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Emergence and Uncertainty in Urban Landscapes A Model for the Toronto Public Landscape

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A Model for the Toronto Public Landscape

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0.0   Abstract

Emergence and Uncertainty in Urban Landscapes: A Model for the Toronto Public Landscape

M.Arch 2011

Derek McEneaney

Master of Architecture

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This thesis was initially predicated on early research carried out on Toronto's Public Open Space - in quite a broad framework. Texts based on the topic of Toronto's formation and its policy on public open space from the earlier days surrounding Lord Simcoe's first plans of the city provided a point of departure for the research.. OMA and Bruce Mau in their design entry to the Downsview Park competition offered further insight into the perceptions and policy of Toronto in relation to public parks and lack of investment and maintenance. While other contributors on the topic of Toronto included Robert Fulford (*Accidental City*), Mark Osbaldeston (*Unbuilt Toronto: A History of the City That Might Have Been*), Jane Jacobs (*Death and Life of Great American Cities*), Howard Moscoe (Councillor Moscoe and his views of the city), Rob Ford and many others offered unforeseen accounts or facts on the city over the past century. Such people and the views they have published defend the very reason for the selection of Toronto as the subject of this research. Coinciding with the topic of Toronto, the recent emergence of the discipline of Landscape Urbanism and the capabilities of landscape in dealing with Modern and Post-modern failings within the city was deemed very early on to be the platform or medium upon which to offer any solution to the research on Toronto. Charles Waldheim, Professor and Chair of the Landscape Architecture Department at the Graduate School of Design in Harvard University, has on occasion referred to his term Landscape Urbanism as follows:

Across a diverse spectrum of cultural positions landscape has emerged as the most relevant medium through which to construct a meaningful and viable public realm in North American cities. (Waldheim, C. 2006. p.41)

0.1   Thesis Statement

Whether a particular project is naturalistic, rectilinear, curvilinear, formal, or informal is irrelevant; what matters is how the form and geometry of a project makes sense with regard to the specific issues it is trying to address and the effects it is trying to precipitate. Thus, recovering landscape is less a matter of appearances and aesthetic categories than an issue of strategic instrumentality.

    James Corner

    Recovering Landscape: Essays in Contemporary Landscape Architecture

From the interpretation and application of contemporary Landscape Urbanism theory this thesis intends to respond to the traditional and current forms of public landscape in North American cities – specifically Toronto. It will discuss the theory which looks upon landscape as the sole medium on which to represent and construct the city. By doing so we can use it to integrate the potential use of ecological – both natural and artificial – and unpredictable systems to generate a model for public landscape from within the existing urban fabric. Like Corner's quote from *Recovering Landscape*, the core issue addressed by this thesis is not about creating visually stimulating public outdoor space but rather strategically integrating the use of natural and artificial ecologies, neglected systems, critical systems and programmable space into a new model for public landscape.

Acknowledgements

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0.1 List of Figures

0.2   Landscape Urbanism Dictionary

Agency [noun]

action or intervention producing a particular effect

Centralized State [phrase]

concentrate (control of an activity or organization)
under a single authority: a highly centralized city

Complexity [noun]

the state of being intricate in an interrelated operation of
multiple entities working naturally, emerging or
temporally declining as a system organically morphs.

Curate [verb]

Select, organize, and look after the items in a collection

Designer Ecology [noun]

Conceived or created by a designer; designed.

*Designer **Ecology*** [noun]

The relationship between organisms and their
environment.

Designer Ecology [phrase]

The artificial creation or representation of natural
ecology

Emergence [noun]

The act or process of emerging

Ecological Design [phrase]

"any form of design that minimizes environmentally
destructive impacts by integrating itself with living
processes" - Sim Van der Ryn and Stuart Cowan

Incomplete Project [phrase]

A project or entity in a constant state of emergence or
change

Landscape [noun]

An expanse of scenery that can be seen in a single view

Landscape [verb] (Corner, J. 2006.)

The medium or agency upon which contemporary
urbanism exists and evolves

Medium [noun]

1. An intervening substance through which something
else is transmitted or carried on.

2. An agency by which something is accomplished,
conveyed, or transferred.

Morphological [noun]

The transformation of forms within natural or unnatural
parameters.

Pastoral [adj.]

Used for the keeping or grazing of sheep or cattle; as-
sociated with country life.

*Strategic **Instrumentality*** [noun]

1. The state or quality of being instrumental.

2. A means; an agency.

Strategic Instrumentality [adj.]

1. Important or essential in relation to a plan of action: a
strategic withdrawal.

2. Highly important to an intended objective

Transformation [noun]

A marked change in form , nature, or appearance or
metamorphosis during a life cycle

Urbanism [noun] – derivative of Urban

The character of city life or growth

Uncertainty [noun]

The state of being uncertain or unforeseen

Unpredictably [noun]

The state of being difficult or impossible to determine
outcome

1.0   Thesis Introduction

1.1   Toronto

Why Toronto? During the initial stages in preparing for the task of this research project two sets of dynamics led to the site and topic of Toronto – one based on the written, theoretical side and the other a more on-site assessment or observation. One group of publications contained justifiably critical writings on the nature of public space in Toronto and the position and quality of public parks and squares within the city's planning mandate. First, OMA and Bruce Mau publicized the failures of Toronto with regard to investment in and maintenance of its public open space (assuming they directed this statement toward parks as it was in reference to the Downsview Park design competition of 2000) as compared with any of its North American counterparts. Second, Robert Fulford's essay "Going Public" in his publication *Accidental City*, describes Toronto throughout the 1900s as a city devoid of any public atmosphere and infrastructure, with laws that limited the use of streets as a place of public interaction. And third, the 2010 Mayoral campaign and election which took place during the early weeks of this research. For those who need a brief explanation as to its relevance within this research I shall describe how our then-recently elected Mayor Robert Bruce Ford (fig. 1.1.1) played a political influence in my perception of Toronto's public space. During one of his many enthusiastically received speeches, Ford argued that Toronto's roads were for cars and trucks only – if cyclists were to be part of any on-road collision then it was their own fault. Cyclists according to the Mayor are all in all a "pain in the ass" (Ford, R. 2010.). These views from city policy makers defy any environmental efforts currently under way within Toronto. With the reduction of carbon footprints an ongoing push for the entire international community*, Ford sees Toronto as a special case where vehicles are the future and low carbon means of transport (including streetcars) are just in the way of urban progress – undoing any good that local communities work hard to promote*. This political view has been seen recently with Rob Ford's abolition of the proposed Fort York Bicycle/Pedestrian Bridge. This project was planned to link pedestrians and cyclists from two sides of the city's public space otherwise blocked by expressways and railroads (Ford, R. 2011).

*Summary of the targets set by the Kyoto Protocol, Carbon Neutral Initiatives, views of Greenpeace, G20 Summit in Toronto, and plans set forth by G20 in order to achieve a national state of carbon neutrality. Among with the more local campaigns such as the Campaign for Green Living by the City of Toronto.

Moving away from what people have said on the topic of Toronto, the on-site observations related to the design and performance of Toronto public parks and squares was carried out as a casual interaction with the public landscape. This exercise originated from writings on Lieutenant-Governor John Graves Simcoe's planning of the city which revealed that the majority of Toronto public parks were initially created from waste space (Glover, R. 2001. p.36). Along with the formation of the space, the design for these spaces – like many other Anglo influenced cities of North America during this time – was based on the pastoral model, a rural picturesque vision of the English countryside. This model has been used quite often in simplistic attempts to resolve neighbourhood issues by the planning discipline (Jacobs, J. 1961, p.89). And as this is at a completely opposite standpoint to what landscape urbanism

fig. 1.1.1 - Mayor Rob Ford

studios currently produce, it creates a complex opportunity to direct Toronto progressively in line with contemporary theories.

As a platform for this research and a means of applying research to design, current theories of Landscape Urbanism will continuously be referred to in order to portray the stance or the "lens" through which we view the city and the medium by which we "construct" any intervention (Waldheim, C. 2002, p.38).

1.2   The Origins of Landscape Urbanism

In the opening chapter of his book *Recovering Landscape*, James Corner presents an alternative view of landscape, or what bureaucratic planners and the general public view as "overly benign or passive to ever assume active or strategic roles in contemporary affairs, as a shaping process (landscape as an adjective rather than a noun, object or scene) for contemporary and future societies and cultures" (Corner, J. 1999). Charles Waldheim, in a lecture delivered to the AALU (the Architectural Association's Landscape Urbanism Program), describes Toronto's planners as having an agenda focused on "protecting the public from design", primarily in response to modernism, thus restricting investment in landscape and certainly the radicalism that surrounds Landscape Urbanism. Also presented by Waldheim on this occasion was the decline in the use of the traditional urban planning discipline in many progressive projects or cities, which goes to prove that the shift mentioned by Corner is in fact under way – albeit in a small number of locations.

Charles Waldheim of Harvard University's GSD coined the term Landscape Urbanism as a very contemporary movement and discipline. In his most significant and earliest publication on the topic, the *Landscape Urbanism Reader*, he formed the explanation of this notion as:

"Across a range of disciplines, landscape has become a lens through which the contemporary city is represented and a medium through which it is constructed." (Waldheim, C. 2006. p.15)

Waldheim, in his essay "Landscape As Urbanism", dates the very earliest emergence of the discipline from postmodern (architectural) critiques on the failures of modernist architecture and planning. As cited in Waldheim's essay he relates the early origins of Landscape Urbanism to Charles Jencks' declaration of the death of modernism. Charles Jencks critiqued modernism for failing to produce a meaningful or livable public realm or come to terms with a city as a historical and cultural construct. The death of modernism as proclaimed by Jencks, coincided with the downturn in industrialization in North America and with the industrial remains of the increasingly decentralized city; the Postmodern stylized efforts failed to address this Modern structural condition of urban form. As the city continued to decentralize the Post-modern approach to the city continued to retreat, with ecological awareness continuing to grow more within society. Waldheim describes the role or character of Post-modernism as that of a Cul-de-Sac, meaning its end or failings were inevitable. This strand of movement developed from the work of those

fig. 1.2.1 - Laffayette Park, Detroit by Ludwig Hilberseimer

such as Ian McHarg and Lewis Mumford who devoted their landscape background to a much more ecological and environmental view toward the landscape. This view saw the position of the city and the environment or ecological design as quite distinctly opposing debates or entities where one could not coexist with the other. Ironically it was under this McHarg-ian school of ecological design that the contemporary landscape urbanist James Corner studied, however he evolved his practice based on the notion that the city and ecological design were not opposing entities. Waldheim cites Corner's view toward this form of landscape architect as one with a "narrow agenda of ecological advocacy" and naive in the face of global urbanization (Waldheim, C. 2006. p.38). None the less, we must appreciate the role of McHarg-ian traditions together with Jencks' critiques in the foundation of Landscape Urbanism.

As explained in a lecture by Waldheim at the Architectural Association on "Planning, Ecology and the Emergence of Landscape" (Waldheim, C. 2009), Urban Planning as a stand-alone discipline is in a state of crisis. In this lecture Waldheim argued that the areas or mandate of Urban Planning left unattended-to voids in the city, voids which Landscape Urbanism (LU) would observe as opportunities to fill in order to establish a foothold on the practice in urban affairs. It is interpreted that Waldheim traced the birth of LU back to as early as the days of Ian McHarg (fig. 1.2.2) – a Scottish Environmentalist/Landscape Architect who focused his career narrowly into ecological design – and Ludwig Hilberseimer (fig. 1.2.1) – a German Architect/Urban Planner – who, although he had ties with the Mies van der Rohe agenda, maintained a certain degree of green emergence in his very modernist work in Lafayette Park, Detroit,where he praises the position of landscape within the urban order of the project even when surrounded by one of the world's largest collections of Mies van der Rohe buildings. This project today is looked on as a success because of this and due to Lafayette Park being capable of maintaining high property values in the face of the economic decline in Detroit, while supporting a socially diverse community.
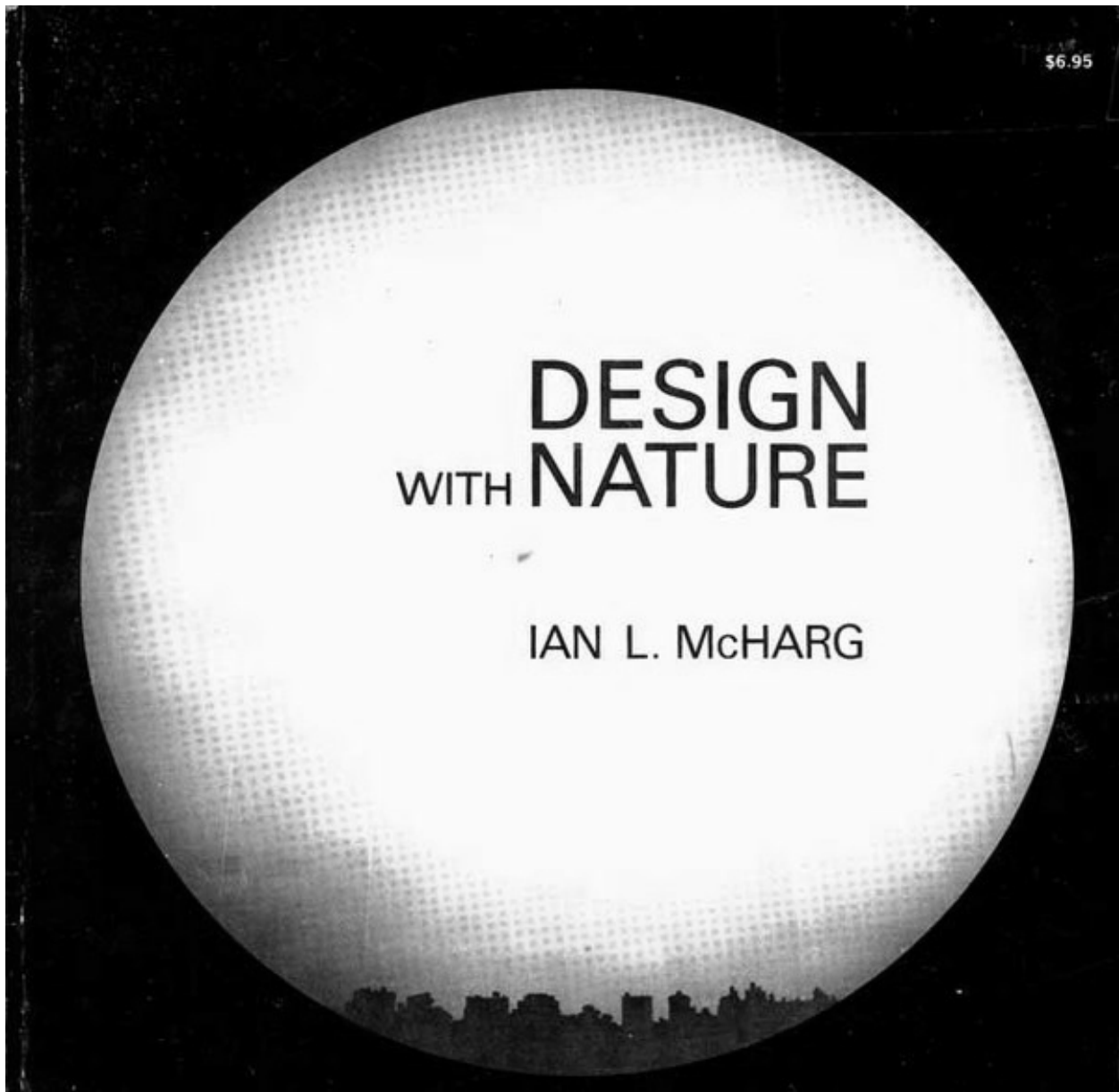
fig. 1.2.2 - Ian McHarg's Design with Nature 1969

Public Open Space: Evolution of Public Landscape + Landscape Urbanism

2.0   The Evolution Public Landscape

2.1   A Brief History of the Role of Landscape in the Urban Fabric

In *49 cities*, an academic exercise on the city carried out at Princeton University by WorkAC, it is stated that cities over time have been dreamt of as being "more flexible, more controllable, more defensible, more efficient, more monumental, more organic, taller, denser, sparser or greener" (WorkAC, 2009. p.14). Through these transformations or ideologies the public sphere adapted to its different city – whether it be monumental, defensive and so on.

Stephen Carr, in his publication *Public Space*, offers a timeline of the perceptions, cultural and social uses and evolutions of public open space in the city. Carr documents how public space evolves from at least two different processes: the natural process and the planned process.

In the natural or ad-hoc process, without any deliberation, a space attracts people to a certain focal point where the dynamics of the surrounding context plays a major part in the success of the natural public open space. These dynamics generate the success through repeated use thus giving way to a popular and utilized public open space.

The planned public space has resulted through two forms of planning: direct and indirect planning. The direct process results from the formal engagement of the landscape architect, architect or urban planner and is commissioned by either private or public parties. This space usually results from zoning requirements set out by planning authorities with a percentage of land set aside for use as a park or a square. A second, indirect process results from the planned space entities creating voids of public space whether formally used or not, i.e. the wasteland left over after setbacks and site boundaries are organized and planned.

The following paragraphs provide a timeline of the different forms of public space and its evolution through the ages and summarises information from the publication by Stephen Carr, Mark Francis, Leanne Rivlin and Andrew Stone in the Cambridge University Press publication on *Public Space*.

Greek and Roman Cities (Carr, S. 1992. p.52)

Public open space in Greek and Roman cities begins with the formation of the agora as the central point for community interaction. The acropolis acts as the nucleus of the early city while the agora performs as the central hub for daily communications, informal and formal assemblies and general operations within the city. This Greek system is one of irregular planning with organic street formations, generated over years of incoherent development (fig. 2.1.1). The agora has evolved in this organic system as an independent point in relation to the city nucleus (acropolis) and performs so actively due to its central position within the market place and exposure to the public operations. Public open spaces during this period offer an elegant lifestyle to the privileged Greek population. As the Roman empire begins to emerge life in the city becomes more regimented as do street formations (fig. 2.1.2). However even though the Roman culture does serve as a branch of Greek civilization, the Roman planning system adopts a standardized

gridiron city-plan where the agora now takes a more formal position within society. Public operations such as religious congregations, debate and commerce are centralized into a single city nucleus – now the formal agora. By now the city has developed a rigorous spatial order in planning and operation and emerges as the new superpower.

The Medieval Marketplace (Carr, S. 1992. p.53)

The Roman City progressively weakened through urban decay in light of the fall of the empires which seen the city become far less significant in light of crusades once safety in society becomes an issue. In light of safety concerns civilization relocated to rural sites in search of safety. After the tenth century safe houses i.e. the castle and the abbey began to expand and towns formed within their walls. This entity is often referred to as a "Burgh" which is clearly evident in a number of Scottish Medieval cities.

This marks the recovery or re-emergence of the market with public open space created ad-hoc adjacent to retail in an irrefular formation (fig. 2.1.3). Over time the towns begin to evolve with strategic points developing as shops or covered markets. This re-emergence of the public domain and market place is a platform for the regrowth of towns. By now the cathedral or religious building takes focus as the "central institution" of the city while the market, like the Greek agora, develops in the central institution's vicinity (Carr, S. 1992 p.53). As the population grows this central market becomes inadequate for the increasing population and markets become more decentralized within the town and city. This newer market evolved into a covered version and in some cases developed retail shops. As the city grew town halls developed and brought with them the formation of civic squares or piazzas as places for public congregation, celebration and other special events.

The Renaissance City (Carr, S. 1992. p.55)

The end of feudalism and the Medieval City emerged around the 14th century with the growth of the Renaissance city beginning in Italy and increased technological advances in firearms. These advances saw the demise of town walls and the fortified nature of cities. This new Renaissance city is a city with spaces "based on a fully symmetrical design" (Girouard, 1985, p.128). This era brings planning back into the city in place of the natural organic evolution seen in the earlier Medieval town or early Greek city. Squares, plazas and gardens within the Renaissance city are formally designed in a purpose-built symmetrical pattern. Across Europe these "grand central spaces" began with relationships to the religious building. Carr argues that these large grand Renaissance spaces such as Place de la Concorde in Paris "are far too large and lacking in connection to the surrounding city". However we must consider the historic investment and religious and political power associated with works of the Renaissance period. The design of these spaces goes on to evolve into a number of smaller spaces, some in the exclusive vicinity of residential zones. As the Renaissance city moves to England a tradition of building exclusive squares for surrounding residential neighbourhoods evolves. According to Girouard, at this time the English perception of square is not necessarily being a place for public use or assembly unlike its equivalent on the continent, which explains the semi-public character of the English square or garden. Carr notes the popularity of these squares among developers and planners

due to their restricted access, facilitating control.

The New World's Square and Plaza (Carr, S. 1992. p.57)

According to Carr the New World settlement form originated in Spain and spread to other nations such as England and America. The new world city sees the public space as a central plaza acting as a marketplace once again where public commons relocate to the centre of the city adjacent to which are located the most important buildings, namely cathedrals and government buildings.

This plaza is used for a variety of purposes such as public celebrations or parades. As noted by Carr, a number of Spanish colonial towns and cities in California possess the plaza format, the best known being Los Angeles' Santa Monica Boulevard. As cities grew, the provision of peripheral public residential plazas, gardens or squares evolved, as evident in the 1682 Plan of Philadelphia by William Penn. The plan of Philadelphia, based on the older spaces of London, represented different levels of public space – one for local residents and one for the city as a whole. As the New World city developed, the position of landscape took a romantic scenic view, in tandem with the Enlightenment Era, especially in Europe and influencing the already similarly planned landscape features of the New World's American cities, and remained as the pastoral view within city garden design for a number of centuries.

As North American Cites became increasingly industrialized with Industrial advancements in Great Britain at the time Streets became increasingly benefitial to movement. The advanced construction of roads led to the streets becoming more and more central to the city as public space.

The Streets as Public Space (Carr, S. 1992. p.58)

In this city, the streets evolve, becoming public open space, from the Medieval style of narrow streets where conflict occurs within the public landscape – the marketplace, cathedrals and streets – due to the city outgrowing its bounds. Summarized from Carr's publication, the city now takes a Roman approach. The corridors within the city system are planned in a more ordered manner. Streets are widened to accommodate population growth and vehicular movement within the city. Carr notes that these spatial revisions are due to architects becoming aware of new logistical/movement requirements and governments concerned with the ease of military movement within the city. Examples of these planning revisions are evident in Haussmann's plan for Paris.

"The streets of a typical medieval city were narrow and heavily used. Considerable conflict occurred between residents and shopkeepers who wished to encroach on streets, and city governments who wished to prevent this" (Girouard, M. 1988). Different classes jostled in the streets, marketplaces and cathedrals as cities began to outgrow their facilities. "In the sixteenth century, straight, wide avenues and a formal spatial order harkening back to the Romans changed the shape of many cities" (Carr, S. 1992 p.58). However the class system still managed to create hierarchy within the streets. Movements such as the City Beautiful used the diagonal boulevard as a basis for

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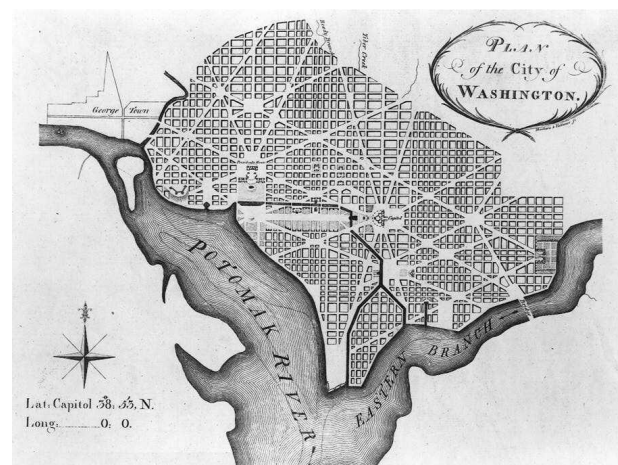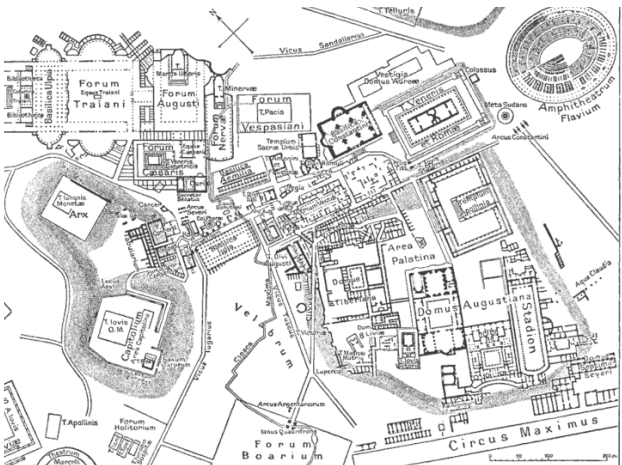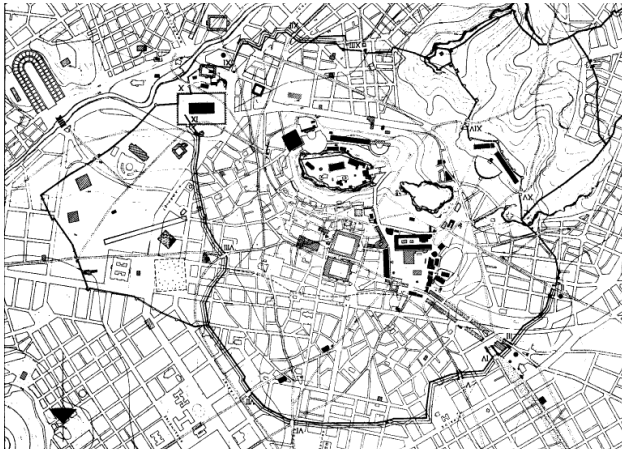
fig. 2.1.1 - Greek City

fig. 2.1.2 - Roman City

fig. 2.1.3 - Medieval City

fig. 2.1.4 - Renaissance City

fig. 2.1.5 - New World City

fig. 2.1.6 - Park City

improving the city in light of the Industrialisation of many of the North American cities during the early 20th century. Cities such as Washington D.C. And Philidelphia, were subject to the Parisian style of a series of diagonal streets/ boulevards forming numerous focal points as public gathering spaces, although according to Carr it never quite managed to achieve its full potential due to slow economic development. The Plan of Chicago 1909, being one of the best examples of the City Beautiful movement, was designed by Daniel Burnham and implemented to a degree, not fully being realized to Burnham's Plans. The main reasons for the plan were to improve the city in response to the industrialized waterfront, improving and widening streets for the rapidly developing city core and offering a more scenic or "beautiful" aspect to the city's landscape. This movement focused on the instant improvement and scenic aspect as a side effect of the Industrial Age and not on the core creation of a culturally and naturally created public realm. Which may be why the North American "grand spaces" such as those in Washington D.C. Philadelphia failed in comparison to the vibrant boulevards of Paris. (Carr, S. 1992 p.58)

The Park City (Carr, S. 1992. p.60)

Prior to the emergence of Parks, the main public spaces in European and American cities were "centrally located squares" (Carr, S. 1992 p.60). According to Girouard in *Cities and People* these spaces were generally just open areas, without any significant planning or structures although the basic appearance did not devalue the space, citizens highly valued the space and "attempts to reduce or intrude on them were bitterly resented" (Girouard, 1985, p.82).

"The word parc or park originally meant an enclosed area containing animals for the hunt" (Whitaker & Browne, 1971), possibly evolving from the royal use of the park and subsequent location of the park on royal property. In the eighteenth century the emergence of the informal, less royally formed, park occurred. Parks in London such as St. James and Hyde Parks captured the informality of the emerging tradition of the picturesque park. The English model tended to capture the scenery from the countryside with "meandering pathways and undulating topography" (Carr, S. 1992 p.62) giving the sense of romantic scenery already under way in visual and literary arts during the with the Enlightenment. In London the further growth of the park saw the model serving particular residential communities with limited access to the local residents. English parks, such as Birkenhead, began to strongly influence the American park movement of the nineteenth century. Many of the parks designed by Frederick Law Olmsted, the central figure of American landscape design at the time, opted to capture a similar scene to the English model but presented as poetic getaways from the chaotic and unhealthy urban lifestyle, the best example of this work being Central Park in Manhattan. With the arrival in America of huge numbers of immigrants, lower class slums and dense residential communities began to spill into the poetic parks which had been the preserve of the upper class, triggering the restricted use of certain parts of parks and the birth of new park facility – the playground.

The Playground and Park of the Reform Era (Carr, S. 1992. p.63)

The era of reform in North America during the late nineteenth and early twentieth centuries brought a "major shift in the provision of public space" (Carr, S. 1992. p.63). The shift in society saw more of a requirement for practical

recreation facilities in residential areas of cities. With huge increases in immigration to North American Cities, the provision of such spaces became a practical effort to also reduce crime in the city. In 1897, a New York City mayoral committee stated that "a lack of such recreation space has been the most efficient cause of the growth of crime and pauperism in our midst" (City of New York, 1897). Playgrounds developed across the city with New York's in particular located around the dense middle class or immigrant neighbourhoods (fig. 2.1.7). Furthermore, in addition to the development of playgrounds for families and children, the introduction of recreational parks, fields and courts occurred in similar ways to the early park – unstructured and informal. Growth in communities saw the growth of local teams or groups organizing competitions and assisted in the structuring of these locations.

The Pedestrian Mall (Carr, S. 1992. p.63)

The late 1950s saw the downtown shopping districts of many cities in North America lose much of their business to the decentralization and formation of suburban shopping malls and big box store malls. City planners sought in some cases to help revitalize these failing downtown cores with increased pedestrian only streets and limited car access to certain areas. Many cases in North America were seen as failures and removed subsequently. Examples such as Grafton Street in Dublin (fig. 2.1.8) and other streets where cars no longer could use such as those in the narrow Medieval streets.

Since the removal of the North American Pedestrian Malls, a number of cities, including Sacramento and Chicago re-approached the Pedestrian Mall by integrating public transit routes in order to stimulate the dynamics of the failings of previous streets. This model proved successful throughout.

We cannot fail to notice changes that have occurred and reoccurred over time in the public landscape of cities – such as the organic formations in early Greek and Medieval times and more spatially regimented in the Roman and Renaissance eras – nor can we fail to identify the strong link between retail and commerce and successful public landscape. In recent times the emergence of newer public space types has been seen in the form of the pedestrian retail mall and corporate plaza with much of the effective outdoor public space located in the vicinity of these retail malls or commercial districts. On the other hand the public landscape designed through the Modern planning of the past century has been through scenic styles from centuries before, maintained solely as a garden representation from those centuries gone by, and designed as afterthoughts in a primarily industrial city. The position of these has been as small urban parks, according to Jane Jacobs, intended to resolve urban neighbourhoods' social problems, however rarely doing so, if anything, creating more problems than solutions in the American City (Jacobs, J. 1961. p.89).

2.2   The Impact of Modernism & Post-modernism on the Public Landscape

It has been stated by Stan Allen and Charles Waldheim that Landscape Urbanism is uniquely capable of looking back at preceding urbanism, "uniquely capable of describing the conditions for a radically decentralized urbanization" (Waldheim, C. 2008. p. 37) in light of Modernism's response to industrial cities and the Post-modern response

to Modernism. In this debate Landscape Urbanism today has strongly criticized Modern and Post-modern planning for their failure in coming to terms with the city as a construct of many centuries' work. (Waldheim, C. 2006. p 38) Even going beyond the grounds of Landscape Urbanism, progressive Urban Planning and Design schools are beginning to renounce the values, position and need for planners. Margret Crawford in her essay "Ghosts in City Hall" published in the *Harvard Design Review* offers a convincing critique from within the Planning discipline itself, citing its inability to understand contemporary urbanism and obsession with rationalism in design (Crawford, M. 2005. p.33-35). Once critiques come from within the discipline it is time to listen.

Modernist planning sought to gain independence in a sense from the complexity and elder stature of the natural landscape in order to gain efficient wealth and growth in the new city built from scratch (Sieweke, J. 2010, p.83). Le Corbusier's visions for the regulated and pristinely organized landscape of the Radiant City is a typical example of the works of Modernist planning, where the public realm lacked the dynamics and complexity in an environment predominantly ordered by rectilinear built form (fig 2.2.1 & 2). Jorge Sieweke, a German Landscape Architect and Professor in the discipline, explains in his "On Father Rhine" text the broader theory of how the "mental rational" together with a desire for "unlimited technological progress" at the expense of the natural environment overly regulated the landscape, engineering and straightening rivers out of existence or into a state of irrelevance (Sieweke, J. 2010, p.83). Such feats over the past centuries have ignored the multi-layered landscape (demonstrated earlier in the chapter)

Modern planning of cities and public open space, around the 1960s, received a scathing attack from Jane Jacobs – a critic of the planning of cities, neighbourhoods, parks and streets – in her book *The Death and Life of Great American Cities*. She points out that the narrow minded planners and even society were quite naive in assuming that the sole means of improving the city or neighbourhood was simply "more open space" (Jacobs, J. 1961. p.90). In its Modernist assumptions, Urban Planning in that period produced what could be described as a number of stagnant examples of urban form.

In my introduction to this research I declared the failures of Post-modern planning's dealings with its critiques of the Modern movement and inability to address the post-industrial opportunities and structures left in the wake of the centralized state. This era was aligned but not linked with a paradigm shift in climatic and economic conditions in which failures of control upon the natural environment became magnified. The new shift required flexibility and resilience as well as a tolerance for unpredictable environments, something which Post-modernism could not begin to comprehend let alone provide for. "The monstrous mindset of endlessly attempting to alter the course of history and charging against the autopoietic cyclical powers of nature becomes an enterprise devoid of hope" (Sieweke, J. 2010, p.83).

Une ville contemporaine. Une rue qui traverse un lotissement à redents (6 doubles étages). Le côté fournissent une sensation architecturale première qui nous porte loin des rues « en corridors ». Chaque fenêtre d'appartement ici « les deux faces) donne sur des parcs.

fig. 2.1.7 - Middle Class City, New York
(early 20th century)
fig. 2.1.8 - Pedestrian City, Dublin, Ireland
(mid to late 20th century)
fig. 2.2.1 - Modern City, Radiant City
(1935 Le Corbusier)
fig. 2.2.2 - Modern City, Radiant City
(1935 Le Corbusier)

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2.3   The Urban Park Shift: from Pastoral Design to Process Design

As the contemporary city became denser and denser public parks became the most distinct forms of public space. As noted earlier in the Park City section, the city park began as a green space and evolved into the pastoral representation visible in many Anglo-influenced cities in North America, notably in our case Toronto. The representation was solely based on recreating the countryside rural setting thus illustrating earlier theories in landscape architecture. The shift today conveys the park as something more than a setting and going beyond the static condition of the park. Currently the contemporary state of environmental awareness in society brings more strategic approaches to design within the city. This began to a degree with the work and theories of McHarg and Mumford and has evolved over time to today's thoeries surrounding Landscape Urbanism. In this social state, the primarily open (un-built-on) space offers the park designer the scope of using the park as an environmentally or ecologically operable site – much like the Field Operations use of the Fresh Kills site, both cleansing the contaminated landfill and increasing the balance of urban green space in New York while regenerating waste into a useable energy resource for thousands of homes in the surrounding districts. In this project we can see the site as a model for a process rather than a visually based model. This shift for the most part involves James Corner's term "strategic instrumentality". It may be equally possible for this new design thinking, which avoids a stylized approach, to still produce what looks like a traditional landscape setting, but it is more concerned with the operations of the landscape design. Corner's disdain for the stylistic aspect of contemporary park or landscape design is explained in the form of the past century's urban parks all beginning to look the same, all taking on a design style from that era - "styles which are either taken from the pastoral model or the modernist formal model" (Corner, J. 2008). A sharp contrast to Corner's strategic model for landscape is illustrated in the work of Hargreaves Associates (fig 2.3.1-2), also a participant in the Fresh Kills competition, who labelled their scheme for the park on Staten Island The Meadows, The Fields, The Isle of Meadows and so on – clearly based on style and visual representation of a traditional landscape. Hargreaves communicative method even went so far as to reproduce the pastoral method of a painted landscape. While on the other side of the fence, Corners work produced a model for process, a management plan for curating ecologies in a phasing structure designed to recover the polluted landscape (fig 2.3.3-4), avoiding to an extent the representation of visual elements and focusing more on the strategic influences which would make a contemporary self-emergent park or landscape.

Applying this way of thinking to Jane Jacobs' view of the urban park (or open space) offers a use for the public park while people are absent from the site. As Jacobs argued in her book *The Death and Life of Great American Cities*, her chapter on neighbourhood parks questions their very existence. She convincingly describes them as urban planners' or society's solution to improving the urban community, while they more often than not really only wish that the open space would solve problems rather than actually doing so. Along with this synopsis of parks in relation to communities Jacobs sums up the role of the neighbourhood park within the city as: "Parks are volatile places. They tend to run to extremes of popularity and unpopularity. Their behaviour is far from simple. They can be delightful features of city districts, and economic assets to their surroundings as well, but pitifully few are." (Jacobs, J. 1961, p.89) This brings us back to the complexity of public open space, the realistic conditions the designer must take into

fig. 2.3.1 - Hargreaves Associates Fresh Kills Entry

fig. 2.3.2 - Hargreaves Associates Fresh Kills Entry

fig. 2.3.3 -
Field Operations Fresh Kills Entry
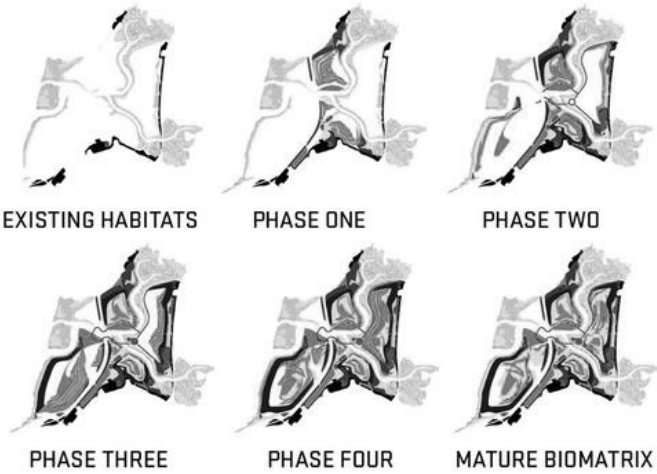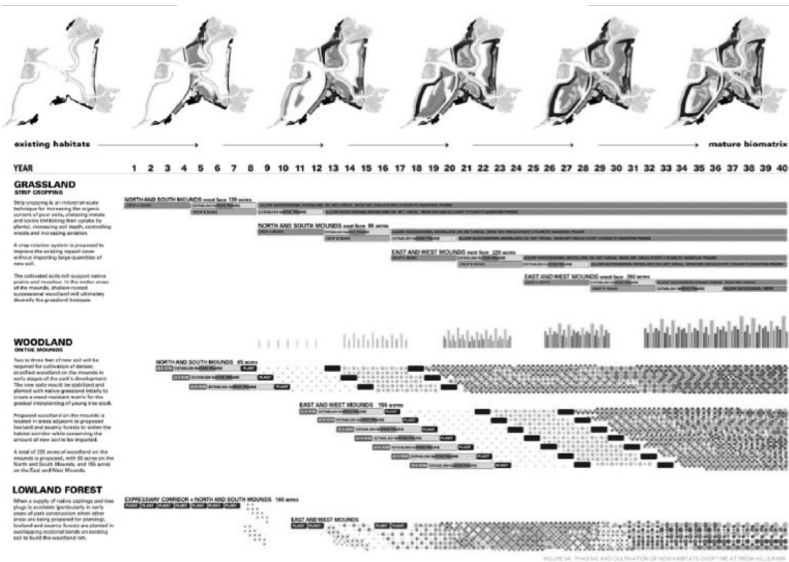
fig. 2.3.4 - Field Operations Fresh Kills Entry

account (like the urban planner – this may not be the solution to every neighbourhood), and opportunities available to generate landscape as an operable entity rather than a static representation. Like Corner's Fresh Kills Park larger parks in cities have the opportunity to make such an impact both publicly and environmentally; smaller parks do not necessarily need to imitate this agenda.

Yorkville Park in Toronto by Martha Schwartz represents an example of Nina-Marie Lister's (Lister, N.M. 2007. p.35) idea of "designer ecology" rather than ecological design, with the neighbourhood park adapting to its dynamics. Situated in a densely occupied part of the city exposed to commercial buildings during the daylight hours while local bars and restaurants maintain the overlapping presence of the public in the neighbourhood into the later hours, this park offers a platform for these activities to operate through appropriate materiality, intensive gathering space and sheltered individual seating. In this project in particular, the designer ecology approach results in an extra large rock transported from the Muskoka region north of Toronto, a small network of bridges over artificial water features and a dense artificial forest.

The Alternative: Landscapes of Change, Uncertainty + Complexity

3.0   The Alternative: Landscapes of Change, Uncertainty + Complexity

Landscape has been described as being uniquely capable of responding to temporal change, transformation, adaptation and succession (Waldheim, C. 2006. p.39). These forms of process bring a certain degree of uncertainty to how we see and utilize the landscape, and in the case of this research the urban landscape. From a design stance complexity comes hand in hand with natural processes, especially when we try to imitate the unpredictable and complex processes. Christopher Alexander's writings in his essay "A City is Not a Tree" defends the necessity for complexity to quite an extreme point of view – nonetheless, we are extracting principles from his design thinking, not literally applying his mathematical models. In Mostafavi's essay "Urbanism as Landscape?", he argues the centralized state's inability or refusal to adopt a method of design thinking which encourages complexity (Mostafavi, M. & Ciro Najle, 1999 p.1). In this text, Mostafavi and Najle attack planning for its curtailment of freedom in overly simplistic planning and obsession with regularity. In addition to this identifying the failure in exploring the temporality of landscape characteristics in place of stylized design. This chapter is analyses the precedents that convey the alternative route to achieving complexity and uncertainty in design – without resolving overly complicated structures illustrated in "A City is not a Tree". Michael Batty's work on *Cities and Complexity* represents a potential contemporary solution directly related to the arguments of Alexander while the work of Koolhaas, Corner and Ground Lab, just to name a few, responds to the problems of complexity through the use of landscape and ecological systems as the medium on which to generate design.

fig. 3.1.1 - Landscape of Change: Capabilities of Water in the Change of a Landscape

fig. 3.1.2 - The Changing Landscape of the Mississipi River by Howard Fisk

3.1   Landscapes of Change (fig 3.1.1)

The medium of landscape is susceptible to morphological change in a dynamic system or process. Kwinter in his essay on "Landscapes of Change" (Kwinter, S. 2008. p.82) explains the operations of such a system or process and discusses the forms of a dissipative system in relation to topographical or geographical conditions – hence the relationship to a landscape of change - best illustrated in Howard Fisk's work on the Mississippi River Delta Mapping (fig 3.1.2).

Relating back to the theories of Landscape Urbanism and the open-ended-ness of the project involving Landscape Urbanism, the theory of change is clearly essential to the application of this research. Kwinter's theory analyses in depth the change upon which landscape – the new medium of urban form – can generate. Waldheim, in a recent lecture (Waldheim, C. 2010), explains the new methods of "growing a public realm" instead of the urban planning method of spatially creating it from waste space through architecture as the primary medium of urban order. This Waldheim explanation brings us back to the emergence of urban form and to Kwinter's landscape of change.

It is true according to Kwinter that any form is simply a moment within a process or a snapshot of a definitive moment within a process (Kwinter, S. 2008. p.82). This general argument or theory could be interpreted as having the ability to defend the Modern or Post-modern planning agenda in the sense that planned space is simply a snapshot in the process of the city's morphological or fractal growth. However, given the relationship of the life cycle of man and other natural ecologies the parallel motion of change created by Landscape is much more suitable to the periodical scale upon which we as a civilization or ecology exists.*

The system according to Kwinter exists successfully with the "continual feeding and siphoning of energy or information to and from a system" in order to keep the system dynamic, "simultaneously in continual transformation locally and in dynamic equilibrium globally." For example: the urban landscape transforms locally creating a public realm under continuous seasonal or ecological change, it is this change which maintains the city which is knit together by landscape as its means of identity in a state of equilibrium.

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* Interpretation of S. Kwinters essay on *Landscapes of Change*, J. Sieweke *Return of Landscape.* It is interpreted that Kwinter explains the notions of change and the speed upon which landscape changes and how they relate to human measurement.

3.2   Landscapes of Uncertainty

Landscapes of Uncertainty relates to back Alexander's argument of overlap in a (city) system and Mostafavi's critique of planning destroying the unpredictably of the chance encounter. This critique by Mostafavi was in light of Modernism and the Athens Charter in the early 20th century which Sieweke also criticises for having an obsession in designing or building from scratch without concern for historic or cultural form. Mostafavi and Najle accuse the Modern city for failing to come to terms with the multiple layers the historic city developed upon - also identified by Waldheim. This critique on Modern planning as a whole sought that the integration of multiple system would create the complex environment where Alexander's overlap and would generate unpredictable events thus enhancing the identity, culture, spontaneity and unplanned event within the city system. Evidence of this was illustrated in Alexander's writing in Maryland's Community (fig. 3.2.1) structure where it is broken into villages and each village is in turn connected to a tree-structured road network – all of which have been planned to organise. His example of overlap is of a village/town in Middlesbourough in the UK (fig. 3.2.2) where the community boundaries, road network and community facilities/buildings all located in accordance with their own agendas create overlap through their organic form into an overlapping system (Alexander, C. 1965). It is in this example that the chance encounter of interaction is far greater according to Alexander.

Examples of this in Toronto or the majority of Modern cities are in the structure of districts in relation to each other. The financial district as a stand alone district offers public interaction for the most part during the hours of 8am to 5pm Monday to Friday – this district has no overlap with that of a retail district or a market district thus adding to the simplicity of the planning of the area and doing what Mostafavi spoke of in curtailing freedom, the chance encounter, playing out life in organised spatial frameworks which reduce the diversity of events (Mostafavi, M. & Ciro Najle, 1999. p. 1) .

In response to this rationalism OMA, in their entry to the Downsview Park Competition, produce a conceptual plan accommodating the organic structure as advocated by Alexander. The Tree City scheme (ironically in response to "the City is not a Tree") offers a "semi-lattice" like layout of paths and routes through the Downsview site. This design has been proclaimed to offer the user or in habitant the chance of always taking a unique route through the park. In order to do this OMA designed a 1000 path and entrance system that would ensure uncertainty in the use of Downsview. Adding an ecological spice to the designed landscape, the 15 year plan to regenerate the condition of the soil and produce a continuously changing and emerging landscape brought further dimension to the uncertainty of the park. (OMA - Downsview Park, Toronto. 2000).

Along with the term uncertainty we should also give attention to a the similar characteristic of indeterminacy in design. OMA also carry the best example of this type of design in Parc de La Villette in Paris. This design was the subject of a design competition in the mid-80's which was awarded to Bernard Tschumi's design, however OMA's scheme remains probably even more influential with the circle of Landscape Urbanism. OMA propose a series of
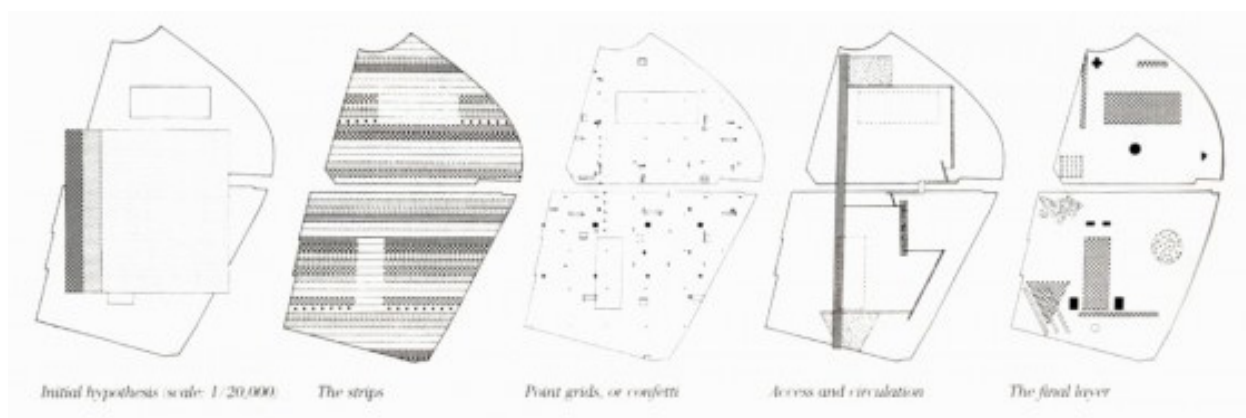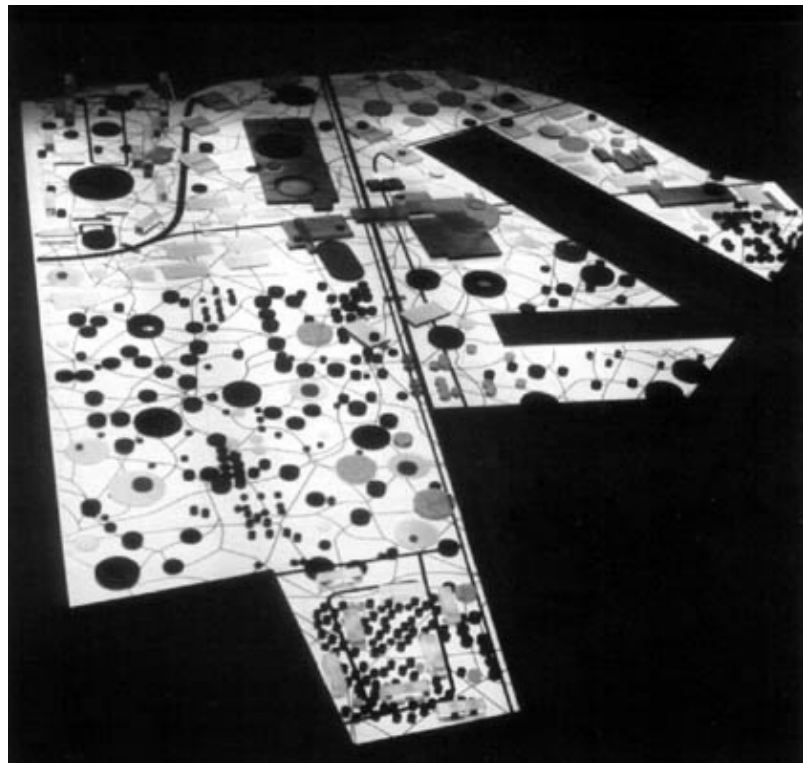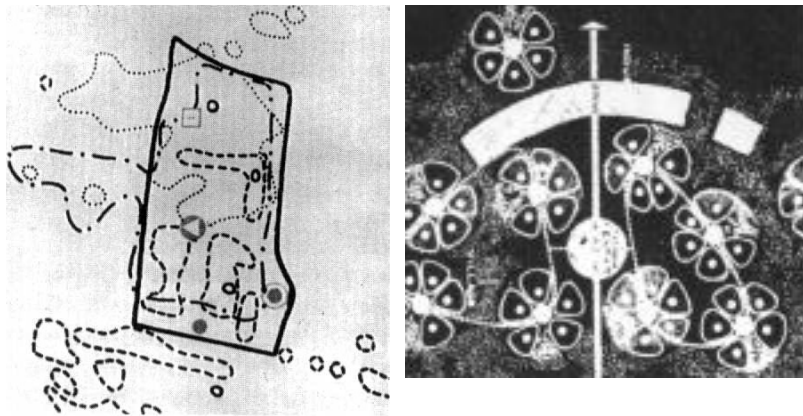
fig. 3.2.1 - Maryland, U.S. from
A City is Not a Tree
fig. 3.2.2 - Middlesborough, U.K. from
A City is Not a Tree
fig. 3.2.3 - OMA's Downsview Park
fig. 3.2.4 - OMA's Parc de la Villette

Initial hypothesis scale 1/20,000   The strips   Point grids, or confetti   Access and circulation   The final layer

linear bands offset from the existing engineered waterway through the site which are in turn indeterminately pro-grammed through material change and open to flexible use and temporal change. Like the Downsview scheme, the indeterminacy of form or permanent form allows the site a flexible means use.

3.3   Landscapes of Complexity

In the research, writing and application of this thesis I am dealing with issues of complexity – organised, not unor-ganised. In attempting to understand as much as possible the structure or system of the city we have accepted that the complexity holding the city's varying elements together is interrelated into an organic machine (Jacobs, J. 1961. p.432) which has led the lens of Landscape Urbanism to act as the driver of the project. So, we can agree for the benefit of the Landscape Urbanism and city project that complexity is the interrelated operation of multiple ecolo-gies or systems working naturally, emerging, temporally changing and dissipating as the system organically morphs.

Complexity has been extremely and pessimistically (pessimistically in view of man's design ability of complex-ity) presented by Christopher Alexander in his essay "A City is Not a Tree". This theory by Alexander represents some of the earliest forms of awareness of the necessity of complexity in urban form. He assembles his essay and argument back in the sixties, which may explain his extremist stance toward the semilattice city. None the less, his argument holds much to take into consideration. He presents complexity in the form of two opposing structures: the "Tree" and the "Semi-lattice" (fig 3.3.2). His explanation of the "Tree" (fig 3.3.1) resembles in many ways the centralized state or negative impact of planning which has been criticized by many including Waldheim and Mosta-favi of GSD, and the Landscape Urbanism discipline. On the other hand, the Semi-lattice as in Alexander's mind is striving to achieve the complexity of the "multi-layered" and "historical and cultural construct" (Waldheim, C. 2006 p.38).

Taking this construct of various layers, Michael Batty explains in his opening chapter to *Cities and Complexity* that cities are composed of different systems or sciences, which in turn consist of further sub-systems, such as economic, social, cultural to name but a few. As designers we currently have to possess an understanding of multiple disci-plines in order to successfully construct or view the city correctly. If not then designers must be able to work within a multi-layered environment of multi-disciplinary designers to manage the complexity of multi-layered site condi-tions. Each level of this scenario consists of its very own individually complex systems, whether it be the layers of systems making up the city fabric or the multiple layers of disciplines at work in managing the urban process. How-
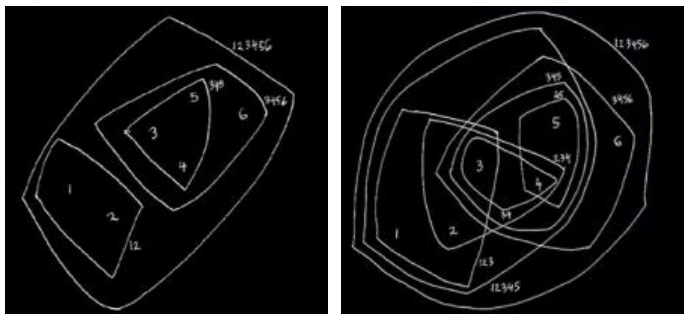

fig. 3.3.1 - Tree Structure - No Overlap

fig. 3.3.2 - Semi-lattice - Overlapped

ever, preceding the movement of Landscape Urbanism, urban planning held a sole reign over the city as a construct, which both Alexander and Mostafavi have convincingly held the inability of planning guilty of over simplistically organising the complexity of cities. This simplistic method of planning, according to Alexander, was purely due to the inability of understanding the complex state or design thinking of those involved in the constructing of the city, thus halting the morphology of the natural organic city.

3.4   Designing Process, Uncertainty & Complexity: The Incomplete Project

The most recent and significant works on designing process in the area of complexity within landscapes of change have been carried out by James Corner of Field Operations on the Fresh Kills landfill site on Staten Island in New York. Like a number of the Landscape Urbanism discipline driven projects, Fresh Kills held a political position within the city which fell through the jurisdiction of urban planning both regionally and federally. Such an opportunity was then presented as a design competition by the heads of New York and resulted in Corners detailed process of curation and cultivation of ecological complexity.

"Fresh Kills Lifescape", a term used by Jason King and Corner on the Landscape+Urbanism Blog describes the method of design thinking used in the Fresh Kills design competition won by Field Operations. This new wave of design thinking (new with regard to implementation) set up the landscape as a platform for a continual process in ecological regeneration and landfill cleansing while providing the city of New York a public open space much greater than anything seen in the Central Park or Prospect Park. Corner first identifies the thirty year process as the timescale necessary to manage and curate the waste into cleansing treatment plants, capping of landfill mounds and cultivation of new vegetation into fully self-sustainable bio matrix where watersheds and landscape would allow ecologies to re-exist on the Fresh Kills site. This method of allowing site ecologies and conditions to evolve themselves through a process of curation is a far distance away from the visually stylized design method seen in preceding landscape and urban designs as well as architectural works. As Alexander has criticized the human designer for his inability to understand and design complexity, Corner may very well have accepted this by instead allowing complex systems to design themselves by providing them with a designed process or platform. This method has been seen in preceding works, however not through implementation, of the Downsview Park designs by the OMA and Corner teams in 2000 or by OMA in Parl de La Villette in 1985. Fresh Kills however remains probably the most significant examples of designing for process, uncertainty and complexity in contemporary landscape theory through offering a completely open ended project.

In response to first impressions on design within Landscape Urbanism (which may have misinterpreted as a lack or absence of design rather than the manipulation or integration of existing elements instead) Waldheim has explained in his lectures previously that this new type of landscape project does not resemble the traditional interpretations of design. This is quite clear in the work on Fresh Kills where the thirty year process is in itself designed and avoids any stylised design of many preceding landscape projects.

The Contemporary City

4.0   The Contemporary City

4.1   The Contemporary City

The contemporary city is a broad topic. Theorists such as Christopher Alexander, Rem Koolhaas, Bernard Tschumi and Jane Jacobs, among many others, have given their interpretations of specific conditions associated with the problems and tendencies surrounding the contemporary city, the city spanning from the early days of Post-modernism to the present day. These include the "Generic City", described in 1995 by Rem Koolhaas as one having lost its identity and the ground plane becoming less significant as the city rises; the "Tree" structured city by Alexander described as lacking overlap in an otherwise simplistic urban fabric suffering at the hands of planning's incapabilities in regard to dealing with complex systems; Tschumi's interpretation of urban space through events, notably love and death into an architectural catalogue of confrontations with architecture and space in his famous Manhattan Transcripts; and touching closer to Toronto, Jane Jacobs' account of the failings and flaws of Great American Cities (Life and Death of) which criticize modernist planning in many aspects from city blocks to public open space. Most of the research carried out has shown a number of the texts on the city identifying the presence and quality of public open space – public landscape – as a major attribute in the success or failure of a liveable city. (City of Toronto, 2011)

4.2   The Position of Public Landscape in the Contemporary City

In her book *the Human Condition*, Hannah Arendt states that public space is the primary, most effective way of portraying a city's cultural identity (Arendt, H. 1958). Waldheim describes the contemporary city or the architecture of the contemporary city as becoming "commodified as a cultural product, ironically rendering many cities less and less distinguishable from one another". According to Koolhaas, in the "Generic City" the scale of fractal growth may be the only form of differentiation - let us interpret this as being size as the only difference from one city to the other. If the public space is so generic and bureaucratically created and planned according to zoning requirements then how can cities stand out as distinct liveable locations, and as cultural constructs (Waldheim, C. 2006. p. 38)?

Don Mitchell argues that public space more often than not emerges as an afterthought, rarely taking the position of a priority in a project and "re-appropriated out of often highly policed and ordered open spaces" (Mitchell & Van Deusen. 2001, p104) (fig 4.2.1). Writers on the topic of public space, including Mitchell and Carr, tend to compare today's situation with that of the Greek agora, comparing apparent levels of freedom or activity in these places, while City officials compare standards to those cities based on cultural and historical constructs (City of Toronto, 2010) in an effort to continually imitate, stylize or import urban form. In the case of Toronto, the City's website publically refers to alien cities upon which to imitate or match "Paris, Barcelona, Sydney, San Francisco" (City of Toronto, 2010). This moves the position of the culturally and historically constructed landscape further and further from the core of the city's design

Today cities are decentralized, the pace of life has become much faster and if we believe in Koolhaas' generic city, the sole activity of the city is business, finance and commerce. What may be more relevant in the history of public

space is its tendency to change and evolve, which we have clearly identified in the previous sections. Carr touches on the factor of economic development or successful activity – he notes that commerce may be a common motivation in creating public open space (public landscape). The Greeks lived in a rich era and in an equally rich (in size) public space centred around the operations of the city. Romans also experienced this trend, and in Medieval times we saw earlier that once civilization fled to rural hideouts and the city/town was insignificant then public space was non-existent – and once the city or town reformed around the market, public space was reborn. Clearly commercial activities are the greatest intensifier or activator of urban public space.

Nelligan, Mauro and Duneier argue that the increase in significance of the sidewalk is a very important part of contemporary public space in the city's landscape – thus pointing toward the role of commerce adjacent to the sidewalk. They describe this space as a major contributor to the manufacturing of a city and maintenance of a "civilized social discourse" (Duneier, M. 1999. p.89). This indicates the importance of movement in the city. Take for example the generic scenario - the importance of moving in the generic city, a city that is comprised of businessmen and women, either going to or coming from the workplace. In this example the sidewalk is an economic artery and platform for civic events. It feeds the city by delivering its workers from A to B.

On a similarly single-use space, in his proposal for Dundas Square Adrian Blackwell identifies the public square solely as a political space (Blackwell, A. 2000 p.126) – which would restrict the use of the public landscape, much like the design of Nathan Philips Square. Linda Pollak identifies the difficulty designers face once program is considered in public space, as the final outcome is nearly always an impossible task as the spaces are in a constant state of change (Pollak, L. 2002.). In a more systematic or instrumental form, the sidewalk is one of the most obvious links in the physical "Semi-lattice" city, from a public pedestrian stance. In both scenarios we see that the sidewalk or public corridor can be equally significant in contemporary public space as the agora was in earlier forms of the public realm. Public open spaces are rarely considered in the generic city although if we are to consider both the evolution of such spaces and the present day performance of Dundas Square in Toronto commerce still acts as a major contributor toward the square.

On the other hand, in some multi-layered natural cities we have also inherited large numbers of nineteenth century public parks and pre-nineteenth century public squares, however in the Modern artificial city, i.e. Toronto and other North American cities, parks and squares have been imported to the landscape. As noted earlier, Philadelphia imported the English Gardens and Central Square while Washington D.C. opted for the French model of boulevards, placing them diagonally in an experimental effort to produce instant public open space. The latter failed when economic forces did not develop in tandem with the imported landscape. The Modern city reverted to the Roman style of organized life and regimented society, whether it meant to or not is difficult to say. The contemporary city has put public space on the bottom of its priority list and allowed dense built form to create residual waste space unsuitable for the construction of rectilinear buildings (fig 4.2.2). This waste space however was has been considered sufficient

in meeting zoning quotas for open space provisions.

4.3   The Next City

Over the past decade the public has witnessed a significant shift within society both in terms of awareness of climatic issues and the global community interventions/targets set for the resolution of this imminent change. In order to carry out such radical change cities, which are core to the problem, require a "flex in their environmental impact" (Reusswig, F. 2010. p.99). Koolhaas in 1995 argued the increasing significance of the city – beyond the already significant view held toward the city. The growth rates are explosive and are projected to continue multiplying. The Endless City documented the rates: in 1900 10% of the world's population lived in cities, 50% in 2007 and projected to be 75% in 2050 (London School of Economics. 2007. Cover Page). It is because of this that the city will play a decisive and pivotal role in the change of carbon footprints of nations and the world. This new city is surrounded by a "Climate Culture" and this culture, no matter how global the targets and policies are set, will decipher change (Reusswig, F. 2010. p.97, 99).

In light of the amendments made to city infrastructure to deal with such change we may be experiencing a more coherent and capable movement in dealing with Modern and Post-Modern failings. Landscape Urbansim is uniquely capabale at coming to terms with the city's very existence and integrating this climate culture as a core element into the representation and construction of the city. Recently, Germany has announced a pivotal movement in their plans to shut down all nuclear power plants by 2022 which provides an example of the significance of this movement, and potentially more nations will follow suit (BBC. 2011) - offering increasing climatic-culture voids in cities other than just North American. However, while politicians, economists and industries try to ease their interests into a climate culture interventions must be made locally to maintain the reduction of carbon footprints. Berlin, with a population of over three million (Berlin Facts, 2011), has already adopted a car-free lifestyle, car-free housing and car-free streets, it currently possessing some of the lowest rates in car ownership per capita (Reusswig, F. 2010. p.101) while here in Toronto we have so far seen much more negative change with a new Mayor who is clearly pro-automobile leading the city against a tide of "climatic cultural-ism" with regard the issue of road vehicles.

4.4   Thickened Ground: The City After Landscape Urbanism (figures 4.4.1-4)

The City after Landscape Urbanism is still a premature entity, with the discipline gaining platforms on which to operate, and exhibit, only in gaps left by the Urban Planning discipline in North American cities. Few precedents exist on a whole city scale. Since the most significant examples of the work – back in the 1980s in the competition entries Parc de la Villette by Tschumi and OMA, later at the turn of the century in Toronto's Downsview Park with several studios providing new standards in the discipline and more recently in New York's Fresh Kills landfill site – are more often than not those holes between political jurisdiction, and gone unnoticed by Urban Planners resulting in park-scale designs.

In the field of academia few institutions have fully adopted Landscape Urbanism as a sole driver for an educational program, with the Master of the Arts in Landscape Urbanism in the Architectural Association being the one of its kind worldwide. The director and a number of graduates of this program have formed Ground Lab, a progressive office dealing with city issues and applying the design thinking taught at the AA. Ground Lab's recent work was probably one of the most large-scale interventions Landscape Urbanism as a discipline has had. Their project Deep Ground (Ground Lab, 2011) for the Longgang part of Shenzen in China operates solely with the landscape as the medium for urban and built form. The project deals with a site of over 11 square kilometres in a regenerative context surrounding the neglected Pearl River Delta creating a new city form with the river as a central ecological corridor. The concept of "thickened ground" is implemented to create multiple datums within the horizontal landscape plane. They "fuse together" improving connectivity, integrating the underground, the originally perceived ground datum and the central bridging of the river, all together multiplying the datums into a three-fold plane. (Ground Lab, 2011). With the landscape gaining further dimension the public realm and forms of public open space benefit from the provision of shelters, connections, bridges, tunnels, nodes, terraces, rooftops – all of which evolve from a regenerated landscape (fig. 4.4.1 - 4). Currently the project is in detail development after Ground Lab was commissioned to officially carry out the project.

fig 4.2.2 - Formation of Dundas Square
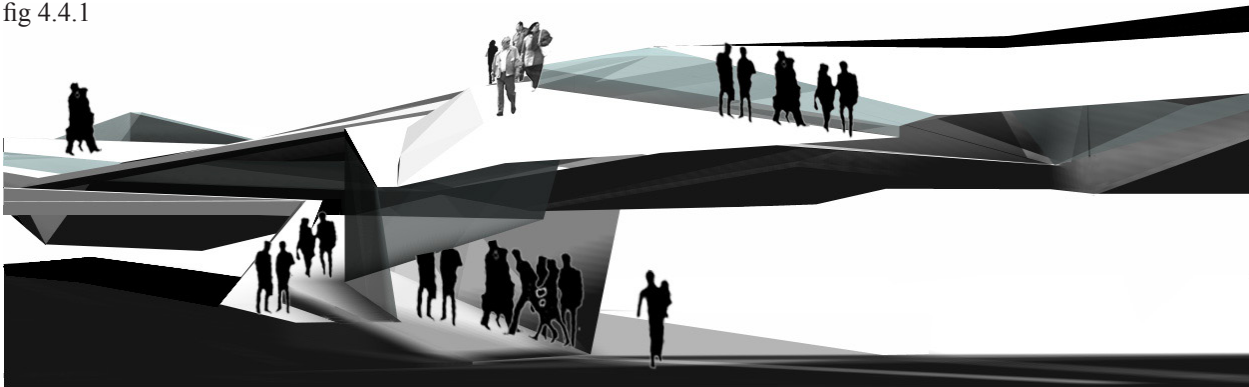
fig 4.4.1

fig 4.4.2

fig 4.4.1+3 - Longangs Thickened Ground ads profile to the Public Realm through dept in Public Space

fig. 4.4.2+4 - Longangs central axis is the Pearl River which takes a lead role in the generation of the city in Ground-Labs design through a priority in cleaning the contaminated water and re-instating the destroyed ecologies alonth the river delta.
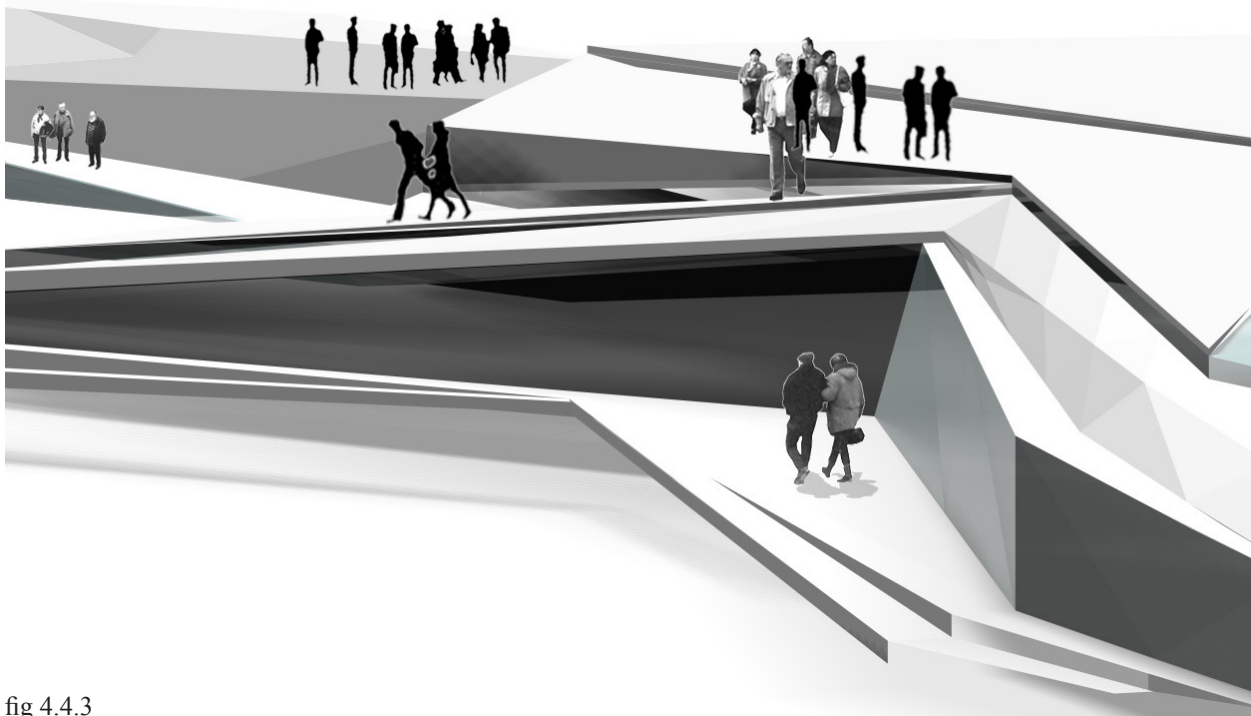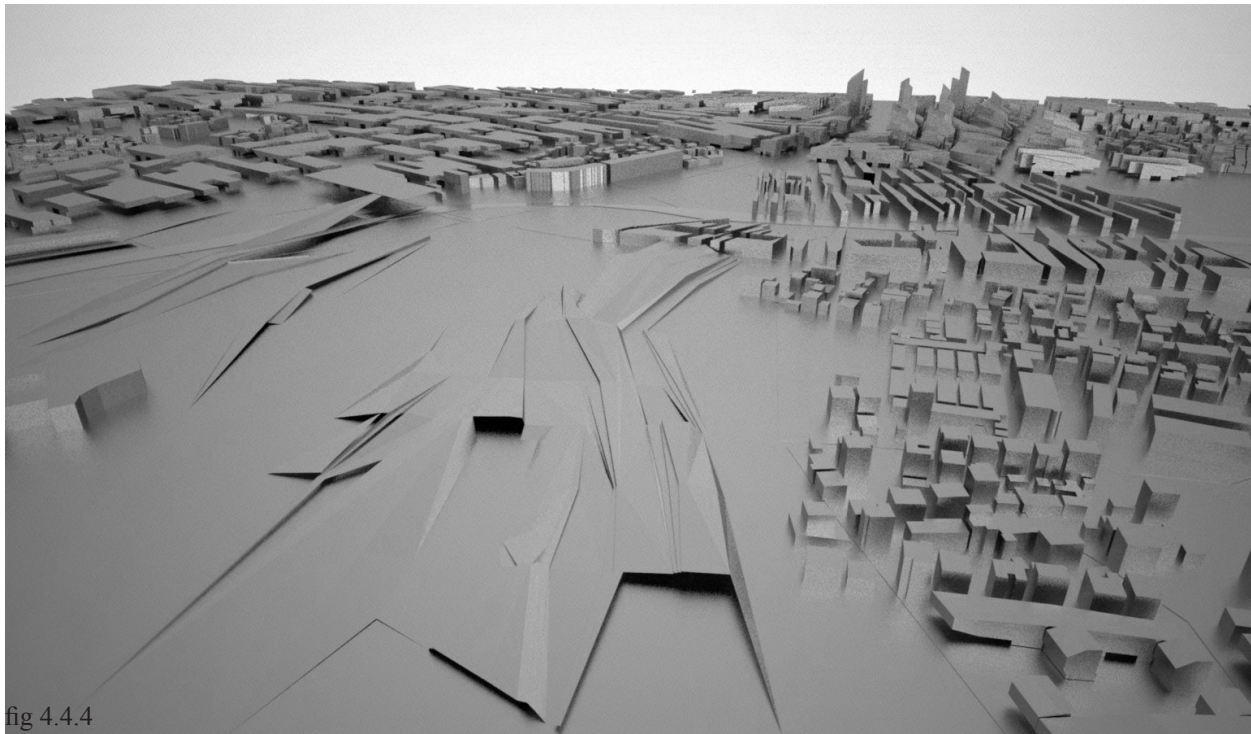

fig 4.4.3

fig 4.4.4

Torento, Toronto

5.0   Torento, Toronto

5.1   A Brief History of Toronto / Town of York

Toronto as it is today was planned as the Town of York by order of Lieutenant-Governor John Graves Simcoe late in the eighteenth century. According to Robert Glover in his essay on "City Making and the Making of Downsview Park" Simcoe choose the current gridiron formation from two options. The first scheme (known as the Plan for Torento - fig. 5.1.1.) resembled that of Penn's Plan for Philadelphia developed by Gothar Mann – a plan consisting of a series of town squares or plazas surrounded by a public commons between the city plan and Lake Ontario. The second, the selected scheme, by Alexander Atkins (Plan for York Harbour - fig 5.1.2.), featured a far more gridiron, utilitarian system with little or no provision for open space. Glover argues that the choice of the utilitarian system "of ten square blocks and no open space" (Glover, R. 2001. p.36) over Mann's was potentially the source of the neglect in Toronto's public space which has been identified in OMA's scheme for Downsview Park.

We can interpret from Glover's essay and the overlap of the planning of Toronto with the Industrial Age that Toronto may have inevitably been a strictly industrial city never having the opportunity to establish public open space as the backbone of the city, as did prior forms of city. Setting the lakeshore and Don River aside to a large degree as central locations for industry and the burying or engineering of the natural creek waterscape were all gestures of the political and industrial view toward the city lands – which has been communicated through Robert Glover's writings on the city.

Although the plan for the Town of York was chosen on behalf of the King of England and during the Georgian period in Great Britain, the new Toronto understandably resembled an Imperial industrial city and nothing like the Georgian period then under way in England. It was a city plan where public gardens, parks or squares were eventually developed in locations where nothing else could go – waste space set off to one side as afterthoughts or untreatable wet locations resulting from the covering of the creek system. (Glover, R. 2001. p.36)

Simcoe's favoured landscape within the city consisted primarily of the productive industrialized downtown core, with dense railway lines, yards and docking facilities occupying the main strategic locations along the waterfront during the city's early industrialized to modernist years. Although not completely intentional in its end result, the city had made numerous attempts to generate core areas within the urban fabric for public open space however failed due to sacrifices made for the financial benefit of developing the city's other infrastructures – a potential catalyst for the city's planning of public landscape as the city developed further. (Osbaldeston, M. 2008. p.17,18)

The first such attempt came in the early years of the city planning stages, with John Howard's scheme for a fully landscaped Waterfront Walks and Gardens on the edge of Lake Ontario from Old Fort York running east (fig. 5.1.3.). The second is represented by the numerous City Beautiful campaigns which were usually ignored in light of the costs and scepticism among the planning department officials. Howard, an English-born Canadian architect, survey
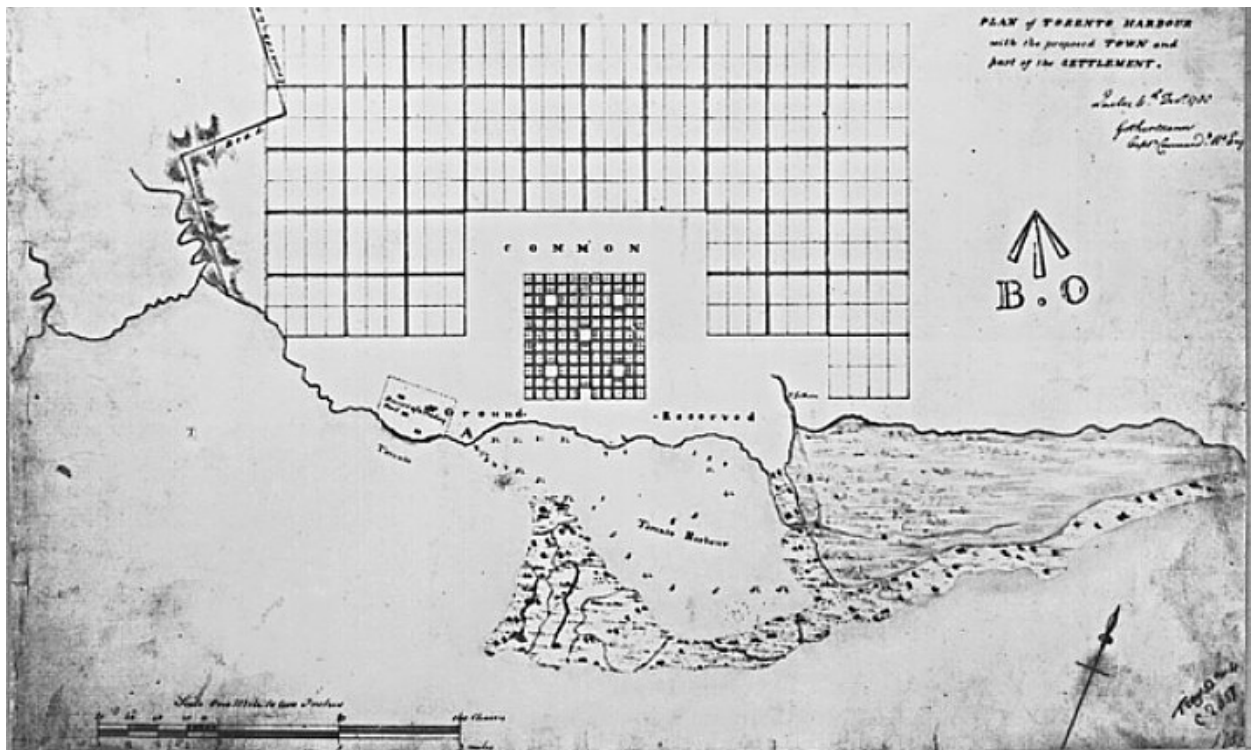
fig. 5.1.1 - Gothar Mann's Plan for Torento: Note the Commons landscape along the Waterfront
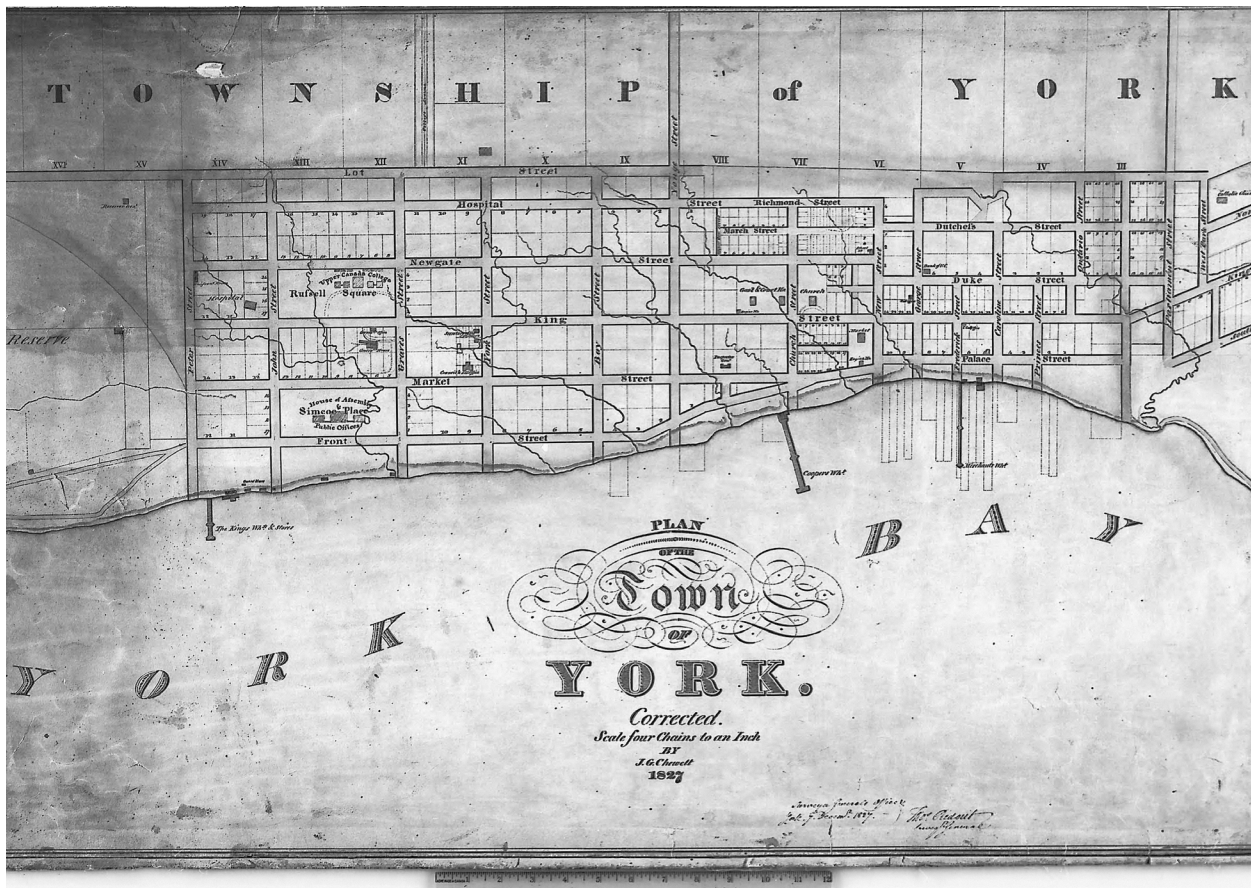

fig. 5.1.2 - Simcoe's choosen Plan by Alexander Atkin: a dense "utilitarian" grid

or and engineer and probably the most prominent in Toronto at the time (City of Toronto. 2011), hailed from an Olmsted-esque style of design during the 1800s; nonetheless he advocated the design of much of the lakeshore as park lands and commons. His proposal for the Waterfront Walks and Gardens planned in 1852 during Toronto's industrial years, was the potential catalyst for what the city would stand for in coming years. Initially the Crown reserve set aside approximately 600 hectares for the public gardens, similar to other Commonwealth countries like Australia. Sydney received a similar land area however today's Sydney sees the Sydney Opera house, the conservatory of music and the botanical gardens located on its waterfront – in hindsight some features that might have occupied Toronto's waterfront. However as development increased in the city these gardens were sacrificed at the expense of the city's public realm but to the benefit of the Grand Trunk Railway System and other industries involved – industries which brought great wealth to the city. According to Mark Osbaldeston in his book *Unbuilt Toronto* the City of Toronto initially planned to develop a completely public waterfront that would be home to gardens, paths and walkways that would facilitate a major element of the city's public landscape. However, reflecting the priority placed on industrial infrastructure, the garden scheme was dismantled piece by piece to sell land in order to build railway yards and docking facilities that would form the city's lakefront image as it exists today.

In later years as the city became more developed and the grid plan was well established the City adopted a number of failed campaigns to improve the urban plan of Toronto. Also documented in Osbaldeston's book, the Civic Improvement Committee put forward plans to retrofit the gridiron pattern with streets imitating the diagonal streets of Paris or more locally Buffalo (fig. 5.1.4.). Although these cities were developed on these principles, our Toronto Committee felt that these imitations would have been the base solutions for improving Toronto. However none of these managed to materialise.

The rapid growth of the city due to the influx of immigrants fleeing the Irish famine late in the 1800s brought the beginning of the cultural layers that would develop the city to what exists today. As the city increased in population urban sprawl took effect as the downtown was already established as an industrial core heavily occupied by the necessary infrastructure.
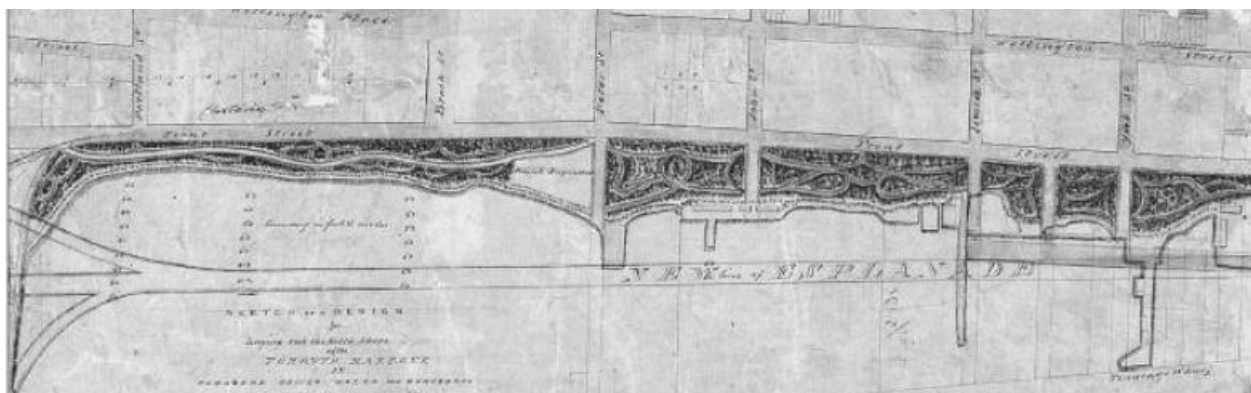
fig. 5.1.3 - Waterfront Walks and Gardens by John Howard

fig. 5.1.4 - City Beautiful Interventions: Diagonal Streets Cutting through the City grid

5.2   Contemporary Toronto

This same downtown core remains today in a structure similar to that of Simcoe's era, forming a dense financial district shielded from the water's edge by the remains of the industrial years of the city, while suburban grid formation sprawled further to accommodate the intense immigration numbers from Western Europe during the twentieth century, like many other North American cities of that time. Robert Fulford notes in his essay, Going Public, how this early neglect of commons and public squares in Simcoe's utilitarian plans may have later affected the quality of the city's public landscape:

"Thirty or forty years ago, the most obvious quality of Toronto was reticence which many mistook for a virtue. Toronto was a city of silence, a private city, where all the best meals were eaten at home and no one noticed the absence of street life and public spaces. Sidewalk cafes were illegal, and there were no festivals".
(Fulford. 1995. p.1)

The above statement could be seen either as a criticism of the people of the city and their lifestyle in the colder climate or of the amenities offered to those people. On a completely speculative argument, the import of English pastoral gardens to Toronto, a city with a very different climatic condition, was also somewhat unsuitable given the extreme seasonal change associated with Toronto. The climate's impact could certainly be a huge factor beneath the surface of social and cultural agendas in the public landscape so I intend to use the yearly climatic comfort levels as a primary design element in the new landscape model for process and change.

Toronto suffers from neglect. Of all major North American cities Toronto spends the lowest amount on public space.

No major city spends less on park operations. Can Toronto survive as urban beauty becomes increasingly important to a city's prominence in the world marketplace? Will Toronto's own negligence turn Canada's central hub into a peripheral global city? Despite its derelict spending, Toronto has the opportunity to convert the city's one inherent asset into its greatest civic amenity. We propose to use Toronto's most distinguishing feature as the park's primary urban component. Trees rather than buildings will serve as the catalyst of urbanization. Vegetal clusters rather than new building complexes will provide the site's identity. An urban domain constituted by landscape elements, Tree City attempts to do more by building less, producing density with natural permeability, property development with perennial enrichment.

Tree City is a feasible urban alternative within the stated available budget. Landscape elements will be planted incrementally over time as funding permits, gradually building up the park's mass into a flexible patchwork of planted clusters separated by open undesignated areas. This will be staged as three long term phases: (1) site and soil preparation, (2) pathway construction, and (3) cluster landscaping. The outcome is a matrix of circular tree clusters covering 25% of the site which is supplemented by meadows, playing fields and gardens. Tree City treats the park as if it is an adult soon capable of sustaining itself rather than a child in need of eternal care. While most infrastructures decrease in value over time, Tree City's natural network will appreciate as the park matures. We propose that capital generated from the park's appreciated land value be spent to manage the park's infrastructure and to support future development in an evolving cycle of implantation and speculation. Tree City is therefore a plan for attainable growth rather than a proposal to create extensive bulk. By forgoing costly buildings in order to dedicate funds for landscaping, Tree City sacrifices the static in order to save what can grow.

Tree City assumes the park's suburban context to be its virtue. The locale offers an ideal opportunity to explore the unrealized promises of low density metropolitan life. Long notorious for its predictability and deathly uniformity, the suburb now has the potential to function as a playground for the urban population to unwind. Tree City's landscaped clusters are programmed for various leisure activities. Adopting the criss-cross figure of the existing runway, Tree City's clusters are complemented with 1000 crossing paths to be used by cyclists, joggers and pedestrians. Its amalgamated landscape will offer a green destination within Toronto's expanding core, making Downsview a counterpart to the Downtown. Located near railways, major expressways and GO Transit lines, Tree City can function as both a point of destination and dispersal. Visitors will be able to visit the site by numerous public and individual means from within the city. At the same time, it can serve as a transportation hub for connections to other outlying areas. As a hub, Tree City would accommodate the extension of Sheppard Avenue under the runway, the future extension of the east-west subway, as well as the development of the existing railway tracks for intermodal transportation.

Ultimately, we envision this vegetal epicenter to connect with the city's green spaces and form a Tree infrastructure for the Greater Toronto Area. By continuing its landscape clusters and extensive pedestrian pathways into adjacent areas, Tree City can link up with the Black Creek and West Don ravines, integrating Downsview into the system of wooded river valleys, parks and public paths so unique to Toronto's urban domain. Earth bridges over Keele Street to the west and Sheppard Avenue to the north will knit Downsview's ecology with the city. In this Tree City grows the park into Toronto to foment urbanization.

fig. 5.2.1 - OMA + Bruce Mau: Downsview Park

5.3   Planning, Landscape + Public Open Space

In the case of Toronto, Planning never gave the natural landscape a chance to co-exist alongside industrial progress. In the case of the Don River and its watershed of creeks, this landscape suffered at the hands of the industrialization of the city in the 1800's. The Don River was perceived as an obstacle by those involved in the development of the city who engineered the delta into a straightened river mouth while also discharging all kinds of effluent from the city, thus moving further and further toward disassociation between built form and natural landscape (fig. 5.3.1 - 4).

In its modernist assumptions, Urban Planning in that period produced what could be described as a number of stagnant examples of urban form. Locally we have seen the design of the new City Hall in Toronto, a design competition targeting international design talent, which was eventually awarded to the Finnish architect Viljo Revell and completed in 1965. This design consisted of the main city hall buildings and a large portion of the site, on the south side, dedicated to public open space and named Nathan Philips Square, after the Toronto Mayor who presided over the design competition. (fig. 5.3.6)

Revell's design since then has been subject to a redesign by the City of Toronto with the use of a design competition. In terms of landscape design theory is quite out of sync with the debates of Koolhaas (Koolhaas, R. 1995. p.921). He argues the "programmatic indeterminacy as a basis of the formal concept allows any shift, modification, replacement, or substitutions to occur without damaging the initial hypothesis" which to a degree questions both the original design and the need to carry out significant revisions. To say that Koolhaas saw the design of a plain open space devoid of any undulation, accommodation for event or materiality (evident in Revell's Square design) is doubtful but rather the challenge in the design of such a space lay in the subtle provisions for indeterminacy of program.

The original design of the square was quite segregated from the paths of the city with a permanent steel fence on the eastern edge along Bay Street returning around on Queen Street, maintaining a barrier to one of the city's more major retail and pedestrian routes. Visually the City Hall building and the site in general were cut off by the design of a bulky footbridge just above head height which added to the barrier effect surrounding the square. As a design of public open space, Revell's was the "sparsest in detail", with a number of other entries to the competition making way for the integration of segments of dense landscape (Osbaldeston, M. 2008. p.99). One entry in particular, from a group of Harvard students, catered their design to seasonal change, with squares for both winter and summer seasons (one part outdoors as an entrance to the building and one partly inside a sheltered courtyard space) (fig. 5.3.5). It is speculated that the choice of Revell's design was based to a degree on his alien status to the competition as a European designer with unique ideas unseen in the previous proposals for the job among Toronto firms (Osbaldeston, M. 2008. p.93-99).

In our introduction to this research we declared the failures of Post-modern planning's dealings with its critiques of the modernist style and inability to address the post-industrial opportunities and structures left in the wake of

fig. 5.3.1 - The Don River Pre-Industrial Planning
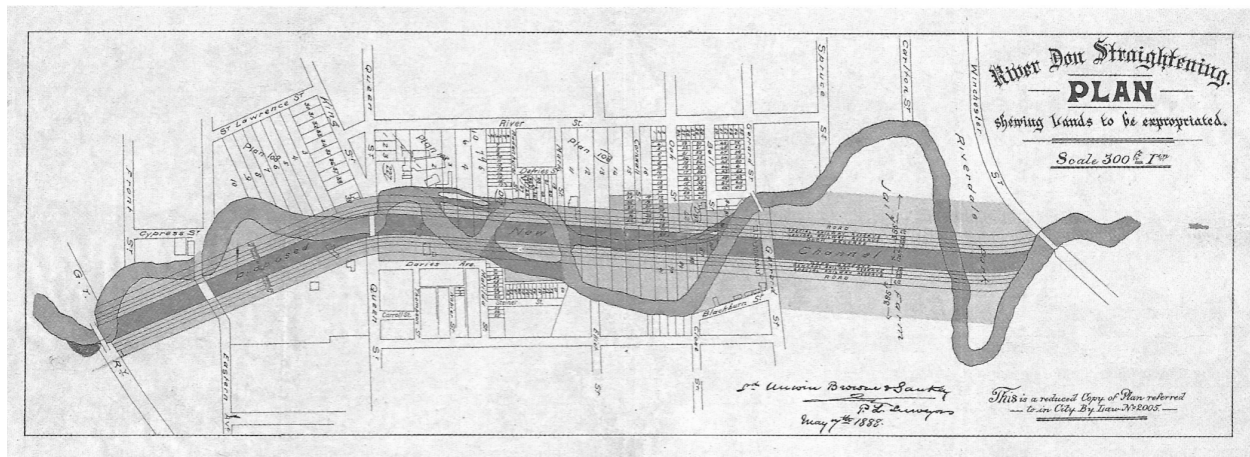

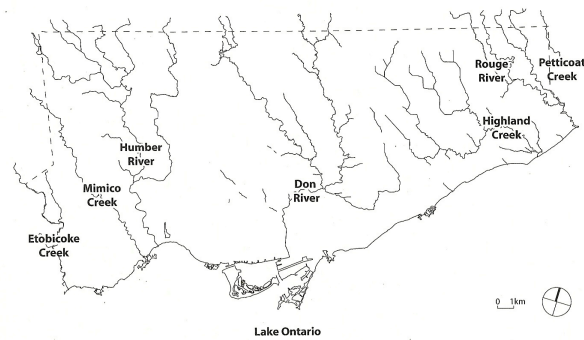fig. 5.3.2 - The Engineering of the Don River, 1888

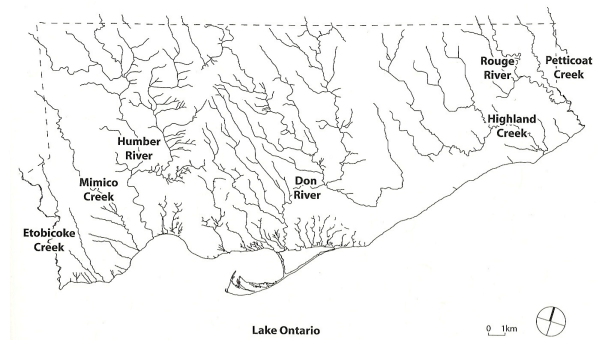fig. 5.3.3 - Toronto's Watershed Today

fig. 5.3.4 - Toronto's Watershed Pre-Industrial Planning

the centralized state. This era was aligned but not directly married with a paradigm shift in climatic and economic conditions in which failures of control upon the natural environment became magnified. The new shift required flexibility and resilience as well as a tolerance for unpredictable environments, something which Post-modernism could not begin to comprehend let alone provide for. "The monstrous mind-set of endlessly attempting to alter the course of history and charging against the autopoietic cyclical powers of nature becomes an enterprise devoid of hope" (Sieweke, J. 2010, p.83).

The recent redesign of Nathan Philips Square was to some extent a declaration of the failure of the design of the vast open concrete field or a clear lack of confidence in Modern public open space design or any Post-modern alterations made since. The new $40 million dollar project indicated the lack of flexibility and opportunity provided by the primarily concrete site conditions. One element of the redesign contained the green roof element applied to the existing pedestrian overpass bridges (City of Toronto, 2011). In general the lack of connectivity to the surrounding context has led to the square being often quite under used and in Modernist fashion displaying an abundance of zoning and division only acting negatively toward the square (Mostafavi, M. & Ciro Najle, 1999). We can therefore assume that public open space has worked quite successfully when the dynamics of the immediate context are connected to the space, not hidden in fortress-like fashion which would, as Jane Jacobs described, create a negative space having more negative than positive effects on the neighbourhood (Jacobs, J. 1961. p.89). This feature of the design was also touched on by Spacing magazine writer and critic Dylan Reid in his account and critique of the primary entries to the recent Nathan Philips Square competition. He describes the three awarded schemes as missing the point of the competition by failing to connect the entire square to the city context, and failing to address the activities that occur on the square, similar to the Dundas Square design of plain flat space and vertical water fountains at ground level - which Reid also criticizes for its lack of design and consideration for context (fig. 5.3.7-8). One interesting comment was that the only commendable entry was in fact the one not selected in the top three places. According to those at Spacing Toronto this was one which accomplished all of the above and integrated a second dimension to the square for sheltered winter use, which one should assume the climatic conditions of Toronto would benefit from. (Reid, D. 2007).
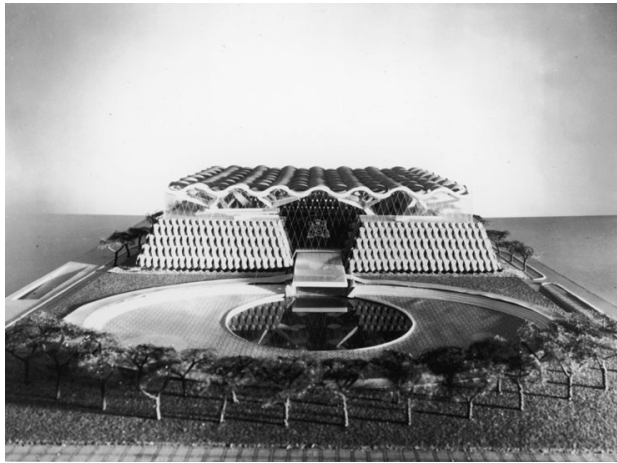
fig. 5.3.5 - City Hall: Harvard's Design
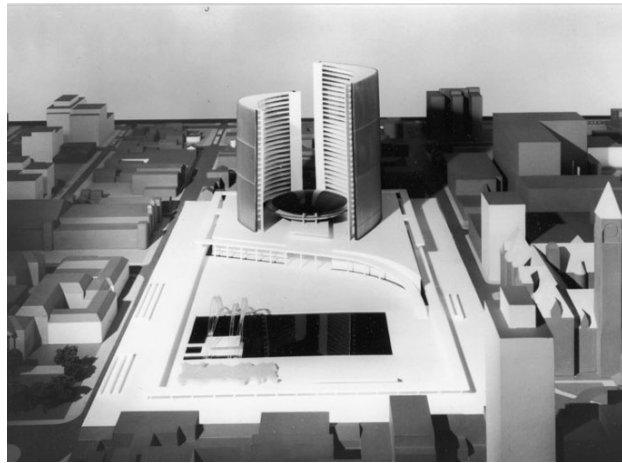
(John H. Andrews and Macy Du Bois)

fig. 5.3.6 - City Hall: Revell's Winning Design

fig. 5.3.7 - Dundas Square in Winter

fig. 5.3.8 - Dundas Square

Site

6.0   Site

In order to construct a platform on which to apply the theory discussed on the recent radical movement surrounding Landscape Urbanism we must establish the operative agenda toward which to work. Rem Koolhaas has described the landscape as a "thin horizontal vegetal plane" which has now become the primary element of urban order. Following this statement back to 1998, Eva Castro and Co. at Ground Lab, as discussed earlier, carried out a project at Shenzen in China focused on the ground as the primary element. Castro's term "thickened ground" (Ground Lab, 2011) bases itself as the constructive technique to build the city. This concept points back to the views of Koolhaas, and provides the thin surface with spatial complexity and depth. In Ground Lab's work on this project they enhanced the significance of the ground from an ecological and social view by adding further dimensions to the Ground, which in most North American cities is one dimensional (i.e. the mono-surface or flat terrain clearly evident across their urban landscapes), putting aside the underground infrastructures. This chapter will establish the operative agenda for the Landscape Urbanism design involving the mono-surface landscape. For the purpose of this work we are limiting the site of our research to the downtown core of Toronto. This district was the foundation of Simcoe's city and offers the most complex layers, dense fabric and historic-natural landscape conditions for the Landscape Urbanism project.

fig. 6.2.1. - Toronto's Sub-surface Terrain by Michael Cook (Garrison Creek Sewer)

6.1   Urban Layers: Ground Surface

Toronto's ground conditions are very different today in comparison to previous years. The covering or engineering of much of the natural terrain resulted in a predominantly flat mono-surfaced city. The rectilinear formation of the city from the early Simcoe days gives an efficient framework for vehicular movement and organised public transit systems. Complexity or irregular organic form is little or non-existent. The downtown core relies heavily on auto-mobile movement despite the presence of public transit systems above and below ground University Avenue carries over twice the amount of traffic daily compared to the Gardener Expressway and much more than any other road within the Downtown district. (fig. 6.1.1)

In efforts to measure the activity on the ground the research utilised the Panoramio facilties of Google Earth to determine the public presence or activity. Although this is quite a relative method, gives a certain degree of compari-tive data within the subject of city street measurements. (fig. 6.1.2)

6.2   Urban Layers: Sub-Surface (fig. 6.2.1)

Toronto's historical formation of landscape consisted of deep cut creeks or ravines flowing into the glacial Lake Iroquois (fig. 6.2.2). As the city developed the landscape simplified, burying the natural elements beneath today's surface. A number of the creeks flowed beneath where today's downtown core is situated (fig. 6.2.5) and are evident through some of the small urban parks residing along the creek paths. (Lost Rivers. 2011.)

It is estimated by the Lost Rivers group in Toronto that Taddle Creek – which cuts through the Annex, through the University of Toronto campus (fig. 6.2.3-4) and through the Financial District – was buried at different stages between 1860 and 1886 (Lost Rivers, Taddle Creek. 2011.). Prior to resurfacing of the city, the ravines or creeks flowed through an undulating landscape as remnants of glacial movements from the ice age. During these times the topography of Toronto was far from flat. According to Nick Eyles' essay in HTO (Eyles, N. 2008. p.34-41), the lands were deeply cut by ravines, especially as far north to the former edge of Lake Iroquois. This condition, now defining the line of Davenport Road, remains as a remnant of the glacial landscape and offers an element of scale to the deep cuts in the Toronto landscape.

Richard Anderson's essay "Dustbins of History" (Anderson, R. 2008. p.74-81), states that the ravines were seen as dumping grounds for the first generations of new Toronto citizens after the arrival of the British. In the case of Garrison Creek, the growth of the city westward in the late 1880s led to heavy pollution of the water. In 1881, it is said to have been a pressing issue in political elections which eventually lead to a straightening of the creek to either increase water flow and alleviate pollution or benefit the adjacent properties (Cook, M. 2010). Noted on the website of Vanishing Point (by Michael Cook), in one of the final verdicts in the issue of the Garrison Creek, Mayor Arthur Radcliffe Boswell announced in light of the closure of the creek:
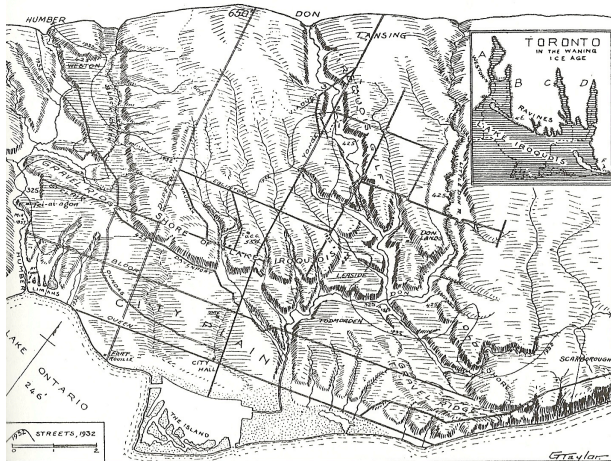
fig. 6.2.2 - Historical terrain of Lake Iroquois

fig. 6.2.3. - McCaul Pond at University of Toronto

fig. 6.2.4. - McCaul Pond at University of Toronto

Average Daily Traffic

24,000

2,000

Fig. 6.1.2 - Public Activity:

Streets and Public Open Space

Fig. 6.1.1 - Daily Traffic Measurements

Site Measurements

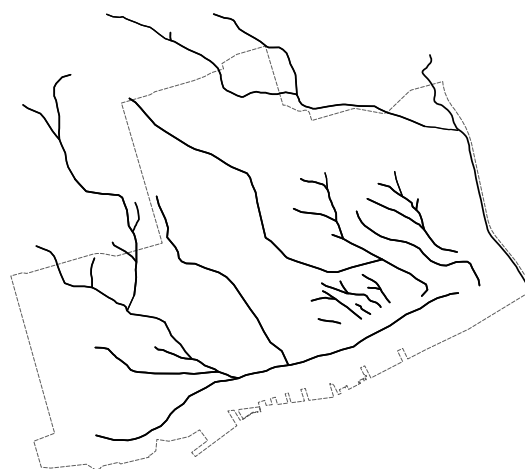Fig 6.2.6 - Sewer Systems of Toronto

Fig. 6.2.5 - Buried Creeks of Toronto

Ground Conditions

"This is a most necessary work, not only on account of its being required to drain a large portion of the western and northern parts of the City, but also in the cause of health, for this creek is nothing more than an open sewer, and has become an absolute nuisance to those residing near it."

Along with these explorations, evidence of the underground ravines is clearly visible in the location of parks in the city. The public view of the land post-burial of the ravines was most probably seen as overly damp land where nothing much could be built in the earlier years of the city, hence the choice to locate most of the city's parks along the ravine routes. Despite the negative outlook toward the watershed, Chris Hardwicke's Ravine City in 2007 visualized the integration of the ravines/creeks into a contemporary ecological urban network, placing the natural heritage and ecologies at the forefront of the city's identity. Hardwicke's proposal uses water as a means of core transportation, a place for recreation while offering a much more organic urban pattern to the linear formation - a linear formation which neglected the patterns of watersheds. The neglect or ignorance toward the creeks resulted in much of them being relegated to beneath the city surface into the sewer system (fig. 6.2.6). We have previously seen Ground Lab's "Thickened Ground" project involving the Pearl Rivers neglect as an opportunity in improving public landscape and using landsacpe as the medium of generating urban form. Toronto's site conditions of buried creeks offers similar potential by integrating neglected water bodies as central mediums in generating a new model of public landscape.

Integrated into the surface through the explorations of Michael Cook and the channelling of the most creeks through sewage pipes, Toronto's sub-surface is very much integral to the dynamics of the "thin horizontal plane" above despite human interventions to mask the natural. In present day Toronto much of the ravine system has been buried like Garrison Creek (fig. 6.2.1). This has been documented by Cook on his website on Vanishing Point, and his various writings on the website and other publications (Cook, M. 2008. p.184).

Further to Cook's notes on Garrison Creek, he explains that much of the work carried out on burying the creek is of substandard quality. He goes on to speculate from his observations that in the coming years, large scale remedial work may be necessary on the branch of the Garrison Sewer. Natural resurfacing of the creeks have occurred a number of times in the history of the city with the collapse of Finch Avenue in 2005 (fig. 6.2.7) and earlier in 1985 during the construction of the Police Headquarters at Bay & College Street. If this is the case for many of the creeksewers then a large scale landscape intervention may be very possible, rendering constant patch work on the buried system unnecessary, and could be interpreted as an indication toward opportunities or the eventual form of the city. (Cook, M. 2010).

fig. 6.2.7. - Finch Avenue collapsing at Black Creek

6.3   Applying Theory: University Avenue

The choice of site in this research has been based on the coming together of many issues concerning the City of Toronto and the interventions carried out by the City of Toronto over the past century in an effort to "improve" the city's public landscape. First, the burying of the creeks (in our case Taddle Creek) - second, the design of boulevards/avenues for enhanced public spaces along street fronts (which derived primarily from the Parisian model) being inappropriate due to the lack of public facilities along the avenue - third, the position of vehicular access in relation to the public pedestrians and public transit lines (based on our "climate culture" and efforts to improve environmental performance of our cities).

The choice of Taddle Creek was due to the core intersection through the centre of Downtown Toronto (fig. 6.3.1) however we can take events from other such creeks such as the Finch Avenue collapse and the work of Brown and Storey in promoting the resurfacing of Garrison Creek at Trinity Bellwood's Park as good reason for using creeks as the centre for applying theory. This work by Brown and Storey however, was still based on visual purposes to stimulate the park and generally respond to demands in the Creeks recovery. The Garrison work involved the reconstruction of an historical flow pattern masking the man-made aspect. In applying our contemporary landscape urbanism theory to our site condition we would instead target strategic instrumentality as the end result rather than imitating past representations of creek watersheds or visually stimulating landscape. This work shall utilize the urban watershed as the medium for design.

In the previous chapters looking at the contemporary city and more importantly the next city we will also take into consideration the environmental impact cities have with regard CO_2 emmisions from vehicular traffic. We can predict, based on Reuswiggs texts, that climate culture will generate a new urban society being heavily aware of their carbon footprint - potentially resulting in a reduction of vehicular dependency in urban centres. This event would also trigger an alternative use for existing roads. This is something we have already seen temporarily in 1970s Yonge Street becoming a pedestrian only street (fig. 6.3.2), the Don Valley Parkway's closure to traffic for a cyclist-only day (fig. 6.3.3) and aswell as many other cities worldwide adopting a pedestrian strategy on a permanent basis such as Grafton Street in Dublin.

6.4   Graphical Analysis

Note: The following collection of images is a graphical and comparitive account of the existing site - University Avenue.
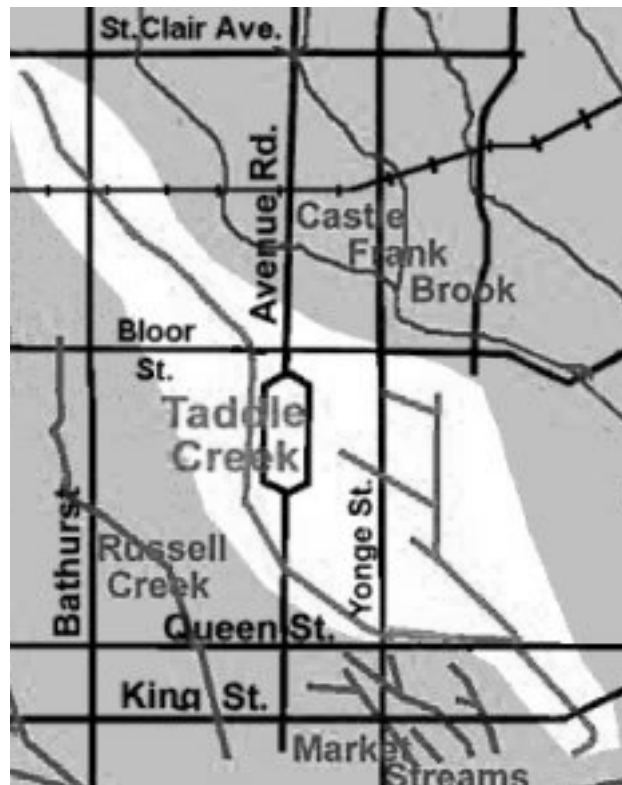
fig. 6.3.1 - Path of Taddle Creek, Downtown Toronto

fig. 6.3.2. - Yonge Street during the 1970's

fig. 6.3.3. - Don Valley Parkway's "Ride for Heart" event

fig. 6.3.1 - University Avenue: Photographic Survey

fig. 6.3.2 - University Avenue: Photographic Survey

fig. 6.3.3 - University Avenue: Historical Imagery (Aerial View)

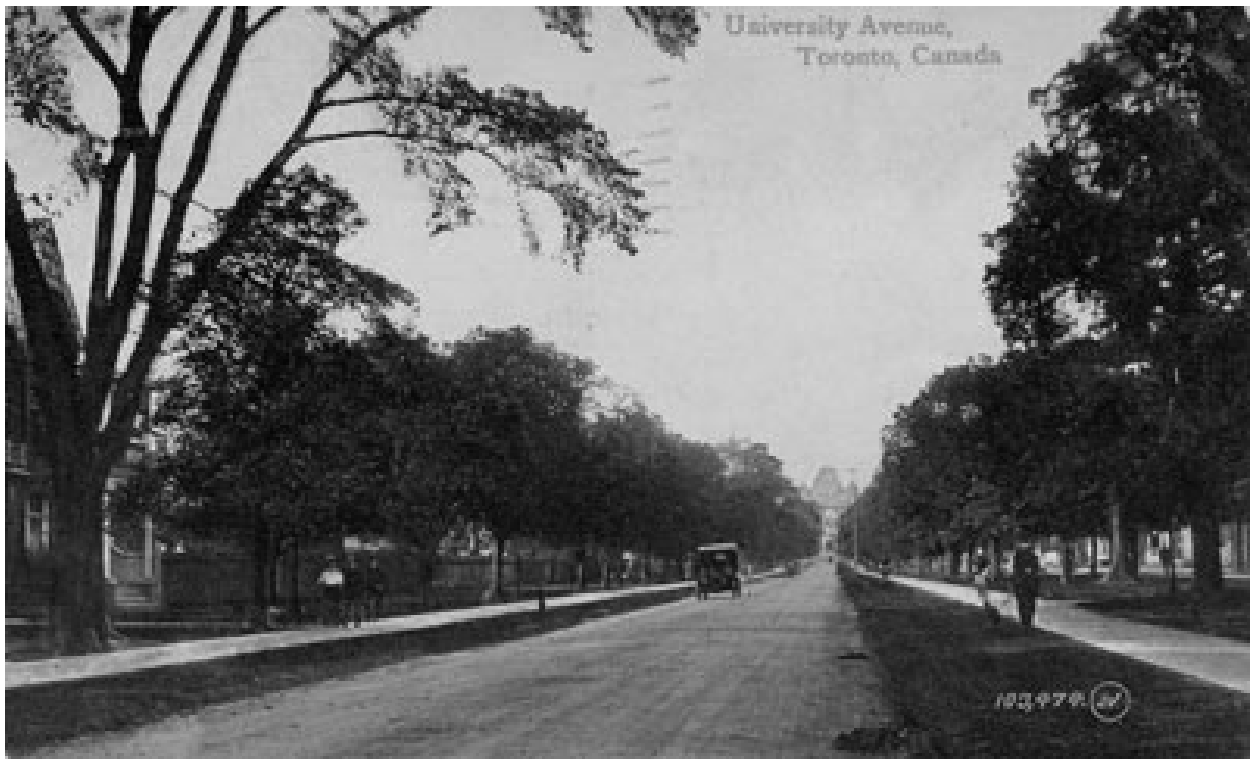fig. 6.3.4 - University Avenue: Historical Imagery (Street View)

fig. 6.3.5 - University Avenue: Historical Imagery (Street View)

fig. 6.3.6 - University Avenue: Historical Imagery (Street View)

fig. 6.3.7 - University Avenue: Existing Imagery (Street View)

fig. 6.3.8 - University Avenue: Existing Imagery (Aerial View)

fig. 6.3.9 - Exported Landscape: Champs Elysees, Paris (Street View)

fig. 6.3.10 - Exported Landscape: Champs Elysees, Paris (Aerial View)

Allan Gardens

Anniversary Park

Bellvue Park

Berczy Park

Bloor Parliament Parkette

Natural Habitat

Tree + Plant Density

Winter Program

Sport + Recreation Facilities

Transient Space

Commercial Adjacent

Residential Adjacent

C
R

Cathedral Sq. Park

Cawthra Sq. Park

Cecil St. Parkette

Clarence Sq. Park

Cloud Garden

College Park

Coronation Park

David Crombie Park

Dundas Square
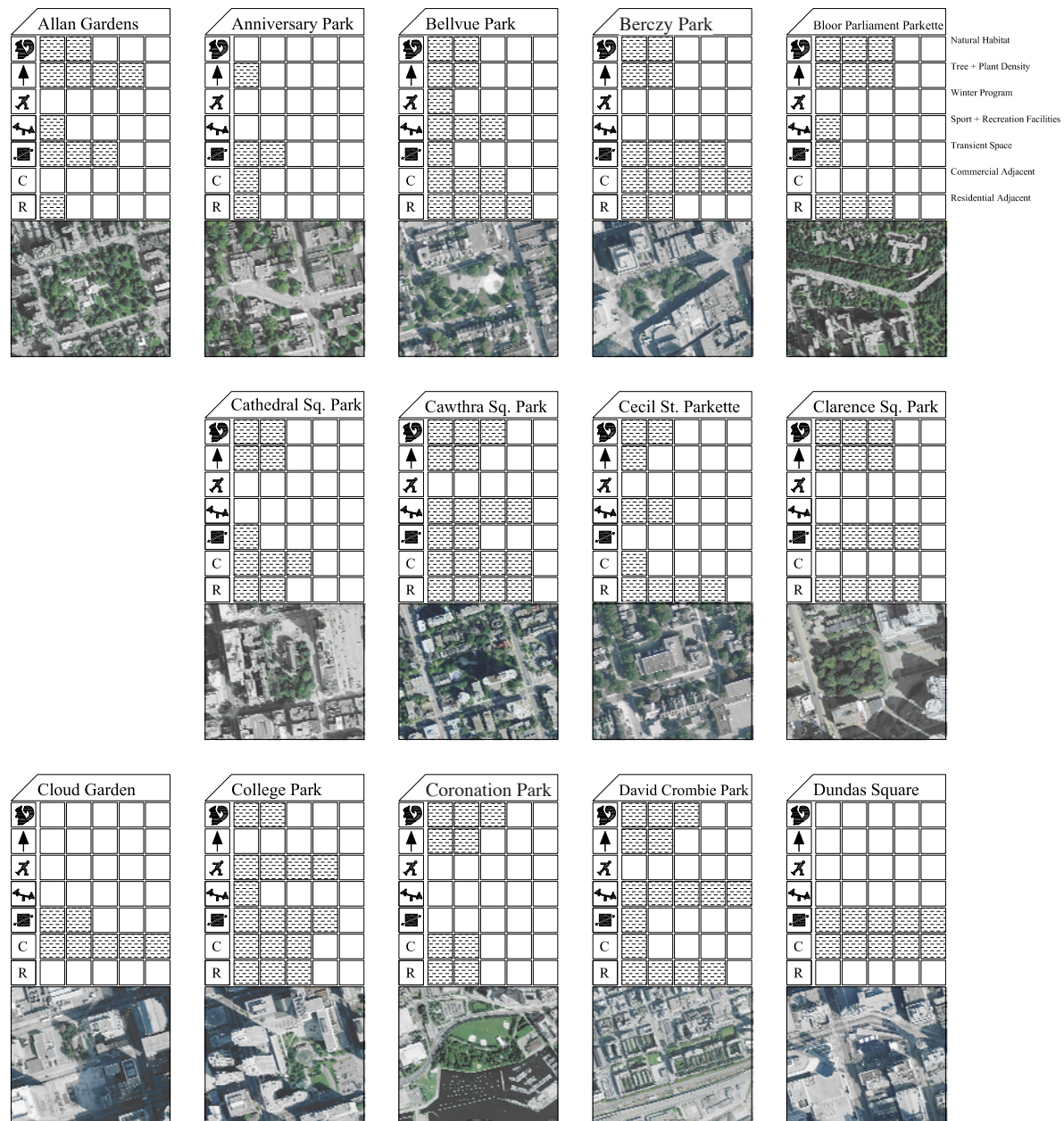
fig. 6.5.1 - Graphical Account of Toronto's Public Open Space

6.5   Measurements: Toronto Public Open Space

In an exercise to establish and measure the elements surrounding Toronto's Public Landscape, program, natural habitat context and horticultural density were measured from desk and site studies of the many spaces within the Downtown core. The above cells document a tabulated account of grades of the above mentioned elements - grading from zero (non existant or extremely low) to five (highly present). One particular observation from this exercise is the absence of significant winter program or seasonal adaptation of public open spaces. Another is the common geometry possessed by much of the spaces from the historical formation of the city blocks.
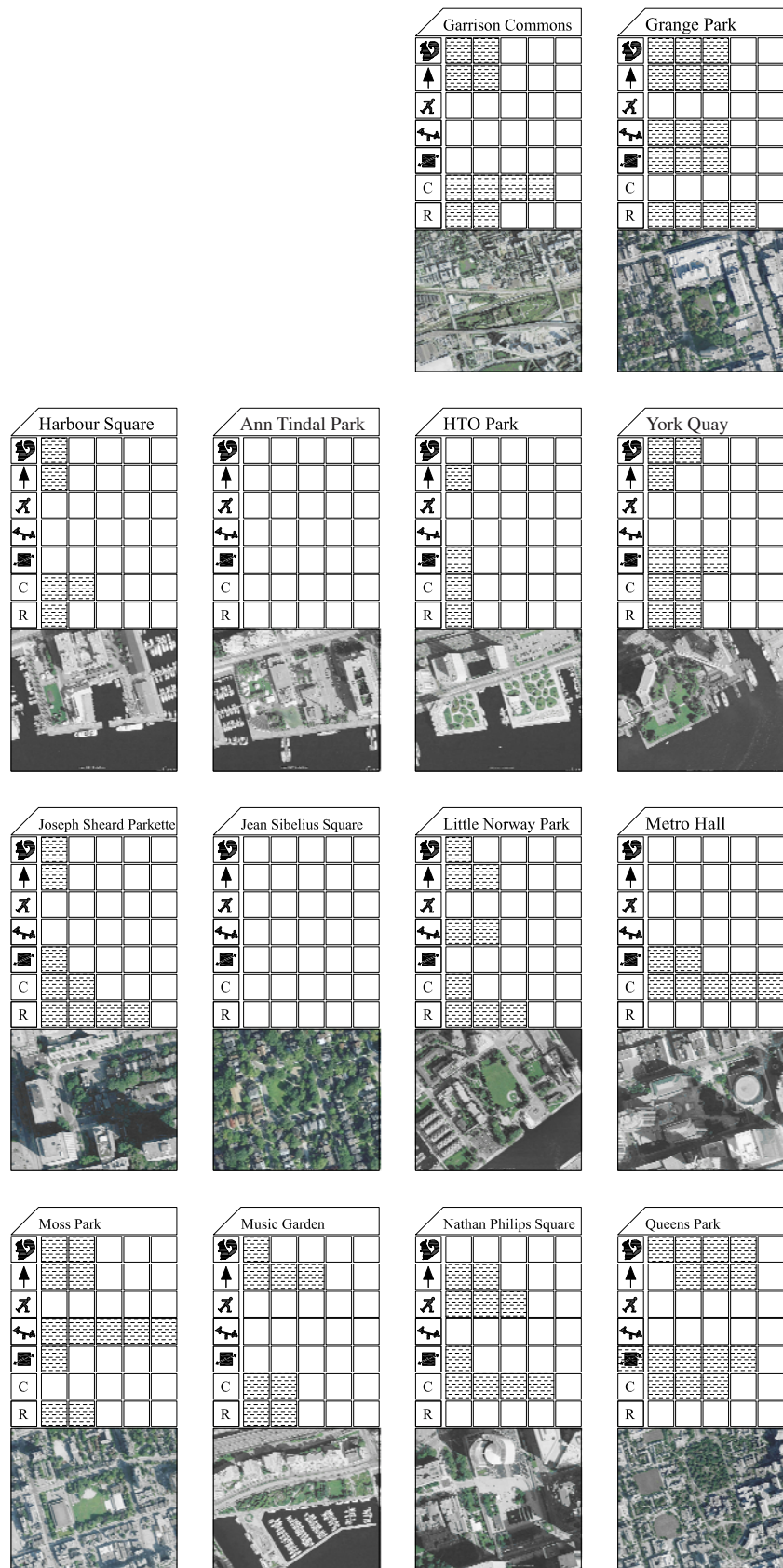
fig. 6.5.1 - Graphical Account of Toronto's Public Open Space
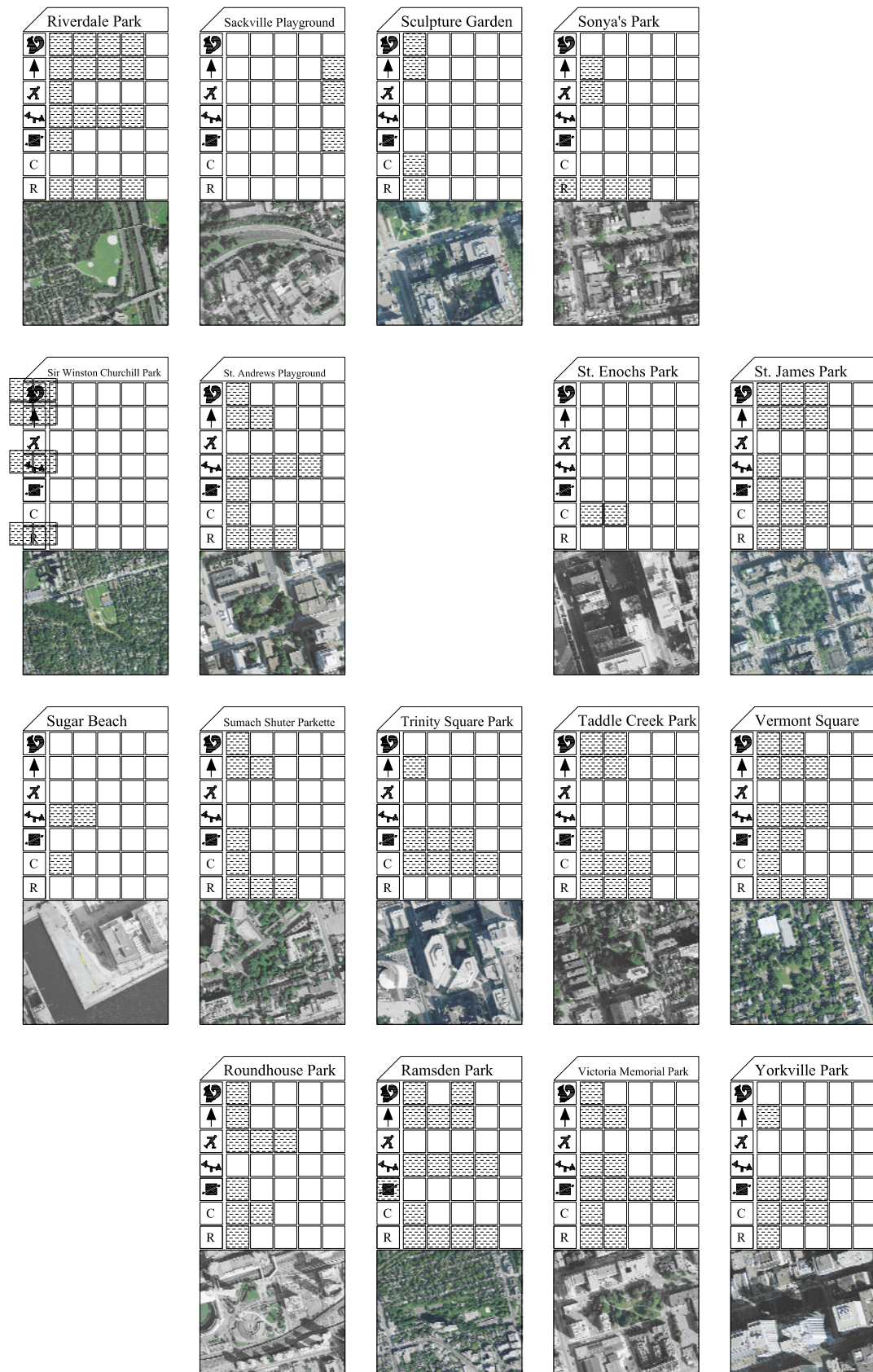
fig. 6.5.1 - Graphical Account of Toronto's Public Open Space

A Model for Process, Emergence and Uncertainty

7.0   A Model for Process, Emergence and Unpredictably

Seasonal morphological dynamics shall create recurring conditions of changing public space and ecological intensities with the constrained urban plan. No longer will pedestrian patterns, spatial organisation or ecological habitats play out in simplistic frameworks. This design is intended to maximize the use of ecologies present within the City of Toronto grounds into a self-generative programmed landscape.

7.1   Curating Emergence and Unpredictably

As identified and interpreted from the writings of Christopher Alexander, complex systems are extremely difficult to comprehend and even more difficult to design. Therefore the application of this thesis research had two options upon which to pursue in producing a responsive design. Rather than tangling the efforts of designing the semi-lattice in accordance with Alexander's mathematical genius it was deemed more appropriate to utilize the present complex landscape of the City of Toronto to generate the level of unpredictably and emergence spoke of by Mostafavi, Corner and Waldheim. Rather than designing in the traditional sense of the architectural project we would instead curate or direct the landscapes ecologies into generating its own self emergent public open space within the City of Toronto. Such characteristics would focus on one of the most unpredictable substances - water as the main driver.

The sources of the new landscape model would be extracted from the existing storm drains branching into the University Avenue trunk sewer and the immediate local surface drainage. Included in this storm drain is the historic Taddle Creek which formerly occupied the area in question as a central water body often referred to as the Little Don River or University Creek. Taddle Creek therefore would provide year round continuous water presence irrigating the new landscape model as opposed to the seasonal presence or extreme change of surface water flow. Through merging these ecological elements into a designer landscape overlap can occur infinite times between the public realm, the designer landscape and natural ecologies.

As we do merge the uncertainty of water bodies and public open space or landscape as an integrated model for public open space we must be aware of Kwinter's description of the dissipative system which is embodied by the patterns of water courses. To avoid urban catastrophe at the hands of ecological transformations we must identify the limits to which we allow this dissipative system or "siphoning of energy" (Kwinter, S. 1992. p.88) to maintain the dynamics but also satisfy its city context. In doing so, we develop a level of permeability within the synthetic surface to optimise the levels of water while also naturally filtering the toxins from polluted surface water along with maintaining the discharge sewer or out-going sewer at the southern end of the site.
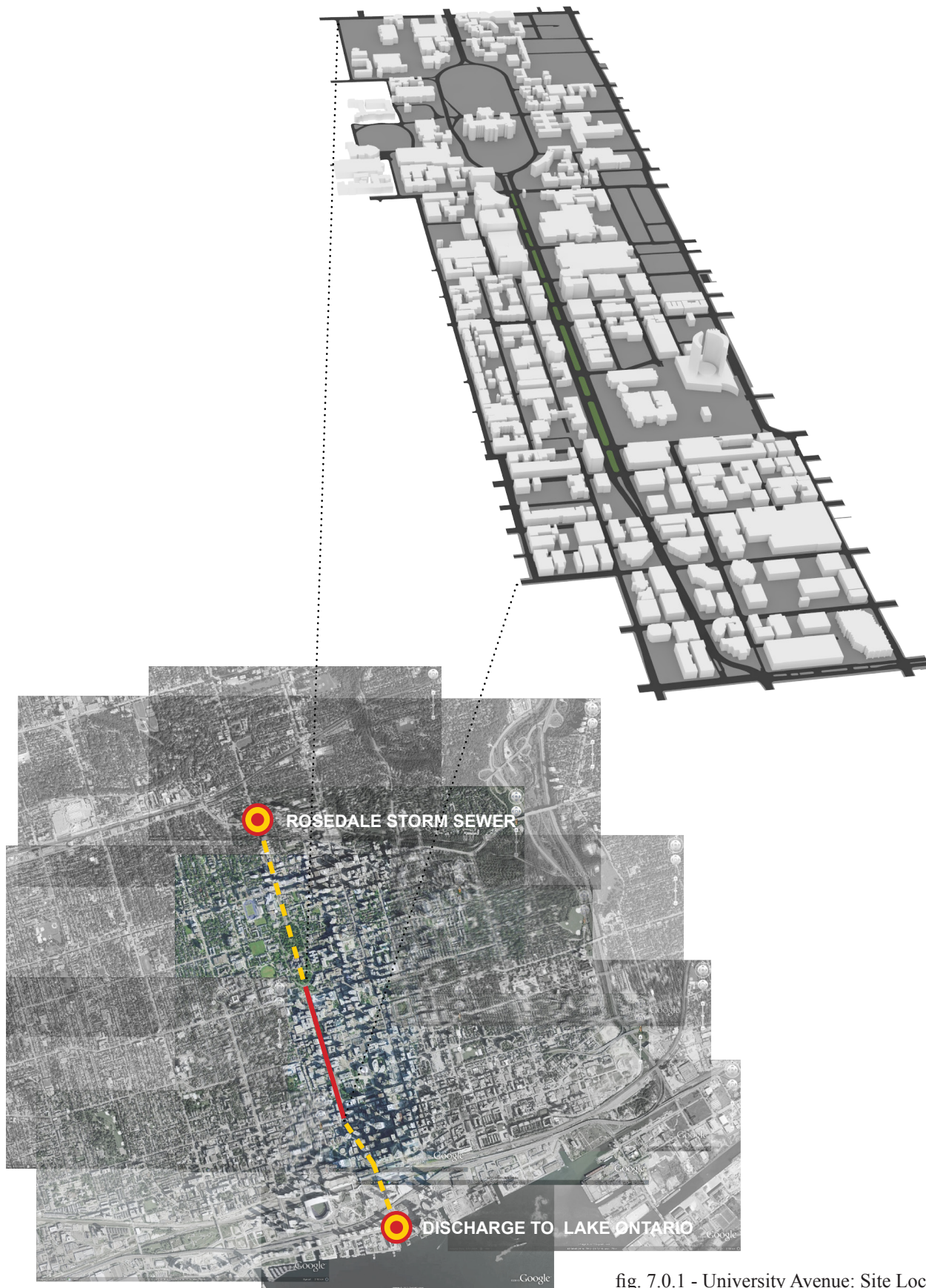
ROSEDALE STORM SEWER

DISCHARGE TO LAKE ONTARIO

fig. 7.0.1 - University Avenue: Site Location

7.2   Materiality and Structure

As this is a move of instrumental design as a core issue we should avoid visually representing rural landscapes or stylizing the design in order to maintain the design intent. As a base for the extensive undulating terrain required to generate the model, the geo-synthetic layer of rock formed gabions used will manage the design of the man-made landscape in order to achieve specific materiality. Coir Cells, as referred to by a number of terrain manufacturing providers, offer the expansive flexibility to install on-site as a planter base and river bed while the common steel-like gabion would create the base for water ponds to permeate fully through the rock layers.

Materiality will be in accordance with programmatic requirements. As this is to a degree an artificial river, the river bed should be structured with a highly dense material to allow for optimum flow, discharge storm ponds will possess a level of permeability to filter toxins through the process of water purification seen in natural filtering of spring water through rock layers. High level landscape, which area areas year round occupiable by the public should have capped surfaces upon which a highly permeable rock formation would allow flooding to first occupy the sub-surface as a preventative toward covering the public program.

7.3   Assigning Program

Program for this new model of landscape is based on precedents in recent works in the City such as skating ponds, skate board and biking surface, artificial urban beaches, botanical gardens, event space and shelterd space. In the act of overlapping program to maximise the usage of facilties ecological program such as the storm discharge pond could be married with a winter skating pond; the botanical gardens with the artificially irragated streams and shelter space - creating an operable collection of planting; skate board surfaces with the dry season river beds/valleys.

Much like the work of OMA in the Parc La Villette in Paris, the indeterminacy of program should add further foundation to the level of change within the landscape. Where Koolhaas provided linear bands of landscape accommodating rapid change, the surface design of the University Avenue model should offer similar characteristics along with ecological transformation.
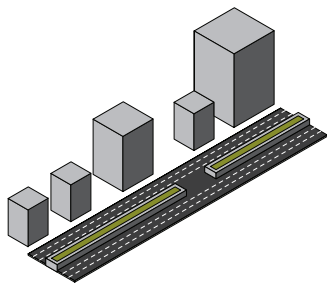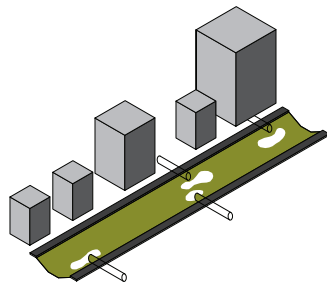
01. UNIVERSITY AVENUE - EXISTING
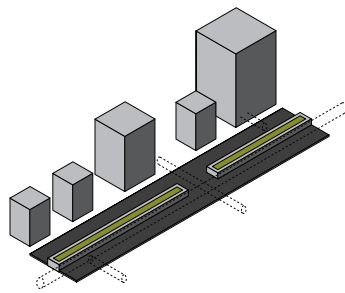
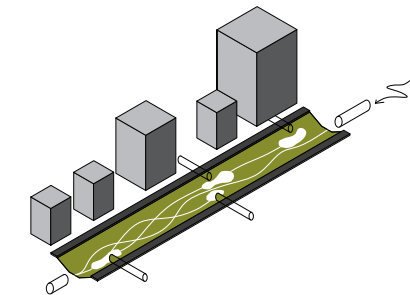02. UNIVERSITY AVENUE - SEWERS
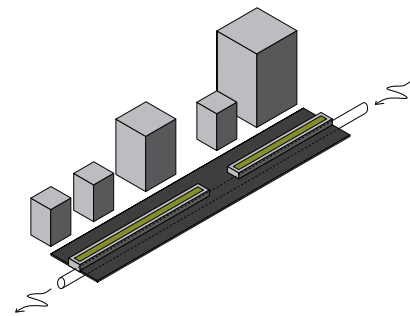
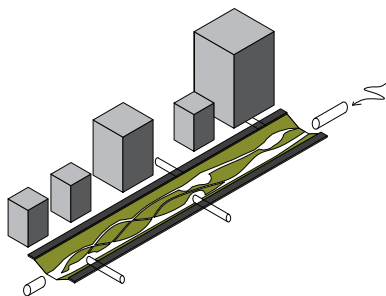03. EXISTING ECOLOGIES:
TADDLE CREEK / STACK SEWER
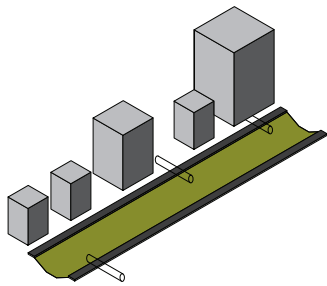
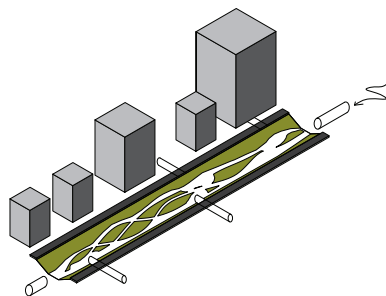04. PROPOSED WIDENING OF
PUBLIC LANDSCAPE

05. PROPOSED DISCHARGING OF STORM
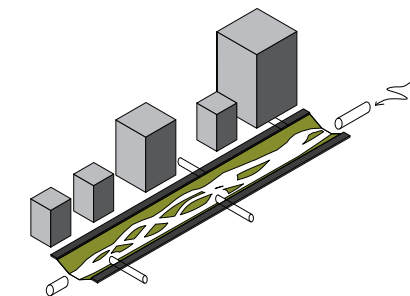SEWERS TO A PERMEABLE SURFACE

06. ARTIFICIAL RIVER FORMATION O
NON-PERMEABLE SURFACE

07. PUBLIC OPEN SPACE FORMATION

08. TEMPORALITY IN FORM

09. TEMPORALITY IN FORM

fig. 7.0.2 - Initial Design Process Diagrams

7.4   Design Drawings

Existing Non-permeable Condition

Storm Sewer   Storm Sewer

Proposed Permeable Ground

Storm Sewer   Storm Sewer

Rock Layered Gabion Landscape

fig. 7.4.1 - Site Section: Existing + Proposed Conditions

October

June

April

January
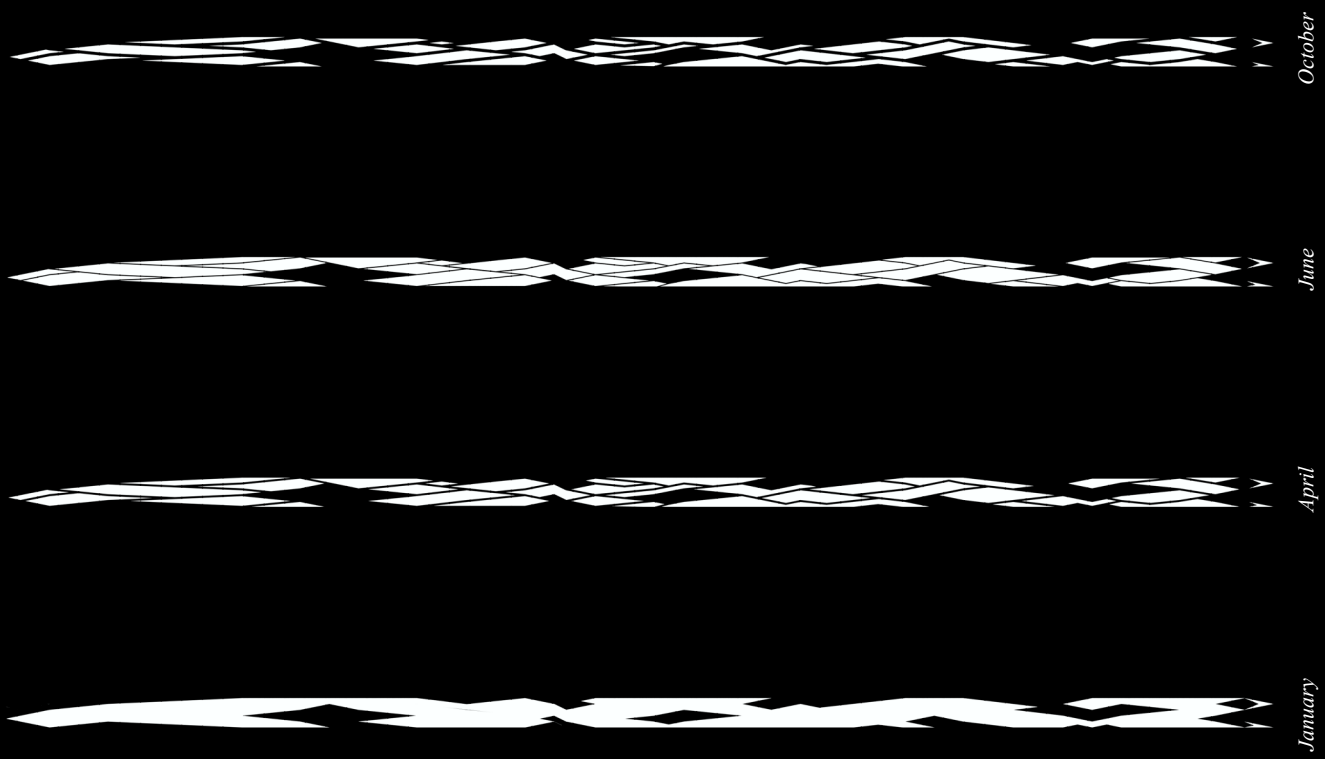
fig. 7.4.2 Introduction Diagrams: Seasonal Temporality of Space

October

June

April

January
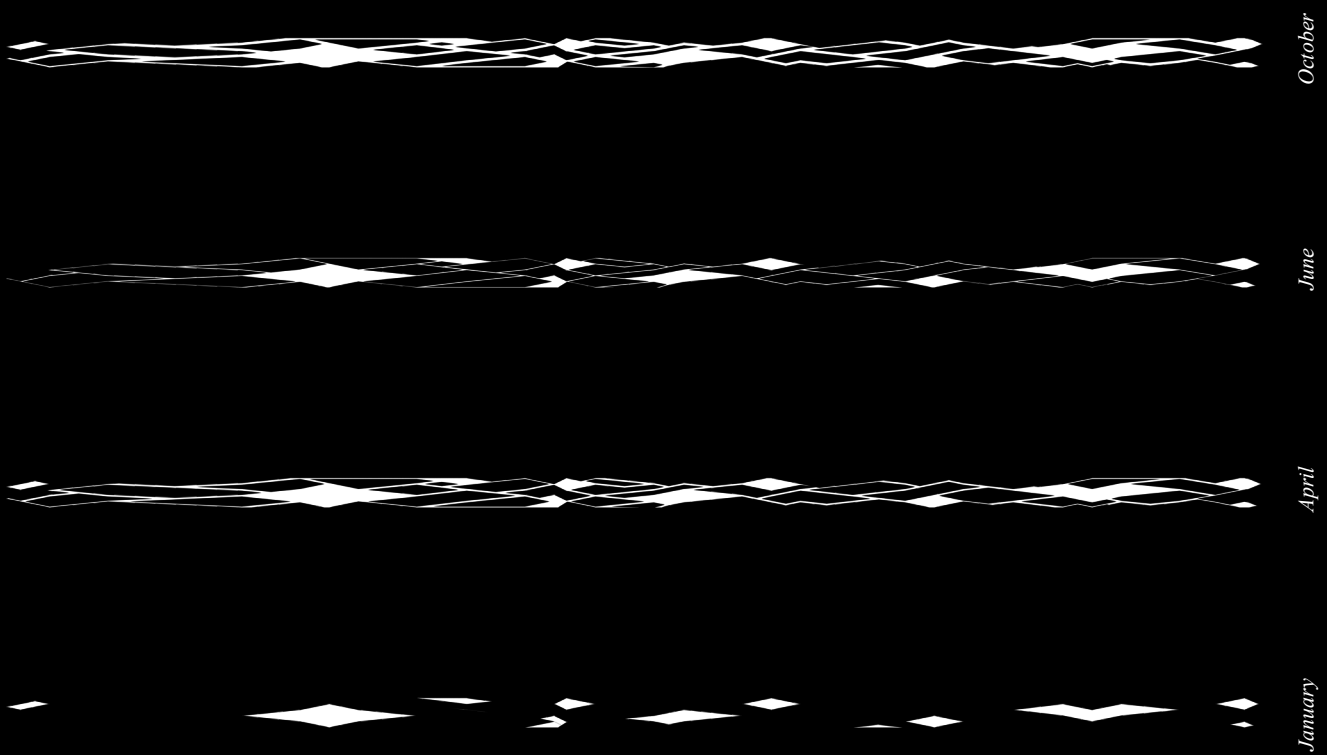
fig. 7.4.3 Introduction Diagrams: Seasonal Emergence in Water based Landscapes
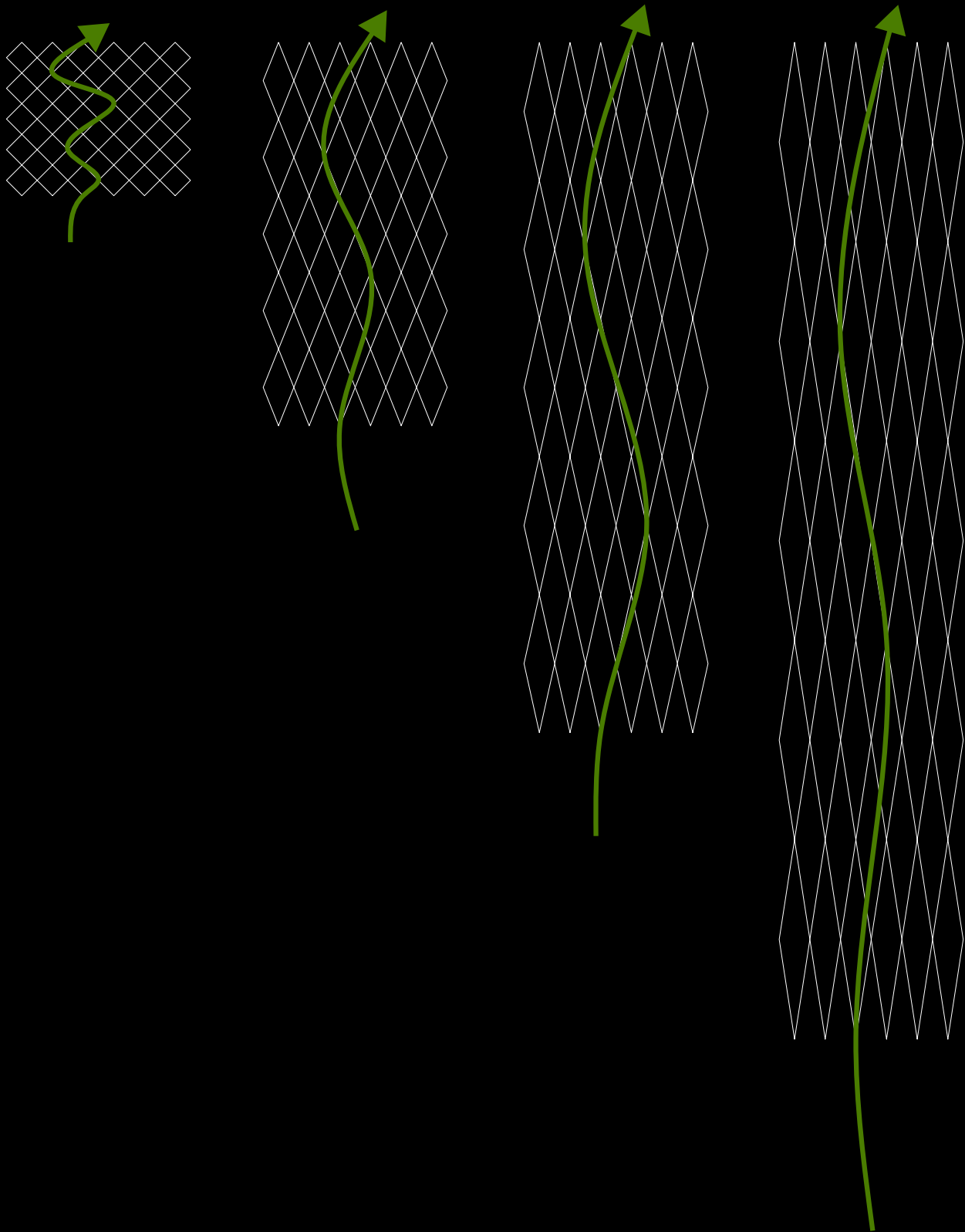
fig. 7.4.4. - Form Generation Diagrams: Water Flow Patterns
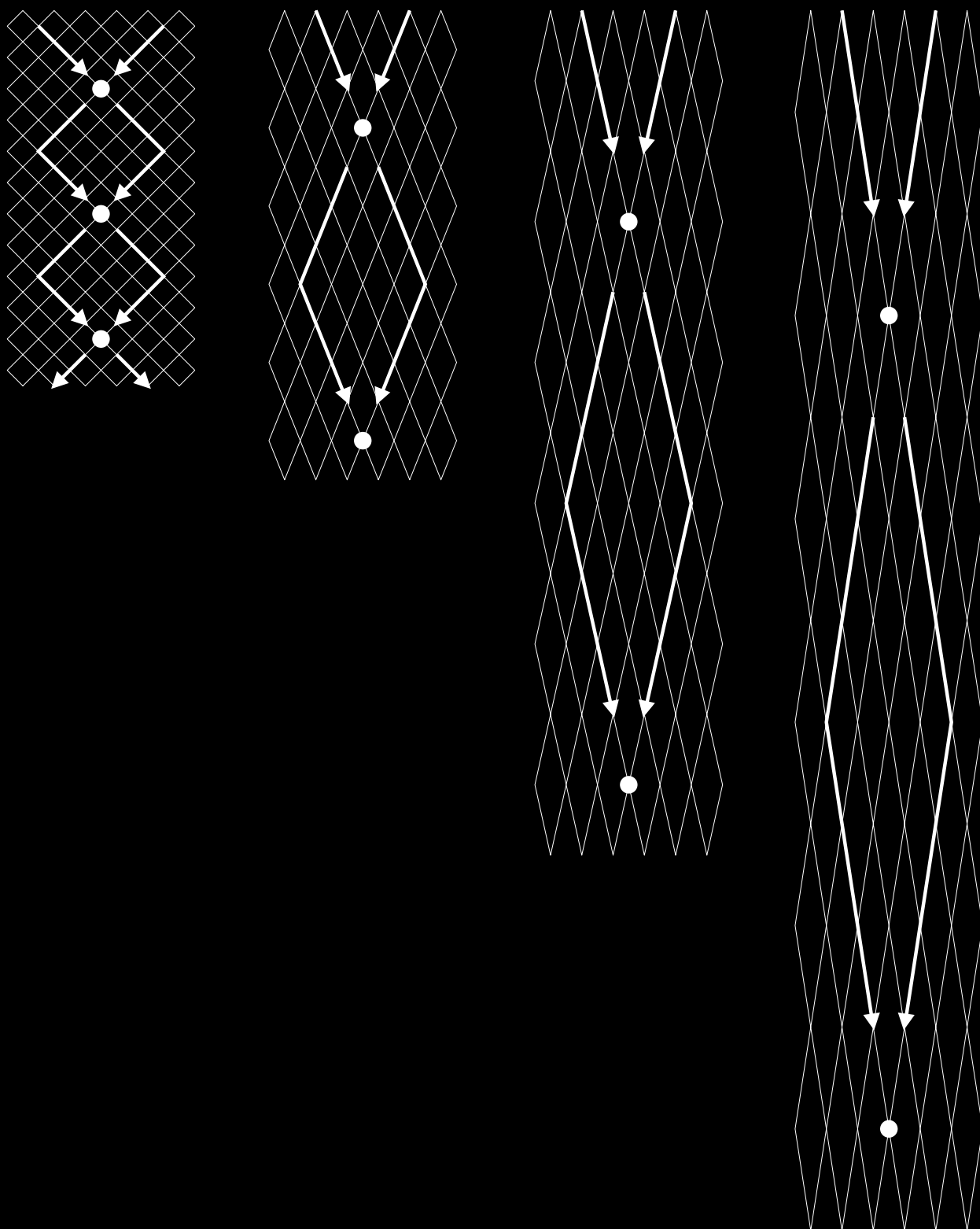
fig. 7.4.5 Form Generation Diagrams: Siphoning of Energy (Water Source)
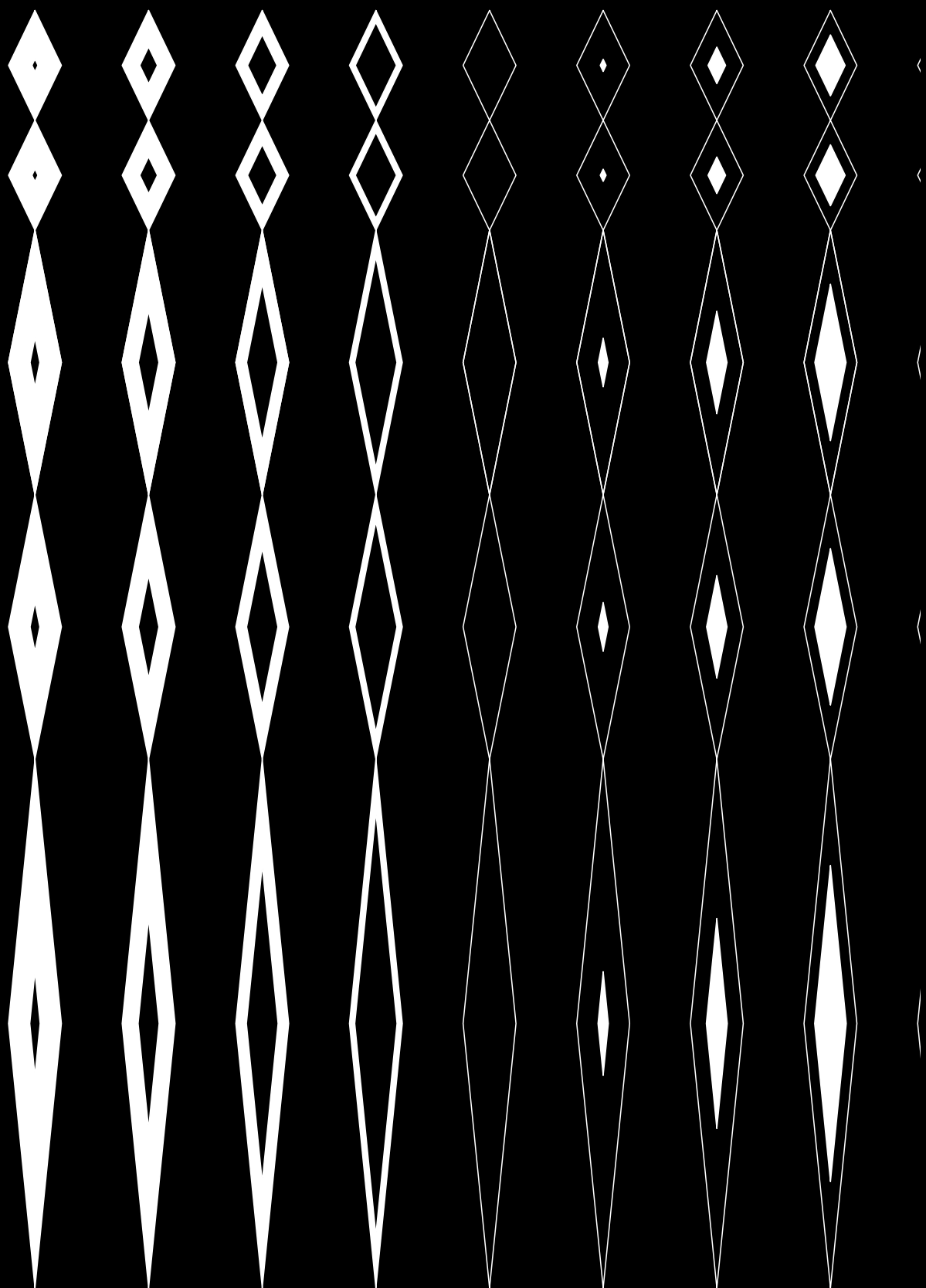
fig. 7.4.6 - Sequence of Gabion Typologies
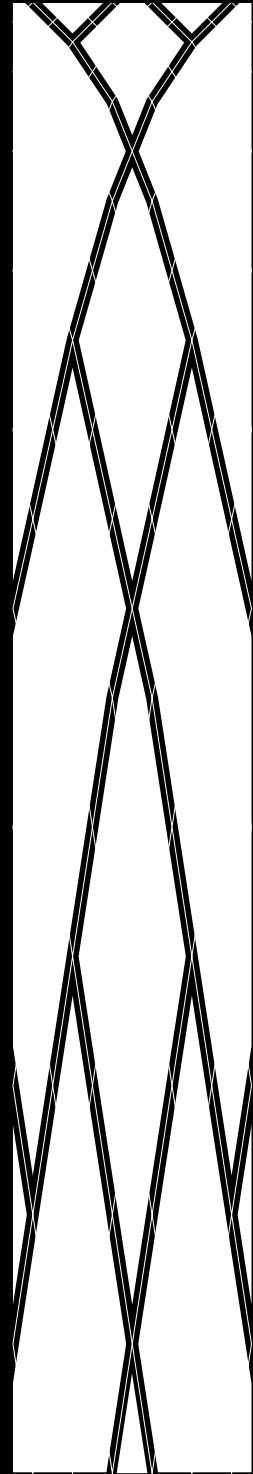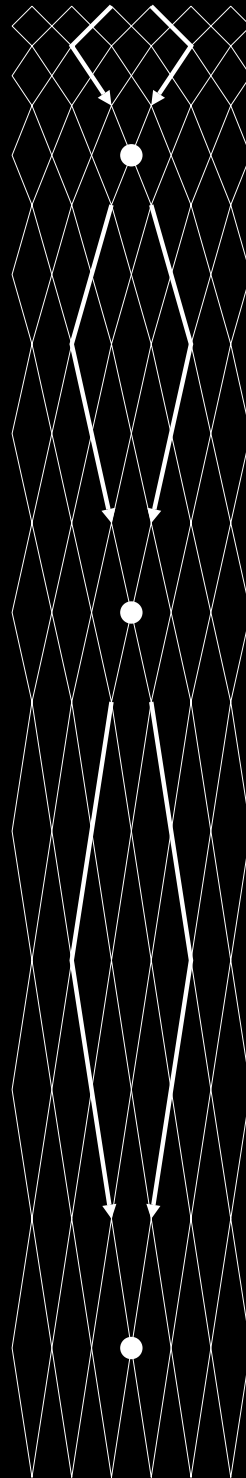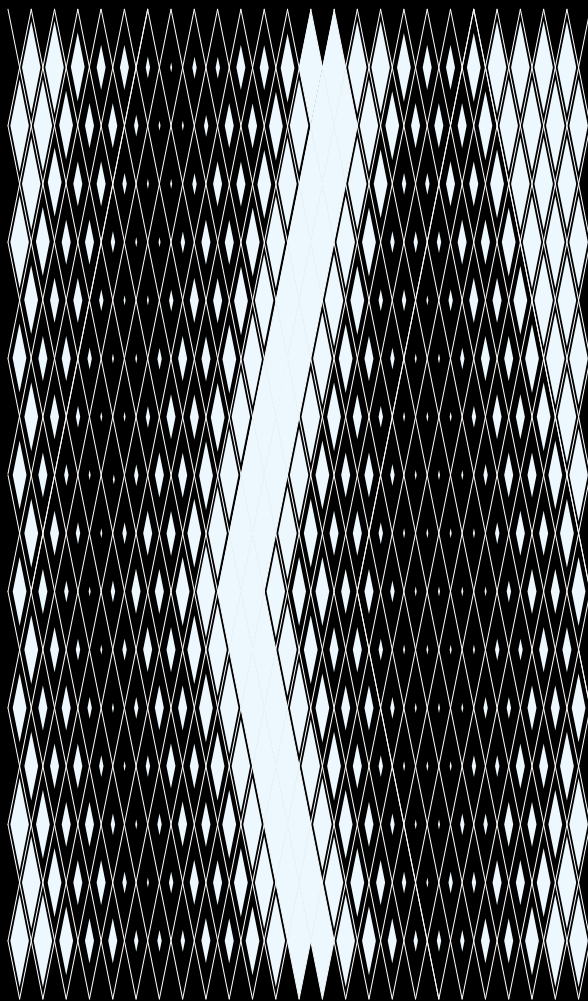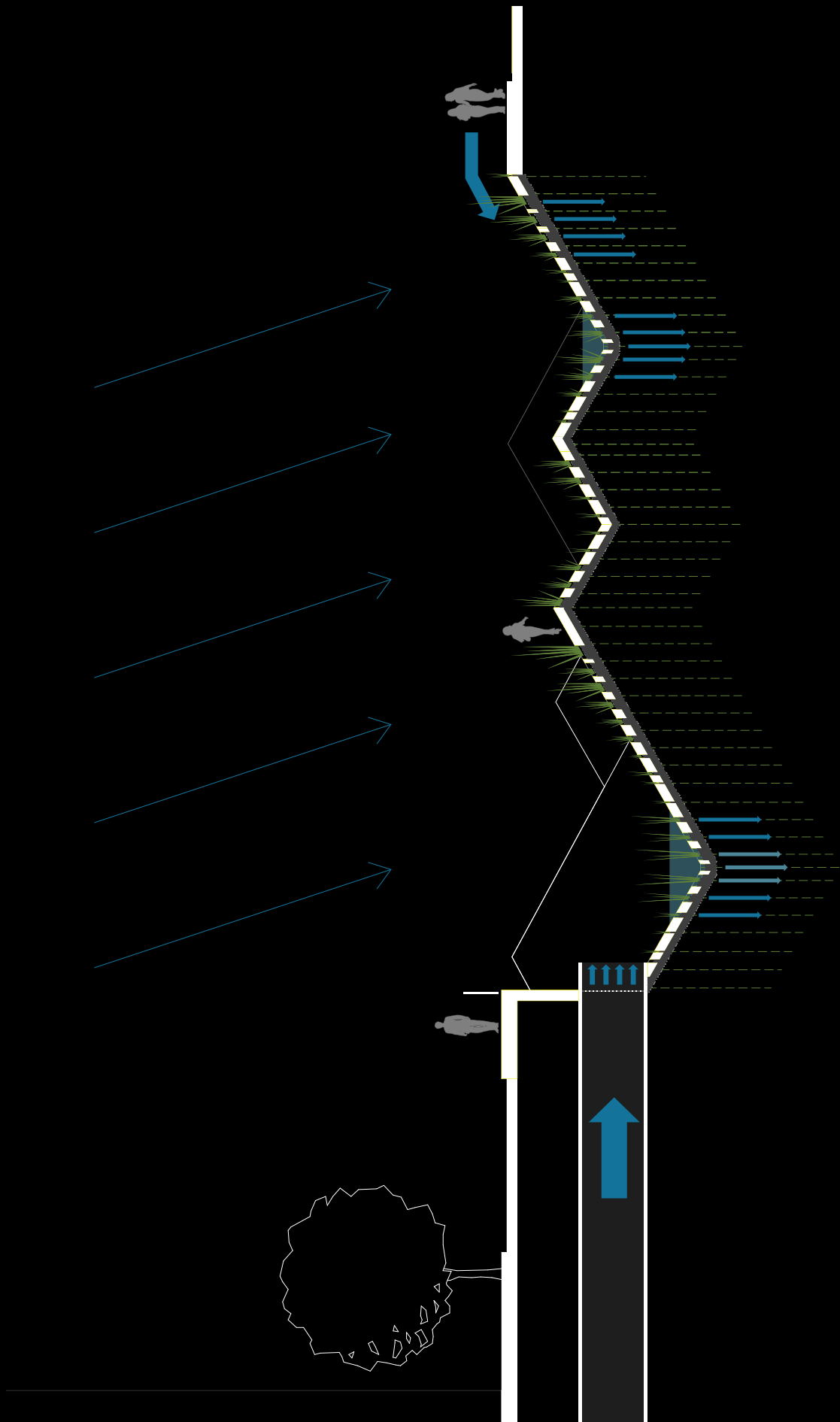
fig. 7.4.7. - Gabion Sequence + Form Generation

fig. 7.4.8 - Site Section: Stream Condition

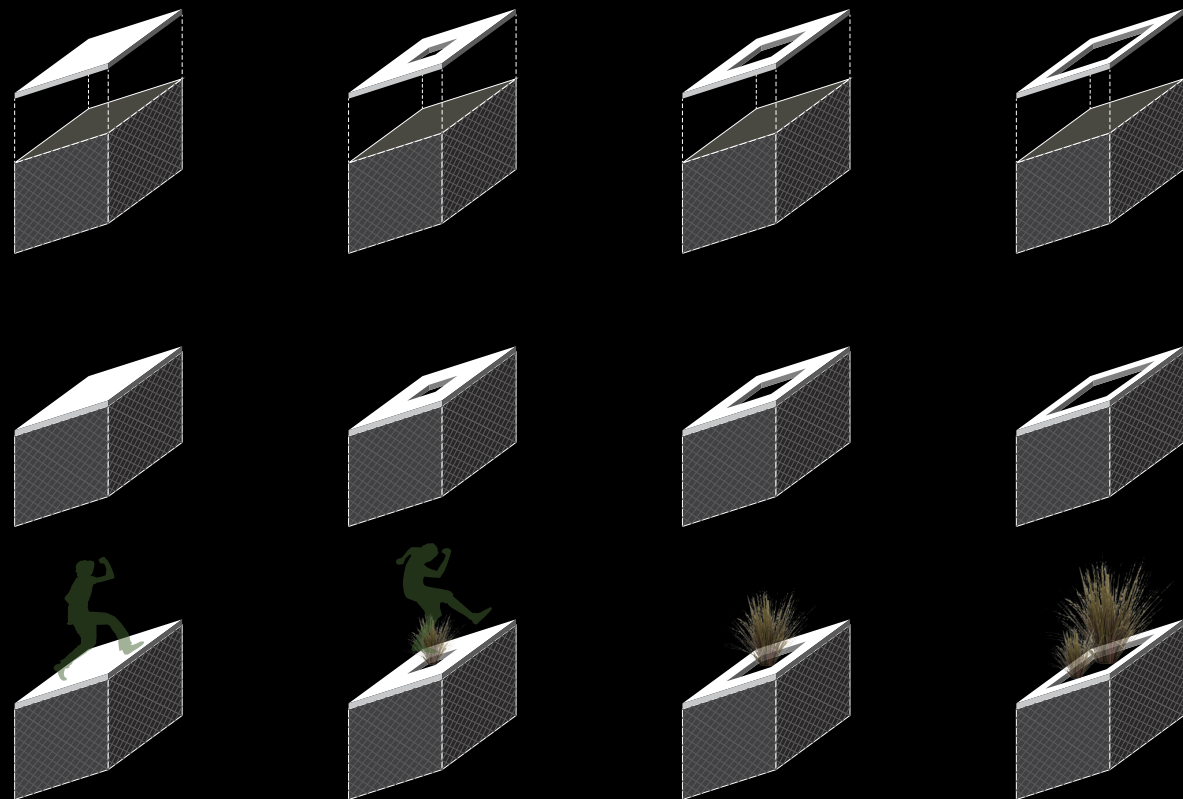fig. 7.4.9 Site Section: Pond Condition
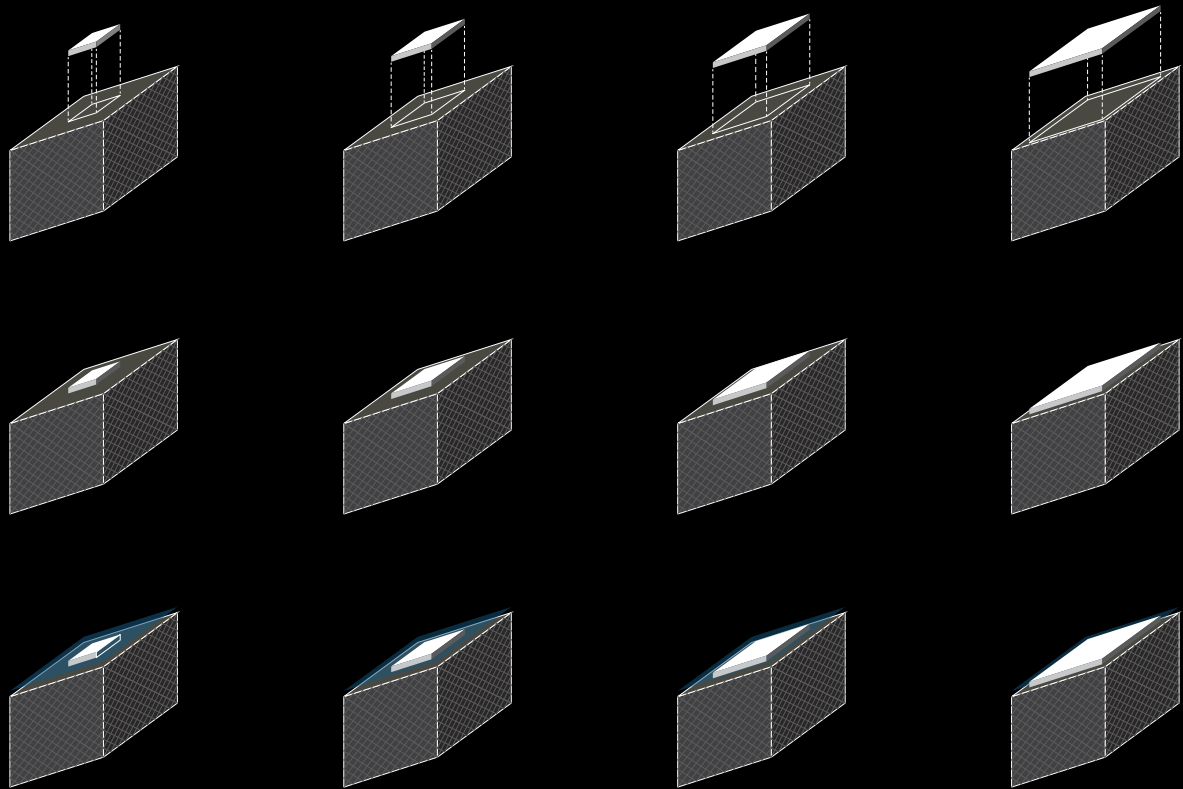
1 - Wet Condition - 75% Permeable   2 - Wet Condition - 50% Permeable   3 - Wet Condition - 25% Permeable   4 - Wet Condition - 10% Permeable
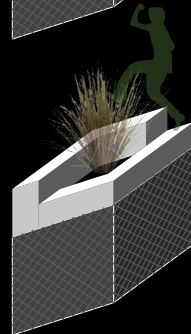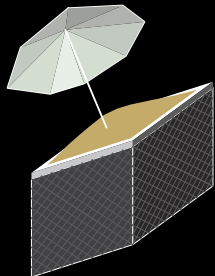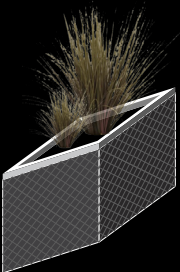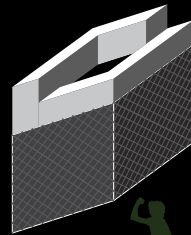
5 - Hard Condition - Pedestrian
Surface

6 - Hard Condition -
Pedestrian /PlantSurface

7 - Soft Condition -
Plant Surface

8 - Soft Condition -
Plant Surface

fig. 7.4.10 - Gabion Typologies
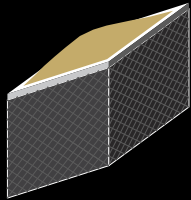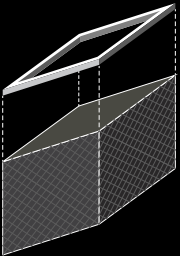
9 - Soft Condition -
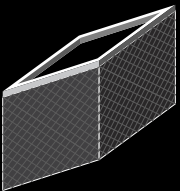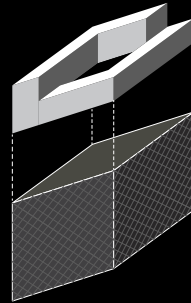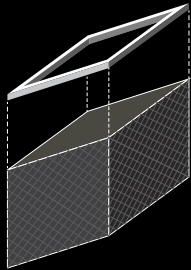Plant Surface

10 - Soft Condition -
Artificial Beach Surface

11 - Soft Condition -
Stepped / Plant Surface

Water Permeation - Inwards

Storm Water Flows

Water Fuelled Emergence - Growth of Vegetation

Through Flow Irrigation - Growth of Vegetation

Water / Ice Condition - Winter

Water / Ice Condition - Winter Recreation

Green / Dry Condition- Summer

Green / Dry Condition- Summer
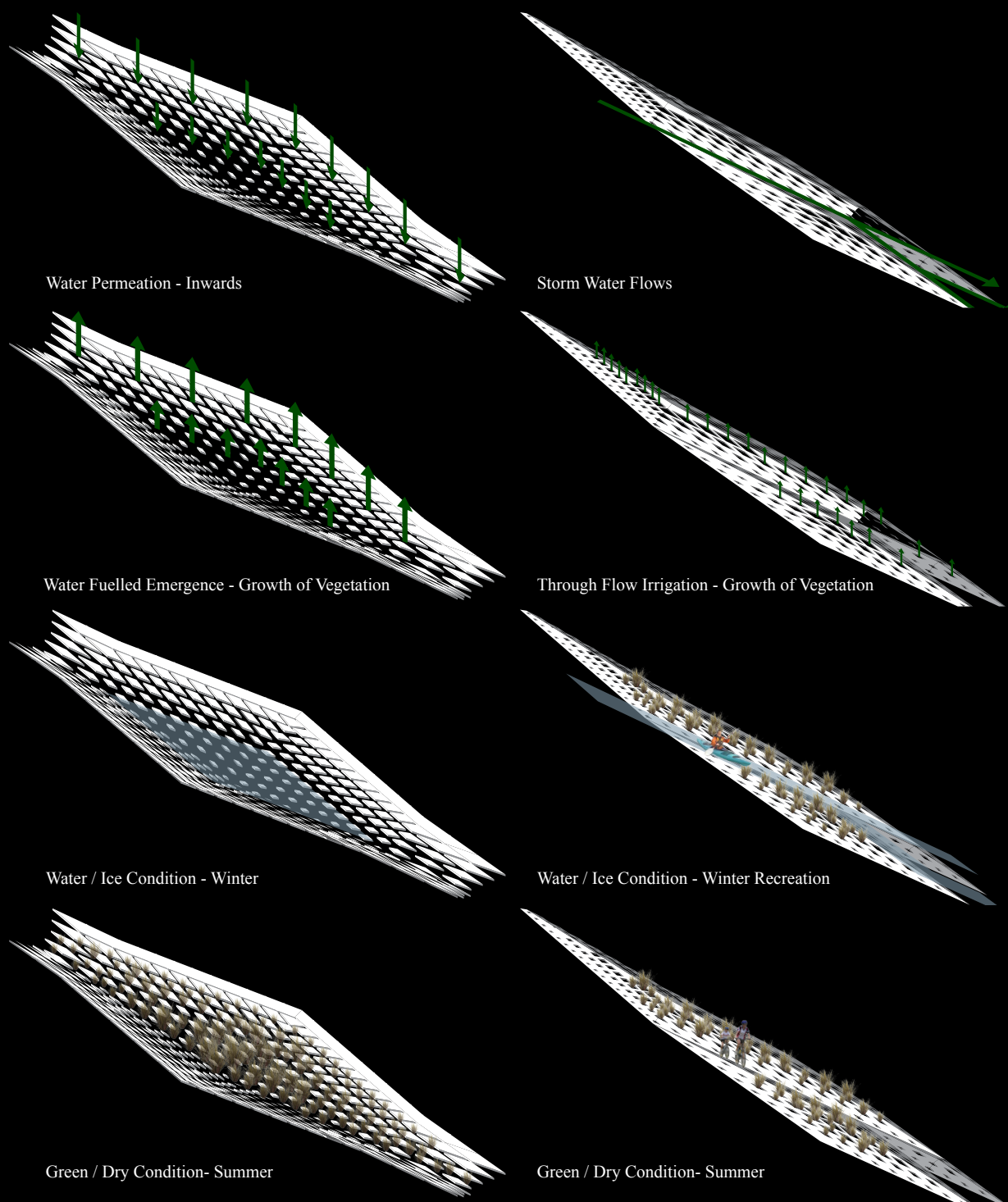
fig. 7.4.11 - Pond + Mound Conditions: Operations + Program

Through Flow Irrigation - Growth of Vegetation

STORM WATER DRAINAGE SEWERS DISCHARGE

STORM WATER / CREEK

FILTERED OUTPUT

PARTLY PERMEATED & FILTERED OUTOUT

PERMEATED FLOW THROUGH SUBSURFACE ROCK FISURES PROVIDING IRRIGATING INOUT TO LANDSCAPE

STORM WATER / CREEK
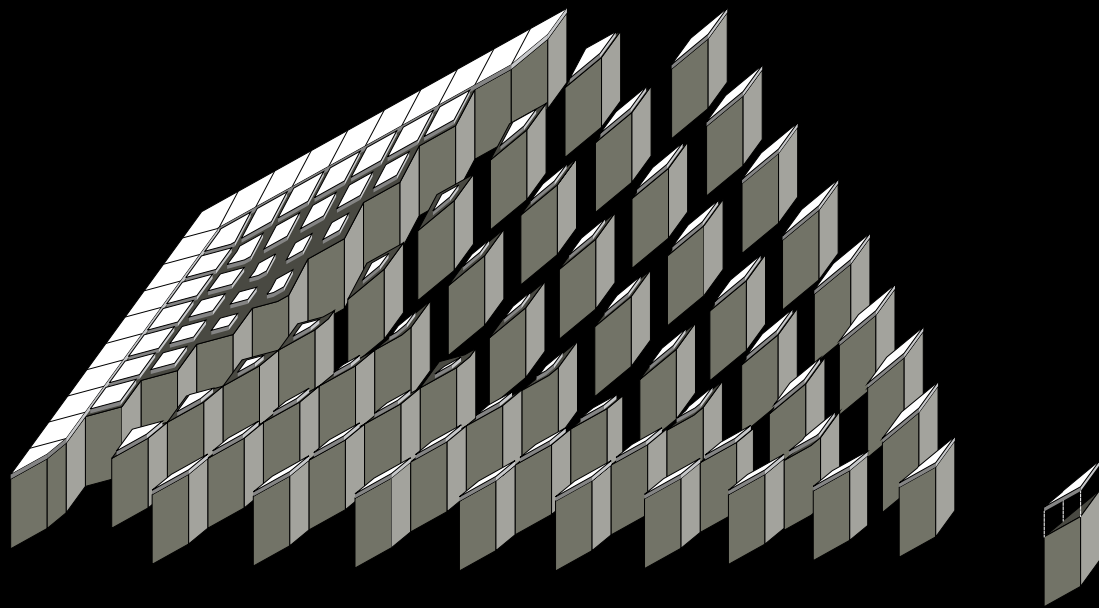
fig. 7.4.12 - Landscape Process Digrams: Gabion Operations

fig. 7.4.13 - Aerial View of Proposed Landscape

fig. 7.4.14 - Street View of Proposed Landscape

fig. 7.4.15 - Aerial View of Proposed Landscape

fig. 7.4.16 - Street View of Proposed Landscape

Conclusions

As this research originally began with critiques of the quality of public landscape in Toronto such as the contemporary Dun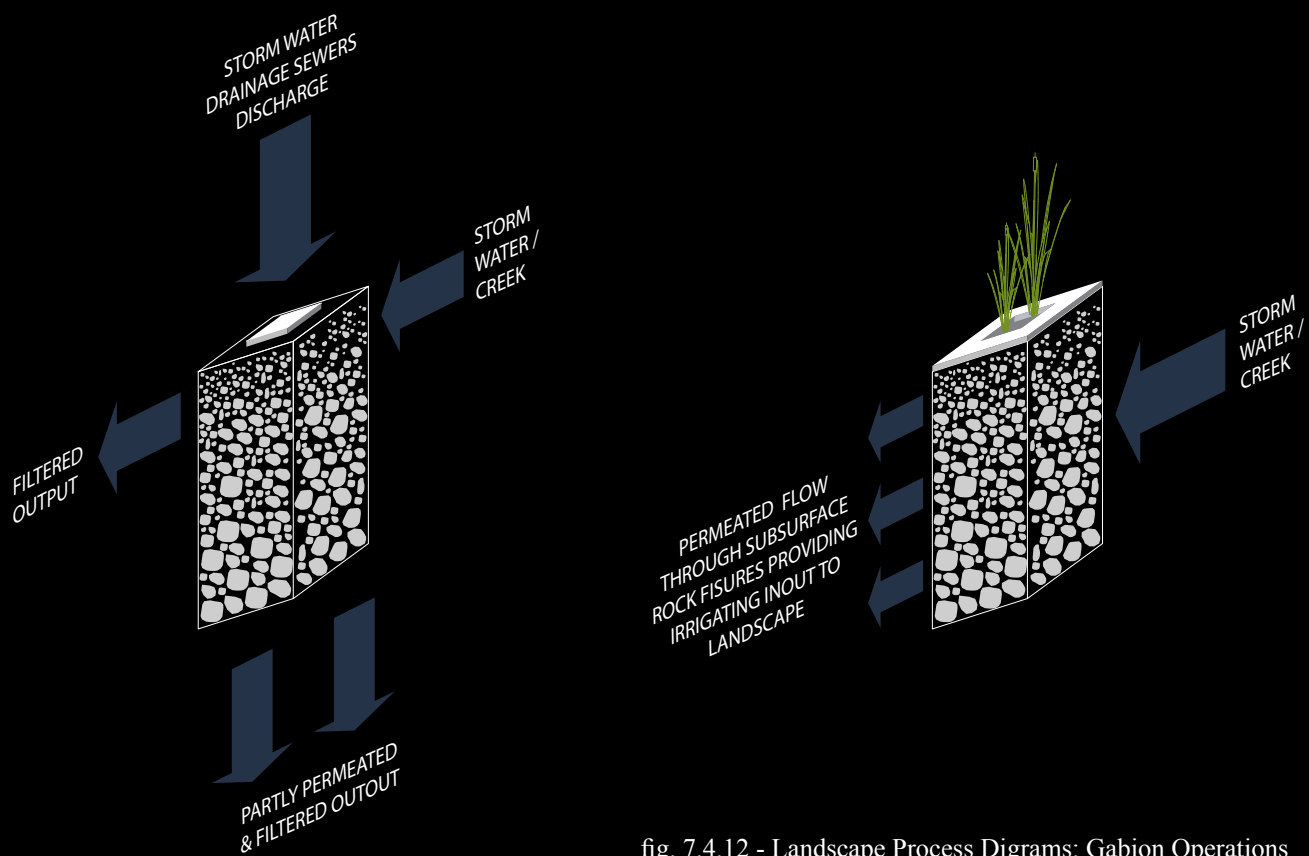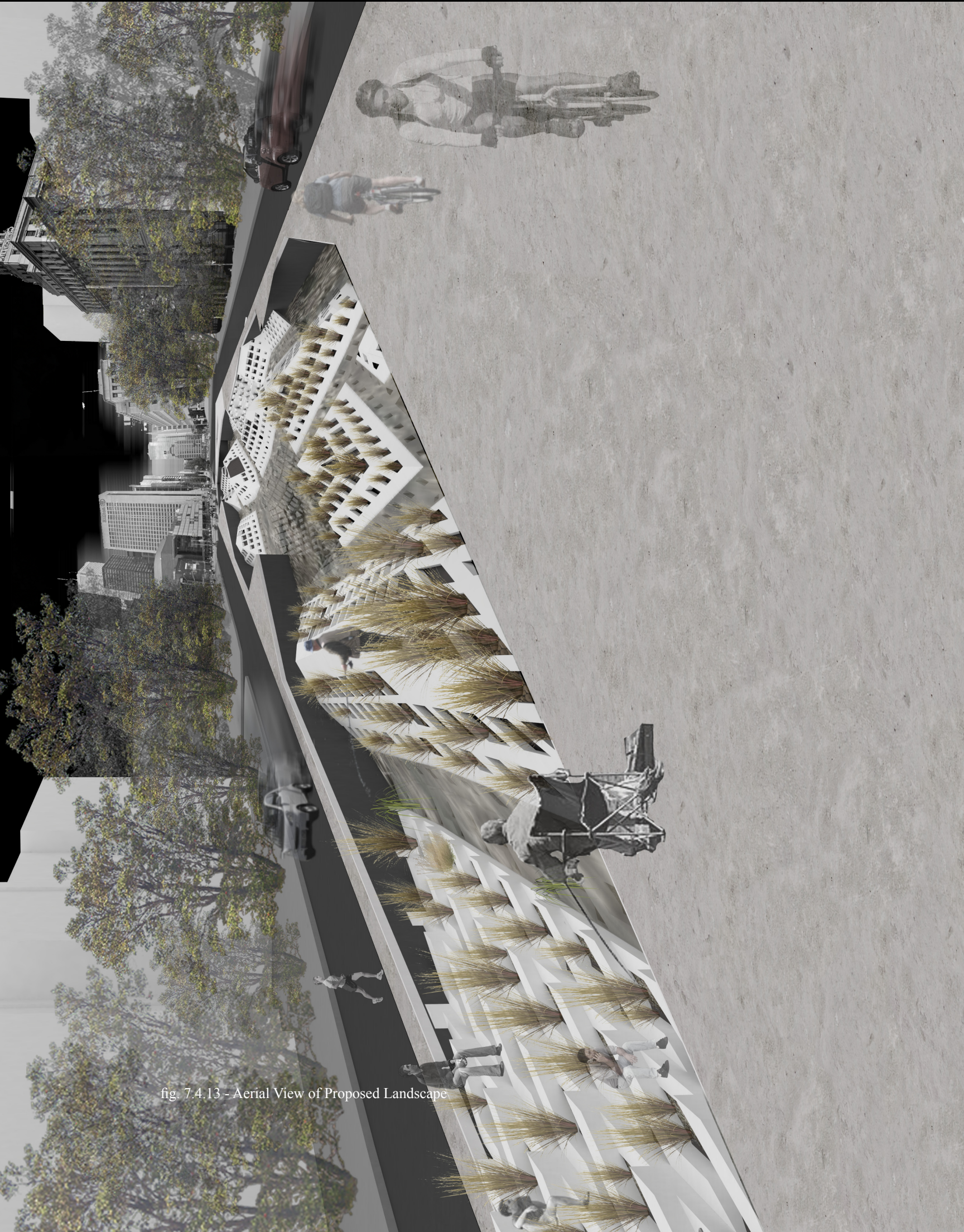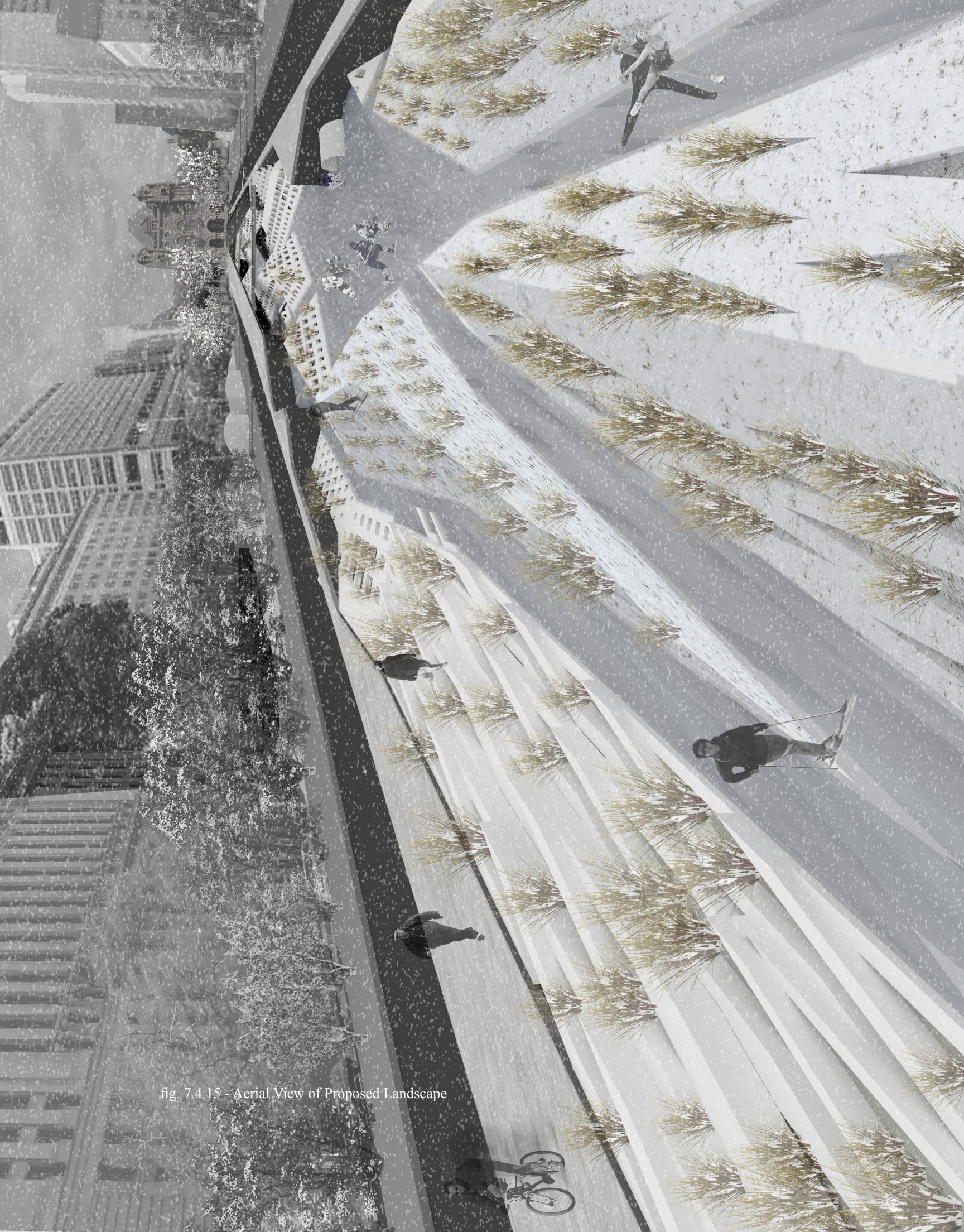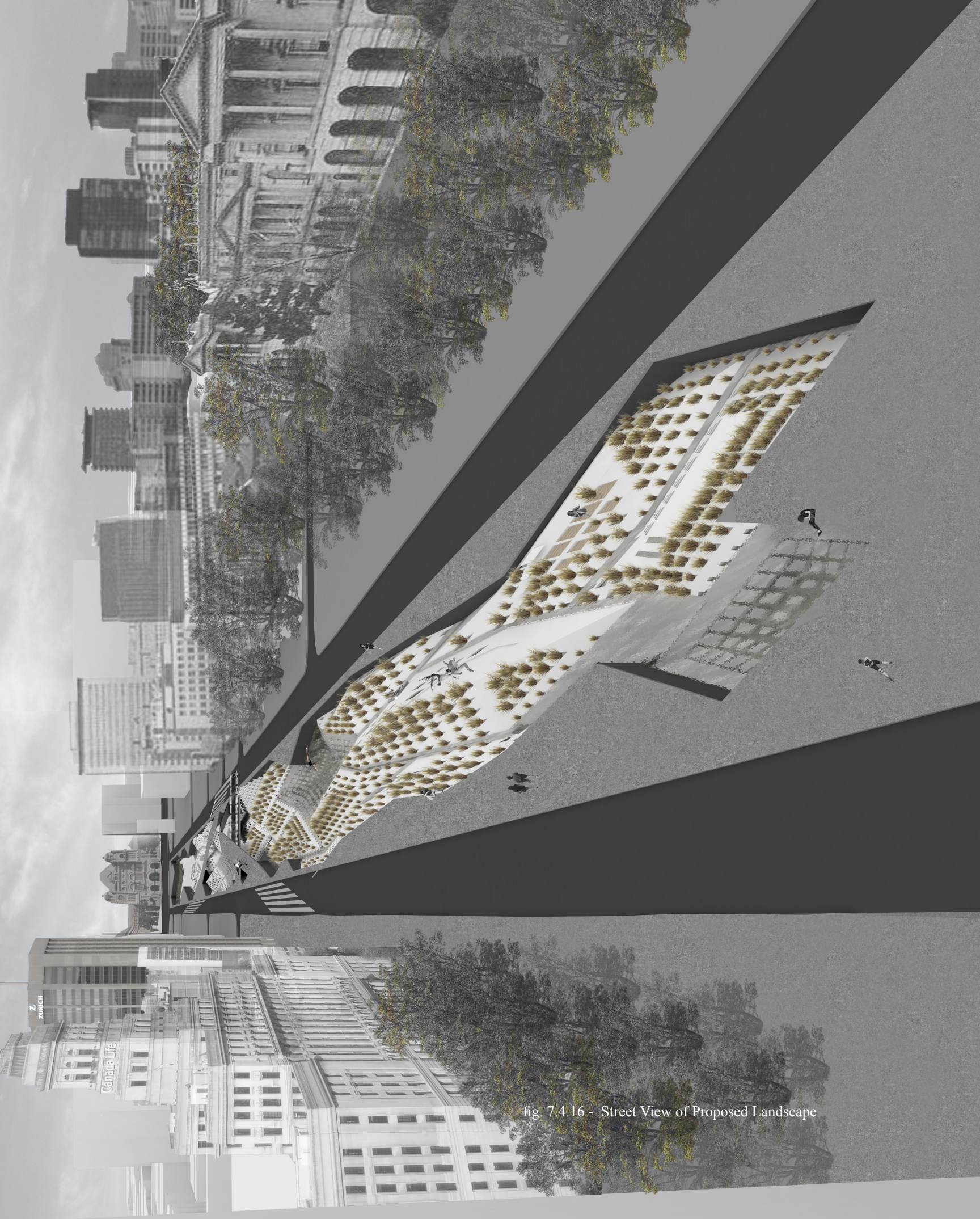das Square, the many pastoral gardens and mysterious Downsview Park, the research went on to prove that Toronto holds a distinct identity in comparison with other North American cities. This research, especially within landscape urbanism taught us to look beyond the visual qualities of landscape but instead the complex dynamics at work in making the landscape successful as a public realm. The minimal surface of Dundas Square and Nathan Pillips Square which lack in providing some fundamental elements fail in regards to designing by style and designing for seasonal change or conditions. However in the case of Dundas Square the surrounding context maintains an active environment despite the visual design, a force that remains relatively absent from Nathan Philips Square.

Toronto's unique identity lies in its landscape and its water courses. The creeks of Toronto, which remain buried, are almost certainly the crucial element in remodelling the city landscape and public realm into a changing and uncertain model for process. And despite the regularity of the city's urban fabric this level of uncertainty is still very possible locally within the rectilinear streets. Alternatively, opportunity for this project is located in many of the existing parks in the Downtown Core where the creek's wetland forced the city to provide unbuilt-on space. Exposure and integration of water bodies at these locations could provide exposition models for this sort of public landscape in line with contemporary Landscape Urbanism theory.

In relation to the research based design, the level of organic landscape and natural emergence through ecology accommodation proved that simple strategies or concepts can respond to the most complex theories. Alexander's term of overlap, Mostafavi's term of unpredictable or uncertainty and Kwinters landscape of change initially appear quite daunting when trying to interpret and apply in design. However it was the medium of landscape that successfully responded to these characteristics of landscape and acted as the medium to construct characteristics of emergence and uncertainty

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