influenced on a more primal level by the works of architects/artists who moulded and applied various forms in design such as Michelangelo and Phidias. "One has the sneaking suspicion that these artists became the mentors of Jeannerets imagination, the guardians of his aesthetic conscience."[10] Art is based on emotion yet there is no emotion without passion. The form of each individual cut stone in St. Peters is a representation of dramatic architectural living form. "Stones are dead things sleeping in the quarries but the apses of St. Peters are a drama." The classical arrangement of carved form which relies upon taxis, symmetry and shape is a pure creation of the mind and does not rely on existing design principles. The Pantheon and the Egyptian Pyramids are forms of drama, they are moving, not confined to a period of time they continue to influence and generate internal mental space. The human form as discussed in Towards a new Architecture, is "an exceptional phenomenon occurring at long intervals""in accordance with

10. JR Curtis, William. Le Corbusier Ideas And Form, London; Phaidon Press Limited. 1986.

11. Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

the pulsation, not yet understood"[11] it changes from century to century while the drama of the architecture of form remains constant and dignified, surpassing thousands of years. "The work of Michelangelo is a creation, not a Renaissance."[12] His work may be classified under a time period yet it refuses to be held down by the classification of renaissance. His work is not a rebirth of a style but rather an individual response to his personal ideals. The whole sculptural form of Michelangelo would have risen from the earth as a single mass, unique and entire. This creation of the single unity, based on classical symmetry and proportion - yet confined within the limitations of its own form, creates an organic entity free from the surrounds and constraints of open space which support the sculptural existence of the passionate drama. The form of a building is based on the function provided within the space. The initial design of the Basilica in Rome reveals more balanced and considered form which has been altered in accordance with time and 'style'. The addition of the three bays in the front and a great vestibule has dismantled the form or intention of the Sculptorin the Holy City. The intentions of the architect have been compromised. Having once been a beacon of timeless form it has been submerged into the world of the aesthetic and detail. "The whole idea is destroyed."[13] Le Corbusier suggests that two differing masses cannot combine to form a single unifying form. In this way the architecture of St. Peters is lost. "With its decoration, conceitedly coarse, the fundamental fault is enormously increased and St. Peter's remains an enigma for the architect."[14]

Left: Michelangelo's original plan of St. Peters in Rome with axial symmetry and pure creation of a single volume.

Right: Present day plan of St. Peters with naive extension or addidion of another form to the pre-existing form which leads to the present day architectural situation which seems tampered with and is without pure form and drama.

Chapter Two

Form as Organic Sculpture

15. Ackerman, James S. The Architecture of Michelangelo, Chicago; The University of Chicago Press, 1961

16. Ackerman, James S. The Architecture of Michelangelo, Chicago; The University of Chicago Press, 1961

17. Alexander Tzonis and Liane Lefaivre. Classical Architecture The Poetics of Order, London; The MIT Press, 1999

Michelangelo, one of the greatest creative minds in architectural form frequently claimed that he was not an architect. "Rather he considered himself a sculptor and foremost artist."[15] This claim is key to understanding the influence of his love for art on his architectural realisations, which were conceived as if the masses of structure were organic forms capable of being moulded or carved, of expressing movement, and capturing light, like a sculpted body of work. It might be understood that Michelangelo sought to express his art through architecture and three dimensional forms. His creative artistic mind has had profound direct relevance to his architecture of sculpture, form and proportion. The only surviving evidence of Michelangelo's theory on architecture deals with the plan. The plan being a two dimensional entity which is responsible for the three dimensional form. "When a plan has diverse parts, all those that are of one kind of quality and quantity must be adorned in the same way, and in the same style, and likewise other proportions that correspond."[16] The influence of the plan as the basis of the architectural sculpted form is reinforced in the architecture of Le Corbusier. "The plan is the generator" – Towards a New Architecture.

The work of moulding forms is a world within the world, complete, whole, a world where there is no contradiction. Non-contradiction is ensured through organisation set on three levels known as taxis, genera, and symmetry. Taxis divide a composition into parts and fit the resulting partitions the architectural elements, producing a coherent work, a unity of clarification, a form. In effect the works of Michelangelo and Le Corbusier are based on logically organised divisions of space. Taxis can be divided into two groups – the grid and the tri-partition. The grid scheme divides the building through two sets of lines. The rectangular grid system is the most commonly used system in classical architecture where straight lines meet at right angles. The architectural works of Michelangelo owe a lot to the studies and documentations of Vitruvius. In Vitruvius's De Architectura, taxis is defined as "balanced adjustment of the details of work separately, and, as to the whole, the arrangement of the proportion with a view to a symmetrical result."[17] The influence of such Classical Architecture on

Michelangelo provided the platform for the alteration and trial of architectural forms. In the architectural creations and stimuli of Michelangelo the emphasis of the organisation of space was centred on the organic.

"Architecture is a plastic thing. The spirit of order, a unity of intention. The sense of relationships; architecture deals with quantities. Passion can create drama out of inert stone."[18] The architecture of Michelangelo is a drama of form, through which form is the end product of the unity and order. Proportion has a significant impact and relevance on how an artist puts forward or exhibits his artistic argument or statement. Michelangelo the artist and moulder of forms puts forward the same metaphor as Le Corbusier for relating architectural proportions to the human body. Michelangelo uses the body as a simile for an organic architectural form. "It is anatomy, rather than numbers and geometry, that becomes the basic discipline for the architect."[19] The forms of the building follow the function. "The parts of a building are compared, not to the ideal overall proportions of the human body but, significantly, to its functions."[20] Michelangelo compares a building to a body, to be seen in an organic light. His reference to eyes, nose and arms suggest an implication of mobility; the built form is a drama "the building lives and breathes."[21] Michelangelo's free flowing organic art has direct relations with his 'organic style' architecture. The architect is perhaps seen as an artist in sculpting form rather than an individual whom relies on logic for his creativity. Similarly Le Corbusier in 'Toward a New Architecture' sought to clearly define and separate an architect and an engineer. "Engineers produce architecture; they employ math calculations which give us feelings of harmony." Architects are concerned with the arrangement of forms. Le Corbusier states that for architects it is necessary to have recourse to the man of art. Art is the application of knowledge to the realisation of a conception. Anatomy is the cornerstone upon which Michelangelo's works lye. The reference to the eyes, nose and arms suggests an implication of mobility; the building lives and breathes. The sculpted building is pure and organic.

The decorative art of artists such as Michelangelo may be understood as tools and as extensions of the human

18. Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

19. Ackerman, James S. The Architecture of Michelangelo, Chicago; The University of Chicago Press, 1961

20. Ackerman, James S. The Architecture of Michelangelo, Chicago; The University of Chicago Press, 1961

21. Ackerman, James S. The Architecture of Michelangelo, Chicago; The University of Chicago Press, 1961

22.Frampton, Kenneth. Le Corbusier, New York; Thames & Hudson Inc, 2001.

body. The phrase decorative art refers inexactly to the totality of human limb objects. A sculpture, and art work or a tapestry is created through the hand for example, and is seen as an extension of the limb which creates it. The human limb is a servant to the mind. "A good servant is discreet and self – effacing in order to have his master free."[22] Understanding a form in this organic way allows for the creation of a free space which although still retains its obedience to form fails to become dominated by symmetry, axes and geometry which still classifying it as dramatic. Le Corbusier understood Michelangelo's approach to form as an organic element of nature. Le Corbusier stated in 1955 that to make architecture was to make a creature.

Early Renaissance theories of artistic proportion, when applied to buildings, produced architecture that was abstract in its artistic sculptural form. Towards the end of the 15th century architects and painters began to be more concerned with three dimensional effects, particularly those produced by solid forms emphasized by gradations of light and shadow. It is questionable whether this abstract artistic architecture produces a paper architecture which is more successful on the drawing board or sketchbook than in three dimensional realities. Michelangelo's response to this architectural idea may be regarded as radical. While other architects of the era such as Leonardo da Vinci based much of their work on studies of form, mass and geometrical mathematics, Michelangelo sought to go progress further to create a living organism based on his artistic study of the body. This is reflected in the later works of Le Corbusier who reforms this architectural study of the body to create the modular man representational of the ideology of Jeannerets work. In Michelangelo's drawings we can see how the concept of the organic was put into practice. Initial studies for a building are vigorous, doors and cornices may be seen as individual works of art, rather than architectural details. They were intended to convey to the mason a vivid experience rather than a calculated measured instruction for carvings.

Michelangelo's plan studies appear as organisms capable of motion; they obey a biological rather than a

structural imperative. Michelangelo rarely made perspective sketches, he hesitated to visualise buildings from a fixed point. To study three dimensional effects he made clay models. The introduction of modelling into architectural practice demonstrates the identity of sculpture and art in Michelangelo's work.

Le Corbusier presents us with many sketches of St. Peters in towards a new Architecture through which he presents his views of the terrible beauties which have befallen the sculpture of form. A caption beneath a sketch plan states "The nave has been extended as shown by the shading; Michelangelo had something to say; it has all been destroyed." The contamination of the original form of the dome has altered the meaning and 'place' of the architecture. It is no longer intended as it was meant to have been. It is no longer a dramatic sculpture positioned in place. The facade is beautiful in itself Le Corbusier states, but bears no relation to the Dome. The real aim of the building was the Dome; it has been hidden. The forms which Le Corbusier speaks of have become disjointed and unrelated. "The whole scheme was a complete unity; it grouped together elements of the noblest and richest kind. The Portico, the cylinders, the square shapes, the drum, the dome. The eye would have taken it as one thing. The rest fell into Barbarian hands, all was spoilt."[23] Form was spoilt.

23. Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

Plan of St. Peters in Rome within which Le Corbusier puts forward his views regarding the "Barbarian" act which deprives the form of its dignity and meaning.

Chapter Three

Le Corbusier and Form

Towards a new architecture; Le Corbusier. Jeanneret expresses the poer and the drama of pure forms in the inclusion of the above images in his document.

     The portrayal of Michelangelo by Jeanneret in Toward a New Architecture is significant in understanding the artistic creative spirit which Le Corbusier possesses. An architect or sculptor of Michelangelo's understanding of dramatic architecture is undoubtedly a figurative and noble ambassador for architecture of form. Michelangelo remains the only singular artist or architect to be given prominence in this historical document. Le Corbusier portrayed Michelangelo to be a sculptor of unquestionable intelligence and passion stating there is no art without emotion, no emotion without passion in Michelangelo's regard. Le Corbusier aims to extract the drama of timeless forms which Michelangelo held in his morals and ideals.

     Throughout his career Le Corbusier sought instantly to anchor symbols appropriate to his age and its given techniques in a fundamental order that he had sensed in nature and in the great works of the past masters. Le Corbusier states that "history was his only real master."[24] Perhaps the best way of understanding Le Corbusier's formal influences may be in a quote from Eugene Viollet – le – Duc "The first condition of design is to know what we have to do; to know what we have to do is to have an idea; and to express that idea we must have principles and a form." Form refuses to be categorised or anchored. For Le Corbusier form was not an isolated

24. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

physical mass, it was a grammar and a language. The growth of a form relies on time and space. When presented with an architectural job Le Corbusier allowed the matter to rest in his subconscious mind for a period of incubation. Le Corbusier states "one can only guess about the life of forms in the mind."[25] The interiorized style of an artist's subconscious is the means that allows him to select and refine while analysing a problem. Le Corbusier's drawings are highly condensed abstractions in two dimensions of spatial experiences which he anticipated in four dimensions.[26] Form for Le Corbusier was an active, volatile, living organism which animated the systems of a structure. In 'Vers uns architecture' he suggests that to fix a plan is to have had ideas and that a good plan is an abstraction, a crystalline thought form, an emblem dense in meaning.[27] This form which he speaks about relies upon a hierarchy of layers compressed in a manner appropriate to its intentions. The forms of Le Corbusier burst with an inner life. "To move through a Corbusier building is to sense how various schemes of order may give way to each other while still contributing to the dominant image within."[28] Le Corbusier's design process offers clues concerning the geneses of forms.

Form was closely related to Le Corbusier's personal principals. Modern history has by choice perhaps left behind Jeanneret's ideas about social and political explorations which relate directly to his 'style' of architecture. Jeanneret moved to Paris in 1908 to progress his knowledge of the artistic forms of architecture which were evident in the avant garde of the city. Having little or no exposure to movements such as Fauvism, Cubism or Futurism Jeanneret was attracted by Art Nouveau which combined an attention to modern materials with the abstraction of natural forms. Having secured a part time day job with architect Auguste Perret, rationalism stressed the primacy of structure in the generation of architectural form. The basis of his studies relied upon the past. "The past was not to be imitated directly, but transformed at the level of underlying principles."[29] Perret had studied at the Ecole des Beaux – Art under Julien Guadet, as mentioned previous, who had advocated classical examples and had implied that the age old lessons of the tradition could be translated at an organisational level to modern means. In the Perrett offices

25. JR Curtis, William. Le Corbusier Ideas And Form, London; Phaidon Press Limited, 1986.

26. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

27. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

28. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

29. JR Curtis, William. Le Corbusier Ideas And Form, London; Phaidon Press Limited. 1986.

structure was translated into art through an intuitive grasp of Classical principles of organisation. While working for Perret Jeanneret learned to think of concrete in terms of rectangular frames as opposed to a flexible material which could be controlled through framework and the form of the mould. Jeanneret was not worried about style alone; rather he was looking for guiding principles that might crystallize as later forms. Rationalism gave Le Corbusier a new perspective on tradition, less concerned with ornamental detail than with the anatomy of underlying post forms. The influence of art form in the architecture of Jeanneret can be traced to his enrolment into an art history course at the Ecole des Beaux – Art where he immersed himself in the past masters such as Michelangelo. "He observed modern practices in the studio during the day – concrete posts, by night – slender iron columns of Labroustes Bibliotheque and grappled with the question of industrialisation form with he makes reference to in his later work of Chindigarh which was deeply anchored in the industrial period in India for example. Throughout his life Le Corbusier remained fascinated by the architectural idea of objects within objects and in funnel form. "Today I am accused of being a revolutionary. Yet I confess to having had only one master – the past; and only one discipline – the study of the past."[30]

30. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

"Far higher than the material is the spiritual, far higher than function material and technique, stands form." – Theorist Werkbund Herman Muthesius states. In early October 1911 Le Corbusier travelled to Italy. At Pompeii he sketched the forum, the house of the tragic poet and the house of the silver wedding. "Every artist finds his own antiquity in the houses at Pompeii."[31] Charles Edouard Jeanneret found domestic archetypes that would profoundly influence his own ideas on houses. For Le Corbusier the word Classical was given a new vitality. Archaeological remains with grids of columns revealed an ancient system in which rhythm and plastic variation were created on the basis for standardisation. The geometry and Proportion found in the Pantheon, Colosseum and St. Peters appealed to his architectural instincts.

31. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

The primitivism of Le Corbusier's later forms had been prepared in the 1930's, however it was reinforced by

his experiences in painting, sculpture, tapestry and mural designs after World War II. The Ubu series of works created by Le Corbusier contained the sense of futility and the absurd. In 1942 Le Corbusier while in the Pyrenees picked up a piece of wood and a pebble which he found in a gutter. As he drew and redrew the objects blended together until what became known as the taureau was born. The Taureaux became an obsessive motif in Le Corbusier's prints, paintings and drawings. At Chandigarh the bull shapes were abstracted into forms of architecture.[32] Le Corbusier seems to have carried in his imagination certain formal configurations with a deep emotional appeal which could represent a variety of different subjects. Artist Eduard Seckler states "Le Corbusier carries within himself and with himself ideas of a formal 'plastique' nature which go back fifteen, twenty years or more; they are drawings, sketches which fill drawers at his home and some of which he takes on journeys. In this way contact is immediately re-established between a new stage and an earlier one."[33]

In 1944 Le Corbusier began collaborating with Josef Savina, a Breton cabinet maker, which resulted in the creation of bold polychrome wooden sculptures based on forms in paintings and drawings. The individual pieces were carved roughly with the marks of the chisel left showing and collided together in random assemblages. Some sculptures resembled organic plastic vegetables. Others appeared as Surrealist anatomical studies where organs were given varying proportions and distortions. The 'Ozon' sculpture of 1946 was in the shape of a distorted ear hanging towards the space which gave it identity. Le Corbusier explained that he was "exploring the acoustic component in the domain of form."[34] "This kind of sculpture belongs to what I have called acoustic plastic those are forms which transmit and listen at the same time"[35]. These forms are similar to those found on the roof scapes at Chandigarh and La Tourette. The rough surfaces of the sculpture influenced the bare crude concrete found in Jeannerets later works.

Le Corbusier made his first oil painting in 1918 aged 31. During the phase of this creative body of works which lasted until 1927 everyday items such as glasses, bottles,

32. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

33. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

34. JR Curtis, William. Le Corbusier Ideas and Form, London; Phaidon Press Limited, 1986.

35. Webber, Heidi. Le Corbusier – The Artist, Zurich and Montreal. 1988.

Le Corbusier study sketch for preparation of the Ozon sculpture, 1920.

books, pipes and violins are depicted exclusively. This period of his work is referred to as Purism. No work by Le Corbusier encapsulates more succinctly the iconic ethos of Purism than his painting Nature morte a la pile d'assiesttes in 1920. As the picture type suggests (image below) Purism was a celebration of industrialised forms and civilisation. Perhaps it is symbolic of finding himself when in 1927 after completing such an artistic conclave that he then sought to use the pseudonym Le Corbusier. The influence of art in the creation of architectural forms may be understood as a metaphor of light bouncing off volumes. The form is given expression through light. Le Corbusier states "I think that if one has conceded any significance to my work of architecture and city designing, then it is to this secretly kept work (the painting)."[36]

36. Webber, Heidi. Le Corbusier – The Artist, Zurich and Montreal. 1988.

Le Corbusiers own relationship with form was quite specific and underestimated. One of his most sculptural architectural works is the Chapel of Notre Dame-du-Haut at Ronchamp. Perhaps it was the freedom of artistic creation which was bestowed upon Le Corbusier which led to the present day sculpted mass at Ronchamp. Canon Lucien

Ledeur insisted upon his artistic talents to be manifested in architectural form. "This is not a lost cause; you will be given free rein to create what you will." It has been stated previously that nature allows for the creation of pure organic forms. Relationships exhibited between one element and another in nature is a metaphor for the internal relationships which are forged within a volume. However Le Corbusier states that good architecture is based on logic and mathematics while in the same breath stating that architecture is based on the line of good art as stated previously. Art is the physical manifestation of poetic nature while poetry is centred on the free and rambling train of thought condensed to create meaning in an often abstract way. In this way perhaps logic and abstract artistic forms can co exist and become one. Leuder stated 'I had the impression that he forged an immediate bond with the landscape'. The landscape is seen as the giver of forms.

From the outset Le Corbusier imagined the shape of the chapel to be a culmination of both concave and convex forms – organic forms related to both the body and the landscape. These forms were partially derived from the realisation of such forms in the Ubu and Ozon series of artistic sculptures which he had created in a seven year exploratory period commencing in 1940. Such a form sought to respond to the visual acoustics of the landscape. The chapel consists of a white plastered mass which is sculpturally sculpted around

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two contiguous concave fronts on both southern and eastern sides. On the north and west convex edges are used on the form. This plastic form is crowned by a beton brut roof which cantilevers over the form below. The dramatic interior of the volume is brought to life through the ever changing lighting conditions which pierce the 'plastic' walls. The overall form of the Ronchamp chapel seems to have been born out of the plasticity of the organic.

Styles characterise cities, but styles exist is the countryside as well perhaps best emphasised and noticed in the characterised styles of churches. The style of Ronchamp is perhaps best understood as a style of reinvention. This reinvention is founded upon place and site. Ronchamp like free standing forms are anchored in their 'place'. "Styles are endowed with mobility"[37]. Ronchamp is free of movement apart from the nature of the combined volumes upon the site. "Mobility distinguishes styles from vernacular architecture, which is relatively static and confined to a 'place'."[38] Dramatic forms are vernacular forms without place, without time.

37. Norberg – Schulz, Christian. Architecture; Presence, Language, Place, Milano Italy; Skira Editore S.P.A, 2000.

38. Norberg – Schulz, Christian. Architecture; Presence, Language, Place, Milano Italy; Skira Editore S.P.A, 2000.

Chapel at Ronchamp, note the plasticity of the plan.

Chandigarh, an oasis of form, was one of Le Corbusier's later demonstrations of logical town planning realised through architectural forms. Organic form was once again the inspiration for much of Jeanneret's work in designing a new capital for the Punjab. While instead of observing an individual building or volume as an organic form he expressed the city itself as an organic entity set against the Himalayan backdrop. He positioned the 'most important' buildings of control or power on the north of the Punjab. "The capitol was

the head and the cultural institutions were the intellect."[39]
Perhaps in the same metaphorical rational expressed by
Michelangelo the roads and other transport networks may be
understood as metaphors for the bodies circulation system.

39. Frampton, Kenneth. Le
Corbusier, architect of the
twentieth century.

The forms of the three primary structures which
the capitol was concerned with; the Assembly, the High Court
and the Secretariat, were all derived from the surrounding
landscape. The evidence of the influence of dramatic
architecture or primal forms is present in the location of the
three state volumes. The composition can be compared to
the Acropolis. In this way monumental structures are situated
according to auspicious alignments against the vast natural
backdrop. "The three honorific structures were distinguished
from each other through the use of large sculptural elements,
the specific form of which Le Corbusier was to adduce from the
flora and fauna of the Indian landscape."[40]

40. Frampton, Kenneth. Le
Corbusier, architect of the
twentieth century.

Sketch of the capitol showing
the way in which existing
elements of the organic
informed the built form of
Chandigarh.

The architectural structure of the assembly is
relatively low in relation to the surrounding capitol buildings.
The form rises out of the earth in an organic artistic motion.
The dynamic roof profile of the volume creates a separation
from the surrounding forms in a dynamic way. Positioned like
individual sculptures on a platform the pyramid and plastic
cylindrical volume perform functional uses in a dramatic fashion.
Similar to other such works by Le Corbusier the volume fails
to willingly become categorised in a 'style'. The form speaks
more of a flattened artistic confluence of overlapping forms.
The assembly is a painting. It is a sculpture, a realisation of both
artistic and architectural sculpted form.

Chapter Four

(Formal) Conclusion

The sculpted forms of Michelangelo and Le Corbusier to confine in the close dissection of their works are key to understanding the relationship posed between both artistic and architectural form. Both innovative leaders of their period refused to be classified in words which implied a single specification such as artist, sculptor, and architect. Michelangelo often claimed he was not an architect or painter but foremost a sculptor of forms. While Jeanneret aimed to convince that he relied upon all of the artistic and architectural classifications for his creative understanding. The opinion that one identifying characteristic of one's work cannot be realised without another, in the form of architectural forms or sculpture or indeed painting, is key to understanding the internal working space of form.

Dramatic architecture is timeless architecture. Similarly to the dispositions of both Michelangelo and Jeanneret dramatic architecture refuses to be placed within a time bracket or constraint. Dramatic architecture of forms refuses to be anchored in the past yet is fundamentally derived from past experience. It provides a space which allows for the mind to wander. The space is contained within the form yet is free of the anchoring qualities of linear time. "To move through a Corbusier building is to sense how various schemes of order may give way to each other while still contributing to the dominant image within."[41] Dramatic architecture and art forms refuse to be styled. They belong to no particular style. Dramatic architecture is based on composition - symmetry and form, both organic and geometrical. The architecture which Charles Blanc puts forward is in many ways representational of the road which the "architecture" of recent times has followed. Styles have become, for the worse, more important and recognisable to modern architects and architectural forms. Dramatic architecture are their own creation, free of classification. Both Michelangelo and Jeanneret were not architects of style or revolution but rather men of reinvention. They belong in the world of volumes, of space independent of objects or spaces through which they find expression. "Architecture has nothing to do with the various styles"[42]. However to say that the Pyramids of Egypt or the Acropolis or the chapel at Ronchamp are timeless due to their formal expression alone would create

41. JR Curtis, William. Le Corbusier Ideas And Form, London; Phaidon Press Limited. 1986.

42. Le Corbusier. Towards a New Architecture, London; Architectural Press, 1927.

a disservice to other buildings of similar forms. Dramatic forms exhibit a logic which excites the mind yet the logic is concealed in the greater manifestation of the form itself. The logic of axes, symmetry and rationalisation which Guadet proposes is perhaps the master generator preceding form. Plastic forms which rely on surrounding context and landscape are seen as organic representations of nature in constructed volumes.

The form in this way opposes to be controlled in a mathematical manner or geometrical logic but relies on its context for expression and place. The chapel at Ronchamp could not be understood as a form of its place if repositioned on a flat city terrain.

Dramatic architecture is related to vernacular architecture, although both are classified and adorn preconceived imagery and fail to be anchored in a given style or time. Dramatic art is concerned wit place and presence. The marriage of dramatic art and architecture in the cases of Michelangelo and Jeanneret are seen as the culmination of thought of the mind exercised through the finished object as an extension of the limb. The body is the consideration of form. Their work is based on the direct line of good art. The good art of Le Corbusier and Michelangelo is free yet confined within its place. It is an art of reinvention for which others must strive, an art of the most original things, as if nothing had yet been done.[43] Architecture must reinvent itself before the intentions of the artist is lost. In the conclusion of form architecture must start over again.

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Le Corbusier

The Improbable Hedgehog

David McInerney

Introduction

"I like complexity and contradiction in architecture",
Robert Venturi 'Complexity and Contradiction In Architecture'[1].

1(Venturi 1966)

Understanding the complexities and contradictions within architecture is a subject that Robert Venturi tackled with success in 'Complexity and Contradiction In Architecture'. Le Corbusier, the twentieth century modernist architect is portrayed to have an understanding of these complexities and contradictions with each mention of him by Venturi. He stands out to architectural theorists as 'getting it right' even though within this subject of complexity and contradiction it is extremely difficult to pinpoint right from wrong because these complexities and contradictions that lie within architecture are generally defined in paradoxical statements, if they are in fact successful. Le Corbusier, in Venturi's eyes did get it right but what exactly is it about Le Corbusier that leads us to believe succeded? A constant that exists within his projects are his rules. His self imposing rules that he believed compiled essential elements to achieve architectural success can be seen in primitive or quite explicit forms depending on the stages of his career throughout his projects. This would lead us to believe that it is through rules that Le Corbusier understood or even unknowingly achieved harmony within contradiction in architecture. It is in the investigation of his theoretical reasons and practical assertions of these rules that a conclusion can be obtained from this complex and contradictory architect.[2]

2 (Venturi 1966)

Le Corbusian Rule

'Towards a New Architecture' by Le Corbusier is an architectural document, a manual for design to manifest an architecture that is sensory to mankind. It explores and offers a hypothesis into our sensory relationship with architecture and suggests or rather more accurately insists that the given hypothesis is correct. From the senses we experience through our sensory organs such as sight to our sense of space and accurate proportion, Le Corbusier offers a manual to please these senses. Written

in 1923 'Towards a New Architecture' explores Le Corbusier's initial expression of architectural rules and his reasons behind the need for rules in architecture, although this isn't the entire subject matter of the book. Although his arguments on our sensory reception are not scientifically proven, they are in fact convincing. He expresses a vibe that our visual connection with each layer of a building is of indescribable importance. From outside on the external facade to the internal elevations of the walls, he reveals to us a sense that the elements comprised in these facades should complement each other and complement the form in which they are seen. An insight into the importance of spatial arrangement is greatly emphasised. The placement of one object or form precisely from another on a given plane is a major concern of the architect. The creation of a pleasing sense of space and proportion isn't given as manual but it is merely suggested that the arrangement of objects and forms on a given plane is the generator of everything else[3].

3 (Corbusier 1987)

Plan, mass and surface are the three aspects of architecture that are in fact suggested to be the generators of projects, mass and surface being the elements in which architecture manifests itself and plan being the generator of order. Mass is the form in which architecture expressed in bold shapes such as spheres, squares etc. He suggests our eyes are pleased by the way in which light meets the form and exposes shadows. Primary forms are depicted as the type of mass the human eye most appreciates, showing the importance of the visual sensory connection with architecture that Le Corbusier most strongly believed in. Surface is the element that wraps the mass or even frequently disrupts and punctures the mass because of utilitarian necessity. He clearly states that the surface should accentuate the form[4]. Each move on this quest for sensorial expression must follow these rules according to Le Corbusier. Architecture will manifest itself through these forms but it is the plan that generates order. The almighty plan arranges space. The almighty plan commands an order in which mass and surface can express themselves. The Acropolis exhibits 'plan bliss' in Le Corbusier's eyes. The arrangement of mass on the inclined plane is the ultimate example of plan perfection. The harmonious rhythm of space and sense of movement up through the space epitomises his rule of plan generation. The plan is the ultimate generator and cannot be rivalled, according to Le Corbusier.[5]

4 (Corbusier 1987

5 (Corbusier 1987)

Regulating lines on a facade are preached to display an indescribable monumentality that commands an order and respect that cannot be expressed by any other means. The modern architect is said to self proclaim themselves as free poets but Le Corbusier insists the regulating lines used in the past by architects such as Michelangelo are vital. The order they command appeals to our vision like the arrangement of features on a face. The proportions of features and distance between them lead us to believe if someone is good looking or not. In the same way this applies to a facade and the way of regulating this is with regulating lines such as the golden section or the right angled triangle. Regulating lines therefore play a large role in project generation as they are what heightens and pleases our visual sense, an aspect that Le Corbusier held dear while writing 'Towards a New Architecture'.[6]

6   (Corbusier 1987)

It wasn't until between the years 1926 and 1927 that Le Corbusier adopted his 'five points of architecture'. Each of these five points are manifestations of the past that Le Corbusier was fascinated with. They are mostly seen in Greek architecture, an aspect of ancient architecture that fascinated Le Corbusier[7]. They are ' le plan libre, la facade libre, le toit jardin, le pilotis, and le fenetre en longeur ' which translate as 'free plan, free facade, roof garden, pillars and strip windows'. Attempts to adopt his new rules were seen in a gradual process from the early 1920s, the first being in Maisons Citrohan[8]. Throughout the 1920s hints of the points are seen in several projects until the construction of the 'Villa Savoye' finished in 1931. It is regarded as the perfect example of the use of his five points[9]. These five rules had utmost importance in his concept of the essential elements of a project. The use of pillars in Greek architecture revealed a rhythm to him that opened space but yet confined it. The free plan opened up space but yet it could easily segregate spaces. It is the conjunction 'yet' that is fascinating about these set of rules. They allow for a complexity and contradiction within each rule that Le Corbusier revelled in.

8   (Frampton 2002)

9   (Frampton 2002)

Rule Contradiction

Le Corbusier at this point appears to us as a rigid architect that produces work within his own set confinements like Palladio for instance. Nine strict rules are required after 1927 by Le Corbusier to manifest the perfect project, four of which dealing with sensory response and five which are manifestations of past architecture. On close inspection of these rules in terms of each other and of Le Corbusier's explanation of the roles of these rules, it is evident that much contradiction arises. Taking the five points there are evident contradictions within each separate point as previously explained with the conjunction 'yet'.

The plan cannot be the sole generator of a project if regulating lines are paramount in provoking a sensory reaction as both of these generators are generated on different axial planes. The plan is said to be the generator of order but is it not the regulating lines on a facade that express to us a sense of order, a sense of monumentality and an overall sense of the project as it was previously described as the aspect that provokes the richest

Maisons Curutchet Plan

Maisons Curutchet Section

sensory reaction. Therefore the plan most certainly cannot be the sole generator, the driving force of the project, because regulating lines appear to have an equal role. Although this is the case from what Le Corbusier is telling us we could extrapolate a new conclusion: the plan is the initiator of a project yet isn't the generator. The 'Maisons Curutchet' has a strong sense of purpose in plan as space negotiates between the slender columns and dividing partitions of the private and servant spaces but it is evident there is a conscious will to generate the project in the vertical axis. The section is clearly a driving force showing the building relation-

Une petite Maisons Elevation

ship with nature and the visual relationship across between the separated office and house. The plan is certainly not the generator of these aspects.

The surface is supposed to accentuate the mass[10] but is this really possible? Any utilitarian puncture in a mass is an interruption to the mass, an inconsistency that cannot be avoided. This inconsistency can certainly reflect the nature of the mass but hardly accentuate its nature. In 'Une Petite Maison' by Le Corbusier the mass that is expressed is a cuboid in shape, clad in horizontal bands stretching from one end to the other. A plinth differing in colour and nature to the horizontal bands sits the mass on the

10   (Corbusier 1987)

Shodan House

ground. The powerful strata of cladding are interrupted by a strip window, fenestrated with vertical mullions. Above this a shading devise horizontally sits on top of the window. The window most certainly doesn't accentuate the mass. The utilitarian need of the window is merely expressed in the nature of the mass.

The conjunction 'yet' has been previously discussed in terms of the five rules. Robert Venturi cleverly highlights this in 'Complexity and Contradiction', showing how it enriches a project[11]. On paper how can something be heavy yet light or complex yet simple? On paper it doesn't make sense but if we take projects like the 'Shodan House' by Le Corbusier, "It is closed yet open - precisely closed by its corners yet randomly opened on its surface"[12]. It is in these paradoxical statements that we realise the richness of its complexity. The question is do the contradictions in Le Corbusier's rules in fact enrich his projects? Is Le Corbusier in fact aware of his contradictions in his rules?

11   (Venturi 1966)

12   (Venturi 1966)

The Improbable Hedgehog

Isaiah Berlin once said, "The fox knows many things but the hedgehog knows one big thing"[13]. Colin Rowe in 'Collage City' expands on this notion and explains that the hedgehog is concerned with one single big idea but the fox on the other

13   (Rowe and Koetter n.d.)

hand is, "Preoccupied with multiplicity of stimulus"[14]. It is in Le Corbusier's own writings that he reveals to us his insistence that architecture should stimulate our senses, which includes our sense of space and proportion and the senses we experience through our sensory organs. If Le Corbusier is in fact a master of disguise or as Colin Rowe put it, "A fox assuming hedgehog disguise for the purposes of public appearance"[15], we can assume that the contradictions that lie between his rules were evident to him. We can almost say they are purposeful because they allowed him to achieve the conjunction 'yet' that creates the paradoxes which we have discovered enriches a project in an indescribable fashion. To Le Corbusier's audience he appears as a hedgehog[16], a Palladio, focused on the one big idea. The very fact he has self professed rules, he exhibits himself as a man with a specific goal, a man working towards one big idea. He creates this persona in front of his audience, but why? Why doesn't he boast of his higher intellectual goals, his concepts of broad sensory stimuli? It is possible as an architect at the forefront of the modernist move-ment he was reluctant to over challenge his audience. Maybe the effect of a sensory stimulating environment that he has created might be destroyed if his audience are aware of his underlying cause. At a subconscious level these stimuli would affect the user and knowing about them would only weaken the effect.

14 (Rowe and Koetter n.d.)

16 (Rowe and Koetter n.d.)

Une Petit Maisons

Taking 'Une Petit Maisons' again we can explore the consequenc-
es of an audience that would be aware of his underlying cause
as opposed to one that experiences the space at a subconscious
sensory level. Situated four metres from Lake Geneva in Veyvey
the house comprises of a, "Sequence of uninterrupted spaces"[17].   17   (Baltanás 2006)
On entering the house, its appearance is an expression of a mass
that is very grounded. It is located on a lower ground plane to the
road and is surrounded by nature. It is almost like a rock at the
banks edge, anchored into its landscape. The overall effect is of
heaviness. As previously explained the cuboid is punctured with a
long strip window that frames the horizon, the water and sky. The
visual impact of looking out of this window is similar to sitting in
the cabin of a boat. The boundaries between land and water are
visually blurred and the effect is that of a direct relationship with
the given lakeside site. The boat effect is emphasised with a long
linear movement through this space at the window which is visu-
ally uninterrupted. The effect is one of lightness, almost like the
house is floating on the lake. The house is therefore heavy outside
yet light inside. If his audience were aware on a conscious level
that this was his intention the effect would be weakened. Their
expectations of Le Corbusier's sensorial experience would retract
from the actual experience available to them. By remaining a
hedgehog in their eyes he succeeded in providing all the wonders
of a fox without creating pre formulated expectations.

Complexity and Contadiction

        It is established that Le Corbusier creates conflicts be-
tween his own set rules and is fully aware of these. It is in the
contradictions that he revels. It is in the contradictions that he
creates the richness that is indescribable but extremely effective.
It is the question of which rules have dominancy over others that
hasn't been established. The answer to this question lays in broad-
er arguments of rules v design and space v appearances.

On the subject of rules v design, Le Corbusier is possibly the
most interesting architect of the twentieth century to discuss. If
he is seen as the hedgehog that he portrayed himself as then the
question of which is more important to him arises - following his

Fallingwater

own rules or designing. We are assuming Le Corbusier was aware of his true fox colours. He is aware of his contradictions and this in turn this allows for loopholes in his rules, loopholes that he uses in cases of design requirements.

It is in comparing him with a true hedgehog, which Colin Rowe has identified, that we can investigate how his contradictions are in fact the loopholes that enrich his work. Frank Lloyd Wright is a true hedgehog[18]. An architect that self imposes rules to reach an ultimate goal. The rules will be strict. The rules won't have loopholes and when an exception is mandatory the exception is made the rule.

18   (Rowe and Koetter n.d.)

'Fallingwater' is a perfect example to expose Frank Lloyd Wrights strict rigor he asserts on following rules. Venturi comments on Wright's insistence on, "Horizontal continuity at the expense of all else", in 'Fallingwater'[19]. He expresses structure and concept as a platonic arrangement which is vertically compiled in strata. Floor plates appear as thick bold plates springing from the stratified mass. Walls are expressed horizontally with bands of stone stretching across the surface. The entire effect is one of layers of material stacked on top of each other like an untidy stack of cards. Where utilitarian needs such as windows are required they simply appear as another layer in this horizontal composition. Where diagonal elements are requires such as stairs, the hori-

19   (Venturi 1966)

zontal consistency is simply applied to the exception. "The exception becomes the rule"[20]. The external stairs in 'Fallingwater' eliminates any diagonal elements such as the string and railing. The treads are expressed as individual horizontal planes and are suspended from the floor ahead. Any stairs internally are hidden between two walls as in most of his other work. His rule of horizontality is dominating at the expense of everything[21]. With no contradictory rule he hasn't offered himself a loophole. He is confined to rules and design requirements become secondary or possibly compromised. The utilitarian need of access by automobile isn't expressed but suppressed. "The bridge is perpendicular and analogues to the order of the house and the curving path of the automobile is not recognised"[22]. Expression of design and requirements becomes either non-existent or forced into the fascist rule of architectural language he has brought upon himself.

Le Corbusier on the other hand, through his complexity and contradiction, expresses utilitarian necessity. His structures are platonic yet exhibit an essence of diagonal movement. His rules do not force design decisions into a specific elementary composition, they accommodate necessity and express it through their contradictions. The fact that free plan can entirely open a place doesn't rule out the fact that private spaces are a necessity. In 'Maisons Curutchet', the slender columns open the space up to

20   (Venturi 1966)

22   (Venturi 1966)

Refectory Windows of La Tourette

enable a free flow of spaces. The plan has the capacity to generate this free flow. The necessity of the private bathroom requires enclosed walls and Le Corbusier expresses this in plan. The plan is now open yet enclosed. Le Corbusier expresses the necessity to access one floor to another. In the 'Unite de Habitation' the stairs is clearly exhibited and celebrated at the north side. The structure is linear and has a presence of great mass but still the utilitarian necessity is expressed. He juxtaposes the design necessities against his rule of mass to express its form. The 'Villa Savoye' celebrates the need for the automobile[23]. He accommodated for the automobile into his design. His rules simply allow for this instead of making the exception the rule. The pillars open yet enclose the space under the house allowing the automobile to express its place in the scheme.

23 (Venturi 1966)

Mies van der Rohe eliminates the, "Exceptional diagonal"[24]. His spaces are sandwiched between two planes. This is to reduce architecture to its simplest form or as how Mies put it, "Less is more". The argument of space v appearances arises here. Mies was accomplished in architectural reduction because he set himself this platonic rule. Variation in spaces suffers from this along with a range of sensual stimuli. Le Corbusier's projects didn't suffer in the same way as his rules allowed for variation and exception through the conflicts and complexities he created. Utilitarian use wasn't expressed by Mies, it was masked. The 'Farnsworth House' expresses reduction to a fine art. The need for windows is resolved by spanning them between two plates uniformly around the structure. The rule of reduction leaves the user with a monotony of sensory experience. Le Corbusier's rule of free facade allows him to express the facade as open yet closed. In 'La Tourette Monastery' the facade at the refectory is glazed and panelled like a distorted chess board, allowing the user to experience light and shade all in the one view. Le Corbusier has expressed the need for windows while enhancing the sensual experience.

24 (Venturi 1966)

Sensual experience is expansive through Le Corbusier's rules unlike the rules asserted by his contemporaries. The fox is evident behind the hedgehog disguise and is clearly succeeding in achieving harmony through the ambiguous conjunction 'yet'. By further studying projects by Le Corbusier we can determine the range of sensual experiences and the extent of expression in terms of utilitarian necessity and how much in fact his contradictions

reinforce these traits. The 'Villa Savoye' in Poissy, France[25] displays an expression of each of Le Corbusier's rules. It juxtaposes one form against another and celebrates utilitarian use.

Intentional Contradiction

Built between the years of 1929 and 1931, the villa is a, "Modern artefact"[26]. The house is located in the centre of a plot that is discovered at the end of an entrance passage that was

Villa Savoye

Juxtaposition of ramp in Villa Savoye

Spiral Staircase in Villa Savoye

clearly designed to accommodate the car. On walking down this passage, the user is quite aware of the passages primary use as a road. The house is revealed slowly as its white primary forms emerge from behind the trees that retain the entrance passage. As previously discussed, the road is celebrated not suppressed like in 'Fallingwater'[27]. A cuboid sits lightly on slender pillars that gracefully touch the ground. Beneath this lies a curved form that straightens toward what we perceive as the back of the house.

27 (Venturi

Le Corbusier's rules are evidently used at first glance. Each of his five points are combined at their best. Free facade, pillars, the roof garden, and the use of strip windows can all be seen externally and free plan is clearly evident on entering. The structure is heavy yet light because of the pillars supporting the bold mass above it. It appears as open yet closed also because of the pillars. The underneath has a clearly defined parameter but views past it are available at the extremes of these parameters. Although these complex contradictions exist the overall sense is one of simplicity, which can be strongly contrasted with the complexity of the interior space.

Utilitarian necessity is greatly celebrated in the 'Villa Savoye'. Light is required and obtained through the strip windows, expressively punctured in the solid cuboid. Rising up through the building is a matter of necessity and is celebrated internally. The platonic effect from the exterior is juxtaposed immediately on entering the building. An internal ramp and curving stairs greet the user in the entrance hall, celebrating the need to rise up into the building. The diagonals interrupt the array of vertical and horizontal elements. It is through the combination of all his rules that allow for the magnificent juxtaposition. The free plan arranges the diagonal requirements like objects in between the structure, the ramp being against the wall to juxtapose it against the wall and clear story strip window and the curving staircase central in the space to glorify its necessity.

The rules allow the external aesthetic to be simple and the internal complex[28]. In Wrights case in 'Fallingwater' the constant insistence of horizontal continuity creates an effect that is quite bland in terms of contrast between the internal and external experience. The free facade that allows the use of strip windows exhibits to us a perception that the cuboid uniformly encloses an internal space. This uniform perception is greatly confused on the

28 (Venturi 1966)

interior. The strip window is in fact fronting internal and external spaces. The pillars and free plan are allowing for the free facade to create the vast complexity between inside and outside. It is the plan generator that has enabled Le Corbusier to create the intermittent internal and external spaces but it is regulating lines on the facade that simplified the transition of spaces on the outside. The combining rules and contradictions within them formulate two entirely different views of the building. Simple yet complex is a contradiction that seems almost unimaginable but in this case it has been achieved. If his rules did not entail contradiction like Wright's rule of horizontality, this exciting conversation between inside and outside could not be imagined. The Villa all in all is an expression of the 'yet' contradiction which has enriched the project beyond the means of any rules of consistency.

The 'Maisons La Roche-Jeanneret, built between 1923 and 1925[29] was built before the evolution of Le Corbusier's five points although his notions on these are evident. At this stage plan, mass, surface and regulating lines are of great importance to him. Holding the title of a self made architect he required his own notions of architectural composition and these are what stood strong.

The house is located in a cul de sac in the city of Paris and was the home of a banker that was a purist art collector[30]. The gallery spaced faces the visitor on arrival and is placed on pillars. This shows the house's presence at the end of this narrow space yet doesn't hide it natural boundary from us. The gallery space is curved in its form and is quite heavy aesthetically but its sits quite lightly on the pillars that support it. The volume is quite artistic and organic. The sleeping spaces appear on the right and express a much more geometrical and formal aesthetic. The mass creates a street edge that appears impenetrable without invitation. Both masses of the living quarters and the gallery space are primary forms but both bring different connotations. The regulating lines on these facades reinforce these connotations. Excluding the large window opening up the facade at the internal bridge. The arrangement and sizing of opes in the facade of the street edge is regulated with the right angled triangle and aesthetically is very much private and ordered. The facade of the gallery with its artistic form is simply enjoyed as the light hits its surface and graduates to shade, expressing the curve. A simple clear story strip

29 (Sbriglio 1997)

30 (Sbriglio 1997)

Left- Stairs in Maisons La Roche

Right- Ramp of Gallery Space
in Maisons La Roche

Villa La Roche View

window celebrates the need for light in the room and appears at the top of the mass which keeps its interruption to the primary form to a minimum. Both conditions are using primary forms, have a surface that is expressed in the nature of the mass and regulating lines that give order to the surface. The sheer number of rules allow for variation between two conditions that contain the same elements. The elements have created an overall building that is formal yet un-formal. Imagining a situation where Le Corbusier set himself one insisting rule, for example a rule of horizontality, the contrast between formal and un-formal would be extremely difficult to decipher. In 'Fallingwater' the uniformly asserted horizontality doesn't highlight and distinguish between private and public spaces but puts them all under the umbrella of

the rule. Le Corbusier's approach again is appealing to our senses at a much deeper level.

Internally the architect embraces the diagonal again in the gallery area. A ramp provides a constant flow of movement that sweeps the visitor up to the next floor. The flow of the ramp is much more organic and artistic than the sharp geometrical angles of the stairs that appears in the more private areas of the house. The artistic juxtaposition of the stairs that we saw in the 'Villa Savoye' is suppressed here. The stairs is hidden between the verticals of the walls. The artistic expression is confined to the artistic area of the house. The private areas are expressed with geometry. The house then becomes organic yet geometric. The complexities that his rules bring when combined again bring variation and different connotations with different functions. A constant suppression of the diagonal wouldn't achieve this or a constant use of the diagonal.

'Maisons La Roche-Janneret' perfectly describes the combination and contradiction of Le Corbusier's earlier rules and how they offer us a variation of sensual experience. The contradiction again lays in Venturi's 'yet' conjunction that Le Corbusier masterfully executed with ease.

Conclusion

Four rules of generation and five of the elementary components that are used in the generation all in some way have either contradictions between them or available contradictions within them. It is sheer number of these rules that create a persona of Le Corbusier in front of his audience, a persona of a classicist trying something new, a classicist rearranging the regular order of rules to manifest a new type of architectural space. This is of course partly true as he did formulate an idea about these rules from classic architecture[31]. This persona suited his audience. His audience not knowing of his underlying cause of an expanse of sensual experiences suited Le Corbusier. This provides for the element of surprise, the subconscious reception of sensory

31 (Frampton 2002)

stimuli that doesn't entail any pre conceptions of a space. The fox was satisfied with his hedgehog disguise in the larger scheme of how he envisaged the sensual reception of space. Touching on only a few of his projects, he has created buildings that are heavy yet light, open yet enclosed, organic yet geometric, simple yet complex and many more. These paradoxical statements enable us to receive multiple sensual stimuli through adjoining spaces and they are possible through Le Corbusier's rules that he asserts in tandem. Robert Venturi and other theorists are in fact correct when they decipher that Le Corbusier 'got it right'. He understood his rules were elements that allowed him to create a variation of sensory experiences. His rules were his tools to create complexity and contradiction and it is in his work that we can also understand complexity and contradiction's enriching power and place within architecture.

Ultimately Le Corbusiers title as a modern architect can now be questioned. His persona of a modernist following self rule holds strong to a certain extent but since his rules allowed for such expansive possibilities through contradiction is Le Corbusier in fact a postmodernist in modernist disguise. He is in fact an architect before his time that certainly displayed traits of a postmodernist. Everyone needs a little hedgehog in ones hedge and Le Corbusier is certainly the proof of this.

LANSCAPE

SETTLEMENT

Shona Madden

Introduction

Landscape comprises the visible features of an area of land, including physical elements such as landforms, associated water bodies such as rivers, lakes and the sea, living elements of flora and fauna, abstract elements like lighting and weather conditions, and human elements like human activity and the built environment.

One would always consider the mountains, rivers, valleys, and flat land Landscape. The build environment can often be forgotten, It is difficult to know where to begin when writing about the landscape as only so much it true in terms of what we know –the rest can only be speculation. The simplest starting point is to begin with what is known – that is starting with the occupation of the landscape by man. To start with human settlement on the landscape brings about another aspect to the landscape – that is the affect the landscape had on these early inhabitants, and how in turn these people used the land for their own survival.

The imprint left on the landscape by these first setters can often be a determining factor in the pattern of the towns or cities that we live in today. While some have flourished, some dissolved, and others have changed to what was initially intended, the landscape still remains. It is a prominent feature in our lives, especially in Ireland.

While the landscape in Ireland, and the tools available to the people, influenced the type of settlement and structures built, the vernacular architecture that arose from this has been lost somewhere throughout the ages.

While the term landscape can mean different things to each of us, the pre-existing, should always prevail, and not be lost to the age of technology and the virtual world.

1. Unknown. (n.d.). Wikipedia. Retrieved 04 02, 2010, from http://en.wikipedia.org/wiki/Landscape

Society

Living as a collective is not a recent phenomenon. It did not appear with the first block of apartments or with the housing estates as we know them to be today. Collective living is the basis to our survival and evolution as a species. Throughout the ages people have come together out of necessity. The need for food and safety dominates, while developing further needs of social interaction.Thus began the evolution of society.

Location is a factor which influences settlement. The proximity of water for food and drink greatly increases the probability of settlement. The gradient of the land was also a factor – the height was a defensive tool and flat land was later farmed as another source of food.

In approximately 8000BC it is believed that the first humans crossed from Scotland to Ireland in wooden boats. Early settlement by these people was confined to the waterways and the coast, leaving the largely forested interior uninhabited. Evidence of these settlements has been discovered in the form of huts and cooking facilities in Sligo, Antrim and Offaly.

As these early inhabitants of Ireland were mainly hunter – gathers, the basic need for a collective settlement or community may not have been obvious. The family unit was the beginning of the collective living, with timber framed construction used for huts, covered in animal skins. These people were nomadic to a certain degree, moving to the next source of food and water when supplies ran short. Men hunted for birds, animals and fish with flint tools and weapons while women collected berries and nuts from nearby.[2]

It was not until the Neolithic period in Ireland that community and society begins to take the shape that, over time, evolves to what we know today. Between 3900BC and 3000BC farming techniques appeared in Ireland, originating in the Middle East and travelling west to Britain, and eventually Ireland. It was with the discovery of farming that the collective underwent major changes and also society. These new settlers arrived to Ireland in the same manner as Mesolithic people, via Scotland and Antrim, and became known as Neolithic people. They brought with them

2. Johnson, J. "Ireland. A human geography." In Atlas of the Irish Rural Landscape, by Kevin Whelan, Matthew Stout F.H.A Aalen, 4 - 30 . Cork: Cork University Press, 1997.

animals and crops that were not native to Ireland, such as cows and sheep, as well as wheat and barley.

These Neolithic people did not settle near the coast and waterways like their predecessors, but in upland areas. These forested areas were cleared using tools and also fire. This made way for the permanent settlements and farms. Soon what I would consider the first suggestion of collective living and even a village was formed.

Neolithic farmers lived in communities larger than that of the Mesolithic hunter – gathers. They lived in clusters of houses, with the possibility of a multi-purpose building in the centre. These settlements farmed a considerable amount of land together, some up to 100 acres. The Ceide Fields[3] of County Mayo is evidence of this. As the Neolithic farmers were not nomadic people they built more permanent houses. These houses consisted of finely woven sticks covered in daub (dried mud). The roof had a hole cut in it to allow smoke to exist – a take on the modern day chimney. The perimeter of the settlement was fenced in with vertical logs, evidence of these found in the ground in the form of post holes.

Cooking was now done indoors, as we do today and the hearth or the fire was located in the centre of the house. As Lewis Mumford points out it is from this point on that the social changes begin to appear. He suggests that this is where the role of the women changes and becomes more involved in the home and raising of children than gathering food. Food is more accessible due to the farming of animals and crops, which means that women are no longer needed to go out to the forests to gather berries and nuts. Their role is associated with the home and their families.

The collective living element also changed the length of childhood for Neolithic children – again with the availability of food children are not need as early in life to go in search of it and thus enjoys a longer childhood together. Instead it would have been more possible for the children to help out in the home with their mothers, in the cooking of meat on the spit over the fire or in the baking of bread on a flat stone, again over the fire.

I believe that it is from this point that evidence of urban practice begins – as Spiro Kostof suggests in his book The City Shaped[4],

Fig 1. Aerial view of The Ceide Fields, County Mayo, with the settlement patterns of the early farms visible.

3. Muesuems of Mayo. (n.d.). Retrieved 04 05, 2010, from http://www.museum-sofmayo.com/ceide1.htm

when the search for food became obsolete and food, due to farming became a surplus that "cities started when there was a shift away from a simple, self-satisfying village economy"[5] . Kostof's conclusion results in a logical succession from a farming community to a more diverse village, and eventually city. When a food surplus existed it encourage some to change trades, and thus bringing about the barter system – a form of exchange. Specialized trades came about, for example craftsmen, scribes, priests, and warriors to name the base groups.

Kostof also implies that although the initial reasoning for settlement location may have been out of necessity, for example access to food and water supplies, this logical does not necessarily continue to today for long established cities. Kostof quotes Aston and Bond, saying "Towns are built by and for people. Their regional and local sitings are the result of decisions taken by people and not of some inevitable physical control"[6] . Granted, once settlement is established it will generate its own infrastructure, but to imply that the physical surroundings and location do not have any influence at all defies the logic of our ancestors.

To take Ireland's major cities – Limerick, Cork, Galway, and of course Dublin – it is clear that the age old theories for settlement locations - access to food and water from rivers and seas – has resulted in the establishment of our most densely populated settlements. Many of these cities still employ the waterways as a source of food – the fishing industry is a source of food and employment in modern day Ireland.

The well-known saying "no man is an island" comes to mind when Kostof states that cities, or settlements, come in clusters. Each city is dependent on the other, even though it may be larger or smaller than it. Dormitory towns and villages occupy the remainder of the countryside surrounding the main cities shown in Figure 1 above. Another point of confusion in relation to Ireland is Kostof's statement that "cities are places that are intimately engaged with their countryside, that they have territory that feeds them and which they protect and provide services for"[7] . While this theory is more applicable to Roman towns, I feel that it can often be different for Irish cities today. For example, the countryside "the territory that feeds" is associated with small towns, not

4. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

5. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

6. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

densely populated, with a strong tradition of farming. The cities themselves do not have this "intimate" relationship with the land surrounding, but it is with the "cluster" situation or its interdependence with the surrounding settlements that feed it.

The hierarchy, which the city, town and village are all part of, is not solely conformed of the population or population density, but to the rate at which urban society undergoes change. It is this change throughout the ages which has shaped and moulded our cities into what they are today.

Fig 2. Map of Ireland – Major Cities denoted with black dot. L-R: Galway, Limerick, Cork, Waterford, Dublin.

7. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

Landscape

"....the evident fit between the human-made and the natural." [8]

The landscape, which has been mentioned in Kostof's statement regarding the cities, or settlements, that are "intimately engaged with their countryside ", is a tool to map or quantify to some degree settlement.

The landscape or topography of a site of settlement, be it town or city, should bear significant influence on the type or structure of the settlement as it is the first physical factor. Kostof also points out the "tendency in city-making to amend the natural landscape as there is to work with it"[9]. For example a cleared forest, reclaimed swamp, diverted river and in filled canyons all suggest the amendment to the landscape prior to the construction of settlement. While it might appear that the amending of the landscape is a crime, many cities, although changed the existing topography were mindful of the "hints of their pre-existing natural landscape ". Settlements along a river bank may have responsive streets along each side, while harbour towns may develop a "street sweep" pattern, in response to the shape of the harbour.

I feel that in Ireland there is a tendency to ignore all suggestions by the landscape, by the natural pre existing environment. To determine the result of this on the landscape of Ireland can only be evaluated by looking at example of how those that were amended and worked with succeeded, or not.

The well known city of Amsterdam is one that started out based on an amendment to the condition of its waterways. The name, Amstellerdam, refers to the city's origin, a dam on the river Amstel.

The hill towns of Italy and the ruins of settlements in the South American mountains are the perfect examples of settlements that worked with their natural landscape, settlements that used the topography to determine the structure of the towns.

Italian Hill towns are an example of "the evident fit between the human-made and the natural". These towns adopt different configurations, depending on the nature of the site they are on. If

8. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

9. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

the site is a ridge the town will generally take on a linear shape, between two points, these points denoted by a church and a castle. Stepping down the slope will be roads which will run parallel to the line created by the ridge. On rounded hilltops the settlement pattern will appear as concentric circles, with the buildings of most importance at the top. The streets will then be terraced down the slope.

Fig 4. An example of the italian hill towns, with the buildings following the linear pattern aross and down the slope.

Fig 3. A view of the Inca settlement, Machu Picchu, showing the integration of the structures with the landscape.

Both of these patterns of settlement can and are used on flat sites, though it seems that they are used more in terms of a planning tool than due to the topographical influence of the site.

"God created the world, but the Dutch created Holland" [10]

René Descartes

In terms of a place or settlement that has amended its natural environment the Netherlands, and in particular Amsterdam comes to mind. Geographically The Netherlands is a low-lying country. A fifth of its area and over a fifth of its population are below sea level, with half the land less than one metre above sea level. The changes to its landscape came about through the process of land reclamation and the use of dikes and dams to alter the waterways. The earliest protection against the rising tides in The Netherlands was the simple act of piling mud to a height that would be clear of the rise of the tide; an earlier version of modern

10. F.H.A Aalen, K. W. (1997). Atlas of the Irish Rural Landscape. Cork: Cork University Press.

day levies. In the Middle Ages trade along the rivers encouraged the development of villages and towns; which resulted in dike towns and dike-and-dam towns.

Dikes were generally wide enough to also carry a road network on top. The buildings would occupy the slopes and the lower ground was protected by the dike from flooding. Towns also began where a river or a creek was dammed. This was the beginning of Amsterdam as we know it today.

Fig 6. A map of the concentric canals of Amserdam.

"A dam across the river above the small settlement turned the downstream portion into an outer harbour. Diked canals diverted the flow along two sides, allowing for an inner harbour upstream and stable land for the extension of the town between the riverbed and the canals. The prized central space of the dam in such towns received important public buildings like the town hall, the weighing hall, or the church."[11]

The earliest suggestion of the reclamation of land in Amsterdam is the late 10th Century. In the 1300's Amsterdam gained city rights. From the 16th Century on Amsterdam survived through a Spanish Inquisition, the Eighty Years War and on into the 17th Century of The Golden Age. The Golden Age in Amsterdam brought about prosperity due to trade with the East and India. It also resulted in the establishment of the world's first Stock Exchange, when the Dutch East India Company traded in its own shares.[12]

Fig 5. An aerial view of Amsterdam, showing the pattern of concentric canals.

11. Kostof, Spiro. The City Shaped. London: Thames and Hudson Ltd, 1991.

12. Amsterdam. (n.d.). Retrieved from http://www.amsterdam.info/

Amsterdam again amended its natural landscape at the end of the 19th Century for the construction of the Amsterdam-Rhine Canal. This gave the city direct access to the Rhine, while the North Sea Canal gave the port a shorter connection to the North Sea. As a result the economy of the city grew. This encouraged the city expansion and the building of new suburbs. The city now fans out in a southerly direction from the central railway station. The concentric canals (a similar pattern to the concentric circle pattern on hills) contain the heart of the city, where most people live. Much of the city and surrounding urban areas are polders, or reclaimed land.

The canal system in Amsterdam is a result of careful planning and acknowledgement of the environment and landscape. The three inner canals of the concentric circles are mostly residential, while the fourth and most outer canal was intended for defence and water management. Unlike many defensive settlements that one imagines, with masonry walls and battlements, the moat formed by the canal and the dike considered enough.

In the early 1600's the construction on the canal system began, proceeding from west to east, and not, as the norm might suggest, from the centre outwards. As the intended plan for all the land enclosed by the canals did not come about as several of the canals themselves have been filled in, becoming streets or public squares.

Due to all the amendments to the city and land -scape of Amsterdam, and the new routes to the North Sea and the Rhine, it has become one of the best cities of the location of international business. Also due to the nature of the city cycling is perhaps the most convenient and popular method of travel.

The use of a car is discouraged, parking is expensive and many of the streets are one-way. The canals have also become a major part of the transport network – water taxis, a water bus and even electric rental boats are used to navigate through the city's maze of waterways. While the need for trade has lead to the establishment of the major city that Amsterdam is today, it has adapted its site to accommodate its needs and the needs of its population.

Fig 7. A view along a canal in Amsterdam, with the linear pattern of the hill towns still maintained.

Change

"....man and his environment are more intimate than a snail and his shell." [13]   *Vidal de la Blache*

The landscape of Ireland is a unique one to say the least. Different aspects give it its distinctive features, the most obvious ones being the cultural elements such as the field patterns, and the settlement patterns. While Ireland is mountainous and flat, as well as surrounded by water the different patterns of settlement seen in Amsterdam or South America are not prominent here. For Ireland the settlements patterns have in many ways been shaped over time by the culture of the people, rather than the topography of the land. Because of this more concern should be paid to the landscape qualities, and for necessary changes to be carried out in sympathy with inherited landscape features, not in ignorance of them.

In Ireland as a whole, a country that is becoming increasingly urbanised, there is a misinterpreted view of the Irish countryside as "natural". As is with our cities, Dublin, Cork, Limerick and Galway, our landscape is becoming artificial. This has been due to the cultural influence and affect of the people on the land, with practices such as farming leaving a permanent mark.

"Landscape is not static but the dynamic product of a complex interaction between human society and its habitat: If either society or habitat changes, so inevitably must the landscape." [14]

It is the territorial framework, or land division, created over many different periods of time that have imposed an overall lay-out on the rural landscape. This now-informal, vernacular landscape evolved at the level of farm and fields, in turn providing shelter and livelihood, using local skills, materials and traditions.

The cultural imprint of the practice of farming begins around the time of the Neolithic Period. From here on in the patterns are increasingly settled and a more ordered landscape begins to ap-

13. F.H.A Aalen, K. W. (1997). Atlas of the Irish Rural Landscape. Cork: Cork University Press.

14. F.H.A Aalen, K. W. (1997). Atlas of the Irish Rural Landscape. Cork: Cork University Press.

pear. The farming techniques used by these people required a lighter soil and upland areas, free of forestation. By the time the early Christians settled in Ireland, the development in the making of tools made it more possible for settlement farms to develop on the flat, low-lands.

These new people naturally brought with them their own traditions, beliefs and religion. As a result, our little Island is dotted with ring forts, evidence and an influential factor in settlements.

Fig 8. A historical map of the Muckross region, showing the the lakes and mountains.

"Despite the suggestive similarity between the lowland distribution and dispersed pattern of ring forts and present-day farmsteads and their common pastoral economy, long running communities in the landscape should not be over emphasised."[15]

The cities, towns and villages that exist today did not necessarily get their roots from these Christian settlements, but a succession of settlements overlapping the Early Christians and modern times.

External forces are always at work. Even in the early stages of our society the affect of external forces on the landscape is dramatic. The Normans, for example, would have established manorial villages and towns, confined to the south and east of the island. The plantations in the sixteenth and seventeenth centuries brought about the estate, a later version of the manors. A reorganised pattern of farms, fields and roads were introduced, in keeping with the grandeur of the estates. From here the transition to today is straight forward. But the effect of history is still evident on the landscape. While the conservation of the landscape should be a high priority, it cannot be seen as a separate entity to the settlements, towns and villages around the country.

As a native of Killarney, County Kerry, I am aware of the presence of the landscape, which cannot be ignored. Though I fear that is what is and has already happened.

A family known as the Herbert's were the inheritors of the lands at Muckross, Killarney in the 1730's, though their connections to Kerry began as early as 1656.

Fig 9. A current OSI map of Killanrey, highlighting the settlement pattern as it moves away from the natural landscape.

15. F.H.A Aalen, K. W. (1997). Atlas of the Irish Rural Landscape. Cork: Cork University Press.

Wealth due to work in the copper mines on the Muckross Peninsula made the Herbert family distinguished and the eventually played an active role in local and political life of the area and country. In the 1830's Henry Arthur Herbert, a descendent, married and moved to Muckross with his new bride. They commenced the building of Muckross House in 1839, completed in 1843. In 1861 the then Queen of England, Victoria, visited Killarney, residing at Muckross for the duration of her stay.[16]

Muckross House itself is situated in the heart of Killarney National Park as we now know it today. What I find interesting is the development of the town of Killarney itself, removed from the House and at intervals of shared boundaries the town, in my opinion, does not seem to acknowledge the presence of the Park and the magnificent landscape contained within. The town developed away from the National Park, naturally due to the restrictions imposed by the Government, but due to this the urban centre of the town proceeds to shift away in the same direction. It should be a worry that in another century the town and park will cease to have this awkward relationship that is just barely held in place even now.

Fig 10. A view of Killarney town iin the horizon, from Ladies View.

Fig 11. An image showing the the settement of the town, as it moves away from the picturesque surroundings of the Park.

While the inhabitants of Killarney do use the National Park, it is very superficial. The beauty of the landscape is exploited for revenue and the Park only ever serves as a transition space, rather than allowing people to remain. While I describe a park and a town, I must clarify that this is not a fenced in town park as one may be imagining. This park I mention consists of over 15,000 acres of lush woodlands, mountains and lakes. Although the idea

16. Killarney National Park. (n.d.). Retrieved April 2, 2010, from http://www. killarneynationalpark.ie/

of the settlement pattern of the town respecting the boundary of the Park, the integration of the town into the park in a marked gesture would reinforce the intimate relationship that man and nature, and the landscape should have, I see no reason why we should not continue our daily lives in the surrounding of the most untouched part of Kerry.

Had this integration began sooner it may also have had a more positive influence on the architecture, or lack of, in modern day Killarney town. A relationship of respect and mutual understanding, one that acknowledges the hints given could have, in turn, brought about something amazing in relation to the architecture of Irish towns, and perhaps, lessened the scarring effect of bungalow bliss and one-off housing.

Conclusion

Hindsight is a great thing, It is always easy to look back and realise the mistakes made, but never to predict the effect of a future action. In many ways the decisions taken in the development of the examples mentioned, Amsterdam and Killarney, were made with good intentions for the future of both the city and the town.

While settlements, Amsterdam, Machu Picchu, and Italian hill towns, seem to have taken the more difficult route in the way and location of the sites, the resulting patterns, and vernacular architecture, reflect far better the hold its landscape has had on it. The engineering and planning in these settlements was ahead of its time, it stands to these communities now.

In the case of Ireland, and in particular Killarney, the attitude taken towards its natural habitat has yielded unsatisfactory results. Can it be rectified or is it too late? I cannot say. Though I do hope that Ireland, as a whole, will take the landscape into consideration more and more, and that the influence of our unique country

could offer something truly amazing to Irish architecture.

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Cover Page Image: Painting by John Hurley, Artist, Tralee, Kerry.

Destination For Emotion
Towards an Architecture of Healthy Daydreaming

Colin Dorgan

Destination For Emotion
Towards an Architecture of Healthy Daydreaming

Daydreaming is a pastime which is widely misunderstood and has grown a questionable reputation through the 20th century. People associate daydreaming with laziness and boredom. Psychologists in the 1950's suggested that daydreaming could envelope children into a neurosis or psychosis and warned parents not to let their kids daydream[1]. Nowadays psychologists have not nailed down a definitive definition for daydreaming due to the fact that there are many different forms of it. Research has shown that there are many positive effects of daydreaming. Psychologists suggest that up to one half of our waking hours are spent daydreaming, showing the ability of us as a species to multitask. Daydreaming can be described however as a state of mind where thoughts experienced are unrelated to the external environment around the body. This is important to the relationship of daydreaming to space. Is it a spatial catalyst that induces the state of mind? It is a beautiful image if we think of daydreaming as the mind in an environment, like a sponge absorbing all the information appearing around it. Where are the places in which we find ourselves daydreaming? Some initial places that came to mind are the bus, the home, the bedroom, the church, the classroom, the field, the beach, the river, on the mountain etc... We find ourselves visualising the future or managing conflict within the province of our selves. In essence daydreaming is time spent thinking about interacting with other people. Research with fMRI scan show that brain areas associated with complex problem solving are activated while a subject is daydreaming[2]. This seems to be an area that is combining psychology and phenomenology and is precisely what Sartre was calling for one of his earlier works *Sketch for a theory of the emotions*[3]

The question we should be asking is whether it is better to spend our time imagining relationships or should we just have relationships systematically. Are there Architectural characteristics that can be optimised to alter the experience and effects of daydreaming in the mind of the average man and in doing so provide him with a basis for a healthy mental condition to continue relationships?

1. Eric Klinger, *Psychology Today* (October 1987)
2. Kalina Christoff, Alan M. Gordon, Jonathan Smallwood, Rachelle Smith, and Jonathan W. Schooler. *Experience sampling during fMRI reveals default network and executive system contributions to mind wandering.* Proceedings of the National Academy of Sciences, 2009; http://www.sciencedaily.com/releases/2009/05/090511180702.htm
3. John-Paul Sartre, *Sketch for a theory of the emotions* (Norfolk: Methuen and Co ltd, 1962)

Chapter 1

Why we daydream in space

The amount of time that we spend daydreaming is significant enough to merit concern. Concern not to our effectiveness as beings but concern to the lack of acknowledgement of this state of mind in our own purpose built environments.

If place is the composer of music arranging lives like notes on a stave, Architecture could be viewed as a painter composing everyday its circulation like a masterpiece. The place has access to our emotions, through how we move, what can we see and hear, how it feels; is it cold, how long have we spent there, is it lit, an airy space or stuffy, is it bright or has the space a very low ceiling with no ventilation, does it have a fire place with the smell of turf and coal? It would be a brave move to suggest that these are factors which do not matter to the average person. Space is a rudimentary part of life and relevant to every member of the human species in a deep and subliminal way. Subliminal in that many people take buildings for granted, as things that we buy to house us or places we go to work, many spaces not having any design specifications at all but serving their purpose admirably and at the flip side of the coin many buildings which have been "designed" have failed miserable in their purpose.

 So destination for emotion is in a sense a phenomenological outcry however it has less to do with building materials etc that other phenomenological essays such as Peter Zumthors *Atmospheres* or Coruso St John deal with. It is more in a philosophical sense which is so awfully demanding to anticipate, articulate and communicate. Outcry may be too strong a word to use; it's not as if every modern building is impractical to a major degree. Many beautiful spaces have been wonderfully

fulfilled, the *Centre Pompidou* in Paris on a public scale or Dominic Stevens *Mimetic house* in Leitrim on a private level, achieving a beautiful balance of vivid design and practicality. Surely the wrongs of the charmless developments everywhere in the Irish landscape has been highlighted enough by the recent economic recession and for too long has the modern architect done little more than fuel her own ego in creating a critical design yet left the inhabitants the cost of faulty plumbing or no place to store their rubbish. These are the things that matter to the average person; will my kitchen smell for the rest of my life for want of an appropriate and hygienic place to put the rubbish until collection?

The design of buildings is important especially with new emphasis on environmental design and doing what can be done live sustainably. This is all well and good, right and proper but a building is used to shelter people from wind and cold and rain and snow. This is how the brain views the building as nothing more than a place to stay, a destination temporary or long term. However it is in these places that much of our lives take place. Historically the home was a safe place from the elements where hunting, gathering and farming took place outside. Work was done outside. Now the vast majority of Irish people work in offices. So it is the outside that is now considered to be the place between. The space where in essence the average person feels he has no purpose. At work we have purpose; to make money to eat and enjoy some of the finer things of life. At home we have a purpose a relief from the harsh world of work and commerce, however at home lies some of our strongest and most conflicting relationships. The realities of family life are not homogenous, for many it is a bipolar situation with occasional conflict and unconditional love, and for others the home is a container for violence. Habits become amplified and tempers rage briefly. However these are the people that are our family, is it not a biological and ethical goal of everyone from

the outset to be part of their own family? It is home where we engage mostly with our family. Each person living their own life, a certain amount of interdependence takes place, but it is at home where we prepare for our separate days. Home is where we continue our most valuable relationships. As speculated before, the brain sees the house as a shelter but it is not just that. Is it the heart that seeks beauty in space? Is it the heart that finds space soulful?

 Space is full of soul with a million stories to tell. it tells through sounds and smells people and objects light and shade that is what is important to us, that is what tweaks our emotions, that is what drags our minds so logically through its maze to pluck our heartstrings. Every space is natural. Animals deserve to feel strongly about their direction in life. Emotion is what makes us human. "The room*; an individual's space of periodic repose either inspires or inhibits creative thought. Insight fantasies and imagination are fuelled by the psychological space of the private interior."*[A]

The benefits of daydreaming have been associated with an organisation of relationships and development of personalities. As well as being in a state of conscious awareness it is a form of spiritual relief. The example of the church and prayer there within is the obvious one which comes to mind. Alain de Botton refers to the Cathedral and the way in which the architecture is used to represent the idea of god and heaven physically. It is intended fully to capture the imagination in its essence; in its birth of conception the cathedral ultimately is a medium to express oneself individually in a collective consciously to oneself or to god.[5]

Relaxation and acceptance of time is the main reason that one ends up daydreaming, if we take the example of a leisure commuter on the bus.

The time commuting on my own is spent in a number of ways; reading writing and thinking. Thinking is the

one that interests me the most because it's the most mysterious. Others do things besides such as sleeping or listening to music. In every case there is an idle brain in contemplation. For me this time in contemplation is extremely important to my development. It allows me to reassess myself on a regular basis and in a way organise pretty much all areas of my life. I would say that ninety per cent of my time commuting on public transport is spent inside my head looking to the past and future. The present is spent thinking of ways in which the future could be best fulfilled or how the past could have resulted in greater fruition.[6] *"The body is not a mere physical entity it is enriched by both memory and dream, past and future"*[7]

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4. Steven Holl, *Edge of a City*. (New York: Princeton Architectural Press, 1991)
5. Alain De Botton, *The Architecture of happiness* (England: Penguin Group, 2006)
6. From my own, *Notebook.*
7. Juhani Pallasmaa, *The eyes of the skin, Architecture and the senses* (England: John Wiley and sons, 2005) 45

Chapter 2

Places where we daydream

Junichiro Tanizaki speaks with a profound passion on the environment that has familiarised itself with him. He describes the relationship as if the architecture touches him and guides him to a certain state of mind. It is not such a two way relationship as one may have thought; he would suggest our surroundings have an underlying sensitivity to our consciousness. Tanizaki is wary of the western styles that have slowly been adopted by the Japanese culture and in essence he is a great champion of the Japanese tradition the tradition of the mystery of things, he speaks with a descriptive eloquence about the materials of everyday life the dark warm wood of a toilet seat and wash basin filled with shadows to endure the light.[8]

The mystery of things in Irish culture is quite similar to the shadows and appreciation of materiality that Tanizaki speaks of. The tradition of the pub in Ireland is as beautiful an expression of society as any of the aspects that fill these places. A place that looks the same everyday; sunny, rainy, day or night the face of these houses are unrelenting, but what is it that happens behind this layer of familiarity? Emotion is held within.

During the day the pub is a sanctuary for (and this is stereotypical but poignant) the aged bachelor. A safe haven from the loneliness of external life the architecture of the pub is representative of his consciousness it is a place that has familiarised itself with him and as such it is a destination for him. A destination that contains alcohol the substance that grants a physical dependence from the space to the man. From here it becomes a place where everybody there knows your name, specifically a place where the outside world

is shut off through the door. One may feel sad or happy but the medium is the same; a drink. It is the presence of a glass that allows you to feel comfortable in the pub, it is the glass that is your claim to space and from here one can operate in a relaxed way. The traditional pub is a full of texture and depth, it is within this depth that the body positions itself, upon the coarse fabric of the seats in contrast to the polished ultimate surface of the table. It is down to custom and memory that a regular customer can prioritise seats in the pub, each person with their own preferred alcohol. The object of the glass is an emblem on the table; it is an icon that signifies the individual and it is from behind the glass that we view the space. The Pint glass in Irish culture is immense; from art and photography to advertisement to means of payment it has many associations always linking communal life to the pub as a destination.

The destination is not just the architecture and the physical position, it is the daydream also. It is the definition of the object, the destination of our pint of Guinness; the place where we direct our hand enabling comfort in the communal setting. It is a similar catalyst to the window on the bus from behind which one can achieve separation from the outside while still being able to extract images as we drive by.

The bus could be seen as a room in which fifty people sit in pairs all facing the same direction normally most are strangers. Each person feels uncomfortable in the perception that everyone else is making judgements on them, what clothes they are wearing etc... as with a multitude of other public places. The obvious comparison would be the church, in which the congregation sit through a journey metaphysically driven by the priest. The church is a room that could house a couple of hundred people facing the same direction, the priest, and it is most unwise to look around at mass unless of course you are a child

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8. Junichiro Tanizaki, *In praise of shadows.* (USA: Leetes Island Books,1977.)

who doesn't know any better. Etiquette is of prime importance in the sober Irish tradition. If the places can be compared then the same could be said for the actions. Can thought be compared to prayer? Prayer is a very personal experience and one might imagine most people have their own faith that they resolve through an internal conversation. Contemplation is much the same as prayer except I speak to myself as if I had two personalities or maybe more. Each personality will pose different problems for the other personalities and eventually a resolution will present itself and have consequence in the physical world, for example; one may think of how to make up with a girlfriend; being something that is within grasp. Prayer is more as though willing something to have consequence in the physical world, for example; one might pray for a cure for an ill family member and this is something that is in essence out of grasp.

To look inside we must first look at something. Islam ascribed beauty to geometry in the two dimensional plane through mathematical patterns of fabulous intricacy. "*This ornamentation, so pleasingly intricate on a rug or cup was nothing less than hallucinatory when applied to an entire hall*"[9] Suggesting then that it is the omission of the invented geometries in everyday life which enhances their effect when experienced in a space specific to devotion. So what is being alluded to is that through memory and reflections upon daydreaming Architecture represents an institutionalised encasing for the human consciousness.

In Hindu tradition where there are many gods with many representations, one of the gods *Shakti* who is the "*combined energy*" of all the other gods created to protect the heavens, she is worshipped as "*the ultimate principle of the universe*" and her presence is represented in one sense as geometric diagram specifically to serve as an object of contemplation.[10]

Patterns on fabric can therefore lead to similar subconscious impressions in mentally confined spaces, such as a lonely seat on a quiet bus. This is where the direct interaction with a two dimensional image can have a warping effect on the state of mind, inducing contemplation."*The presence of an object makes you imagine an absent one*"[11] Bachelard suggests that each interpretation of the same place, image or object is subject to everyone, it is not our experience of the world that governs our imagination *"rather it is our imagination and associated verbal images that guide our experience of the world"*[12] Contemplative thought is kick started visually by something especially beautiful or geometrical, an object or how light falls on it. It is as if the object is looking inside of us.

There is a surrealist twang at play here also, considering the idea that objects can play with our imagination or that the subconscious has a game that it initiates with the visualisation of images freely associating particles of vision or sound with memory and emotions. The act of pursuing the free association of the mind is not just related to the internal self but also space should be immovable from surrealist pieces; paintings in particular, then they may be more successful."*Art training, in fact may be an impediment to the pure play of free association and the unconscious"*[13]To truly represent the mind in a place with no situation then sure the lights must be turned off so as the environment does not play a role. But then the attack of the dark on the artist would manifest itself in thought.

9.   Alain De Botton, *The Architecture of happiness* (England: Penguin Group, 2006)114
10. George Michell, *Hindu Art and Architecture*(United Kingdom: Thames and Hudson,2000) 22
11. Gaston Bachelard, *Air and Dreams An essay on the imagination of movement*(United States: Dallas institute publications, 1988)
12. Gaston Bachelard, *Air and Dreams An essay on the imagination of movement*(United States: Dallas institute publications, 1988)
13. Lewis Kachur, *Displaying the Marvellous*(Cambridge Massachusetts: Mit press, 2001)

Chapter 3

Properties of Dreaming space

"*But, finally, on our own, looking out of a hall window onto the garden and the gathering darkness, we can slowly resume contact with a more authentic self, who was there waiting in the wings for us to end our performance*"[14]

It would appear that architecture represents a physical container for dreams; religious architecture specifically is made for this purpose. The church is seen as the centre of spiritual matters in Irish villages and cities, the idea that spirituality needs a destination can be seen in all forms of religion around the world. Are there other types of space that deal with the mind specifically?

In Invisible cities Marco Polo and Kublai Khan meet so that Marco can report on all of the magnificent cities he has seen, largely imaginary with wonderful names it is now generally accepted that Marco described Venice each time the Kahn requested to hear about a new city. There is a chapter there where the Kahn and polo have a discussion in the garden and they realise that their conversation may not have taken place and that there was no travel at all. The Garden is imaginary. "Perhaps the garden exists only in the shadow of our lowered eyelids" It is admissions such as this that are the real success of this book, highlighting the insecurities of the most powerful men. "*We are allowed to withdraw here dressed in silk kimonos to ponder what are we seeing and living, to draw conclusions to contemplate from the distance.*"[15] The men situate themselves in clothes and place while trying to comprehend the process of the imagination. It is possible that one or other of the men are imaginary or maybe it is Calvino in the midst of one of his own daydreams having one of the internal conversations that are described above. Marco and Kublai characterising the alter personalities that Cal-

vino confronts. The daydream is a place of emotional unrest where a self may have difficulty expressing a thought."I speak and speak but the listener retains only what he is expecting"[16] It is not the description of the many fantastical cities that are compelling but it is the relationship between the men and their conversation. They are not equals; the Khan is a ruler and as such Marco must act with the correct manner. This is iconic of many of the places where one finds oneself in a contemplative state.

That polo speaks and speaks but the listener only hears what he wants to suggests also that conversation can induce the dream. Conversation that is initiated but one person is unwilling to listen to the other is a sign that the dream state does not just imagine the conversation before it occurs but it also tries to alter the information that is received while the words are spoken. As a bubble refracts the light that passes through it so too does the conversation bend the dialog uttered from the lips of man to man.

"*Writing is a structure of my consciousness*"[17]

Libraries are spaces in essence that are containers for the mind in an institutionalised sense and around which the individual is given leave to find a place for themselves. The person is restricted in some ways by the etiquette expected by the institution. The restriction is important for the occupation of the library because of the quantity of information that is available. The person can claim a seat around which he feels relatively comfortable, so that he can enter the book in his hands in much the same way the glass of alcohol is the object of the pub, the book is the object in the library. The study spaces of the library are typically high rooms with large dimensions where the individuals are in close proximity in a highly ordered formation of self reliable pods. Don't these independent library pods remind you of the bus seat?

14. Alain De Botton, *The Architecture of happiness* (England: Penguin Group, 2006)

15. Italo Calvino, *Invisible cities*(London: Vintage, 1997) 93

16. Italo Calvino, *Invisible cities*(London: Vintage, 1997) 93

17. John-Paul Sartre, *Sketch for a theory of the emotions* (Norfolk: Methuen and Co ltd, 1962) 59

The physical pod is designed to provide the ideal study environment, study being an act of intelligent self development is a progression of daydreaming in that it is initiated with intent. If geometrical images can induce contemplation in a religious context then the words on a book can do the same. There is confusion in how one may read geometry and it is a shame that there are rules to reading words and letters. Imagine the anarchy of the book that obeys no rules in grammatical construction where words do not line up or where letters are independent. Where the natural isolation of the person in the bus will free him to dwell within himself and induce the contemplation, the design of the independent desks in the library is trying consciously to shut out everyone else and provoke study. *"An architectural space frames, halts, strengthens and focuses our thoughts and prevents them from getting lost, we can dream and sense our body outdoors but we need the geometry of a room to think clearly, the geometry of thoughts echo the geometry of the room"* [18]

Michel Foucault should have included libraries in his description of heterotopias, the library being a destination or space containing many rooms, many connections and a million nodes in the network of books. It falls into the second principle of heterotopias and the fourth principle just like the exaggerated heterotopia status he ascribes to cemeteries. It represents an architectural manifestation of culture and is also dealing with slices of time, whereby books have an irreducible aspect of date. The inter citation of books creates a wonderful world of cross reference and associations to a multitude of other authors and fields making the library so rich in which to daydream. [19]

If we look at Japanese tradition again this time taking hints from the architecture of Tadao Ando as to how some designers perceive the position of man in a landscape. Ando makes ardent use of pools of water to draw the experience of his space into the scenery.

This focuses the mind elsewhere and eliminates the foreground to a reflection of the background. It is a term called *Shakkei* meaning "*borrowed scenery*"[20] It is similar to the canopy that typically surrounds traditional homes in the Japanese countryside, both linking the home and man to the broader landscape; providing a canvas for dreams and ambition. This sensitivity to the landscape is another manifestation of the dream state by which the walls of the home are not the only threshold to the elements. Why is it that people all around the world want a room with a view? It is a natural instinct to be safe and observant of our surroundings, but it gives us a separation from the immediate context elevating thought and giving us time to contemplate, like a subconscious positioning of ourselves so that we may have the opportunity to approach thought.

The Architectural firm Coruso st John spoke of how the view from the train allowed them to glimpse industrial buildings in the English countryside while travelling to the site of one of their commissions. It led them to become inquisitive of the distant buildings. They visited the image that they saw from the window in the passing train. It led them to make reference to the building's materiality and significance in the landscape in the new building that they created "The choice of a building's construction, its' material and it's structure, has a direct effect on the emotional character of its spaces"[21] They speak of emotion related to buildings through the fabric of the walls etc which is abstract in that it is not as if a brick conveys happiness or depression. The emotion contained in a place is more likely the association that the individual places upon that brick, like Bachelard's interpretation of the imagination and how that is what guides us through space.[22]

There is one phenomenon that is particularly relevant to this piece and it is that of claustrophobia; a fear

18. Juhani Pallasmaa, *The eyes of the skin*, Architecture and the senses (England: John Wiley and sons, 2005)

19. Michel Foucault, *"Of other spaces"*, Architecture/movement/continuity October 1984

20. Kenneth Frampton, Introduction to *Light and Water* By Tadao Ando (New York: Monacelli press, inc, 2003)

21. Peter St John, *Shaping Earth* (Wolverhampton, UK: MN Associates and the University of Wolverhampton, 2000) pp.78–81
http://www.carusostjohn.com/text/towards-an-architecture-of-emotions/

22. Gaston Bachelard, *The poetics of space*(Boston: Beacon Press 1994)

of confined spaces. "*Fear's aim is to negate something in the outside world magically and will go so far as to annihilate itself in order to annihilate the object also*"[23] It is the definition of a destination for emotion where man is overloaded by the space that encompasses him, by the situation that he is standing in the middle of.[24] Claustrophobia has no cure but it's treated in a number of ways one of which is to get the patient to learn to react differently when presented with an oppressive space, through hypnosis occasionally the psychiatrist uses suggestive images and words to impress upon the subconscious of the patient that they are safe in space.

There is no Architecture, Music, Art or Work. There are only destinations in which the human condition networks endlessly and aimlessly. If there were no destination for emotion then the Arts would have a higher pedestal than they do at the moment. People have fun and work within the world that they live, the world that each person perceives uniquely, each person performing until the moments everyday where we look blankly at a computer screen for a time that is immediate and unquantifiable and man finds himself there in his real world tangled up in love and emotion.

23. John-Paul Sartre, *Sketch for a theory of the emotions* (Norfolk: Methuen and Co ltd, 1962)59
24. http://medical-dictionary.thefreedictionary.com/claustrophobia

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The Battle for Perfection

Vernacular (via classicism) to Modernism

Introduction

As decades, styles and laws continue to pass our perception of what a perfect form in architecture constitutes persistently varies. There are three main eras when we seemed to think perfection was within our grasp: the vernacular, classical architecture and the modernist style. The transition from one to the next can be seen to have both circumstance and requirement in common but the results of these circumstances and requirements yield three of the most vastly differing styles in the history of architectural design. Just as each comes within scope of what may be described as perfection, the next comes along putting new, opposing laws in place. The natural, free-flowing vernacular style gives way to the highly controlled, ordered and ornamental style of the classical era which, in turn, gives way to the simplistic, minimalistic style of the modernist age. Each could be described as being globular in magnitude. These are the three styles that reached every corner of the globe and leave evidence of their presence that stand to this day.

We began with the vernacular style that embodied perfection in its naturalistic harmony with the earth. It was not about aesthetics but focused on need: the need for shelter; protection; warmth; shade. This was then overcome by the classical that showed perfection in its intricate proportioning and calculation. In terms of geometry, ratio and mathematics, classicism is the closest thing to perfection we have seen. The next big style to envelope the globe was the modernist style, contrasting with the classical in its simplistic nature with a focus on technologies rather than ornamentation. The geometric shapes remain but now have no meaning other than aesthetical. As we near the exhaustion of the modernist style we have to ask, is there a further level of perfection to yet be reached or are these the closest we will ever achieve?

The Vernacular

The traditional ideal of the vernacular style refers to the literature of local place and language and the architecture of local materials and methods. It sprung from the rich and varied history of diverse settlements around the world as a purely native reaction to the situation and conditions of the people. It was a means of recording

The Irish vernacular thatched cottage

events, legends and stories, of battling and overcoming regional weather conditions and of preserving a native way of life. A truly vernacular piece of work gives the outsider a glimpse of life within this other world in a way that would not be had through any other medium. It provides the experience of witnessing generations of learning, modification and improvement and tells a story of the growth of an entire community. With travel beyond your country border unheard of in most cases in the vernacular era, outside influences did not manipulate the style and so the globe was littered with unique, almost incestual, inward-looking cultures that were set in their ways and reluctant to change. Was this un-tainted feat one that merited the title of perfection or was it merely the beginning of something that had yet to fuse and link with the surrounding world to be deemed successful?

The argument is strong for both sides. It cannot be considered a perfect form if it only relates to a small number of people as perfection is a universal quality, but it also becomes contaminated when allowed to mingle

with alternate, conflicting methods.

A perfect form in any medium is considered to be something whole, something complete. It is undeniably true to itself and its intentions. It is something which is seen as being universally beautiful. This being the case, the traditional vernacular does not fit within these criteria. It relates to a specific culture with specific requirements and an internal ideal of beauty. The trespasser within this culture, without the background of its history and people, may not understand or accept the words and forms put before him. Although to the trained eye the beauty may be clear this does not yield a pure vision as preconceptions have been formed through knowledge of the culture. The purest experience can only be had by the untutored eye that embarks on a journey of discovery as it explores the realms of a new world. If this eye fails to understand what is put before it, it has not succeeded perfection. To be considered perfect it must be comprehensible and unambiguous which relies on a link with a global language and understanding. Does fitting into these criteria compromise the definition of vernacular or does it validate it? Can the vernacular survive if it is contained within tiny pockets of society but on the other hand can it exist at all if it relates to the global population?

The term vernacular acts as a blanket term under which every individual native style of every country around the world is covered. These styles, though categorized beneath the same title bare no relation to each other. They range from the thatched cottage to the mud hut, possibly the two most prominent images associated with the term vernacular as we look back on it today. The vernacular of each individual country grew from the basic human requirement of shelter against the elements. Using what materials could be found, and taking into account the regional weather conditions, styles began to emerge. Where the sun scorched the earth they designed for shade, where storms and downpours of rain were frequent a waterproof cover was essential and where the winters brought a deadly cold insulation and warmth were top priority. The best materials around were found to suit each requirement and were manipulated over time to reach their full potential. Beginning with the very basic and

bare minimum the designs developed and became more sophisticated with time but all the while remained focused on the initial necessity.

The African mud hut is the best example of a "perfect" form. As a vernacular style, mud huts can be subdivided once more into north, south, east and west based on regionally found materials. One finds structures in thatch, stick/wood, adobe, mud, mud brick, rammed earth and stone with a preference for material based on district: North Africa uses stone and rammed earth, west Africa uses mud/adobe, central Africa uses thatch/wood and more perishable materials whilst east Africa uses a mix of each material. Many may believe that Africa boasts no architectural conquests south of the Egyptian pyramids but these mud huts are most definitely not as accidental nor as simplistic as they may seem. These huts alone allow an insight into an entire way of life and experience of a world vastly different to our own. The African climate remains warm throughout the year with the most uncomfortable climatic period being the long rains which are quick and voluminous periods of precipitation, unlike the con-

tinuous light rains of Europe. Lying mainly along the equator also means that Africa gets equal amounts of sunlight and darkness each day and there is no prolonged winter period. As such, most of life in Africa is lived outside with shelter needed only from the cold at night and from wild animals. There has never been a need to invest as heavily in shelter as has been done in Europe as there is rarely an occasion in Africa where a lack of shelter would prove life threatening. The Huts are often small as they are only inhabited for short periods of time and there is no demand for an indoor area for any of the daily activities in African life. They are made of the readily available mud or river clay, or a mixture of cow-dung and ash, which is plastered over a skeleton of branches with a roof of grass and are constructed in a quick and easy manner. This means that they are completely inexpensive in both materials and labour. The huts are re-plastered each year after the harvest season and before the next rain which also had an important hygienic function: river clay is a very clean and wholesome material that discourages the breeding of insects and other pests. The huts are designed

Vernacular African mud huts

exactly to the specifications of the African climate. Both clay and grass are good insulators, but are porous and so allow a free flow of air. It is often very hot during the afternoons in Africa but the huts remain a cool and welcome resting place. At night when the temperatures fall the hut retains its daytime temperature, keeping its inhabitants warm. The huts built of natural "earth" materials also fitted in with the basic African philosophy of drawing on nature for all their needs, and only in the amounts that were needed. This philosophy of living in harmony led to zero garbage, since everything was biodegradable. Indeed, until the advent of modernity and urbanisation, Africa was a continent of natural beauty preserved in its entirety. The materials being introduced to African architecture today trap heat, smells and moisture and are derived using procedures that harm the environment but we fail to notice the harm they are causing because these materials are in keeping with the modern day trends of inflated consumerism, self-definition through possession and a careless disregard for the planet which has in many cases destroyed the natural, existing order of the land.

Though this is possibly the longest surviving genuine vernacular way of life and architecture, the pure, simplistic and harmonious lifestyle of the native Africans is being stomped out due to our failure to understand the natural beauty of the order and a belief that these living conditions cannot be satisfactory as they do not reach the comfort levels of our own homes. A failure to imagine living in them ourselves results in a decision that nobody could be happy inhabiting them. This is the case with any truly vernacular style. A standard of comfort and aesthetic quality was set in modern times and anything that doesn't reach this standard is eradicated. Where these standards were set, the vernacular became something boring and uninteresting. These areas then enforce their ideas of what is beautiful on those around them. The demise of the vernacular here was brought about by a total ignorance and unwillingness to accept what we did not understand.

The vernacular died out as a fashionable style as it became too ordinary and lacking in an ability to refresh or redesign itself. The building methods used by the locals for generations were believed to have been pushed to their limits and exhausted. No more could be accomplished within the confines of indigenous methods and materials. As is the case with any trend the subsequent trend is the inverse. Rather than have something completely native and cultural it seemed much more exotic to adopt the styles of distant lands as a sign of wealth and being well travelled.. Indications that you were well-travelled were amongst the most esteemed design features and so we began to look away from home for inspiration. Elaborate decoration depicting exotic fruits, plants and animals became a symbol of wealth. The upper class would bring plants back from their travels to be grown in their exotic garden, which became a feature of every well-to-do country home. Voyages overseas were sponsored on the promise of returning with foreign spices, jewels and cloths to increase ones stature within society. This would be the downfall of the traditional vernacular. Having something different to everyone around us will always make us feel as though we possess something special and unique, in this case the anti-vernacular, styles experienced around the world and

applied at home. This unique quality was absent in conventional designs where each building was under the same restrictions of material usage and construction method. The beauty in these constructions faded within the communities as it remained monotonous and tedious leaving a gap to be filled by the next "perfect" style.

Classicism

To fill the hole left by the demise of the traditional vernacular came the strictly cloned style that spread around the world in the age of classicism. The Renaissance period saw renewed interest in the ruins left by the ancient cultures of Greece and Rome, and the fertile development of a new architecture based on classical principles. Rooted in the Greek traditions the classical manner was appointed the most perfect and pleasing style. Beginning in the artistic capital of the world, Italian scholars and philosophers deemed the highly calculated and proportioned style to be the perfect form. Rigorous laws were put in place based on what was considered to be most pleasing to God, beginning with the design of temples and spreading into the residential domain.

It became accepted that the circle was the purest form as it was most used throughout nature by God himself.

There are just three ancient and original orders of classical architecture, the Doric, Ionic and Corinthian, which were invented by the Greeks. To these the Romans added the Tuscan, which they made simpler than the Doric, and the Composite, which was more ornamental than the Corinthian. The height of a column is calculated in terms of a ratio between the diameter of the shaft at its base and the height of the column. A Doric column can be described as seven diameters high, an Ionic column as eight diameters high and a Corinthian column nine diameters high. The concept of proportion became a more humanist idea with the study of the work of Vitruvius and the belief that proportion in building should adhere to those of the human body in which all proportions come back to the golden section number Phi(1.681). The proportions in building were now directly related to the human proportions of the perfectly built man for "As man is the image of God and the proportions of his body are produced by divine will, so the pro-

portions in architecture have to embrace and express the cosmic order" [1]. These theories were brought through the fifteenth Century by Alberti and then the sixteenth Century by Palladio, each adding to them and adapting them but sticking rigidly to the same basic principles. Palladio moved away from ecclesiastical buildings and worked more on palazzos and villas but still brought the man-inspired rules of architecture to his work.

These Classical ideals for architecture were born in the height of the Renaissance. As a result of this they spread quickly around the world as this was a time for the spreading of ideas with the development of the printing press and an increase of interest in worldwide travel. The ideas of classicism as "perfect"architecture became universal and each individual vernacular style was replaced by these new laws. Design Patterns for construction proliferated the globe and images were simply chosen from their pages and reproduced on vacant sites by anyone who could afford to build them. Books such as Palladio's own "I

1 Wittkower, Rudolph.
  Architetural Principles in the Age of
  Humanism.

Quattro Libri dell'Architetture", Vitruvius' "Ten Books on Architecture" and more recently, James Gibbs' "A Book of Architecture, containing designs of buildings and ornaments" (London, 1728) spread the ideals of classicism. Palladianism became briefly popular in Britain in the mid-seventeenth century. In the early eighteenth century it returned to fashion, not only in England but also in many northern European countries. Later it had a surge in popularity throughout the British colonies in North America, highlighted by examples such as Drayton Hall in South Carolina, the Redwood Library in Newport, Rhode Island, the Morris-Jumel Mansion in New York City and Thomas Jefferson's Monticello and Poplar Forest in Virginia. To show the Italian connection, Drayton Hall, for example, bears remarkable resemblance to Villa Cornaro, near Venice which was designed by Palladio.

The spread of Classicism is also clearly evident here in Ireland. Some of our greatest architectural feats could have easily been taken straight from these classical guidebooks. Castletown House in County Kildare is the first house in Ireland to follow the rules of Classicism directly. It was

Drayton Hall, South Carolina

Villa Cornaro, near Venice

built between 1722 and 1729 and consists of two wings connected by ionic colonnades flanking the Renaissance inspired central block of the house. The wings, in true classical fashion, contained the kitchens on one side and the stables on the other. The main house was possibly designed by Alessandro Galilei with the wings added later by Sir Edward Lovett Pearse who had just returned from a tour of Italy, bringing with him the classical elements he had encountered. The original layout of the house also owed much to the plans of English houses such as Chevening in Kent which had been recently published. Chevening was designed by Inigo Jones, the first Englishman to study architecture in Italy and the first to introduce Classical design to England. Those linked with the global spread of classicism, in recent publications, are spoken of almost as heroes, but these could also be seen as the people responsible for the loss of many vernacular styles

Looking once more at the African vernacular, this was one of few regions that the classical style did not manage to permeate. It is only in recent years that western civilisation has begun to influence the African way of life. This could be an indication that, had the classical style failed to travel beyond Italy, there would be a much greater and diverse collection of vernaculars around the world, leading ultimately to a greater universal understanding of nature, the Earth and how we fit in amongst it. With classicism came a classical way of life, following the lifestyle the architecture would de-

Chevening House, Kent

Castletown House, Co.Kildare

mand. Here, the image of the typical classical house will always be linked to the upper class families of the Irish countryside in the eighteenth century because anyone who fit the upper class criteria and could afford to build one had a Palladian inspired house.

As was the case with the vernacular, the Classical style is only recently beginning to expire. Its meticulous detailing is being cast aside in favour of simplistic, minimalistic forms, showing once more that the succeeding style to any fashion is the direct opposite, almost in an act of rebellion. The heavy patterning and textures swiftly faded and the glory days of the classical became an eerie shadow on our landscapes. As the style became gradually more accessible to all levels of social class, it became less attractive to those at the top who began to strive for something to, once more, set them apart from the rest.

Modernism

As the Renaissance was the catalyst for the spread of Classicism, the modern style was carried around the globe on the back of the second world war. It had its beginnings in the decades before 1914, reaching its highest pitch of creative vigour in the late twenties and then ceased to move during the war. This was not because the war had killed it but because it had rendered its universal acceptance inevitable. Modern architecture is characterized by the simplification of form and creation of ornament from the structure and theme of the building. Its effects spread and spread with undiminishing momentum to the extent that now there is no corner of the industrialized world in which the thin, high, glossy blocks, the perspectives of concrete posts, the eternally repeating rectangles are not typical and familiar.

The availability of new building materials such as iron, steel, and

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glass drove the invention of new building techniques as part of the Industrial Revolution and they are now forms and materials common to every square meter of the planet. Our world is becoming a muddle of large, inhabited, gleaming white geometric shapes. Modern architecture can be characterized by an application of the principle that the materials and functional requirements determine the result, an adoption of the machine aesthetic, an emphasis of horizontal and vertical lines, a creation of ornament using the structure and theme of the building, or a rejection of ornamentation, a simplification of form and elimination of unnecessary detail. The buildings in the images below could be anywhere around the globe, there are no defining features, differences as a result of place or connection to the heritage of the area. This is magazine architecture, eye-catching imagery of which we construct an exact replica for ourselves. It has no personality, predominantly it is merely a large white concrete box. Everything has become about shapes rather than culture and way of life.

Geometry has no place in architecture. People and heritage should be at the forefront of architectural design. A web page posted the following question to its followers: "What is architecture?" Of the 34 replies they received to the question, 33 defined it as the process of designing and overseeing construction of aesthetically pleasing buildings, one replied that it was

Examples of modern architecture's inability relate to place

"an art that reflects human feelings and dreams in shapes within science, environment and humanity", but for the most part, no response mentions lifestyle, heritage, tradition, culture, climate, beliefs, nature.....the things that should be considered most important of all. The modern style is as much about the physically built style of architecture as it is about how we have begun to see architecture. The world sees architects as pompous and egotistical for thinking they are making a real difference to the planet and architects see the rest of the world as being oblivious and ignorant for not understanding the self-proclaimed importance of their work. Architecture is viewed as the act of making pretty buildings. There is no intellectual attachment, as was the case in the classical era. Good architecture, in common perception, is a term describing the aesthetical quality of a building, not how one reacts with and within it. There is little room for such reaction in a concrete cube especially one we see multiplied to the point of exhaustion.

The International style was a major architectural style that emerged in the 1920s and 1930s, the formative decades of Modernist architecture.

The term had its origin from the name of a book by Henry-Russell Hitchcock and Philip Johnson written to record the International Exhibition of Modern Architecture held at the Museum of Modern Art in New York City in 1932 which identified, categorized and expanded upon characteristics common to Modernism across the world. As a result, the focus was more on the stylistic aspects of Modernism. Hitchcock's and Johnson's aims were to define a style of the time, which would encapsulate this modern architecture. They identified three different principles: the expression of volume rather than mass, balance rather than preconceived symmetry and the expulsion of applied ornament. The common characteristics of the International style include: a radical simplification of form, a rejection of ornament, and adoption of glass, steel and concrete as preferred materials. Further, the transparency of buildings, construction (called the honest expression of structure), and acceptance of industrialized mass-production techniques contributed to the international style's design philosophy. Finally, the machine aesthetic, and logical design decisions leading to support building

function were used by the International architect to create buildings reaching beyond historicism. The stark, unornamented appearance of the International style met with contemporaneous criticism and continues to be criticized today by many. Especially in larger and more public buildings, the style is commonly subject to disparagement as ugly, inhuman, sterile, and elitist. Some of the most important examples of this international style exhibited in the Museum of Modern Art in 1932 were: Alvar Aalto's Turun Sanomat building; Le Corbusier's Stein house, Villa Savoye and Carlos de Beistegui Penthouse; Otto Eisler's Double House; Walter Gropius' Bauhaus School and City Employment Office; Erich Mendelsohn's Schocken Department Store; Mies Van Der Rohe's Apartment House, German pavilion at the Barcelona Exposition and Tugendhat House; Jacobus Oud's Workers Houses,(Seidlung, Kiefhoek; Karl Schneider's Kunstverein.

Conclusion

As this most recent globular style spreads, questions of form in architecture are tending to recede, giving place to questions of technology and industrialization, planning and mass-production for social needs - questions of building rather than architecture. Architecture will soon dissolve into a close federation of town-planning, structural engineering and industrial design. There is much to fear in this transformation as it is, in effect, the full arrival of a new man-made environment that will either end in a full loop around to a restoration of the vernacular way or a mutated, complex, "utopic" alternative. We can already see the notion of a retreat to a simpler, traditional way becoming the idyllic vision of a perfect lifestyle. It has taken centuries for us to realise that what we started with was perfect in its own right. We are gradually coming around to an ecological harmony with nature but the harm that has been caused in the process has brought irreversible damage to our planet. Having experienced these three globular styles, we now move forward with the development of our idea of perfection. Do we hold on to any of the rules of the vernacular, classicism or modernism? Could perfection be born of an amalgamation of the three? With the knowledge of the advantages and disadvantages,

failures and successes of each can we move forward with the best points and attempt to marry them together or is yet another new, revolutionary style required? "Buildings, like poems and rituals, realize culture. Their designers rationalize their actions differently. Some say they design and build as they do because it is the ancient way of their people and place. Others claim that their practice correctly manifests the universally valid laws of science. But all of them create out of the smallness of their own experience"[2].

....

2 Glassie, Henry.
  Vernacular Architecture

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RHYTH-ONNACI

Diarmuid Hanon

Beyond the Visual:
"Where the Streets Have No Name"

.....Tell me (since you are so sensible to the effects of architecture), have you not noticed, in walking about this city, that among the buildings with which it is peopled, certain are mute, others speak; and others, finally – and they are most rare- sing?......

Foreword:

The aim of this piece of writing is to examine and engage in an appreciation for the senses as a complete entity. The senses here are being viewed as the temporal experience that predominantly evades any form of accurate notation. To achieve this, music will be used as a vehicle in exploring means of eliminating hierarchy when it comes to the design process. As architecture and music are, in my mind at least, first and foremost art forms, it is in this arousal of the senses I feel they are most connected. Understanding that both forms use similar techniques, merely draped in alternative appearance, leads me to believe that both stem from the same origin; expression.

Introduction

The very nature of an art form is one of liberal expression. "Architecture arouses sentiments in man. The architect's task therefore, is to make those sentiments more precise"[1]. The means in which ideas or messages are expressed and carried is often interchangeable, but at the core the methods used are in essence the same. Tools and interface change but the process rarely strays. Every artist has an instrument be it pen, brush, lens, hammer or string. These articles can be viewed as basic forms of physical media, used to convey any imaginable form of personal self expression. Just because a given painter has spent thirty years engaged in the technicalities and practices akin to people of his discipline does not isolate him from the realms of engaging in other art forms at the deepest level. His endeavours with brush in hand could, if a different path was chosen, have resulted in the venting of his ability to self-express, through photography, music, sculpture etc. The ultimate point here is that the mind is the activator, the body is the vessel, and the means by which this vessel is tapped is merely a focused time-spanning matter of human habit, where the specific tool used to tap the minds creativity is secondary. It is due to this artistic constant that many have drawn similarities between the various expressive forms, and in particular architecture and music, because it is the artistic mind that is a constant.

Chapter I
Linear Sequence

Architecture and music are intrinsically bound. However, the depths of detail that can be read into each individual art form as an independent entity is so substantial, that a single point of inter-relevance must be made with crystal clarity if an analytical comparison is to be made. In order to achieve this, or at least to strive to achieve this, I have attempted to consider how music and architecture are essentially experienced, and to my mind they appear to be linear. Both music and architecture can be broken down into progressive linear sequences, or paths. Direct links made between these linear progressions will serve to highlight their pre-existing symbiotic relationship.

Music is by nature experienced as a sequence, be it a sequence of melodic notes, percussive rhythms or an arranged textured combination of both [2](Fig.2).

Fig.2 Sequences in Mary Had a Little Lamb

This is true for the performer, conductor, arranger, and witness, be it as a visual, oral or aural act. If a song is three minutes long or an opera an hour, it is consumed second after second linearly. An entire work cannot be consumed in the same manner a painting or visual can. There is no overall viewpoint, just an enveloping emotional attachment. The same can be said about architecture as an experiential art form. Spaces are encountered moment by moment, step by step, or as Gorden Cullen called it *serial vision, "a series of related spaces"*.[3] (Fig.3) This is not to say that more than

one factor cannot influence each moment. Even if one moment suggests the next it is true to say that only one scenario can be realized at a time. The ambiguity arises then in the initial creating or intended perception of these spaces or sounds. Are all the senses seen as part of a palette?

Fig.3 Serial Vision, Architecture akin to film, an assemblage of vignettes

One example of this sensory relationship arises in a description of Frank Lloyd Wright's 'Taliesin West' made by Philip Johnson found in "Essays on the Intersection of Music and Architecture"[4], in Galia Hanoch Roe's essay "Scoring the Path" cited above, which goes as follows…

"I think the essence of his house is the procession through the building. I once counted the turns you make since you approached the buildings, until you get into what he calls the cove, the holy of holies where you finally sit down with the high priest, and the number of turns I think was 45. He is playing with you as you walk through that space… then when he opens this flap under this little secret garden you say there can't be any more surprises, there can't be any more unfolding of spaces, but there are, and you get into this private courtyard with this green grass and the falling water…

then you finally get into the cove, and just when you are used to his six-foot ceiling it has fourteen foot ceilings, and the fireplace runs the full length of the building, and there are no windows all of a sudden, and no canvas, you are entirely enclosed in the middle of this experience, and by the time you get there you realize that you have been handled and padded and twisted much as a symphony will caress you, or an opera, until you get to the crisis"[5]

Fig. 4 Taliesin West in plan, likened to a musical journey

This quote even as a self-standing piece of writing demonstrates the linear qualities with which a space is negotiated, or designed to be negotiated in the same manner a piece of music is conceived to fix and tear emotion and amuse and bemuse the senses. The outstandingly obvious factor to be taken from it also is how this abstract emotional relationship is carefully crafted and measured by the architect, with a definitive rhythm, and the forty five turns encountered bare striking similarity to a potential forty five bars of music or measured rhythm.

In acknowledging that our senses are entirely filtered and projected as human beings by our brains, Daniel Levitin's "This is Your Brain on Music'[6], and particularly the chapter 'The Music Instinct' offers insight into the mechanics of these workings. The evolution of music as an adaptation of language that lacks any clear evolutionary basis is at the core of the notion that the oral tradition has become sequential over vast periods of time. Even the term evolution depicts a sequence of progressive events. Music here

is not a necessity however. The original fundamental need of the human in relation to the oral tradition is communication, and music is "an indulgent by-product", to quote Stephen Jay Gould[7] who also labels music as a "spandrel"[8] (Fig.5). Music is a co-existent yet secondary function of communication that has become so strong in its own right that it greys the area between what is absolutely necessary and what isn't. Levitin goes on to liken this spandrel-quality to how "a designer might plan for a dome to be held up by four structural arches...there will necessarily be a surface space between the arches, not because it was planned for, but because it is a by-product of the structurally driven design."[9] The result is a spandrel; a happening that occurs not as result of direct planning but yet still serves to add to the effect of the overall conclusion. It doesn't begin as a necessity

but it gains such merit thereafter that its necessity doesn't merit questioning. He also likens this quality to features of the natural world, the mother of all creative invention, when he states "birds evolved feathers to keep warm, but they co-opted the feathers for another purpose - to fly...this is a spandrel"[10]. A bird needs feathers more to keep warm and stay alive than to get around; because the feathers then served to streamline the birds ability to fly earns it the title of being a necessity. Many spandrels are put to such good use that it becomes difficult to generate an understanding of what came first. The surface space between the arches in buildings became the site for great works of art in the form of paintings and other décor. These spandrels he goes on "became some of the most beautiful parts of the building, design being the adaptation and the resulting impact the

spandrel." The relevance overall in this notion is that, if we are to consider the sensory importance of a creation to be the main generator of a project or work of art, can the materiality of a building or instrumentation of a musical work be the spandrel? If our senses are the structural arches, can the buildings form or layout be the spandrel? Must the spaces define the sense and not the senses defining the space? In essence can the mood define the music?

Fig. 5 "Spandrel", the welcome by-product of intention

Another means, by which this linear progression can be understood in relation to evolution and spandrel, is through intention and primal necessity. If the origins of human 'sound-making' are linked to communication, then this must surely relate in terms of architecture to the notion of shelter as the absolute minimum original requirements. The metaphorical reading of a facade wasn't always cared about. In terms then of how architecture has progressed linearly, and in essence evolved, it is fair to liken early shelter's development to primal communication's development. Today we have poetry, music, novels, academic essays, lectures and countless other forms of how initial communication has developed. Although they all might have been initially labelled as spandrels of communication, the passage of time allows us to grade their development and even place a value on how individuals or entire cultures embrace certain aspects of oral evolution. This is true in turn for architecture. As Frank Lloyd Wright put it "Every great

architect is - necessarily - a great poet. He must be a great original interpreter of his time, his day, his age".[11] Architecture began as a necessity. Humans needed shelter from the weather so architecture was born.[12] Today we grade architecture in terms of countless aspects of its inter-relativity with social patterns, philosophy, infrastructure, networks, communities etc. The intention has changed because necessity has altered over time, and this is true for many cultures. If one was to examine the third world, and areas in impoverished parts of Africa, it becomes clear that necessity is still in its primal stages. Shelter is still the main driver for any form of derived architecture. Questions asked during the conception stage are more along the lines of 'Will it keep us dry?', and not 'Where can I sit alone to work on my computer?' This linear progression in relation to time is a constant in relation to art forms. The ability to progress an art form and its power to convey is directly related to the necessity of what needs to be derived from it. Basically if humans need to find a way to say something, they will. If it doesn't need to happen, chances are it won't.

On a much larger level one might be bold enough to place art, and specifically architecture under the constraints of Darwin's Theory itself; Natural Selection and survival of the fittest where evolution is the ultimate linear progression[13]. When a niche or need appears in the realm of architecture, a 'mutation' occurs, at both mentally tactical and physically actual levels. Thought processes and attitudes evolve which lead to a mutation of the built environment. The evolution of necessity continues. Almost every space we inhabit as living

creatures has undergone a linear step-based change, brought about by us ourselves, due to the evolution of our needs and means. When architecture at large needs to achieve something previously unrecognized, processes that might aid in achieving this are put in place to facilitate a mutation. As this mutation comes to fruition we then begin to recognize the inherent spandrels that follow suit; the things or instances that could not have come to be were it not for the mutation. Perhaps today's mutation is the current struggle to create a 'sustainable' built environment which before our time was never a dominantly large scale issue; "the pressing economic and political issues of our world"[14]. Our needs and concerns have evolved due to environmental necessities so our inherent current level of skills and capabilities now search for ways to evolve our architecture

in response. As Jean Nouvel put it "each new situation requires a new architecture"[15]. He does not state each situation needs a variety of a past architecture; he believes in constant evolution. Ideas and mutations that do not deliver what is needed will be cast aside and only the strong will remain; Darwin's Theory.

Fig. 6 Architectural Evolution?

This is a common pattern, or sequence. It cannot be labelled as cyclical because evolution can

never go backwards, but it does suggest a recurring theme. The notion of a recurring theme is absolutely vital here as it is what defines a sequence. A sequence can be made of one thousand parts or ten, but it is in the character or form of the sequence that it can be defined. If this mutation of the arts as a response to necessity is a sequence, then it is present in both music and architecture. Remember classical music was the Michael Jackson of its day. Palladio's classical Villa Rotunda was perhaps an earlier version of Le Corb's modernist Villa Savoye. This ultimately leads to the concept that maybe in relation to progression-based, linear sequences of time; a spandrel can only come to be, when a change in necessity causes mutations to arise.

Up to this point, it has been linear progression through time in the form of sequences that has been discussed. It is also equally important however to compare the value of linear progression through space, both visual and audible space, and how this might be recorded or documented. It seems that any entity that comprises of many parts can be divided into layers, even if only for the purpose of analyzing, where each layer allows individual reading of a certain aspect of the whole in isolation, whilst still being read as part of the whole. Linear sequence at a practical level is the vehicle by which architects lead and manipulate the perception of a person experiencing a space. [16] This manipulative vehicle can be viewed in terms of simple mathematics; of addition and subtraction. One stage in the sequence follows the previous stage where each new stage adds to the overall experience in a vast variety of ways. That is not to say

however that each following stage adds positively to the whole. It might add negatively, which is still not a subtraction, but could be seen as detraction. The character of linear sequences is so that each step is directly related to the previous one, i.e. "moving from a closed to an open space, from a light space to a dark space, or from high to low".[17] Each step suggests a corollary. The craft of the architect comes to the fore in his or her ability to affect future responses based on the sequence. The observer weaves a path based on a simple combination of choices and restrictions. One may choose to stop, walk faster or slower, look left, right, behind or in front, reverse the position in space or retain the position, all of which is controlled and confined by designed obstacles along the path such as walls, slopes, staircases, water, openings, points of view, darkness and even changes in temperature. These are all ingredients in the blending of the sequence.

All of the imposed architectural confines on a sequence can still never refine the experience to a definite limitation. A person not only experiences a space with slightly different fluctuations in the sequence each time but also under different lighting and climatic conditions. One is confined to the clothing of a certain culture or era which control movement and pace differently each occasion; one hears different sounds and echoes from the surrounding environment, from birds to mobile phones to traffic, all dependant on the time of day. A person's subjective feeling and opinion of a place will change throughout the day, week or years during which he or she experiences it. Each path is truly original, even when taken by the same person, at the same

time of day, wearing the same clothes. The subtleties define it. James Corner describes this as an accumulation of meaningful events:

> "There is duration of experience, a serialistic and unfolding flow of befores and afters. Just as a landscape cannot spatially be reduced to a single point of view, it cannot be frozen as a single moment in time. The geography of a place becomes known to us through an accumulation of fragments, detours and incidents that sediment meaning, 'adding up' over time. Where, when and how one experiences a landscape precipitates any meaning that is derived from it."[18]

This quote captures the essence of how linear sequences are centred on the senses and the temporal intangible qualities of our daily rituals. Each sense could be seen as a string on a double bass; sight, smell, touch and hearing. Each one can be struck independently but by playing them simultaneously you create various chordal sounds that can be played at different speeds, dynamics and volumes. An architectural linear sequence is similar to having your senses plucked differently every time one engages with the space it occupies.

Chapter II
Sound and
Space

In such an image conscious age is it fair to state that our senses have become ordered?[19] Has it somehow come to pass that through sheer over-soaking of one aspect of our perceptual traits that we now have a ranking system for our senses, even subconsciously? It is now the age of the visual and aesthetics reign supreme. Juhani Pallasmaa would call this the "strictly hierarcised" status of our senses.[20] It is necessary to point out directly from the beginning of this chapter that it is not intended to arrange a power shift in terms of which of our senses merits an overall dominance, rather to generate a discussion that justifies an encompassing view of all senses as credible individual focal points

to inspire creativity. The origin of this methodology must lie in the initial reading or grasping of the 'site' as source for inspiration[21]. If a site can be understood in all it embodies beyond the physical, prior to any concept of design, then the inevitability of a design based on appearance decreases exponentially.

Music as an art becomes relevant here in relation to its multi-sensory dimensionality. A live music performance relies as much on a visual connection as it does on an audible one. Granted the dominance in a musical performance is handed to the audible, the visual power of an act is never-the-less a key ingredient. A lighting arrangement moving in tandem with the music becomes an art in itself. A bodily gesture, a form of dance or display of emotion from the performer can serve to enhance our perceptive capabili-

ties, in our attempt to truly read the depth, or lack thereof of what we are witnessing. The point here is that when more than one sense is given license to govern, or at least participate as an equal member, the end result becomes one that treats us as complex beings and not just a pair of eyes or a pair of ears. Too often are we subject to a singular stimulus. Without becoming prejudice, and as negative as it might and does sound, a deaf person should not be able to feel what somebody free from impairment can feel, when experiencing a truly moving piece of architecture. In the same fashion a blind person will never feel the full weight of a live music concert. These are facts of life, as harsh as they might appear. Yet it is still true to state that outside of specialist buildings designed to cater specifically for various sensory needs (Japan's TOM Gallery of Touch-Me Art / "House Near New York" by Charles Moore)[22], today's growing built environment pays homage to the visual alone.

It is also simply factual to state that the more comprehensive and inclusive the perceptual immersion in any conceived architectural space, the more engaging and ultimately successful the design can be viewed, unless of course the intention of the design is to isolate our senses. It takes all of our senses combined to truly grasp what a site means, or as Stephen Holl puts it, "...it is vital that the perceiver of space be open to a range of diverse experiences, comprising of both physical and mental phenomena"[23]. Similarly Yi-Fu Tuan states that what is readily perceivable "is the abstract knowledge *about a place; however the feel of a place takes much longer to acquire. It is a blend of sights, sounds and smells, a unique harmony of natural and*

artificial rhythms such as sunrise and sunset, of work and play. The feel of a place registers in one's muscles and bones"[24]. This view doesn't state any groundbreaking information, as it is something that should be almost bluntly obvious. What it does achieve however, is to lay out the depth of potential inspiration an architect can rely on or draw upon, outside of the mere physicality of a place.

It might therefore be viewed that one of the many reasons, albeit it a central one, that historical buildings and structures possess an ability to move and impress upon us is related to how they *feel, where feel doesn't mean to touch physically. The medieval cathedral is one such example of this multi-sensory spatial experience. The acoustic quality of the material and space, combining with the dramatic play of light and shadow, together with the massiveness of the structure and the feel and touch of every surface culminates in an extremely impactful sense of spirituality.*[25] This is achieved through the harmonic manipulation of our senses. This harmony could be seen as a formula, and because a formula is made of parts, some often unknown, it becomes clear in Kourosh Mavash's description of the Persian garden that the *feel achieved is the result of a recipe of sorts where each ingredient compliments the next. Sometimes it is unclear why some parts enhance another part at all but that simply adds to the sense of mystery; sense being the key word. "...the Persian garden with its patterns of light and shadow, reflecting pools, gurgling fountains, scents of flowers and fruits, and gentle cool breezes offers an amazing richness and variety of sensory experiences which all serve to reinforce the pervasive sense of coolness"*[26].

If it can be achieved that an overall awareness of our senses is central in the creative process then the notion of site, as a physical visual entity in space alone, becomes almost obsolete. Responding to the world through sight differs from respondin to it through other senses in several important respect. For insatnce, "seeing is objective, seeing-as the saying goes is believing....Seeing does not involve our emotions deeply...the person who just see's is an onlooker, a sightseer, someone not otherwise involved with the scene. The world perceived through eyes is more abstract than that known to us through the senses".[27] Location can mean more than longitude and latitude, and proximity to all relevant networks, be they social, educational or infrastructural. Any characteristic that can be measured or graded in relation to any unit of length is a servant of the visual. Is there an opportunity for architecture to do as music does and have more than one sense 'perform' at a time? Fundamentally the premise of this entire pursuit is to realize a total sensory experience of architectural space, where sound is a valid material.

Thierry de Duve has been recorded as defining site as "a harmony of place, space and scale, which can be recuperated only by linking two of these factors at the expense of the third, which at a later moment is paradoxically redefined and re-inscribed as if in recognition of its failure"[28]. The concept of what site means according to de Duve embodies three core components in the design of the built world. Under the same definition he goes on to describe the notion of context as "the point of conception for an idea and the main platform for the process of architectural design[29]".

He does not however limit context to a physical entity. He embeds elemental concepts of culture, identity, history and human scale as well as perceived physical aspects of the locale. Context is alive. It is not a static.

This argument towards a sensory unification of architecture can also take a neurological turn in relation an idea based on the premise of sound association. Places, memories and certain acts of movement are connected with various sounds in our minds. Subconsciously when we are presented with a familiar visual we immediately expect to have its corresponding sound accompanying it. To quote Bernard Leitner, 'just like the eye, the ear is a finely tuned instrument for measuring space'[30]. Any site according to Leitner has its own idiosyncrasies, one of which is the soundscape; a term original coined by R. Murray

Schafer. This particular feature of the site is a unique and rich data bank of history, culture and the nature of the site. In the same way that a piece of music can be both pleasant sonically to listen to and also evoke emotion, architecture can surely perform a required function passively, and engage the perceptual senses simultaneously, in relation to its own original soundscape. In a similar analytical study to Kevin Lynch's 'elements of site', Murray Schafer introduces 'keynote sounds', 'signals' and 'soundmarks' [31]as elements of reference in relation to the soundscape of a place. This is a classification system that looks to attach a referential basis to a comprehensive taxonomy of worldly sounds, be they manmade or natural. Every type of movement, be it social, industrial, human or of the earth, has its own audible fingerprint and our mind associates each visual with a set

of sounds or individual sound. If architecture then, as an ordering device for this movement, crafts spaces for all of these actions, do their associated sounds not deserve equal attention considering they are already triggered in our minds? No visual exists in our minds without a sound, and often also an accompanying sense of smell.

An effective example of this is to imagine two separate simple scenarios. Imagine standing in the centre of a boisterous rubbish dump, and turning full circle taking in how it smells and moves, and the sounds of large machinery moving and crushing waste. Contrastingly imagine standing alone in the centre of a calm meadow with nothing to see all around but green pasture. As simple a comparison as this is, it is fair to state that both scenarios come with starkly differing charac-teristics of which only a small part is visual. Both scenarios do not come with an image alone. We refer to our personal sound banks and smell banks to develop a perceptual connection. In essence therefore any given site can be said to be made of landscape, soundscape and even smellscape. I would suggest therefore that site can be seen as a *'sensescape'*[32]; a spark to ignite our mind in its efforts to call upon a wealth of memories and experiences that collectively attempt to build the moment at hand.

Sound can also be viewed as the very substance that dramatizes our lives. Sound brings us tension, suspense, relief, anger, sadness in the form of crying, happiness in the form of laughter and almost any other emotive response we are capable of as human beings. This has an enormously psycho-logical impact as a result. Without

sound, and in turn emotion, what allows us to communicate? Schafer writes that "music is for most people a stronger emotional experience than looking at a picture or scenery....partly because we can close our eyes...we *feel more vulnerable to sound*"[33]. Another simple means of examining sounds impact is by raising the notion of surround sound systems. Watching a movie in surround sound immerses you in the visual. One sense buries you in another. The sound enlarges one's spatial awareness to include areas behind the head that cannot be seen. Schafer expands on this notion by explaining that "Auditory space is very different from visual space. We are always at the edge of visual space, looking in with eye. But we are always at the centre of auditory space; listening out with our ears.....Visual awareness faces forwards. Aural awareness is centred."[34] This concept

is deeply provoking. The notion that we are experiencing multiple forms of space at once, literally at the same moment suggests our senses are linked to separate versions of space. Does another form of space exist for smell? This concept has striking similarities in my mind with the changing forms of water in relation to scientific fields of study; that the same substance can be a solid (ice), a liquid (water) and a gas (steam). This again in turn leads me to suggest that in terms of architecture, is the visual the solid, sound the liquid, and smell the gas?

One final concept worth mentioning is the notion of sensory suggestion; that is how an individual sense can lead us to believe more about another sense. An example of this can be found in Lisa Heschongs 'Thermal delight in Architecture', where she references a quote made by Yoshida

who reported that "in the hot and humid Japanese summer, people like to hang a lantern or a wind chime under the roof of the veranda. The lightly swaying lantern or the ringing of the bell gives a suggestion of refreshing wind and coolness"[35]. The very reverberation of a sound in space and the actual quality of that sound affected by what material it meets and by the geometry and proportion of that material – in other words, by architecture – actually lifts and enriches our comprehension of the surrounding space. One quiet ring of a wind chime suggests a peacefulness that affects how we move through its containing space. Strobe lighting in a night club encourages us to move in rhythm. One sense can suggest both directly and indirectly how we comprehend our surroundings and ultimately how we move through it, which is what architecture seeks to achieve.

If architecture strives to provide spaces that simultaneously control movement, evoke emotion, serve a specific functional purpose and allow those who experience it to feel comfortable as living beings, then a multi sensory understanding and approach is vital. To quote Kourosh Mavash once again, "Biologically we are not capable of closing our ears. Even in absolute silence, as we think, we speak voicelessly to ourselves",[36] "we are condemned to listen"[37]. Some things cannot be denied.

Note: The absence of images from this chapter is for two reasons intentional. Firstly it is my belief that a representation must convey and be consistent with the very principles it is to communicate. Secondly, any images I would chose would merely be my personal interpretation of this specific concept and would potentially narrow the realm of imagination.

Chapter III
2D vs. 3D Representation vs. Reality

What you see is not what you get. The widely accepted representational design conventions associated with architecture are the plan, section and perspective, all of which demonstrate an inability to express the temporal and motile dimension of a linear sequence or series of emotive responses. A plan can suggest the flow of space but never can it make you feel its impact beyond the visual and audible. A sectional perspective might suggest how light might affect one specific scenario but it cannot possibly convey how the space experienced directly beforehand or afterward as part of the route through space, will affect it. Methods of two dimensional documentation fail in their ability to only record slices of experience, and parts of a whole. A basic equivalent of the standard methods used to portray architectural proposals, would be to say it is similar to handing somebody the printed lyrics and score of a piece of music, and asking them to imagine what it sounds like without hearing or feeling it; an impossible task.

Music as a counterpoint to this is created using the senses, but as a recorded document or entity for those outside of the artist to experience, it is two dimensional. A musical score can suggest how a work progresses but never can it make you sense the musical fluctuations brought about by playing or experiencing. Music is almost the polar opposite to architecture in relation to documentation due to the manner in which they come to be in reality. Architecture begins as two dimensional

concepts and ideas, with perhaps a series of exploratory models in three dimensions to test certain parameters and conditions. Then when the explorations reach a satisfactory level, work on its actual creation commences. It is only then when the work is completed in reality that its impact can be weighed and understood. Music however is created in reality using instruments of various types and characteristics to produce certain melodies, rhythms and arrangements and then it is documented. If one was to write or create music without hearing it first, without developing an emotional and sensual connection it would become mathematical and lifeless in its actual form. This raises the question; can architectural experience be tested prior to creation? This testing does not imply imagination or suggestion but the physical act of walking through a proposal.

Logically it is clear that an architect cannot have several attempts at building various versions of a project before it succeeds and that any form of "experience testing" must be virtual. Perhaps therefore advances in technology could generate the software necessary to involve the senses in an all-encompassing fashion. Many mainstream computer games and more specifically studios in Hollywood[38], utilise motion capture chambers which have in turn become the definitive way to create the 'un-creatable'. Could architecture borrow from this meth`l765`l765od and allow one to experience the shifting light conditions, the temperature changes, the tension and release, the spatial flow and fundamental dimensional relationships at one is to one? Blockbuster films are created with actors in large empty warehouses and empty sets where the world to be interacted with is projected virtually in accordance with their movement. The conceptual world is lived in. This approach might not be plausible

for small scale endeavours but for large scale expensive projects, unknowns should be eliminated. The senses should be enlisted as three dimensional judges of two dimensional worlds because it is in this sensory dimension the purity of a creation exists.

The Greek engineer/composer Iannis Xenakis[39] becomes relevant here due to his creation of various approach systems towards architecture. While becoming acquainted with architecture in Le Corbusier's studio (1947 – 1959), he also studied musical composition with the French composer Olivier Messiaen, (1908-1992). It was Messiaen who advised him to take an alternative approach to the concept of composition, and rather than follow the prescribed musical route, he advised Xenakis to take influence from his own background in engineering and architecture. His original work was influenced largely by two factors; the Modular and graph paper. The "modular" is a metric system introduced by Le Corbusier which is based on the Fibonacci series (1, 2, 5, 8, 13,....) and the Golden Section. (Fig. 7) This coincided with the height of an important neo-Pythagorean cultural wave In Western Europe in the 1950's. The modular allowed him to organise time in a rational manner while his use of graph paper granted him means to shape pitch envelopes and musical form. The graph paper in itself then provided a certain scale to his work so that each idea could be compared to the rest due to their identical canvas. In his time however, the notion of virtual experience wasn't a reality so he searched for commonalities between the fundamentals of music and architecture, and created a precedent or formula to follow in relation to testing. By combining both arts as experiential studies

he developed a method to test one art through the other. In his creation of the facade of the La Tourette monastery (Fig. 8), he incorporated many musical elements into his method of spatial division and geometry. At the time he had been studying glass panels in detail and due to a creation of his called Metastaesis, (Fig. 9)"the central section was constructed on a combinatorial organization of melodic intervals, +/- 1, +/-2.+/-3, +/-4, +/-5, +/-6, expressed in semitones". The physical arrangement of the panels became based on musical intervals under the supposition that if the intervals were pleasing musically they would also translate to a successfully pleasing architectural visual. His work called Metastaesis was a musical composition derived from the resources of the Modular. He composed a score of music, far removed from conventional scores to convey these universal

harmonic relationships in space.[40]

Fig. 7 Cover of Le Corbusier's Modular

Fig.8 La Tourette Facade Layout

Xenakis also commented on Goethe's famous line that "architecture is frozen music"[41], where he felt that from a composer's point of view, the statement may be reversed to say that "music is

architecture in movement" or in essence, music is melted architecture in a fluid form. This comment by Xenakis bares similarity to a separate observation made above in the previous chapter, where the idea that space is like the changing forms of water, ice and steam is relative to separate human senses. Perhaps Xenakis believed that the fluidity between the arts was related to how they were experienced, which is ultimately a trait of the senses . This knowledge is relevant here in relation to how Xenakis overcame the notion of representation versus reality. He took a mathematical scientific resource, in the modular, and transferred it to a form that could be felt or experienced through music with his Metastaesis, and then ultimately transferred the resulting effect back into architecture in the form of an undulating glass facade. He incorporated both art forms in reaching his end goal.

Fig. 9 Xenakis' Metastaesis Workings

This way of thinking found itself into many other projects Xenakis undertook with Le Corbusier. The point where this culmination of the arts came to the fore was in the Philips Pavilion in Belgium (1956 -1958)[42](Fig.10/11). The local firm Phillips Gloeilampenfabrieken NV requested Le Corbusier to develop a piece of architecture that would serve as a showcase of the sound and light possibilities of their technologies rather than to display any of their actual products. This notion naturally intrigued both Le Corbusier and

Xenakis and the project began to revolve entirely around the development of Le Corbusier's "Poeme electronique", an eight minute spectacle of light, sound, images, colour, and rhythm: "a crystallization of his concept of an organic synthesis of all arts".

Fig. 10 Xenakis' Initial Sketch of Phillips Pavillion

Fig. 11 First Scale Model of Pavillion by Xenakis

Upon Le Corbusier making a decision on the actual type of space required; (a black and empty 'stomach' or 'bottle' with an entry and exit that could accommodate roughly five hundred people for ten minute performances allowing two minutes for entry and exit circulation.), he delegated the actual architectural design to Xenakis and enlisted in Edgard Varese to compose the piece.

It was not only a combination of representational ideals and techniques but a combination of various professionals with various approaches that resulted in a sensory beginning to an architectural climax. Xenakis actually comments in his 'Notes towards an Electronic Gesture' that the Phillips Pavilion is the first project where he realizes his ideal of an "artist-conceptor"[43]; who in his mind was someone capable of creating "new abstract and free forms, tending towards complexities, and then towards generalizations on several levels....of organisation". This term is hugely evocative due to the notion that a work of art begins with a artistic conceptor and not one who is specifically skilled in any certain form of art. This in turn relates to this essay's introduction where the observation is made that as creators, the mind is the activator of creation, the body is the vessel and the specific tool is merely a means of tapping the vessel. Xenakis made practical links between two ultimate conclusions of his ongoing Metastaesis study. He was interested in the notion of continuity and whether it was possible to get to one point to another without breaking that continuity. Where in relation to music this notion became real in the form of the glissando (Fig. 12), in architecture it became hyperbolic parabola shapes. Xenakis defined the physical qualities he wanted to portray in his architecture, then translated that to music, where he discovered a pre-existing means to express his desire, then translated this musical motif back to architecture. The experimental structure of the Phillips Pavilion became exclusively based on self-supporting hyperbolic paraboloids.[44] In many ways this was how Xenakis avoided placing the credibility of the entire project

in the hands of two dimensional representation. It was never a question of representation versus reality because through music he had been dealing with reality directly from the beginning. Experience was the driver, not the visual. Even though Xenakis didn't base his analysis around the senses, he based it on the reality of a different yet relative art form, which could be graded by the senses.

Fig. 12 Xenakis' graphic representation of glissandi

On a practical level, representation versus reality it what dominates architecture as a study and profession. The art of the architectural presentation is often reduced to an architect's ability to suggest or evoke, or as Cedric Price put it, "he must be practiced in the art of anticipation, designing not only what is, but everything that might be possible"[45]. Mathematical drawings such as measured plans and sections are often expected to convey entirely non-mathematical aspects of an experience. Robert Sapolsky writes, "It pains me to think that so many feel that choosing science, means you cannot also choose compassion, or the arts, or be awed by nature. Science is not meant to cure us of mystery, but to *reinvent and reinvigorate it.*"[46] This notion becomes interesting in relation to the idea that science, a reasonable, logical, theory based field of study, can evoke mystery, which is in essence a sensory trait. Mystery cannot be touched

or quantified, but a quantifiable source can spark it. The even more incredible fact is that these types of drawings are two dimensional scientific works, and that science doesn't promote its own third dimension when attempting to convey these intangible qualities of space. Also in relation to the skill of judging a presentation, it is fair to state that only a certain amount of experiential slices can be selected to portray what a project might aspire to become. This allows for a great deal of unknown scenarios and imagining, which is a contrary concept to the ultimate designed result. An architect will design every square meter of a project and leave no visual aspect unknown, yet he might only imagine or cater for a much smaller amount of sensual experience. He might have drawn a section that evokes how a typical space might feel but not to the same detail as the ordering of a facade or laying out of a spatial arrangement. Buildings should be driven by the senses, subsequently derived by science to ultimately become places of the senses once again. As Louis Kahn put it, "A great building must begin with the immeasurable, must go through measurable means when it is being designed and in the end must be immeasurable"[47].

Chapter IV
Relativity in Repetition

Relativity is the only means by which comparison can be drawn. That is to say that if previously unknown workings or ideals can be made to be layered, so as to align with a set personal standard or given means of generating an understanding, then a mutual commonality can be reached. Everything that makes us who we are; every experience, every relationship, every understanding and every mystery, are how we communicate with the world and in return allow the world to communicate to us, and maybe more importantly through us. This is also true to no lesser extent for the built world. The notion of a repeated element becomes valid here due to the simple fact that humans are creatures of habit and routine. We develop understanding through sheer repetition of experience, be that a novelist learning to develop a fictional character, a butcher learning to cut and prepare meat or a painter learning the intricacies of a brush stroke. A child does not sit on a bicycle for the first time and succeed.

If it is true that humans are creatures of habit then this must be due to an over-ruling factor or set of factors. Habit is by definition a continuing reoccurrence based on circumstance. This circumstance can be viewed as the environment, both built and natural. Le Corbusier's well known and documented belief in the golden section and Fibonacci series spring to mind here. His conviction was that like Leonardo's Vitruvian man there was a governing reoccurring design present in all facets of life that could be quantified and

analyzed. This ultimately led to the afore-mentioned *Modular.* Le Corbusier centred his design philosophy on systems of harmony and proportion. His devoted faith in the mathematical order of the universe was closely bound to the golden ratio and the Fibonacci series, which he described as "rhythms apparent to the eye and clear in their relations with one another. And these rhythms are at the very root of human activities. They resound in man by an organic inevitability, the same fine inevitability which causes the tracing out of the Golden Section by children, old men, savages and the learned."[48] (The use of the word resound is interesting here as it is a term linked to sound and reverberation). If these circumstances are found organically in nature, then it is only logical to assume that as natural living beings whose composition follows this code, that we instil them in all we create, be it intentionally or not. If it is part of us, or to be more accurate, if we are part of it, then subconsciously we are programmed genetically to further the code. The involvement of genetics is relative once again to the notion that architecture evolves as part of Darwin's Theory which was suggested in a previous chapter. As our genetic code evolves, and therefore as the universal code of nature evolves, our exploits evolve accordingly. We can only put forward that which is part of us, either as part of our belief system or physical make up.

Iannis Xenakis becomes relevant again here in relation to how his Metastaesis led him to challenge the inter-art credibility of the Fibonacci series. If repetition is how humans come to understand the world, and if the world can be broken into mathematical formu-

lae or sequences, then how can this mathematical premise straddle practices that aim to address the non-mathematical; emotion and the senses? Xenakis made fundamental observations in order to address these formulae. Humans to him were "organisms of patterns, biologically prone to prescribed orders"[49]. Understanding that Xenakis placed humans as parts of a wider pattern of biology, only serves to deepen the impact of this code or formula that governs so much else. Fibonacci sequences appear in many biological settings, such as branching in trees, arrangement of leaves on a stem, the fruitlets of a pineapple, the flowering of artichoke, an uncurling fern, the arrangement of a pine cone, relating to the breeding of rabbits, the spirals of shells, and the curve of waves. The Fibonacci numbers are also found in the family tree of honeybees.[50] All of

these studies have found that one sequence repeats itself through a wide variety of growth systems in the biosphere. This suggests that if something is created following these laws in architecture, then it can be documented and transferred to a different medium, provided a common language can be achieved between architecture and it. This is why the title of this chapter is apt; the entire realm of relativity in relation to architecture is in some way linked to a repeated element. Maybe therefore, architecture that follows an order can be tested using media or other art forms that also fall subject to the same order.

A further study carried out by Xenakis, that might serve as an example of to test this notion was in his orchestral experimentation. If when experiencing an orchestra, the audience are all positioned in

Figure 6: Iannis Xenakis, Terretektorh (1965). Diagram suggesting the distribution of the musicians amongst the audience. Source: Mario Bios, Xenakis. Der Mensch und Sein Werk (London: Boosey & Hawkes, 1966).

Fig. 13 Sketch of interspersed orchestra, Xenakis

space at roughly the same vantage then it can be said that the audience are experiencing an almost identical relativity. The orchestra is grouped together at one point and the audience sit relative to them. Xenakis introduced the idea of dispersing the orchestra in the performance space, amidst the audience, in several of his pieces of the 1960's such as *Terretektorh (1965) and Nomos Gamma (1967-68)*[51](Fig. 13), where the musicians are seated among the listeners. These experiments toyed with the idea of relativity in that on leaving the performance space after the concert, no two spectators would have the same impression of what they had just experienced. One man might have been sandwiched between the texture of a violin and a trombone while another might have been subject to the flute and a timpani. It was all relative. It was not capable of repetition.

An added characteristic of us as habitual creatures is that we draw on the previous to construct our opinion about the new. This might be directly linked to our subconscious ability to recognize the golden section or the Fibonacci sequence at work. Even if it has no link to either of these means, the structure and impact of previous experiences allow us to translate somehow in our minds, all that has preceded to a common language and process the new in relation to all these previously repeated scenarios. Our minds themselves move linearly. As I write this sentence it is in itself affected by what I have stated before or what I believe I will say next. Yet it is the intangible impact that is remembered. If a book excites you, intrigues you, enlightens you, angers you, pleases or saddens you, it is ultimately this feeling that is recalled when

next a similar proposition arises. This is similar to architecture as it is similar to music. When one walks through a dark cave, the next dark cave will be approached relative to how the previous layers of similar experience trigger it to be. When one enters a church, there is a certain approach or experience attached to how one moves and acts due to previous encounters. When one hears a new piece of music, or an old piece for that matter, our attachment to it experientially revolves fundamentally around what has gone before[52]. Countless layers of impression and repetition build up in our minds and in our personality that affect the next stage. This is why in the built world, habit is found in what we create. We seek means to relate. This is similar to the notion raised in chapter two in relation to the visual always being associated with an accompanying sound. We are layered beings that build banks of memories, smells, emotions and experience. When we cannot relate we do not engage; therein arises harmony of intentions.

Harmony being a term relative to mathematical equation in music, in the form of frequencies and their relative overtones, could be seen to imply a sensory formula of sorts in architecture. Palladio concerned himself predominantly with aesthetic harmony. His formula, if it can be viewed as such, was one of balance, where one side of a building would mirror the opposite. 'X' would equal 'X' and 'Y' would equal 'Y'[53]. Rhythm as a fundamental to music as an art is so strongly self-standing that it almost requires no explanation. However, if it is analyzed with a view to describing it as part of the universal repetition it opens new means to understanding it. If we abstract musical rhythm as simply

part of a musical device, to being an independent entity with which human aurally relate, it becomes a means to provoke movement. It would seem then that in our strive to relate, what really drives us is our need to be guided through repetition; to be provoked into movement. Again if music provokes movement, architecture orders it.

This leads to the concept of order or framework as grounds for creation, yet any architectural characteristic that can be measured or graded in relation to any unit of length is a servant of the visual. In recent decades, together with the gradual dismantlement of classical theory in architecture, architects have become coy about mentioning or using proportional systems or as Le Corbusier put it, "regulating lines"[54]. This however might suggest that in order to follow different paths that architects have attempted to purposefully neglect universal order, in an attempt to create outside its bounds. This in itself becomes intriguing however due to the notion that, in order to be different to something, you have to know what it is you are being different to, and then you have to move a certain degree away from it. Regardless of what parameter you set, you are still creating a relationship with what you are trying to escape due to your conscious movement away from it. This raises the question that, if architecture that strives to remove itself from universal law or set order, does so intentionally, is it not still following order, albeit an unspoken one? Everything is relative to something.

In a similar vein of thought to the notion of two-dimensional representation of reality, design can be based around slices of experience that are repeated over and over

as means of allowing the person experiencing the space to generate a dialogue with it. Maybe less is more? (Although Robert Venturi wouldn't agree.)[55] As we move through a space there is an inherent rhythm to how we adapt to our surroundings. Consciously or otherwise we acquire signals through the semiotic language of a piece or architecture that promote a certain tempo to our movement. This rhythm becomes the pulse; the architectural heartbeat that beats with our own.

Conclusions

The concept of perceiving space as a stream of senses, each representing different aspects of the experiential quality of a linear sequence, could broaden the visual approach to design as means for a more deeply resounding experience. If space is a material that architects sculpt and mould, then all layers of space should be recognized. The separation of each strand results in an addition to the built environment that is experientially shallow, even if at first it succeeds in striking awe in us through a singular sense. Music then as a deeply similar art form to architecture, offers means to test spatially relevant sequences and experiential orders when two dimensional representations fails. Formulae present in both arts suggest that if a common language or cross-pollinating system of notation can be found then a dual aspect, inter-art approach can be embarked upon. Architectural ideals could be used to influence music in the same fashion that musical exploits can prove fruitful in grasping the intangible in architecture.

Perhaps the greatest outlet music can offer architecture arrives in the testing stage of a project. Mathematical laws are constants so if instead of viewing architecture and music as known commodities, they might be treated as unknowns, that merely comply to these ever-present rules, they become one and the same. When the weight of intended experience cannot be graded, music might offer means for the rhythm of structure or spatial mood to be conveyed. These however, are

just suggestions. What might also be taken from this text is the notion that due to the inherent workings of the human mind, which seeks to form relation-ships with every aspect of the surrounding world as means to relate to it, humans *feel their way sequentially through space and time. Universal laws of proportion, evolution and relativity suggest that because humans are also part of the system, so to speak, we are bound if not programmed genetically to recognize order and harmony in all dimensions of our senses. When this occurs, frequencies within us recognize their universal equivalent. This type of phenomenon reaches far beyond the realm of the visual alone and therefore architecture, which serves as provider for these opportunities, must respond to the entire spectrum. A total experi-ence comes down to conterpoint and resonance.*

'Resonance'- of the Latin *resonantia, meaning 'echo', which derives from the Greek ekho, related to ekhe, 'a sound' that to be heard, re-quires a resonating space.*

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38   "Avatar", 2009 is the most advanced recent example of these movies

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Scalbert

55   Robert Venturi is known
for his comment, "Less is a bore"..

Dead Architecture Sells
The Market and its relationship with Architecture
Conor Horan Murphy

In the liberal global civilization we find ourselves living in, is there really such a thing as architecture anymore? With the evolution of our questionable consumerist morals, architecture has become little more than a commodity, a product, a goods item. In the changing world around them, Architects have had to turn to the market in order to find their way. This however has not been without its consequences as they have witnessed the erosion of their influence as the market manipulates architecture for its own financial gains.

Architecture is not the first commodity to be manipulated by the market for its own ends. During the Dutch Golden Age, the contracts on newly introduced tulips began to be bought and sold at enormously high prices but then suddenly collapsed. Considered a luxury item since its introduction to the Low Countries from the Ottoman Empire at the end of the Sixteenth Century, large numbers of tulip varieties were cultivated, with the bulbs of the most vivid and spectacular highly sought after. As the tulip grew in popularity, professional growers and speculative investors began to pay more and more money for the contracts to desirable bulbs. This led to a wind trade of contracts, where contracts to a bulb for after a growing season could be bought and sold during the season it's self, while no bulbs were actually changing hands. In 1635 a skilled crafts man would earn approximately 150 florins in a year. At the same time forty bulbs were bought of 100,000 florins. This level of trading increased until February 1937 when contract prices collapsed and tulip trading stopped abruptly ruining many investors in the process. This train of events does not sound too far off what has befallen many property developers of late.

Decoration Sells
New York, the development of the Skyscraper and Art Deco

The effects of the market on architecture can be seen clearly in New York in the years leading up to the Wall Street Crash. From the turn of the century architecture as an art form died. No longer was it a discipline of building design but rather of the 'brutal extrusion of whatever site the developer had managed to assemble'[1]. The market's demands of function and economics practically designed the buildings themselves. Architects were increasingly side lined in the conception of these forms as teams including financiers, lawyers, engineers and real estate experts were convened to formulate the most profitable incarnation of the skyscraper for the given site.

It was the advancements in steel construction and reinforced concrete, but most significantly, the invention of the elevator, that made the development of the skyscraper possible. Prior to this, anything above the second was considered unfit for commercial use while above the fifth floor was considered uninhabitable. Floor to ceiling heights and floor plate depths were governed by the need for natural lighting and ventilation. The quality of the spaces depended totally upon

1. Rem Koolhaas, *Delirious New York*.

Down Town Manhattan Skyline, 1913. With artist's enhancement, hand colored.

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The Crown of the Chrysler Building, Manhattan. Built 1930.

2, 3, 4. Carol Willis, Form Follows Function.

'large windows and high ceilings to allow daylight to penetrate as deeply as possible into the interior'[2]. Ceiling heights stretched from ten to twelve feet while window openings could be anywhere between five and eight feet wide. American developer Ower F. Aldis insisted in his 'Eight Fundamentals' for profitable development of a 'maximum depth of twenty-four feet from window to wall'[3]. Skyscraper floor plans developed accordingly. Circulation and services were placed in the centre of the floor plan with the served spaces taking prominence beside the facade openings.

However, following Otis's invention, the only limitation on the height of a skyscraper depended on the size of the plot upon which it sat. Within the floor plan, accommodation had to be given to the amount of elevators that would be needed to provide adequate rush hour service to the upper floors of the building. As the building got taller, the more floor space the elevator banks would begin to consume. And consume they would until the loss of rentable floor area in the lower floors began to outweigh the potential financial gain of more floors. Every skyscraper is a creation of the market and its design, a purely economical calculation. These first skyscrapers were no different. Their location, the size of their plot, the floor to ceiling height, the number of floors vs. the number of elevators needed to service them and the restrictions of New York's Zoning Laws were all meticulously equated against one another in order to find the most profitable building design.

To see the skyscraper as just 'a machine to make the land pay'[4], erected where ever space could be found, would have been to deny it its full potential, something the developers of Manhattan were unwilling to do. They recognised that the skyscraper, as a commodity, had much more to offer. For them, location became the equivalent of product placement and the title of tallest building in the world was coveted by those who claimed it for the invaluable publicity it generated.

Corporations too began to recognise this potential as they realised the benefits (physical, financial and metaphorical) building and owning their own building would bring. Their mostly speculative buildings became flag ships, statements of importance and prominence to the outside world. It was into this competitive, ego driven landscape that architecture was resurrected, but not as its former self, rather as a tool by which developers and corporations could impress upon their rivals and the public their superiority though grander and decoration, height and efficient services.

Though the Empire State Building can be seen as the final instalment of this delirious development prior to the devastation following the Wall Street Crash, the Chrysler Building remains the finest example of the market's opulence and grandeur. It stands as a bastion of the decadence of this period in, what can only be realistically called, real estate design.

Built in under a year, its stainless steel clad pinnacle rose to briefly claim, not only the title of the world's tallest building, but also that of tall-

Lobby of the Chrysler Building, New York

Mosaic Mural on the Ceiling of the Chrysler Building's Lobby, depicting the building it's self.

est structure in the world, before being over-shadowed by the Empire State Building in 1931. Though the speed of its construction and the height it achieved are impressive it is also the building's strikingly original design that sets it apart from others built in this era. The rather mundane massing of the building's base gives way to the breathtaking stainless steel clad sculptural crown, stepping back in seven para-bolic curves from the building's facades to peak in a ornate spire, conceived and built in secret to best the recently completed Bank of Manhat-tan Building for height. The brilliance of its peak and the elaborate detailing of the building's step backs easily compensates for the quite routine detailing of the rest of the facade. The flamboy-ant magnificence of its exterior is replicated in the Chrysler's lobby, accessed again through three relatively plain entrances. The light from the en-trances plays on the red Moroccan marble clad walls and the yellow Siena marble floor, both also trimmed in blue marble and amber onxy, beneath a ceiling covered in an ornate mural depicting the building its self surrounded by examples of the modern age and decorative patterns. The detail-ing of the chrome banister of the stairwell and the wood marquety elevator doors are exquisite, consolidating the impression of excessive luxury that radiates from the building from the micro to the macro.

The Chrysler Building remains as the apex of the fondly remembered architectural style of Art Deco, but can it really be called an architectural style? It was here in New York that the market first killed off architecture with the development of the skyscraper, only to raise it from the dead to decorate its new cathedrals of commerce and capitalism. In this context Art Deco cannot be seen as an architectural style but rather as an amalgamation of the market's influences on what was once called architecture. Stripped of its misty eyed reverence, Art Deco becomes little more than the art of decoration, the art of deca-dence, the market's self exultation.

Difference Sells
Individualization, Consumerism and Architecture

The Wall Street crash could be seen as the first real catastrophe of the globalized economy in a shrinking world. Before it, no other event resonated with such widespread consequences. World War One, though utterly seismic in its own right, projected little further the continent of Europe in its instant effects. Between then and now the world has gotten even smaller, and 'culture has become global'[5]. We have evolved into a sixty second society with little distinction between our respective cultures. Our personal spheres of interaction have exploded with infinite possibilities. The scale of our interaction with the world has exploded over the last one hundred years to the scale we are now at, that of the individual to the world, or architecturally, individual:world. In an increasingly populated planet everyone seems to be clamouring to have their existence acknowledged, to stand above the earth's billions of other inhabitants and be recognised by someone.

While the world has gotten smaller, it has also gotten more diverse, as we all seek distinction from others through our own individualism. In reaction to our growing awareness of our position in the scope of the planet, and fuelled by

5. Irenee Scalbert, *Architecture at the End of History.*

The Skyline of Construction we have become so used to

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the market's recent prolonged run of growth, we have happily embraced consumerism as a means though which we can express our uniqueness. The idea of commodities as the primary form of expressionism in this respect holds sway. Like the Developers and Corporations of New York who decorated their buildings, we now decorate our lives. There is status to be gained though accusation. And the market knows this well. No longer does it act upon the principle of supplying to meet a demand, but rather on the belief that supply can create demand. Bring out the shiniest new toy and people will want in, even if they were living quite fulfilled lives prior to learning of its existence.

And what of architecture in this monoculturel, consumerist society we happily live in? In his article 'Architecture at the End of History', Irenee Scalbert, in response to Francis Fukuyama's claim that we have now reached the end of history[6], theorizes that this could also herald the end of architecture. However unlike New York, architecture's second demise did not come about at the hands of the market's demands but rather

6. *Francis Fukuyama, The End of History and the Last Man.*

The Fall of the Berlin Wall, the End of History, the End of Architecture?

by the death of civilisation. The last two great civilisations of the human race ceased to exist following the fall of the Berlin Wall when they were replaced by 'consumer culture' and the birth of 'a universal homogenous state'[7]. This transformation has been exemplified in the changes we have witnessed in the skylines of our cities, Scalbert claims. They have become 'the rash outgrowth of economic activity...places which we now associate with the contrary of civilisation; with the frontier'[8]. In our migration to the suburbs and our abandonment of the city we, the new universal consumers, have 'left civilization behind'[9]. In our desertion of 'the cradles of civilization' to the market and the forces of economics, Scalbert questions if 'architecture can survive the effects of an aggressive economy and of the ceaseless development with determine the shape of cities'[10]. In this climate where are architects to find their source of creativity?

Seattle Public Library, OMA, Seattle

Architecture's (possible) salvation came in the unlikely form of the market. Architects turned to it in the face the extinction of the traditional idea of architecture and found though it an unforeseen dimension of freedom. Rather than fearing the 'corrupting influence of money' and believing the interests of developers and corporations to be in direct conflict with their own, architects have sacrificed their independence for their survival. Once again, as in New York, they have found their role in the development of form diminished. Now they once again work with economist, market researchers and others under the supervision of developers or their deputies for the modern age, project managers. For this sacrifice however, they found a unexpected 'place where radical freedom prevails'[11]. Instead of being the creation of form, brought back to prominence by the instigaters of the modernist movement, architecture is once again the by-product of negotiations and deliberations between a wide variety of professionals, not only architects. This process took physical form in the Office of Metropolitan Archi-

7. Irenee Scalbert, Architecture at the End of History.

8, 9, 10, 11. Irenee Scalbert, Architecture at the End of History.

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Cantilevers, MVRDV, Amsterdam 1997

tecture's Seattle Public Library scheme, where the building took on a literal reading of the brief in section[12].

In this environment and in understanding architecture now as a commodity, architects have become no different from other goods producers, competing in an increasingly crowded market place. To ensure their continued existence they must anticipate demand in order to stay ahead of the competition, 'hence they decide what people want'[13]. No longer are they tied to the demands of the individual client and though the unlikely form of the market, embodied by private developers, they had discovered an 'unlimited experiment for it falls on them to imagine what people want'[14]. Architects are no longer alone in their acceptance of the value of diversity as it now also aligns its self with the market's interests in this individualized world. The point about difference, Scalbert articulates, is that it sells[15]. This acceptance coupled with architects new found freedom led to architectural moves being accepted where they previously would have been considered audacious, even inexplicable. The Dutch Architectural firm MVRDV, in building 100 apartments for elderly people in the suburbs of Amsterdam, cantilevered five breathtaking boxes from the straight façade of the multi-storey block to little question[16].

MVRDV took this understanding of architecture

12. OMA, *Content*.

13, 14. Irenee Scalbert, *Architecture at the End of History*.

15. Irenee Scalbert, *Utopia Plc: A View from London*.

16. MVRDV, *The Cantilever, FAR-MAX*.

as a commodity in an individualized world further in both their Proximity proposal and Silodam scheme. Their Voids proposal for a mix use building of apartments and commercial space in Berlin played on their interpretation of the changes in our social behaviour. Commenting on the increase in the number of times people now move house, and our more transient nature, they express that 'the house has become part of our dwelling career with the longing for diversity seemingly paramount'[17]. They state that there is no such thing as the ideal home and that the permanent ideal has been supplemented by the temporary. In describing their architectural approach, MVRDV pay particular attention to the idea of cataloguing and the potential client. In developing the maximum potential choice of housing types, they believe they are meeting the wishes of the potential client. This extension of the 'known ideals' of housing can be set up though extrapolated incarnations of the average house. This, they claim, would lead from the 'straightforward front-to-back type to the stair type, the house with the super window, the house with no roof, the house with no walls, to the pit house... etc'[18]. These spaces are all specific and individual, waiting to be inhabited over and over. From these intentions a remarkable section is developed, akin to a Chinese puzzle of ideas and potential lifestyles. An unexpected but welcomed by-product of the process of placing these permutations of the average house within the building's envelope was the in-between houses that were created. These undesigned, surprise houses can be seen as truer forms of the architects' intent here. Their 'unexpectedness' goes even further in accommodating the individual's interests then the architects' original exploration of the of the average house. Here, MVRDV proposed 284 ideal homes, each one as unique in their spaces as their future inhabitants are in their individualism.

As a competition entry, Voids and its experimentation with both the individual's, and the market's,

17, 18. MVRDV, Proxinity, FARMAX.

Detail of Section, Voids Competition Entry, MVRDV, Berlin 1994

Examples of Silodam's Suggestive Floor Plans

interest in individualized dwelling types was never physically realised. However, with their Silodam project in Amsterdam a year later MVRDV got the opportunity to bring their investigations and suggestions further. Rather than continue with the idea of unique dwellings for individuals however, they began with a catalogue of samples describing the potential of the brief, manifesting in a series of plans that were suggestive of their intended occupants. Irenee Scalbert comments that 'these types prefigured a lifestyle but did not prescribe it anymore then an ad campaigne for a product'[19]. In contrast to the isolation of each dwelling and the suggestive presence of one's neighbours in Voids, Silodam's dwellings and collection of spaces were grouped together in 'mini-neighbourhoods' in an intentional move by MVRDV to 'try to create a more social and safer living environment' in response to 'increasing individualization'[20]. These 'mini-neighbourhoods' and the sizing, mixture and configuration of the numerous types within the building were once again the outcome of detailed negotiations between all four parties involved in the building of Silodam, a housing developer, a housing corporation, a developer of workspaces and the city of Amsterdam[21].

This process was so important to the creation of this building that it acts as the title to the proj-

19. Irenee Scalbert, Architecture at the End of History.

20, 21. MVRDV, Negotiations in a Housing Silo, FARMAX.

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ect in MVRDV's publication FARMAX, Negotiations in a Housing Silo. It acts as a reminder to the ever presence of the market in the minds of architects at this time. Traditional architectural ideals enjoyed a renaissance of sorts during the romance of the modernist movement, after their death at the hands of New York's skyscrapers. However, after the death throes of postmodernism, architecture once again fell victim to the market as architects tried to find their way in the individualized, consumeristic society they discovered themselves in, turning to the market at the end of history. Though this led to unprecedented artistic freedoms it again exposed architecture to the harsh reality of the aggressive economy and relinquished power from the architect to the market. Though not as extreme as the down grading of the role of the architect in New York, this latest economic boom once again brought the role of the architect into question, and though they enjoyed greater artistic and creative powers then their predecessors in New York did with the skyscraper, they still, like before, ultimately had the market to answer to.

Silodam, MVRDV, Amsterdam1995

Anything Sells
Architecture and the Celtic Tiger

MVRDV's theorising of the market's effects on architecture can been seen as indicative of Dutch architecture in between our two most recent recessions, however what of architecture in Ireland during this period? What effects did the Celtic Tiger bring about Irish architecture?

In the sunny economic climate created by the Celtic Tiger, the Irish gladly welcomed their improving standard of living and took to the consumeristic culture that came with it with gusto. As with the rest of the world, the idea of architecture became a sought after commodity, a means by which to express one's uniqueness. In Ireland however, expressing one's individuality came second to flaunting one's wealth and these cultural changes, coupled with our deep rooted need to possess our own patch of land, led to some peculiar results.

Fuelled by our new found wealth and primal need for land ownership, small scale architecture flourished. The accepted arrangement of the patron and the architect thieved as some of the nouvelle riche sought to marry their need to express their individualism with their craving for land and property. The Celtic Tiger led to such unprecedented levels of construction in Ireland that not all new development was born out of the architect's hand. Initially, and in direct contrast to the rest of the world, the market was only trying to supply demand, let alone create it. In the absence of any law requiring the use of an architect in new construction, many property developers conceived and built their new housing estates without any input from an architect at all. In the low density suburban carpet radiating from our city centres, these amalgamations of housing components became quite common, exercises in pure finan-

Elmpark, Bucholz McEvoy Architects, Dublin 2008

cial gain by their creators. Where as in New York they reached for the sky, in Ireland we reached for the countryside.

This low density suburbanization of the countryside was clearly unsustainable, though its instigators, now living in their semi-detached houses in Kildare, may not have cared. Strangely however, is seems that the market did. It understood that commuting times from the dormer towns to the cities were beginning to verge on the ridiculous, and recognised a potential gap in Ireland's housing market. In response to this developers began speculating with the rather un-Irish idea of apartments. It was in this move can be drawn between the Irish market and the International market. Here the market decided what the consumer wanted and gave it to them to some success. However the Irish dream of a house on a plot of land remains too fixed in the minds of the Irish to fully buy into the idea of apartment living. Something that can be seen in Ireland's equivalent of the Chrysler Building, Dublin's Elm Park. Though it bucked the trend in developer led construction,

through some clever moves by its architects Bucholz McEvoy[22] and can be seen as a rather successful scheme, two years after its completion it still lies unoccupied. The recent economic crises not only revealed a reversion to a more conservative market but also to a more traditional idea about the types of spaces we wish to inhabit.

22. Interview with Graham Petrie, Architect on Elmpark.

Nothing Sells
The Future Place of Architecture following the Economic Crises

What now for architecture? Now that the economic boom, that sustained our consumerism and the market's control over architecture, has collapsed where does it go from here? We have suddenly gone from a state of 'anything sells' to 'nothing sells'. Gone now, at least for the foreseeable future, is our means to express ourselves though acquisition. The need for architecture and individualism seem superfluous when confronted by some of the harsher realities of life now being faced. Perhaps this readjustment of our collective priorities offers us within the architectural community an opportunity to fully judge the decay that has befallen architecture of late. It does sell, but not at the moment. So set are we in our political and economical global liberalism that this current economic crises, though harsh, shall fail to bring about a drastic change in our ideology. We shall sit tight in our beliefs and wait for the good times to return, at which point the whole process of consumerisation shall begin again. But in the mean time we have been awarded some breathing space to take stock of the meaning of architecture now, and its potential meaning in the future. The last great depression gave birth to the main stream modernist movement; could we be on the verge of something similar? A question still remains over architecture's failure to providing better quality housing. Certainly the work of Dutch architects and others in the 1990s and 2000s went along way in bringing into question the notion

Il Rigo Quarter, Renzo Piano Building Workshop, Corciano, Italy 1978

of the ideal home but while there are still social housing issues, people living in the streets and elderly people living in large empty houses, architecture has still ultimately failed. Surely there has to be a better way of providing for the needs of the individual or couple as they negotiate life's many crests and falls. Rezno Piano's Building Workshop may have been onto something with their industrialized system of Housing at Il Rido in Corciano, Italy. His evolving housing presents the shell of the building as the constant while the floors and partitions of the interior are free to be changed as the inhabitants circumstances change[23].

The romantic notion of architecture has suffered greatly of late, but perhaps this is necessary for its evolution. We as architects have many problems yet to resolve, and the future ahead of us to resolve them in. Though at times we may have to take a back seat to the market, opportunities shall arise for us to show our worth. The end of history does not signify the end of architecture, because if nothing else, architecture sells.

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Dreams and Architecture

A study of the place for dreaming in a logical world

Deborah O Shea

Introduction

Dreams allow the enactment of fantasies that are difficult to realize in real life. The many different applications of unconscious dreams in the conscious real world are put into perspective by this dissertation; with focus on the position of dreams and the unconscious in Architecture. This is a discursive field that has hardly been theorized. Although some architectural theorists have been concerned with the meaning of surrealism in architecture, so far there have been no critical examinations of its development. So far there has been no

Image of M.C. Escher's 'Relativity'

critical examination of the historiography of this topic. This is because this is an area which is difficult to realize in the built environment. This dissertation focuses on the role of dreams in art, to the surrealists and on the role of surrealism in architecture. The surrealists championed spontaneity, deliberately defying linear rational discourses; what would this be like in architecture? Could there ever be a time when the unconscious dream world was in charge and overpowered a logical world? It has been described that dreaming is *'the soul's freedom in sleep'*[1]; we can connect with our 'soul's freedom' by expressing dreams through our creativity in the conscious mind.

1.Pierre Sorlin, *Dreamtelling*, (Reaktion Books Ltd, 79 Farringdon Road, London,2003)

Chapter 1 - The Architecture of Dreams

The best way to access the unconscious mind is via dreams. Dreams are a series of mental images and emotions that occur during sleep. The four states of mind are the Beta (most of our waking hours), the Alpha (meditative state), the Theta (the dream state) and the Delta (deep sleep or total unconsciousness)[2]. Dreams occur in the Theta and the Delta state; in the REM (Rapid Eye Movement) state. You need to dream/REM to stay alive and you dream every single night whether you can remember it or not. Using devices like the electroencephalogram (EEG), which measures brain waves, researchers have shown that while we sleep we're cycling through different states of consciousness, moving in and out of dream states and actively restoring vital chemical balances for the next waking day. Dreams are a very important part of our inner lives, trying to help us attain emotional balance, trying to express and respond to feelings we may not even acknowledge in our waking lives. Dreaming is how your brain deals with problems. All the areas which were turned off in the non-rapid eye movement state gear up when REM sleep occurs, except for the logical, reasoning portion of the preferential cortex. This part does not accelerate in the REM state. So, effectively, your brain is activated logic and reason free in the REM state. As the role of dreaming is to deal with the brains problems, it appears that dreams become the logical and reasoning part of the brain now in this state.

"*According to Freud the dream, like every complex psychic product, is a creation, a piece of work which has its motives, its trains of antecedent associations; and like any considered action it is the outcome of a logical*

2.Roy Hunter, *Master The Power Of Self-Hypnosis: Program Your Subconscious To Attain Health, Wealth & Happiness,* (Sterling, December, 1998)

Image above of the Human-Brain with the highlighted Preferential Cortex

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process, of the competition between various tendencies and the victory of one tendency over another. Dreaming has a meaning, like everything else we do."[3]

Our waking mind is not present when we are sleeping and that is why we do not experience our dreams the way we experience our waking life. But our conscious life does influence the unconscious, Calvin Hall psychoanalyst on dreams and human personality, suggests that dream content is continuous with waking thought and behaviour. Dreams correlate with our age, gender, culture, and personal preoccupations. Sometimes people have a lucid dream and in a lucid dream they are aware that they are dreaming and they possess most of their normal waking consciousness, their normal memory and their normal judgement. People are very different and their dreams are very different. How much the emotions they experience during the day effects their dreams depends on who they are and what they are going through. For most people, the emotions of the day strongly influence the nature of their dreams at night. In essence, our conscious life influences our unconscious, dreaming mind.

Sometimes the unconscious generates a fantasy so full of vivid, symbolic images that it captures the conscious mind totally and holds our attention for a long time; this is known as daydreaming. Daydreaming is conscious dreaming and it's the way the unconscious invades our conscious minds and attempts to express itself through the imagination; in bursts of fantasy that float across the conscious mind, barely noticed by us. We think we are thinking or planning, but more often we are in a daydream, lost for a few minutes in that stream of fantasy before we pull ourselves back.

Dreaming is one of the best parts of who we are what we are and why we can do what we are inspired to create. By al-

3.Carl Gustav Jung, *Dreams*, (Routledge, October, 2001)

Image bottom right describing the functions of the left & right side of the brain

Image bottom left showing the logical left side of the brain and the imaginative right side

4

lowing our unconscious dreaming mind into our conscious waking life, we have a richer life experience influenced by all aspects of the mind.

4.Robert A Johnson, *Inner Work: Using Dreams and Active Imagination for Personal Growth,* (HarperOne, England, 1989)

 "The unconscious manifests itself through a language of symbols. It is not only involuntary or compulsive behaviour that we can see the unconscious. It has two natural pathways for bridging the gap and speaking to the conscious mind: One is by dreams; the other is through the imagination. Both of these are highly refined channels of communication that the psyche has developed so that the unconscious and conscious levels may speak to one another and work together."[4]

Sigmund Freud who is often described as the 'father of psychoanalysis' began his fascination with dreams when he noticed that many of his patients would often find a connection between the real world and their own dreams. Freud began analysis on their dreams and his own; he believed his outcome would be very valuable; that we would learn something new and receive new communications from our unconscious mind, information that has always been inaccessible to us.

In many of Freud's lectures he illustrates his distress with the lack of interest and research into dream analysis. He was distressed with the lack of advancement of our knowledge with our unconscious mind. Perhaps it was not as much lack of interest in the topic but more that people were hesitant to explore such a difficult topic. Either way dream analysis then and now still remains a grey area, with little fact and a great deal of presumption. Freud was afraid that dream analysis' significance would die out completely and that we would miss out in what this undiscovered symptom of the unconscious mind has to offer. Dream analysis has much to offer. It allows us to get a greater understanding of our complex unconscious mind.

"But the further you go the rarer do these contributions become and finally the sectional heading disappears completely."[5]

Freud's career of interpreting dreams became interesting and influential to many people, because of Freud interest in this

5.Sigmund Freud, *New Introductory Lectures on PsychoAnalysis,* edited by James Strachey, (The Hogwarth Express & Institute of Psychoanalysis, London, 1974)

topic did not die out. The French writer and poet Andre Breton and his followers were greatly influenced by Freud, the unconscious mind and the understanding of dreams.

"It was apparently, by pure chance that a part of our mental world which we pretended not to be concerned with any longer, and in my opinion by far the most important part, has been brought back to light. For this we must give thanks to the discoveries of Sigmund Freud."[6]

Andre Breton famous 'Manifeste du surrealisme' comments on the importance of freedom and of the imagination, while ridiculing "the reign of logic". His manifesto was published in 1924 and was a catalyst to the surrealism movement that occurred soon after. In the surrealists eyes surrealism was much more than a movement, it was a way of life. They believed it was time for the imagination to be accepted and for the logical world to step back. It was a time for the dream-like unconscious world to flourish and acquire its rightful place in the Arts. Andre Breton believed that the unconscious state of mind could fuse with the conscious to create a richer reality.

 "I believe in the future resolution of these two states, dream and reality, which are seemingly so contradictory, into a kind of absolute reality, surreality, if one may so speak."[7]

The surrealists believed that the unconscious was the source of the imagination, and because dreaming is one of the major symptoms of the unconscious mind, it is the major inspira-

6.Neil Matheson; *The Sources of Surrealism;* From Andre Breton - Manifeste du Surrealisme 1924; (Lund Humphries Publishers; 2006)

7.Neil Matheson; *The Sources of Surrealism;* From Andre Breton - Manifeste du Surrealisme 1924; (Lund Humphries Publishers; 2006)

Image by Shahla Rosa 'The Triumph of Andre Breton and Surrealism'

Image of Salvador Dali's Theatre Museum in Figures, Spain.

tion behind many surrealism works.

The Spanish surrealist artist Salvador Dali created art that was an expression of the idealization of the unreal. Salvador Dali turned his birthplace the Emporda landscape into a symbol of surrealism. He turned the reality of the countryside surrounding him into surreal art which illustrated his dreams. The Dali Theatre-Museum in Figueres is an example of this. He created a surreal world full of his dreams and he wanted others to be able to dream there too.

"I want my museum to be like a single block, a labyrinth, a great surrealist object. It will be a totally theatrical museum. The people who come to see it will leave with the sensation of having a theatrical dream."[8]

8.Sebastia
Roig; *Dali The
Emporda Triangle;*
(Fundacio Gala-
Salvador Dali
Triangle Post-
als, S.L., 2008)

Dali painted his vivid coloured oil painting The Metamorphosis of Narcissus in 1936 and published 'The Metamorphosis of Narcissus, Paranoiac Poem' to complement it. He stated that this accompaniment was "the first poem and painting carried out entirely with the integral application of the paranoiac-critical method." In the painting soft malleable paint strokes are evident, with brilliant colours, to create the illusion that objects flow from one to the other like being in a trance-like dream state. There are two main figures, one of Narcissus, (In Greek mythology, a youth who was punished for repulsing Echo's love by being made to fall in love with his own reflection in a pool. He died gazing at his own image, and was turned into a flower) the other of a stone hand holding an egg. When you gaze for long enough at the painting both figures

appear to become each other, that Narcissus can be seen as a hand, and the hand appears to be a body bent over like Narcissus. Dali was an artist of a very different style while he was a student. He broke away from this to become the surrealist artist. Perhaps this painting suggests that these too figures are the past and then present Dali, the hand with the ants the dying student and Narcissus the new Dali searching for himself in his reflection.

The artist Max Ernst did not believe paintings should reflect reality, he thought they should be inventive and be a discovery of the subconscious. Ernst studied the work of Sigmund Freud and was hugely influenced by him. Ernst found that it was the dream material of Freud's work which was so attractive, rather than any underlying hidden meaning. "Dadaville" is one of his paintings which portray Ernst abstract dream-like view on the urban skyline of a townscape. This piece dates from Ernst's transition between the Dada movement in Cologne and the new place in the Surrealist movement in Paris. He painted it spontaneously on canvas with few alterations as he went, in order to create art that spoke from his unconscious mind. He then pressed wooden planks down onto the canvas, so that he could go on to scratching around them and moulding them into his vision. Perhaps the use of the rough wood is representative of the walls of the Dadaism that were around him and around the city of Cologne, and the loosely painted dreamlike background represents the freedom of Surrealism.

The Italian painter Giorgio De Chirico is another artist which was interested in the unconscious mind and the metaphysical power of dreams. He believed it was important to seek inspiration from our dreams and to be in awe of their metaphysical strength.

"We should keep constant control of our thoughts and of all the images that present themselves to our minds even when we are in a state of wakefulness, but which also having a close relationship with those we see in dreams."[9]

From 1912 his paintings seemed to point to the direction of the Surrealism movement, years before it was even conceived. De Chirico's The Fatal Light 1915, mannequin figures, representing human in an unreal state, mechanical aspects, head open looking straight through, exploring the metaphysical and the human mind. The mannequin lacks a mind. Perhaps he is saying that a person without a mind, an unconscious mind,

9.Neil Matheson; *The Sources of Surrealism;* From Andre Breton - Manifeste du Surrealisme 1924; (Lund Humphries Publishers; 2006)

is lifeless like the mannequin and so too will be art without this quality.

"The heads of the mannequins are opened so that we can see right through them, like the windows of Metaphysical buildings, catching glimpses of ghostly trains... From the well-combed wigs, which make them seem almost human, emerge brightly coloured flags."[10]

These surrealist artists influence many other painters. There was something very attractive about their fluid, colourful paintings inspired by the painters own dreams. Yves Tanguy was a painter influenced by Breton, Dali, Ernst and de Chirico. He was self taught and developed his own styles and techniques. In his 1930's painting 'Day of Slowness' it is clear to see that Dali's paintings of boneless limbs and soft brush strokes probably inspired this painting. The painting contains surreal objects which abandon any figuratively descriptive details on a soft light-filled background. His paintings are almost other worldly.

"The painting takes shape before my eyes reveals its surprises in the course of its development, and it is precisely this that gives me the feeling of total freedom"[11]

Frida Kahlo's painting 'What the Water Gave Me' portrays her feet surrounded by hallucinatory images in a bathtub of hot water. These images include herself and her Mexican heritage, with symbols of sexuality and death. Breton was amazed that Kahlo could have achieved such surreality in her work

10.Mary Ann Caws, *Surrealism*, (Giorgio de Chirico, *the Metaphysical Period, 1888-1919*), (Phaidon, Michigan, 1997.)

11.Yves Tanguy, *Surrealism*, Cathrin Klingsohr-Leroy, Taschen.)

12.Whitney
Chadwick,
*Women Artists
and the Sur-
realist Movement*,
(Thames and
Hudson, 1991.)

without having any awareness of the movement. She opposed
his efforts to include her in the surrealist group *"although she
insistently denied she was a surrealist, her encounter with surrealism in
the late 1930s strengthened the psychological content of her painting and
increased her reliance on symbolic imagery."*[12]

Image of Frida
Kahlo's 'What
the Water Gave
Me'

Chapter 3 - The Belief in Dream - Architecture

Surrealism was an attractive movement for many to switch to as it was a breather from Dadaism which was full of demanding principle and noisy manifestations. Surrealism was more of a state of freedom. Surrealism created a new condition of being; fusing the conscious and the unconscious mind. Perhaps they felt more fulfilled connected to all aspects of the mind and that the art they produced was richer. Dreams were important to the Surrealists, and their art was their way of enacting their fantasies. Some architects believed in the power of dreams also. While it was difficult for them to realize dream imagery in built architecture, they wrote about the possibilities of it instead. Perhaps they felt that we need imagination more present in architecture than logic, which architecture should be a pure expression of the self, just as the surrealist's art was. Rem Koolhaas and Friedrich Kiesler are two architects which addressed this topic in their writings. The writer Robert Harbison also wrote many books about irrational and subconscious architecture.

Belief in the power of dream and the unconscious mind also became a topic of interest in the writings of Rem Koolhaas. He is an architect who believes in surreal architecture. In 'Delirious New York' Koolhaas addresses the relationship between the rational grid of New York City and the often irrational structures on the plots of land between this grid, which he calls *"Cities within Cities"*. Koolhaas celebrates the *"chance-like"*[13] nature of city life. This book identifies the uniformity between the episodes of Manhattans urbanism, Koolhaas establishes New York as a product of a movement he calls *"Manhattanism"*. He believes that there is a collective unconscious in New York which is intertwined with the conscious grid.

14.Friedrich Kiesler' *Endless House 1947 - 1961;* (Hatje Cantz Publishers; Bilingual edition; 2003)

Friedrich Kiesler was an Austrian architect, an artist, theatre designer and scholar, who wrote many books about his theories and about the role of the imagination in architecture. He believed the subconscious is the real truth, that it takes everything into account and delivers a richer reality. He believed that functionality is "stillborn" and does not take everything into account; "*a foot that walks (but does not dance)*"[14]

"*In the dualism of Vision and Fact, Surrealism resurrected Vision. Fact was only retained as an ingredience of mans subconscious. In truth, Vision should create out of itself, automatically. The new aesthetics were anti-machine.*"[15]

15.Friedrich Kiesler, *Endless House 1947 - 1961;* (Hatje Cantz Publishers; Bilingual edition; 2003)

Kiesler believed that architecture should be designed with ones whole body and whole mind. That the architects should design by being the tool rather than by guiding the tool, and design from their subconscious imagination.

"*The misery of man lies far deeper: in his inability to construct anything that has not been experienced by the imagination.*"[16]

16.Friedrich Kiesler, *Endless House 1947 - 1961;* (Hatje Cantz Publishers; Bilingual edition; 2003)

Robert Harbison also wrote about the more irrational trends in the architects mind. He believes in dream-like architecture and its difficulties that "*imagined buildings embody a more advanced kind of thought.*"[17] He addresses the problems surreal, dream-like architecture has, in being accepted into a world of reality, in his book 'The Built, the Unbuilt and the Unbuildable'. He makes the valid point that buildings are for the client not for the architects; therefore it cannot be the architects dream, it has to be the clients dream. Harbison is in pursuit of architectural meaning and if there is room for dream in the logical world of architecture.

17.Robert Harbison; *Eccentric Spaces;* (The MIT Press; 2000)

18.Robert Harbison, *Eccentric Spaces;* (The MIT Press; 2000)

"*Better than ordinary works of architecture they enshrine the metaphysical approach to technology, which sees it as a visionary medium for realizing the most farfetched dreams*"[18]

19.Steven Holl, *Edge of a city,* (Priceton Architectural Press, New York, 1991)

Is there room for dream in the logical world of architecture? It is more than acceptable for new architectural projects to take logic and reference from past examples, yet shouldn't their essence be as different as that of the century before us? "*With new programs, new challenges and a fragile landscape to cultivate and preserve, our architecture should, in the words of that great American regionalist, William Faulkner, 'create out of the materials of the human spirit, something which did not exist before.*"[19]

Chapter 4- Dreams of Architecture

The fantasy of dreams as discussed can be achieved without much difficulty in areas of the Arts such as literature and painting. While it is possible to dream new dreamlike architecture it is much more difficult to realise such dream qualities in the built environment. Still many have experimented in doing just this; fusing surrealism and dream imagery with buildings, to create a new type of architecture. They left behind rules and principles and portrayed their own self expression, by recreating their unconscious dreams.

The French postman, Ferdinand Cheval was not a builder, a sculptor or an architect and even stated that architecture was a field in which he remained totally ignorant to. However he created the 'Palais Ideal' which has been referred to as one of the best examples of surreal architecture. He built the stone structure by his bare hands creating his dream

Image above from 'Archigram'

Images bottom of Ferdinand Chevals the 'Palais Ideal'

building; an amazing imaginary castle. Cheval stated that he had a series of strange visions; all the images were of an incredible palace which encouraged him to begin to create it out of stone one day in 1879. After 33 years his amazing dream palace was a finished reality. He never gave up on his vision and worked hard to make it his become a reality. How does a man with no knowledge of construction or architecture create such a successful and architecturally applauded building? He did not need to use guidelines or inspiration from previous types of architecture; it was his individual dreams and imagination which allowed him to create something incredible. He has since inspired many architects and surrealists such as Andre Breton, Salvador Dali and Picasso, who took inspiration from Palais Ideal to create their own works. His work is an archetype of Surrealist Architecture, and shows how a man's dreams can be turned into a wonderfully abstract piece of architecture.

Friedrich Kiesler has been the only architect to ever declare himself as a member of the surrealist movement. He had great innovative ideas for creating architecture that screamed surrealism, but he built very little. Kiesler worked on fascinating drawings and texts for years to explain his surreal project the 1959 "Endless House", which also has never been built. It is a completely dreamlike house on stilts and if it had been built it could be considered a piece of Surrealist Architecture. His design for the building included features such as curved walls continuous from floor to ceilings with no distinguishable break, grass floors and light which filled the organic shaped rooms from different angles by being directed by mirrors and lenses. It's a house of endless possibilities and yet no one has ever commissioned it to make it possible because in trying to build the surreal, he was always unlikely to receive many commissions for real buildings. Perhaps it is too experimental and not certain enough for others to realise.

"Man's house does not matter as long as his mind is sheltered by subconscious living."[20]

The Catalonian Antoni Gaudi includes dreamlike symbolism in his Architecture. Gaudi thought of himself as bringing Gothic tradition into the modern age. He did not consider his work as surrealist, yet his buildings are full of symbolic imagery and dream-like ornament, each of which has its own character, each seems alive. Casa Batllo in Barcelona is an example of these surreal qualities, with its undulating surface covered in polychrome ceramic and reflective specks of coloured glass. The double attic rises above the façade and its coloured tiles allude to dragon skin. Throughout the building there are more surreal animal and plant motifs.

Perhaps Gaudi did not refer to himself as a surrealist as he did not want his work to be perceived as wacky or spontaneous, as many surrealist works are. Gaudi planned every detail to perfection to make his dream become a reality. His logical, mathematical and inventive skills allowed him to recreate his visions. He possibly wanted credit to be given to these skills of his; that his work was not experimental, that it had logic behind all of it. If Kiesler had more technically convincing drawings of his work like Gaudi had, and had distinguished himself from a surrealist association, maybe his work would have been more accepted like Gaudi's was. Hundreds of tourists queue on the streets of Barcelona to see 'Casa Batllo' everyday but still nobody has tried to recreate 'The Endless House' so there is obviously a thin line between which the general public will either accept or refuse imaginative, dreamlike, subconsciously designed architecture.

Both images of Gaudi's Casa Battlo

21. Antoni
Pixtot, *The Dali
Theatre-Museum
from Figueras*,
(Triangle Post-
als, December,
2006)

22. Antoni
Pixtot, *The Dali
Theatre-Museum
from Figueras*,
(Triangle Post-
als, December,
2006)

23.Rem Kool-
haas, *Delirious
New York;* (The
Monacelli Press,
a division of
Random House
Inc, Broadway,
New York;
1994)

"We've given the degree to a madman or a genius, time will tell"[21]

Samuel 'Roxy' Rothafel had a vision for Radio City Music Hall in New York City. The 'Associated Architects' of the Rockefeller Centre wanted Radio City Music Hall to be "sober and modern". But "Roxy is bored" with modern architecture. Roxy wanted to recreate a vision he had of a sunrise, by using the lights of the auditorium to create the sunrise at the end of each performance. His vision became a successful reality. The sunrise surrounds the Great Stage while radical acts such as Roxy's founded dancing group, the Rockettes perform. Roxy unintentionally created exactly what the surrealist Dali had set out to do years before a place where people *will leave with the sensation of having a theatrical dream."*[22]

"Unintentionally, Radio City represents a more radical break with the past than any consciously revolutionary theatre has managed so far."[23]

Edward James an "architect of dreams" endeavoured surrealist Architecture, "Las Pozas" his design of a dreamlike Mexican Jungle. He was a patron to many surrealist artists such as Salvador Dali and Rene Magritte. He believed we should express our dreams in art and architecture. James began building Las Pozas in 1949 and for four decades he set about creating his crowning achievement. Edward James believed that in Las Pozas he had created something which was alive. It is a number of eccentric and surreal gardens surrounded by soaring coloured concrete walls rising into the sky. Dreamlike details are found all over the gardens such as large sculptors of hands, serpents, and exotic flowers, spiral staircases which lead to nowhere and a house which turns into a cave.

"My house has wings and sometimes in the dead of the night, she sings."[24]

Las Pozas is successful. Many travel to Mexico to get lost in
dream experiencing this garden and its buildings. Suffice to
say maybe James is more calculated than crazy; that his sur-
realist recreations are more studied than spontaneous, having
chosen the freedom of a series of garden to act them out in; a
knowingly accepting environment for experimentation and
extraordinary subject matter.

The Scottish Parliament Building by Enric Mirralles is an
imaginative, dreamlike piece of Architecture. The building
aims to connect the landscape with the building and the city
with its people, in a surreal organic collection of low-lying
buildings blending in with the landscape and the created
landscape of the leaf shaped motifs of the roof over the Lobby
of the building. The building won the 2005 Stirling Prize in
Architecture yet it is not as appreciated amongst the gen-
eral Scottish public. The final cost and design for the project
stimulated the controversy and criticism by the public, the
media and politicians. But before the building was realised,
these people were contented to vote for Mirralles design to
make the shortlist to be one of the five most popular competi-
tion entries for the project, before a design team announced
Mirralles design as the winner. It seems they could accept the
designs when it was still an idea, a dream, a set of images, but
when it became an actual reality they had difficulties with it.
The controversy and argument became contagious through-
out the general public.

Image of
Edaward James'
Las Pozas

18

"As heirs to the twentieth rationalist thinkers our contemporaries do not overvalue dreams"[25]

While technology is developing, the chance for more surreal architecture is increasing. Zaha Hadid is a present-day architect whose work is an example of this growing technology and design. Her dreams and imaginative design can be realized with the help of powerful computers and materials. In the future as restrictions lessen, architects maybe able to outdo the surrealists themselves. That even the most outlandish dreams can be easily realised in Architecture.

The Surrealist and their work influenced this experimentation from architects. Surrealism was the twentieth century's longest lasting revolution in the arts. The Surrealists try to unravel the materialistic values held responsible for the war, and to obtain political liberation by creating art that came from the individual's imagination alone. They went back to basics, ignoring rules and principles. Since the split from modernism this has become attractive again. If we went back to the basics, back to the basic imagination, stripped from principles, maybe we would have a purer individual architectural expression; architecture accessible to everyone.

"The Surrealists aspired to a form of liberation which would emerge from the dialogue of the conscious with the unconscious mind"[26]

Since the 1960's the cultural movement of postmodernism has also influenced experimentation from architects, and encouraged them to create more self expressive dreamlike designs. Postmodernism occurred from peoples exhaustion with the strictness attached to Modernism, which was *"a set of beliefs about the practice of art, of criticism and of history, and about images, values and techniques of representation."*[27]

25.Margaret Hooks, *Surreal Eden: Edward James and Las Pozas,* (Princeton Architectural Press, 1st edition, October, 2006)

26.Pierre Sorlin, *Dreamtelling,* (Reaktion Books Ltd, 79 Farringdon Road, London,2003)

27.Mary Ann Caws, *Surrealism,* (Phaidon, Michigan, 2007)

They were dissatisfied with obeying the political beliefs that determined how art was practised. And rightly so, art and architecture are associated with creativity and imagination, then shouldn't these imaginative view be allow to flourish, not hindered by rules and ideals. Why should there be principles and who should be right? Shouldn't it be a matter of each individual's pure dream expression being realized instead of the polluted mix of aesthetic principles and politics? There is no politically correct type of architecture; therefore boundaries should not be imposed if they are not there to begin with. Perhaps all design should be free and an expression of the individual. Dali broke free from the codes and theories thought to him as an art student and he became a superior artist. So should they be teaching those custom coded theories to the next generation of easily susceptible students?

Chapter 5: Conflict between the Unreal and the Real

There is conflict in belief of dreams amongst different cultures in the world. The belief in dreams is very present in many different world religions and cultures. But these different world religions, disagree with each other's beliefs on the unconscious dreaming mind, for example this conflict in belief exists between the Muslims and the Hindus. The Muslims believe that the right to relate and interpret a mental insight is the privilege of a select blessed few. They also believe that there is no distinction between dream and vision; according to Muhammad's revelations in the Koran.

This belief is different to that of the Hindus who consider the whole world as a mere illusion. Only when they are dreaming do they have access to the cosmic plan and gain insight into reality. They belief that all who have the potential can enter into a state of conscious dreaming.

"Dreams are windows opening on to a truth more universal and authentic than material appearances."[28]

28.Charles Harrison and Fred Orton, *A Provisional History of Art & Language*, (Paris: Editions E. Fabre, 1982).

Both however do agree that dreaming is important, that it allows us to gain a greater understanding of reality. They fact that they both belief that dreaming is our vision of reality is interesting; that this unconscious part of our mind is in fact more real than the conscious world around us.

The sixteenth century playwright William Shakespeare is credited with imaginatively expanding and shaping the dramatic representation of dreams. His plays included dream-like

settings in worlds full of fantasy, for example the faerie world of 'A Midsummer Night's Dream.' Also Shakespeare's psychoanalytic description of characters is so intriguing, that it is said Sigmund Freud used Shakespeare. Appearance Versus Reality was a common theme in Shakespeare's plays; that the unconscious and conscious mind and world, were in conflict. In the play 'Macbeth', the three main characters Banquo, Macbeth, and Lady Macbeth each project a false façade, but as time passes the realities of their true personalities begin to emerge. They cannot hide their unconscious mind, or deny themselves of it.

In the play 'Hamlet', many of the characters hide behind a 'mask'; they give the impression of a genuine person, but in reality they the opposite. Their false appearances make it tricky for Hamlet to uncover the true nature of the characters that hide behind their façades.

Shakespeare focuses a lot of his plays on this theme of conflict between the real and the unreal. He makes the point that many of the characters in the plays, depend on only their eyes and the conscious world around them which can be deceiving. When they found out the true subconscious behind them, when they find out their ambitious, deceitful dreams in the case of Macbeth, then they only truly know the person.

Rem Koolhaas makes a point in'Delirious New York' about an apparent conflict between Le Corbusier and Salvador Dali. Both had such different points of view when it came to design it is easy to make this claim; Le Corbusier the rational Purist; Salvador Dali the subjective Surrealist. Le Corbusier was a painter aswel as being an architect. When he became acquainted with the painter Amedee Ozenfant in 1918 they launched Purist ideas which were manifested in 'Apres le Cubisme, le purisme'; it attacked the supposed ornamental and decorative degeneration of cubism at the time. Le Corbusier adopted an objective approach to art based on clear architectonic principles.

"From now on, they declared, verticals and horizontals were to be the sole bases of a pictorial geometry controlled by reason, precise, and capable of validation like a scientific experiment. Their ideal was the perfection of the machine."[29]

Dali's work was the antithesis of this; his work lacked rules and principles Dali even often claimed not to know the

29.Karl Ruhrberg, Klaus Honnef, Manfred Schneckenburger, Ingo F. Walther, Christiane Fricke, *Art of the 20th Century*, (Taschen)

30.Karl Ruhrberg, Klaus Honnef, Manfred Schneckenburger, Ingo F. Walther, Christiane Fricke, *Art of the 20th Century,* (Taschen)

31.Karl Ruhrberg, Klaus Honnef, Manfred Schneckenburger, Ingo F. Walther, Christiane Fricke, Art of the 20th Century, (Taschen)

32.Thomas Koster, 50 *Artists You Should Know,* (Prestel Publishing September, 2006)

real significance of his paintings, *"which does not mean they lack meaning, but on the contrary, that they escape a simply intuitive, logical analysis, because they are so complex, coherent, and spontaneous."*[30] His work was personal to him and in some ways only decipherable to him, just like dream psycho-analysis is to the individual. His own life experiences and dreams inspired his work. This was the essence of Surrealism.

From looking at a Le Corbusier painting, it is not clear who the individual is, his principles are evident but not his psyche.

"Acceptable subjects were few – everyday mundane things rendered in straight-forward colours, to ensure that no sensuous charm, decorative fillip, or insinuating motif should detract from mathematical harmony."[31]

Dali, however shares himself in his painting, we see right into his mind and his dreams.

"Dali decodes the fantasies and symbols of his Surrealist visions, penetrating the depths of the irrational and subconscious, elevating hard and soft to the level of aesthetic principles."[32]

Even tho it is a reatively minor episode in Le Corbusiers career, and that he had little to do with surrealism it is interesting to note that Le Corbusier abandoned his own rules and moved away from his own purist theories in 1929, when he developed a freer, expressive style, with the human figure as his central theme. Is it possible that he didn't agreed after all with his earlier rules? In Le Corbusier's 1921 campaign for new architecture he said that he sees the house as a living machine.

"There exists in this world a new spirit; it is to be met with particularly in industrial production... We must create the mass-production spirit.

Image left of Le Corbusier 'Still Life'

Image right of Le Corbusier' 'Apartment de Beistegui'

The spirit of constructing mass-production houses. The spirit of living in mass-production houses. The spirit of conceiving mass-production houses."[33]

 However soon after this campaign he experimented with surrealism, when he designed a house in 1930 for the Parisian art collector, Charles de Beistegui. It featured a Surrealist roof garden, complete with a false fireplace and a living room which had lawn for carpet. Here Le Corbusier contradicts his concept of five basic principles, by defying one of them; that facades should be without ornaments. Yet this experimentation did not alter his beliefs or change his mind about surrealism.

The Law of Conflict is a basic *law* of the mind. It states that whenever the conscious and subconscious are in *conflict*, the subconscious invariably wins. Suffice to say imagi*nation* wins out over *logic*. Perhaps the unconscious mind is much more powerful than we can ever begin to realize. Perhaps imagination is more powerful than logic, and we should listen to our imagination more than our logical reasoning. By liberating imagination from our memories and dreams, we can connect more with the powerful unconscious.

"The unconscious is a marvellous universe of unseen energies, forces, forms of intelligence – even distinct personalities – that live within us. It is a much larger realm than most of us realize, one that has a complete life of its own running parallel to the ordinary life we live day to day. The unconscious is the secret source of much of our thought, feeling, and behaviour."[34]

33.Le Corbusier, Towards a New Architecture, translated from the French by Frederick Etchells, (The Architectural Press (London), 1927,)

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Conclusion

Dreams depend on imagination, experience and reality. Reality depends on the produce of dreams, imagination and experience. Therefore both the unconscious and conscious are critical to each other's development. Dreams and the unconscious are very powerful tools that can be used to benefit the world of art and architecture in a very positive and world changing way. I believe that the idea of the dreams being used in art and architecture is understood by the public but when it comes to putting it into practice it isn't accepted by the public without some form of logic or rules behind it. The idea of dreams and the subconscious being the sole idea of a project is more suited to art rather than architecture because art has less need for logical planning, which is more crucial to architecture; architectural spaces have to work aswel as being creatively designed. Also architects have limits put upon their design process caused by many factors. The architect designed for the client and the brief not for themselves, while the artist is freer to express their own individual self in their work. This makes it difficult for the architect to realize their dreams in their work. I believe if there is any likely hood of this idea of complete surrealistic architecture it has to happen in the modern day as there are far fewer constraints and rules than ever now. People are more open to change now and are looking for innovated new designs. The wait is exciting to see if architectural surrealism ever becomes a historical movement which is well documented and accepted, or perhaps the belief in dreams and the unconscious will remain undervalued like Freud feared it would.

"All this still seems about as foreign to general awareness as it was thirty years ago."

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Freedom for Thought
Irénée Scalbert

Library catalogues are prolix in helpful titles, for instance "Writing up a dissertation", "Dissertation research and writing for construction students", and "Enjoy writing your science thesis or dissertation". The keenest students will wish to read "Writing a successful thesis or dissertation" or, better still, "Writing the winning dissertation". The more adventurous will be drawn to "The dissertation journey". The easily-distracted will want to take advice from "Writing your dissertation in fifteen minutes a day", and the more challenged among students will draw courage from "Starting up research".

The zeal of teachers is truly boundless. They will leave no hole unplugged but one - the rhetor's hole – and it here that unwary students shall fall. This, they will proceed to do subsection after subsection of every one of the sections of their dissertation, past a flurry of commas and semicolons, down to the last full stop. Picking oneself up in the confounding depth of academe, humbled by the authority of rhetoric, looking up through a fog of notes and footnotes, with luck students might still afford a glimpse of the object that they set out to describe.

A function of health

Must students endure the ordeal of the rhetor's hole? Must education be, in the words of Rabindranath Tagore, the Indian writer and founder a hundred years ago of the school of Santiniketan, "borrowed cages that treat the students' minds as captive birds"? Need measure and value be prescribed at the outset? Cannot students "come directly to an intimacy with this world with the freshness of our senses"?[1] Will they not be given constant occasions to explore their capacity through improvisation? Education, according to Tagore, is not a treatment designed to cure ignorance: it is a function of health, the natural expression of the mind's vitality. Like a tree, we gather our food from the surrounding atmosphere.

This atmosphere is more important than the rules, methods, teachings and books which schools routinely provide, and it will take pride of place in the programme of an institution. The ideal school offers no less, and perhaps no more, than an atmosphere, and the ideal teacher realizes that to teach is to learn. His rightful place is behind the student and he makes sure that he is not in the way. Indeed, students, by their greater willingness to learn and to experiment, become the natural agents in the education of teachers. For teachers, by the responsibilities of their position, are precluded according to Tagore from launching into a world of adventure in experiment; through years of struggle and drudgery, they lost much of that initial equipment without which no experiment is possible – a fruitful imagination.

Education is routinely experienced as a passive activity. The teacher dispenses an education; students receive it. The teacher lectures; students listen. The teacher stands at the front; students seat before him, at desks that recall in their alignment a military formation. The teacher imparts a discipline (in both senses of the word), a canon; students aspire to freedom and to creation. The teacher is singular; students are plural. Cedric Price seldom referred to education save to castigate "educators". He preferred "learning" about which he spoke often and passionately, an activity unlike education in that it is centered on the student, not the teacher, or better, that is shared by both equally.

A cloud of possibilities

Teachers commonly debate about curriculums behind close doors, as if they were about to appoint the next Pope. Exceptionally, an institution will step out of line. The AA School for instance had a libertarian ethos not unlike Santiniketan's. Taught courses engaged with subjects that seemed interesting, provocative and timely, and none were compulsory. A lecturer may draw 30 students, another, 4: no-one, student or teacher, complained so long as interest was sustained. In recent years, the dreaded word, curriculum, could be heard again: what ought an architect to know, it was asked, seeking once more to cure ignorance at the expense of the mind's vitality.

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Sociologists have argued that habits are breaking down into a cloud of possibilities, that these must now be thought and negotiated. God, nature and truth, science, technology and morality are being transformed by modern life into precarious freedoms. "All metaphysics and transcendence, all necessity and certainty are being replaced by artistry."[2]

So it is for architecture that must continue without canon or tradition, and come to terms with its own freedom. We often forget how prompt and' fickle can be the wheels of history. Only twenty years ago, most architects were expected to know their *Oeuvre Complète* - there was only one: Le Corbusier's. One hundred years ago, most were expected to be conversant with Michelangelo and, money permitting, to have walked the streets of Rome. In recent years, necessity found a substitute in the extremities of fashion – our "artistry". But it is a pale substitute in that novelty inevitably fades away.

Some architects will recognize an aspect of themselves in the cleaner of OMA's villa near Bordeaux about whom a film has been made. For her as much as for ourselves, the strange, the extraordinary have become an integral part of ordinary experience. Our senses are lulled and dulled by the outlandish character of design, leading cleaners, clients and all to sleepwalk through existence. The villa recalls, like so much in our contemporary architecture, Jacques Tati's *Playtime* or *Mon Oncle*, but it is Tati deprived of the critique and the humour. It recalls Surrealism, but it is Surrealism without the sense of the marvellous that was its cardinal virtue.

A trellis for the imagination

In the absence of a canon, to decree what a student ought to know would demand a boldness verging on intolerance. Students, like teachers, learn by osmosis. They hear more than they listen, they see more than they look, they feel more than they learn. Hence the importance of an institution's atmosphere. It must be sufficiently open so that intuitions can take hold about the world and the time in which we live. It must be sufficiently diverse so that opinions can be formed. And it must be sufficiently rich if these intuitions and opinions are to be sustained and to mature.

But this is not the same as to say that a school must simulate the real world. Professional reality works upon the mind like a grindstone. It clogs it with unnecessary e-mails and telephone calls, with overlong meetings and the complexities of human relations. A facetious friend used to say that working in someone else's office was a last opportunity for making mistakes before setting up one's own. How much more true about schools that should not only make allowance for mistakes but embrace all alleys of the possible.

Schools ought to make reality optional, to make it available on demand. A responsibility of teachers is to suspend context and to provide temporary support for the imagination of students (the word "tuteur" in French means tutor in the pastoral sense as well as stake in the horticultural sense). In professional life, imagination may be the servant of reality to which it gives meaning and direction. But the opposite holds true in schools where reality is a trellis for the student's imagination. For the student, above all for the architecture student, reality is a project.

This does not make the project or the reality that it prefigures arbitrary. To the contrary, architectural education differs from academic knowledge in that it is never disinterested. When a project goes well, lines describe in thin air spaces where one would love to be. More than imaginative understanding (Tagore's expression), design is in a true sense wishful thinking. This is the source of its charm and, when it is successful, of its power. Frank Duffy, a great champion of architectural education, claimed that "project-based teaching is our invention and our glory." In the life of the studio that shaped the profession's psyche, design is the core.[3] Essays, dissertations, technical studies, even practical experience, all revolve around this unique perspective. All assume by osmosis the character of a design project in that, not content with merely describing what already is, they contemplate what might be.

A project for life

A dissertation will take great care over the facts. It will be scrupulous about their veracity and mindful of the scholarship of others. It will collect in the process observations, notes, footnotes and other

paraphernalia inherited from traditional forms of learning. Yet architects, by dint of their visual training and their projective mind, can describe facts in ways that are so focussed, so engaged and pithy that their prose at the best of times approaches poetry. Witness the writing of Frank Lloyd Wright, of Le Corbusier, Mies van der Rohe and Rem Koolhaas. Knowledge in a dissertation may differ from knowledge in a project, but the difference will be one of medium more than of kind. Jean Nouvel's final thesis project was all words and no drawings, while Koolhaas' was arguably the dissertation that later metamorphosed into *Delirious New York*, a work that is far more interesting than *Prisoners of Architecture*, his thesis project.

A dissertation suggests a grand conception. It will follow a discourse, it will be laid according to a composition, it will unfold in a development. Yet at root it is simply a long essay. In this, it is no different from other forms of learning. All work in education is an essay. Every project is but a first step in the greater project of life. Indeed life itself is an essay, and like all essays, it is in its nature to remain inconclusive.

Schinkel knew this better than most. For much of his life, he worked on his *Architektonische Lerhbuch*, a treatise that he envisaged as the sum of his ideas and of his work, as a life-long dissertation. It was never completed. "The more deeply I penetrated into the matter, he wrote, the greater the difficulties that stood in the way of my efforts. Very soon I fell into the error of pure arbitrary abstraction… This gave rise to something dry and rigid, and lacking in freedom… I pursued my research further, but very soon found myself trapped in a great labyrinth."[4] I read in this troubling confession a warning. Not all dissertations, not all essays, not all life projects need fall into the rhetor's hole and flounder in a great labyrinth. So long as there shall be freedom for thought, our senses need not be blunted, and our engagement with this world will retain its immediacy and remain as a tribute to the mind's vitality.

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