

Adrian **THE** Clery
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LIMERICK

The Saul press · Two thousand and twelve

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The book of dissertations

This volume includes selected History and Theory dissertations written by the Third Year students of SAUL in the academic year 2011-2012.

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**School of Architecture
University of Limerick**

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THE
ARCHITECTURE
OF
THE
IMAGINATION



The Architecture of the Imagination

School of Architecture

University of Limerick

April 2012

Adrian Clery

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1 Introduction

In one way or another, all great works of architecture throughout time employ science fiction. They implore the mind to reconsider what its senses have just transmitted, questioning what has been put before us rather than the customary bland sensory experience of everyday life in the modern world. While many architects believe Architecture's true success lies in being a quiet backdrop to life, I believe that architecture must stimulate our fantasy and our imagination in order to be relevant. This must not necessarily be loudly expressed, so long as it achieves a sense of wonder.

In many ways, in this dissertation I hope to articulate and define what I observe these qualities to be, and perhaps discuss the different variations on inspiration from fantasy; why the mazes of Catacombs beneath an ancient city can be just as awe-inspiring as a large-scale urban project such as the Pompidou Centre.. two very different works and an example of the contrast between loud and quiet, despite both being able to rouse the senses.

Science fiction however, goes further than just stimulating our senses – it can be used as a way for us to understand our feelings towards times other than our own, and evaluate what we feel is missing from our lives.. that which is then left to pure imagination.

I. I
OMA - Convention and
Exhibition Center, Ras
Al-Khaimah, United Arab
Emirates



2 Past, Present... Future?

All revolutionaries in art and architecture have tested the imagination. When Picasso began painting people from two perspectives at once, it had never been done before nor had it even been conceived. He shook the art world by trying something new.. something fresh. But Nostalgia is indeed a seductive beast

In Architecture, we have now come upon a period in time where major development has halted. Since perhaps the beginning of the 20th Century, we have become trapped by nostalgia, something which is evident in more than just architecture. The great architect Le Corbusier was certainly aware of this growing trend in the way the built environment was conceived. His early work is that of a man desperately fighting to erase the past and create a stunning new future. Despite in later years turning toward an architecture of atmosphere, material and character, Le Corbusier never succumbed to an addiction to the past as many of his contemporaries did.

Although the books which are to be found in architecture libraries and schools throughout the world would lead one to believe in a rich process of development from one era to the next in magnificent ground-breaking architecture, the reality is an entirely different picture. Sadly, this is because the buildings and projects which capture our hearts and minds

only count for a tiny percentage of buildings which have been built to date. For every Villa Savoye or Farnsworth house, there are likely tens of thousands bland mundane houses nestled into suburbia. The halt in the development of architecture has to do with this large percentage of buildings rather than the select few we read about and study.

The same era that saw the completion of works such as the Rietveld – Schroeder house and other early works of modernism also saw neoclassical and Beaux Arts buildings continue to come into being – while one struggled to create something amazing, extraordinary and new by experimenting with the very notion of fixed planes and movable elements the other merely continued to replicate the safe choice, which is the well trodden path. In many ways, the story of Architecture as we like to recall is very like Robert Frost's Poem "The Road not Taken"; it requires a daring and inventive mind in order to take the new route and venture into the unknown. We must free our minds however, if we want any chance of a real present at all.

We echo buildings of the past because we are afraid of the new and always will be - our generation knows nothing else. To use an example closer to home, take

the Georgians for instance, and the Architecture they brought to cities around Ireland. Nowadays their contribution would be considered extremely radical; to wipe clean huge expanses of land and create grids of tidy, well proportioned brick buildings standing five storeys above what used to be. It must have been invigorating to constantly reinvent the present and be free from the limitations of history and time itself. Why have we become so fixated on a time that is not our own? Does it stem from a serious feeling of discomfort with modern life? Alain de Botton is of the opinion that we fantasise about what is missing in our lives'. So for instance, a city dweller in an overcrowded London might dream of a small rural life in the Country; similarly Marie Antoinette dreamt of a life away from riches when she spent time in her humble cottage.¹ Does our fondness of the past symbolise a civilisation moving into the future far more rapidly than we think?

2.1

Marie Antoinette's rural cottage - an example of De Botton's theory



3

Reinventing the Background: Architecture and the Icon

Every once in a while, I see something which completely freezes me in place, and just for one second leaves me completely amazed. I recently visited Toronto, and toured the city centre in order to see as many architectural wonders as possible. I had only two days – a short space of time in which to soak up such an abundance of culture. But nevertheless I did all the things an average tourist might do; walked the main streets, ate in famous restaurants (or simply ones we do not have at home) and of course went to see the CN Tower. I walked across the city to see a building which I had only ever seen in magazines.. something which I didn't really believe could exist in a modern city until I witnessed it myself.

At first, Will Alsop's Sharp Centre for Design struck me as something quite extraordinary. It is perhaps the most strange and daring architectural project I have ever seen in the flesh. I am not sure of how it works or whether it functions well as Architecture, but I admired it simply for its Sci-fi qualities – this is a building which seems to have walked right off the page of an Archigram drawing, pausing briefly in Toronto before moving off on its travels.

3.1

Will Alsop's Sharp Centre
for Design in Toronto



Toronto is not afraid to embrace uncertainty in order to stimulate our collective imagination. Does it fit in with its context? That depends on how one might define context. Perhaps it fits its context in the way it achieves something for that particular street, or the way it defines that space. Architects today are becoming more and more daring in their waking of society from blandness – they are beginning to break from the norm, the average, and sometimes the accepted in an effort to mould invigorating cities.

I acknowledge that I am more reserved about these bold additions than I wish I could be. Buildings by architects such as Daniel Libeskind, Zaha Hadid and Frank Gehry are revolutionary in that they beckon people to wake up and notice architecture, while I sometimes wonder if they are simply making a circus out of the built environment. I appreciate the effect of their creations, but does architecture then ultimately cease to exist? Isn't architecture about the graft required to make spaces and environments work and combine the needs of man into a working whole? My question to the great minds of architecture today is this; can one create imaginative architecture which appeals to the mind as well as the eye while respecting the existing grain of cities?

3.2

Daniel Libeskind's Royal Ontario Museum, Toronto

3.3

The initial sketch for the building which was done on a napkin - something rather stereotypical of "starchitecture"



It has become commonplace for so called “starchitects” to boldly stamp their visions on cities by creating once off buildings which sit as glamorous objects next to the carefully knitted fabric of the city – objects which fulfil their role as architecture in the effects and experiences they can give us, but severely lack in terms of their ability to weave themselves coherently into this fabric.

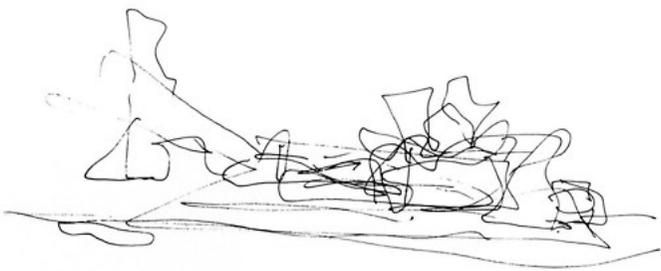
The Guggenheim in Bilbao by Frank Gehry is just one example of an amazing building which seems to disregard context. Widely discussed amongst those in the world of architecture, it has been described by Herbert Muschamp of the New York Times Magazine as a “shimmering, Looney Tunes, post-industrial, post-everything burst of American artistic optimism wrapped in titanium”.² It has done great things for the region of Bilbao in creating a new form of “architectural tourism” and is considered by many to be a masterpiece not only for its design but also for its resulting impact on the local economy – an impact which has given rise to the term, “The Bilbao Effect” – an example of just how detrimental an exciting urban landscape can be to the success of a city.³

3.4

The Guggenheim in Bilbao
by Frank Gehry

3.5

Early conceptual sketch
of the forms and shapes
which developed into the
final design



Gehry's work must be lauded for the attention it has brought to architecture, it's boldness in materials and forms, and certainly the excitement it brings by being so refreshingly different. It is utterly disappointing however that his work has been replicated to such a high extent. Many of his buildings have this exact same materiality of folded sheets of metal in distorted form; this establishes his work almost as a brand and simultaneously undermines it – how can one argue that such varying contexts can or should be treated with a similar materiality? If we can create striking new spaces while integrating them into their settings, the city can grow into a complexity of many parts while ultimately remaining one powerful whole.

Architecture is never the act of one man, and the city is never the act of one architect. Despite this however, architects want to create landmark buildings for which they will be remembered. Speaking at a recent lecture series held in the University of Limerick, architect Emilio Ambasz admitted that he does strive to create landmark buildings, for without them he would not have been here speaking with us today.⁴ While this may be true, we cannot be egotistical and self-absorbed. Our work must be in making architecture in order to enhance it's setting, rather than

3.6

The repetition of materiality in Gehry's projects;

Marqués de Riscal Vineyard Hotel, Elciego

Frederick Weisman Museum of Art, Minneapolis

Richard B. Fisher Center for the Performing Arts, New York

Walt Disney Concert Hall, Los Angeles



contradict a city by making something with a foreign sensibility, out of scale and imbalanced, however attractive and appealing an object it may be.

It is these lessons which we must take from Science Fiction. In the Imagery of Science Fiction, one sees futuristic buildings rising miles into the sky, dazzling wonders of metal and glass. But in each depiction one senses a great coherency amongst the landscape of towers, or sense of a greater order higher than the needs of the individual. The power of these depictions lies in the way they convey a very distinct image of a society which we essentially long for: one in which the focus of daily life is on the collective rather than the individual. It is this very relationship, this emphasis on the collective and power in numbers which Science Fiction demonstrates as an important characteristic which architecture must inherit. Our cities must become environments which are consistent, and shaped by many hands rather than one vision.

3.7

Morpheus' speech to the people of Zion, *The Matrix*, 1999

3.8

Munster supporters in the city of Limerick temporarily take over the city's main street during the Heineken Cup Final



4 Science fiction Architecture

What does it take to make an architecture of science fiction, and how can we design buildings which are stimulating today? According to De Botton, we would need to create buildings which embodied the missing things in our society.⁵ However, there are key elements which nearly all depictions of the future have in common... elements which can capture our fantasy in one way or another.

4.1

Castle by Patrick Jensen

Many of these qualities are still to be found in ancient architecture; qualities which many working within the world of science fiction are drawn to, and indeed, do not wish to sacrifice in the discovery of a new built environment. It is interesting how many portrayals of life in a time far from our own share characteristics with the environments of our past. Basic elements of architecture such as shadow and light, scale, perspective, order & rhythm; these are things which made the architecture of the past so strong.

When one looks at the Parthenon in Greece, or the Pantheon in Rome, they give us the sense that they cannot be improved. No conceivable addition to the Pantheon or Parthenon could stand up to the energy in these timeless buildings. They have been given strength in the way they were designed and appeal to our sense of monumentality, scale and



light. The Pantheon's atmosphere is exaggerated in a Piranesian fashion in many of the drawings in which it features; It takes this enormous volume of space, doming majestically as it reaches the very peak, only to be punctured by a sphere of light. The building makes us feel tiny and acutely aware of scale, while creating dramatic shadows and a deep sense of weight from far above.

Indeed, the monumentality which many ancient buildings display seems to have left the deepest mark on the minds of those who try and depict the future. There is without doubt a parallel to be drawn between the gigantic powerful structures of the past and those represented in our visions and fantasies of the future. However, there are also other elements which often feature in these works, elements which I find to be at the core of Science Fiction and thus, Science Fiction Architecture.

Scale is unquestionably one of these qualities. In Science Fiction, we tend to embrace the extreme and see a work based drastically on either end of the spectrum in terms of scale; either something which makes us feel as tiny as a bug, or as large as a giant. After all, we rarely find excitement in the ordinary, the I:I.

Antonio Sant'Elia's La Citta Nuova of 1914 is merely one example of this in which the artist creates a bold towering vision of the future. In the words of Oliver Hervig, Sant'Elia "adorned his Citta Nuova with monuments to movement: every design an airport or a station, every sketch a picture of movement with a monorail or elevator; metaphors of modernity that have no need of human operators".⁶ Giving some sense of its futurist context, Sant'Elia's work was indeed obsessed with movement. Its form however could be likened to many buildings in Roman times; where one is intended to be gleaming and pointed, the other has a more classical feel. But once one wipes away the connotations which materials bring, two very similar visions are unveiled; an architecture of weight and monumentality, which brings order to our chaos and makes us feel how small we are.

Another theme which dominates the realm of science fiction is that of reality and fantasy; the real and the surreal. As I will later go on to describe, humankind has an inherent fascination with reality, stemming from the curiosity which naturally hungers inside us. This curiosity however can be harnessed with exciting architecture or science fiction. Of all the most popular books and novels in this genre which have appeared over the course of the last century, reality has

become a topic which has become explored more and more. Works such as *Tron* (1982), *The Truman Show* (1998) and *The Matrix* (1999) show how modern society is becoming more and more aware and interested in the notion of reality. Just as the Second World War brought about a response which heavily shows the influence of Machines and Technology, the Age of the iPod has certainly had its impact.

Time is another aspect which often features as a key idea in works within this field. Whether it be travelling through time like the protagonists in the 2001 release *Donnie Darko* or the earlier *Back to the Future* series, audiences have expressed a great interest in the idea of time. Time is a way for us to record and give meaning to our lives. Through the work of scientists such as Stephen Hawking, Albert Einstein and Brian Greene (who theorises that Space is constantly tearing and repairing on microscopic levels ⁷) we have come to learn a great deal about time. But the more we learn, the more we realise how little we know, which will be sure to keep us interested in the idea for a long time to come.

Time however is about more than just understanding the universe; the fact that something is extremely old and ruinous can often be just as exciting as something

new and revolutionary. When Sir John Soane presented the Bank of England's governors with three oil sketches of the building he had designed, one of them depicted it when it would be new, another when it would be weathered, and a third as its ruins would look like a thousand years onward.⁸ Similarly Albert Speer's theory of Ruin Value proposed that beautiful ruins would be left behind long after the current generation had come to pass, symbolic of the Nazi's society and greatness just as the ruins of the Romans and the Greeks were symbolic of theirs.⁹

In Robert Harbison's *The Built, The Unbuilt & The Unbuildable*, the author likens Richard Rogers' Lloyd building in London to a modern ruin and argues that if the artist Piranesi were still alive, he would most definitely share his fascination with abandoned industrial buildings; a form of ruin in the modern city.¹⁰ Ruins speak to us of decay and the natural world and are something with which I find to be incredibly interesting... perhaps with the same sentiment that the old landscape gardeners of Eighteenth Century England such as Capability Brown and Humphrey Repton often tried to create picturesque scenes where before stood vast plain meadows. Like a small stream to a broad meandering river which has carved its way into the ground, the patina of time and human life upon objects and landscape is certainly a fascinating notion.



Le Corbusier was in many instances a timeless architect. By this I mean that some of his projects appear as though they are thousands of years old, while others seem to be set in a distant future – one never really can tell. In Villa Savoye and his early works we see the future orientated Le Corbusier, with his dreams of high rise, the rectilinear, the cold and the modern. In Chandigarh and Ronchamp however, we see the work of a changed man, work which sits in the land as though it has been left by some ancient civilisation. What both versions of the man have in common is their engagement with fantasy. Each of Corbusier's designs engage the imagination while formally only giving a hint of what time they were set in. Despite his prominent work being over almost a century old, it still feels as relevant today as it did when it was produced, perhaps even more so now in this uncertain time.

Similarly, Space and astronomy is something which must be included as a key element of science fiction since classically it has been definitive to the role of the genre. We owe our interest in Space to the Great Unknown, the outside world far above and beyond us, which we will forever try to but never fully understand. Science Fiction speaks of an interest in understanding things, in contrast with fiction, i.e. a work of fiction sets a wonderful scene for a fantasy

4.2

Sir John Soane's ruin drawing for the proposed Bank of England

4.3

Richard Roger's Lloyd's building, London

world, whereas science fiction is often interested in how this world came about. This is crucial to the plot of *The Matrix*, in which the protagonist realises that “current” society has been collectively asleep since the early years of the Twenty-first century: Machines have taken over the current world and are keeping humans living in an illusion via a program known as “the Matrix”.¹¹ This does not mean that science fiction is all about space, but it has become so important to the genre as a symbol for the curiosity and imagination with which it is associated.

Technology also features heavily in science fiction, whereby humankind flirts with the impossible or simply confronts our own rapid development. It is a re-occurring theme which again can be associated with the curiosity which is inherent in works of this genre.

The worlds we imagine with science fiction are dramatic and tantalising. They remind us of ways in which we can give some sense of wonder and awe back to the built environment; whether it be by creating spaces which makes us feel tiny, or by playing with the themes of monumentality, contrast and light. We have the opportunity to start creating amazing and desirable architecture, if we let science fiction lead the way and be used not only as a tool for us to understand

the psychological context of a world undergoing constant change, but as a stimulus for a new approach to building an architecture of experience.

5 Cities of the Imagination

London, Airstrip One, *1984*

Orwell's depiction of a future London in the novel *1984* comprehensively defines dystopia – an outlook or view towards the future which became prominent in science fiction works throughout the course of the twentieth century. First published in 1949, it marks a very specific standpoint towards society and times other than our own. Based on Alain de Botton's theory of how we fantasise about what is missing from our own lives, one could surmise that perhaps Orwell's novel secretly speaks of a writer overwhelmed by the world he finds himself living – one which has just recently suffered a major World War and has had to come to terms with a rapid advancement in machines and other developing technologies.

1984 essentially captures the essence of what it means to be a prisoner in an unjust and corrupt system, which people of that time could arguably relate to more than modern day readers. It could be argued that the world which Orwell is describing is primarily about totalitarian dictatorship, such as the Soviet Union under Stalin and Germany under Hitler... a world where power is seen as "the capacity to inflict unlimited pain and suffering on another human being".¹² Interestingly, Orwell takes these experiences

5.1

Big Brother propaganda as depicted in the 1956 film version of George Orwell's *1984*

BIG BROTHER



IS WATCHING

YOU



of society and uses them to create an architectural environment with the same impact, translating power and authority into a city of oppression.

By the year 1984, the world has been divided into four large sectors, with Oceania situating what was once known as North America, South America and Great Britain. Formerly referred to as “England”, the story takes place in Airstrip One of which London is the capital. ¹³

The Ministry of Truth is just one example of this new architecture of authority; an enormous pyramidal structure of glittering white concrete rising 300 metres into the air, containing over 3000 rooms above ground. On the outside wall are the three slogans of the Party: “WAR IS PEACE,” “FREEDOM IS SLAVERY,” “IGNORANCE IS STRENGTH.” There is also a large part underground, containing huge incinerators where documents are destroyed after they are put down memory holes. ¹⁴

In order to create an architecture of authority and power, Orwell emphasises monumentality, weight and scale in his fictional buildings and from their descriptions in the text, one might be forgiven for thinking the author was attempting to describe an

Albert Speer building during the height of the Nazi's reign. 1984 and Orwell's future London however do not fantasise about what life is missing.. they instead channel their fears and predictions about an unnerving future into a piece of literature which in the end, is far more revealing about a society in chaos than one might imagine a work of Science Fiction could ever be.

Zion, *The Matrix*, 1999

When the Wachowski Brothers released the 1999 Blockbuster *The Matrix*, they reinvigorated science fiction with a story that left everybody in deep thought. What if the world we live in is not true reality?

Based approximately one hundred years into the future, Neo finds himself being tracked by a strange group of people within a circuit of computer hackers. Upon meeting him, they give him an impossible choice; either take the red pill and “see how deep the rabbit hole goes” or take the blue pill, and subsequently have his memory of their meeting wiped. The inquisitive Neo takes the obvious choice; he chooses to wake up and see the world today as it really is.¹⁵

Zion is the last human city in a world overrun with machines. In the years following the early part of the twenty-first century, artificial intelligence in machines grew to a dangerous point which resulted in a massive war which the machines won. The machines now rule a world so polluted it is in constant darkness and use artificially grown humans as an energy source as all the natural resources on the planet have been exhausted.¹⁶

5.2

Zion, last city of humankind, *The Matrix*, 1999



Zion itself is a machine city, hollowed into the ground in order to be as close as possible to the earth's core for heat; the dense smog in the atmosphere above ground has become poisonous to the extent that if inhaled can kill, and has blocked all incoming heat from the sun.¹⁷ It is a city of monumentality; of one central circular void running deep into the ground, with tiers of post-apocalyptic chalet-style villages forming rings around this void.

This film is a vivid example of how works of science fiction often try to predict the future. Despite essentially remaining fiction, many end up being wise predictions based on the current direction in which the society of that time is going. As the intense onset of technology came following the war, Orwell envisaged a dystopia under constant surveillance – not too dissimilar to the CCTV cameras which litter every major public location in today's world. Similarly, *The Matrix* finds itself in a world in which resources have completely run out, and machines have become too advanced – both estimations which are admirable based on society's standpoint at the time.

5.3

A view down into the mechanical generators beneath the city



The Capitol, The Hunger Games, 2008

Written by author Suzanne Collins, The Hunger Games is rapidly becoming the next great science fiction work of our generation, and in similar fashion to Orwell's 1984, Collins' portrayal of society is very much a stereotypical image of dystopia. The book has a great deal in common with its predecessor not only in its content but also in its treatment of architecture as a by-product of current cultural values.

The story takes place in Panem, where the United States of America once existed. Rather than setting the novel in a distant future, Collins chose to base her work upon an alternate present, in which the United States has been taken over by a totalitarian government and broken into twelve small regions throughout the land after an unknown apocalyptic event. Her description of places, are raw, emotive and primal, adding to an already original and captivating story.

In Panem, a large rebellion was carried out upon the Capitol, the highly advanced metropolis from which the Government rule the twelve sectors. After the uprising, and as a lesson to all of those who rose against them, the Capitol introduces the "Hunger Games"; a televised event in which a boy and girl from

5.4

The Capitol, city of the government of Panem



each sector are picked in order to fight to the death on national television.¹⁸

The Capitol shares many characteristics with the aforementioned London of Airstrip One, as a depiction of a city controlled by a totalitarian style dictatorship. It is a city of machines and advanced technology which is uniform in its landscape of powerful looking buildings, as opposed to Orwell's vision in which new objects of the Government and Big Brother are stamped across the historic city of London.

Can we use such a lucid portrayal of an alternate reality to further clarify our own? Can science fiction hold the key to the many unlocked doors which lie deep in the shadows of our subconscious?

It is particularly striking that of all the novels in the genre of science fiction released in the twentieth century, those that have left the deepest mark on our collective imagination have been the ones which are set in dystopian scenarios of "us" against "them"... environments which inevitably force us to come together and rise against a greater force. Is this perhaps an expression of how we deeply long for a connection with one another, in times where technology is making it easier to become further and further apart?

With a common enemy, we have an excuse for truly being a collective once more and engaging in an excitement which lifts us out of our skin, and out of the daily complacency of life in the modern world.

6 Impossible Buildings

Part of what it means to be human, is to engage in a pursuit for questions to the unanswerable, and dream of the impossible. It is in our essence to constantly wonder about what is possible and how we can stretch those limitations – our thirst for knowledge and intelligence is what defines us.

Indeed, it is naturally inherent in us to be curious about the impossible; something which often features in works of fantasy and science fiction. It is certainly a prevalent theme in the work of Japanese animation and film group, Studio Ghibli, whose work often deals with an architecture based on fantasy. The Japanese studio rose to fame with their animated film, “Spirited Away” which won an Oscar for Best Animated Feature in 2002. Since then they have become tremendously popular in the world of anime for their imagination and captivating storytelling.

Some of their most popular work is situated in the overlap between architecture and fantasy; portrayals of floating islands in the sky or even walking castles. Interestingly however, director Miyazaki has become noted for his “apocalyptic” aversion from all accounts of modern Japan. As critic Shimizu Yoshiyuki sums it up,

“most of Miyazaki’s work takes place in worlds where the systematizing structures and rationalizing processes of the modern world have been destroyed and a condition of disorder has overturned everything. In other words, modern Japan as a narrative site is consistently avoided. It is as if his narrative can only exist before modernization or after modernity has been destroyed”¹⁹

This stems from a realisation on Miyazaki’s behalf: that when something becomes real it often loses what made it so appealing in the first place, becoming an imitation of reality rather than an escape from it.

Likewise, in the work of Peter Eisenman, impossibility is certainly a point of interest. Eisenman’s peculiar designs are notorious for illogical elements which seem to serve no other purpose than that of stimulating the users of his buildings. His work is speckled with columns which reach for but never quite touch the floor, primary shapes distorted and cut, planes intersecting... and while this all works fine as sculpture, the contradiction of Eisenman is that he values theories of space and architecture over the actual user’s experience of a building.

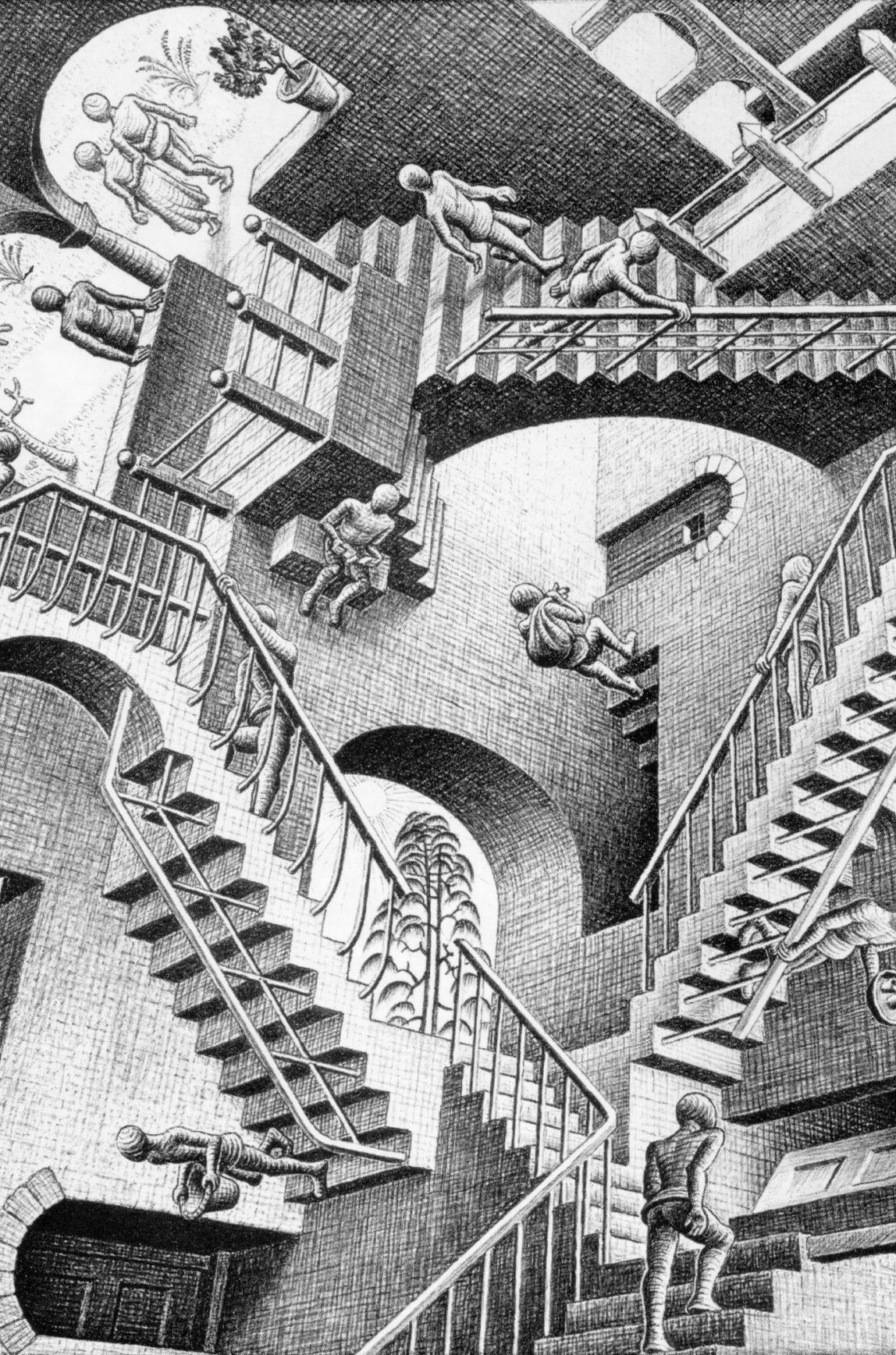
The theme of overcoming impossibility is also extremely prominent in the woodcuts and lithographs of artist M.C. Escher. For example in the lithograph print he entitled *Relativity* one sees people ascending stairs in various planes; as though gravity does not exist. The artist beckons us to turn our head, and no matter which way we look at the image, one surface is always somebody's ground plane.

6.1

M.C. Escher's famous lithograph print, entitled *Relativity*

Another artist working within the spectrum of impossibility is Filip Dujardin. Described by some as Escherian, Dujardin uses digital tools to manipulate images and portray buildings which seem normal at first glance but are actually structurally impossible. Like a comment on the work of Escher, Dujardin achieves a similar effect to his predecessor, but using a modern medium.

It is this fantasy of escape which intrigues us so much about impossible buildings; In the world of fantasy we are no longer restricted and can finally free our minds from the rules and laws of the existence we know so well. Fantasy allows us to escape, if only momentarily, from the rigid frame of life which we inhabit.



7 The Problems of Reality

When works of pure imagination are converted into physical objects, the magic is often lost in translation. It is therefore interesting to see architects such as Zaha Hadid and Peter Cook bridge the gap from a career of making “Paper children” as Emilio Ambasz recently described,²⁰ into a world where their designs have to be real and functioning pieces of architecture.

Hadid, among others, is noted for having a long period of entirely unbuilt projects up until recent times. Having graduated from the Architectural Association in London in 1977, she immediately became a Partner in Rem Koolhaas’ firm, the O.M.A. Subsequently after leaving the practice however, she had a series of winning competition entries which were never built.²¹ Hailed as a genius with theoretically groundbreaking work, she almost seemed destined to remain a theorist rather than a practicing architect.

Indeed, Hadid is not the only architect whose work is so complex at first sight that it immediately seems that construction will be an arduous feat; Daniel Libeskind is another architect who could perhaps have remained in the realms of the unbuilt before a recent surge in the appreciation of both his and Hadid’s style of work.

The Jewish Museum in Berlin is certainly a work of science fiction; it has been said that the coordinates on which the geometry of the zigzag lies were taken from the locations of buried Jews who died during the holocaust; an awe-inspiring concept, which gives great meaning to the building.²² Though undoubtedly a thoughtful and receptive piece of architecture, it still has a responsibility to function - because it is real and not a work of art or sculpture, it has the responsibility to cater to the environmental conditions most favoured to human inhabitation and ergonomics. While it can be said that this building accomplishes both to a satisfying level, more often than not, the work of Libeskind can be physically problematic in spite of its meaningful nature.

In Harbison's, *The Built, The Unbuilt & The Unbuildable*, the author argues that there are "interesting designs which if built would be betrayed by the techniques used to erect them".²³ Despite the fact that many of these buildings have been built, they are undermined in their translation from fantasy into reality. Harbison goes on to describe "structures in which necessary joints obliterate some sweeping curve which was the whole point of the design"; an effort to demonstrate how the physical construction of certain ideas often contradicts the values which we are drawn to as an idea.²⁴

Can fantasies thus ever really be built? Or must they by definition remain unbuilt in order to preserve this sense of awe? In the case of the visionary Étienne-Louis Boullée, no constructed piece of architecture could possibly live up to the drawings produced for the project. As Harbison describes, “Boullée is one of the most relentless fabricators of infinitudes”, and with the suggestion of infinity comes the contradiction that a built piece will always have an ending; something which need not necessarily be described in art.²⁵

Similarly, the great Giovanni Battista Piranesi would never have been able to build ruins, as the very idea of a ruin requires a building to be hundreds or thousands of years old – something which a new build can mimic but not achieve. One building which has been noted for precisely this strange phenomena of a new building representing the old, is the Best Product Stores, Houston Texas by SITE. Playing on the theme of decay and ruins, the building does little but create an attention-capturing façade, behind which lies no different from an ordinary North American supermarket... How disappointed Piranesi would be upon seeing such a building.

Upon being commissioned to design the centrepiece pavilion of the sixth Swiss national exhibition, New York based architects Diller Scofidio and Renfro recently designed what they termed, “The Blur Building” – a suspended platform shrouded in a perpetual cloud of man - made fog. The concept for this project is rooted deeply in fantasy and the desire of man to achieve the impossible of passing through a cloud, and perhaps living in it.

The Reality of the project however is that it is merely a large machine taking water from the lake and spraying it through nozzles at an extremely high pressure in order to simulate the effect of a cloud, while users pass into the contraption. ²⁶ To venture into this building must feel as disappointing as peeling off the facades in an old Western town only to find a street of uniform box buildings – an illusion so fake in its execution that it becomes disassociated with the concept.

I’m sure the expo was amazing as a technological feat and perhaps for the Niagara falls like experience of becoming completely saturated as you journey into it’s core, but for the most part it completely denies its potent fantasies of flying through cloud and being in the sky.



Whether anyone could achieve a modern ruin, or a mechanical cloud is beside the point; by trying to make a fantasy a reality, we often dilute what attracted us to the idea in the first place.

7.1

Filip Dujardin's impossible buildings as digitally manipulated images

8

Case Studies

Central Park

As historian Simon Schama once said, “Landscapes are culture before they are nature; constructs of the imagination projected onto wood and water and rock”.²⁷ At first glance Central Park does not strike one as a work of science fiction, but what could be more radical to one of the most dense cities in the modern world than cutting a vast chunk of it away only to fill it with adventurous landscapes and public spaces? Central Park was not cut from a fabric of skyscrapers, but rather evolved with them, the edge and contrast getting more severe over time.

Having initially opened in 1857, Central Park was later expanded by Frederick Law Olmsted and Calvert Vaux, who together won a competition to expand and improve the existing park.²⁸ The Park has since gone on to become incredibly iconic and has featured in a vast amount of media. As Kenneth T. Jackson of the New York Historical Society once described it, “Central Park is the most important public space in the United States”.²⁸

In *Central Park: An American Masterpiece*, Sara Cedar Miller describes Central Park as “the living embodiment of nineteenth century American landscape

paintings, particularly those of the Hudson River or New York School”²⁹ before going on to speak of its glory despite its inherent contradiction. “Central Park in the 1850’s was America’s greatest example of the marriage of aesthetics and engineering. In this it has always been a glorious paradox: above ground it is a designed landscape that copies nature so closely that it disguises its own fabrication and, below ground, it is an efficient technological system”³⁰

The Park remedies Manhattan almost like the Yin and Yang; The dense overcrowded city opens up in relief into a huge stretch of Park, while the Park creates an edge of density adjacent to its free space, allowing inhabitants to roam from one to the other as they like. It captures our fantasy with its sense of scale, hidden technology and monumental contrast to the rest of the city.

Maison Bordeaux

In contrast with Central Park, here we see a project which is quite visibly a work of science fiction, employing technology and other elements in order to create a futuristic piece of machine architecture. In many ways it can be seen as a gesture towards the Villa Savoye by Le Corbusier, and his dreams of a house as a “machine for living in”.

The house is situated on a hill overlooking the city of Bordeaux, and is a perfect example of a house designed entirely around the needs of its inhabitants. In 1994, Rem Koolhaas of the Office for Metropolitan Architecture (O.M.A) was commissioned to build a residence for the family of a man who was paralysed from the waist down after being injured in a car crash.³¹

Koolhaas responded to his clients' needs with a futuristic masterpiece of science fiction architecture. Author Terence Riley has described the Maison Bordeaux as “Perhaps a metaphoric statement rather than a functional one”,³² speaking of its essence as a piece of architecture and the mechanical lift which Koolhaas embedded into the core of this project. The

house itself contains a large elevating platform which moves “Like an itinerant room” alongside a “three storey wall of shelves, each holding books, files, artworks, and wine within the husbands easy reach.”³³

This platform, and more generally this house, is the intersection of man and machine; a reoccurring theme in science fiction. Koolhaas himself said of the house that the “movement of the elevator continuously changes the architecture of the house. A machine is its heart”³⁴ – perhaps a direct reference to Le Corbusier’s Villa Savoye, or merely an insight into the mechanical fantasies which lie at the core of this work.

9 Conclusion

According to the theories of psychoanalyst Jacques Lacan, fantasies must remain unrealistic. The moment in which a fantasy becomes reality, you cannot want it anymore; In order to continue to exist, the objects of our desires must be perpetually absent, for we fantasise about fantasy itself rather than the vision we are presented with. In essence, the hunt is sweeter than the kill.³⁵

In many ways Lacan's thoughts echo those of German art historian Wilhem Worringer who spoke in relation to painting, although his theories are equally valid for architecture. He theorised that society transfers loyalty from one aesthetic mode to another, the determining factor for the new aesthetic being what society does not possess enough itself. If this is true for art throughout time, is it possible that Architecture and society's view of it may have changed in the exact same way?

“Abstract art, infused as it was with harmony, stillness and rhythm, would appeal chiefly to societies yearning for calm – societies in which law and order were fraying, ideologies were shifting, and a sense of physical danger was compounded by moral and spiritual confusion.”³⁶ Against such a turbulent background, inhabitants would experience what Worringer termed “an

immense need for tranquillity”, and so would turn to the abstract, to the patterned baskets or the minimalist galleries of Lower Manhattan”

In contrast, in societies which seemed to have become overly secure and to an extent predictable, Alain De Botton describes the emergence of an opposing hunger; “citizens would long to escape from the suffocating grasp of routine and predictability, turning to realistic art to quench their psychic thirst and reacquaint themselves with an elusive intensity of feeling”.³⁷

According to De Botton, historians have noted that the Western world acquired a taste for the natural in all its major art forms during the end of the eighteenth century. There was a shift in what was popular and indeed what people were becoming enthusiastic for; “informal clothing, pastoral poetry, novels about ordinary people and unadorned architecture and interior decoration”.³⁸ These people began to adore nature in their art and their literature because nature was precisely that which was becoming lost in their lives.

Just as Herman Melville’s *Moby Dick* was a popular story in 1851, following the atomic bomb the focus

was on stories such as *Godzilla* (1953), whereby the events of our history propelled this new apocalyptic thought. Different times produce different strains of science fiction and provide us with views into our own collective subconscious. Thus, a society which became intensely over-saturated with decoration may have relished in Le Corbusier's ideas of pure functionalism and radical buildings which stripped away decoration, while recent times have called for more daring insertions in the fabric of our cities; new architecture which stimulates us and surprises us rather than the long favoured idea of a contextual approach to making cities. Does the public appreciation for icons and loud architectural responses signify a culture in which stimulation is becoming harder and harder to come by?

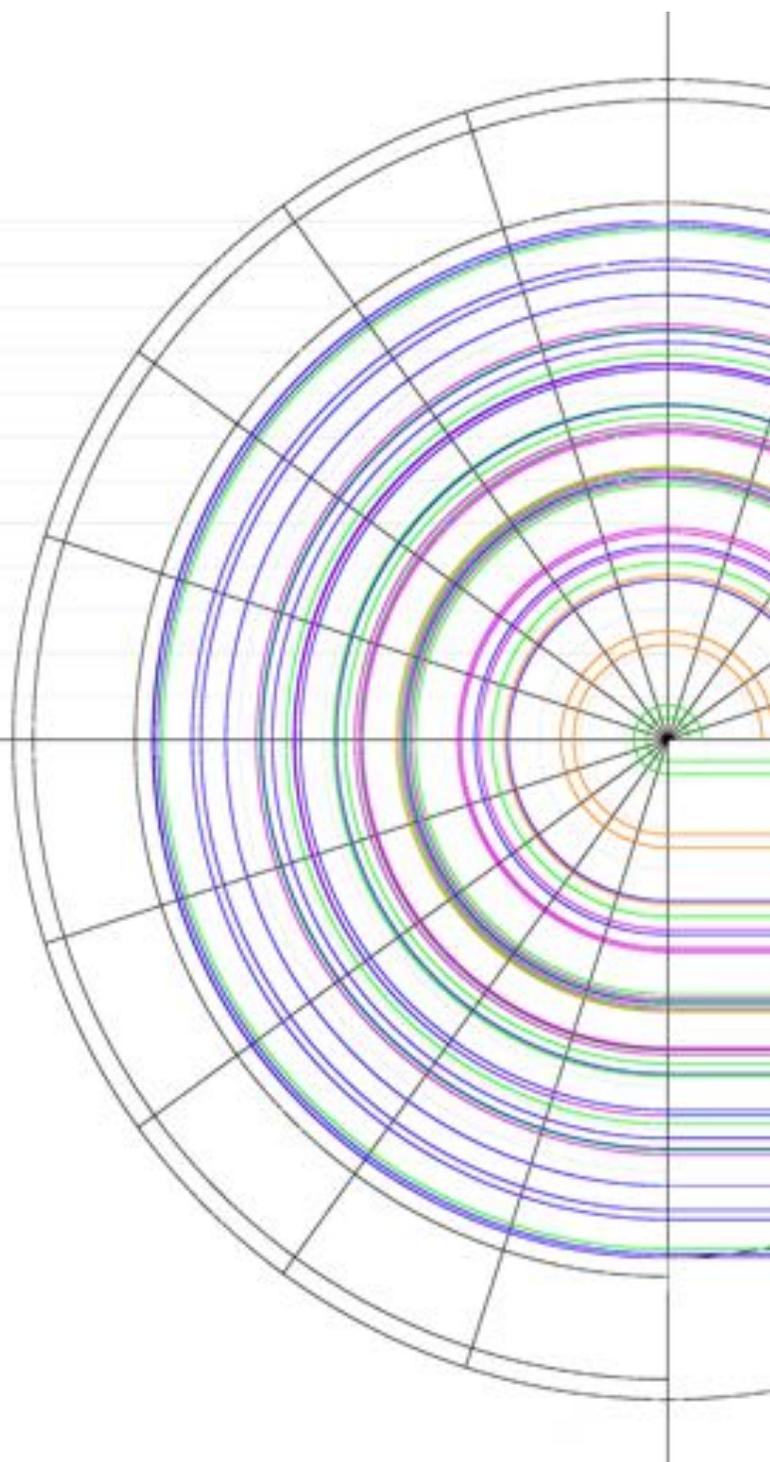
Just as art became a record of a continually changing society, depleted on varying things at varying times, science fiction can reveal things about our primal reactions to any given climate we find ourselves in, and ultimately enable us as architects and thinkers to harness these desires into the built environment, create an architecture of experience, and inspire us into the ages.

9.1

illustration by Alvim Corréa, from the 1906 French edition of H.G.Wells' *War of the Worlds*



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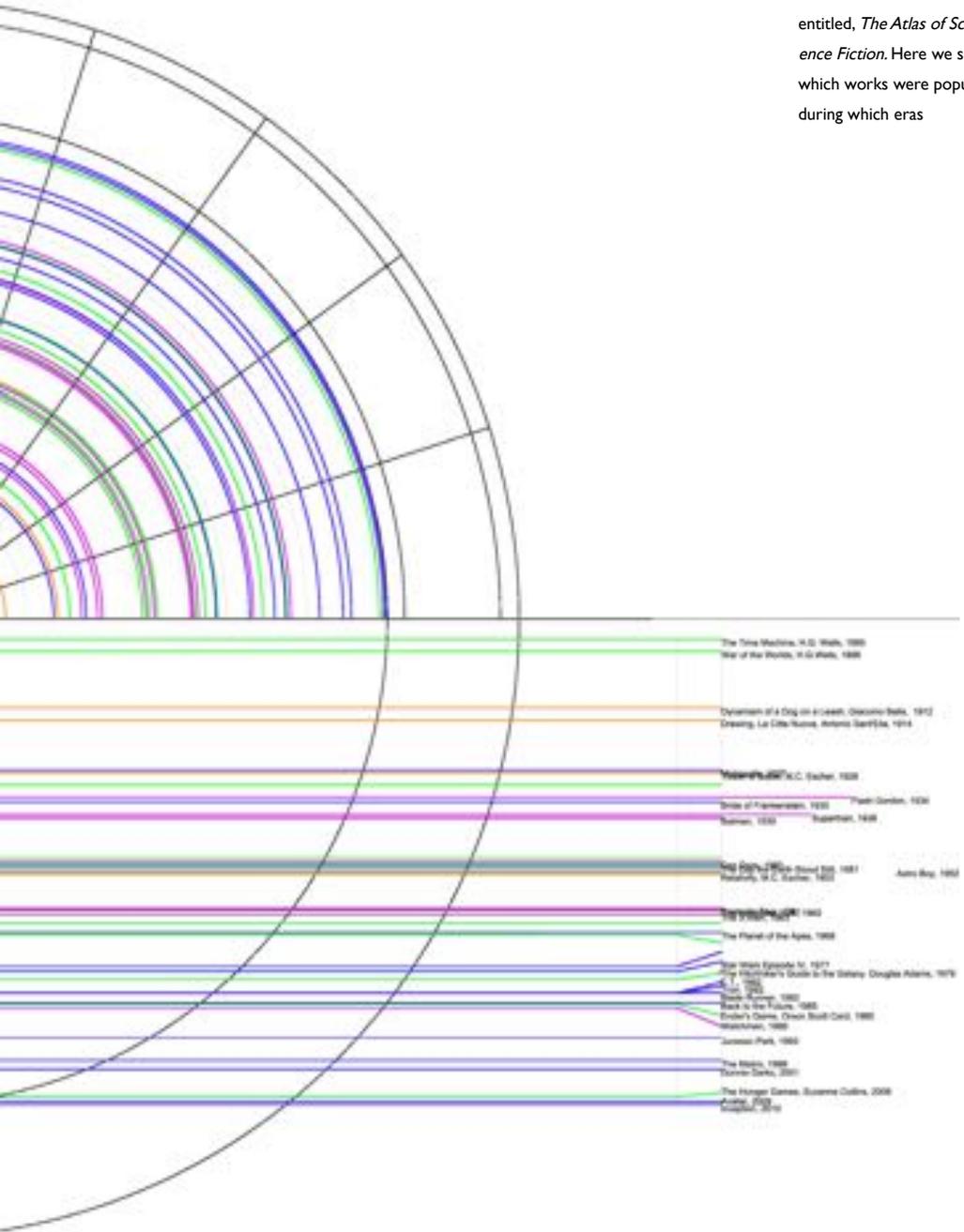


Art



9.2

Personal illustration
entitled, *The Atlas of Sci-
ence Fiction*. Here we see
which works were popular
during which eras



Bibliography

1. De Botton, Alain, *The Architecture of Happiness* (New York: Pantheon Books, 2006) p155, 156.

2. Muschamp, Herbert, "A Masterpiece for Now", *The New York Times Magazine*, 7 Sept. 1997, available: <http://www.potEAU.k12.ok.us/phs/williams/APAH/readings/Gehry,%20The%20Miracle%20in%20Bilbao,%20NY%20Times%20mag.pdf> [accessed 02 April 2012]

3. Rybczynski, Witold, "The Bilbao Effect", *The Atlantic Monthly*, Sept. 2002.

4. Ambasz, Emilio, "Emilio Ambasz & Associates", SAUL Spring Lecture Series, 27 Mar. 2012

5. De Botton, Alain, *The Architecture of Happiness* (New York: Pantheon Books, 2006) p155, 156.

6. Herwig, Oliver, *Dream Worlds* (Munich; New York: Prestel, 2006) p26,27

7. Greene, Brian, *The Fabric of the Cosmos : Space, Time, and the Texture of Reality* (New York: A.A.Knopf, 2004)

8. Spotts, Frederic, *Hitler and the Power of Aesthetics* (Woodstock: Overlook Press, 2003) p.332

9. Spotts, Frederic, *Hitler and the Power of Aesthetics* (Woodstock: Overlook Press, 2003) p.332

10. Harbison, Robert, *The Built, The Unbuilt & The Unbuildable* (Cambridge: MIT Press, 1993) p.121-125

11. Wachoski, Andy; Wachoski, Larry, *The Matrix* [film] (Burbank, California: Warner Brothers Pictures, 1999)

12. Wachoski, Andy; Wachoski, Larry, *The Matrix* [film] (Burbank, California: Warner Brothers Pictures, 1999)

13. Sideris, Jeremy, *Psychological Manipulation Through the Debasement of Language in Orwell's Nineteen Eighty-Four* [essay] available: http://www.gradnet.de/papers/pomo98.papers/jysideris_a98.html [accessed 04 April 2012]

14. Orwell, George, *1984*, a novel (New York, New American Library, 1949)

15. Orwell, George, *1984*, a novel (New York, New American Library, 1949)

16. Wachoski, Andy; Wachoski, Larry, *The Matrix* [film] (Burbank, California: Warner Brothers Pictures, 1999)

17. Wachoski, Andy; Wachoski, Larry, *The Matrix* [film] (Burbank, California: Warner Brothers Pictures, 1999)

18. Wachoski, Andy; Wachoski, Larry, *The Matrix* [film] (Burbank, California: Warner Brothers Pictures, 1999)

19. Collins, Suzanne, *The Hunger Games* (New York: Scholastic Press, 2008)
20. Yoshiyuki, Shimizu "Sukoyaka naru boso: Tonari no totoro no openu ending o megutte," *Pop Culture Critique* 1 (1997) p. 93
21. Ambasz, Emilio, "Emilio Ambasz & Associates", SAUL Spring Lecture Series, 27 Mar. 2012
22. Hadid, Zaha; Betsy Aaron Zaha Hadid: *The Complete Buildings and Projects* (New York: Rizzoli, 1998)
23. O' Regan, John, *A Monument In the City: Nelson's Pillar and it's Aftermath* (Cork: Gandon Editions, 1998)
24. Harbison, Robert, *The Built, The Unbuilt & The Unbuildable* (Cambridge: MIT Press, 1993) p.161
25. Harbison, Robert, *The Built, The Unbuilt & The Unbuildable* (Cambridge: MIT Press, 1993) p.161
26. Kazi, Olympia, "Architecture as a Dissident Practice: An Interview with Diller Scofidio + Renfro" *Architectural Design* Volume 79, Issue 1, Jan/Feb 2009 pages 56–59
27. Cedar Miller, Sara, *Central Park: An American Masterpiece* (New York: H.N. Abrams, 2003) Introduction

28. Cedar Miller, Sara, *Central Park: An American Masterpiece* (New York: H.N. Abrams, 2003) Introduction

29. Cedar Miller, Sara, *Central Park: An American Masterpiece* (New York: H.N. Abrams, 2003) p 11

30. Cedar Miller, Sara, *Central Park: An American Masterpiece* (New York: H.N. Abrams, 2003) p 12

31. Riley, Terence *The Un-Private House* (New York: MoMA, 1999) p 28

32. Riley, Terence *The Un-Private House* (New York: MoMA, 1999) p 28

33. Riley, Terence *The Un-Private House* (New York: MoMA, 1999) p 92

34. Riley, Terence *The Un-Private House* (New York: MoMA, 1999) p 92

35. Lacan, Jacques, *Ecrits: A Selection* (New York: Norton, 1977) p. 284

36. Worringer, Wilhelm, *Abstraction and Empathy* [essay] 1907

37. De Botton, Alain, *The Architecture of Happiness* (New York: Pantheon Books, 2006) p 155, 156.

38. De Botton, Alain, *The Architecture of Happiness* (New York: Pantheon Books, 2006) p 155, 156.

Illustrations

1.1

OMA - Convention and Exhibition Center, Ras Al-Khaimah, United Arab Emirates. Photo: OMA, [<http://www.dezeen.com/2007/05/11/rak-convention-and-exhibition-centre-by-oma/>]

2.1

Marie Antoinette's rural cottage - an example of De Botton's theory. Photo: Malkhos Anebo [<http://malkhos.livejournal.com/>]

3.1

Will Alsop's Sharp Centre for Design in Toronto. Photo; Hugh Pearman

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Daniel Libeskind's Royal Ontario Museum, Toronto. Photo: Sam Javanrouh and the Royal Ontario Museum

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The Guggenheim in Bilbao by Frank Gehry. Photo: MiroHotel Bilbao

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Frederick Weisman Museum of Art, Minneapolis

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Photos by Lisa Thatcher

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Morpheus' speech to the people of Zion, *The Matrix*, 1999. Frame from the Original Motion Picture

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Munster supporters in the city of Limerick temporarily take over the city's main street during the Heineken Cup Final. Photo: Munsterrugby.ie

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Castle by Patrick Jensen. Photo: Patrick Jensen

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Sir John Soane's ruin drawing for the proposed Bank of England. Photo: John Soane Museum London

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Richard Roger's Lloyd's building, London. Photo: richardrogers.co.uk

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Big Brother propaganda as depicted in the 1956 film version of George Orwell's *1984*. Frame from the Original Motion Picture.

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Zion, last city of humankind, *The Matrix*, 1999. Frame from the Original Motion Picture

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A view down into the mechanical generators beneath the city. Frame from the Original Motion Picture

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The Captiol, city of the government of Panem. Frame from the Original Motion Picture, *The Hunger Games*

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M.C. Escher's famous lithograph print, entitled *Relativity*. Photo: Taschen Publishers

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Filip Dujardin's impossible buildings as digitally manipulated images. Photo: Filip Dujardin, [<http://bldgblog.blogspot.com/2008/11/resampled-space.html>]

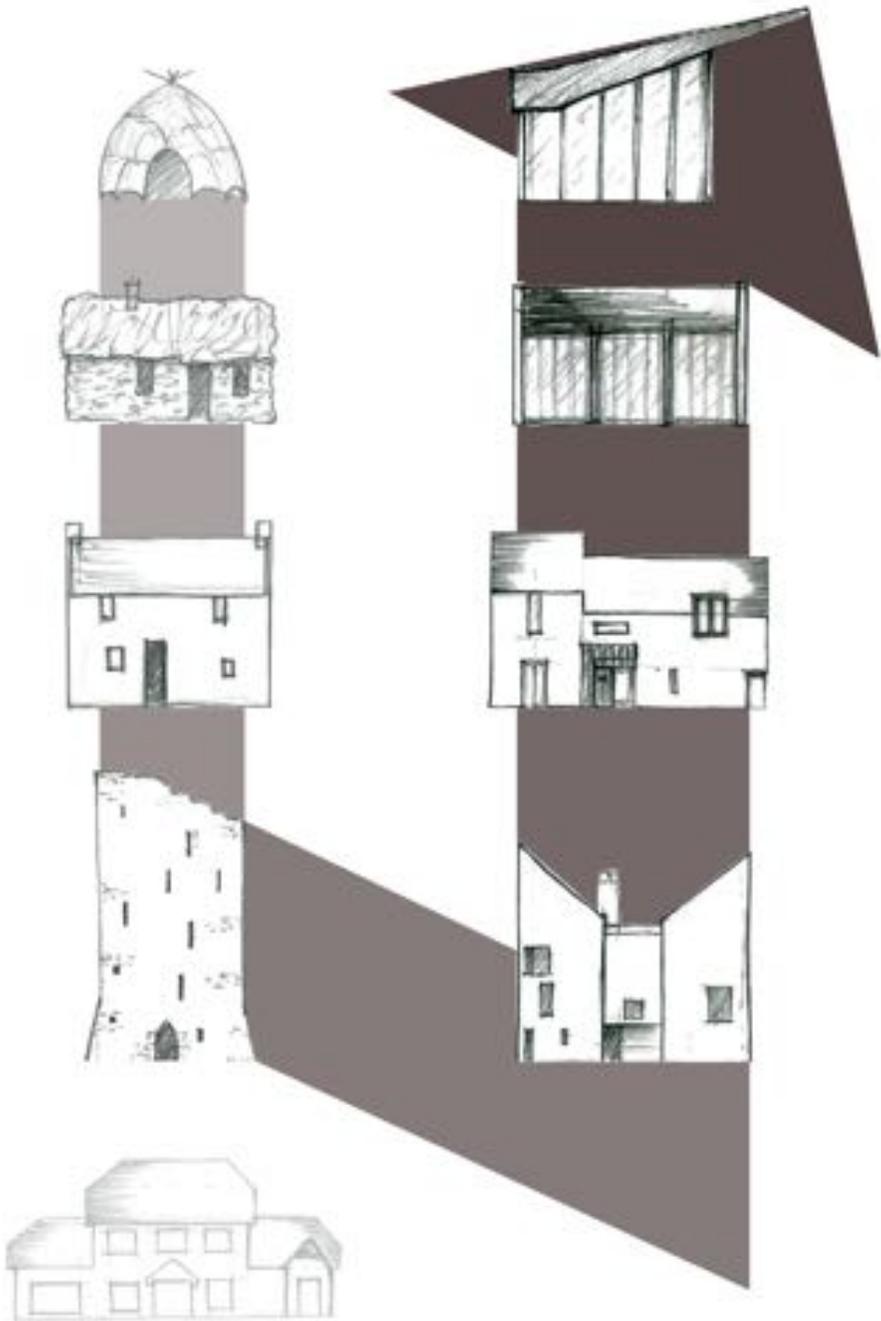
9.1

illustration by Alvim Corr ea, from the 1906 French edition of H.G.Wells' *War of the Worlds* . Photo:
Alvim Correa

9.2

Personal illustration entitled, *The Atlas of Science Fiction*. Here we see which works were popular during
which eras.

The Essence of Rural Ireland And Positive Architectural Responses.



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Chapter 1

The Fundamental Characteristics of the Rural Irish Landscape, and the current state of play.

It was the retreating glaciers of approximately 10,000 BC that finally severed the landmass from its continental embrace and left us today with what we recognise as the island of Ireland. Setting in motion a dialogue between man and the landscape, through continuing cycles of human settlement and land cultivation, creating what we today call a cultured landscape. Its modern day culmination evidenced in our now agriculturally dominant landscape. This agricultural scene we associate as being a fundamental characteristic of the rural Irish landscape.

Today four fifths of the landmass of the island is devoted to agriculture. A mixed pattern of farming comprising beef, tillage and dairying based on a pastoral system. A defining visual characteristic of this agricultural enterprise being the sight of permanently grazed livestock throughout the landscape. Varying sizes of farms provide the basis for the division of the country into its agricultural regions. Tillage practises occur mainly in dryer north-eastern regions. The north-central lowlands specialise in livestock production, while the south-west and northwest cater for intensive dairying production.

Some people when observing the rural landscape of today make the mistake of viewing it as a 'natural' landscape. In reality, the rural landscape we see today is in fact an artificial

landscape, the cultured landscape mentioned earlier. It was the Mesolithic hunters of approximately nine thousand B.C., that were the first to interact with the landscape. Most of their foraging was carried out from the rich and plentiful resources of the sea, lakes and rivers, resulting in minimal disturbance to the blanket forest conditions that characterised the existing natural landscape of the time. Five thousand years later it would be the Neolithic immigrant settlers who would establish the first early forms of an agricultural economy, in the rearing of livestock and the cultivation of cereals. A settled and ordered landscape dictated the first forest clearances, and fixed boundaries were introduced. In recent times, the discovery of an extensive farmed landscape unearthed from under a bog at Ceide fields in Co. Mayo displayed evidence of pastoral grazing all year round that was the prevailing condition at the time. Early field patterns were also unearthed made up of stone walled boundaries.

Early farmers continued to settle across the island, but basic technology required the lighter soils of the upland margins where forest cover was thinner and drainage conditions better. As time progressed so too did technological advances, the first significant changes appearing through the Bronze Age, followed by the Iron Age, and on through the medieval period. Increased population and cultural advancements saw the deterioration in natural forest cover, heath and blanket bog replacing woodland that failed to rejuvenate. An ever encroaching cultured landscape and increased livestock grazing hastened the demise of the natural forest.

Although blips in the evolution of the landscape managed to halt the disappearance of the native woodland cover, in some instances

a reduction over several centuries even permitted the replenishment of the natural forest in some parts of the land. But the eventual return and extension of settlement dispersal and land clearance would eventually render the deformation of the landscape permanent. F.H.A. Aalen's commentary on the transformation of the landscape over the last twelve thousand years concludes, "There is no simple narrative of a pristine world progressively degraded by human interference, no edenic green garden of Ireland to which we could all revert if only we behaved more sensibly" ¹. In confirmation of peoples misconceived ideas of what they believe to be the natural rural Irish landscape, he makes the point that many characteristics we see today in the landscape, "from bogs to beech trees, from rabbits to donkeys, from potatoes to pheasants"² are, as a matter of fact surprisingly "recent human intrusions"³.

The established settlements of this "human intrusion" formed a fundamental part of our rural landscape through history and to the present day. Agricultural buildings such as farmhouses, outhouses, creameries and associated production buildings, along with the public buildings of schools, shops, churches, pubs and halls, form some of the most recognisable components of the rural Irish landscape. They are the most "architecturally ambitious and largest rural buildings" and because they are the oldest and largest structures in the landscape, "create a sense of continuity and depth" Aalen informs us. It is this distinctive combination of farmyards and outhouses, dwelling houses and fields, that provides an instantly recognisable component of the rural Irish landscape, a fundamental characteristic of the landscape.

1. F.H.A. Aalen "Synthesis of Habitat and History" Atlas of The Irish Rural Landscape (Cork University Press 2011) 21.

2. F.H.A. Aalen "Synthesis of Habitat and History" Atlas of The Irish Rural Landscape (Cork University Press 2011) 21.

3. F.H.A. Aalen "Synthesis of Habitat and History" Atlas of The Irish Rural Landscape (Cork University Press 2011) 21.

Of the recent new buildings that inhabit today's rural landscape approximately only five per cent (source R.I.A.I. 2012) display the architectural ambition that Aalen talks about. Such architectural solutions display clearly, a sympathetic and considered approach to their surroundings, with appropriate use of scale, size, and massing. They interpret and respect traditional building techniques, materials and crafts. Siting and orientation is dealt with in equal consideration. Such examples present as modern day descendants of a past tradition. The development of modern day materials such as glass, steel and concrete has allowed for modern contemporary design solutions that still employ the principals of the best of what went before, but speak very much of the current age. Such forward thinking examples are in stark contrast to the overwhelming majority of corresponding buildings that share the same landscape. Buildings that increasingly display the complete opposite, and appear increasingly alienated from the landscape.

Positive architectural solutions show what can be achieved through the control which design allows. Designs that enrich the lives of the occupier, while offering a lifestyle of choice and quality. As Alain de Botton states in his channel 4 documentary "The Perfect Home" based on his book by the same name (Nov. 2011), "A good building shouldn't be shutting us off from reality, it should in some way mediate between the inner world and the outer world as it actually is. The point of our buildings is to reconcile us to the facts of our lives". De Botton's statement highlights a basic right, that the principles of good design should be available to all.

People all too frequently reconcile architecture in simple terms such as ‘the design of buildings’, but architecture involves far more than just the design of objects.

The opening paragraphs of this essay outline the settlement history of the island. The people of those times made their way through the landscape, deciding on a certain location to stop at, to settle in, and in doing so establish a place. The making of a fire, the making of fuel stores, of places to sit, of places to rest, these simple actions formed the earliest evolution of the house. The people began to organise their surroundings into an assortment of places for a variety of different uses. The practise of architecture in its simplest most basic form, the identification of place, the generic core of architecture. Thousands of years later, the principals and objectives first tested by these ancestors remain the same. Places are proposed by the designer, and places are created and adapted by the user. Good design dictates that places proposed should be in accordance with the places used. As Simon Unwin puts it, “At its rudimentary level, architecture deals not in abstractions but with life as it is lived, and its fundamental power is to identify place”⁴ It is only through the identification of place by positive architectural responses, that we can begin to renew our rural built environment.

4. Simon Unwin “Architecture as identification of place” *Analysing Architecture* (The Cromwell Press, Wiltshire, UK .Third edition 2009) 30.

Chapter 2

The cultured landscape of the past

The cultural landscape of the past developed over lengthy periods of time. As F.H.A. Aalen informs us in “Synthesis of Habitat and History”, “an informal vernacular landscape took shape in the form of farm and field that provided the basic necessities, shelter, a livelihood, the employment of local skills, traditions, and materials. The rural landscape was viewed in simple terms as reflecting necessity, the product of a rural community adjusting to its habitat, adapting to its specific needs”⁵. Such identifying characteristics of the landscape did not evolve from a unified design but instead, “from a sensitive and considered adaptation to the land. The resulting ‘sense of place’ is organic, produced by the balance between natural background and overlying cultural features”⁶. This balance generated lasting elements, resulting from the practical needs of a defined people in a defined place: “Successful adaptations, such as vernacular building styles, field patterns and land use, were transmitted by tradition”⁷. This organic approach was employed in the corresponding buildings that would coalesce with the surrounding landscape (fig 1). Aalens observations inform us that, house styles evolved slowly, as adaptations to the local environment and economy. “Distinctive forms transmitted as part of a communal tradition. What people call ‘Vernacular Architecture’ is a term now associated with these rural types of buildings”⁸.

Until the recent century, the rural buildings of Ireland displayed long established considera-

5. F.H.A. Aalen “Synthesis of Habitat and History” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 6.

6. F.H.A. Aalen “Synthesis of Habitat and History” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 6.

7. F.H.A. Aalen “Synthesis of Habitat and History” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 6.

8. F.H.A. Aalen “Components of the Irish Landscape – Houses” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 213.

tions. The provision of shelter, of blending with the landscape. Regional variations exist, all be it with what may be classed as minor nuances dependant on proximity to the coast, dominant prevailing winds or more sheltered inland locations. "Ireland's rural buildings are most closely associated with its Celtic neighbours Wales, Cornwall, and most notably Scotland. Similarities exist with dwellings in northern and western parts of England, and with the rural buildings of the Atlantic fringe stretching from Galicia in the south to Scandinavia in the north"⁹.



Fig 1.
Rural buildings as part of
the landscape
(Photo Colm Bradley)

Aalen sets out his description of what constitutes the vernacular house of rural Ireland, (fig 2). "It consists of a modest single storey, with thatched roof, and simple rectangular plan, one room in width, with each room opening into the next without a central hall or passageway. Structurally, the houses apply simple rules; the roof supported by the exterior walls, not by internal posts or pillars, with local materials used for the construction, stone or mud for walls, cereal straw or rushes for the thatch, timber for the roof frame. Windows and entrances are placed on the longest sides of the plan, rarely on the gable walls"¹⁰. Such houses display a strong ratio of solid to void, masonry to openings in appearance, with small apertures denoting the openings. In some areas the custom of white washing the walls adds a visual dimension, acting like a signature upon the dominant green and brown backdrop of the natural landscape. "These houses record and reveal how the majority of previous generations of Irish people lived within the rural landscape, the dwelling place being among the most central, durable and evocative of cultural artefacts"¹¹. The use of good proportions and a considered approach to the surrounding environment



Fig 2.
Typical vernacular cottage:
Athea, Co. Limerick
(Photo Colm Bradley)

9. F.H.A. Aalen "Components of the Irish Landscape – Houses" Atlas of The Irish Rural Landscape (Cork University Press 2011) 213.

10. F.H.A. Aalen "Components of the Irish Landscape – Houses" Atlas of The Irish Rural Landscape (Cork University Press 2011) 214.

11. F.H.A. Aalen "Components of the Irish Landscape – Houses" Atlas of The Irish Rural Landscape (Cork University Press 2011) 214.

achieves a balance that offers aesthetic appeal, and forms a distinctive characteristic of the rural landscape. The tradition of vernacular buildings of the rural landscape, Aalen concludes, “endures as a rich legacy, still available both as a model and an inspiration for the future”¹².

12. F.H.A. Aalen “Components of the Irish Landscape – Houses” Atlas of The Irish Rural Landscape (Cork University Press 2011) 214

Chapter 3

The cultured landscape of the present

In looking at the cultured landscape of today we see that until the recent “Celtic Tiger” years changes to the rural landscape were comparatively understated. Land use was relatively stable throughout the twentieth century, with livestock and permanent grasslands dominating, ensuring landscape continuity in the process. Forest cover expanded all be it in relatively low levels by corresponding European statistics, but recent promotion of afforestation has had a significant, and at times controversial impact upon the landscape. The transformation of the rural landscape, accelerated since the 1960’s through farm consolidation and intensification of grassland farming has had, as Kevin Whelen notes, “an impact on associated rural buildings, affecting their style, scale and siting and also altering the layouts of farmyards, fields, and infrastructure”¹³. The pace of such change skyrocketed during the recent “Celtic tiger” years with the unprecedented housing boom that fundamentally transformed the rural landscape (fig 3), aided and abetted by the construction of numerous new roads to facilitate an ever increasing car dependant lifestyle.

In the period between 1995 and 2005 over half a million new homes were built and the average price of a new home tripled. (Central Statistics Office, archive) By 2010, almost two thirds of the population of the country was urbanised.

13. Kevin Whelen “The Challenge of Change”, “Facing the future” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 114.

As Kevin Whelen describes it “Rural Ireland receded from the country’s daily consciousness”¹⁴. Today in 2012, a staggering statistic unmatched anywhere else in the world informs us that one third of all houses in the Republic of Ireland have been built since 1997, with 81 per cent of homes owner occupied – the highest rate in the world, (Central Statistics Office 2012). These statistics serve to highlight the recent internalised cultural preference for owning ones own home.

This preference can be assessed as follows, “Many new householders seek to live close to where they grew up, and many grew up in the countryside, if not in the open countryside, in small towns and villages close to the countryside. Many urban people too, are only one or two generations removed from their forbearers in rural areas”¹⁵. There are economic advantages to rural one off houses compared to urban equivalents. “For buyers, the cost of one off housing is usually much less than urban housing. For sellers, sales of sites with planning permission can be a useful side-earner”¹⁶. Also for many, the decision to live in the countryside is very much a lifestyle choice. The countryside is perceived to offer a more natural, less cluttered, healthier and safer environment than its urban equivalent, even though people are aware that distances to services and the work place can be a drawback, it is generally accepted that to live in the countryside means one must have access to transport, the most reliant of which being one’s own car. Today, ownership of the car is considered an essential component to living in the countryside. Such reasons as outlined above, serve to confirm the high demand for one off houses in rural Ireland and highlight a section of society’s desire to maintain a link with the land. But for all the



*Fig 3 & 4
Legacy of the ‘Celtic Tiger’
: Urban style housing estates
in rural villages, and abandoned /unfinished
housing.
(Photo’s Colm Bradley)*

14. Kevin Whelen “The Challenge of Change”, “Facing the future” Atlas of The Irish Rural Landscape (Cork University Press 2011) 114.

15. “Planning analysis of Rural One Off Housing” Limerick County Council County Development Plan 2009. 27.

16. “Planning analysis of Rural One Off Housing” Limerick County Council County Development Plan 2009. 27.

desire to maintain a link with the land the new buildings of this recent period appear more and more alienated from it.

The legacy of this period sees many additions to the landscape completely at odds with their location employing poor use of scale, style, siting, and choice of materials (fig 5). Many dwellings display a lack of consideration or appropriateness to the surrounding landscape, and the abandonment of traditional techniques. Traditional skills and craftsmanship jettisoned in exchange for speedier, profit driven construction.

Little attempt has been made to preserve and enhance our older indigenous buildings of the landscape, buildings that form a very distinctive built heritage. "A heritage as important to our cultural identity as our language music and literature"¹⁷. In many cases these buildings have been hastily discarded (fig. 6). Peter Black, architectural conservation officer with Kildare County council, outlines recent attitudes to such buildings. "The modest farm buildings, which are integral to our landscape, embody the cultural values and social history of past generations and are unfortunately frequently associated with an era of great poverty and of diminished society. These farm buildings as a result have little cultural or architectural value attached to them. This lack of awareness of the architectural and historical significance of many farm buildings is a contributing factor to the pattern of abandonment that can be witnessed throughout the country."¹⁸



*Fig 5
Typical 'one off' housing
with no relationship to the
landscape
(Photo's Colm Bradley)*



*Fig 6
Suburban style housing
county Monaghan. The
older vernacular house
discarded to the right of
the picture.
(Photo Courtesy of Atlas of
the Rural Irish Landscape)*

17. "Introduction" Cork Rural Design Guide: Building a new house in the countryside. (Cork County Council 2003) 7

18. Laura Bowen & Nicki Matthews, "Forward" Peter Black, Reusing Farm Buildings: A Kildare Perspective (Kildare County Council 2005) 8.

Historical architectural awareness and significance, was very much to the fore in the thinking of the arts and crafts movement in England in the late 19th century. Its ideals of that period are relevant to our own rural landscape of today. William Morris, one of its leading lights, championed the cause as Peter Davy suggests, for “an architecture that would grow unself-consciously from its surroundings catering for the needs of ordinary people”. Davey highlights Morris’s own quote from “The prospect of architecture” which outlines the movements thinking regarding existing rural conditions of the time. “If the old cottages and barns and the like are kept in good repair from year to year (fig 8.), they will not need to be pulled down to give place either to red-brick, blue-slatted man-sty, or the modern tudor lord bountiful cottage. And where new buildings must be built, (fig 7) by building them well and in a common sense and unpretentious way, with good material of the countryside, they will take their place alongside the old houses and look, like them, a real growth of the soil”.



*Fig 7
The Red House By Phillippe Webb for William Morris,
Bexley Heath, Kent, England (designed 1859). “Every
brick in it is a word in the
history of Modern Archi-
tecture”. -Weaver, Lawrence
Small Country Houses of
Today, First Series, Country
Life, London,
(Photos Courtesy of Arts and
Crafts Architecture)*

*19. Peter Davey “The
Prophet” Arts and craft
Architecture (Phaidon Press
Inc. New York 1995) 30.*

The attitudes that Morris describes can be evidenced today in the positive architectural responses to the rural landscape condition. These successful responses exemplify why it is important for architects to have a greater role in the design and delivery of the buildings that will inhabit this condition. The following chapter will demonstrate how such architectural responses can exert a lasting and positive effect on the rural built environment, on the lives of those who inhabit it, promoting emotional wellbeing, and lifestyle choice; and in so doing, influence and encourage the broader rural community to embrace and engage with architecture.



*Fig 8
Arlington Row, Billbury,
Gloucestershire. Described
by Morris as 'surely the
most beautiful hamlet in
England'
(Photo Courtesy of Arts and
Crafts Architecture)*

Chapter 4

Main Case Study

Scanlon Houses 1 and 2.

County Meath based architect Seamus Scanlon's 2001 design for two houses, one for his sister and young family the other for his father, adheres to the virtues William Morris talks about in "The prospect of Architecture". Here, both houses display characteristics that can be associated with an older cultured landscape. Designing for family members can be seen as an added challenge for an architect. The project takes on a more personal significance, and an increased level of expectancy, but as Scanlon demonstrates, such potentially overpowering conditions can serve as the extra driving force in the delivery of a bespoke piece of architecture. The brief for the project was to design accommodation on a single acre site located in the flowing countryside of North Kerry.

The architect's sister had talked of a 'weariness' of entering the same stock houses on her return to the country that generally consisted of standard 'urban style' designs with internal corridors and rooms divided into 'box's' that failed to take advantage of available natural light. Her requirement was for essentially, the complete opposite - a light filled dwelling without corridors, with spaces that flowed from one to the other, a dwelling that would cater for the differing needs and lifestyles of the occupants, one a young couple with two small children, the other a mature parent.

In referencing the vernacular styles of the past, Scanlon takes his cue from the traditional long houses that prevailed in this south west region of the country, (fig 9 & 10) “Stone or mud single storey houses predominated until the mid nineteenth century, with an outer zone of sub medieval long houses in Ireland and Scotland, storeyed houses were common by the mid-seventeenth century”²⁰.

20. F.H.A. Aalen “Components of the Irish Landscape – Houses” *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 213.



Fig 9 & 10.

Typical elongated farmsteads with part of the original house raised.
(Photos courtesy Atlas of the Irish Rural Landscape)



Fig 11 & 12

Fig 11. Scanlon Houses 1 and 2, front (north) elevation as viewed from road.

The parental dwelling is located to the right with its gable presenting to the road.

Fig 12. South facing courtyard cluster arrangement, parental dwelling located on the left.

(Photos Colm Bradley)

Instead of taking the much referenced approach of a single dwelling with integrated annexed accommodation for the parents, here the architect marks the clear distinction between both 'clients' by providing two completely separate and independent dwellings, in doing so acknowledging the difference between on the one hand, someone in their retirement years and the requirements of their lifestyle, and on the other, the lifestyle requirements for working parents raising a young family (fig 11 & 12, 12a). This initial design decision was the catalyst for the success of the project, and forms a fundamental key to the relationship of the occupants with the architecture they inhabit, and their relationship with each other.



*Fig 12a. Ground Floor Plans
(Image courtesy of Shay Scanlon architect)*

The main family dwelling is set up 'L' shape in plan; this encloses two sides of a shared private south-facing courtyard to the rear (fig 12a). The parental dwelling, smaller in plan consists of a single rectilinear form and presents at the gable. It is located perpendicular to the main dwelling and in so doing completes the three-sided perimeter to the south-facing courtyard (fig 13). This courtyard-clustered arrangement is reminiscent of typical vernacular farm buildings that consist of - farmhouse, yard, outhouses.



Fig 13 & 14

Fig 13 (left) Scanlon houses, with courtyard viewed from south, with separate parental dwelling located to the left of the main family house.

Fig 14 (right) Traditional courtyard clustered arrangement, farmhouse, yard, outhouses. (Photos Colm Bradley, and Atlas of the Irish Rural Landscape)

For the main family dwelling, as requested by the client, the internal layouts consists of a procession of spaces that flow smoothly from one to the next. Sliding doors disappear into walls to allow continuity between spaces, large floor to ceiling glazed openings take advantage of the south-facing courtyard, which is always visible as one moves through the ground floor plan. Three steps delineate a threshold level change, marking on the ground the move from one 'wing' of the 'L' to the other, while also dealing with the gentle south to north slope

over the site. Floor to ceiling dimensions are taller than standard, and an additional sense of drama is achieved with triple height volumes to the dining hall/stairwell space, and the sun-room at the southernmost gable. These triple height volumes that stretch all the way from the ground to the apex of the roof, create a sense of surprise when entered, emphasised more so by the fact that such volumes are not experienced in common housing (fig 15).



Fig 15
Triple height space to 'sun room'
(Photo Colm Bradley)

Such plays on space and light make this house seem far more spacious than its approximate 270 msq. total area suggests. The accommodation consists of living, kitchen, dining, sun room, dining hall, bedroom and bathroom on the ground floor, while upstairs there is a master bedroom with ensuite and dressing, two further bedrooms, a bathroom, and study area.

In the smaller parental dwelling the spaces flow equally smoothly by way of the single linear form. All spaces are the full width of the dwelling accessed one to the next, again the architect referencing the forms of early vernacular dwellings "simple rectangular plan, one room in width, with each room opening into the next without a central hall or passageway"²¹. Like the main family dwelling the courtyard is always visible with all spaces availing of a dual aspect (fig 12a), while the two gable end spaces, avail of three orientations. This dwelling is ideally sized and designed for its inhabitants. A ground floor area of approximately 86msq. consists of a bedroom, bathroom, living space, dining and kitchen area and entrance hall. First floor accommodation consists simply of a master bedroom with en-suite, and is approximately 30msq. in area. (fig 16a)



Fig 16
Zinc detail to window
(Photo Colm Bradley)

21. F.H.A. Aalen "Components of the Irish Landscape – Houses" *Atlas of The Irish Rural Landscape* (Cork University Press 2011) 213, 214.



Fig 16a
First Floor Plans
 (Image courtesy of Shay Scanlon architect)

Externally both dwellings can be viewed as direct descendants of the vernacular tradition. The architect has presented both with the characteristic strong solid to void ratio on elevation, openings are considered and appropriately sized, masonry the dominant aspect. The scale and massing of the forms has also been respectfully considered, the stepping in the roofs breaks the massing, reminiscent of elongated farmsteads, where raised roofs allowed for additional accommodation. The presenting of a simple uncluttered gable to the road is also an acknowledgement of a vernacular tradition. This is emphasised more when the buildings are viewed in perspective from the road (fig 17), they appear as a cluster, familiar in appearance, as if they have always part of the landscape. The architect has employed traditional detailing and finishes, high in quality

of execution. Lime render to the masonry walls, quality joinery to windows and doors. The use of a contemporary material zinc, denotes the entrance, and dresses projecting windows (fig 16), the roofs employ traditional natural slate.



Fig 17
(Photo Colm Bradley)

The two buildings complement each other, modest, but solid in appearance, free of any ornament or fussy decoration. They sit quietly upon the land, reassuring in their closeness, complimenting their surrounding environment. It is best left to the architects sister to sum up what it means to live in such a place, to inhabit an architecture created for them. “I just love living here, I couldn’t imagine living in any other place, in any other way. I love the brightness, the openness. That I can see my father across the way, living independently, knowing that he is close, is safe, there’s something very reassuring about that. And when the time comes, one day we’ll move in there, and some one of the kids hopefully in here, and so it will continue.”

Such descriptions confirm the positive role architecture can have on those who inhabit it, the two houses offer up so much more than just places in which to dwell. J.B. Jackson talks of “a

lively awareness of the familiar environment”²² when describing what a sense of place can be. Jackson makes the point that it is the familiar to which we are somehow drawn, and in which surroundings we feel most comfortable. To that end Shay Scanlon has created such a place with his architecture.

Case Study 2

Hanrahan House.

Before describing the following, it is worth pointing out that although this paper identifies the rarity of design led dwellings visible throughout the rural landscape, it is perhaps somewhat ironic that the following example happens to be located within a few short miles of the previously discussed dwellings. Located in the same north Kerry countryside, the Hanrahan house is not easy to find. Located in off a secondary country road it is accessed via a *boitharín* (small road) complete with grass growing down the centre of the tarmac, a sight so associated with the rural landscape. The Hanrahan house was designed by Limerick based architect Seamus Hanrahan for his brother and sister-in-law, the first phase of which was built in 1997, the second phase following on in 2007.

The first phase (fig 18) was designed and built to avail of the rural housing grant scheme at the time that consisted of £3000 (approximately €4000 in today's money) for all dwellings up to 125 square meters area. At the time this figure made up about 8 per cent of the build cost, £50,000 at the time as confirmed by the owner, who being a builder by trade took responsibility for the construction of the

22. J.B.Jackson “A Sense of Place A Sense of Time” *A Sense of Place a Sense of Time* (Yale University Press 1994) 159.

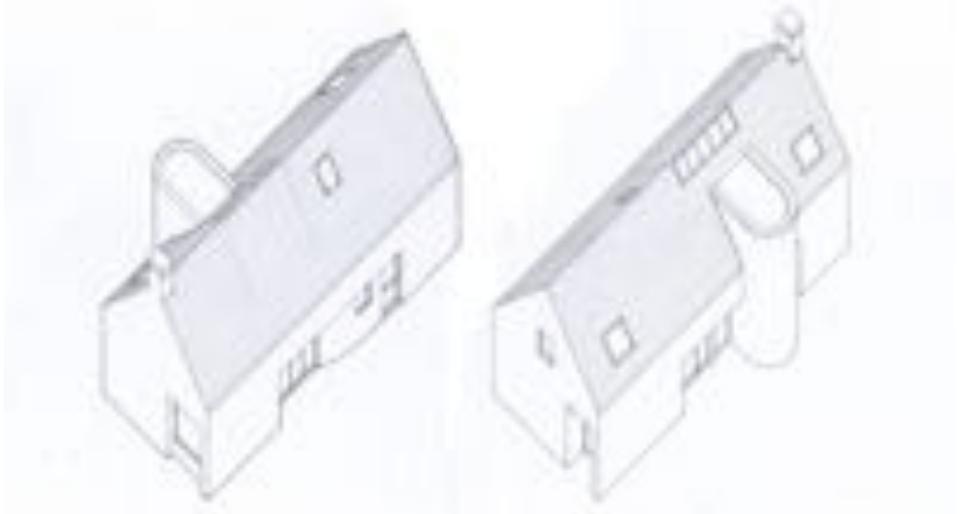


Fig 18
Axonometric of first phase construction, south & east axonometric, north and west axonometric.
(Image courtesy of Seamus Hanrahan)

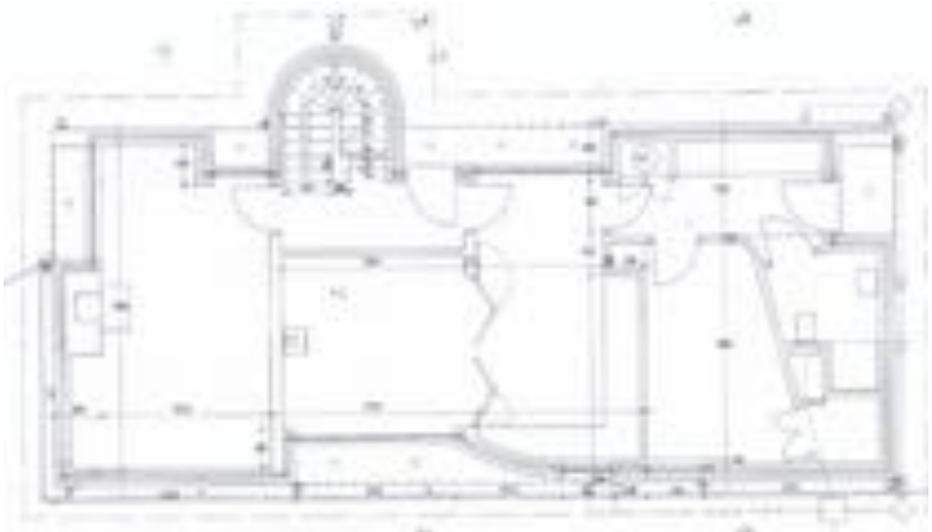


Fig 19
*First Phase: Ground Floor Plan *(note: as built plan, central living space was to be one space uninterrupted).*
(Image courtesy Seamus Hanrahan)

project. “I was always interested in doing things differently, bringing a different way of thinking to the project, instead of the standard stuff you see all around the place. Having Seamus involved allowed us to do that”.

The initial first phase construction of the dwelling takes the simple vernacular rectilinear form (fig 19), set up on a north-south axis, with the addition of a striking geometric cylindrical form (fig 19a, 19b) reminiscent of early modernist motifs that houses the circulation stairwell. This projecting stairwell also serves to denote the main entrance to the house, and provides shelter at the entrance from the prevailing southwesterly winds common to the area. The employment of this form immediately sets the house apart as one that employs a very definite architectural approach.

At ground floor you enter the house at the centre of the plan, immediately into a double height space. *The initial intention of the architect was to enter into a free flowing single open plan space of kitchen, dining living, availing of east, south and west light plus the top light from roof lights over the double height space to the centre of the plan (fig 19c).

Utility, storage, wc and shower are partitioned from the main living space and grouped at the northern end of the plan acting as a buffer and insulator to the main living space. A series of folding doors within the main living space would allow for flexible use and arrangement. However, the client, brother to the architect, who is also a farmer as well as a builder, had expressed a desire to keep a ‘room’ separate within the main living space, “to enter into a more ‘familiar space’ after a days farming on the land, to relax in front of the fire”, is how the



Fig 19a
West facing elevation 1st phase
(Image courtesy Seamus Hanrahan)



Fig 19b
Projecting stairwell at entrance
(photo Colm Bradley)



Fig 19bc
Double height space
(Image courtesy Seamus Hanrahan)

architect recalls the instruction. Of course the introduction of the partition “compromises the free flowing nature of the plan, but I couldn’t convince the brother of the folding doors, and wasn’t going to fall out with him over it”. The space was to avail of natural light from three aspects, east, south and west, whereas the result was a central space of kitchen and dining availing of eastern light, with the addition of top lighting via roof lights to its double height volume. The ‘southern room’ avails of south and west light.

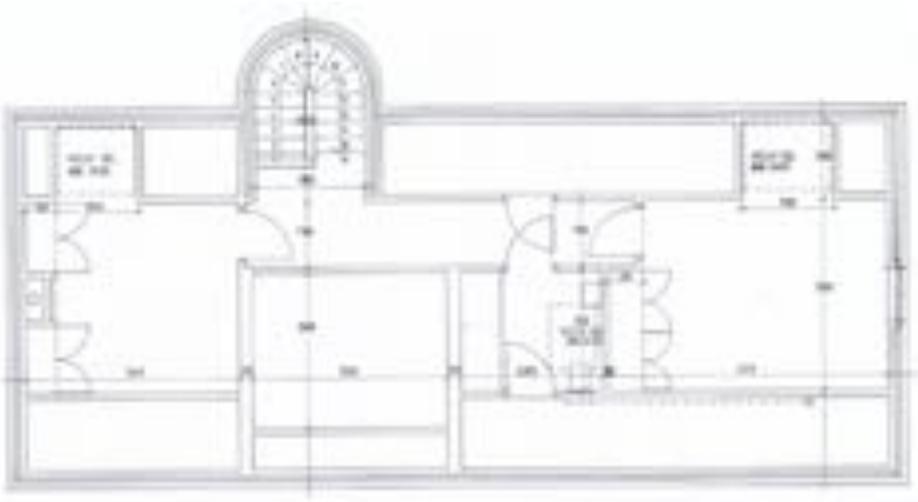


Fig 19
First Phase: First Floor Plan
 (Image courtesy Seamus Hanrahan)

Upstairs (fig 20) the accommodation is simply laid out, a link that over looks the floor below provides access to a bedroom at each gable, both bedrooms avail of top light via roof lights (a condition of the planners), with the northern bedroom availing of a small window to the gable. Storage space is provided in the left over space in the roof at the eaves, a bathroom situated on the northern edge of the void completes the layout. The 75 square metre two-

storey extension (fig 21, 21a, 21b) constructed in 2007 adds a strong contemporary design element in contrast to the more familiar form of the first phase of the dwelling.



*Fig 21 Second Phase: Ground Floor Plan
(Image courtesy Seamus Hanrahan)*



*Fig 21a, 21b,
(Photo's Colm Bradley)*

In the words of the architect the addition's form was derived to "clearly differentiate it from the first phase of construction". Connected to the centre of the main part of the house by a zinc and glass link this two storey flat roofed addition provides additional accommodation for a growing family. Ground floor sees the repositioning of the kitchen space and the addition of a children's play room, while upstairs (fig 22) accommodation consists of an additional bedroom, shower room / w.c. and master bedroom, the master bedroom to the south avails of elevated panoramic views across the landscape through openings to the south and east. At ground floor, the architect has managed to successfully provide two additional aspects of natural lighting to the east-facing kitchen, the glazed link allowing north and south light. The additions deliberate crank on plan maximises light penetration from the south.



*Fig 22 Second Phase: First Floor Plan
(Image courtesy Seamus Hanrahan)*

Externally the house is carefully detailed in its finishes, openings are simply formed and appropriately sized, verges are finished flush on gables (fig 23), zinc cladding to the link and roof are dutifully executed. A corresponding pressed metal trim to the cubic volume simple and functional. The house reads as a collective of forms cylindrical, triangular, cubic, all references to early modernist forms. Here they interact in an exposed landscape and viewed from a distance, still reference the Irish vernacular farm buildings that went before, a series of different scaled volumes clustered together (Fig 24).



Fig 23. Flush verge to gable, pressed metal trim to roof parapet (extension). (Photo Colm Bradley)



Fig 24. Viewed from a distance, the house reads as a series of different volumes clustered together. (Photo Courtesy Seamus Hanrahan)

The architect's sister-in-law gives some impressions of her experiences of the house, "even when I'm away visiting my parents in Cork, I always want to come back here for the night, I'm drawn to the house, I just feel relaxed and at ease when I walk through the door. And the effects of the house aren't confined to the

adults, 'all the local kids love coming over, they call it 'the mansion', they love running round the place up and down, and all over it". The last observation the most telling perhaps given that the house at 200 square metres area would be considered quite modest in size in comparison to the typical houses built during the same ten year period.

In the house he has designed for his brother and sister in law, architect Seamus Hanrahan has managed to successfully deliver through his architecture, a controlled and considered design approach that accommodates the natural modern day requirements of a growing family evolving over time, in doing so, maintaining the very essence of what a family house should be, a home for all.

Conclusion

The long established history of dispersed settlement throughout the rural landscape continues today in contemporary Ireland. As recent figures have shown, Irish people's relationship with the land remains undiminished. However, the strength and heritage of our rural built environment is in danger of being eroded through mediocrity, and a lack of respect and understanding for context and tradition, as displayed in the majority of buildings that inhabit the landscape. Such responses only serve to display the consequences of a failure to engage architecture as a medium for the upkeep of a rural built heritage. The significance of which cannot be underestimated, "Houses and farm buildings lie at the very centre of Irish architecture and culture; they are as constant, and as typical, as the network of fields, mountains and lakes which surround them... On the one hand there is a vernacular lineage descended from medieval and celtic roots, and on the other, 'classical' houses related by plan and elevation to the principles of European Renaissance."

Therefore, and as the case studies go some way to demonstrating, a built environment that does adhere to the virtues of past traditions, that highlights the importance of simplicity, restraint, proportion, quality of materials and context, serves to inform of the important role architecture plays in maintaining a quality rural built environment. Not a built environment of sentiment but one of modern forward thinking architecture, respectful of the past while embracing lifestyle choice and technological advancements associated with a contemporary society.

The opportunity now exists to replenish, through the medium of architecture, the successful renewal of our rural built heritage. To re-establish a distinct component so associated with what we call the 'essence of rural Ireland'. An architecture that, in the words of Aldo Van Eyck is, 'by us for us'. Such sympathetic, sustainable, architectural solutions are not the preserve of a minority of society. People of all social backgrounds can experience the life enhancing benefits that a quality of design can deliver. It is only by arguing for a greater role for architects and architecture in the future constructions of our rural built environment, that we can begin to reinstate the essence of rural Ireland, and re-establish an essential part

*"For the House in the Country not just one thing should say,
As it speaks of the past with the look of today.
Like a stone in the wall marks the key of connection,
Like tradition and memory, convey subtle reflection"*²³.

23. Verse: *Untitled*,
by author.

Bibliography

F.H.A. Aalen, *Atlas of The Irish Rural Landscape* (Cork University Press 2011)

Simon Unwin, *Analysing Architecture* (The Cromwell Press, Wiltshire, UK .Third edition 2009)

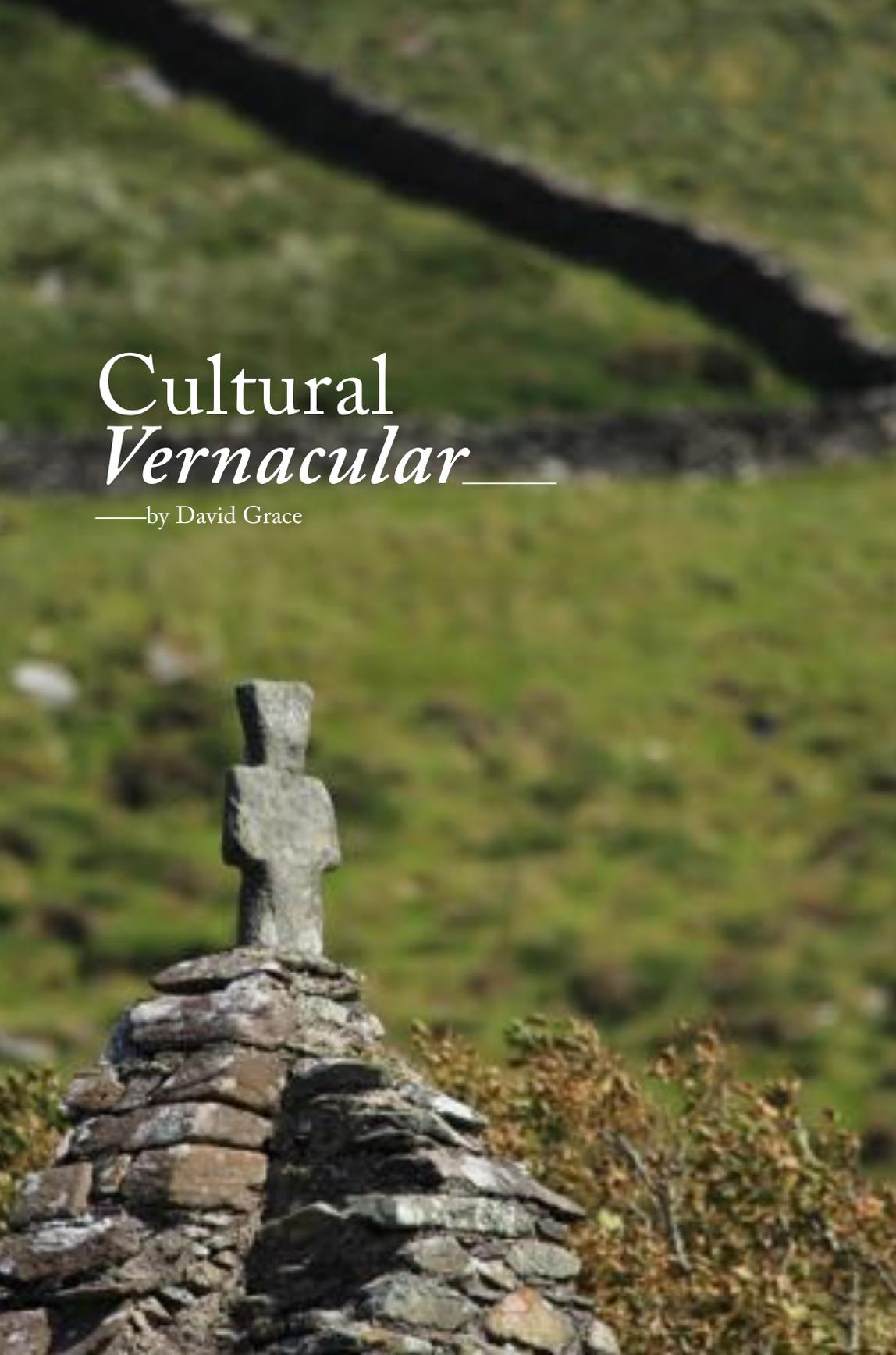
Planning analysis of Rural One Off Housing: Limerick County Council County Development Plan 2009.

Cork Rural Design Guide: Building a new house in the countryside. (Cork County Council 2003)

Laura Bowen & Nicki Matthews, *Reusing Farm Buildings: A Kildare Perspective* (Kildare County Council 2005)

J.B.Jackson, *A Sense of Place A Sense of Time*, (Yale University Press 1994)

Niall McCullough and Valerie Mulvin, *The Nature of Architecture In Ireland – A Lost Tradition* (Gandon) 1987

A photograph of a stone cross standing on a stone wall in a green valley. The cross is made of stacked stones and has a simple, rectangular shape. The wall is also made of stacked stones and runs across the foreground. The background is a lush green valley with a dark, rocky ridge in the distance. The text "Cultural Vernacular" is overlaid on the image in a white serif font. The word "Cultural" is in a standard serif font, and "Vernacular" is in a cursive script font. A horizontal line follows the end of "Vernacular".

Cultural *Vernacular*_____

—by David Grace

Cultural Vernacular

By David Grace

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This thesis is based on the idea of opportunities in modern life to reinvent the role of the architect in rural Ireland. Rather than looking at the vernacular as a fossil in the landscape it can be viewed as a process of building collectively. This process has traditionally operated without the need for the architect but a dialogue can begin in rural communities if the architect is willing to become part of the process. With the changing face of the social and cultural makeup of rural Ireland more and more people are reinventing how they inhabit the landscape, creating rich territory for the exchange of knowledge and the creation of unique and well designed spaces.

Chapter 1: The Inhabited Island

Ireland and its land.

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1.Deserted Village, Slievemore, Achill.

The island of Ireland is a rich and textured landscape fragmented into many counties which in turn contain a baffling number of towns, town lands and villages, not to mention the coastal island communities. Each one has developed slowly over time, evolving into a rich tapestry of folklore, creating a national identity rooted in the land. The island, first inhabited almost ten thousand years ago, has been witness to the slow evolution of that identity. Each successive generation has left behind its architectural DNA, radically transforming the landscape which was once eighty percent forest, creating a complex and compressed imprint of human habitation. Everywhere, remnants of the country's colourful political past and present are built into its surface, some ruins just visible, protruding above the surface of its patch-worked farmland and some dominating the surrounding landscape.

When analyzing the Irish landscape it becomes apparent that two conditions exist in tandem. The first is what we can call a "Rural Landscape" or what J.B. Jackson calls the "inhabited landscape", a landscape where traditional rural culture has shaped the land at a local level for generations. The second is the "Urban Landscape", a landscape which developed through the industrialization and modernization of Ireland. Both have political landscape elements but it is the urban which holds the centres of power and formulates national strategies and is given the task of implementing European Union laws and national development plans. Historically Ireland has always had a layering of generational landscape modifications, each one adapting to the other, creating an ever evolving language written in the landscape.

One of the most striking aspects of the contemporary Irish landscape is the relationship of the built environment to agricultural land and heritage. The expansion of urban centres over the past hundred years has knitted the surrounding rural villages and Landed Estates

into its fabric, creating pockets of underused green space. These spaces have the potential for new and exciting uses in the future and may help to create more intensively used recreational spaces within urban zones. The main centres of urban expansion in Ireland have been Dublin, Cork, Waterford, Limerick and Galway. The periphery of these newly expanded urban centres has the luxury of existing within close proximity to the diverse geophysical features of the island nation and the rich heritage of its “inhabited landscape”. This proximity has the ability to connect people with place and create a new awareness of the potential of such a condition. It is within this context that creative new approaches to how we inhabit space need to be developed.

The Road and habitation



The history of the island reveals a great deal about the makeup of the Irish psyche with regard to its land. Invasions, landlordism, famine and civil war have all played a part in how we view our position within the island. The nature of rural communities on the west coast developed as mainly self-sufficient entities within the landscape. 115 These settlements were organised around the rundale and clachan system. "A clachan (or baile or 'village') was a nucleated group of farmhouses, where land-holding was conducted communally, on a townland basis and often with considerable ties of kinship between the co-operating families"¹. This system of habitation flourished and, aided by the potato, was able to sustain a massive population growth "which expanded from three to eight and a half million people between 1700 and 1845"². It is through this complex system of land manipulation and human settlement that the west of Ireland has inherited its "inhabited landscape". Although the mass movement of people to the west has its origins in war and invasion, the capacity of the Irish settlers to work the less fertile land of the west coast showed a "sophisticated response to specific ecological conditions"³. In effect, "they maximised the carrying capacity of a fragile environment in an expanding demographic regime"⁴.

This sophisticated approach to adapting land for habitation along with the limited horizontal expansion of an island nation has led to an extremely dense and layered road network. Although the early rundale settlements were clusters of buildings related more to the immediate farmland than the wider context, the networks evolved like capillaries connecting and servicing the needs of this new vernacular way of life. In 'Discovering the Vernacular Landscape' J.B. Jackson, the American writer describes the evolution of such road networks.

"It seems obvious that when there are restrictions on the use of the centripetal, national highway, or when it is not conveniently located, the rural traveller will devise another way of travelling to the village, and this will consist of paths and trails and primitive roads beaten by local traffic and closely adjusted to the topography and soil, changing when the roads become impassable or according to the

season. Thus there evolves what we might call a vernacular road system flexible, without overall plan, but definitely centripetal; a system which is isolated, usually without maintenance, and the bane of long-range travellers and of a government wanting to expedite military or commercial traffic. So it is only a matter of time before the local system is taken in hand and coordinated with the national network—usually to the distress of the small community involved”⁵

Traditionally in rural Ireland, until the car became the main means of transport, the road was a place of interaction and social importance. In the summer months Céili dances were held at crossroads throughout the country. These events would have been important social occasions for rural communities. Fragments of that traditional attitude towards the road have all but vanished. In a recent interview on Kerry radio Mícheál Ó Muircheartaigh, the iconic Gaelic Athletic Association radio commentator, spoke of life in Kerry as a child just before the car appeared on the roads around Dingle in the 1960s. His description of a romantic slower pace of life in rural Ireland, a place where people walked, cycled or travelled by horse or boat, a place where people had time to stop and talk, is a beautiful description of simple encounters which gave an essentially harsh life moments of fulfilment.

Mobility in Ireland has run parallel with its economic prosperity. The need to connect farm with market and people with town over time has led to a hierarchy of space; the land, being of economic importance, is placed at the top, the road links produce with buyer and the home exists on the in-between space of land and road. The road has become the established network for contemporary Ireland to develop one-off housing in the landscape creating patterns of ribbon development and urban sprawl which are beginning to blur the boundaries of town and country. What was once a place of social importance has become saturated with commuters leading disjointed lives between work and home, creating an almost inhospitable environment along its main routes for pedestrians and cyclists to use. These ancient boundaries of privately owned land which were once so

sacred in rural communities had become a sellable commodity which facilitated the housing explosions of the celtic tiger. Because of the existence of such a dense network of roads and privately owned land the road will continue to be a major factor in the future habitation of this small island nation.

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Although the property boom has slowed we have yet to see what the full impact of this type of development will be on the future generations. Some rural dwellers are happy to build houses on family land for their sons and daughters and some see it as a rite to do so, one positive outcome of this being that the families stay connected. The Irish need for ownership of land and home has become ingrained into our psyche over generations. The Land Commission set up 1923 in the new Free State established compulsory purchase of land from what was left of the Landed Gentry. It envisioned “A cohesive, classless society. Large holdings were deemed to be immoral, because they deprived too many local people of the opportunity to own their own land”⁶. The Celtic Tiger property boom has only reinforced the idea of ownership. With the availability of space and the Irish attitude to owning a house with a front and back garden it may take some creative shifts in cultural attitudes towards shared space to reduce the impact on what is left of our treasured cultural landscapes. A sense of place is beginning to be slowly eroded when we create a sub-rural existence. The carrying capacity of the land with regard to this type of development may well have been taken as far as it should go. It would be naive to think that future habitation of Ireland’s rural and coastal landscapes will stop. It is important to become aware of alternatives and shifting social attitudes to the habitation of rural Ireland.

The political web



To call the Irish landscape a political one is a starting point for defining it. The word “political” suggests a semblance of order and planning for the common good of all its people. Jackson suggests in ‘Discovering the Vernacular Landscape’ that “The most basic political element in any landscape is the boundary”⁷. The creation of boundaries is one of the first statements of identity we make when inhabiting a landscape. It helps to define who we are and what we are saying about the space in which we have settled. Through time, in Ireland, ideas of collective and singular habitation have evolved, been imported and shifted in cultural meaning causing boundaries to increase and overlap accordingly. These basic components reveal a deep and complex history of ownership and physical connection to the land. Field patterns across parts of the west coast created using dry stone walls “are among Europe’s most distinctive, intact and prized cultural landscapes”⁸. This enclosed system of agriculture and private ownership has helped to maintain the continuity and structure of Ireland’s landscape. 119

It is within this framework of private ownership and strong cultural ties to the land that we need to negotiate ways to find a balance for the future habitation of this island nation. An interview which was conducted late in 2011 for this thesis with Bernie Goggin and Sean Brosnan brought a local perspective to the political landscape of south west Kerry. Sean is a founding member of the Dingle Sustainable Development Group and has been a voice for the local community on planning issues for a number of years. Geologist Bernie Goggin was born and raised in Dingle and is the chairman of An Taisce in Kerry. They outlined the complex local attitudes towards development in Dingle. According to Bernie the complex make up of private land ownership throughout the Dingle peninsula has led to a widespread resistance to good planning laws because of the economic advantages to individual owners. The sale of sites and the re-zoning of land has

been very lucrative for all involved. The result is individual objects placed in the landscape with little or no consideration to design and the future management of a unique cultural landscape.

Sean Brosnan who has been involved in two design statements for Dingle town said that the majority of people want to see good planning laws being implemented. Like Bernie, he is aware that a small but influential minority can manipulate planning legislation. He was able to cite a planning case where, after the local area plan was drawn up by Kerry County Council stating Dingle should develop as a cohesive and compact town, a land owner applied to have a site two kilometres outside Dingle Town re-zoned. The land owner was successful in his application to have his site zoned as part of the town. The site, bordered by agricultural land which another land owner didn't want to re-zone, now sits ready for development under the same laws that control the town's urban development. He was very adamant that development should continue but it would have to be executed with good design and cohesion with local area planning. Unfortunately the allure of temporary economic gain for individuals has come at a cost, the further deterioration of one of Kerry's prized cultural landscapes.

The opportunity for radically reinventing how we view our relationship with the land and how we inhabit it needs to be addressed. To date Irish National Development Plans have tended to adopt a top down system of decision making, resulting in conflicting objectives and a greater Urban: Rural divide. In recent years small rural communities have shown that they have the ability to mobilize and challenge political decisions being made in Europe which affect their way of life, resulting in a greater sense of community than their urban counterparts. The fabric of these rural communities is an element which must be engaged at a personal level when trying to re-imagine the future implications of large scale decisions. Our landscape can no longer be viewed as a fragmented collection of individual plots

where developers and land owners manipulate the system to get rich quick. The structure of the Irish landscape as we have seen has been about individual small communities adapting to the unique local geographical conditions. Over generations intimate knowledge of its character has been passed down and it is at the local level that small and inventive strategies will begin to flourish. Recent development on the Beara peninsula of walking trails which have been established by local councils, local land owners and The National Trails Office have created a landscape without boundaries. Working with local farmers on an individual basis has provided a public amenity where one can flow freely through and around patterns of habitations which have existed for over six thousand years. Land owners maintain the trails which cross their land adapting a landscape without building permanent structures.

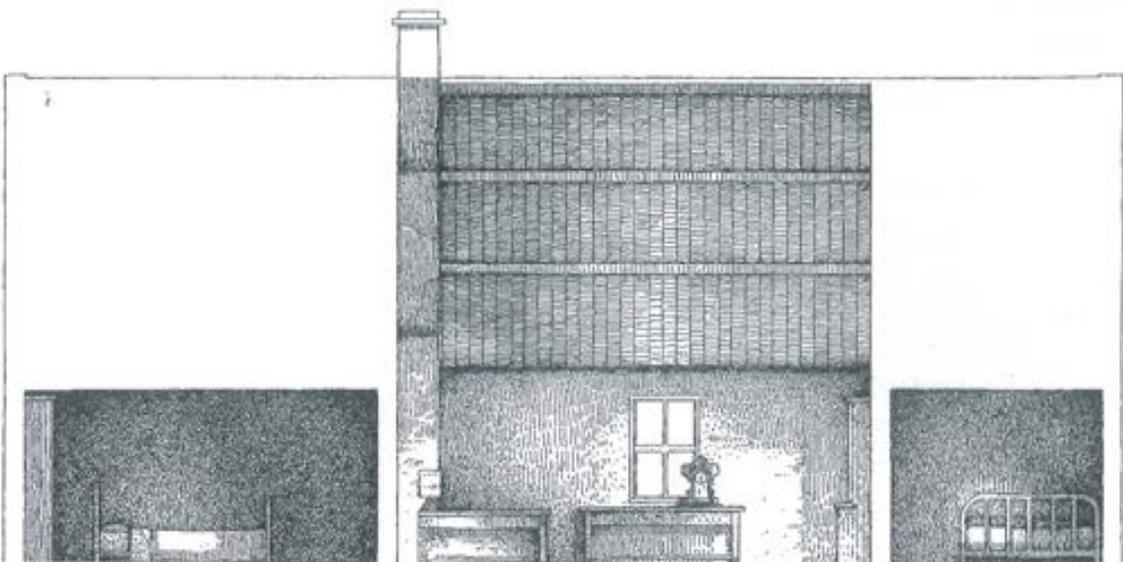
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Isolated pockets on the Beara peninsula

This simple idea, worked at a community level, has evolved isolated pockets of land and created rich territory for engagement with people and place, through the medium of walking. The intimate scale of the Irish landscape means we are never really overwhelmed by it, which allows us to engage with all aspects of its ruggedness and moods. The presence of human habitation is always close by, reassuring the wandering eye.

The current political landscape of Ireland is in a flux of monumental proportions. Statistics released in the media in March 2012 reported that nine people emigrate every hour in search of hope or running from what has become of life in Ireland. The economic crisis has created a wilderness for the individual in search of fulfilment “But the wilderness experience is always an interlude, a moment of new insights. It is time that it came to an end, time that we undertook the reconstruction of our desolate cities and the reinvigoration of our rural communities”⁹



4. Longitudinal section of Peter Flanagan's House

The word vernacular has different connotations and different meanings for different people depending on fields of study and practice. In architectural terms the vernacular usually refers to a house type related to ethnic or geographical origins. In Ireland the vernacular is associated with the house of the rural dweller. A one story cottage with a rectangular plan, small window openings with a thatched roof, which was quickly modernized when money and new materials became available. The rooms in plan usually open into the other without a passage way or hall. Regional variations exist from east to west and north to south suggesting a crossover of ideas and a reinterpretation of construction techniques. The architectural history of the Irish vernacular cottage has been well documented but, as written by Jackson;

“the emphasis has been on the old, the pretechnological structure. From the architectural point of view that is probably more stimulating to the student. What makes me uneasy is the word vernacular now covers many lively aspects of popular culture, especially contemporary popular culture, and by concentrating almost exclusively on the anatomical aspects of old buildings, the field of vernacular architecture studies runs the risk of being antiquarian.”¹⁰

The interest here, for the moment, lies in the process of the people and community involved in the construction and creation of rural architecture, a modern vernacular. If the vernacular is viewed not as an architectural fossil but as a set of “traditional relationships- between the house and the family, the house and the community, the house and the place of work”¹¹ we begin to see that the vernacular is being constructed and re-inhabited in contemporary Ireland. Within this frame work of community and construction the role of the architect as a professional appears to be nonexistent. Is there a role for the architect to play in rural Ireland? A place where for generations the construction of the home, shed, wall and agricultural structures has for centuries developed without the need for a professional.

The description of the vernacular process of construction described by Henry Glassie reaches the core of what it means to create architec-

ture within a vernacular framework. He points out the conflicts which can arise when “the designer, the builder and the user are different people”¹². When there are three different people involved there needs to be some social organisation and “social organisations are apt to shape in conformity with the political orders prevalent in society”¹³. The idea of space as a commodity suggests that style and taste can be dictated to a market which is incapable of constructing and making goods for themselves, underlining fundamental cultural differences between designer and user. Glassie points out that “difference coincides easily with unity when designers, builders and users connect in culture. The idea of cultural unity is the point behind the scholarly creation of the ideal of the builder-occupant. What makes vernacular architecture is not an occupant who builds but a cultural congruity among design, construction and use.”¹⁴ If the architect can somehow become engrained in a process that is “simultaneously hierarchical and collaborative”¹⁵, in such a way that he is at different times both a leader and a follower, the idea of a vernacular tradition is maintained and can flourish with the input of knowledge from all parties creating modern ideology rooted in tradition.

Now more than ever the role of the architect is being questioned. With global shifts in jobs and construction he finds himself fulfilling his historical role as serving the rich and political elite. Jeremy Till eloquently summed up the connection between the profession of architecture and power; “Since money, materials, land and authority to act were necessary, and since the ruling power was the only force capable of furnishing him with these means, the architect by definition had to identify himself with it”¹⁶. The opportunity for architects to begin to reinvent their role and creatively tap into sources historically seen as outside the scope of the profession could be fertile ground for creative freedom and expression. With an understanding of the cultural landscape and vernacular traditions of an island nation such as Ireland the architect could become locked into dialogue at a local level and begin to construct new and exciting opportunities. The nature of the built idea, no matter how small, has the power to

transcend what is in vogue and connect with people who can see the value in committing to a more collaborative and ethical treatment of the inhabited landscape.

Chapter 2: 6000 years in the making

Dingle the inhabited landscape, micro Ireland.

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One of the most striking landscape features about the Dingle peninsula is its mountainous character. A collection of mountains called The Brandon Group run along the northern extent of the peninsula creating sea cliffs which run along the coast to Brandon Creek. The creek is thought to be the departure point of St Brendan The Navigator's voyage across the Atlantic. To the south the Slieve Mish mountain range stretches from just outside Tralee town and begins to reduce in size just after the town of Annascaul, half way between Tralee and Dingle town. Between these mountain ranges are smaller undulating hills and farm land which have been inhabited for over six thousand years. Getting to Dingle Town travelling west from Tralee you can straddle a road which has been etched out along the Slieve Mish, passing a handful of small towns with their own unique character and histories, or cross the Conor pass, Ireland's highest mountain pass. In the end all roads lead to Dingle town.

What both routes have in abundance are views, which are not only picturesque, they also reveal how the land has been worked for generations. Rising and falling through the land allows us to gain a reading of the overall and the intimate. At any high point along the journey we can begin to make a connection to generations of habitation. Field patterns, imprints on the uplands beyond present limit of cultivation reveal a time when Ireland's population had reached eight million and the capacity of the land to provide food was pushed to its limit. A mountain top Cairn at Dromavally speaks of the high kings of Ireland and sacred routes whose meanings have been lost in time. The character of this cultural landscape is a reflection of the island as a whole.

For centuries people have been drawn to the rugged shores of the West of Ireland, finding deep inspiration in its people and beauty. The magnetic draw of the west coast continues today and the flow of people fluctuates with global shifts in social, economic and political attitudes. While conducting research interviews for this dissertation it came to light that German newspapers, during the Cold War, may have claimed that West Cork would be the safest place to survive

nuclear fallout. It is well known that there was an influx of Europeans buying property in West Cork in the seventies. On April twenty-third 2011 an article published in the Irish Times reported the death of Col Bachman in west Cork “ranked as one of the most controversial figures in Switzerland, having set up a so-called ‘secret army’ in the 1970s to counter any Soviet-bloc invasion”¹⁷. Bachman had purchased Liss Ard estate near Skibbereen in the 1970s “reportedly with the intention that it should be used as a base of a Swiss government in exile in the event that the country was invaded by the Soviet bloc”¹⁸. At the same time the then Taoiseach of Ireland Charles Haughey purchased Inishvickillaun the most westerly of the Blasket Islands located off the Dingle Peninsula County Kerry. Being the sole owner and inhabitant of the island he constructed, with the help of the Irish Army, a totally self sufficient house on the Island and introduced a herd of Red Deer which still exist on the island today. No claim has ever been made that it was built as a reaction to the hysteria surrounding the Cold War.

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6. Charles Haughey's house, Inishvickillaun, Blasket Islands, Kerry

The influx of people to the west coast continues to this day and has begun to change the architectural makeup and social structure of rural Ireland. These areas are no longer seen as being isolated on the fringes of northern Europe and people seek out regions with specific intentions and ideas about how they want to inhabit these unique landscapes. These cultural shifts and attitudes to how the individual envisions their life are evident through the western seaboard. The artist, potter, musician, organic farmer and surfer all seek out that balance of life and an expression of individuality which manifests itself through the architecture of the dwelling. Ireland is not alone in experiencing cultural shifts and attitudes towards more sustainable lifestyles.

At the same time in Ireland the culture of the second home saw an explosion of holiday homes in the west of Ireland from the early 90s resulting in a myriad of architectural tastes. The homes predominantly located in the country's most scenic locations has resulted in a seasonal intensification of temporary populations resulting in a dramatic shift in how we use and relate to the landscape. Within this mix of cultural evolutions are the descendants of the rural dwellers who have lived and worked the land for generations. The concept of the small holding and private land appears to be shifting to an idea of a shared landscape which appeals to everyone who wishes to experience it through different mediums or put down roots.

Cultural Vernacular. the house of Iarfhlaith Ó Murchú

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Iarfhlaith Ó Murchú is one person who has decided to make the Dingle peninsula his home. He represents this cultural pattern of moving to the west coast and reinventing one's life. Having spent his childhood growing up in the suburbs of Dublin he made a decision to relocate to Baile Dháith (Ballydavid) seven years ago. The area has had a family connection for generations and the house which he had decided to inhabit was built by his great grandfather around 1874. The house was part a clachan which over time has begun to disintegrate. Plots of land around the house were sold and a few holiday homes have been built set back from the road. Iarfhlaith's uncle still farms the land which has been passed down from generation to generation and he provided Iarfhlaith with a half an acre of land to produce his own food and keep some livestock if needed.

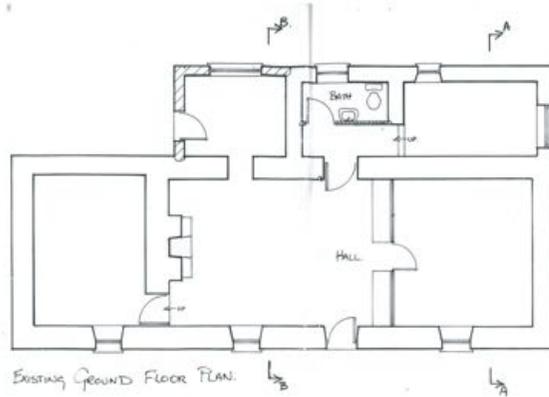
Initially Iarfhlaith sought out the services of an architect to help with modifying the house. The architect provided a comprehensive schedule of works for the renovation of the house. The plan for the house proposed a collection of mono functional rooms surrounding a living dining space. The detailing and imagined habitation of the house was a standard approach to the renovation of a traditional cottage ready to be used as a holiday home. Over the space of half a year it became evident that the proposed renovations were too costly to carry out and the standard idea of how a house should be inhabited was not the individual expression which suited Iarfhlaith's life. Iarfhlaith decided to undertake the role of architect and builder himself, unknowingly embarking on a tradition which has existed in rural Ireland for generations.

The roof of the house needed to be replaced first and long discussions on how it would be carried out took place between Iarfhlaith and his brother Darach. For ease of construction they used corrugated steel roofing sheets which were purchased about ten miles from the house. The construction brought the whole family together for a week during the summer and everyone worked together taking on whatever role was required. Once the roof was on and insulated with sheep's wool, Iarfhlaith moved into the house and carried on the

internal work over the weeks and months before winter. Using the internet, Iarfhlaith researched different construction techniques which were sustainable and environmentally friendly. Stone was carried from the sea cliff, which is at the edge of his uncle's land, and used for flooring throughout the ground floor of the house. A mix of hemp and lime was used to bed the flooring and also to fill a stud partition wall. 133



8. Iarfhlaith with the house in the background on the left, August 1988,



The function of rooms within the house as Iarfhlaith describes them shift with the seasons and as the need arises. Three rooms make up the main structure of the original house and at the back of this another three rooms were added at a later stage, one being a modern bathroom. The central room of the house, which opens on to the road, contains the fire. This room sometimes becomes the kitchen and is the centre for life within the house. The other two rooms fluctuate from being guest bedrooms to storage space of this season's potato crop to a lounge. This fluctuation of use is what Jackson would call a vernacular concept of space; "a space has no inherent identity, it is simply defined by the way it is used."²⁰ The house has become the frame for Iarfhlaith's life and that life has expressed vernacular traditions going back generations. Links to these traditions are expressed through his dependence on the environment and on the land shared with his uncle to produce food, the openness of the house to the road and the informality of the welcome when you enter the house. This fits with Jackson's description of life in the vernacular dwelling; "Its hospitality, though no less generous and welcoming, is informal and unpremeditated: no special rooms, no special hours, no special china or special cooking area called for, and the guests who appear, often uninvited, are not there for negotiating alliances or soliciting favours: they come to be included in the daily routine of the family"²¹.

Iarfhlaith's decision to reinvent his life in Baile Dháith and the way he inhabits the landscape is an example of a modern cultural vernacular. Cultural because it represents contemporary changes in lifestyle choices and vernacular because the life which has taken shape

within the newly inhabited environment has developed strong vernacular characteristic. The opportunity for an architect to engage with this way of life is open and ready for discussion.

Sitting at Iarfhlaith's the table listening to the history of the house and the steep learning curve which was involved in the re-habitation of it reveals a wealth of options where an architect could have been involved in the process, more as an adviser and a builder than a person tied by legality and formality. Ideas such as construction techniques, materiality and the creation of beautiful spaces in and around the house could have all been explored at the beginning of the process. The outcome would have been a mutual exploration and adaptation of a rural cottage tailored to suit the life which would eventually be contained within. 135

The Architect: the built idea.



Dominic Stevens is an Irish architect who grew up in the suburbs of Dublin and has had a relationship with rural Ireland from childhood. Ten years after he graduated from university the lure of life in rural Ireland became a very feasible option in trying to avoid a lifetime of debt being tied to a mortgage in the suburbs of Dublin. His idea was to build a home in Cloone, County Leitrim, which would enable him to sustain a life of his own creation. The process which evolved from this decision resulted in more than just the building of a house. His engagement with the people of this rural community and the landscape began to shape his thinking on the vernacular which he views as “a way of being, a *modus operandi*”²². Through the building process he was able to form bonds with his neighbours, who were more than willing to help in whatever way they could, resulting in a better sense of community and connection to place. He discovered a world where people had always built their homes as a community and collected examples which he published in his book ‘Rural’, and stated that “I suppose we wanted to prove that the vernacular tradition is alive and well and down a breen near you, that it is not a style that you can make a pastiche of, that it is a robust, pragmatic tradition.”²³

The tradition of building your own house is a seed which Stevens has begun to regenerate within the landscape of rural Leitrim. His role as an architect in this environment shows that with a creative and ethical approach a life can be created for the profession within rural communities. At the same time he is in a position to understand and voice the realities which are changing the face of rural Ireland. He outlines the urban perspective on rural housing which over the years has been critical of its development. This opinion has been voiced in the media and the opinion is that the housing has been “‘ugly’, tasteless’, ‘badly sited’, ‘unsustainable’ and that there are altogether too many of them- a ‘bungalow blitz’”²⁴. He states that it is economics, rather than rural traditions, which is responsible for the blitz - “no wonder the resulting houses aren’t pretty”²⁵.

The presence of an architect such as Stevens in Cloone has begun to impact a wider community. He has just launched a website called

irishvernacular.com. On this website you can download information and drawings for a self built house which he has constructed for twenty five thousand euro near Cloone. This idea has the potential to grow and evolve, if people are willing to adapt it to suit their individual needs rather than simply recreating it in the landscape.

Conclusion: Imprints, cultural and physical.

As we have seen, the Irish landscape is a rich and complex network of man-made interventions. The basic human need to create a dwelling to protect us from the elements has left its imprint on the land. Each generation has made its own unique architectural statements expressing the values and ideals of the time. The choice is there for an architect to become involved with small rural communities but it is only a decision which can be made on an individual basis. The reinvention of the architect's role in this context has the potential to create unique spaces which could enhance the life of those communities. The architect would have to be adaptable, turning his hand to different requirements as the need arose. The knowledge that would be gained by working closely with a community and materials would be invaluable. As Dominic Stevens states "For me as an architect I for the first time felt myself inside the knowledge of building, how a building is constructed became more instinctive, less a learned discipline."²⁶ The knowledge which the architect holds has for far too long been viewed as a commodity. With a huge reduction in opportunities to build and find work the reinvention of the role played by the architect in society is necessary. The economic potential of such a venture would not be as rewarding as chasing the global shifts in prosperity and working under governments with questionable ethical values. The reward would be in becoming ingrained in a community and sharing knowledge, thereby guiding and enhancing its future evolution and protecting its habitat for future generations.

Footnotes.

1. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),86.
2. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),86.
3. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),89.
4. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),89.
5. J.B. Jackson, Discovering the Vernacular Landscape(New Haven, Yale University Press,1984),24.
6. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),104.
7. J.B. Jackson, Discovering the Vernacular Landscape(New Haven, Yale University Press,1984),13.
8. F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition(Cork, Cork University Press,2011),200.
9. J.B. Jackson, A Sense of Time a Sense of Place(New Haven, Yale University Press,1994),91.
10. J.B. Jackson, A Sense of Time a Sense of Place(New Haven, Yale University Press,1994),64.
11. J.B. Jackson, A Sense of Time a Sense of Place(New Haven, Yale University Press,1994),64.
12. Henry Glassie, Vernacular Architecture(Philadelphia, Indiana University Press,2000),46.
13. Henry Glassie, Vernacular Architecture(Philadelphia, Indiana University Press,2000),46.
14. Henry Glassie, Vernacular Architecture(Philadelphia, Indiana University Press,2000),46.
15. Henry Glassie, Vernacular Architecture(Philadelphia, Indiana University Press,2000),46.
16. Peter Blundell Jones, Doina Petrescu, Jeremy Till , Architecture and Participation(Philadelphia, Indiana University Press,2000),46.
17. <http://www.independent.ie/national-news/west-cork-bids-farewell-to-the-cold-war-swiss-spy-who-set-up-a-secret-army-2627892.html>
18. <http://www.independent.ie/national-news/west-cork-bids-farewell-to-the-cold-war-swiss-spy-who-set-up-a-secret-army-2627892.html>
19. <http://www.independent.ie/national-news/west-cork-bids-farewell-to-the-cold-war-swiss-spy-who-set-up-a-secret-army-2627892.html>
20. J.B. Jackson, A Sense of Time a Sense of Place(New Haven, Yale University Press,1994),65.
21. J.B. Jackson, A Sense of Time a Sense of Place(New Haven, Yale University Press,1994),66.
22. Dominic Stevens, Rural(Leitrim, Mermaid Turbulence,2007),55.
23. Dominic Stevens, Rural(Leitrim, Mermaid Turbulence,2007),59.
24. Dominic Stevens, Rural(Leitrim, Mermaid Turbulence,2007),83.
25. Dominic Stevens, Rural(Leitrim, Mermaid Turbulence,2007),83.
25. Dominic Stevens, Rural(Leitrim, Mermaid Turbulence,2007),58.

Images.

All images were taken by the author unless otherwise stated.

2. Ernest Albert Waterlow, Galway Gossips, oil on canvas, 1887, The Tate Gallery, London.
3. Archaeological Survey of the Dingle Peninsula(Oidhreacht Chorca Dhuibhne,1986),13.
4. Longitudinal section of Peter Flanagan's House, Vernacular Architecture, Henry Glassie.
7. Iarfhlaith August 1988, from his family album
9. irishvernacular.com

Bibliography.

F.H.A. Aalen, Kevin Whelan, Matthew Stout, Atlas of the Irish Rural Landscape second edition, Cork, Cork University Press, 2011.

J.B. Jackson, Discovering the Vernacular Landscape, New Haven, Yale University Press, 1984.

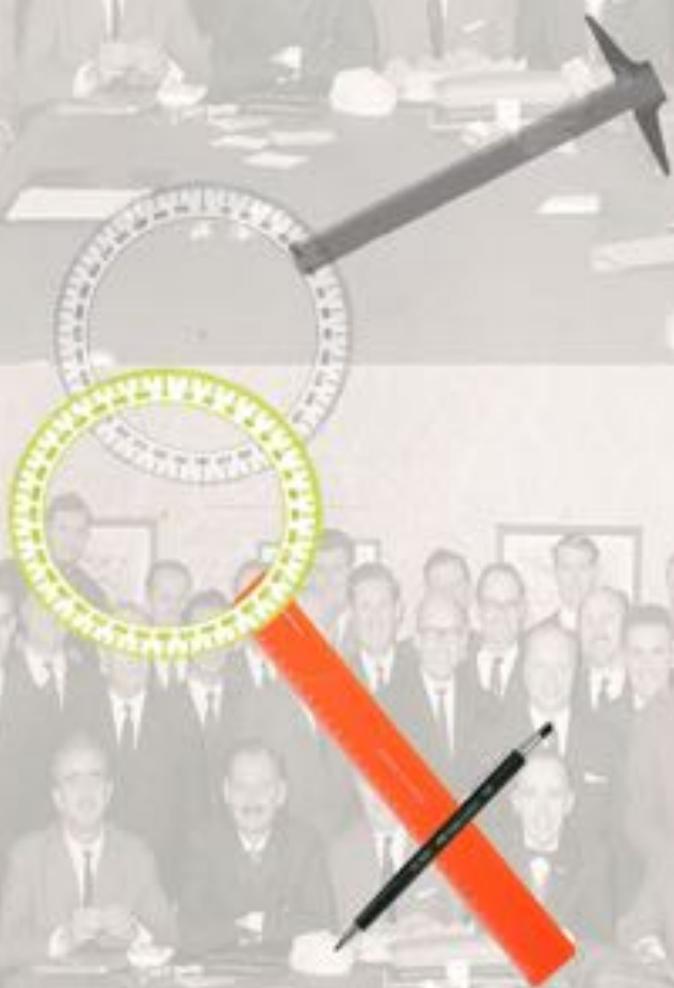
J.B. Jackson, A Sense of Time a Sense of Place, New Haven, Yale University Press, 1994.

Henry Glassie, Vernacular Architecture, Philadelphia, Indiana University Press, 2000.

Peter Blundell Jones, Doina Petrescu, Jeremy Till, Architecture and Participation, Philadelphia, Indiana University Press, 2000.

Dominic Stevens, Rural, Leitrim, Mermaid Turbulence, 2007.

Women in Architecture



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Introduction

The profession of architecture has always been perceived as a “male” profession, especially with its coalescence with the construction industry, the building site of men laying blocks seems to translate to the architecture firm of men designing buildings. The attributes required to be an architect would appear to be full of “masculine” virtues according to several psychologists, “ambitious, self-reliant, independent, assertive”, whereas women are attributed with virtues like “caring, nurturing and sensitive” (more suitable to the dominant female professions like nursing, school teachers and child care workers). If this really was the case you would expect that no woman would ever be employed in an architect’s office let alone make it to prominence. And yet there are a few women who have made it into the history books for achievements of architectural merit. If women really do possess the capabilities to succeed in the field of architecture why is the ratio of female employment in comparison to male employment so exaggerated?

Chapter One: Female Employment

To set this in a larger context of female employment, opportunities for women in Ireland and Europe have been steadily increasing from 1999 to 2009 and have slowly been gaining on male figures. Based on figures from a report from the Central Statistics Office in 2010 the rate of employment for women in Ireland in 1999 was at 51.8% (male employment was at 74.2%) while in Europe it was at 53% (men were at 70.7%). In 2003 Ireland took a slight lead on Europe where the figures rose to 55.5% for women (and 74.9% for men), while figures in Europe increased to 55% (70.4% for men). Ireland then maintained this lead up to 2008 where female employment rose to 60.4% (75.7% for men) and Europe remained at 59.1% (men were at 72.8% employment). In 2009 however the female employment rate of 57.8% fell behind that of Europe which was at 58.6%. In specific European countries the Stockholm Council set an EU employment target of 57% for women aged between 15 and 64 by 2005, while the Lisbon Council, back in 2000, set an EU target of 60% by 2010.

Employment rates for women over the age of 55 in Ireland in 1999 was about 26%, while male employment was at a significantly higher percentage of 62. While employment figures for men over 55 have remained over 60%, employment for women over 55 has risen to 42% in 2009 but still trails male figures considerably. When we look at the area of construction women are almost left completely behind. Male employment in construction is at 19.2%, only significant when you compare it to female figures of 1.4%. In the EU male employment is at 13.8% and female employment is at 1.7%.

From census figures showing hours worked by women and men we can see that in general women work less hours than men. In 2004 women worked an average of 31.9 hours a week, which fell to 30.8 hours in 2009. For men, the reduction was from 41.3 hours a week in 2004 to 39.5 in 2009¹. According to the Central Statistics Office, women work less hours and retire earlier. It could be that women never remain in employment long enough in architecture to ever make it to the professional heights reached by more

by more of their male counterparts.

When we focus on the percentage of women working in professions in comparison to architecture we can see huge differences. Women pharmacists increased from 30% in 1985 to 49.3% in 2009. The percentage of female chemists increased from 11% in 1985 to 30% in 2009. In 2008, women accounted for 32.4% of all lawyers, 32.2% of all physicians and surgeons, and 68.8% of all psychologists², but the number of women in the profession of architecture has always remained significantly lower. (In the UK at present 17% of the architectural profession are women, while the number of female architects in 1999 was at a paltry 8%). Although the number of women in practice has remained at a constant low, the number of women in architecture schools is increasing. According to RIBA figures the percentage of women entering architectural studies increased from 27% in 1990 to 38% in 2002/3. This increase in the number of women entering university studies is reflected across most disciplines, increasing numbers of women are studying medicine, law, veterinary etc. The number of students at a University level in these fields seems to translate into female employment, all but architecture

Chapter Two: Role of Gender

One possible explanation for this is the playing out of gender roles in today's society. A role generated by years of social conditioning. Generations of families have developed so that the young girl is given a doll to play with, while the young boy is given a toy car to play with. Even at an early age a role in society is already being decided for them. The doll to the young girl in some ways symbolises the pre-determined gender role of "caring, nurturing", the role of the housewife, of the teacher, of the nurse. The mechanical car, on the other hand, for the boy symbolises the more dominant male roles of mechanic, engineer, "problem-solver". These break-downs in gender roles also transcends somewhat into education system. (Possibly less so as the education system progresses) But certainly by those generations in the architecture firms now. The subjects offered in all male schools compared to all female schools differed significantly in Ireland. Girls are encouraged to take subjects like home economics, biology and art, whereas boys are encouraged to take subjects like physics, woodwork or honours maths. From my own personal experience of the Irish education system I was never destined for a career in architecture from the outset. Coming from an all female school in a more decidedly rural part of Ireland, I was the only girl out of the year of a hundred that expressed a serious interest in architecture (the career guidance counsellor at my school tried to talk me out of doing it and suggested I look at a course in nursing at the National University of Ireland Galway) I would imagine this lack of interest is partially down to the subjects offered at my school. Subjects core to the study of architecture like technical drawing and construction studies were not taught at my school. (They were, however, taught at the all boy's school in my town). This experience seems to be less common as schools around Ireland are slowly becoming rejuvenated, and mixed schools are now lessening the social divide between boys and girls. The secondary school I attended would more than likely be regarded as relatively old fashioned, but it is more likely closer to the education system experienced by women in architectural practices now.

The roles of each gender is played out by the media through

through magazines, television, and film. Possibly the strongest female image, and one which the vast majority of women strive for is the image of the nurturing mother. For generations women have felt the need to fulfil their femininity through motherhood. It is at the base of almost all feminist reading, the idea of “anatomy is destiny” and seems to translate into female employment figures, architecture seems to be no exception.

A lot of women seem to leave their place of work after having their first child. The most common choice among women seems to be to their role as a mother first and career woman second. From research carried out by the University of the West of England, female architects who answered an online survey stated there was a lack of returner training for those women who had taken a leave of absence and didn't feel they were taken seriously in their practice as a designer once they started a family. One woman from the survey stated that “I was offered an associate position within a year, but when I fell pregnant this was forgotten.” Another claimed that she was “forced to downgrade her position following childbirth even though she had made effective childcare arrangements.”³ It seems women who try and juggle both career and family life struggle because of the long working hours promoted in architectural practices; long working days and working weekends make it hard for women to find time to raise a family. The working week in most architectural firms seems to exceed the EU Working Hours' Directive of 48 hours maximum.

Chapter Three: Social Identity Theory and Professional Aspirations of Women

Another series of research that could go some way to explaining the lack of women in the male dominated profession of architecture is the social identity theory. Social Identity theory is the theory that individuals can break down their social world in terms of two types of groups, in-group and out-group. The “in-group” is a group is a group that the individual feels they belong to, and an out-group is a group that the individual does not feel like they belong to. This sets up all kinds of positive relationships between in-group members and negative attitudes towards out-group members. Some researchers apply this in-group/ out-group dynamic to the dynamic of men and women. Men who see themselves in-group with other men and view women as out-group, and so have derogatory attitude towards women and a positive attitude towards men. There has also been some research done into the dynamics of in-group and out-group when the self-esteem of a group is “threatened”. The respondents of a survey reacted negatively to out-group members when their self-esteem was threatened and reacted favourably to ingroup members. This may prove to be a difficult social situation for those women who find themselves having a disagreement in a male oriented architecture office or on a building site.⁴

Another psychological survey done that might explain why female architects never make it to prominence in a male dominated surrounding is the research done on “The Psychology of aspirations to top management”. It explains the glass ceiling affect brought up in the survey done by the University of the West of England. The glass ceiling is the invisible barrier that seems to prevent women from advancing into the top ranks of management. “As a result of gender role socialization processes, men aspire to enter male dominated occupations seen as calling for “masculine”/agentic personal qualities whereas women aspire to enter feminine occupations seen as a calling for “feminine”/communal personal qualities.” According to Janice W. Lee because of the difference in status of men and women in western societies, occupations seen as calling for masculine qualities are higher paying and more prestigious than those seen as calling for feminine qualities.

5. Janice W. Lee, *Psychology of Gender Identity*, (New York: Nova Science Publishers, 2005), 55-58

Previous research into job aspirations of men and women have shown that men aspire to male dominated occupations and women, to a lesser extent, aspire to female-dominated occupations. This has somewhat changed in recent years where women job aspirations have become more similar to those of men. In the survey, men and women who described themselves as possessing more masculine characteristics had higher aspirations to top management.⁵

6. American Psychological Association, *When the Boss is a Woman*, <http://www.apa.org/research/action/boss.aspx>

When it comes to the different types of managerial styles of men and women there does seem to be a difference in leadership qualities. Although male and female managers perform differently under different gender biases there seems to be a general consensus that in general male managers run with a more “command and control” style of management, are more likely to criticise subordinates and be less hands on. Women on the other hand have a more caring and democratic managing style and are more likely to be, “serving as role models, helping employees develop their skills, and motivating them to be dedicated and creative” based on research done by the American Psychological Association.⁶ This type of leadership style could only work to the advantage of architectural practices, cultivating creativity in younger employees and encouraging a communal atmosphere.

Chapter Four: What women have achieved so far.

Women have not gone entirely unnoticed in the world of architecture, and are not entirely without achievement although still remain in the shadow to some degree by the achievements of men in the same field.

**GIRL ARCHITECTS
ORGANIZE A FIRM**

First of Its Kind, It's Expected
to Show That Women Need
Only Opportunity

TO BE REAL HOME BUILDERS

Houses They Design Will Have
Plenty of Closets, Few Dust Gath-
erers, and Lots of Comforts.

Enthusiasm for the rights of women
has led two young feminists in New
York to establish the first firm of its
kind in existence—a firm of women ar-
chitects. Miss Anna Pendleton Schenck
and Miss Marcia Mead, earnestly believ-

Possibly the most interesting achievement in the history of women in architecture is the opening of the women owned practice of Schenck and Mead in 1914 in New York city, a mere 4 years earlier, 50% of architecture programs in the U.S were denying women entry. The two female partners had very strong feelings on feminism and were insistent on making it in the male dominated world of architecture. In an article in the New York Times in 1914 they stated "We have been in business only a week, and we already have two orders. Other women architects, practicing independently, have

done fairly well; we are going to do very well". They also explain that they are the only women only firm and that they believed they were setting an example for others to follow by achieving this. "We feel that the movement for women has gone beyond the point of argument; the thing women must have now is opportunity to try themselves".⁷ Schenck and Mead like other female architects tended to focus on designs based around the home and on communal dwellings. In 1915 the duo won first in a competition held by the city club in Chicago. The competition allowed participants to design plans for a neighbourhood centre in any location in any city.



Another interesting woman from the history books is Anna Keichline. At the age of fourteen she won her first design competition for a handmade oak table and walnut chest. She graduated from Cornell University's architectural program in 1911. She was most famous for her work as an industrial designer and the year after she graduated she filed her first patent for a new type of combined sink and washtub. Keichline patented a total of seven inventions one of them for a portable partition design, a fold-away bed for apartments, and an economical form of kitchen construction. Her most

8. Sarah Allaback, *The First American Women Architects*, (Illinois: University of Illinois Press, 2008) , 119

significant invention was the k-brick. The k-brick was a hollow fireproof clay brick which could be filled with insulation or soundproofing material. "According to the MIT school of engineering Web site the k-brick led to the development of today's concrete block." Like Schenck and Mead, Keichline had strong feminist views and was an active participant in social causes of suffrage and low-income housing.⁸



In Europe, Eileen Gray was also noted for her industrial design work possibly more so than her architectural work. In the 1910's and 20's she was renowned lacquered furniture designs and interiors. She began a six year collaboration with architect Jean Badovici in 1926. Of the forty-five architectural projects recorded in her archive, only nine of her buildings and interior projects were realised (four of which were attributed to Badovici). Le Corbusier was a very fond admirer of Gray's work and even displayed her proposal for a Vacation and Leisure Center (1936-37) alongside the work of his fellow delegates *Congres Internationaux d'Architecture Moderne* in his *Pavilion des Temps Nouveaux* in the *Exposition Internationale "Art et Technique"* of 1937⁹. Because of her naturally shy nature, and possibly to the fact that she was a woman she never made it to any critical esteem. Gray promoted equality when it came to gender, more so than women. In a letter written to Sheila de Bretteville, Gray states about the 1973, Women's building in L.A " I quite agree up to now women had no legal recognition but I am sorry that the building in L.A is called the women's building. For what reason? It seems to mean that women are an inferior species. Otherwise, why is this building not for everyone? Surely criticism must only be based on merit, and merit implies knowledge: the perception of new angles, perhaps, but not emphasizing the difference between individuals."¹⁰



9. Caroline Constant, *Eileen Gray*, (Michigan: Phaidon, 2000), 5.



10. Peter Adam, *Eileen Gray: architect/designer* (Michigan: H.N. Abrams, 1987), 373.

11. Aaron Betsky, Zaha Hadid: The complete buildings and projects, (New York: Rizzoli, 1998)



To find modern day counterparts, it is possible to consider architects like Zaha Hadid and Kazuyo Sejima. Zaha Hadid was born in Baghdad in 1950. She attended several schools in Switzerland and England before choosing her academic career in mathematics in the American University in Beirut. She then pursued a career in architecture at the AA in London in 1972 where she graduated with a Diploma prize in 1977. She then joined the Office of Metropolitan Architecture originally set up by Rem Koolhaas and ELia Zenghelis, her former professors. Within two years of graduating Hadid opened up her practice in London, whilst teaching at the AA.¹¹ Although her work



has over the years has gained much critical acclaim, it has attracted some criticism for its impracticality. Her first ever built project was a fire station at the production complex of the vitra office furniture group at Wil-am-Rhein on the German-Swiss border. The project was “a formal success but not a functional one”. The fire service moved out and the building was converted into a chair museum”. Despite

12. Peter Fisk, Creative Genius, (London: John Wiley and sons, 2011), 260

these criticisms she became the first female architect in 2004 to win the Pritzker Architecture Prize. Zaha herself is known (or perceived to be) quite aggressive and difficult. Like Eileen Gray she does not seem to have any strong interest in promoting women in architecture, only creative individuality and innovation.¹²

Chapter Five: Architecture Power Couples

Down through the years the most common career path for women in architecture has been one half of an architecture power couple. In the past there were couples like Charles and Ray Eames, Peter and Alison Smithson, Denise Scott Brown and Robert Venturi, nowadays this trend of male/female partners has continued with firms run by Anne Lacaton and Jean Philippe Vassal, Kazuyo Sejima and Ryue Nishizawa.

Charles and Ray Eames are regarded by some as “among the most, if not the most, important American designers of the twentieth century. Of particular note is their innovation in the field of industrial design, their bent plywood chair (1946), their fibreglass chair (1950), and their lounge chair (1956). But they also expressed talent in the fields of architecture and film.¹³ Charles and Ray seemed to have a fruitful and equal working relationship both with recognition in the design community in their own right. This may have been due to the fact that they never raised a family, which was a very unusual lifestyle for an American couple of those times. Although they had some joint projects they never worked entirely together, because of their different backgrounds and training. (Ray in the world of Art and Charles in the world of Architecture). There is some debate as to whether Ray was happy with the recognition she got on the projects they did collaborate on. Ray was an extremely shy character and did not have the same reputation in the field of design as Charles did in their Eames office. Most of their early collaborative work was attributed to Charles and later to the Eames office. “In many ways Ray suffered from being the partner of someone to whom his peers gave him the accolade of genius”. That being said, Charles always made an effort to make it known that they had equal contribution in their shared designs.¹⁴



13. Donald Albrecht, *The work of Charles and Ray Eames*, (Virginia: Harry N. Abrams, 2005), 23

14. Pat Kirkham, *Charles and Ray Eames: Designers of the Twentieth Century*, (Michigan: MIT Press, 1998), 377



One of the most vocal women on the status of women in an architectural partnership was Denise Scott Brown. Denise was married to two architects in her career, the first being Robert Scott Brown, whom she met at the University of Witwatersrand in South Africa, her second husband was Robert Venturi, whom she met while she was lecturing at the University of Pennsylvania. She was born in Zambia in 1931 and left South Africa and Witwatersrand in 1952 to study Architecture at the Architectural Association in London, where she graduated in 1955. Denise has received master's degrees in city planning and architecture from Pennsylvania, and has spent 5 years lecturing as part of the faculty there. She has also lectured in various other Universities like University of California, Berkeley, University of California, Los Angeles, Yale and Harvard.¹⁵ Denise married Robert Venturi in 1967 and moved with him to Pennsylvania to join his firm. Within the firm Denise is the person responsible for urban planning in design projects and for programming.

In 1975 she wrote an unpublished essay on "sexism and the star system in architecture". In this essay she describes her experiences as a woman and wife in the world of architecture. She begins by describing her expertise in the sphere of academia and lecturing. She then describes an encounter she had with an architect whose work she had been reviewing and claimed that in response to her review they replied; "We at the office think it was Bob writing, using her name". Following this she describes various times of misattribution of work between herself and her husband, and how Robert at the beginning of the book "Learning from Las Vegas" had to include a note at the beginning of the book asking that the work not be attributed to him alone, and included everyone in the firm who was part of the collaboration and the roles they played in creating the book. According to Denise his request was "almost totally ignored" and explains that "A body of theory and design in architecture apparently must be associated by architecture critics with an individual; the more emotional their criticism, the stronger is its focus on one person". Their office now provides an information sheet with their preferred forms of attribution – "the work to our firm, the writing to the person who signed the article or book". Denise then cites an example in the Japanese Journal Architecture and Urbanism ; "A review of his

15. Frederic Schwartz and Carolina Vaccaro, Venturi, Scott Brown and Associates, (Barcelona: Gustavo Gili, 1995), 265.

Crosstown Community suggests that Venturi is not so much affording his theory new development as giving the source of his architectural approach clear form in a fundamental attitude toward city planning Venturi's position in relation to city planning is the thing that enables him to develop his basic posture in relation to architecture. The Crosstown Community reveals a profound mood of affectionate emotion". This is then followed by Brown correcting the journalist "This would be fine except that the Crosstown Community was my work and was attributed as such in our book; I doubt whether, over a period of three years, Bob spent two afternoons on it." She also describes how one architectural critic claimed that her presence in her husband's firm had a negative influence on his architecture, and that he is "led astray" by his wife in "certain suburban practices". These experiences according to Denise cause her to fight, suffer doubt and confusion, and expend too much energy. She includes the reactions of her male colleagues on the subject of misattribution, "Why do you worry about these things? We know you're good. You know your real role in the office and in teaching. Isn't that enough?" She then says how she doubts if it would be enough for her male colleagues.

But her complaints make critics and cause lasting hostilities against both Denise and Robert, which she says they cannot afford. Both them have worked very closely together on both social theories since 1960 and building projects in architectural practice since 1967. Although her contributions haven't always been equal in every project, and Bob does remain the chief designer, she says that in some projects her ideas hardly appear in the final design at all, in others the basic idea is hers. But according to Denise's views on sexism in architecture and the wife of an architect, she is assigned the role of scribe, typist and photographer. In 1973 she gave a talk on sexism and the star system to the Alliance of Women in Architecture, in New York. At the time she requested that the meeting be open to women only " for the same emotional reasons (including hurt pride) that make national movements initially stress separatism". This didn't stop six men getting in and hiding down the back, who gradually grew glummer as the women bonded over shared experience. She also explains her theory behind the "star system", how architecture is a system

that deals with unmeasurables, that architects are measured on whether they are a good designer or not against a set of indefinable criteria and that they must follow an “architectural father figure” to give guidance in areas where there are few rules to follow. In any case, Denise speculates that for male architects this “guru” must be male. At the time she was concerned with the macho image of the “modern architectural revolutionary with his avant-garde technology out to save the masses through mass production”, and was even considering the possibility of a more feminine “conservative and nurturing” oriented stance recommended to the profession by ecologists and urban planners, which might be the chance female architects have been waiting for. Denise also describes the world of architecture as a “men’s club”, she quotes Cynthia F Epstein’s reference to the “colleague system” and the “sponsor-protégé relationship, which determines access to the highest levels of most professions”. Epstein suggests that “the high level sponsor would look foolish if he sponsored a female and, in any case, his wife would object.”

When Denise finally does publish her essay she explains how she was afraid to publish her essay because of the possible hostile reception her sentiments on feminism in the world of architecture would create, and might hurt the prospects of her career and her firm (Even some women today who have achieved great advancement in the field have little to say on the topic). She includes the changes that have happened in architecture schools where the ratio of men to women is almost 1:1. She makes some interesting points on the changes in architecture since she has left, in her opinion architects did not follow the warnings of the social planners and the ecologists and that women were not able to “ride in on the trend”. She cites that the macho revolutionary has been succeeded by architect as *dernier cri* of the art world, which has led to an increase in the culture of personality.

She also mentions the opposing trends in the increase of female admission and the move to the right in architecture. That increasing female entrances occur at the bottom and the cult of personality occurs at the top. She expresses her interest of what might

happen when the two trends meet. But according to research done by the University of the West of England the two trends still haven't met, and that there is still a problem at a professional level of female employment retention in architectural practices. Denise writes how measures have been put in place to help small female owned firms but does not help the absorption of women into the mainstream unless women who have been integrated into large existing practices own 51% of the firm. She mentions how some women question the need for the feminist movement, explaining that personally they have experienced no discrimination. These ideas seem to come from younger women who have only ever experienced this at the school stage in their career, "the least discriminatory environment they will encounter in their careers". Brown expresses her concern in knowing that at the early stages in practice little difference is present among men and women, it is only through advancement that "difficulties arise, when firms and clients shy away from entrusting high level responsibility to women". Women who then see their male colleagues advance on into higher positions, and lack a feminist awareness might then have a tendency to believe that their failure to achieve is their own fault.

Denise ends on a strong note saying that over the years she has come to realise that people who have caused her these moments of doubt and pain are ignorant and crude."They are the critics who have not read enough and the clients who do not know why they have come to us. I have been helped realise this by noticing the scholars we most respect, the clients whose projects intrigue us, and the patrons whose friendships inspire us, have no problem understanding my role. They are the sophisticates. Partly through them I gain heart and realise that, over the last twenty years, I have managed to do my work and, despite some sliding, to achieve my own self-respect".¹⁶

16. Denise Scott Brown, Room at the top, Sexism and the star system in architecture, http://isites.harvard.edu/fs/docs/icb.topic753413.files/14_Outside%20in%20the%20Profession/Brown_Sexism.pdf

Conclusion

As proved by Denise Scott Brown and Robert Venturi there is no easy way for some to succeed in the world of architecture, especially for women. Whether they are in practice by themselves or with a husband/male colleague questions are always asked, or not as the case may be, of their role in design and creation of architecture. There is a constant battle being played out with every professional woman between their role of career woman and gender role, role of housewife and of mother. They fear that through pushing themselves into the higher echelons of architecture, a male dominated environment, they are in some way of denying their femininity. According to research women lack the interest in progressing to higher levels of employment, especially in male dominated professions. This makes it a harder battle for those few women who do have an interest and wish to advance their careers in the field. I think women have contributed greatly to the profession, whether these contributions have been noted or not, and that there is still more to be contributed. Like Denise Scott Brown, I am interested in seeing if women can ever progress enough to make it to the top of the “star system” given recent figures in architectural education. I think given the managerial styles of women, this could lead to more social sensitivity in offices, which might even transcend into a feminine architecture. Even from an article in the New York Times in 1914 we are reminded of the sensibility of the female architect in comparison to men when it comes to the house “Heretofore, men have planned houses that women have groaned over—marvels of beauty, perhaps, and miracles of taste, but likewise prodigies of inconvenience and impracticality. The dining room, for instance, as conceived by mere man, had a magnificent view of the rose garden but was some remote distance from the kitchen; the washtubs were of the most durable porcelain and of exquisite lines, but they usually broke the washwoman’s back; men never forget the fireplace, but the clothes chute sometimes slipped their minds”.

Bibliography

Central Statistics Office, Women and Men in Ireland, Stationery Office, Dublin, February 2011.

Professional Women: Vital Statistics, Department for professional employees, <http://www.pay-equity.org/PDFs/ProfWomen.pdf>.

The University of the West of England, Why do women leave architecture, Bristol, May 2003.

Janice W. Lee, Psychology of Gender Identity, (New York: Nova Science Publishers, 2005).

American Psychological Association, When the Boss is a Woman, <http://www.apa.org/research/action/boss.aspx>.

The New York Times, Girl Architects organise a firm, New York, March 8th, 1914.

Sarah Allaback, The First American Women Architects, (Illinois: University of Illinois Press, 2008).

Caroline Constant, Eileen Gray, (Michigan:Phaidon,2000).

Peter Adam, Eileen Gray: architect/designer (Michigan: H.N. Abrams, 1987).

Aaron Betsky, Zaha Hadid: The complete buildings and projects, (New York: Rizzoli, 1998).

Peter Fisk, Creative Genius, (London: John Wiley and sons, 2011).

Donald Albrecht, The work of Charles and Ray Eames, (Virginia:Harry N. Abrams, 2005).

Pat Kirkham, Charles and Ray Eames: Designers of the Twentieth Century, (Michigan:MIT Press, 1998).

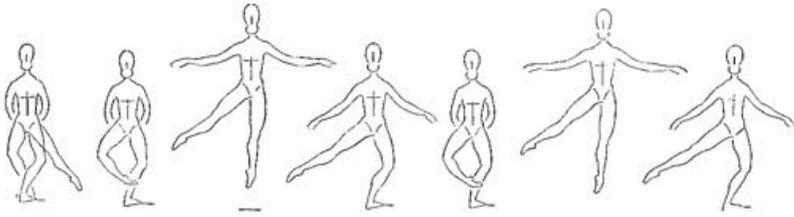
Frederic Schwartz and Carolina Vaccaro, Venturi, Scott Brown and Associates, (Barcelona: Gustavo Gili, 1995).

Denise Scott Brown, Room at the top, Sexism and the star system in architecture.

The Architecture of Dance

Eimear Egan





I n t r o d u c t i o n

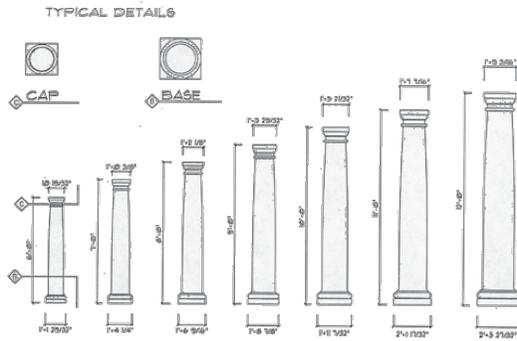
Through this study I aim to draw on the main principles of dance and see how they can be applied in the realm of architecture. Architecture and dance are equally important emblems of culture, and they share a vocabulary throughout their histories, both dealing with the manipulation of space on a human scale. A series of geometry and form becomes architecture with the addition of movement and rhythm. A similar statement can be made for dance. A structure evolved from a series of twisting and turning, a description of space, it could be said that dance

helps lift architecture to reality. The movement of the human body is a vital component in creating social space. Movement and construction come together to control such space. Architectural design can become much informed by the observation of dance. As the Spanish architect Santiago Calatrava puts it, “Architecture is a wrapping for the human body, and dance is the finest expression of the body.”

If we take this a step further, it is fair to say that classical ballet is the finest expression of dance. I believe it is evident that dance has inspired architecture since antiquity. There are many crucial influential components involved in dance that can inform architecture in a quite compelling way. In regards to this, it is interesting to look at Palladian architecture. The Palladian style is based strongly on symmetry, perspective and principles of the formal classical temple architecture of Ancient Greece and Rome. , classical ballet can be compared to a Palladian Villa with its control, elegance, grace, rules and symmetry. Both are backbones for the styles that follow. Ballet is a very logical art form, it is noted for its clarity of expression, movement and pureness.

The general principles of classical ballet involve weight distribution, transfer of weight, alignment, squareness, pull-up, turn-out, lift, poise, counter-pull, counter-balance and balance. All these principles work together and are inter-related and must be looked at in relation to one another. Classical ballet is the anchor which most other dance technique reference back to and its harmony and unity is quite insightful for architects when designing.

Through this study I intend on breaking down classical ballet in its form and process and examining how its principle components work so seamlessly together and exploring how this may inform us in our design processes in the world of architecture today.



Chapter 1

The Evolution of Classical Ballet and Classical Architecture

The boundaries of architecture and dance have been permeable throughout history. With this in mind, I will now explore the evolution of how classical architecture and classical ballet developed into such precise arts of such high status.

The seed of ballet began in Renaissance Italy. Dance had an extraordinary hold on the behaviour and minds of the people of the sixteenth century. The Medici families all wanted to have the best of everything; it became a culture of fine buildings, beautiful paintings and lavish entertainment. Court ballet was

a grand event. There was a dance between each course which was called an “entreé”. Catherine de Medici, the granddaughter of Lorenzo the magnificent was the one responsible for bringing ballet to France at the end of the fifteenth century, and it is here that it really began to take shape.

The true founder of ‘Ballet de coir’ in France was the Italian dance master Balthasar de Beaujoyeulx. He produced the famous ‘Ballet Comique de la Reine Louise’ in Salle Bourbon of the Louvre 15th October 1581. Beaujoyeulx was quite satisfied with his production “a geometric combination of several persons dancing together”. It was when the Opera and the ballet came together that technique began to come into play. The five positions of the feet were invented and the ‘Académie Royale de Danse’ was established. As professional dancers became sought after the standard of dancing improved and the first Ballerina was born.

The Romantic era brought a freer, more expressive style. Dancers became graceful and lightly poised. The art and music of the time such as the works of Delacroix and Berlioz, had a huge influence. Blasis invented the ‘Attitude’ position, inspired by Giovanni da Bologna’s statue of mercury. Blasis was an avid student of sculpture, anatomy and geometry who devoted himself first and foremost to teaching and thinking about dance. The new form of dance stood on its own, powerful enough in gesture and expression that it didn’t need words, it “explains with rapidity the movement of the soul; it is a universal language, common to all times and better than words it expresses extreme sorrow and joy... I do not want just to please the eyes,

I must interest the heart.”

The ballet of the Romantic era also had a certain decorum attached with it. Marie Taglioni had a key rule to play in this, she believed that “ an innate grace of manner should be enhanced by a formidable ease of technique and an imponderable style.” People were encapsulated by her beauty in elevation and her lightness in landing; she danced with great grace and modesty and had a divine charm of pose and position. “Taglioni is immortal. Her technical authority and ineffable lightness which is associated with her name live on in the ideals of grace and elevation that are still the goal of dancers today.”

It was from this point on after the Romantic movement that the classic timeless ballets, that still play a huge role today, were born, such as ‘The Nutcracker’ and ‘Swan Lake’.

If we compare the development of Palladian architecture, and where it took shape from, we can see many overlaps in principles between it and classical ballet.

The main principles of classical begin with the ‘orders’. There are five orders, three are Greek; Doric, Ionic, and Carinthian and two are Roman; Tuscan and Composite. ‘ordo’ can be a row of columns, a continuation, a layer or a course of brick. The orders were thought as an essential basis for which to develop from. Charles Blanc who wrote ‘Grammaire des Arts du Dessin’ thought of orders as parts of general history of design. He saw them as the parallel between the horizontality of classical architecture and the lines of the human face.

The Greeks idealized the treatment of form rather than mass, they also took harmony and proportion as sacred geom-

etry. As described by the Roman architect Vitruvius in his Ten Books of Architecture,” Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard. From this result the principles of symmetry. Without symmetry and proportion there can be no principles in the design of any temple; that is, if there is no precise relation between its members as in the case of those of a well shaped man”. There were a precise set of rules involved. For example in Doric temples the column was narrowed at the top to assure the eyes that the column cannot be overturned, (this brings to mind the concept of point shoes in ballet), the Flutes draw an emphasis on the upward thrust. Its profile however is the most important measure of strength in every Doric Temple, at the base it is edged by three channels, light delicate folds. The orders taught most of the principles of this classical era. They taught elements of light and shade- the casting of shadows, presentation, rendering, proportion and symmetry.

Bramante Alberti was first to use classical order as an expressive language that he employed and varied according to the nature and scale of a building. The classical orders had a great influence on Palladian Architecture. A temple is an expression of movement and Palladio saw the distance between the columns important. For instance, for the Ionic order there two and a quarter column diameter spacing at the bottom of their shafts. These proportions were important when aspects of perspective are brought into framing views of the countryside. Villa designs connect with their settings. Porticos or loggias were built so that residents could appreciate views of the countryside. Columns

are an integral part of the control and dynamism in architecture, as Louis Kahn once said” consider the momentous event in architecture when the wall parted and the column became.”

In exploring the sources of both classical ballet and Palladian Architecture, it is now a much more manageable job to understand their processes and drive. It is a satisfactory foundation from which to start to analyse each in terms of form, expression, movement and intention.



Chapter 2

Form

“Man is all symmetry,
full of proportions, one lime to another,
and all to all the world besides:
Each part may call the furthest, brother:
for the head with foot hath private auntie,
and both moones and tides.”

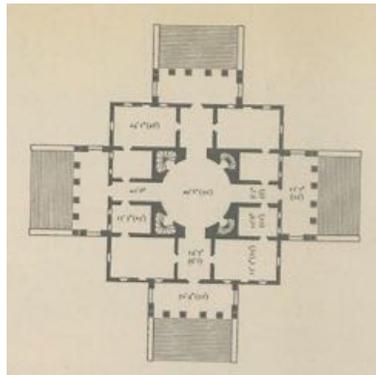
I feel that these lines from George Herbert’s 17th century poem ; Man, are quite evocative when investigating classical architecture in terms of form. The Greeks and Romans believed

that the human figure was an exemplary carnation of harmony and order. In the classical orders we see that there is a parallel between the shaft of the column and the torso of the body, also there is a connection between the lines of the face and the horizontal members. As Burckhardt puts It, the “Doric order is one of the most exalted creations of mans feeling for form.”

In discussing classical architecture and the Doric order in terms of form, it is difficult not to have the Acropolis of Athens spring to mind. As Le Corbusier describes it” one clear image will stand in my mind for ever: The Parthenon, stark, stripped, economical, and violent, a clamorous outcry against a landscape of grace and terror”. It sits like an object of immense imposing strength and power. It seems to have eternal presence. Its columns are made in a zigzag as to give the impression that’s its foundations are straight. As Virgina Woolf conveys, in his novel Jacob’s Room” Its columns spring up like fair round limbs flushed with health...no place seems more lusty and alive than this platform of ancient dead stone”



In developing from the temple it is interesting to look at the Palladian Villa in terms of form, Villa Rotonda is possibly the best example from which to describe. This is a classic in the essence of Palladio's Villa design. Villa Capra, more commonly known as Villa Rotonda, due to its fully symmetrical plan with and its central circular hall. Palladio himself described it as a pure work of art. It was intended to demonstrate the beauty of pure form with its geometrical plan which comprised of the circle, square and rectangle and also its four symmetrical porticoed faces. The Villa was designed for Paolo Amerigo, a wealthy Vicentine cleric, as a retirement home.



Villa
Rotonda

At the centre of the square plan the two story circular hall contained overlooking balconies. Palladio had envisioned a semi-circular domed roof but when he died, a lower one was built by Vincenzo Scanzoni which was modelled off the Pantheon with a central oculus originally open to the sky. The proportions of the rooms were mathematically precise by the rules he set out in 'I Quattro Libri dell'Architettura.' To him proportion was everything, "Just as the proportions of voices are harmony to the ears are those of measurements harmony to the eye."

Palladio wished to create buildings that were unified and well-balanced, and he believed that proportion was the way to achieve this. He was influenced a lot by the proportions of the Ionic order, which comes apparent in his window and door design. Palladio believed that in a room with a flat ceiling, the height should be equal to the width, with vaulted ceiling, the rooms height should be equal to the arithmetic, geometric or harmonic mean between the length and the width, each room interrelated by ratio.

There is a lot of overlap between Palladio's preferred ratios and characteristics of musical scale. The mathematical additions of intervals take the form of multiplication of their ratios. The villa is rests asymmetrically in the landscape at 45 degrees to the South on a hilltop, in this way all the rooms receive sunlight. Each loggia engages with the landscape differently even though they are identical in design. They do so through a variation of wide steps, retaining walls, and embankments. In all, this villa manages to combine classical harmony with an appreciation of natural landscape. This villa manages to stand with

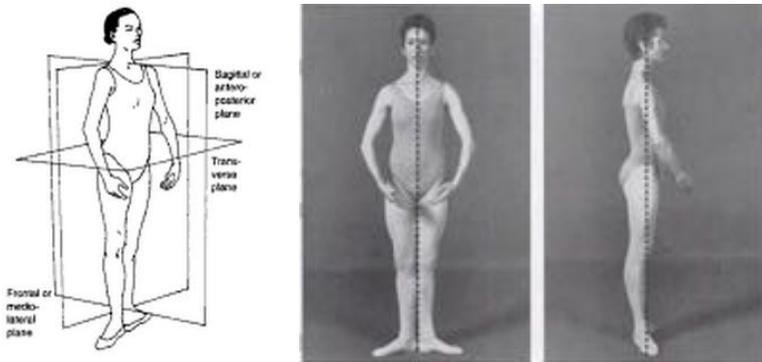
elegance and poise through its unified symmetry and proportion. The essential factor involved in his consideration of form is the sense, of the relationship of parts among themselves and to the whole. Palladio inherited this way of thought from the great procession of Italian designers. He was influenced greatly by people like Brunelleschi, Bramante and Michelangelo.

In considering form in classical ballet, a strong controlled aesthetic comes to mind. Ballet involves a balance in choosing the correct proportions for parts of a combination showing the harmony of all the parts in their interchanging relationships.

There are two main principles involved in that a formal balance of composition in classical ballet technique, 'Aplomb' and 'Ligne'. Aplomb is an imaginary vertical line used to assess alignment and vertical centring in a dancer. Aplomb is viewed in two directions. When the dancer is in a proper in classical first position the centre line moves down from the top of the head through the middle of the nose, mouth, chin, sternum, navel, the middle of the pelvis and through the heels of the foot. When viewed from the side the aplomb line runs down from the top of the head, in front of the ear, through the middle of the shoulder, hip, and knee and resting in front of the ankle bone.

Ligne describes how a dancer forms lines in space with the body. The harmonious arrangement of the different parts of the body such as the head, shoulders trunk, legs and arms, in order to form elegant and harmonious compositions of curves and straight lines in space. A pointed foot is crucial in following through strong lines. The development of point shoes allowed

for an extended aplomb and stronger extended lines. A dancer strives to display a good outline of the body, full of elongated lines.

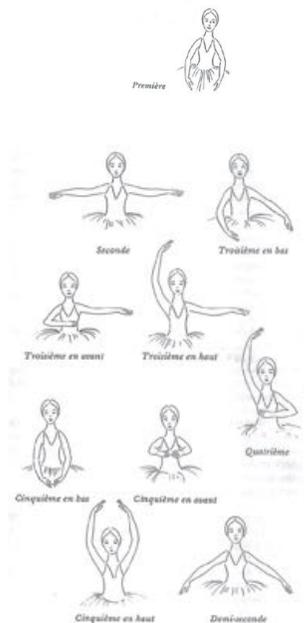


Pointe shoes were invented by Charles Didelot in 1795. It was Marie Taglioni who was first to make use of these flying machines, in her role in 'la Sylphide'.

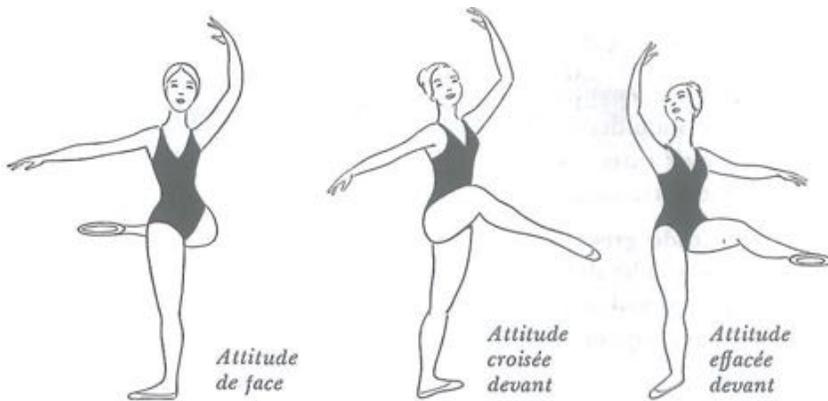
Point shoes allow for a floating form, a dancer on point emanates a weightless poetic presence. Pull up through the legs by stretching upwards from the floor, engaging the abdominals and lifting the torso of the legs is important in achieving such an aesthetic. Pull-up is 3 dimensional.

There are five principle positions of the feet ballet, with the addition of arms create ten classic stances, these are the basis for which each movement or pose begins. There are also two chief styles of pose, 'Arabesque' and 'Attitude'.

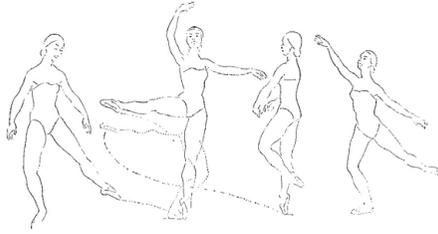
Among the ancient Greeks, arabesque was a name given to an ornament of fantastic and geometric design. In ballet this name describes the grace and charm of geometric design expressed in this basic pose. The arabesque is a long flowing line made by arching the body and balancing it over one foot with the other extending behind. The arms extend the pose to make the longest possible line from the finger tips to the toes, the head must be poised in harmony with the line of the body. There are an infinite number of variations with an alteration of the direction of the body in space or an arm position.



Attitude is derived from the Italian 'attitudine', meaning "a way of holding the body" In ballet this pose was invented by the Italian school, and was inspired by the Statue of Mercury by Jean Bologne. The basic pose of which there are again numerous variations, it is a vertical position of the body supported by one leg, with the other knee bent and raised behind. The arms are both bent in the attitude position with the raised arm corresponding to the raised foot. Like all the basic positions there are an infinite variation of expression, every change of arm position, turn of the body or lean of the body produces a different attitude.



The head is the focal point in achieving classical alignment. The head balances on the top of the spine and changes position throughout combinations and sequences, to compliment the pose. The eyes are part of the head position and relate to the stage space and the audience. As Vitruvius puts it “all art and its methods are derived from a well composed and proportioned human body...nature therefore having shown the face and the head are its noblest part; as the seeing can judge the whole of it, so also should a castle be placed in the most eminent part of the city, that it can look over and judge the whole human body, and that the head should have a proportional correspondence to the appropriate parts; so that the head might be a fortress, the arms its adjoining and enclosing walls, which encircling it on all sides will bind the rest of it into one body, a huge city.”



Chapter 3

Movement

“All movement is purposeful, has a cause and a function.”

This is quite an important statement to keep in mind when thinking about movement in terms of architecture; it is interesting that it was written by a dancer. Rudolf Laban was an artist, choreographer, dancer and theorist born in Bratislava in 1879. Laban’s notions on movement and his notation system have been successfully applied to study and record almost every type of physical motion. Laban is seen as movement’s greatest map-makers. Hodgson compares him to Stravinsky and Picasso

, he is the father of modern dance.

After failing to follow in his fathers footsteps in the Army, Laban left military school to study at the École des Beaux Art in Paris in 1900. It is here that he developed an interest for dance and drama. As he grew in the dance world, he went on to be appointed as ballet-master at the Berlin State Opera in 1930 which contributed greatly to his rationalisation of movement. He was interested more in the positioning of the body and the dynamic of the movement than the steps or floor pattern. He was drawn to Greek thought and had a particular fascination in Plato's beliefs.

Plato was of the opinion that everything in this world was made to a certain geometrical formula in their overall purpose, the stars animals and man's behaviour were all linked to their structure and how they interacted. Plato conceived that bodies must be either in motion driven by another force or have the source of motion within them. A development of this thought became Newton's first law of motion. From this we can grasp that 'motion' is an inanimate thing, it is within the body that a more animate 'movement' is prompted.

From this Laban drew that flow is responsible for continuousness or ongoingness of motion, without any flow of effort movement must be continued in a single imitation and action. Laban believed that the body takes the form of static shapes for example wall-like, ball-like and pin like. He observed where movement was being done, in terms of places in space; his emphasis was on direction and planar movement. His thoughts were that the harmony of space takes the form of set 'scales' of

movement within geometric forms.

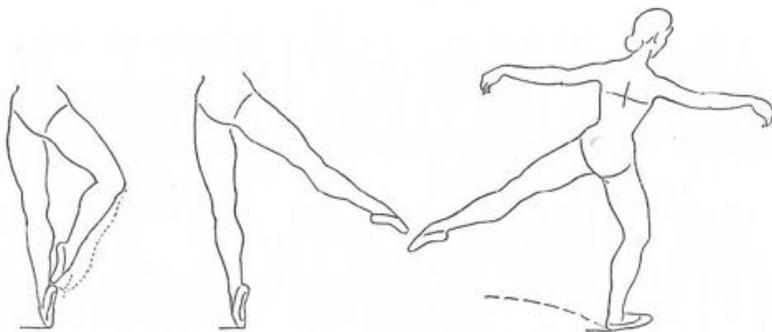
Francois Delsarte broke the body into three zones, the head, torso and limbs, all must work in correspondence. He seen the trunk as being the core both in position and concept, the head takes the role of control and the limbs were the most free. The fundamental principle of expression was strength and control at the centre, with freedom at the extremities. He then ordered this movement into three divisions. Normal (at the centre), eccentric (going from the centre), concentric (going towards the centre). Tension, relaxation, relations, balance and form was associated with each movement. Elements which also went hand in hand were motion and force, space and form, time and design.

In Classical ballet these basic principles of movement and the human body are rationalised and controlled. Ballet is a special language of graceful movement, developing from one pose to another in seamless harmony. The dancer makes the transfer of weight appear effortless. Breathing, turn-out, pull-up and lift disguise the actual shift of weight, the body stretches slightly upwards and sideways on a diagonal through the legs and pelvis, fully transferring the weight to one leg, then the body weight is centred forward and over the arch of the supporting foot, this is crucial in achieving smooth changes of direction and feet. These subtle movements such as 'developpé, temps'-the unfolding movement of the foot, are as important as executing the poses and positions for which they connect in striving for elegance

Balance is thought of both anatomically and aesthetically.

In striving to attain balance anatomically, the three planes of the body intersect. The three planes are the frontal plane, the front half and back half, the sagittal plane, the right and left side, the transverse plane, the top and the bottom half. Aplomb, the imaginary vertical line used to assess alignment and vertical centering in a dancer interrelates to these planes, as described in the previous chapter on form. It assists the dancer's ability to change levels from demi-plié to relevé and visa versa as they control and centre the body weight along its vertical axis. When executing movements from one foot or two feet, balance, stance, transfer of weight, and aplomb all integrate. Aplomb enables the dancer to move vertically up and down or through space with strength, confidence and grace.

Transfer of weight

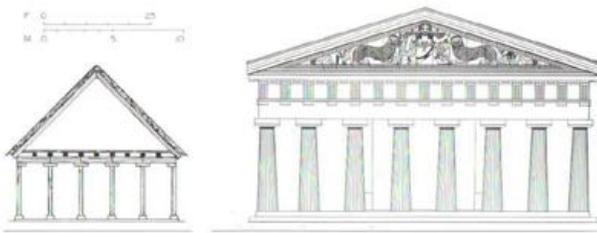


In ballet the equilibrium is always controlled, however a ballerina attempts to push its boundaries and desires never to sink in the body or give in to gravity. When the dancer moves all the body parts consistently readjust to realign. As Newton's third law states "For every action there is an equal and opposite reaction," as gravity and weight push down, the muscles work upwards. When executing a downward motion, the body lifts before it descends, in this way counter-pull and counter balance are elemental. Counter-pull deals with the opposing forces that are at work in the body, counter balance is the upward and slightly forward lean of the torso when the leg lifts further than twenty degrees back, the elongation of the spine is essential. Together counter pull and counter balance prevent loss of squareness and pull-up while allowing for freedom of movement.

This leads to movements such as a Soubresaut and Renversé. A soubresaut is a sudden jump, jolt or jerk from fifth demi-plé which then springs into the air, legs tightly crossed and feet pointed, the dancer alights simultaneously on both feet without changing feet. This move is performed travelling forward with a backward lean of the body, 'Renversé' is a movement of the body during a turn in which the normal balance is upset by bending sideways and back without disturbing the equilibrium. Movements such as these add colour and drama to a sequence.

Breaking ballet down into its principle components, seven basic types of movement can be observed, each with a technical name derived from French; élaner to dart; étandre to

stretch; glisser to glide; relever to lift; sauter to leap; and tourner to turn . Each of these movements can then follow a particular style, interlinked with a gesture which leads the movement in one of eight possible directions. This brings a dynamic of expression to a sequence.

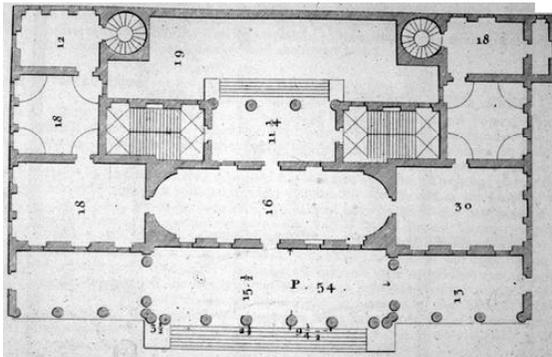


the Parthenon

A temple is an expression of movement. As mentioned in the first chapter, columns are an integral part of the control and dynamism in architecture. If we observe classical architecture in terms of movement, the plan, in co-ordination with light, are the central components in terms of movement within classical architecture. There is a strong relationship between the plan and your experience of a building. The plan has a strong connection with mathematics and geometry, in particular in classical architecture. As le Corbusier puts it, “the plan carries in

itself the essence of sensation”. The plan prompts the activities and circulation, I classical architecture, certain rules are associated with the plan. In a typical Palladian plan, Palladio’s humanist training is quite evident. There is a great subtlety in the proportion, composition and equilibrium in comparison to the classical plans before him. His plans usually consist of a central block built around the axis of the entranceway and two symmetrical flanking blocks. The design grows from the central circulation axis, in positioning loggias, if there was one, it would be positioned along the centre and if there were two they would be situated either side. The same principle applied for stairs.

The human body is also symmetrical either side, but not in depth. The Chiericati plan is typical in that the left and right side are mirrored however the front and back are not. It is the combination of the plan and light that creates movement within a building. The rhythmic effect of the colonnades of the temples of antiquity would be nothing without the sun. The same goes for Palladio’s loggia.



If we look at the centralised churches of the sixteenth and seventeenth century as described by Robin Evans, it is interesting to examine his exploration into searching for the geometric centre. He finds that the typical centres in the centralized church focus on a couple of key aspects. The altar, which is positioned eccentrically, baptisms based around central gatherings, polygonal plans. Everything is a centre emanating into something.

Here that he associates light with symbolism. The perfect universe is a perfect sphere. He discusses Raphael and his beliefs. The calm perfect centre of light represents god which gradually emanates to man. The point where the brightest light is focused to is not at eye level to the congregation or even to the priest, it is located much higher up, illuminating the dome, sourced from above through an opening in the roof. This symbolises god's presence.

This is where he begins to connect Renaissance art into the argument. The same effect was to be portrayed through art and architecture, but with the architecture, geometry needed to assist. For example the aura that radiates Deity's head in Giovanni di Paolo's *Expulsion*. The circle is seen as heavenly, reaching out to the planets and the stars, full of power. Dante's believed that "each sphere with God's own love it more instilled the further from its center it appears." It is interesting to note that the 'Attitude' position in ballet was derived from a similar source in Renaissance art, inspired by Giovanni da Bologna's statue of mercury.

If we look at light working in a collaboration with a plan

to create movement, Palladios Monastery of Santa Maria della Carita is a good example to take. Here light has a larger purpose than simply illuminating the Redentore, its different quality in each of the three major spaces, underlines the individuality distinctly established in the plan.



Chapter 4

The Observer

When we look at Classical Ballet and Classical Architecture in terms of how they are interpreted in reality, beyond drawing or text, the observer that is key, it is through the spectator that both come to life. In this manner, form and movement come together and perspective is brought into the equation. “Architecture led to the vanishing point which led to architecture” In Renaissance painting there was one perspective construction for people and a different perspective construction for buildings. This shows that perspective is a system, calculated and rational-

ised to be set up in a particular way. We engineer the scale and the proportion. It is a somewhat false representation of intuition. However the way we draw things has a direct resemblance to the way we build them, I feel ballet brings scale and proportion back to reality, it creates an interaction of visual perception and geometrical projection.

Linear perspective has an important role to play as it works together with proportion. Harmony, perspective and proportion all knit together. They create a ratio of projections, a rationalised art. Architecture is like the music of a piano, and art more like that of a violin. Here ballet can also be described in this way. In comparing ballet to the freer contemporary dance, ballet like a piano with its notes set out, harmony can be calculated more clearly, whereas with contemporary dance, like the violin, intuition plays a much more dominant role, incorporating the notes that lie between the scales.

In classical architecture, observation is really only thought of in terms of elevation. The addition of perspective in the Renaissance was an important aspect in terms of the development of Palladian architecture, in terms of engaging with views within the landscape, his loggia were of a much higher merit at framing views, than the flattening of the countryside into pictures in a Claude glass.

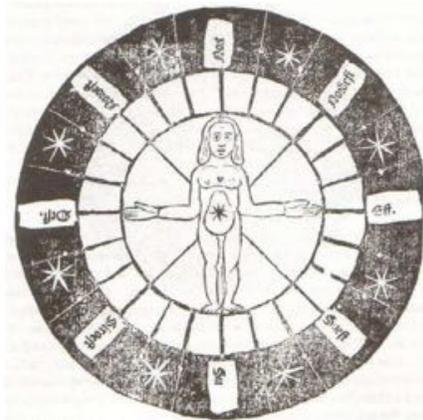
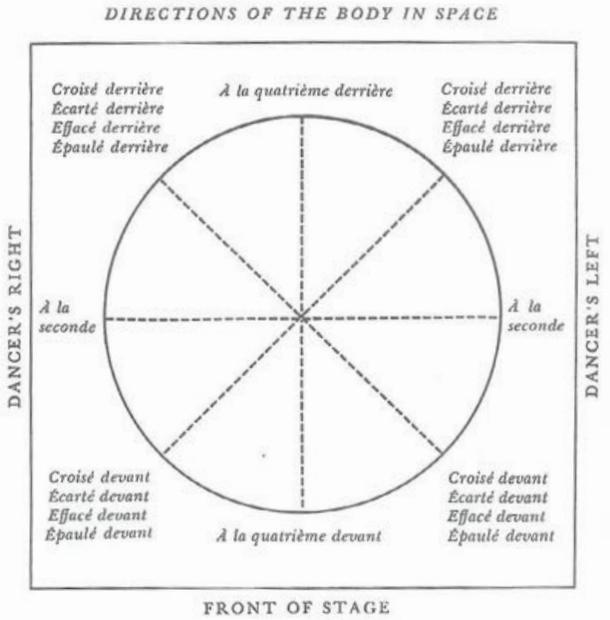
Since its beginnings in the Renaissance, everything in classical ballet has referred back to the stage and the audience. Ballet as a production was established as a theatrical form. Dance was a spectacle with unifying dramatic themes, it told a story. Dance had an extraordinary hold on the behaviour and minds of the people of the sixteenth century. When observers attempted

to make a stab at capturing this fleeting art, they were deemed unsuccessful. Writing seemed to take away the movement and fluidity freezing the dancing form. As Francois de Lauze put it “I freely admit that dancing had something which ennobles and animates it, such as a certain air or bearing- stately or casual which cannot be captured by the pen.”

The position of the dancer on the stage is of utmost importance. If we observe figure x, it can be noted that the four corners of the square represent the four corners of the stage. The dancer is represented by the centre of the circle, facing out towards the audience. It is interesting to see this diagram in relation to the humanist Renaissance one along side it.

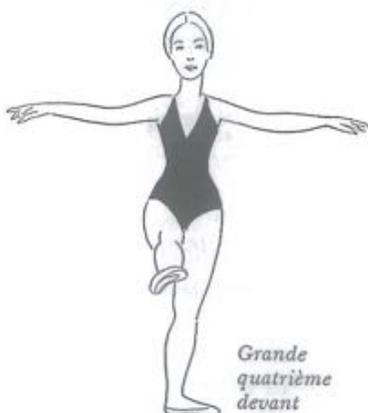
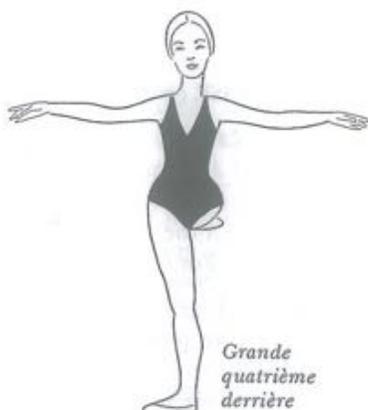
Directing of the body is important in adding colour and variety to the movements, the body is turned to various directions in space so that the audience can see various views, “de face”, facing the audience, “en écarte”, throwing wide apart, the dancer presents a $\frac{3}{4}$ view of the body standing at oblique angles to the audience, “en effacé” legs are in fourth with the leg furthest from the audience in front, with a $\frac{3}{4}$ view of the body which again is standing at an oblique angle to the audience, “en epaulet” a position for which the shoulders are the key element, usually progresses to “épauliment” which is the colourful use of the upper body adding artistry were movements are performed directly facing the audience which would otherwise be lacking, “de coté”, which indicates if a step is going to move to the right or to the left, or finally “dos au Public” this is standing with your back to the public. The dancer will move in a given direction with the feet in either second or fourth position.

Figure X.



The direction of body movements with particular placing are known as “Croisé” which in English translates to “crossed”. The dancer can cross in back, in front, backwards, forwards or side to side. In crossing to the back-”croisé deriere” the dancer will stand at an oblique angle to the audience with the foot that is least near the audience opened to fourth position back raised or on the ground. To cross in front-“Croisé devant” the dancer will open out the foot nearest the audience into fourth position to the front while standing at an oblique angle to their audience. In crossing backward “Croise en amere” the working foot furthest from the audience is crossed under the supporting foot this movement indicates that the step will be performed diagonally in space . From this it is quite evident how calculated and controlled the composition of the dancer is when framing views for their audience.

In Euclidean geometry, of classical architecture, it is almost as if figures are applied like template to a material, creating an object. The focus lies on the metrical geometry of the solid form, whereas ballet has a closer relationship with projective geometry. In projective geometry, figures bend according to point of view. The figure belongs to a spirited escaping item that remains out of reach. Projective geometry relates to objects images that is its shadows, maps or pictures. It is important that projective geometry is considered in architectural design. It is quite significant to how a building can be experienced and interpreted. As Evans puts it,” What connects thinking to imagination, imagination to drawing, drawing to building, and building to our eyes?”Projection geometry engages with the observer.





Chapter 5

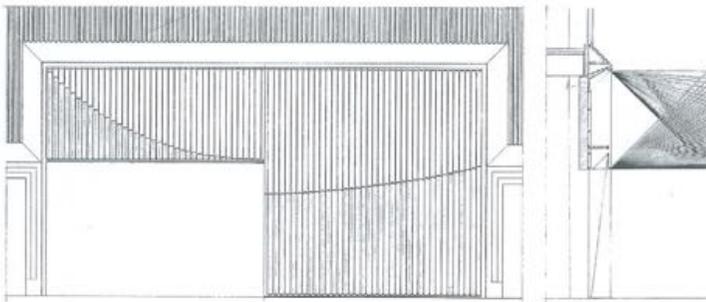
Influences

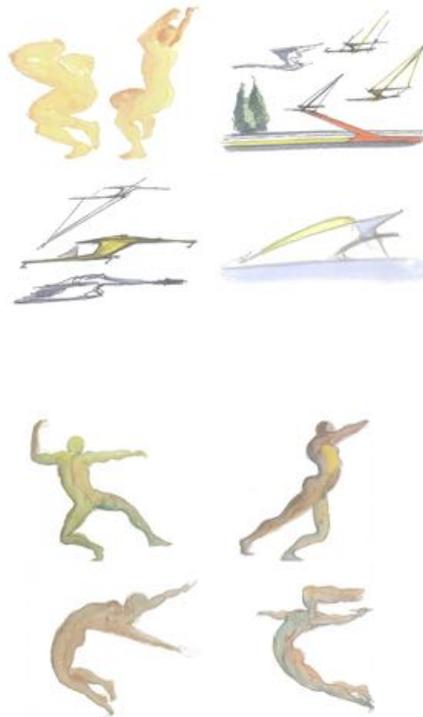
In terms of architecture today, the relationship between dance and architecture has played a key role in the New York City Ballet's new season entitled "The Dance of Architecture", which is comprised of seven world premiere ballets and is in homage to the Lincoln Centre of Performing Arts 50th anniversary. This role master chief of this festival of dance was taken by Peter Martins who chose the Spanish architect Santiago Calatrava to design his set. "As an architect, I have studied and sought inspiration from movement and the human body. To

me, there is no muse greater than a dancer.” The Ballet is full of changing group formations of accented positions, with emphasis on composition.

Santiago Calatrava is a Spanish architect, engineer and designer whose main projects include bridges, transportation centres. The idea of movement provokes a lot of Calatrava's architecture. As Paul Goldberger puts it “Calatrava buildings don't sit on the ground; they dance above it” There is a poetic movement within most of his work. Calatrava has a particular interest in the technological- spacial problem of identifying the form of moving structures for buildings.

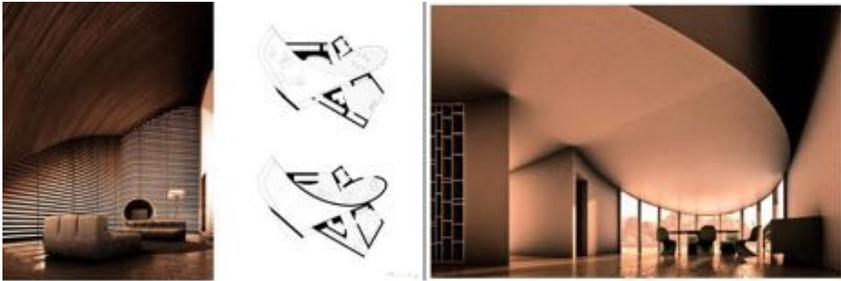
He uses analogies of the configuration of the human body in movement to solve structural problems. He rejoices in dancers in motion and strives to intertwine the same joy in creating his structures. In Calatrava's design of the Ernsting Warehouse doorway in Germany, we see the beginning of his expression of poetic movement in his infusion of light and grace. Along with the analogy of the moving human figure, there is a correlation with the visual effects of the classical Doric columns in a temple waving rhythmically in the sun. This is interesting as it clarifies the connection between ballet and classical architecture.





If we look at dance in the broader sense as it evolves in different styles through culture, each having some elemental distinctions but all drawing back to the same underlying principles in their dialogue. The Spanish architect Antonino Cardillo's view, "If architecture is music in stone can its "limbs" dance? Architecture only remains still in pictures. In real life its natural state is one of transition" . Cardillo was influenced by the traditional Spanish dance in the design of his "House of Convexities" in Barcelona. . Flamenco is known for its rhythmic

stamping of feet and hands, its expressive arm movements, its strong presence with dramatic poses and its emotional intensity. This building plays with different aspects of light and perspective within the thresholds throughout the building. Flamenco inspires the lines of the building and creates playful transitions for the user.



In exploring dance as a means of educating and informing design, it is intriguing to examine the thoughts that the observation of dance provokes in a group of young architecture students. Dance can expand the foundations through which students engage with and critically understand the “bodily/human/experimental dimensions” that they are developing in the development of their design process.

In a drawing and representation class, the students were asked to engage with the dancers in terms of the spatial inten-

tions of the movement, what part of the body is leading and to trace the space made by the body through movement , using this to consider their Intuitions beyond the page, when recording the movement of dancers through space.

In studying the dancers as they moved, some key themes emerged from the students observations. These included an interest in the interaction and contact point with the ground, foreshortening, a pattern or sequence of movement, a progression of form, the hierarchical perception of limbs to allow movement and the pressures involved in the transfer of weight .

In thinking of these elements in terms of the design process in architecture, they become quite insightful. This way of thought allows a role for both subjectivity and objectivity in there thoughts on designing, moving from two dimensional to three dimensional. The students become more aware of the harmony between a perceived freedom and an underlying control, a balance which is pivotal in architectural planning and organisation of space.

In conclusion, From investigating and comparing dance and architecture, In particular classical ballet and classical architecture, breaking their processes down in relation to form and movement and examining how thier principle components work so seamlessly together, I believe a great deal can be observed and applied to how we approach our design processes in the world of architecture today.

End Notes:

1. Alastir Macaulay, Dance Review: 'A Couple of Graceful Leaps Into the Past', The New York Times, April 30th, 2010.
2. Tamara Karsavina, Classical Ballet : The Flow of Movement, London, The Dancing Times LTD, 1962.
3. Mary Clarke and Clement Crisp, Ballet An Illustrated History, London, Hamish Hamilton LTD, 1992, 15.
4. Mary Clarke and Clement Crisp, Ballet An Illustrated History, London, Hamish Hamilton LTD, 1992, 45.
5. Mary Clarke and Clement Crisp, Ballet An Illustrated History, London, Hamish Hamilton LTD, 1992, 54
6. Joseph Rykwert, The Dancing Column, On Order in Architecture, Cambridge, Mass, The MIT Press, 1996
7. Joseph Rykwert, The Dancing Column, On Order in Architecture, Cambridge, Mass, The MIT Press, 1996
8. Andrea Palladio, Andrea Palladio : the complete illustrated works / photography by Pino Guidolotti ; introduction by Howard Burns ; text by Guido Beltramini ; edited by Guido Beltramini and Antonio Padoan., New York : Universe, 2001
9. Joseph Rykwert, The Dancing Column, On Order in Architecture, Cambridge, Mass, The MIT Press, 1996
10. Le Corbusier, Towards a New Architecture, London, Architectural press, 1970.
11. Anna Ryan, History and Theory Lecture, semester 3, 2010.
12. James S. Ackerman, The Architect and Society : Palladio, Harmondsworth, Middlesex, England, Penguin Books,

1966.

13. Branko Mitrovic and Ivana Djordjevic, Palladio's Theory of Proportions and the Second Book of the "Quattro Libri dell'Architettura", *Journals of the Society of Architectural Historians*, Vol49, No.3 sep 1990, University of California Press, Accessed on Jstor.

14. James S. Ackerman, *The Architect and Society : Palladio*, Harmondsworth, Middlesex, England, Penguin Books, 1966.

15. Thalia Maria, *The Language of Ballet; A Dictionary*, Princeton New Jersey, Princeton Book Company, 1987

16. Joseph Rykwert, *The Dancing Column, On Order in Architecture*, Cambridge, Mass, The MIT Press, 1996, 63.

17. John Hodgson, *Mastering Movement: The Life and Works of Rudolf Laban*, London, Methue 1997.

18. John Hodgson, *Mastering Movement: The Life and Works of Rudolf Laban*, London, Methue 1997.

19. John Hodgson, *Mastering Movement: The Life and Works of Rudolf Laban*, London, Methue 1997.

20. Gayle Kassing, Danielle M. Jay, *Teaching Beginning Ballet Technique*, Human Kinetics, 1998.

21. Thalia Maria, *The Language of Ballet; A Dictionary*, Princeton New Jersey, Princeton Book Company, 1987.

22. Thalia Maria, *The Language of Ballet; A Dictionary*, Princeton New Jersey, Princeton Book Company, 1987.

23. Irene Scalbert, *History and Theory lecture AR4033*, Year Three, Spring Semester. 2nd February, 2012.

24. James S. Ackerman, *The Architect and Society : Pal-*

ladio, Harmondsworth, Middlesex, England, Penguin Books, 1966, 161.

25. Robin Evans, "The Projective Cast" Architecture and its Three Geometries (Massachusetts: MIT Press 1995) 18.

26. Robin Evans, "The Projective Cast" Architecture and its Three Geometries (Massachusetts: MIT Press 1995) 25.

27. James S. Ackerman, The Architect and Society : Palladio, Harmondsworth, Middlesex, England, Penguin Books, 1966, 159.

28. Robin Evans, The Projective Cast; Architecture and its Three Geometries, Cambridge, Mass, MIT Press, 1995

29. Margret M. McGowan, Dance in the Renaissance; European Fashion, French Obsession, London : Yale University Press, 2008

30. Margret M. McGowan, Dance in the Renaissance; European Fashion, French Obsession, London : Yale University Press, 2008.

31. Thalia Maria, The Language of Ballet; A Dictionary, Princeton New Jersey, Princeton Book Company, 1987.

32. Robin Evans, The Projective Cast; Architecture and its Three Geometries, Cambridge, Mass, MIT Press, 1995

33. Robin Evans, The Projective Cast; Architecture and its Three Geometries, Cambridge, Mass, MIT Press, 199

34. Alastir Macaulay, Dance Review: 'A Couple of Graceful Leaps Into the Past', The New York Times, April 30th, 2010.

"2008 House of Complexities, Barcelona, ES" Accessed April 12th 2012, <http://www.antoninocardillo.com>

35. Anna Ryan, module description, Drawing and Repre-

sensation AR4023, Academic year 2009/10, Autumn Semester.

36. Anna Ryan, module outlines, Drawing and Representation AR4023, Academic year 2009/10

37. The students' observations, Drawing and Representation AR4023, Academic year 2009/10, Autumn Semester.

Bibliography

1. Alastir Macaulay, Dance Review: 'A Couple of Graceful Leaps Into the Past', The New York Times, April 30th, 2010.
2. Tamara Karsavina, Classical Ballet : The Flow of Movement, London, The Dancing Times LTD, 1962.
3. Margret M. McGowan, Dance in the Renaissance; European Fashion, French Obsession, London : Yale University Press, 2008.
4. Robin Evans, The Projective Cast; Architecture and its Three Geometries, Cambridge, Mass, MIT Press, 1995.
5. Thalia Mara, The Language of Ballet; A Dictionary, Princeton New Jersey, Princeton Book Company, 1987.
6. Joseph Rykwert, The Dancing Column, On Order in Architecture, Cambridge, Mass, The MIT Press, 1996.
7. James S. Ackerman, The Villa: Form and Ideology of Country Houses, London: Thames and Hudson, 1990.,
8. Andrea Palladio, Andrea Palladio : the complete illustrated works / photography by Pino Guidolotti ; introduction by Howard Burns ; text by Guido Beltramini ; edited by Guido Beltramini and Antonio Padoan., New York : Universe, 2001
9. Gayle Kassing, Danielle M. Jay, Teaching Beginning Ballet Technique, Human Kinetics, 1998.

**The Vernacular:
A Documentation of our Progression**

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- The Vernacular – A Natural instinct
- Identity
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The focus of this paper is to examine the domain of vernacular architecture, to obtain a heightened understanding of a facet of architecture which is often disregarded as merely the work of the common man which does not involve a great deal of thought but more so is a response to one's needs, and ultimately come to a conclusion on what is the most appropriate means of respecting both the development and history of a given site whilst continually looking towards the future. After all we can only go forward by looking first at our past.

I believe we are at a period where the vernacular is experiencing a resurgence of interest. This is due no doubt to the fact that many people are now tiring of the ever increasing globalisation in all aspects of life. Never has the world been so connected therefore never have we shared so much information. With this comes global - trends they have been as evident in architecture as in fashion but there appears to be a longing among people for what has been somewhat lost, that is distinctiveness. I yearn as do many others for a time where one is not reduced to a mere cog in the machine where we are not judged and gauged entirely on a numbers basis and a time where it is our identities that are of most importance. Architecture of course has a bearing upon this as has location. It has been stated that architecture "transcends what we observe in nature", if true should we not be sensitive to location by incorporating vernacular methodology in our designs, be it through: form, climate, functionality and not least materiality?

1 Louis Kahn

The Vernacular – A Natural Instinct.

It is all too easy to label the vernacular as a glorified definition of the term traditional. I must admit that for some time I myself was under the illusion that vernacular architecture was simply using the materials found at our feet, following the example of local traditions and respecting the natural elements at a given site. It is only having studied the topic further that I realise it is far more complex and not only has its roots in history but in our constant evolution. Vernacular architecture is very much a visual documentation of our development as a race. It gives us a clear indication of how we began primarily as basic hunter/gatherers and of what we have become. It is also our identity

A vernacular building is one which responds to its context. One of the best examples of instinctive architecture or be it planning are the “Céide fields” of north Co. Mayo. These ancient fields are the oldest known enclosed landscaped in the world dating back more than five thousand years. What makes these so interesting is that although covered by blanket bog over six feet deep in places, modern land holdings centuries later followed the plan of these walls quite accurately on sheer instinct rather than knowledge thereof. This gives rise to the argument that vernacular is very much a primitive instinct as opposed to an educated set of decisions which is to a degree very true however such examples depict a clear education and understanding of context.

According to Friedrich Ragette “archi-

ecture begins with the settlement of man. The creation of shelter is our response to the environment and the context of our existence” This context may be broken down into two main categories: the natural and the human. Each contains their own sub categories, those are: location, climate, materials and tradition, socio-economic and values. It is the challenge of the architect to weigh up all of these factors and thus design an architecture which responds appropriately. The human context is ever-changing and can never be entirely catered for. We may only strive to prepare for future generations by looking to the past as is well documented by Sigfried Giedion throughout “Space Time and Architecture”. The natural context on the other hand although changing, is far more permanent and it is this which the vernacular is most concerned with. Climate and location will undoubtedly remain significant to the form and scale of any project. Materiality per contra may change and this is a significant aspect of all designs especially those of the vernacular where being true to context is to the fore. In the human context for one to design instinctively or rather practically, it is understandable to use the most easily acquired raw materials however in responding to the natural context the choice of materials becomes important. The success of a building and even the development of an area may pivot on materiality.

2 Friedrich Ragette, *Traditional Domestic Architecture of the Arab Region*. (China: Everbest, 2006), 10.

The vernacular of anywhere, that is to say the ever developing style of building and design which defines that place aside from its ecology, climate and natural beauty, is what gives land

character. This is something that man has

strove to do since the very first person decided to explore what lay beyond the horizon. J.B. Jackson writes on this theory in “Discovering the Vernacular Landscape”. He states that there is something deep within us all to fence and name every patch of land we encounter. A curious instinct considering we yearn for new untouched land quite often. A major example of this is the grid organisation of the United States of America. One might argue that it is in our nature to explore while one may also say that it is due to man’s urge to conquer that there are very few rocks and crevices on this planet which have not eluded our race and which have as of yet not been named and claimed.

I have yet to find a spot on this relatively small island nation of ours that does not have a name or more often than not a number of them each with their own back story. This is due to the variety of settlers who have resided here over thousands of years. Irish people however have traits which all nationalities do not possess, we are made aware from a very young age that there is great pride attached to calling our land our own. We are told and retold of the many times the country has changed hands and of how our land as we are taught was pillaged and robbed from us through force and violence. We as a nation have very strong emotions toward the land we come from. For this reason I imagine that whether they are aware of it or not, all Irish people are passionate about the vernacular architecture of our country that is if a true one exists.

An example of this can be seen in many everyday peoples' opinions on the imported architectural movements such as the Georgian blocks. By the common person these are often viewed with distaste as they are a reminder of a country under occupation by a foreign empire. Those of us who study the topic acknowledge the fact that such movements, be they accepted or forced upon our nation were nonetheless major developments in the forming of towns and cities and thus in creating what we have become. Does this not mean that they too are part of the vernacular if after all it is a documentation of our development? I believe it takes every aspect of our development to create what is deemed a vernacular architecture. Whether one chooses to accept it or not, the negative as well as the positive history have developed our identity.

Identity

Personally I have always had a passion for vernacular architecture even before I became aware of the term. This has been especially true where buildings respect the landscape which they sit in, be it through form, concept or materiality. Materiality tends to be the first element I consider when investigating any building This I have no doubt stems from my upbringing on Árainn, the largest of the three Aran islands a small archipelago which are situated about thirty miles west of Ireland at the mouth of Galway bay. The area is famous for its distinctive limestone landscape. There is a distinct symmetry to the rock, all crevices stretch from north to south and serve as permanent reminders of ancient glacial flows as well as boundaries for farmers and animals alike. It is a truly remarkable place not simply for its natural beauty but also for the history that goes with it. It is a barren, wind-beaten outcrop which has attracted visitors and settlers for over three thousand years with certain studies gauging it nearer to seven thousand.

It is true to say that islands in general possess a degree of mysticism. Their geography alone appeals to man's instinct to discover and conquer. This is well documented throughout history. Easter Island for example in the south Pacific continues to puzzle academics and explorers alike, nobody quite understands its history entirely nor even the motivation for its initial inhabitation c. 300 A.D. What Easter Island does unfortunately portray aside from its claim to fame (the lines of stone statues), is the failings of man and the failings of

a race to live in harmony with their surroundings. Two major factors in the demise of Easter islands population were slave raids and disease however prior to this the real catalyst was the fact that the tribes of the small rock completely ravaged the landscape. Every scrap of wood available was used and almost every animal found was eaten. There was a complete lack of control regardless of the order within the society which at one point boasted about 15,000 inhabitants.

It is stories such as this of failed civilisations that make the story of Aran impressive, the fact that people have lived and thrived on such a small patch of inhospitable land for such an extensive period. Of course there is the argument that it has a closer proximity to the mainland however if this were seen as a positive then surely far more inhabitants would have immigrated long ago. It is well documented that the Island has attracted the attention of many great thinkers over time among them Saints, writers and artists. There certainly is a draw to the place and it is for this reason that I believe any developments upon the landscape must be given considerable thought for they tend to be painfully obvious as well as long standing, not least in the form of housing.

The true vernacular architecture of this area it may be said is seen in the beehive shaped huts which once dotted the landscape. These were creations of the first settlers and no more than the cave dwellings of Pantalica nor the underground village of Loyang, China, these were a pragmatic response to their site. They were primitive dwellings, corbel domed structures constructed of the

surface stone at hand devoid of any windows. They were simply for survival in the elements. Survival however is a far cry from an enjoyable standard of living. This is a would-be argument often put forth by architects such as Ronald Brunskill who stated of the vernacular:

“...a building designed by an amateur without any training in design; the individual will have been guided by a series of conventions built up in his locality, paying little attention to what may be fashionable. The function of the building would be the dominant factor, aesthetic considerations, though present to some small degree, being quite minimal. Local materials would be used as a matter of course, other materials being chosen and imported quite exceptionally”³

³ R.W. Brunskill, *Illustrated Handbook of Vernacular Architecture*, 4th ed. (London: Faber and Faber, 2000, 1971).

It was with the arrival of tools and better knowledge of materials that these conical structures became vertical and the roofs became thatched before eventually being abandoned for the “traditional thatched cottage”. These also embraced the vernacular methodology. They too possessed a sense of place not merely for the fact that they were constructed entirely from locally sourced materials but also due to the manner in which they responded to the climate. All were one storey dwellings with a loft. The pitch of the roof was always kept low and the walls thick often up to a metre or more to insulate from the cruel Atlantic winds. Most will now argue that technology and a greater understanding has helped us to break free from the shackles of our climates yet I am of the opinion that one can be radical in architectural design without disregarding nature

entirely for this is a mistake which mankind has regretted on more than a few occasions. It is the most powerful force on Earth and one which all our interventions should incorporate and co-exist with, for nature is not one which can be contained.

Change and the Impact of Technology

We are in a very interesting era right now one where the world has never been so connected. For the most part this is a positive development but there are of course issues with this. For some time I have been of the opinion that globalisation has gone far enough perhaps too far. Technology is constantly advancing to our general delight, in architecture also. Designs thought to have been the work of science fiction and fantasy are becoming realities and never have we had so many materials nor as many means of construction. It is due to such advancements that for some time the idea of vernacular forms and methods have been left by the wayside. People do not wish to live in outdated colonies, nobody wishes to be left behind in such exciting times and rightfully so. The lessons of past trials both successful and failed are often forgotten for this reason. It is only natural to constantly push the boundaries if we did not do so life would cease to be interesting, as would design.

There is no sense however in ignoring the past and this I believe is where the importance of the vernacular lies. By all means new is interesting yet where we have come from is our source of knowledge and without exploring this it is naive to even consider designing new forms of architecture, this entails not only the great buildings of old but deconstructing the fundamentals of those buildings and of architecture itself, this is where one will find true substance and genuine concepts. As Frank Lloyd Wright once stated of vernacular architecture:

“for us better worth study than all the highly self-conscious academic attempts at the beautiful throughout Europe”.⁴

4 Frank Lloyd Wright *

The core needs of design lie there. Each decision be it an instinctive or an educated one was calculated and served a specific purpose. That is not to say that architecture on the whole has strayed from its natural context due to prosperity and technological advancements yet there has been unimaginable change. Structures which respond to their context both naturally and on a human level are more honest. The architecture tells the story of the site, its context and the people who inhabited it much like the manner in which a person's face tells the story of their life. Many buildings tend to mask such clues, such as structure or true materiality. Of course new methods have paved the way for amazing structures and truly magnificent spaces, the likes of which man could only dream of as recently as a half century ago. One still cannot help but wonder are heritages being lost in the process or more importantly identities?

I do not gain a great deal of excitement in viewing the same architectural techniques being used the world over nor do I enjoy the idea that the primary context which architecture adheres to is the economic one. This nonetheless is an unfortunate truth and one which is not new either, especially in Ireland and one might argue that this even is vernacular for it tells us of the prosperity of the period in which a building is constructed and is appropriate in so far as it continues to be a measure of our development. I believe nonethe-

less that if a building does not relate in any form to its natural context, that it will forever be considered a stranger to its surroundings. Perhaps it is somewhat acceptable within the great metropolises for these are places almost without affiliation to any greater rule, they are multicultural hubs much like airports or stations. They are sometimes referred to as non-places for they have no true identity. Here and only in such places to I believe it is moderately permissible to view the context as a blank canvas, for such places create their own context. The natural contexts they once had are long forgotten or hidden beneath centuries of concrete yet as with the example of the Céide fields it may one day re-announce itself.

To be good it is said is to change while to be great is to change often, if true then for an architect to be successful and to be true to type one must be capable of change, the context of a given place however is not any one mans to change, for this reason I believe one should be sensitive to the vernacular landscape and not ignore the merits of primitive techniques and least of all ones instincts. It is admirable to have a distinctive style it is not however to force that style upon all cultures and all landscapes, it is not practical either. A style can be adapted. Le Corbusier is a prime example of this. There were of course his renowned five points however they were applied with a sensitivity to context as can be seen in a number of his buildings, in particular the Legislative Assembly at Chandigarh where the natural context was given great thought as well as the human even to the extent of the manner in which the construc-

tion was undertaken i.e. the use of donkeys as opposed to more effective developing technologies of the times. It is very much a 20th century approach structurally, constructed in a primitive manner. It embraced the heritage both of the area and of the people. This I believe is the most appropriate means of progression, by all accounts move forward but never ignore what has gone before nor underestimate its significance.

The Legacy of the Vernacular Response

5 Emilio Ambasz, "Green Over Grey" (lecture, SAUL, University of Limerick, Limerick, March 27, 2012).

A renowned architect recently stated that "as architects we wish to create landmarks".⁵ This of course means we do not wish for our designs to fade into the oblivion of their context, an admirable statement as most people are fearful of uttering such words. Many designers are under the impression that to do so one must create something significantly different, a bold intervention which announces itself dramatically through form and materiality. This could not be further from the truth. What tends to be overlooked quite often is that it is the more subtle architectural feats, those which respond to their landscapes accordingly and those which are sensitive to the encompassing contexts, which become landmarks. It is these which stand the tests of time not simply because they are designed with their climates in mind but because they are suited to their specific area in the world.

J.B. Jackson states that "We have to learn that we can no longer aspire to permanence in our communities, but to their continuity." This I believe is paramount to the study of vernacular architecture if not to architecture on the whole. One cannot keep hold of the past for that will not lead to a successful future or to further development however we must embrace the lessons of those which have gone before us and use them to a certain degree, this is as true with architecture as with people. Jackson goes on to say:

"...We cling to old buildings and old urban forms even when they have no artistic or religious

or political significance. The restoration of non-descript old houses or old residential neighbourhoods is pleasant enough in prosperous communities with a history of their own, but is this the way of providing continuity for communities which are poor or too new to have a history? Whatever we like to think in hard times (which eventually come to every community no matter what its size or wealth) what makes survival possible and desirable is not its archaeological identity but its ability to continue, and it continues because some structures, some institutions and facilities provide continuity. These are the landmarks.”⁶

Traditionally such landmarks were the church, the town square, the house of justice and the schools. This is still the case mostly yet nowadays areas are often distinguished by other structures such as sports pitches, arenas even car filling stations or supermarkets. These however do not (in their architecture) lend themselves to continuity they tend to be structures with short life spans with little or no relation to their contexts, they are brands generally erected swiftly with cost in mind as opposed to design. So what will be there for the future generations to learn from or will this era be seen as a blemish or a lesson not to live by similar to the unfortunate inhabitants of the fore mentioned Easter Island? One of the key questions relating to vernacular architecture is where do we find the medium? What is an appropriate response which both caters for our future needs and is sensitive to the past and the surrounding context?

⁶ John Brinckerhoff Jackson, *Discovering the Vernacular Landscape*, (London and New Haven, Yale University Press, 1984), 111.

Looking at protected buildings which generally are our landmarks one must note that more often than not such structures tend to contain a vernacular response, be it through form or materiality as is the case in Ireland. A building of significance was always built from locally sourced materials, they pertain a distinct quality which cannot be matched by hybrid materials of the modern era. They withstand the elements and find a place in the public hearts as they tend to fit even in modern society. Vernacular buildings do not simply grab at ones aesthetic needs they earn a place within society. On the other hand one must tread carefully when analysing the buildings of by gone eras, it is far too easy to become trapped in one mind set and believe that it is the only way to design. Landmark buildings are still thus because they are rare in the bigger scheme.

We are especially guilty in Ireland of believing that there are only certain ways of building as well as being highly critical of innovative concepts. Evidence of this can be found throughout the stringent planning laws which govern our state where often time creativity even when sensitive to the landscape is barely considered. These have resulted in box form bungalow dwellings which for the most which lack any real thought or design and merely fall into line with one another and barely develop with passing decades offering very little to the imagination nor to the eye.

Conclusion

I believe that the way forward is to be more lenient towards spatial ideas, to allow our architects to express the artistic in society but to encourage vernacular thought. All buildings must relate somehow in my opinion to their context and reflect this. However there should not be specific rules by which we all must abide. As it stands planning regulations do not guide one in design but rather dictate what one is permitted and is prohibited from creating. An example of this can be found on the Spanish island of Lanzarote where all rural dwellings must reflect those of the past. All are whitewashed with the inhabitants choosing between three colours of paint for the woodwork of the openings one to represent the soil, one the sea and thirdly the volcano much like the three elements earth, wind and fire. There are also laws against high rise buildings in order to preserve the natural qualities of the area. These regulations were majorly influenced by the architect César Manrique who believed in sympathetic development having realised the touristic potential of the area. The principles of such laws may be commendable however they are extreme in their enforcement.

If one could not express their own nature in architecture then the profession would cease to exist however without order and in my opinion a response to the contexts which define a landscape we are taking a step backward. Vernacular architecture as I believe is very much an ever developing documentation of mankind and our relationship with where and when we live, for this

reason I believe we should respect our contexts and respond appropriately in our designs. Public guidelines however as seen in planning are not the way of encouraging responsive design and are certainly not the means of encouraging creative ones. For this I reason I believe that other than educating students accordingly in more free environments there are not a great deal of solutions to the matter. In many respects the only way forward is to continue as we are and people will learn from what is created around them.

During the age of landscaping in Britain it was firmly believed that all great cities had ruins. When we draw the ruins of our designs what are we left with? Assuming that we are fortunate for enough for them to become ruins one would hope that it would be the best part, that the key elements will remain standing. Perhaps they might become the bones of a new project entirely or perhaps they will inspire an even better one. This in many respects is the true vernacular of anywhere. The designs which respond to their context will be clear and ultimately should gain respect thus continuing our development and the progression of society.

Bibliography

- Jackson, John Brinckerhoff, *Discovering the Vernacular Landscape*,
- Oliver, Paul, *Dwellings*,
- Rudofsky, Bernard, *Architecture Without Architects*,
- Giedion, Sigfried, *Space Time and Architecture*,
- Ragette, Friedrich, *Traditional Domestic Architecture of the Arab Region*,
- Robinson, Tim, *Stones of Aran; Labyrinth*,
- Edgerton, David, *The shock of the Old*,
- Ambasz, Emilio, "Green Over Grey", (Lecture at SAUL), March 27, 2012.

Physical or Digital



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0. Introduction

Is there still art left in architecture? Or has the computer with its complex curves and 3D modelling made it a thing of the past. In nearly all modern architectural practices computer hardware and software are present at nearly every stage of the design process. The only stage left relatively untouched is the initial one, the first move, where the pencil connects with the paper and makes the first mark. This mark is the most important; it influences everything that comes after. The pencil is an extension of the artist's hand, an important tool, and one most architects would struggle without. It is how we express our intuition of what the design will be. From that first move, the computer may be introduced and may even take control, but in most cases a hybrid development of the sketches is the next step.

By using computer programmes, designed to assist and testing thru models at the same time, most architects find a balance between the real and the virtual worlds. Toyo Ito said 'we of the modern age are provided with two types of body. The real body which is linked to the real world by means of fluids running inside and the virtual body linked with the world by the flow of electrons'¹. Unless we exist in complete isolation we are connected in some way to both worlds. Architecture exists very strongly in both; in the virtual world we are able to design complex objects or even completely new civilisations. We then started to ask computers to figure out how we could build complex curved objects and forms in the real world. The boundaries of construction technology and material manufacture advanced to make this possible. Architecture should use both real and virtual tools to progress. It is easy to get wowed by fancy graphics of digital media, but in some cases a simple hand drawing may tell the story just as well.

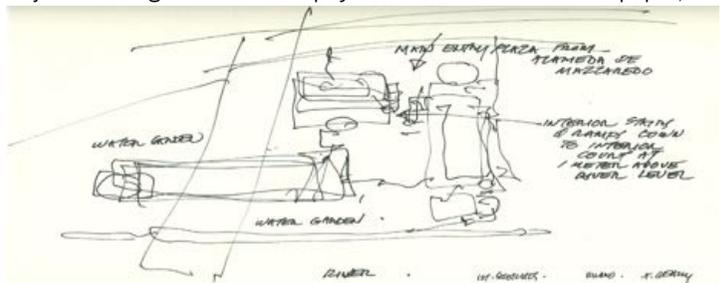
1 Antoine Picon, Digital culture in architecture, (Basel, 2010) 57

1. Imagination to physical

What we design is part of us, there is a connection to it. We give it a little part of ourselves every time we create something, and we consider it ours. The first move is usually always made with a pen or pencil on paper. According to Gehry the first mark on the page is 'the moment of truth', a crucial first stroke triggering a decision that determines all the subsequent steps². It is in this first moment that the design becomes real, and not just something in a designer's imagination, it is a moment full of potential. Because this first move is so important, it may explain why there is nothing more frightening to a designer or artist than a blank piece of paper. But if you are too scared of making a mistake with this first move you may never put anything on the paper. To overcome this, they must trust in intuition and be less self-conscious, give the hand and the mind the freedom they need to create.

Juhani Pallasmaa says: 'The pencil in an architect's hand is a bridge between the imagining mind and the image that appears on the sheet of paper.....or perhaps it is the hand that imagines as it exists in the flesh of the world, the reality of space, matter and time, the very condition of the imagined object'³. He suggests that it is not only the mind that imagines, but the hand thinks for itself 'that the capacity of the imagination does not hide in our brains alone'⁴. We do not have to think about telling the hand how to write; it has already learnt that skill and remembers it, as have other limbs other skills like how to walk or cycle a bike, we no longer think about these things our bodies do them automatically. Pallasmaa believes that 'The use of the computer has broken the sensual and tactile connection between imagination and the object of design'⁵ There is a physical connection with the paper,

Frank Gehry --Guggenheim Museum, Bilbao.

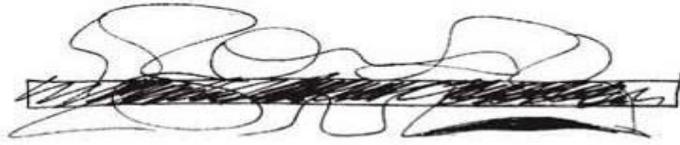


2 Mark Rappolt, Gehry Draws, (London, 2004) 11

3 Juhani Pallasmaa, The thinking hand, (Chichester, 2009)017

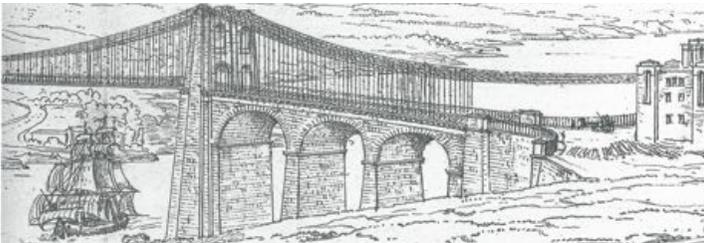
4 Juhani Pallasmaa, The thinking hand, (Chichester, 2009)017

5 Juhani Pallasmaa, The thinking hand, (Chichester, 2009)065



compared with the alienation of the screen. A click of the mouse is not the same as the pen or pencil marking the page. Every architect has a different way of working, just as they have a different way of thinking. If we compare two architects who are considered architects of the digital age Zaha Hadid and Frank Gehry, both of whose buildings relies heavily on computer technology; Hadid uses 10-15 computer monitors to see all of the aspects of a building at the same time, but Gehry is the opposite he can only 'look at some terrible image on a screen....for a few minutes at a time. Then I have to run out the room screaming'⁶.

A hand drawing speaks to all the senses, it is possible to feel other sensations like temperature, noise or even smell from a sketch, the smudges can become part of the atmosphere. While the artist is drawing an object they touch it, not in a physical way, but with their other senses. Pallasmaa said 'As I sketch a contour of an object, human figure or landscape, I actually touch and feel the surface of the subject of my attention, and unconsciously I sense and internalise its character'⁷. By doing this the artist can remember what they have seen and experienced better. If you compare how much you remember of a building once you have sketched it or one you have just photographed, the amount of information you are able to recall at a later date is very different. In my own experience this is due to the fact that you really study a building to be able to represent it on paper, with a photograph it's a snap shot of a moment that perhaps does not portray the full sensory experience like a sketch could. If we look for example at architect Karl Friedrich Schinkel, he probably wouldn't have absorbed as much detail as he did on his English journey, if he had the use of a camera rather than his sketch book.



3. The Menai Bridge, Karl Friedrich Schinkel

6 Mark Rappolt, Gehry Draws, (London, 2004) 92

7 Juhani Pallasmaa, The thinking hand, (Chichester, 2009) 089

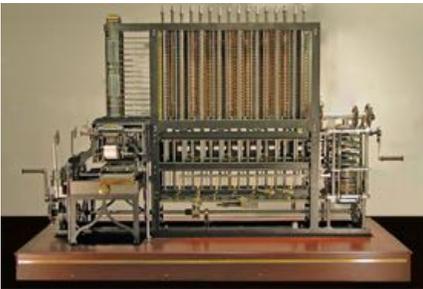
Drawing is not the only medium that the designer can make use of, model making is an important tool in visualising a design. Once you make a model, you can better understand the spaces you are creating. You get a better feel for it, and if the model is large enough you can experience those spaces. Even though computer can create quick 3D models that give the designer a glimpse of what the spaces are like, it is the physical act of making that space that the designer is missing out on. The feel of the card, paper, metal or wood can inform the designer what material the building wants to be made out of, not want value can be inputted into the material field box. The latest advancement in model making would be the 3D printer; with this the designer is removed to at best the role of observer, more often than not the finished model will just be delivered to him. This technology has been around for a while but is now becoming more and more affordable, with printers costing less than what we might imagine, we may in the not too distant future be able to hit the print button and a few hours later have a scaled model on the desk, again having been removed from the process by the computer. Take for example we need a hard to find part of a machine, the long drawn out process of having the part painstakingly moulded and manufactured maybe no more with the development of 3D scanners and printers⁸. These advancements have revolutionised the prototyping of products, but their use in architecture may prove costly to the skills of the architect and the development of his designs. Their only advantage would be in the manufacture of a final presentation model for the purpose of explaining the building to the client or public, thus putting it outside the realm of the design process.

The profession of architecture will never return to the pre-computer way of doing things, this we all know; the computer has made the production of technical architectural drawings faster, more detailed and easier to amend and reproduce if required. It is the complete computerisation that makes me uneasy, the loss of contact between the artist and their medium, and the art of architecture being reduced to a series of 0's and 1's. The distance of the screen from the hand, not being able to touch, limits one of the senses important to design and should not be undervalued or ignored. The freedom of the pen or pencil on the paper is not the same as the cursor on the screen, the architect gets a feeling or an idea from doodling or absent minded sketching on a piece of paper.

2. Development of computers in the developed world

A computer is a machine; it is the software that controls it which is important. Boolean algebra was developed by George Boole in 1850, and in 1937 binary numbers 0 and 1 was combined with this type of algebra to produce binary code. Digital computers are controlled by binary code, which is the difference between 1 and 0 (on/ off or true/false).

What was the first computer? The Greek Antikythera mechanism or the Roman abacus, are these computers? Or does computer history begin with Babbage in 1871 with a machine he called an analytical engine that was designed to produce mathematical tables. From here on the computer was continuously asked to do more and more complicated tasks. In 1890 the census for America was held using one punched card per person of the population. The problem was not the gathering of the information, but how to compute this information into something usable or at least readable. The tabulating machine was developed using this punched card system, it was

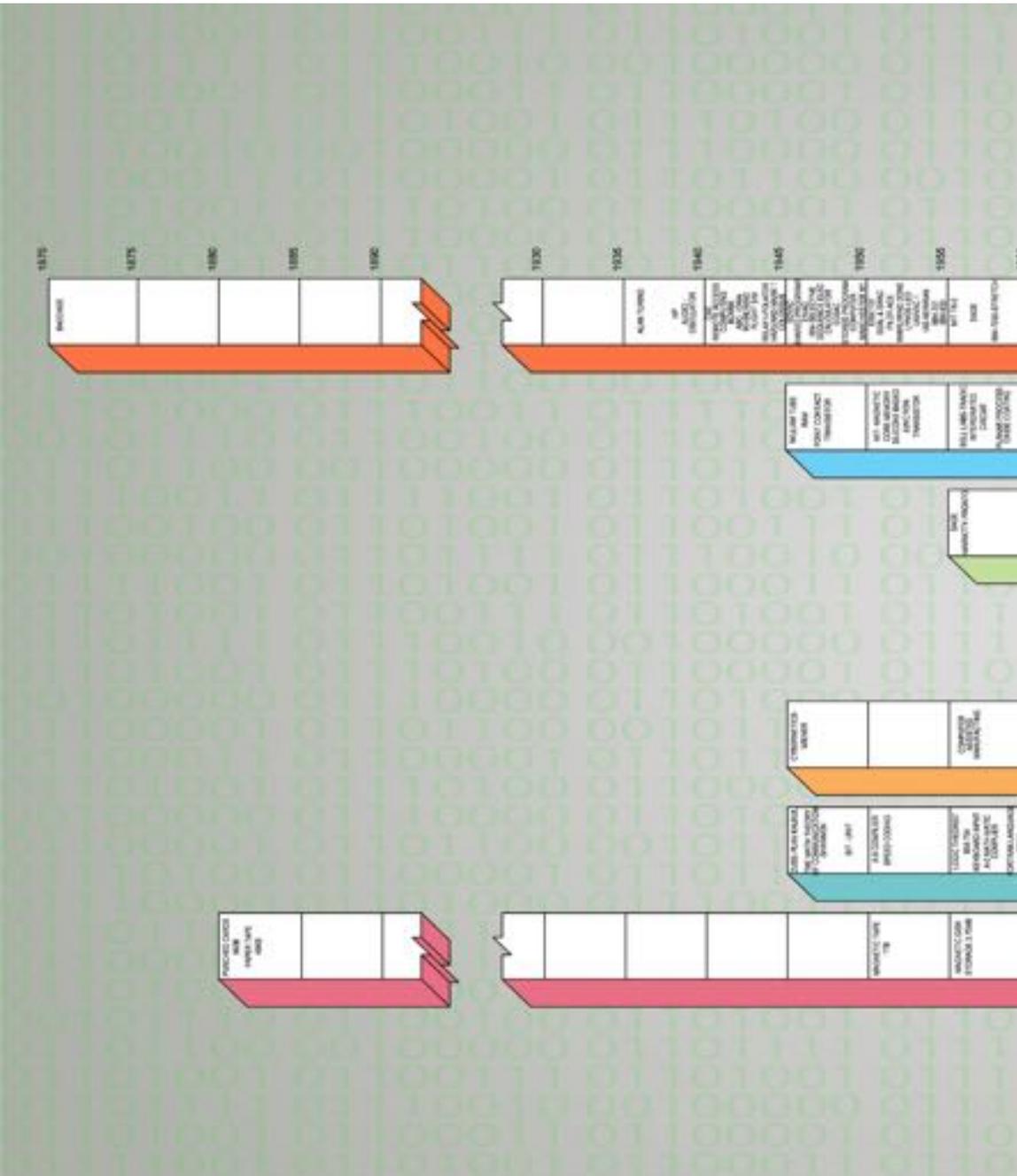


5. Babbage's analytical engine

6. Enigma

able to correlate the information gathered.

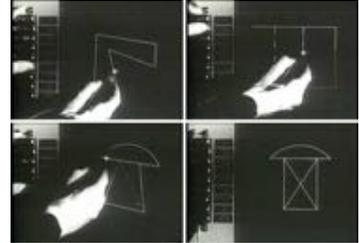
World War II had a great influence in pushing computer technology forward. Code breaking became important, cryptography and communication was a major factor of the war, for example the development of such machines as the Enigma, Bombe and Colossus by the British led to advances. These in turn were instrumental in the development of MK I, the first digital binary computer in the modern sense, it also had internal electronic storage. On the other side of the Atlantic the Eniac machine was being developed, it was finished too late for WWII and did not have any internal storage, but was used in the development of the A-bomb. The first commercial computer was for the catering company Lyons, it was called Leo; it



4. Development of computer technology since 1875

7. Leo, first commercial computer

8. Sketchpad



was used to help manage the inventories and distributions.

The Cold war bought about the development of Sage, a missile early warning system. Which in itself was outdated by the time it was finished, but it did contribute to the development of real time messaging. It was at this point, that how we interacted with these machines became more important. The graphic interface was developing; Ivan Sutherland created Sketchpad, a drawing program using a light pen to input instructions.

The next big move may not have been in the computer itself but in a way to link multiple machines together in a network. ARPANET was the starting point for our now networked society; it had four nodes each in a different university. Computers were reducing in size, they were no longer taking up whole buildings or even rooms, but had been reduced to single workstation. In the 1970's the PC (personal computer) was introduced, this was a general purposed machine; they were designed to do many different tasks depending on the software programmes that were installed. Other area of computing were developing at the same time like Artificial intelligence (AI) and robotics with the Stanford arm, software development with the computer language Basic, graphics with computer games like pong. Developments in all of these fields fed off each, one using the other to push forward. The 1980's saw the introduction of the Apple I, game consoles, Cad for the PC, internal and external storage got physically smaller but their capacity increased and Tron was the ground breaking film of the decade in relation to its special effects. From here on computer got faster, could do more things and was more widely available to the general public. The 1990's bought the

9. Apple I



10. Facebook



World Wide Web (WWW), Photoshop, laptops, Play station I and eBay was invented. The 2000's this rapid development continued: laptops outsold desktops, the iphone was introduced which revolutionised the mobile phone market and social networking sites such as Facebook and MySpace grew to global proportions.

Where will computing go next? It maybe a world run by computers than can learn and no longer need to be told what to do...the film A.I. does come to mind. We are afraid of this scenario, what happens if the control is taken away from us? The science fiction industry has been producing books and films that tell us that this will restrict our freedom and eventually we will work for the robot and not the other way round. In 2007 Scientists and engineers were experimenting with robots that they don't programme, they may simple tell it to move forward, but they don't tell them how to do it, the robot learns how to move itself. At the same time, even with some of the same engineers the self replicating robot was other area of research, with this robot as long as new material within reach they will continue to built. The advances in robotics have moved on to flying agile robots that are capable of scanning their surroundings and moving thru a space, they are not pre-programmed with information about the space, they also send back the information that they collect to a computer the robot moves can be tracked and all information viewed on a 3d image that the robot is making.

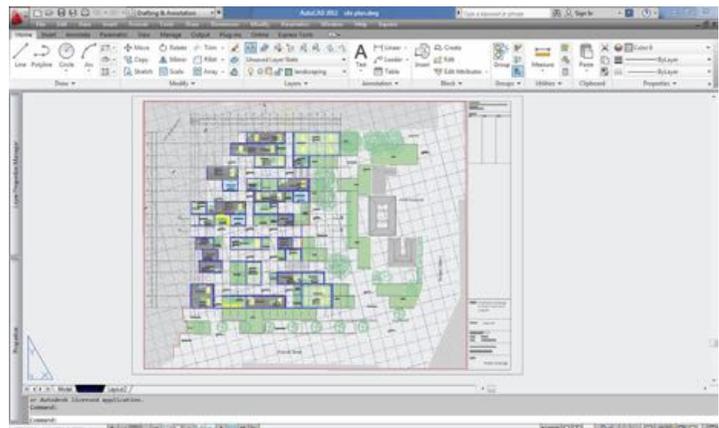
Architecture exists in Virtual worlds as well, but here it does not have to abide by the same rules. Microsoft employs architects to design virtual worlds, with some of the same issues. The character travels thru a sequence of spaces, interacting with other characters along the way, much like the way people in the real world do. The main different being that virtual architects don't need to consider codes and regulations their buildings do not leak due to a misplaced membrane. But they could consider climate if the designer wants

them to, for example overhangs to create shade, therefore changing the atmosphere of the virtual building. The care been employed in the design of this virtual world illustrates how important digital space has become.

What happens when you take digital technology away for a person for a day? There is a feeling disconnection and loss. They feel like they're missing something either in the virtual or real world. Is it a fear of being un-contactable, they ask themselves what if someone needs me or I need someone else. The feeling of helplessness increases if a question is asked and you are unable to access the limitless amount of information normally available thru a smart phone. Will it be possible to be outside the information network in the future? Is it possible now? Only if you chose to live in isolation no phone no TV no computer, and are self-sufficient, but even then there a record of you, someone has your name and linked to that there is a number, your location has at some stage been mapped via satellite. What has this done to society? Take for example the mobile phone, what did we do before everyone one had one? We were on time. Messages were simply left for us and we received them when we arrived. There was no sense of impatience with others if they did not return calls or messages instantly.

How has computers and CAD changed architecture? Quite dramatically, not only did it make drawings easier to develop and change without having to redraw the entire sheet, but it made digital architecture possible. Some of the buildings we have seen built in the last decade could only have been realised because of advances in 3d modelling software has become more available. Without the computer these NURBS (Non-uniform rational basis spline) would have been extremely difficult to calculate, but now

11. AutoCAD



easy to use computer programmes will do it for you. That is not the only use for 3d software, it is used by architects to try and envision the spaces that they are designing. Programmes like Sketchup make it easier for the architect to imagine the spaces they are designing; it also makes it easier for them to present these spaces to others.

12. Sketchup



3d modelling software has become much more intuitive and easier to use, the early versions were complex, limited and required an extensive amount of man hours and the most technologically advanced computers. But you could say architects have been envisioning and presenting space in this way since the invention of perspective drawings. You could ask how is 3D modelling different, like with 2D drawings it is easier to change views or details, it is also faster to construct, giving the designer instant results and gratification.

3. Digital space

In the present culture the computer and other digital developments have created flatness or a shrinking of our perception of distance. For example it is now possible to be virtually present in one place while actually being somewhere on the other side of the world. Most of us have used such software as Skype to connect in a professional situation or just to talk to family and friends abroad. This has closed the distance that miles create, letting us feel that people and places on the other side of the screen aren't that far way. It has made the world small, but what has it done to different cultures? Are all developed countries cultures merging into one type? There are fewer and fewer cultural differences in today's world, larger cultures smothering out smaller ones; or the smaller ones aspiring to be more like the larger ones, wanting what they have, being it at the expense of the indigenous cultural traits.

Another feature of the digital culture and space time relationship is the zoom-able world, for example gps and the global mapping. The gps device (for example a smart phone) locates you in the world and can then inform you about the area you're in. The wealth of information that you can access is extensive, from traffic conditions to its history, or any photographs that have been uploaded of the area. So you are able to zoom from the universal scale to the square meter in which we inhabit. This has changed the global practice of architecture. It is now possible to design a building anywhere in the world without actually ever being to the site, (even though this is not to be recommended). The architect no longer needs to move to be near the development because technologies allow them to control the design from quite a distance away.

Being constantly connected to the information network has its draw backs. Is the imagination limited by digital culture, being constantly entertained and stimulated, we no longer have to imagine for ourselves. Children no longer make believe, why would they? When they can access an elaborate magical world, which can be held in their hand, and with a flick of a switch they can be transported into this world, be any character they wish and have amazing adventures. Even in some cases like the Xbox kinetic, you don't even need to hold the controller, because your body is the controller and the magical world is your television screen. We are surrounded by digital devices everywhere we go; we are able to access limitless amounts of information from anywhere about anything. The software



13. Zoomable world

that controls these devices is actually more important than the devices themselves; constantly evolving and updating at an incredible speed. In the field of architecture a new breed of architects/programmers are emerging. In his book Antoine Picon points out: 'scripting has developed only in the past few years, fostered by the growing computer literacy of young architectural students and architects that are now able to write code instead of relying on predefined software functions'⁹. There maybe a fine line between developing new software for the architect to use and developing software that looks to replace him. Architecture is about the experience of the spaces, I don't know if you can programme a computer to feel or experience. It may go a ways to towards aiding design but a designer must be able to judge the spaces that are created. In 2004 Marcus Novak said architects will have 'to learn designing by algorithms, then learn to design the algorithms themselves and finally learn how to let algorithms design themselves'¹⁰. I don't think this has happened on the scale that he envisioned, actually has there been a reaction against this thinking? And is the popularity of this computer designed 'blobitecture' is waning.

9 Antoine Picon, *Digital culture in architecture*, (Basel, 2010) 95

10 Mark Rappolt, *Gehry Draws*, (London, 2004) 37

4. Seductive, but.....cold

Forms that curve, roll, blend or gently fold are seductive and pleasing to the eye, and have most people wanting to touch them and other wonder how they are constructed or how they manage to even remain standing. The smoothness of the form and of its surface was important. When these designs first started to appear the reception was cool, some believing they could not be realised, but a few were built and delivered on what they had promised. The interested spaces inside were so different to what had come before. Blob architecture was what this style was called (even though not all of the buildings were bulging forms).

BLOB (Binary Large Object), are forms that trying to mimic forms found in the natural world. The first full blob building was the Water Pavilion in the Netherlands by NOX architects, this design



14. Water Pavilion, Netherlands, NOX Architecture

used computer aided drawing programme to help produce the form.

Another well know supporter and designer of this style is Greg Lynn, whose designs went far beyond the discipline of architecture. This type of architecture was in style from around the mid nine-



15. Kunsthhaus in Graz, Austria, Peter Cook and Colin Fournier

ties, but like most fashions it lost its shine after a relatively short amount of time. Sculpted forms at times do feel alien from their landscape for example Peter Cooks and Colin Fournier Kunsthau in Graz, Austria, this building looks more like a space ship has landed rather than an organic form that may have grown there. This may contribute to the way it was designed, but computer which is itself a very different world. If you compare this to a building designed by

16. Falling Water by Frank Lloyd Wright

17. Early sketch of Falling Water



hand for example Falling Water by Frank Lloyd Wright which does not contain any curves or NURBS it fits into its landscape.

This Blob style had developed further as more abstract art than architecture, with a lot of these types of designers venturing in to the realm of sculptural forms. This gave them freedom, without the restrictions of function.

They no longer seem like impossible forms to build, computers have reduced the calculations required and the manufacturing of smart materials has made these designs more feasible. Although most of these types of designs remain unrealised their impact on the architecture can still be seen. Architects are not as apprehensive about pushing the boundaries and using complex curves, though maybe not to create a complete form but as an element of one.

Architecture took the importance of surface from the blob and developed it, it was no longer just a barrier between inside and out but it now 'challenges the distinction exterior and interior'¹¹. The surface- ornamental facades focused on how the building or its architecture interacted with its surroundings, the landscape. Is digital culture and technology making the architecture invisible? Architects are now using the facades of the buildings that they are designing to give the individual a sensory experience. 'digital architecture is the reconfiguration of the city in terms of sensory stimulation, a renewed interest in textures and colours with its tactile appeal to the passer by digital design is clearly geared towards the satisfaction of the senses'¹². The use of digital technologies in the facade

11 Antoine Picon, Digital culture in architecture, (Basel, 2010) 89

12 Antoine Picon, Digital culture in architecture, (Basel, 2010) 180

system themselves is getting more common, for example projections and other lighting effects, so even when the building may be closed it still has an active presence in the environment. Herzog &



18. Basel museum

19. CaixaForum, Madrid,

20. Prada store, Aoyama, Tokyo

de Meuron Architects use their facades to evoke a reaction from the passer by, as shown in the examples below. The Lanban centre for dance in London tells a very different story compared to the one it tells during the day. At night you can see the life within, during the day this is hidden from view.

With Herzog & de Meuron Architects, they rely on computers to help them design their buildings, but they also use scaled model to test their ideas, this hybridization is the current approach to architectural design, in design lead offices.



21. Lanban Centre, London, Herzog & de Meuron Architects

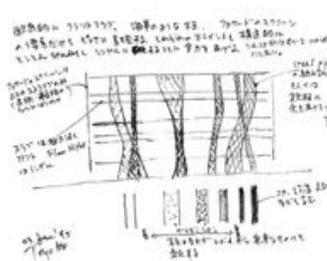
5. Best of both worlds

Gehry says 'the computer is a tool, not a partner, an instrument for catching the curve, not for inventing it'¹³. Hybrid design is the taking the best of what both techniques have to offer and finding a way to mesh them together and make it work for you. In most cases this will start with the pencil but after that the individual architect will have his own way of working. Computers do make even the largest projects manageable; projects like the Yokohama International Port Terminal by FOA would have been incredibly difficult without the use of advanced computer software. This architecture may not have even had happened, 'the complex forms of the building are widely understood to be the outcome of an experiment with computers'¹⁴. Is this hybrid way of designing just the resistance to complete computerisation? Some architects are afraid of these advancements because they see it as taking some of the control away from them and giving to a machine or it could be that they just don't understand how they work. The advantages of computer aided design greatly outweigh the disadvantages; architectural practice will never revert back to a pre-computer way of doing things.

As mentioned before each architect has his or her own way of visualising, developing and expressing their designs, an example would be Zaha Hadid. She always starts with a sketch develops it on the computer, then 'prefers to look at drawing on screen rather than on paper. The screen has luminosity. Computer renderings are lacking a layer compared to hand renderings or paintings'¹⁵. Her office uses countless number of models when designing, allowing them to look at building differently, in a way that you would not be able to with a computer model; this may change with the availability of 3d printing.

22. Sketch, Sendai Mediatheque, Toyo Ito.

23. Sendai Mediatheque, Toyo Ito



13 Mark Rappolt, Gehry Draws, (London, 2004) 30

14 Irénée Scalbert, The Yokohama International Port Terminal, CICA, 2008

15 Patrick Schumacher, Digital Hadid, (Basel, 2004)10

Algorithms being used to solve problems, are they bringing architecture closer to the forms of the natural world? Toyo Ito believes so; he starts with a sketch, believes in algorithms, experiments with materials and pushes engineering solutions to their limits. He says: 'An algorithmic architectural order thus closely approximates the order of the natural world.....they will generate spatial structures that have little to do with those of the grid of the twentieth century. There is equally no doubt that if architecture comes to approximate the system of living organisms in the natural world even slightly, peoples basic bodily sensations would be awakened' ¹⁶.

Materiality plays an important role in evoking sensations in the individual, but it is also the way of linking a building to the real world. Picon states that 'we solve more and more problems at the level of material design rather than at structural design'¹⁷. Complex facades may look like nothing more than decoration, but in fact they incorporate other features that deal with issues like structure, environmental conditions or the long term sustainability of the building. Ito believes 'Magic is the art of concealing when apparently revealing, shyly distracting with an elegant gesture in an area unrelated to the most important action'¹⁸. Computer programs and design advancements in the area of manufacturing smart materials are now making this magic possible.

Maybe it is not the computer that some designer find alien but the way in which we interact with it. Below shows Sandscape one of many new ways of computer-human interaction that are being developed. It uses a box filled with sand to represent the landscape and blocks of wood to represent buildings or forms. With the use of a real time 3d scanner any changes the designer makes are picked up immediately and are projected on to a screen for him to review.



24. Sandscape, MIT

16 Toyo Ito, Toyo Ito, (London, 2009)09

17 Antoine Picon, Digital culture in architecture, (Basel, 2010) 145

18 Toyo Ito, Toyo Ito, (London, 2009)24

6. Conclusion

The development of more computer generated designs will continue, but is this development costing us? Will the art of architecture survive? Digital based architect is battling for freedom from the pen and paper, while the paper architect struggles to keep control of his design but at the same time is trying to keep up with architectural develops and trends.

The way we visualise things in this digital world is changing, and so is the way we represent them. In some cases the skill of drawing is being replaced by computer programs that can generate views and form buildings for the programmer. Are we devaluating the design and creative process by allowing mathematically derived design methods to take over from genuine inspiration. I think the ideal solution is a combination of these two forms of architecture and not a choice between the two. There will still be the two extremes but with the majority sitting in the middle, taking advantage of both. Frank Gehry says: 'The machine has been used as a tool; it has changed a lot of things but has left the core of architectural thinking still totally dependent upon the designer's intuition'¹⁹

Bibliography:

Books:

Antoine Picon, Digital culture in architecture, Basel, 2010
Charlie Gere, Digital culture, London, 2008
Francoise de Franclieu, Le Corbusier Sketchbooks, London, 1982
Georges Ifrah, The universal history of computing, Paris, 1994
Juhani Pallasmaa, The thinking hand, Chichester, 2009
Karl Friedrich Schinkel, The English journey, London, 1993
Mark Rappolt, Gehry Draws, London, 2004
Patrick Schumacher, Digital Hadid, Basel, 2004
Paolo Portoghesi, Aldo Rossi, The Sketchbooks, London, 2000
Robert McMarter, Frank Lloyd Wright, London, 1997
Toyo Ito, Toyo Ito, London, 2009

Articles:

Irénée Scalbert, The Yokohama International Port Terminal, CICA, 2008
The Economist, The printed word, Filton, 2011
The Economist, Difference Engine: Making it, Los Angeles, 2011

Illustrations:

1. Mark Rappolt, Gehry Draws, (London, 2004)147
2. Zaha Hadid Architects, <http://www.zaha-hadid.com>
3. Karl Friedrich Schinkel, The English journey, (London,1993)183
4. Development of computer technology since 1875
5. <http://www.computerhistory.org/babbage/>
6. Antoine Picon, Digital culture in architecture, (Basel, 2010)45
7. Antoine Picon, Digital culture in architecture, (Basel, 2010)76
8. <http://en.wikipedia.org/wiki/File:Sketchpad-Apple.jpg>
9. Antoine Picon, Digital culture in architecture, (Basel, 2010)138
10. Screen shot of Facebook
11. Screen shot of AutoCAD
12. Screen shot of Sketchup
13. <http://maps.google.com>
14. Ventulett Symposium: Textile Tectonics, 2008, Georgia Tech
15. <http://www.flickrriver.com/photos/thomasreichart>
16. Robert McMarter, Frank Lloyd Wright, (London, 1997)210
17. Robert McMarter, Frank Lloyd Wright, (London, 1997)212
18. <http://www.ducciomalagamba.com>
19. <http://www.ducciomalagamba.com>
20. James Whitaker 2009 www.WhitakerStudio.co.uk
21. <http://mediacentre.kallaway.co.uk/case-study-laban.htm>
22. <http://www.artspace.org.nz/exhibitions/2001/blurringarchitectecture.asp>
23. Toyo Ito, Toyo Ito,(London, 2009)139
24. Ishii, H., Ratti, C., Piper, B., Wang, Y., Biderman, A. and Ben-Joseph, E. (2004). Bringing clay and sand into digital design – continuous tangible user interfaces.(BT Technology Journal 22)

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The Further Trends

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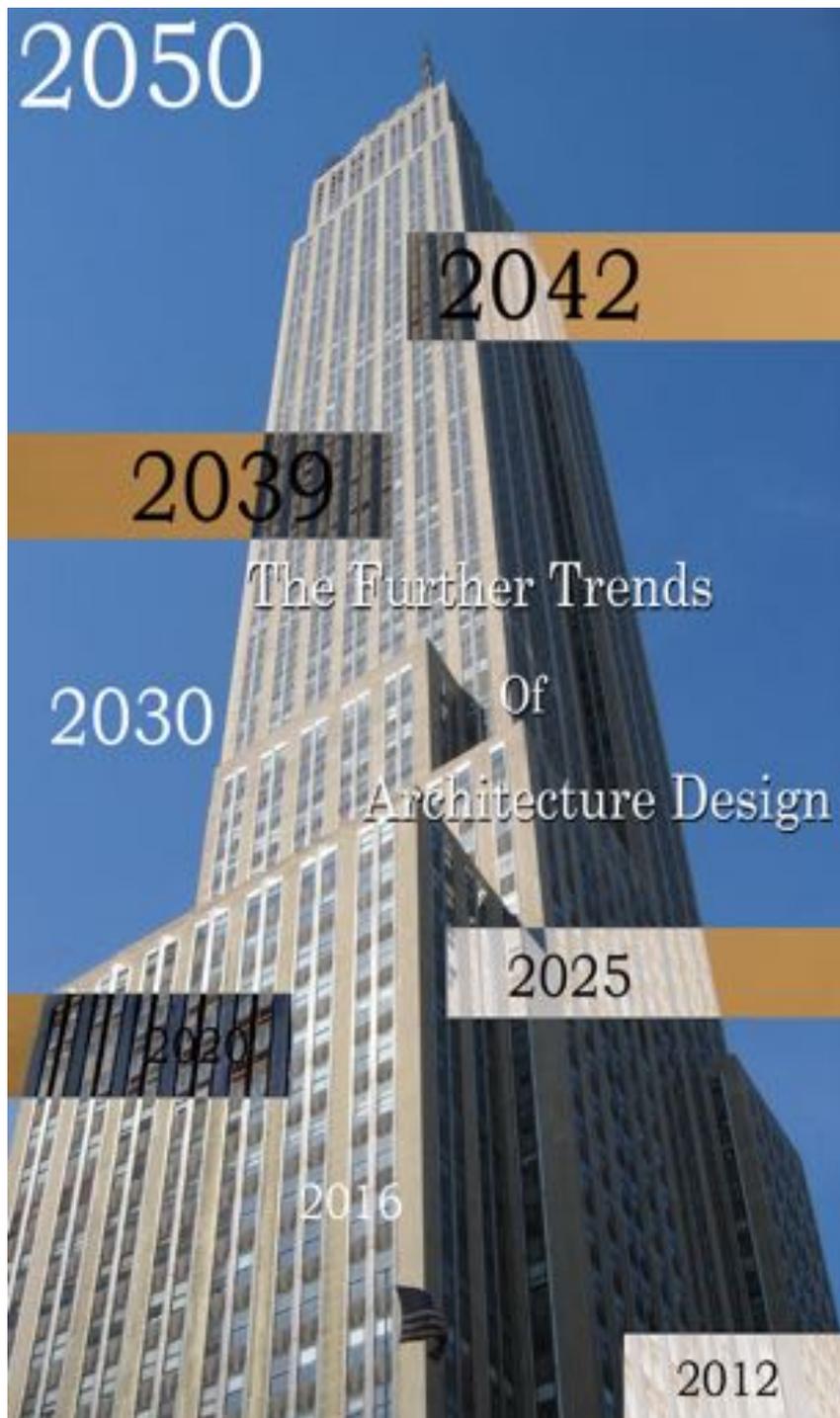
Architecture Design

2025

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2012



The further trends of architecture

- Introduction
- Start of the tall building
- The material use for high rise building
- The importance of light
- Design of a skyscraper
- Relationship between office buildings and finance
- Skyscrapers in New York and Chicago
- The Empire State Building
- Less is more
- What skyscrapers means to the city
- Environmental issues
- Summary

This is the twenty-first century, the concept of space and building has changed and developed for hundreds of years. We need to start to rethink what the real living space is, and what will the further trends of architecture be. The reason why we try to create something new is because we have experienced the different periods of various styles of architecture. We start to look at each of these periods, in a way, they are acting like the fashion vane. These periods control the thinking and limit the creativity of architecture and the behavior of the user. Now as we are more technologically advanced than ever before, it is time to move on and to find what the next step is, and create a new style of architecture design that represents contemporary society. Building is the basic need of humanity, its development contributes to the social, economic, environmental and technological development, and they have a strong relationship between them. I will analyze further architectural design trends by combining it with the public point of view and the change that happens in society. The skyscraper is the new form of building which creates huge opportunities in architecture. Furthermore, the skyscraper will be the form of building which stands around world in the future.

During 1880s, many tall buildings appeared in Chicago, 12, 14, 16, and 23 stories. They set together in the city, and they all had their own names, but people did not think they were nice buildings, and this is the beginning of the skyscraper, the tall office building¹. In 1896, there was no city more beautiful than New York². All tall buildings stand in the city center, they

1 Carl W. Condit, "The Chicago School of Architecture", (Chicago, The University of Chicago Press, 1964), 368

2 Sarah Bradford Landau and Carl W. Condit, "Rise Of The Skyscraper", (London, Yale University

appeared like towers, with heavy masonry and classic detail, and these buildings represented the economics of New York. At the same time, as the buildings grew taller, there were many issues that we had to conquer. As the height of the building increased, the plumbing system became very important, it can supply water to the upper level of building, and the elevator is also important to the tall building. Hydraulic elevators were used at start, and then as the technology developed, after Otis brother's experiment, electric elevator replaced them.

There are a lot of different types of building materials, stone is the main one, but stone can only resist compression, so it is very hard to build a flat roof with stone, only the most extreme inventiveness allows it to achieve a huge arch roof. During the 1890s, wrought iron was used in all different parts of building, floor, frame, and column. The use of iron is separately rapid. Iron can be stretched and drawn together, it resists both compression and tension³, so if a building is using an iron structural frame, all sides of room can cover by glasses, this can allow the maximum light get in to the interior space. Then steel started to replace iron as it does not strain as fast as iron, and it is more vulnerable than cast iron to corrosion. All metal structures are very weak against fire⁴, when the temperature increases, the strength of metal decreases, so it is very important that one always keep the metal part of structure hidden from exposed positions, to avoid directly

Press, 1996), 168

3 Sigfried Giedion, "Building In France Building In Iron Building In Ferroconcrete", (Canada, The Getty Center for the History of Art and the humanities, 1995), 101

4 Sarah Bradford Landau and Carl W. Condit, "Rise Of The Skyscraper", (London, Yale University Press, 1996), 173

connecting with fire when an accident happens. There was an example of a building which was considered fireproof, because it had masonry bearing walls and interior iron frame. Only a small part in the bottom was exposed to the air, which caused the building's collapse⁵.

As the building gets higher, the wall thickness is reduced. So that it can reduce the load at the lower level. High buildings are always designed for maximum light. The quality of light in the space is directly related to the rent ability of the building. The facade of the skyscraper is mainly covered by glass windows. It gives the best light for the interior space. And it is better to build in a small area, because it can save the space on the ground as land is expensive, and also small area but a tall building can have same volume but better light for the interior space. So the building can earn great profit for the investor as people will pay more money to rent the office. The best office space shows the power of the person using it. For example, like the office in the corner or have at least one exterior window⁶.

To design a skyscraper, we start from the smallest unit, normally it is the size of an office. A nine foot wide office is considered desirable by the greatest number of tenants⁷. So the wideness of the office influences the spacing between columns and the size of each parking space. The floor below ground is normally a floor which contains the services for power, such as boilers and

5 Sarah Bradford Landau and Carl W. Condit, "Rise Of The Skyscraper", (London, Yale University Press, 1996), 180

6 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 27

7 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 81

engines. Then the ground floor is normally use for banks, stores or other functions which require large area, and also have great accessibility. This is the most important floor, and we have to give it a beautiful entrance to attract the eyes to its location. The first floor, usually contains many stairways and elevators and they all divide into different sections. Above first floor, there are indefinite numbers of stories of offices stack up one by one. Finally, the top of the building is filled with tanks, pipes, valves, sheaves, and mechanical etcetera which work with the services for power in the basement⁸.

The skyscraper is the ultimate architecture of capitalism⁹, it can reflect the finance situation of the city. There was a question about what is the value of land, and the answer for that is whatever someone is willing to pay¹⁰. Gass Gilbert gave a definition to skyscraper, which is 'a machine that makes the land to pay'. In 1983, the current American architecture is about art, but all about business, a building should create as much profit as it can, otherwise no investor will have the enough money to meet its cost. The profit of a skyscraper can earn is directly related to the height and the light quality of itself. If the building is tall, it can have more office space to rent out, and it can achieve better advertisement as it will be notice easier. The quality of light for the interior space is dependent on the facade of the building, the height of ceiling and the depth of the building, the better light quality inside building, the higher rent you can get. And this is why

8 Louis Sullivan, "The Tall Office Building Artistically Considered" Kindergarten Chats.

9 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 181

10 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 157

all the architecture in America seems to strive for height. As an office building's prime and only object is to achieve the greatest profit for the owner. Although the building has become taller, there are a lot of problems come with it. People start question the skyscraper for its height and atmospheric pollution. There are mainly four problems which are important. Firstly, high buildings block the sunlight at lower level, it causes the office at lower level to be rented out at a cheaper price. Secondly, the risk of earthquakes is very high, that makes the people use the building at higher level unwilling to pay higher rent. Thirdly, it is difficult to pump the water to the higher levels, so when fire accident happen at higher level it will cause the building hard to deal with it. Fourthly, as the building is designed for office use, and the entire load applied at the lower level, so it is very hard to convert the function to another purpose¹¹. All these question are given by the lower stories user, because the skyscraper took the business opportunity from them. After all these, finally there are laws create for the height of skyscraper. Firstly, the height of building can be no more than 15 times the square root of the street width, but if the street is wider than 100 feet, the height is limited to 100 feet. Secondly, if the building is set back from the street, the height of building can rise up twice the depth it setback. Thirdly, if the building is located at corners or avenues wider than 100 feet, the building can raise above the limit. But architect C.H Blackall disagrees with these laws, he thinks there is a business need for the skyscraper. He feels there is no reason for why we need to reduce the height of the building, for the environmental problem,

¹¹ Sarah Bradford Landau and Carl W. Condit, "Rise Of The Skyscraper", (London, Yale University Press, 1996), 187

we should solve it through architecture, not just by simply reducing the height of the building. It is important to make the building as tall as the price of the land is expensive. Architects must try harder to answer the questions¹². But not only problems, there are also many advantages that come with the skyscraper. Skyscrapers contain a lot of offices, and offices are necessary for the transaction of business, the invention of the high speed elevator makes vertical travel fast and comfortable, before it was once tedious and painful. The development of steel structure makes shown the way to safe, the strength of steel construction increase the height of the building by a lot. And due to the increase of the price of the land when population gets higher, build the building taller can solve the population problem¹³.

At the start of the twenty-first century New York and Chicago were the only two metropolis cities¹⁴. In New York, the height of a skyscraper was unrestricted, after 1889 when metal-skeleton construction was allow by the building code. During the vernacular period, from 1920s to 1930s years the volumes of office space are more than double in both cities. The average height of major New York office building was increased throughout the twenties, around 1925, large projects were generally between thirty to forty stories¹⁵. As the fundamental functions and economics were the same for all tall buildings, which makes the skyscrapers all use similar forms. At the first period all skyscraper forms like tower.

12 Sarah Bradford Landau and Carl W. Condit, "Rise Of The Skyscraper", (London, Yale University Press, 1996), 190

13 Louis Sullivan, "The Tall Office Building Artistically Considered" Kindergarten Chats.

14 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 9

15 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 85

In 1920s the building forms in both cities changed dramatically especially the contrasting appearance between Manhattan and Chicago's skyline. Chicago's skyline looks like a flat roof, all buildings are end vertically at a similar height. In Manhattan the skyline is lower, but there are few outstanding skyscrapers broken the skyline, it looks much better than just a flat skyline. The empire state building is great because it is not designed by great architects, but intelligently within a formal with its own beautiful economy. It was operating in 1931, but it did not turn an annual profit until 1950¹⁶. It is the landmark of New York as the statue of liberty.

The Empire State Building has 102 stories. It is located in New York City at the intersection of Fifth Avenue and West 34th Street. The roof height of the Empire State Building is 381 meters, if you include the height of the spire, the height reaches a total of 448.7 meters. The building of the Empire State Building started in 1930, and finished at 1931. It only took 410 days. The materials used in the Empire State Building were the lightest materials, the total weight is about 330,000 tons, the building has a total of 6500 windows, 73 elevators and there were total of 1860 steps in the building. It was built during the western financial crisis period. It is consider as the symbol of American economic recovery. It was the tallest building for 40 years, and one of the wonders of the world's seven projects. Until 1971, the height was exceeded by the World Trade Center. The world trade center became the world's new tallest building. In the next few decades, there were also many new buildings taller than the Empire State Building.

16 Carol Willis, "Forms Follows Finance", (New York, Princeton Architectural Press, 1995), 90



After the collapse of the World Trade Center in Sept 11 2001, the Empire State Building continues to take over the title of the tallest building in New York until the Freedom Tower is built. The interior wall of the Empire State Building is clad with marble stones which come from different countries and the ground floor, as a space, contains many different types of art. These factors create a noble atmosphere within the building. The Empire State Building is situated in the most prosperous heart of Manhattan, where office space is highly valuable. Because the Empire State Building is very famous, a lot of variable companies intend to rent office in this building. By doing this, it can increase the visibility and credibility of the company. It also shows that the company has considerable strength. Since 1978, there is a stair climbing competition that happens every year. People who enter the competition have to climb from the ground floor to the eighty-sixth

floor. There are 1574 steps all together. Since 1994, the Empire State Building's top floor became a wedding place for young people, and also became the place to celebrate the Valentine's Day. Anyone who had wedding in there would able to become a member of the Empire State Building. This allows for free return to the building every Valentine's Day. Through all of the above, we can see that the skyscraper, that is the Empire State Building, is more than New York's financial logo. It is also the symbol of romantic and youthful vigor.

Skyscrapers are not only used solely for office buildings, they are also used as apartments. In 1949, 30 years after Mies Van Der Rohe's study for skyscraper¹⁷, he built a tall apartment block along the Michigan Lake. The view from the huge glass window is limitless. It is a twenty stories building with a ferroconcrete skeleton. It is U shape plan, two units join as one, and each has an elevator and stairway. It is called the Promontory Apartments. Lake Shore Drive Apartments are two tall buildings placed together. These are known as the twin buildings and it has becomes fashionable in the United States. This time the tradition of the Chicago school of the 1880's think it is the combine between the creative power of an artist and gigantic organization of modern building industrialization¹⁸. Mies's work greatly increased for the early fifties on. And after a decade his work was recognized in Germany. And in the early sixties he is already accepted internationally. In the early twenties, Mies finds

17 Sigfried Giedion, "space, time & architecture the growth of a new tradition", (London, Harvard University Press, 2008), 603

18 Sigfried Giedion, "space, time & architecture the growth of a new tradition", (London, Harvard University Press, 2008), 607

the combination of glass and steel skeleton is a new form of expression of art. And he feels it is important to develop this to further step¹⁹.

The words 'less is more' are the key words to the development of architecture. It is said by famous Architect Ludwig Mies van der rohe. He thought that building should need less decoration and show the nature of the building in a generous way. He described his building as 'skin and bones'. This rule is applied on most of our modern buildings, especially in the skyscraper. As the skyscraper is very tall, the first choice of material we will use is steel, because it is light. Because the depth of skyscraper is large, we need maximize the light allowed into the building. Hence, glass will be the material that we will use for the facade. And steel plus glass are the same as the idea of 'skin and bones'. They can create the feeling of tidiness and give a natural aura to the building.

The skyscraper is considered as the most important element of the symbol of the modern city. It is also the element that creates the skyline of the modern city. But in the recent years, the comparisons of high-rise building are extremely strong. Many of the skyscrapers have not yet started to be built, but the height is constantly been refreshed. The higher the building gets is not the same as the beauty it can get. They are two different concepts. But in some point of view, the higher construction gets the stronger the iconic and monumental effect it can have. The cost

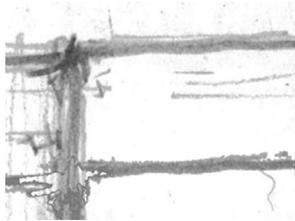
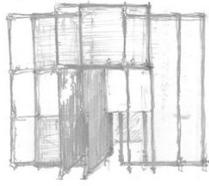
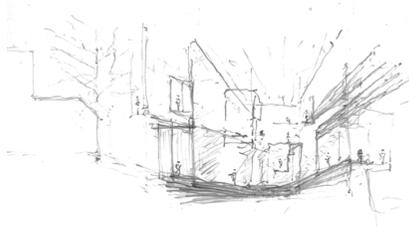
¹⁹ Sigfried Giedion, "space, time & architecture the growth of a new tradition", (London, Harvard University Press, 2008), 616

of a skyscraper is not cheap, but for a country's government, this type of construction can reflect the image of the city in urban strength. If the operation of the skyscraper is good, it can create great economic and tax return for the city.

The building's exterior material has many variables chosen to suit the ultra high rise buildings. So the glass curtain wall is not the only option. It still depends on how the building is designed. Materials such as stone, aluminum, titanium, zinc plates, ceramic plate can also be used for the exterior material of the ultra high rise building. Of course, the safety of the high rise building is always a very important issue. Choice of the material is not only about the beauty, but also must give full consideration to the safety of construction. In addition to security issues, environmental protection and energy saving are also important to the skyscraper. Many people will ask the question about light pollution. First of all, the skyscraper will cause the urban canyon effect, high rise buildings have a huge surface area, the glass curtain wall will absorb, reflect lots of sunlight to cause the temperature of the surrounding area higher than in other areas. Light pollution is not only about the rise in temperature. It is also a destruction of the beautiful night sky, it will cause glare to people who drive. The use of different types of materials on the exterior are very important. Many people do not agree with the idea of "all glass building". Skyscrapers will also affect human living environment, the factors include light, shadow, sound and variety of natural phenomenon. The skyscraper will cause a large shadow. The lower floor will be unable to receive sufficient amount of light. Moreover, the wind speed higher than 10 meters above the ground will increase greatly. For example,

at 200 meters high, the speed of wind will increase three fold than the speed at 10 meters. Because of this, noise pollution is a factor to consider. At the same time, the skyscraper will cause channel effects. A cyclone is formed in the corner of the building. It impacts the pedestrian with strong winds while they walk pass the buildings. As technology improves, we find many ways to solve these problems, such as the photovoltaic curtain wall and the use of wind power. Because of the height of skyscrapers, they can fully absorb the solar power, and save a lot of energy. So it can make skyscrapers become another source of power, to help the city in ways other than business.

Today the skyscrapers are no longer just about the use of urban land effectively. They are buildings which, combined with new technologies, can represent the social culture of the city. By looking at the buildings of the city, they can tell you about the history of the place to let you become part of the city faster. The tall office buildings can let you know the economics of the city and let you find the business opportunities easily. For the tall apartments, they can greatly help the city which has high density populations to solve the housing problem. It is hard to understand why all international cities do not have any iconic skyscrapers. I find that as technology is improved, the problems such as light pollution, wind impact and noise issue on skyscrapers will be solved easily. The skyscrapers can also turn in to a source of energy and make them more environmental to the city. Therefore I believe that Skyscrapers will finally stand everywhere, they are the future for architecture.



The Sketch

Exploration

Description

Fusion

Pleasure

The Mind

Imagination

Realising ideas

Concentration

Sensory emotion

The Hand

Being

Performance

Moment

The author's hand

The Eye

Seeing

Flying sketches

Memory

A sketch is more than a representation of its subject perched on the interface of a page. It is constructed through a spiral of energy requiring sensory emotions and the human anatomy to perform simultaneously. It demands a moment in time and is drawn in a style that is unique to its author. Each line crooked or straight as it might appear, is picked up by the eye. It is then processed by the brain and brought through the nervous system to the hand which is then transcribed onto the paper by whatever medium the author sees fit. The time which is invested in the construction of a sketch not only captures a visual account of that moment on paper, but the entire experience hones the senses and generates both cognitive and abstract thinking. As the eye rationalises and the ear animates, the brain processes and the hand guides, the moment in time which existed at the birth of the sketch becomes embedded in the author's mind.

A true analysis of the sketch and its lines requires the process of peeling back a succession of layers. Through a series of careful observations the journey

begins, eroding the representation on the surface of the page, revealing the beauty within the line construction as the sketch begins to take form. Moving deeper into the realm, one wonders about the author's thought process. The pen lines present clues, providing the observer with the opportunity to grasp the intuition of the original thought as the inner motivations of the sketch become evident. The line technique, composed by the hand, reveals an insight to the author's personality and his immediate situation at the time of the sketch. It is the final layer that is the most difficult to unveil as the observer can only speculate as to the direct relationship experienced between the author and the sketch.

By writing my dissertation on this subject, my wish is to construct a composition that will elucidate the prism behind the art of sketching, uncovering the beauty within the construction lines while attempting to discover the influence which the sketch instills on the author's mind.



What is it that we really see when we encounter a sketch? Situated on the surface of a page the composition of lines generates a fragment of information. The scope of any particular drawing comes from a realm of limitless boundaries for each individual sketch represents an image taken from an infinite spectrum. The formulation of lines crooked or straight as they might appear depicts something which exists in reality or in fantasy. What we might perceive on the interface of a page can depict an exploration of its subject. It might also be descriptive in nature or it might be purely pleasurable.

At a first glance one senses the maturity of the physical sketch. The jagged edges of the paper are present and even in the absence of tactile contact the texture suggests a fine and subtle feeling. Even before the story behind the drawing is revealed there is a sense of wisdom about it, and the spectator feels that he must prepare in his mind before gazing into the kaleidoscopic spirals and vortices in the studies of water flowing turbulently undertaken by Leonardo

Studies of water in motion,
Leonardo da Vinci
c.1510
Windsor Castle,
The Royal Collection

da Vinci. The energetic depiction of pen and ink lines set in motion is captivating as the eye is thrust deep into the vortex within the geometrical image. The dynamism of the study of moving water suggests that the sketch is of an exploratory nature. A forceful fluidity of lines represents water tumbling from an orifice, its origins unknown. The lines then take on an erratic behaviour when received by the still water below. It is only when the reader looks beyond the compelling beauty conveyed through the multitude of lines that Leonardo's interest in understanding the behaviour of moving water becomes evident.

The use of line massing is much more economical in the descriptive sketches of Le Corbusier. If we are to ignore the words and focus solely on his drawings, it is evident that the intriguing nature of his landscape compositions are portrayed by a recession of lines, and still oceans are present without a single ripple drawn. The solid and void formation of Leonardo's water in motion is not evident here yet there is a remarkable power of nature

on display. The bird's-eye vantage point suggests that the author is in an elevated status and that the edge is of a particular importance to him. The continuous crooked lines of the coast mark the boundary between water and land. The section of land in the sketch is weighted by the gravity of line use, depicted by straight sweeps, organic shapes and double line techniques, all of which lead us to imagine the nature of the landscape. The economy of a single line is also true for the representation of sky which holds little value in the real estate of the sketch, reinforcing the notion that the image is taken from above. This is true for Le Corbusier recorded this description from the window of an aeroplane taking off on a flight from Bogota to Miami.

There often exists a fusion of typologies within a sketch. Louis Kahn's descriptive studies represent building forms of a monumental status such as the Cathedral of Sainte Cecile at Albi in France. The building on paper appears to be unyielding and suggests that it is one complete unit. At a closer



inspection however, it is the nature of the line technique that suggests the sketch was more valuable to Kahn in exploratory terms. The cylindrical towers which rise from the base in a light hearted spiralling dance can be read as detachable elements, independent of the horizontal pen strokes that depict the main structure behind. The fluid movement of the pen strokes suggests vitality as if through the act of both describing and exploring a sense of pleasure came about within the author.

Portal to the mind,
Bento's Sketchbook,
John Berger, 2011,
p 20

To sketch for the purpose of pleasure can be a truly gratifying experience. This type of sketch is so often accompanied with a hint of exploration as it is the nature of human beings to continually remain inquisitive. This can be said for the sketches by John Berger as he explores the practice of drawing modelled on his vision for the philosopher Bento de Spinoza. Before reading the text I journeyed through Berger's sketches. Seductive in nature and composed with reverence, I arrived at a door which was not closed nor completely open,

revealing a slit shrouded in mysterious shadow. The door symbolises a dimension of infinite material beneath the sketch. It is an element which is so familiar to us, yet so often ignored and now through Berger, it has become isolated and confronts the reader. Drawn in pen and dressed with a lilac wash, this threshold symbolises the portal to the mind.

Le Corbusier has said of the *human mind* as possessing:

'a certain independence: it is a box into one can place elements of a problem bit by bit. One lets them drift, ripen slowly, ferment, until one day, sparked by an inner, spontaneous impulse, the latch is lifted. One takes up pencil, charcoal or paint and delivers on paper, the idea comes - the child comes - it appears on earth - it is born.'

Winfried Nerdinger,
Dinner for Architects:
A Collection of
Napkin Sketches,
New York, 2003, p10

The elements which Le Corbusier is referring to are never isolated singular components, interested only with one individual problem. Deep within the sub-

conscious our thoughts are constantly active. Past observations, experiences, influences and memories are tirelessly communicating with each other, merging, reasoning and preparing for the time when they will be called upon, to trigger the initial design impulse within the author. Upon looking through the sketchbook of Le Corbusier from the summer of 1950, which is largely preoccupied by studies of his Unite d'Habitation in Marseille, I came across a drawing that was instantly recognisable. The drawing holds little relation to the overall context of his sketchbook; the reason why I felt compelled to study it further. The highly aspirational drawing constructed by a speedy hand describes a large expanse of space open to the sky. The ascending pen lines of the horizon provide a place for the thought-out elements within his mind, and give way to the architectural idea to be born. Interestingly the architect drafted this sketch after seeing the site at Ronchamp from a train between Paris and Marseille weeks before ever having stepped foot there.



The importance of the initial idea to be carried through to the realisation of a project is the challenge that faces all architects when confronted by a new brief. To study the sketch by Alvaro Siza of his design for the Malagueira residential district in Evora, Portugal, one senses a quality of reality within the drawing. Laying down a firm sense of where, Siza constructs the sketch in a sweeping bird's-eye view, exposing the entire site within its context. One can see the careful considerations of the architect as he deposits elements formed by his memories, past observations and tireless explorations, perceiving form in his mind and shaping it on paper. The architect's mind is at work, feeling his way through with continuous sweeping pen lines, tracing routes within his mind, having treaded the footsteps of the local inhabitants, he moves in and takes possession of the site. This idea in the form of a drawing is vital to the architect, as it expresses his inner motivations working through the emptiness of the page, moulding the lines, shaping the sketch and producing a tool to aide in the

Early sketch,
Malagueira Residential District,
Alvaro Siza, 1977,
Alvaro Siza,
Complete Works,
Kenneth Frampton,
p 165

process of creating form through the powers of the imagination and the concentration of the mind.

In order for the imagination to feast upon the knowledge contained within the mind, the author must find a suitable place where it is possible to disappear into one's thoughts. Recollections from my own childhood of having discovered a new sketch pad or set of pencils would transport my mind for long periods of time into a world of doodles and drawings taken from memory and imagination. This was a practice that taught me to concentrate. It was never forced and I am reminded of how I would disappear, often without leaving the room, into my drawing for a period of time. The act of sketching has the power to transport one deep into the subconscious. Of course it is deeply personal to each author, but to truly concentrate, one must have their place to retreat, be it physical or subliminal. For some, it might be the ordinary and familiar environments, as others seek a transitory or extemporal feeling, but for all, it involves a journey of escape, to retreat and allow the fruits of

the mind to engage in the full potential of the sketch.

Having executed his own wilful escape from France as a young man, the French writer Stendhal, uses the powers of concentration to perform an extraordinary work of the imagination. Constructing his memoir, he sketches his way across the confines of the plan, towards the escape and happiness of the section. As he takes the reader alongside him, he journeys through his mind capturing his memories and ideas buried deep within his subconscious. The memoir is a fusion between drawing and text and it could be argued that the author uses sketching to aide his writing. Through a series of spidery diagrams, drawn with haste, the young Stendhal journeys back to recreate the events of his childhood, long after they have taken place. Minimal pen lines illustrate the precise proportioning of spaces and their ordered relationship with each other, allowing the reader to experience firsthand the confinement of his early years. These diagrammatic sketches, illustrating the physical context of his childhood bring



about a unity between the plan, the section and the human being. Though the sketches are absent of sentiment, the precise proportioning of spaces assist Stendhal in his course of self exploration allowing him to represent an image from within. As his mind perceives the plan, he feels his way through the past, releasing his imagination and his thinking as they flow in unison through the human body.

Study of the hand,
Pencil, 2012

'I have received *handfuls*'

All thinking relates to the human body. So much of the knowledge of what the human mind has learned has been taken from the body as a form. Therefore it comes as no surprise that throughout time the structure of the whole being has undergone intense observations and tireless analysis through the medium of drawing, assisting the evolution of invention and design. The most primitive of all structures, the human anatomy provides shelter for the mind. Its structure affords the frame which holds the eye and it regards the hand to be one

Andre Wogensky,
Le Corbusier's
Hands, Paris, 1987,
p 23

of its most central components. At the moment of realisation, the author's entire being becomes immersed in the drawing. A sketch no matter how clinical the lines might appear is never independent of the body that constructed it. The process takes on a spiral of energy requiring the sensory emotions and the human anatomy to perform simultaneously.

As in a performance, the act which takes place between the depths of the mind and the surface of the page reveal the true beauty within the construction, as the sketch begins to take on a form. Each new line crooked or straight, commands a different movement. The spinal structure, rigid in nature, guarantees strength throughout the overall production. As the lungs steadily expand and contract, they keep in rhythm with the beating heart, as the blood flows with fluidity through the valleys and rivers of the internal being. Elements of knowledge and intuition race through the nervous system, keeping in tune with the harmonious relationship between the hand, eye and mind. The limbs,

loose and agile, allow for the hand to move with ease, as it sweeps across the surface of the page, adhering to the choreography of the mind. The reaction of the foot might result in dance, keeping in time with the overall routine. As the eye rationalises and the ear animates, the brain processes and the hand guides, the finely tuned senses perform in unison with the rhythm of the supporting orchestra. The entire being is activated. The animated hand in motion has become a tool, lengthened by the connection it holds with the pen. It understands the tactile surface of the carbon paper, the backdrop for the scene. Merging as one entity, the hand and pen become the final contact with the body as it deposits elements from the mind onto paper. There is power in the thought that the author's hand has created the strokes by guiding his pen across the page, the intimacy of the moment becomes present.

Propelled by the hand, each strike of ink contributes to the formulation of the escalating vortices as the exploratory study of turbulent water undergoes

constant transformation. There is a brilliant storm taking place. The innocence of the blank page is vulnerable to the floods of ink pouring down. The constant scratching of the tapered metal nib violently engraves the surface of the paper. The force is unforgiving as the energetic sweeps of the hand accelerate, amounting in the vast accumulation of spiralling lines. Resembling the mast of a ship in distress, the erratic behaviour of the quill becomes entangled in the eye of the storm. The sound of scratching prevails as the blankness swells and erodes away. The smell of ink is potent as the hand hurriedly injects from the well, depositing ink spills throughout the region. The dynamism of the study reflects the verve pulsating through the author's being and beyond to the intimate atmosphere of his Milanese studio as the intense friction between the metal nib and the pores of the paper remains embroiled.

The quest to unleash the original thought is disclosed as the mind embarks on an intimate journey through memory. Footprints, the origins of

the drawing, reveal the walking habits of the natives as they traverse the baron site. The sprinting mind processes elements from within before catapulting them to the awaiting hand, where the anonymous man in the Porto cafe takes possession of the sketch. The pen lines spinning out allow for the controlled hand to mould the streets, as measured intuition and fermenting knowledge transform the page. The gesturing hand reveals the vibrations of his inner self, reflecting the current bloom of his country's political climate. As the pen sprints across the page, rarely stopping to take breath, vitality leaps from the surface. The spirited elements begin to emerge as built forms on paper while the sketch waits in anticipation to be realised.

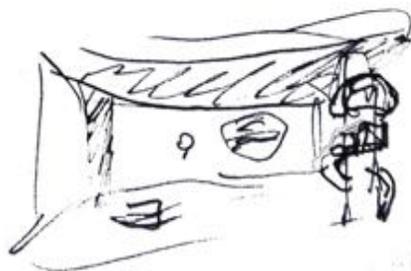
Preoccupied by his pen and Rich Art sketchbook, his hands contend with the vibrations of the moving train. The shrieking friction of steel against steel together with the sound of the slicing breeze, correspond with the ever changing environment between Paris and Marseille. The man peering

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through his glasses observes all of what he sees from the open window of the steam engine. Gazing northwards and positioned on the left, his animated hand reacts in haste with the dialogue taking place between the eye and the mind, as the scene, now a memory has been left behind. This memory will ripen. But for now, the knowledgeable hand has exposed his inner motivation and with fewer than eight lines drawn, the intimacy at the moment of conception is revealed. The chapel at Ronchamp is born.

He drew what was before him. The large cylindrical towers emerge on paper intending to reinforce the structure of the enclosing wall behind. The hand illustrating his brain at work reveals the formal instinct of his mind on the page as the physical form of the cathedral rises from the ground. The intention of the study is to separate that what is relevant in the architect's mind. With a measured response, calm and controlled motions of the hand sweep across the page, directed from within the structures of the mind, illustrating the monumental form. The hand is

La Chapelle de
Ronchamp, from the
Paris Basel train.
Le Corbusier,
1950,
Le Corbusier Sketch-
books 2 1950-54,
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content for the figure behind now knows exactly what he is looking for. Upon examining the sketch, the observer having never visited the town of Albi, immediately perceives the atmosphere of place. The constructed image informs the observer, providing him with the freedom to make judgements and form opinions about the environment, directly involving him in the drawing. Through the fluid movement of the pen strokes the observer experiences the intimate dialogue between the hand of the author and what his eye perceived on that September evening in 1959.

What *the eye* perceives is deeply personal to each author, therefore the observer can only assume as to what situation might have existed at that particular moment in the realisation of the sketch. Everywhere we look we see, no matter where, there is a view, an environment and a narrative. However, it is how we see that is pivotal. To assume will not suffice, as to understand the true representation of anything we must make observations to inform ourselves on the subject of our interest. It is through these obser-

ventions that we acquire the knowledge to truly see and by doing this we will eventually learn to know.

The following personal accounts have been taken directly from memory. Comparable to the "flying sketches" of Thomas Jones, they are a collection of events recording the moment of seeing in the present tense, live action as it were, on pieces of loose paper. Like a photographer snapping a moment in time through the means of a camera I attempt with rapidity to capture that moment between the lead of a pencil and a piece of carbon paper. Whether it was a spontaneous halt in a familiar journey, the people who were present, the weather condition or a certain conversation, that moment is to be relived each time the sketch is resurfaced.

The air is hot. In the near distance, I see the silhouette of three children chasing each other, their mother who stands by, is preoccupied by the documents in her hand. The frail man opposite quietly observes as he sits and stares onto the vast pla-

teau that lies between us and the distant mountains on the horizon. I attempt to record the serenity of the moment through pencil. The surface generates an intense silver glare in the foreground. The verticality of the walls emphasises the emptiness of the space. There is no crowd or hustle, just the faint echo of the children's laughter. The moment is hard to capture on paper. The paper is moist and the lead becomes sticky. I pack my sketchbook away. It is new and a gift from somebody very special. I step onto the barren asphalt and board a small aircraft. It is my last memory of Laos.

My hand moves fast as the lead transfers onto the page. It employs the role of a shadow which is cast from the profile of the ash tree opposite, and gives form to the market tent beneath. Two tourists take rest on a bench at the foot of the obelisk, where from above Saint Patrick looks down. The sun is generous and the air is mild. A conversation takes place beside me, while the engine of a delivery van idles to my left. The sash windows on the house to

my right are open, it is most definitely summer. I darken the top panes of glass with heavy strokes. In the background of the scene, a double line appears, indicating where the different coloured walls meet the slate along the eaves. My friends arrive and it is time for lunch. The sketch remains unfinished.

My eye moves from left to right in both directions. I pace the ground and calculate the exact number of vertical columns. I now perceive to understand the entity of the space as my eye ascends to the decorative vaulted ceiling above. I make a record of the buildings plan through a pencil sketch. It generates my awareness of the Cathedrals detachment from its neighbours. I now realise that the buildings cavernous environment welcomes people in with open arms from the austere realm outside. With this knowledge I can comfortably sit back and evaluate the building in section, before my hand transcribes it onto the paper. Why not stay a while I thought? It is the evening rush after all, and the end of December. The blizzard can wait, the subway will calm.

A photograph might have done it. In fact, I did take some. The former runway gave opportunity to a bike race. Who cares who won! A very fast pen sketch constructed on the back of an aging map relives the moment. The breathlessness and tired limbs give way to the casual pattern of bodies scattered along a large white arrow painted on the ground. Some of bikes stand like masts around our deck while the rest are abandoned on their sides. The sketch captures the situation with the theatrics of the old quadrant in the background, now the prop setting the scene for an afternoon spent in the new city park. One of the standing bicycles in the foreground takes preference in the sketch as the sunlight perforates its mechanical skeleton. The object signifies the trip. Largely, the sketch evokes a memory overflowing with spirit.

John Olley notes the words of Le Corbusier in his essay:

'When one travels and works with visual things - Architecture, painting or sculpture - one uses one's eyes and draws, so as to fix deep down in one's experience what is seen. Once the expression has been recorded by the pencil, it stays for good, entered, registered, inscribed. ...To draw oneself, to trace the lines, handle the volumes, organise the surface ... all this means first to look, then to observe and finally perhaps to discover and it is then that inspiration may come.'

John Olley,
Drawing -
The Language of
Representation and
Thought in Design,
The Architect and
the Drawing,
Dublin, 1989, p13

Cover Image - Personal Sketchbook, Le Corbusier Sketchbooks 2 1950-54, 259

Bibliographical Note

Andre Wogensky, *Le Corbusier's Hands*, Paris, 1987

Brownlee & DeLong, *Louis I Kahn*, London, 1997

David Bindman & Gottfried Reimann, *Karl Fredrich Schinkel 'The English Journey'*, Yale, 1993

Giorgio Vasari, *Lives of the Artist*, trans G Bull, Harmondsworth, 1965

H. Van Bergeijk & Deborah Hauptmann, *Notations of Herman Hertzberger*, Rotterdam, 1998

Hehn Langdon, *Claude Lorrain*, Phaidon Press, 1989

Irene Scalbert, *A Real Living Contact with the Things Themselves: Landscape Painters and Architects, 1600 - 1850*

Jean Paul Richter, *The Notebooks of Leonardo da Vinci Volume I*, Dover Publications, 1970

Jean Paul Richter, *The Notebooks of Leonardo da Vinci Volume II*, Dover Publications, 1970

John Berger, *Bento's Sketchbook*, Verso, 2011

John Olley, *The Language of Representation and Thought in Design*

John Ruskin, *The Stones of Venice*, ed J.G Links, New York, 1960

Juhani Pallasmaa, *The Thinking Hand*, Wiley Publication, 2011

Kenneth Framptin, *Alvaro Siza Complete Works*, Phaidon Press, London, 2000

Kent Larson, *Louis I Kahn Unbuilt Masterpieces*, The Monacelli Press, 2000

Kenneth Framptin, *Alvaro Siza Complete Works*, Phaidon Press, London, 2000

Paulo Portoghesi, *Aldo Rossi The Sketchbooks*, Thames and Hudson, 2000

Stendhal, *The Life of Henri Brulard*, trans John Sturrock, New York, 2002

The Architectural History Foundation, *Le Corbusier Sketchbooks 2 1950-54*, MIT Press, 1981

Winfried Nerdinger, *Dinner for Architects: A Collection of Napkin Sketches*, WW Norton, New York, 2003

