The Architecture of Production

Ownership & Opportunity in Industrial Process
Acknowledgements:

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The relationship between nature and man’s industrious use of the landscape can be read as a dialectic driven by economic necessity. The continuous layering of natural and human efforts offers a complex history of place. As economic markets become increasingly volatile the fluctuations of industrial space, from activity to abandonment, occur far more frequently. However the rigidity of these spaces, in allowing for a binary movement between use and disuse, is proving detrimental to the development of our cities, community livelihoods and economic stability. The cyclical nature of production, by acknowledging its instability and recognizing its origins in ecological processes, could allow for the reintroduction of nature into our constructed urban landscapes, benefitting society in three significant ways; by alleviating man’s sense of alienation from nature, the elimination of non-space within cities and around the urban fringes, and by challenging the capitalist necessity for continuous production.

Capitalist productivity projects a spatial character through profit driven progress without considering the effects during periods of recession. Industry is becoming an increasingly short term activity reflecting the turbulent movements of global capital. The structures that are erected and the landscapes that are created do not reflect the impermanence of industrial processes. This in turn makes short term production far more costly and often impossible, and also creates a network of voids throughout and around the city. However the combination of greater ecological awareness and the development of new technologies could allow for the industrial-nature dialectic to fluctuate more freely between the poles of productivity.

The cartographer Tim Robinson narrates a rich history of the landscape by translating the forces which have shaped it. From the slow movement of landmasses over millennia to the immediate infrastructural and industrial actions of society, Robinson traces the relationship between man and nature in Connemara back to its routes, supporting his findings with toponymical and geological surveys, thereby giving a clear insight into the formation of the landscape. The impact of human cultivation on such an unyielding terrain, in such a sparsely populated corner of the world illustrates the degree to which mankind has shaped the world;

*Patches of this fertile terrain were cultivated in harder times; here and there the traces of old potato ridges show in the green turf like ribs in a famished beast.*

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Here, the translation of periods of use and disuse gives an incredibly powerful history of place. Within the rural setting of his explorations there is a legibility which is far more obscured in the modern city where place names no longer describe the physical reality of the location and the gradual deconstruction of redundant industries and infrastructure is less permissible. This, in many respects, reflects the growing disconnect between urban society and the natural landscape as the industrial rules of urbanism took precedence over vanquished nature.

The premodern city acknowledged its existence as an extension of the natural world. The dependence placed on the immediate landscape was considered part of the urban mechanism; the city essentially functioned as the focal point of local trade and communication with neighbouring regions. Because of the limitations of transport and food preservation the city relied almost entirely on the surrounding landscape and could not be considered as an object dissociated from its own horizons. Society, in its most urban of expressions, was still directly linked to the natural conditions of its environment; the wealth of its soil, its accessibility along trade routes and the raw materials and minerals available to it.

With the beginning of the First Industrial Revolution, however, the function of the city began to change. Production began to migrate to the city and it became more introverted. This, in many respects, gave birth to the modern city. Rapid technological development and the modernisation of production processes lent itself to the idea of the new age of modernism. This inevitably led to the epistemological separation of Nature and culture, as Bruno Latour explores in his book ‘We Have Never Been Modern’.

Through the use of anthropological precedence he argues that it is the impossibility of changing the social order without modifying the natural order – and vice versa – that has obliged the premoderns to exercise the greatest prudence. 3

This period of rapid social change, combined with the Nature-Culture disconnect, completely altered the social order without considering the impact on the natural world. The new industrial city developed to accommodate the revolutionized industrial processes rather than the radical social transformations which accompanied it. Urban society did not exist in a space that was designed for its interactions and was thereby alienated from its own environment:

It was only when the townsman found himself closed in by his methodical urban routine and deprived in his new urban environment of the sight of sky and grass and trees, that the value of the country manifested itself clearly to him. 4

Here, the historian and philosopher Lewis Mumford argues that the construction of the industrial city, being driven by economic rather than social motives, succeeded in alienating man from nature. The photography of Miru Kim highlights the juxtaposition between man which belongs to nature and his infrastructural creations which alienate him from it. The frailty of the naked human form within the contraptions of technological progress implies a disconnection between the individual and industrial progressions. Mumford’s depiction of capitalism as a driving force of industrialisation expresses clearly that the social and economic shift toward capitalism was not reflected in any changing attitude toward industry and nature;

While the feudal families with their command over the land, often had a monopoly over such natural resources as were found in the earth, and often retained an interest in glass-making, coal mining, and iron-works right down to the modern times the new mechanical inventions lent themselves to exploitation by the merchant classes. The incentive to mechanization lay in the greater profits that could be extracted through the multiplied power and efficiency of the machine. 5

I have always been fascinated by living beings reclaiming the urban ruins, having come across more than just rats: wild dogs, cats, birds, and bees nesting in sugar barrels in abandoned sugar factories. Envisioning imaginary beings that could dwell in these spaces, I began to occupy them myself. I became an animal or a child interacting with the surroundings. As I momentarily inhabit these deserted sites, they are transformed from strange to familiar, from harsh to calm, from dangerous to ludic.

3/ Latour, Bruno. We Have Never Been Modern (Cambridge: Harvard University Press, 1993), 42
4/ Mumford, Lewis. Technics and Civilization (Chicago: University of Chicago Press, 2010), 295
5/ Mumford, Lewis. Technics and Civilization (Chicago: University of Chicago Press, 2010), 26
Drawing of visible horizon from Limerick City
Original Scale 1:50000
The birth of a more global competitive market most certainly encouraged the development of more efficient and cost effective means of production. However by recognizing the short comings of industrial production under the capitalist system, by acknowledging the disconnect which developed between industrial, economic and ecological thought and by studying the social impact of industrialisation that, in a relatively short period of history, has completely altered the relationship between man and nature we will begin to see the possibility inherent in recently developed technologies in changing the very nature of industrial production.

The industrialisation of the urban landscape completely transformed the city in a very short space of time. The urban routine adapted to comply with production lines and shift work, also labour was more focused on centralised industrial buildings and areas whereas before the first industrial revolution a far smaller working population had been spread throughout the city in smaller workshops. This rapid industrial densification occurred along the capitalist demand for production efficiency, where the absence of nature, although contrary to citizens’ desires, had no immediate impact on the profit generated. In a recent article in The Economist, entitled 'The Onrushing Wave', the history of the industrial labour movement is studied in an attempt to predict the possible outcomes of increasing technological advances.

In 1500 an estimated 75% of the British labour force toiled in agriculture. By 1800 that figure had fallen to 35%. When the shift to manufacturing got under way during the 18th century it was overwhelmingly done at small scale, either within the home or in a small workshop; employment in a large factory was a rarity. By the end of the 19th century huge plants in massive industrial cities were the norm. The great shift was made possible by automation and steam engines. 6

Implicit in this shift, however, was a transformation of social hierarchy. The social creation of space, the question of ownership of the city and the right to recreate it was addressed in the human geographer David Harvey’s recent book ‘Rebel Cities’. Harvey begins by quoting Robert Park, an urban sociologist as saying that the city is:

man’s most consistent and on the whole, his most successful attempt to remake the world he lives in more after his heart’s desire. But, if the city is the world which man created, it is the world in which he is henceforth condemned to live. Thus, indirectly, and without any clear sense of the nature of his task, in making the city man has remade himself. 7

Harvey goes on to echo Mumford’s assertion that urbanization is inherently linked to capitalism, however using the terminology of surplus value and surplus product. Again industrialisation surfaces as the driving force behind the rapid growth in urban populations, and equally, the defining principles of the early industrial city were moulded to suit productivity rather than liveability. The argument that emerges is that man cannot recreate the city more after his heart’s desire given that the roots of urbanization lie in capitalism. Therefore as long as capitalist doctrine holds precedence over other human rights there cannot be a city which truly portrays a considered relationship between industry and nature as defined by societal desires and ecological necessity.

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6/ 'The Onrushing Wave,' The Economist (Jan 18, 2014)
7/ Harvey, David. Rebel Cities: From the Right to the City to the Urban Revolution (London: Verso, 2012), 3,4
Most utopian fiction is based on a reversal of these priorities. In Kim Stanley Robinson’s "Pacific Edge", for example, it is only after strict legislation regulating multinational corporations is put in place that industrial production responds to societal necessity rather than acting as a necessity. This is the fundamental difference between ecotopian fiction and romanticism; in novels such as "Pacific Edge" and "Ecotopia", by Ernst Callenbach, society still embraces industry and technology but assimilates it into ecological cycles with greater awareness. Romanticism, on the other hand, seeks the return of a more primitive existence. In William Wordsworth’s poem “The World Is Too Much With Us” he laments the alienation that has grown between man and nature:

> It moves us not Great God! I’d rather be
> A Pagan suckled in a creed outworn;
> So might I, standing on this pleasant lea,
> Have glimpses that would make me less
> forlorn;

Wordsworth clearly expresses a regret that technological advances have left us "out of tune" with nature, however he also suggests that capitalist consumerism is to blame for this misdirection of society’s development;

> Getting and spending, we lay waste our powers;
> Little we see in Nature that is ours;
> We have given our hearts away, a sordid boon!*

The dissemination of romanticism proves that it is not in fact technology but its implementation within industrial processes that has led to the epistemological separation of society and nature. This is generally articulated as a desire to return to a more primitive form of civilisation. Despite these seemingly unambiguous expressions many consider romanticism as a kind of unrealistic fantasy, whereas the significant contribution of the romantics was to question the direction in which society was advancing. It is important to note that the romantic movement was associated mainly with the early 19th century and came about as a response to the rapid urbanization and societal changes of the first and second industrial revolutions. These technologies were maybe most significantly being applied to the cultivation of the New World, where the idea of a fresh start on virgin land sparked, in some, utopian aspirations of a successful creation of an ecologically responsible form of industry.

It is interesting, therefore, that Henry D. Thoreau, the American poet and philosopher, considered the European dissociation from nature in favour of industry as the primary factor in the diminishing of European relevance in future development. The value which Thoreau places on nature, as portrayed in the essay "Walking", is directly linked to future prosperity. For him, the untainted American landscape offered this opportunity that poets such as Wordsworth and painters such as Casper David Friedrich were depicting. He believed that the future of philosophy and society would remain firmly rooted in America as it offered a complete reconnection with nature;

> The West is preparing to add its fables
> to those of the East. The valleys of the
> Ganges, the Nile, and the Rhine having
> yielded their crop, it remains to be seen
> what the valleys of the Amazon, the Plate,
> the Orinoco, the St. Lawrence, and the
> Mississippi will produce."*


The pleasure and importance that Thoreau places on the woods as a distinct counterpoint to the life of the town indicates a desire to prevent a complete privatization of the natural environment. Thoreau’s views on the inherent possibilities of the American landscape were, in many ways, indicative of the attitude among American poets and writers at the time. The mineral wealth, as well as the enormous task of cultivating the expansive new terrains, conjured these utopian aspirations of a successful integration of industry into a society that remained very much linked to their ecological condition. The poet William Cullen Bryant, who was a member of the same poetic community as Thoreau in early 19th century Massachusetts, was considered a proponent of advancement through modern technology. The discovery of coal, in Bryant’s view, heralded a new age of industry. He saw the opportunities provided by technological advances as a force of social equilibrium. In the poem A Meditation on Rhode-Island Coal he both celebrated the beauty of the material itself and its abstraction from the mines of this ‘lovely isle’, and also the future which it promised to deliver to the young nation:

For thou shalt forge vast railways, and shalt heat
The hissing rivers into steam, and drive
Huge masses from thy mines, on iron feet,
Walking their steady way, as if alive,
Northward, till everlasting ice besets thee,
And south as far as the grim Spaniard lets thee.

Thou shalt make mighty engines swim the sea,
Like its own monsters—boats that for a guinea
Will take a man to Havre—and shalt be
The moving soul of many a spinning-jenny;
And ply thy shuttles, till a bard can wear
As good a suit of broadcloth as the mayor. 10

Bryant did, in most respects, predict quite accurately the effects coal was to have on the development of the nation. The mechanization of trade, transport and production played a huge role in the United States’ rapid growth and significant impact on the global economy. The aspiration of coal also fueling social equality was, however, somewhat misguided as the benefits bought about by the new fuel source were not distributed amongst all citizens but fell to the wealthy capital investors. He also failed to consider the finite nature of the landscape’s resources and the long term impact of their radical exploitation.

The overall impact of American industrialisation failed to realise the romantic ideologies of a society reconnected with nature through a more integrated application of modern technologies. Poets and writers such as Bryant and Thoreau verbalised the hopes of the new settlers to create a country that both excelled in industrial markets and that continued to embrace the natural beauty and societal benefits of the landscape. The industrialisation and cultivation of the Americas that followed, driven by economic competition and profitability of surplus production, completely transformed the landscape. It succeeded in almost entirely exhausting the landscape in its short history of cultivation, a process which, according to the environmentalist George Perkins Marsh, had taken centuries in the south of Europe due to over farming. In Tristes Tropiques Claude Levi Strauss gives a critical description of the effects of this early industrialism of the young continent:

That careful and reciprocal relationship between man and the earth which, in the Old World, established the age-old bond whereby one fashioned the other, has never existed here, where the ground has been violated and destroyed. A rapacious form of agriculture appropriated what was readily available and then moved on, after wrestling some profit from the soil. 11

10/ Bryant, William Cullen. A Meditation on Rhode-Island Coal In Poems by William Cullen Bryant (New York: BiblioLife), 215
We create works in response to the ever-bleakening relationship linking humans, technology, and nature. These works feature an ambiguous narrative that offers insight into the dilemma posed by science and technology’s failed promise to fix our problems, provide explanations, and furnish certainty pertaining to the human condition. Strange scenes of hybridizing forces, swarming elements, and bleeding overabundance portray Nature unleashed by technology and the human hand.

Levi Strauss goes on to lament the destruction of the indigenous inhabitants and landscapes of the Brazilian tropics. The cultivation of the Americas, which, particularly in South America, is still developing very rapidly, is quite an illustrative depiction of Hegel’s ‘Law of the Heart’ in which the desire of the individual is pitted against the mechanics of global society. In this respect it is difficult to imagine a successful attempt by man to remake the world he lives in more after his heart’s desire within a capitalist system in which the utopian aspirations of the individual are inevitably subservient to the laws of the global market.

The recent implications of these processes are well documented by Aldo Leopold in his study of the Californian water crisis; A Sand County Almanac, whereas the compelling work of the photographic partnership of Robert and Shana ParkeHarrison offer a visual depiction of the human relationship with nature. The barren settings and colour schemes of their work reflect the destructive nature of man’s involvement in creating the landscape. Complex contraptions are used to generate natural elements such as clouds and grass. Mumford promotes the polytechnic innovations but acknowledges the damages caused by their improper application to society;

The machine, by failing as yet – despite neotechnic advances – to allow sufficient play in social existence to the organic, has opened the way for its return in the narrow and inimical form of the primitive. Western society is relapsing at critical points into precivilized modes of thought, feeling, and action because it has acquiesced too easily in the dehumanization of society through capitalist exploitation and military conquest.

Social and industrial resistance to the growth The Co-operative Movement was a clear retaliation against the nature of social change being brought about by industrial capitalism. It valued workers’ quality of life above sheer profit creation and promoted education, healthy living and environmental responsibility amongst its members. It represented a closer bond between the producers and the natural cycles which determined the limits of their production. They supported the direct link between the value of their yield and the capacity of the land, further exploitation of the landscape or of the workers was seen to devalue their quality of life. Similarly the Luddites’ violent reaction to the precedence given to profit creation above livelihood, and more recently the events of May 1968 in France, brilliantly depicted in Marin Karmitz’s 1972 film Coup Pour Coup, highlight the impulse to resist the social changes brought about by technological industrialisation. The architecture of the factory, through its responsiveness to market efficiency and its indifference to human desires, shaped the aesthetic of disenfranchisement. Harvey supports the significance of the factory in the history of class struggle and recognizes the undermining influence of the geographical mobility of industry;

The traditional beginning point for class struggle has been a particular space – the factory – and it is from there that class organization has been built up through union movements, political events, and the like. But what happens when factories disappear or become so mobile as to make permanent organizing difficult if not impossible? And what happens when much of the workforce becomes temporary or casualized? Under such conditions labor organization in the traditional manner loses its geographical basis and its powers are correspondingly diminished.

We create works in response to the ever-bleakening relationship linking humans, technology, and nature. These works feature an ambiguous narrative that offers insight into the dilemma posed by science and technology’s failed promise to fix our problems, provide explanations, and furnish certainty pertaining to the human condition. Strange scenes of hybridizing forces, swarming elements, and bleeding overabundance portray Nature unleashed by technology and the human hand.

12/ Mumford, Lewis. Technics and Civilisation (Chicago: University of Chicago Press, 2010), 302
13/ Harvey, David. Spaces of Hope (Berkeley: University of California Press, 2000), 50
The history of industrial architecture has narrated the disenfranchising effect of industry’s disconnection from geogaphic location. Factories and mills of the early industrial period, in the Americas and in Europe, represented the ambition of the industrialists as their scale and material composition were incredibly bold, monumental statements in the landscape. The permanence of the structures placed faith in the local labour force and the material wealth of the landscape. Monolithic concrete structures and large spanning steel trusses became the architectural language of the time. This approach to the industrial expression was derived from a period of continued economic growth in which the progress of developing technologies gave the impression of grandeur. Also because it was in this era that towns were becoming urbanized many of these structures were centrally located or were soon consumed by the city’s rapid expansion. London’s Battersea Power Station represents the pinnacle of public admiration for technological industry, described by the Daily Herald as ‘a flaming altar of the modern temple of power’. Despite the power station’s redundancy due to the development of more effective technologies the monumentality of the structure grants it an importance and relevance to the city, whereas industrial buildings designed in response to a more temporal economic climate fail to secure their place in the urban fabric. The longevity imbedded in the design of Battersea Power Station has lent it an emblematic status within the South London landscape and ensured its reuse and reintegration into the fabric of the city. The result of industry’s geographical indifference is the creation of non-spatial institutions which relate to neither their environmental nor their social landscapes. By prioritising progress the spatial commitment of industry is lost and its presence as an institution of a particular place diminished, as Michel de Certeau argues in The Everyday Practice of Life; … the functionalist organisation, by privileging progress (i.e. time) causes the condition of its own possibility – space itself – to be forgotten: space thus becomes the blind spot in a scientific and political technology.”

Modern industry has adopted a new aesthetic of cheap and quick construction which almost anticipates an economic slump or extreme changes in the industry, caused either by new technologies or by a shift in the market. Due to increasingly turbulent economic cycles industrial buildings are less inclined to invest in design that would improve working conditions and integration into the landscape. Despite the temporary appearance of many modern industrial buildings they remain vacant long after being abandoned. In a market driven solely by profit creation there is no incentive to deconstruct.

The effects of this prioritisation of financial gain are most visible in small cities and large towns where post-industrial non-space can cripple the dynamics of a city’s centre. David Harvey describes, in Spaces of Hope, the current condition of Baltimore, where derelict plants litter the landscape waiting for reuse, following the migration of industry to cheaper labour economies. Equally the impact of derelict industrial landscapes around the peripheries cities seems to be constantly extending. Limerick’s Dock Road illustrates the effects of this dereliction; where abandoned modern steel warehouses stand next to the vacant industrial giants of the 19th century. The ecological implications of these spaces are stifling to the city’s ecology, further alienating man from nature. As the landscape architect Gilles Clement writes, urban biodiversity is being put under increasing pressure through spatial exploitation. He defines legislative protected space, inaccessible or un-exploitable space and transitional space as his three categories of urban ecological study. Within the urban context Clement focuses on the creation of a third landscape; where the urban landscape is constructed and then relinquished again to nature.

14/ De Certeau, Michel. The Practice of Everyday Life (Berkeley: University of California Press, 1988)
By prioritising space rather than progress, the building and the production, become the property of the city’s inhabitants. By designing a space for a modern industrial revolution to take place according to the demands of the public, rather than being shaped by the most efficient means of profit creation, the terms of modern production become more democratic. Furthermore a public sense of ownership of industrial space may encourage the deconstruction of redundant buildings and infrastructure allowing for the creation of third landscapes and greater biodiversity. A revolution of how we produce would thereby have huge implications for how society interacts with nature and how it infiltrates our towns and cities. Latour suggests that the revolution of things will disable the separation of society and nature;

... the two constitutional guarantees of the moderns – the universal laws of things, and the inalienable rights of subjects – can no longer be recognized either on the side of Nature or on the side of the Social. The destiny of the starving multitudes and the fate of our poor planet are connected by the same Gordian knot that no Alexander will ever again manage to sever. 15

Latour argues throughout We Have Never Been Modern that the issues faced by mankind are never simply ecological, social or political but are all at once. During the modern period pragmatic responsibilities were shirked in favour of rapid innovation, the post-modern period therefore must be a period of holistic solutions. An egalitarian society in command of its own industrial activity would be obliged to align production processes with ecological cycles. Ecological catastrophe and the widening social divide are both products of the prioritisation of economics. Public and democratic control of production creates an entirely new dynamic, where the city is shaped and performs according to the desires of those that live there. Therefore periods of slow economic movement would give an opportunity both to assimilate innovation into the mechanics of society and to offer a period of homeostatic equilibrium within the nature-culture dialectic.
The varying level of technological development across the globe leads us to believe that society is far more advanced than is truly the case. Modern innovation representing the cutting edge of technology, in reality, is not indicative of societal progression. As historian David Edgerton argues, the technologies which are used to define an era are not truly emblematic of social mechanics around the world where successfully integrated innovations are far more influential. The impression created by Edgerton's findings is that technological innovation is driven by the wealthy for their own consumption, however an industry more concerned with social equality would be more focused on research and development rather than production, as the continuous production of new technologies would not be assimilated successfully by the masses.

Equally the degree of symbiosis between ecological cycles and industrial/economic cycles would benefit from industrial space which did not rely so heavily on constant production. As new techniques are employed in factory processes nature must readapt to cope with the dynamism of industrial output. As argued by Latour:

*the strategy of industrial firms and heads of state is too full of chemical reactions to be reduced to power and interest; the discourse of the ecosphere is too real and too social to boil down to meaning effects.*

Eugene P. Odum, one of the first recognized authors on ecology, discusses, in his Fundamentals of Ecology, the mechanics of this reciprocal relationship between man and nature. Although, scientifically, his work has been largely disproven the theory of homeostasis which he adopts to describe the consequences of mankind’s attitude toward natural exploitation is incredibly valuable. The language employed by Odum is reminiscent of electrical or mechanical engineering and also captures the dynamism and volatility of the responsive capabilities of ecology. Industrial space which, permitted a certain degree of inactivity, would offer a period of evolutionary adjustment which is usually required before such a system actually becomes stable.

The design of spaces of production must respond to periods of inactivity as a means of social equilibrium and also to offer a period of ecological readjustment; a space where the homeostatic mechanisms of both nature and society are given room to oscillate violently in order to establish the new means of interaction. The impact of such industrial space would completely alter the dynamics of industry and urban ecology; alleviating the urban alienation from nature, and accepting fallow periods which would diminish the need for constant production, and, eliminate the non-space of redundant industry and infrastructure. It is the industry imagined by Bryant where the innovation is not driven by consumerism and the capitalist profit system but reflects the egalitarian desires of society.

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Abstract

Having looked into both the history and the spatial implications of industrial production I was interested in reintegrating industrial processes into the city fabric. The result of the densification and centralization of industry would challenge the private ownership of production by making industrial activity more present in the lives of the urban public.

By bringing industry back to the city and increasing public awareness of its activity and inactivity the local responsibilities of industry and its responsiveness to local economic, political and social movements is hugely increased. In periods of recession industry would be directed to supplying the needs of the community. If industry were to halt completely people may use the space to create for themselves what they can no longer afford to buy.

Creating a dynamic building which draws its energy, cooling, and services from the location both links the building and processes to the city and also acts as a constant visual and audible reminder to the inhabitants of the city.

Digital fabrication allows for greater flexibility and for smaller businesses to adapt to changing markets. Shared workshop space and retail, and also a self sufficient means of supply and distribution allow small producers to benefit from the infrastructural scale of the building.
The project consists of three towers containing retail and storage at the lower levels and labs and office space in the upper floors. The external envelope of each floor alters to give outdoor work spaces. Shared workshop spaces are housed within the large connecting bridges. A rotating floor on the top of the southern tower connects the various levels and functions. It also distributes goods, equipment and materials to the various parts of the building.

Hydrokinetic generators within the river provide power to the building and determines the rotation of the crane floor. River water is used to cool the workshop spaces and equipment.
Sketch and sketch model of Crane Tower
Model Original Scale 1:100
The location of the project is incredibly important as its position on the banks of the river Shannon make it far more link it to the natural cycles of tides, and rainfall, as well as seasonal variations of temperature. It also opens up supply and distribution routes along the river.

The surrounding buildings create an urban scale which rises gradually to the new scale of the towers. Because of the layout of the Georgian grid the buildings have an axial view which extend up Thomas Street, making it visible from the centre of the city. It’s location on the Quays also means that it is visible from anywhere along either bank.

The activity generated by the building is equally dependant on the surrounding city. Retail units on the lower levels allow the businesses and producers above to benefit from the central location by having an immediate public outlet. The produce of the towers is then on display to passers by.
Copper and thread model on a concrete base
Exploring a double skin which shelters certain external spaces, and creates a flexible external envelope.
Deliveries arrive by ship into the dock or by truck to Poor Man's Kilkee. The crane level rotates to Wellesley Island to deliver material to the outdoor work area where it can be treated or sent to storage. Treated materials are sent by crane to the first workshop level where products are collected and then delivered to the retail units or unloaded back onto ships and trucks.

The dimensions of corridors, spaces and turning circles are defined by a forklift.
Bibliography

14/ Harvey, David. *Rebel Cities: From the Right to the City to the Urban Revolution*. (New York: Verso, 2013)