

**The Productive Edge:  
Generating Public Space at the Suburban Periphery**

by

Neda Pavela

Submitted in partial fulfilment of the requirements  
for the degree of Master of Architecture

at

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**DALHOUSIE UNIVERSITY**  
**SCHOOL OF ARCHITECTURE**

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## **ABSTRACT**

This thesis considers the potential of the suburban periphery to become an ecologically, socially and culturally productive site which supports local and regional public programs. It explores ways of creating connectivity across the hard boundaries of a suburban development, an expressway and an agricultural area in order to stimulate biological and cultural diversity in this typically neglected, “leftover” environment. The site is the Ninth Line Corridor at the suburban edge of Mississauga, Ontario.

The investigation of boundary occurs at the urban, building and experiential scales, and considers how the intersection of landscape, ecology, architecture and program can generate activities and events which foster engagement with the site and within a community.

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My family for their unfailing support and encouragement; and Nick, for squaring me off.

## CHAPTER 1: INTRODUCTION

### Collectivity and Connectivity

In the suburbs, the built environment and the ethos of individualism associated with private property serve to disconnect residents from each other and from their environment. Henri Lefebvre has suggested that traditional planning promotes disembodiment by fragmenting the body's activities and disorienting the senses, the result of a modern urbanism that has "emerged as an array of techniques of separation, circulation and communication to control and manage both the explosion of time and space and the incoherence between different spheres of everyday life" (Kofman and Lebas 2000, 87). This thesis is motivated by a desire to reinstate an idea of the collective amidst the rampant individualism of contemporary society, by creating specificity in the often undifferentiated environment of the suburbs, and by positioning the individual within the numerous scales and systems which shape the suburb. Consideration is given to how architecture can reflect the socio-cultural condition of plurality - where the condition is rarely either/or, but more often this *and* that - as a means of stimulating diversity and experience in the suburban environment.



Suburban Condition: Separation of functions, lack of human dimension.

It is possible to imagine the city filled with citizens who are different, but who also have things in common, starting with the commonality of place. The city is the field in which differences are expressed,

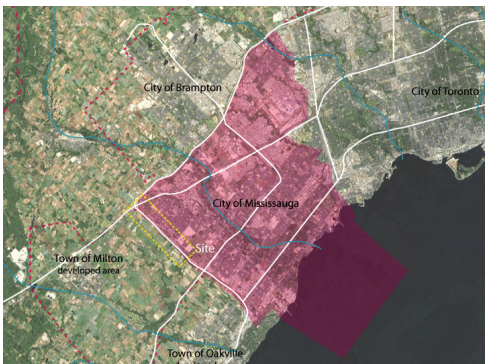
commonalities are found, and boundaries are negotiated. Only by engaging with others, especially those in different social and cultural groups, can individual citizens feel that they have a stake in the city. A city's public spaces traditionally serve as the venue for collective experience, social engagement and personal expression. The problem with the suburban environment is that it is characterized by multiple boundaries and hard edges between uses, buildings and open spaces, all of which serve to limit the potential for alternative uses or occupations. The belief is that there is a need in the contemporary suburb for public space that is open-ended, or, as Richard Sennet puts it, space that is democratic and which incorporates "porosity of territory, narrative indeterminacy and incomplete form" (Sennet 2007, 296).

This thesis attempts to foster a sense of connectivity between and across these boundaries and edges by considering how moments of differentiation within the suburban landscape can occur at the intersection of ecology, building and program.

## Context

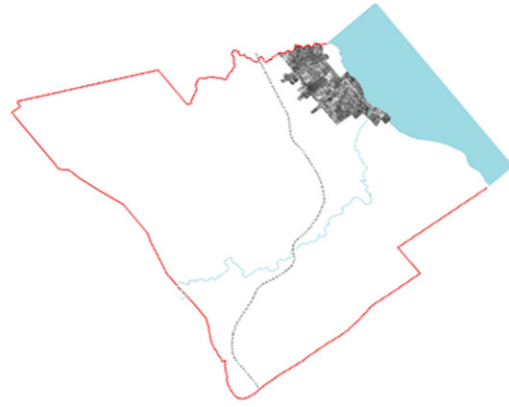
### Suburban Context: Mississauga

The City of Mississauga is located in the western part of the Greater Toronto Area (GTA) in southern Ontario. It developed as a cluster of villages which were eventually incorporated to become a suburb of Toronto. Through the appropriation of small village centers, and subsequent rapid development,

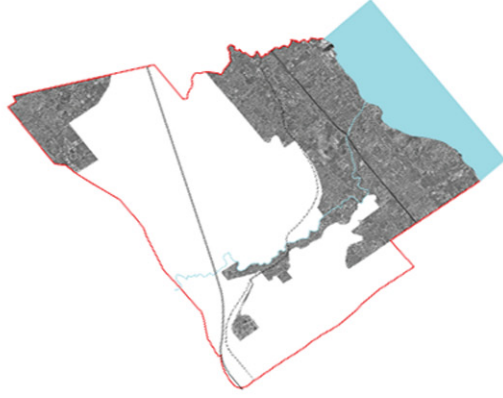


City of Mississauga in context. Base map from Google Maps.





1954



1975

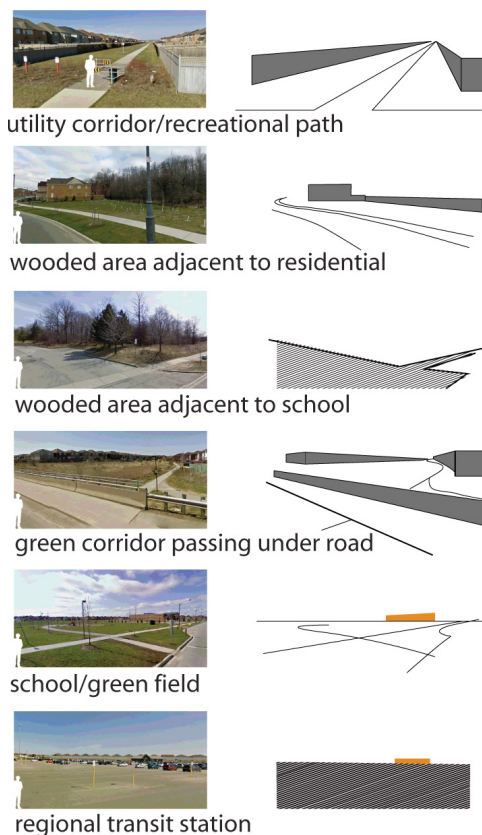


1995



2000

Mississauga growth 1954-2000. Over the course of 50 years, small villages were absorbed within the suburban expansion of the city which has now expanded to its boundaries. Developed areas are separated by the open spaces along regional highways. Adapted from City of Mississuga eMaps.



Suburban form: Existing relationships between public space, open space and natural areas.

Mississauga grew into a city of over 700,000 residents. Most of this development took the form of suburban sprawl: single family housing, sprawling industrial and commercial parks and wide roads and highways to accommodate the resulting automobile traffic. Over the course of 30 years, Mississauga has expanded to its city limits.

### ***Suburban Form***

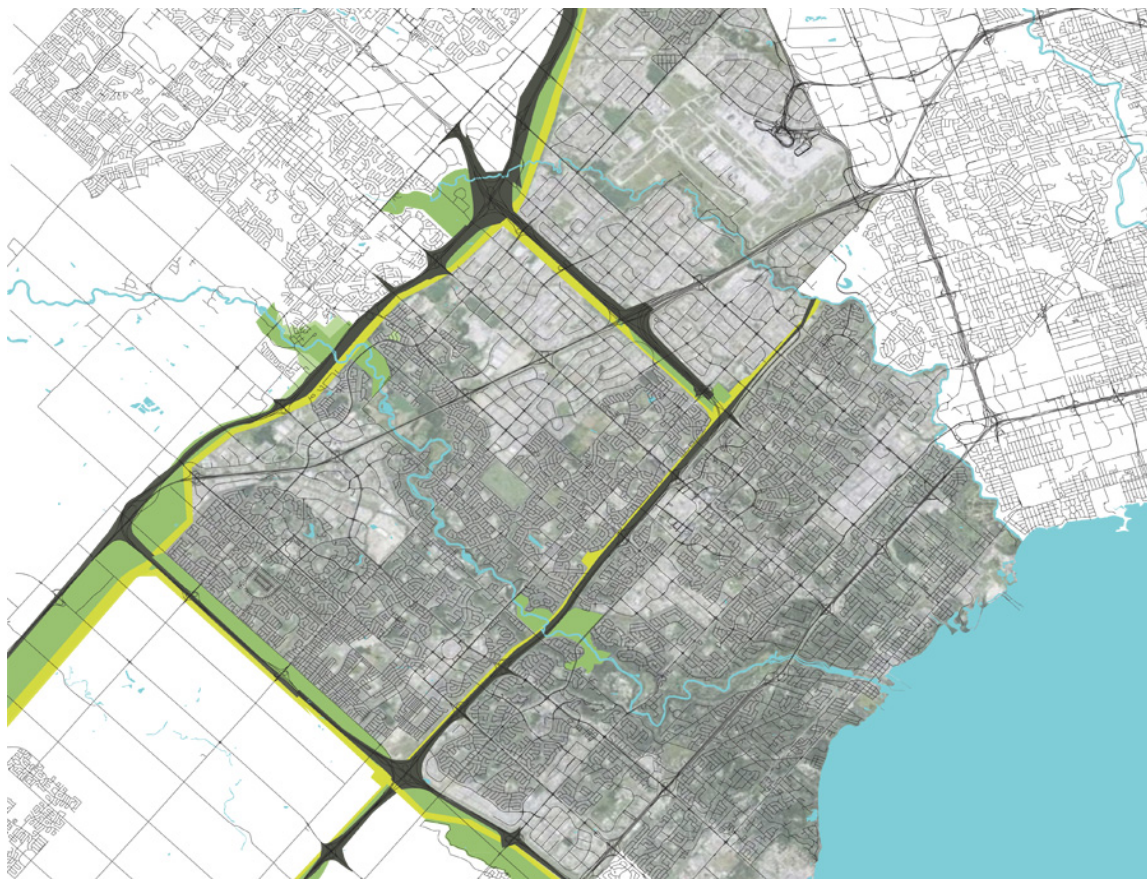
As a former suburb of Toronto, Mississauga has developed to the point where it is no longer subservient to the main city. It provides all the amenities for living, albeit at distances which make the automobile a necessity. Within Mississauga, there are multiple centers of focus: the city centre contains civic and cultural functions and major retail facilities, and other commercial nodes throughout the city are equally important in providing both work and leisure amenities. Residential development has followed the guidelines set out in the Mississauga Plan, which emphasizes the establishment of commercial centres as points of community focus (Region of Peel 2010). This thesis takes issue with commercial activity supplanting genuine public exchange as the basis of community development, and considers ways in which a sense of community identity can be fostered through alternative activities. In attempting to define alternative models for collectivity in the suburb, this thesis eschews the centre for its traditional association with formal or civic programs, in favour of an alternative location that would better capture the ideas of dispersal and multiplicity, and investigates

whether the suburban periphery, which, as a marginal and undefined condition, provides an opportunity for looser or alternative modes of expression and experience.

### **Regional Context: Parkways Belt West Plan**

The Parkways Belt West Plan was implemented in 1978 to designate a multi-purpose utility corridor, urban separator and linked open space system through the GTA. Regional highways have been developed within these corridors. The aims of the plan are to:

- 1) Separate and define the boundaries of urban areas, thus helping to provide the residents with a sense of community identification;
- 2) Link urban areas and areas outside the region by



Parkways Belt West Plan. Adapted from Ontario Ministry of Transportation.

providing space for the movement of people, goods, energy, and information, without disrupting community integrity and function; 3) Provide a land reserve for future linear facilities (such as highways, electric power transmission corridors, and pipelines) and for unanticipated activities requiring sites of high accessibility and substantial land area; 4) Provide a system of open space and recreational facilities linked with each other, nearby communities and other recreational areas (Ontario Ministry of Municipal Affairs and Housing 2008).

Regional master plans identify the Parkways Belt as key to developing transportation and utility networks in the Region. This thesis adopts these aims; accepts their intent; and by suggesting that these guidelines are insufficient in themselves, investigates further strategies to add to their effectiveness.

### **Site Context: Ninth Line Corridor**

The Ninth Line Corridor is a long swath of land paralleling the 407 highway within the Parkways Belt West Corridor, spanning from the 401 in the north to the 403 in the south. Its eastern edge is bordered by Ninth Line and residential subdivisions beyond. In 2010, the western boundary of Mississauga was relocated from Ninth Line to the midpoint of the highway, placing this clearly defined strip of land within the city boundaries. The Corridor largely functions as a floodplain for stormwater management, but both the Parkways Belt Plan and existing land use plans call for most of the site to be left as open space in order to provide a buffer between the highway and any development to the east, and to provide recreational

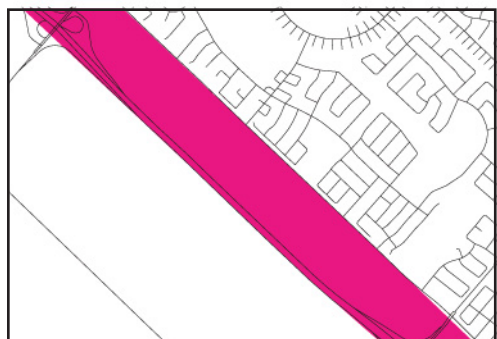
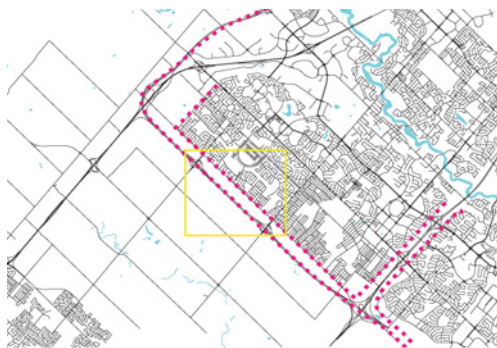


Ninth Line Corridor location between residential subdivision and regional highway.

opportunities for adjacent neighbourhoods. This thesis takes the position that rather than simply being left as open space, the site can be reimagined as a *productive* edge to the suburb, which, through the introduction of varied programs that address landscape, ecology and culture, generates a number of both spatial and relational conditions.

### **Site as the Edge of the Suburb**

This Ninth Line Corridor site operates at two scales: a regional one, and a neighbourhood one. In the first instance, it functions as a thickened edge to the city, between the suburban development and the agricultural land to the west. At the scale of



Regional scale: corridor as edge of city.



Site scale: highway and subdivision as edges.

Edge Condition.

the neighbourhood, the site has two hard edges, namely the highway and the existing Ninth Line, with the open space corridor between them. In this case, the open space should function as an amenity for the adjacent communities. The general strategy is to articulate this edge as a solid at the scale of the city (through thematically related programs, and by establishing a framework which physically links these programs) but to break it down into progressively smaller units scaled to the neighbourhood block and its associated residential buildings.

Peter and Alison Smithson's concept of 'holes in the city' offers some clues as to how to deal with open spaces. The holes in the city are "gaps created by the necessary change in function" (Smithson and Smithson 2005, 210). The Smithsons felt there was an opportunity to imbue these 'holes' with a sense of space, to make them a place where one can breathe and feel human. They felt that the traditional service-hole in the city could be renewed to play a connective role by being given an appropriate lining, and by using an appropriate language for the renewal of a place. This, they felt, would generate individual and collective responsibility for open spaces (214).

The design proposes that the edge of the Ninth Line Corridor should be reinforced to provide a threshold into the space of the Corridor (any intensification should occur at this edge), and that the Corridor should be maintained as a public space

with buildings, amenities and infrastructures.

### **Thesis Question**

How can the integration of landscape, ecology, architecture and program generate new types of public spaces on the suburban edge?

## CHAPTER 2: STRATEGIES

### Reading The Suburban Landscape

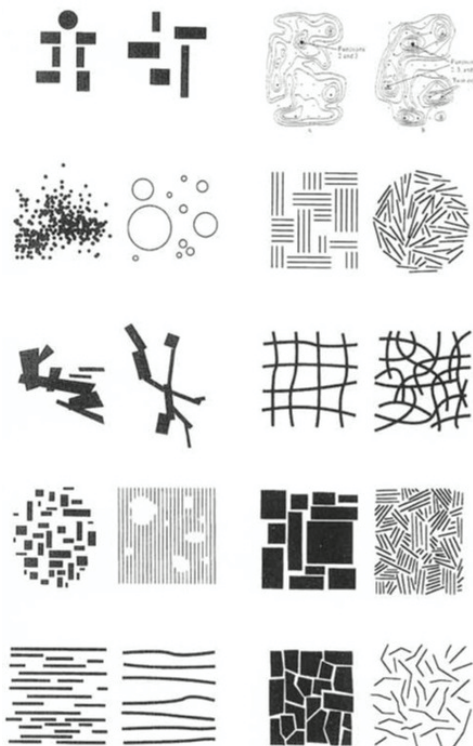
#### Field Condition

Much of the suburban landscape is experienced as neutral or background space through which we move rather than as active space which we occupy. Nodes of activity - moments where we meet and interact - create points of intensity in this otherwise neutral field.

The notion of field works at a number of scales: The sprawling networks of mobility infrastructure that move us through the city, and their associated interchanges which form points of intensity; the school building or a shopping centre within the suburban fabric which appears as an object when read as figure-ground, but which also emerges as a point of intensity in the patterns of activity; and finally, the space that we occupy as a field of effects and interactions between individuals, or rather, as the space of action and speech.

Stan Allen's reading of the urban context as a field condition is informative in understanding the spatial relationships within the suburban fabric. He states:

One of the potentials of the field is to redefine the relation between figure and ground. If we think of the figure not as a demarcated object read against a stable field, but as an effect emerging from the field itself – as moments of intensity, as peaks and valleys within a continuous field – then it might be possible to imagine figure and field as more closely allied (Allen



Stan Allen. Field conditions. From Allen, 1999.



1999, 97).

If the public suburban building is reconsidered as a point of intensity in the field, rather than as a fixed figure on a fixed ground, it opens up the potential for a new relationship between site and building. This thesis explores how this strategy can be used to generate activity within the Corridor.

### Patches, Edges and Corridors

Ecological principles underscore the interconnectivity and interdependence of natural systems, but these principles can also be applied to other scales and systems to allow us to look at the relationship between elements of the urban environment.

Key principles of landscape ecology, for example as summarized by Dramstadt et al (1996), include:

Interaction with surroundings: the more convoluted the shape of a patch, the more interaction, whether positive or negative, there is between the patch and surrounding matrix.

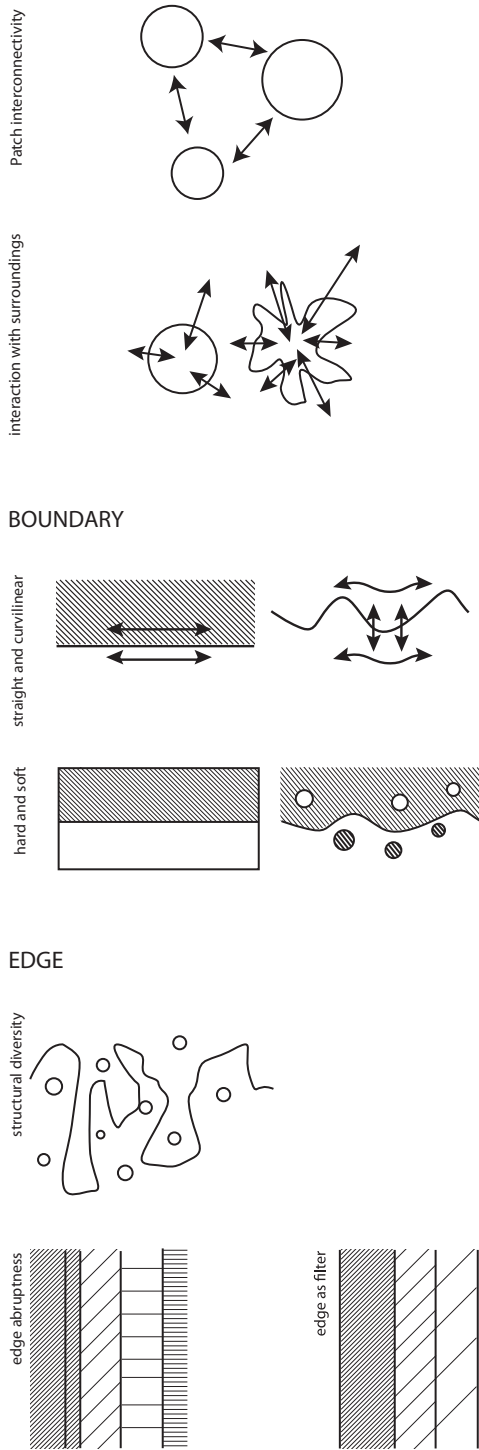
Edges with high structural diversity are richer in species.

Edge as filter: Patch edges normally function as filters.

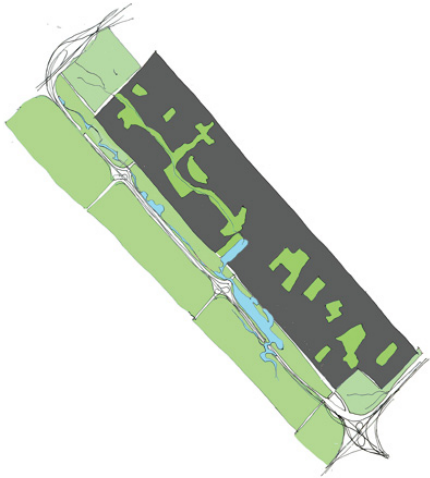
Edge abruptness: Increased edge abruptness tends to increase movement along an edge, whereas less edge abruptness favours movement across the edge.

Straight and curvilinear boundaries: straight boundaries tend to have more species movement along it, whereas a convoluted boundary is more likely to have species movement across it.

Hard and soft boundaries: A curvilinear tiny patch boundary may provide a number of ecological benefits.



Extrapolating ecological principles to the built environment: Connectivity, Boundaries, Edges. After Dramstad, Olson and Forman, 1996.



Existing relationship of site elements.

These concepts informed the reading of the site context.

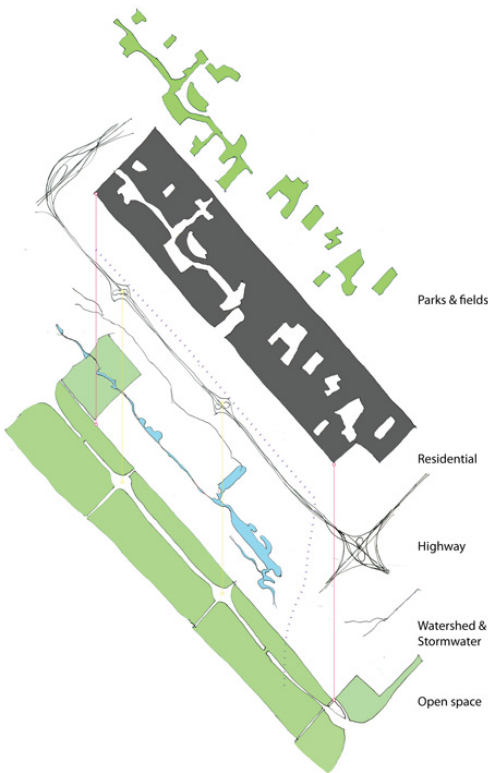
## Reading the Site

The Ninth Line Corridor is currently undeveloped. Save for a few scattered buildings, the Corridor is primarily used to manage stormwater runoff from the adjacent subdivision, and to function as a floodplain. To understand the various forces which are influencing the site, a series of mapping studies of the surrounding subdivision were undertaken. The strategy was to isolate the structuring layers of the site and recombine them in search of intensity in the field.

The layers are:

*Road networks*, which are the major structuring element of the subdivisions, along with the highway.

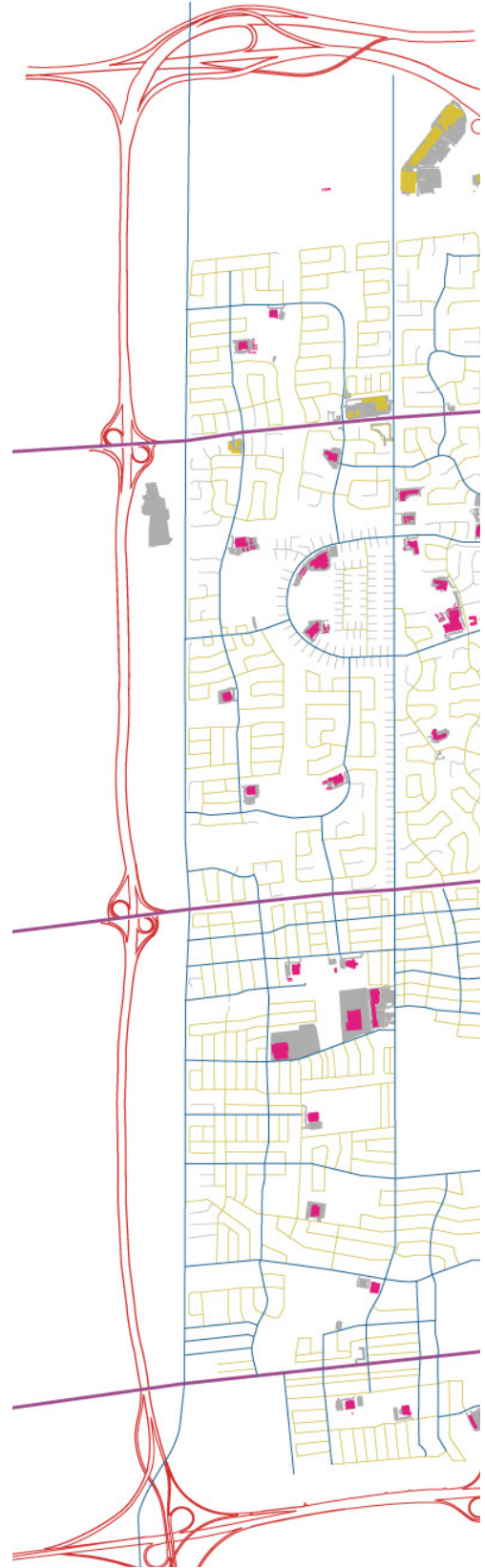
*Public Buildings*, including schools and commercial buildings, plus their adjacent parking lots. The development of these subdivisions has followed the guidelines set out in the Mississauga Plan, which emphasizes the establishment of commercial centres as points of community focus (Region of Peel, 2010.) Within this development, the buildings which have any sort of a public functions are the schools, which serve the large number of youth and children, and which accommodate evening and weekend programs for the communities.



Site elements pulled apart.



Public buildings in relation to open space.



Public buildings in relation to road hierarchy.

Site Analysis: Structuring the subdivision around public buildings, open space and roads.



Site Analysis: location of water infrastructure on site in typical condition.

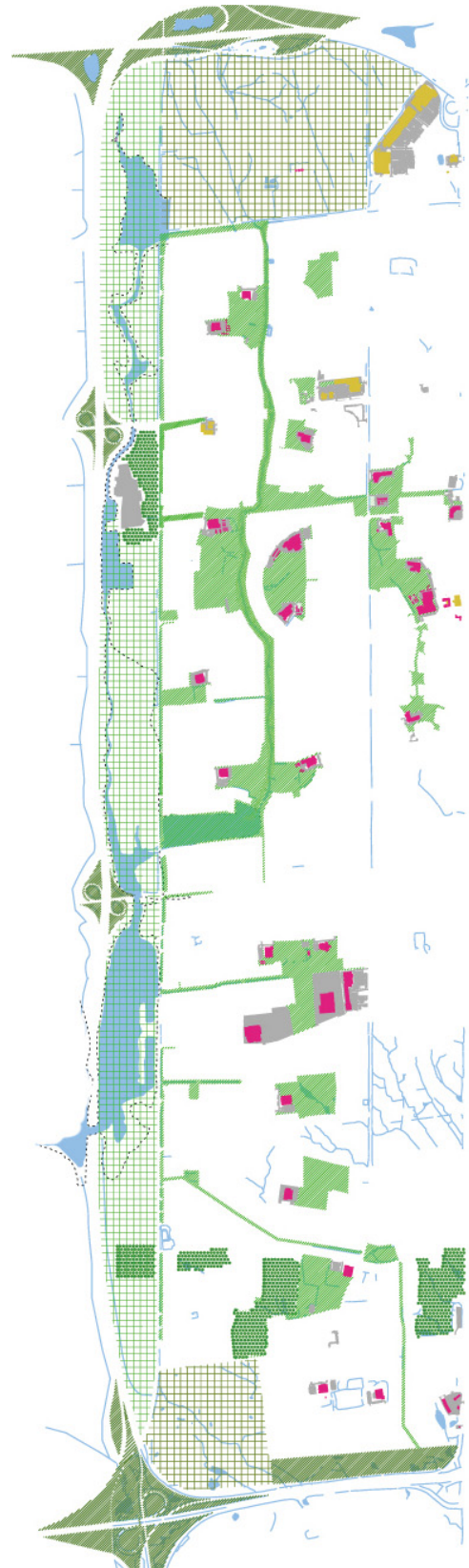
*Green spaces*, including grass-covered fields, hedgerows, remnants of natural wooded areas, and naturalized corridors. Fields have a direct relationship to public buildings, providing open space for recreation. The remnant natural areas are typically isolated within the built environment, and lack continuity within the system as a whole. The naturalized corridors serve an infrastructural purpose in managing stormwater runoff and connect to the floodplain of the Ninth Line Corridor. These corridors additionally function as walking trails.

*Waterways and ponds* are the infrastructural elements of the site, used to manage stormwater. These water bodies are man-made, but have the appearance of being a part of nature, generally being surrounded by fields of wild plants. These water elements informed an idea of fluctuation as an important counterpoint to the existing rigid structure of the suburb.

All these elements operate at large scales which are difficult to directly experience. The challenge is to introduce a finer grain which expresses the interconnectivity of these systems.



After seasonal rainfall.



After 100-year flood.

Site Analysis: water retention facilities in relation to green and public spaces.



Site strategy: grain.

## Grain

### Nested Scale

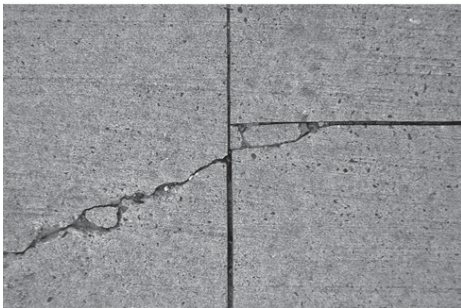
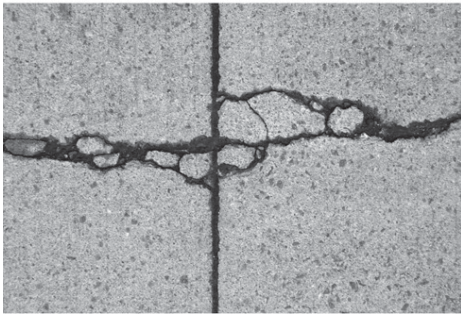
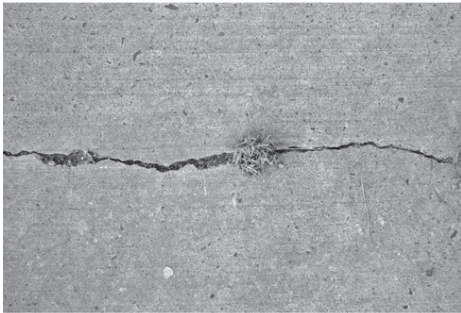
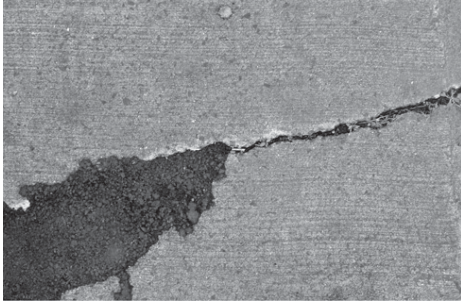
In dealing with systems at vastly differing scales, there is the question of how to find linkages between them. The strategy is to maintain all systems working at all scales. For example, nature and site ecologies operate at the scale of the whole site, but they are also introduced at more experiential scales and at the scale of the building.

### Porosity

The idea of porosity is a way of testing the potential of elements and of activity to flow across boundaries. There are two types of porosity: literal and phenomenal. The former occurs through the articulation of surfaces and boundaries, and whether they are open or closed, solid or hollow, continuous or modular. Phenomenal porosity occurs at the experiential level when programs are allowed to overlap and expand, and when activity can extend past fixed boundaries.

### Productive Edge

The edge is where two independent objects meet and interface. At times this interaction seamlessly produces a third condition, while at other times it causes a violent or adverse reaction. Keeping this in mind, the strategy in investigating all scales of the suburban environment is to look at how the edge can be porous, to allow for connecting, overlapping and blurring between systems and scales.



Porosity of the ground. Flow of natural systems produces uncontrolled patterns in man-made surfaces.

The production of new programs and spaces occurs when seemingly disparate programs or functions are placed adjacent to each other or overlapped. Blurring the edge between them accommodates an expansion of activity or intensity.

## Landscape Strategy

At the scale of the Corridor, the intention is to reconcile the relationship between nature and the built environment. It is proposed that a natural corridor be restored and protected along the highway side of the Ninth Line Corridor. This corridor connects to the existing network of green spaces within the subdivision, and also under the highway to the adjacent farmland.

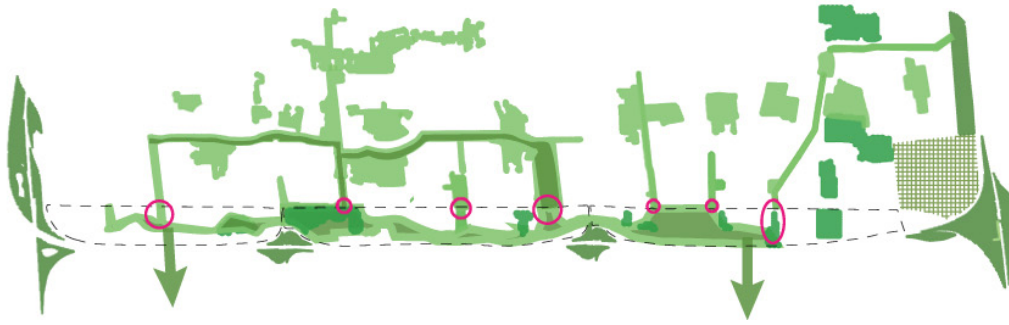
To strengthen the connection to the green spaces within the subdivision, the existing Ninth Line is broken up at points where it would overlap with the green corridor. Where Ninth Line used to be a high-speed thoroughfare, the strategy of breaking it up converts its remnants into neighbourhood roads, reduces the potential danger to animal populations in the corridor, and strengthens pedestrian connections between the Corridor and the subdivision. Existing pedestrian paths in the subdivision are extended into the Corridor and connected to each other.

The intersection of these networks (the natural corridor, the road network and the pedestrian path) mark the sites for architectural interventions.



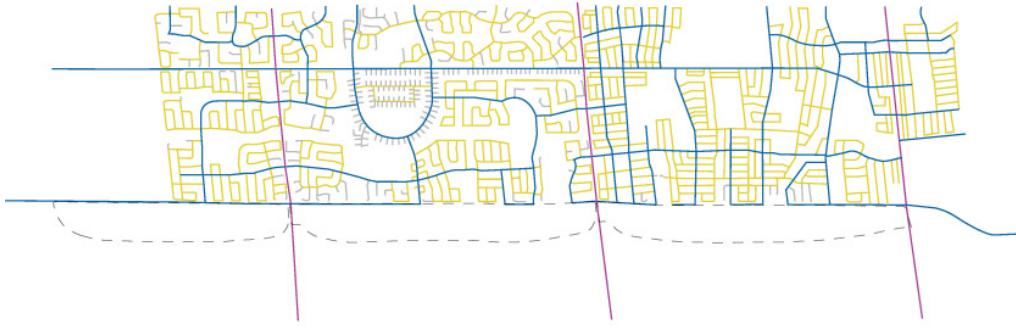
Identifying sites for architectural intervention within the Urban Strategy.



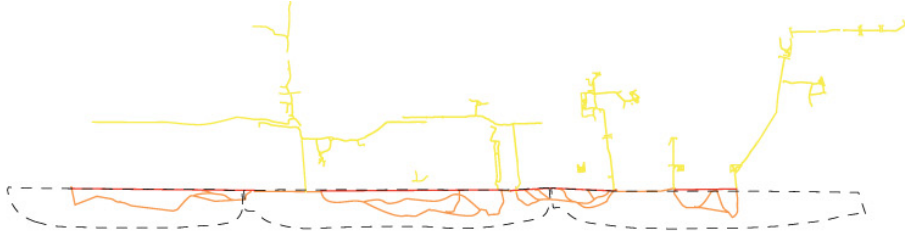


Corridor: Connect green spaces within subdivision to natural corridor within site.

Elements of the Urban Strategy.



Edge: Break Ninth Line to allow for green corridor connections.

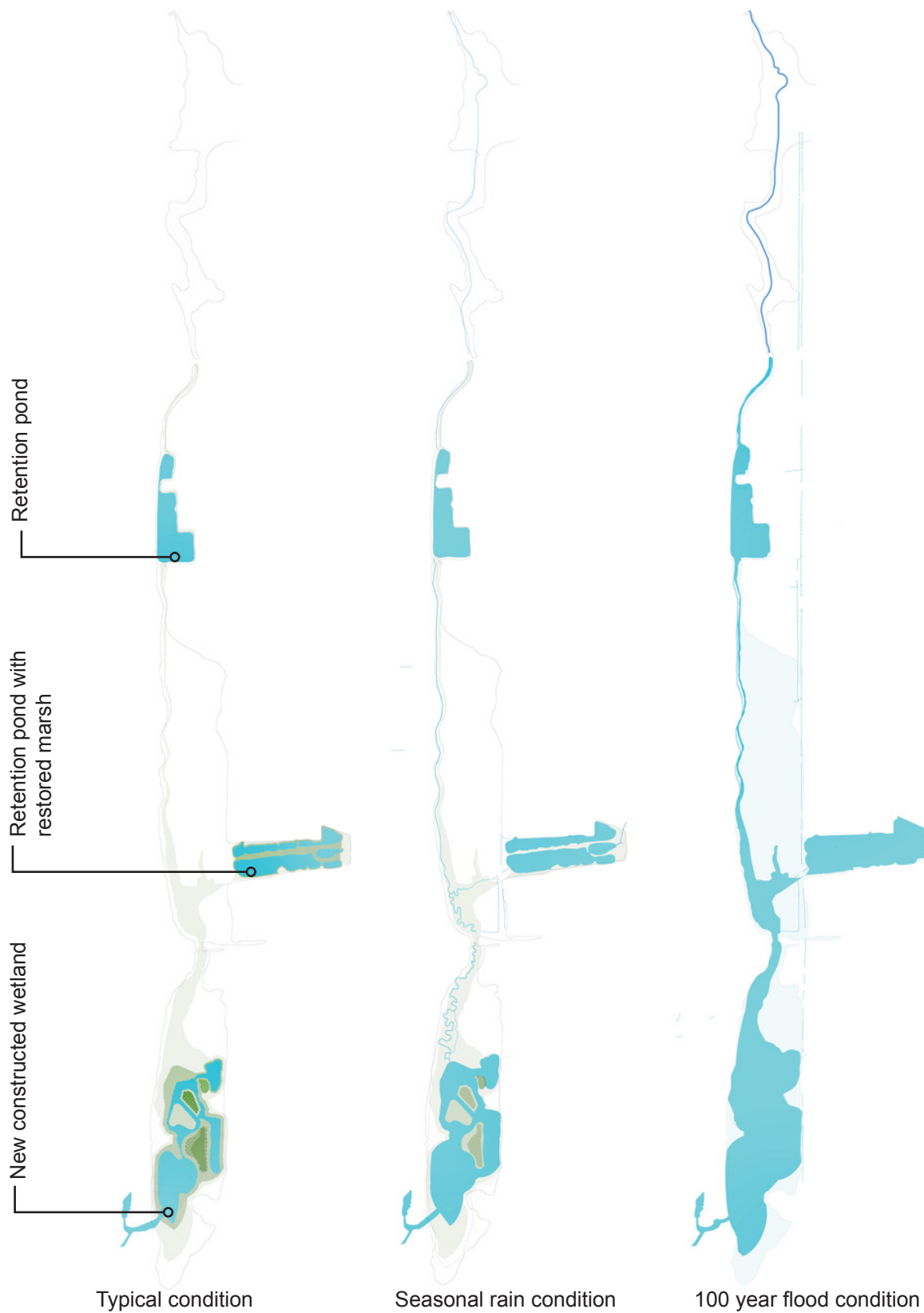


Corridor: Complete existing path network within subdivision by introducing multiple pedestrian routes.

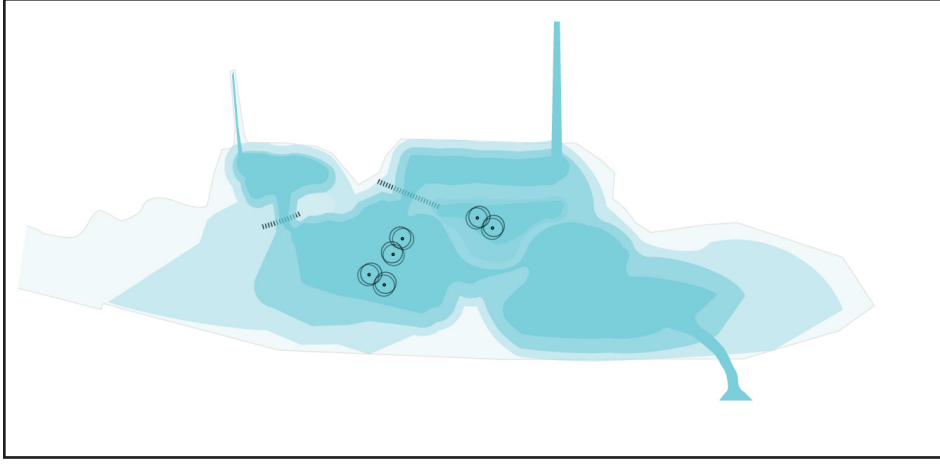
## **Ecological Strategy**

The primary ecological strategy is to increase the diversity of the natural corridors surrounding the site. To this effect, it is proposed that the south section of the Ninth Line Corridor be redeveloped as a wetland to better manage stormwater runoff, but to also bring additional benefits to the site: firstly, the wetlands will be more effective than the existing retention ponds in filtering and cleaning stormwater runoff before it is discharged into the stream network, and will stimulate natural habitat in the wetland; secondly, the wetlands will provide a unique opportunity to foster stewardship and education among the residents of the subdivision.

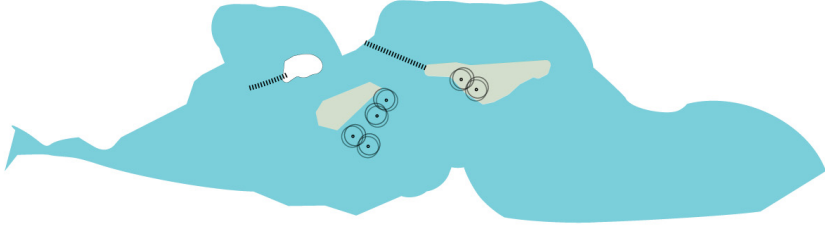
In addition to the wetland restoration, a replanting of a forest woodland will also be undertaken along the length of the Corridor to further stimulate diversity and to allow movement of species. The act of replanting has the potential to become a community event.



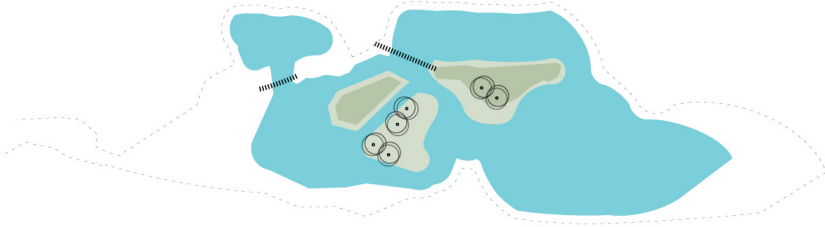
Stormwater Management Methods. Three types of runoff treatment facilities and associated extent of flooding.



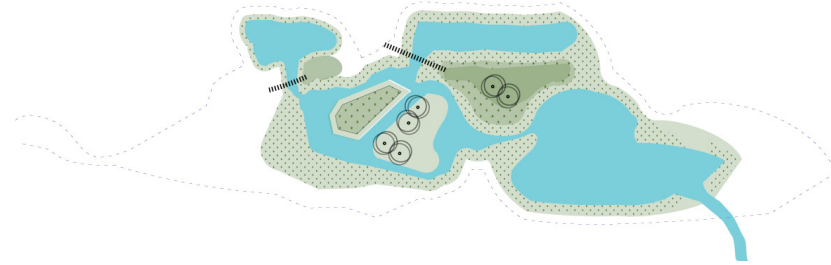
Combined



100 year flood condition

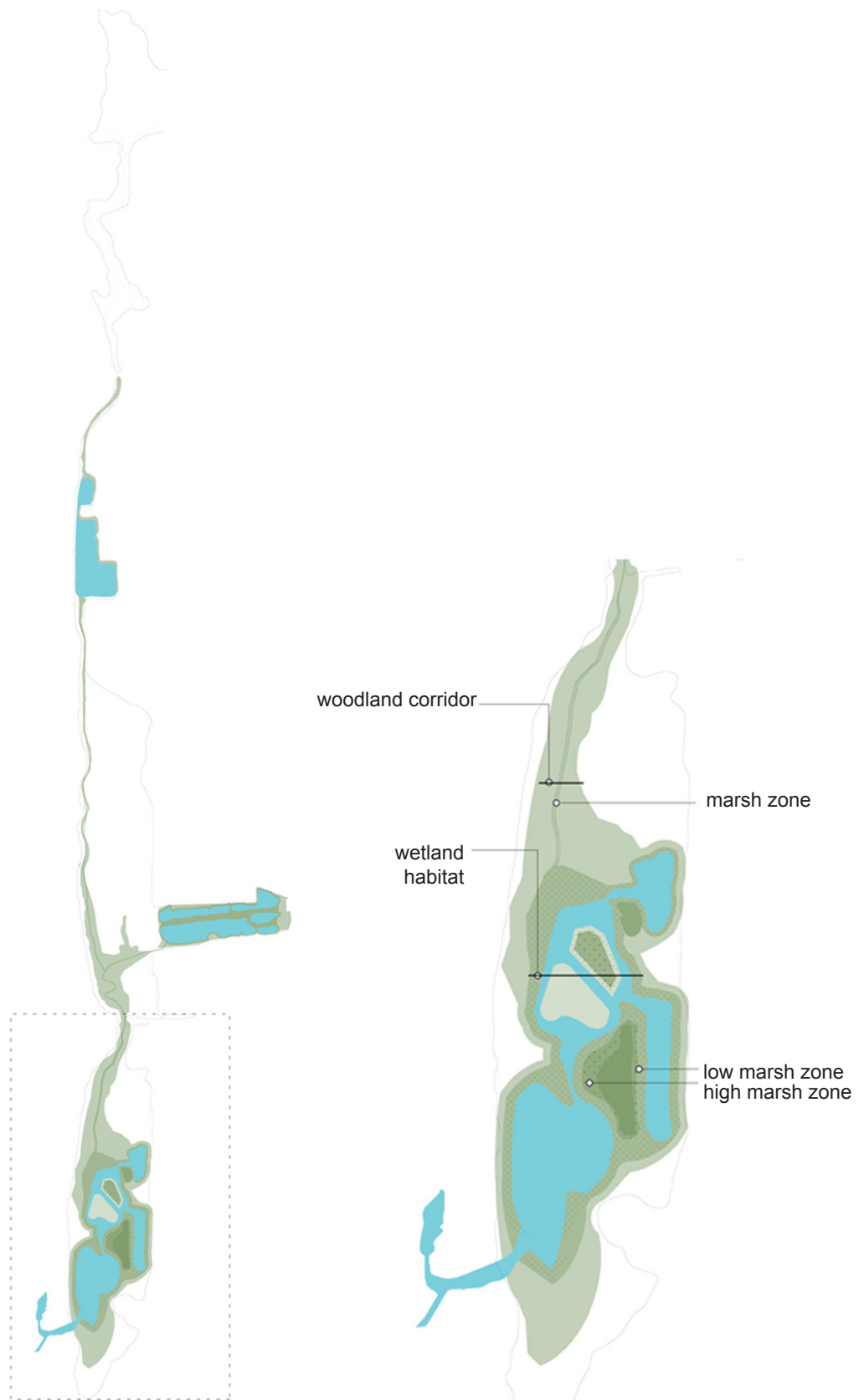


Seasonal rain condition



Typical condition

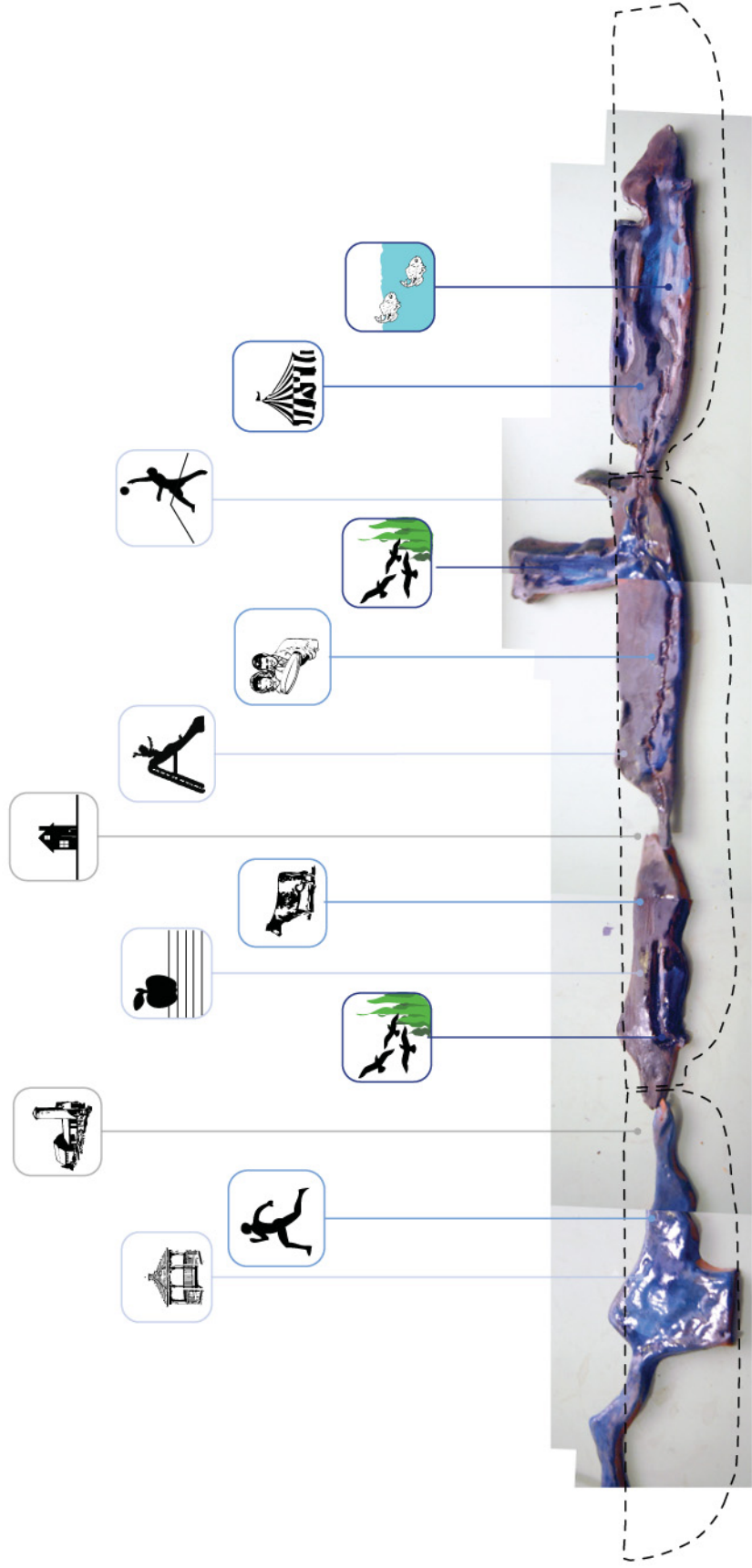
New Constructed wetland to replace existing retention ponds. Stages of flooding.



Variety of vegetation zones within the floodplain support biodiversity.

always wet  
 seasonally wet  
 rarely wet  
 never wet

nature  
 landscape  
 program  
 building



Program potentials within the floodplain according to likelihood and duration of flooding.

## CHAPTER 3: GENERATING DESIGN

### Generating Program

An architectural intervention at the scale of a building, along with its associated program, can bridge the human dimension and the large scale natural systems which operate along the whole site.

The proposed Centre for Suburban Ecologies is a monitoring and research centre which deals with mitigating the environmental impacts of suburban development. Under the direction of this Centre, the Ninth Line Corridor will be partially restored as a forest woodland which will support biological diversity. In “Design For Ecological Democracy,” Randolph T. Hester suggests that scientific landscapes can be an effective way of breeding citizen scientists who engage with urban ecosystems through observation, research, testing and direct experience. Participating in the collection of such data makes abstract scientific concepts and processes comprehensible, and relates them to everyday life (Hester 2006, 348). Thus, the centre will act as a catalyst for the further goal of fostering ecological stewardship among residents of the adjacent subdivisions. An additional educational program layer will connect the schools and the children within the subdivision to the site.

The exploration of this program aims to define a relationship between building and landscape and building and program as a way of generating a

variety of conditions and activities, and introducing a degree of programmatic flexibility that is not present in the traditional single-purpose suburban building.

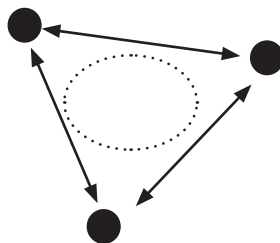
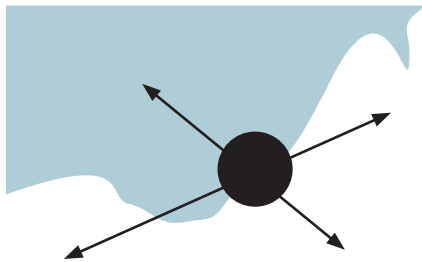
Bernard Tschumi has argued that there is no longer a relationship between architecture and the events that take place in it. He writes that:

...There is no longer any relationship possible between architecture and program, architecture and meaning....there must be no identification between architecture and program....the concept of program, however, remains increasingly important....The program plays the same role as narrative in other domains: it can and must be reinterpreted, rewritten, deconstructed by the architect (Tschumi 1994, 13).

To this extent, the program of the proposed Centre is used as a tool to structure this thesis: it provides a rationale for the restoration of the Ninth Line Corridor as a natural corridor; it establishes a framework within which further development can occur in the Corridor; it serves as a bridge between the subdivision and the Corridor; and it has no preconceived formal typology that might limit its potential.

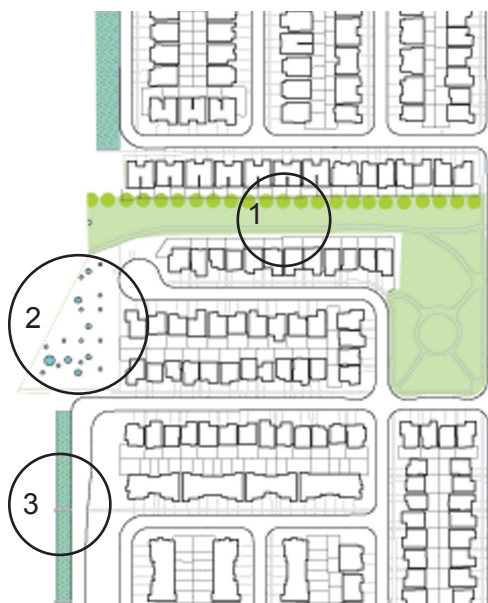
## Landscape to Building

The strategy for dealing with the Corridor as a whole is to maintain its open space character, but to strengthen the connections into the subdivision, define the thresholds into the Corridor, and then develop *patches* within the larger field which facilitate programs that may extend into the rest of the site.



Two strategies for relating building to landscape: Top: building as point from which program extends into landscape. Bottom: Individual buildings frame landscape and define field for further program.

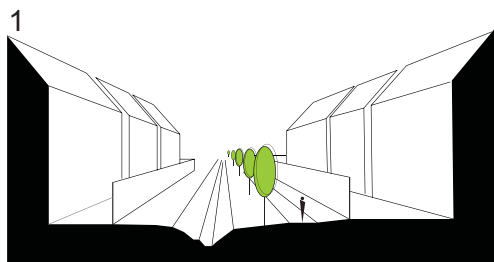




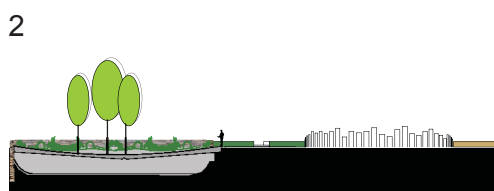
## Framing the Site

A duality between the natural and the built develops at the scale of the Corridor. The edge of the highway is buffered by the restored nature corridor, connecting under the highway to the agricultural land beyond, while the Ninth Line side is defined as a built edge. A series of architectural moves was developed to articulate the edge of the site at the urban scale, to introduce natural elements at this edge and to connect the site into the subdivision.

These moves include:



*The planting of native tree species through the utility corridors.* This signifies the extension of the natural systems into the subdivision, and the linear arrangement of trees acts as a visual device to pull people through the corridor to the site.



*Neighbourhood Parks where Ninth Line has been removed.* These parks connect the Ninth Line Corridor into the daily life of the neighbourhood by providing interactive play space for children, and foster neighbourhood identity and responsibility for the site. These parks would provide a variety of play surfaces and spaces.

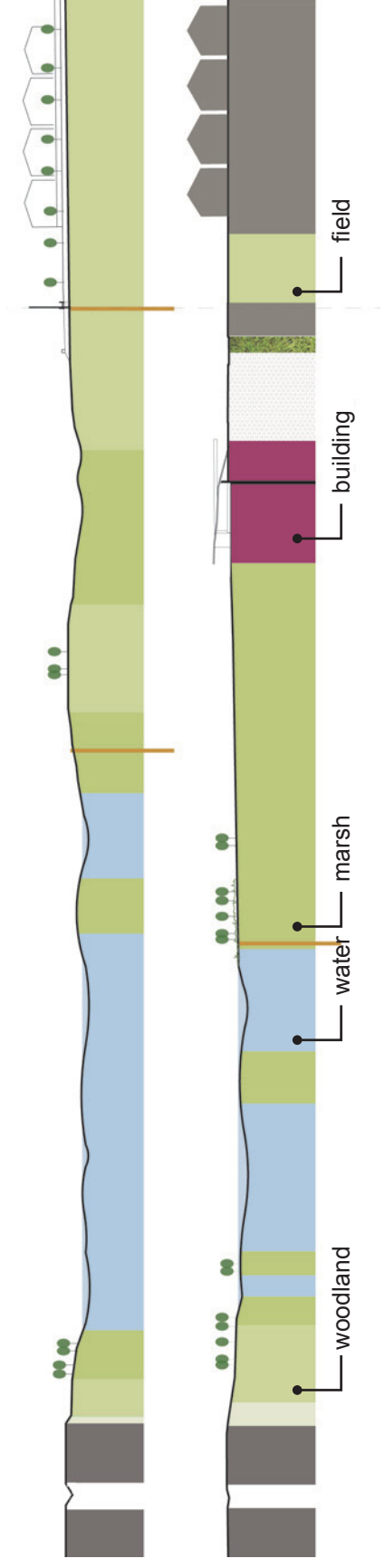


*Rain Garden Troughs where Ninth Line remains.* These slips serve as a threshold into the Corridor, and also contain and direct stormwater runoff from the road.

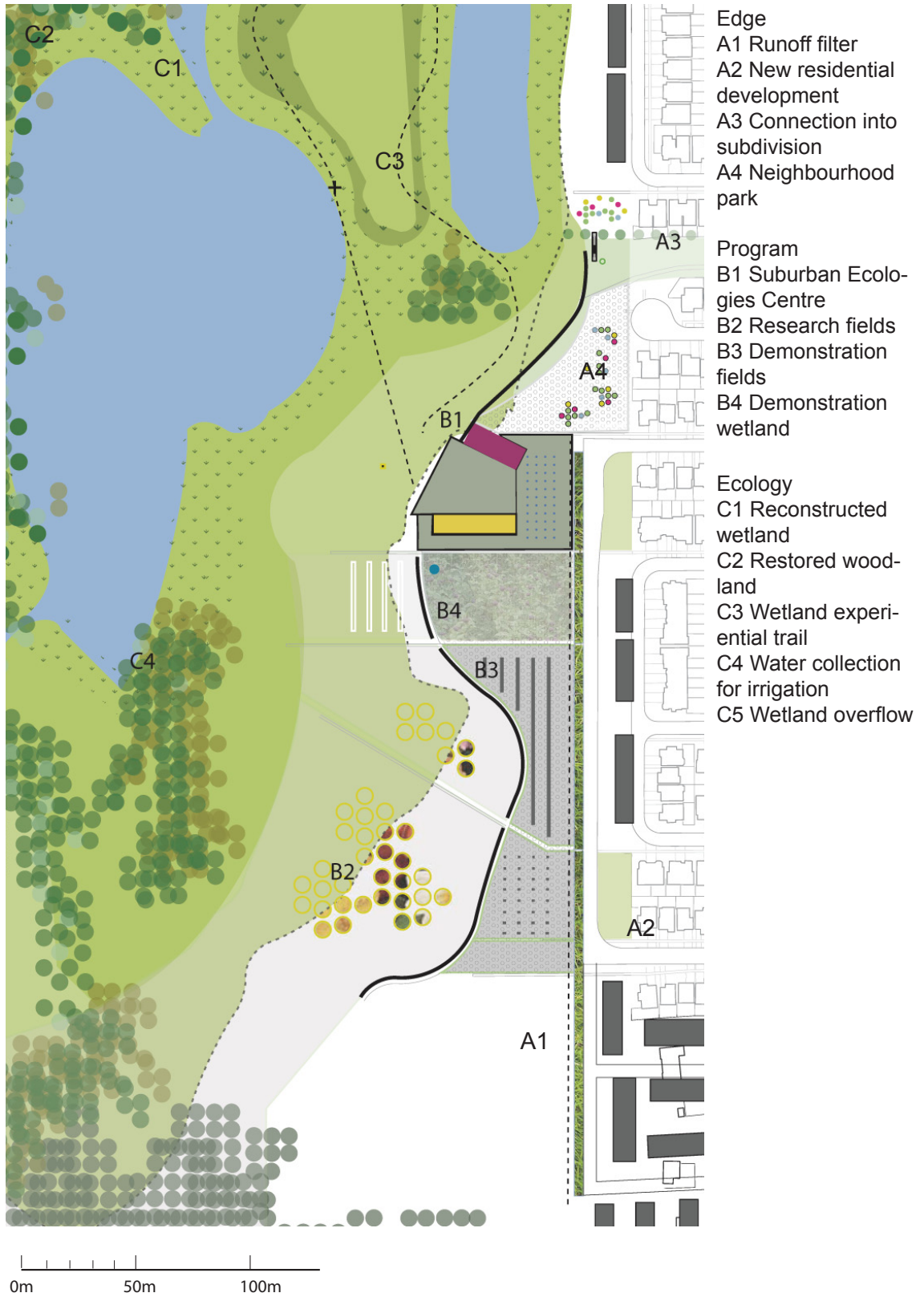
Architectural moves at the urban scale:  
 1) line of trees through existing utility corridor;  
 2) neighbourhood park where road has been removed;  
 3) rain garden trough where road remains.



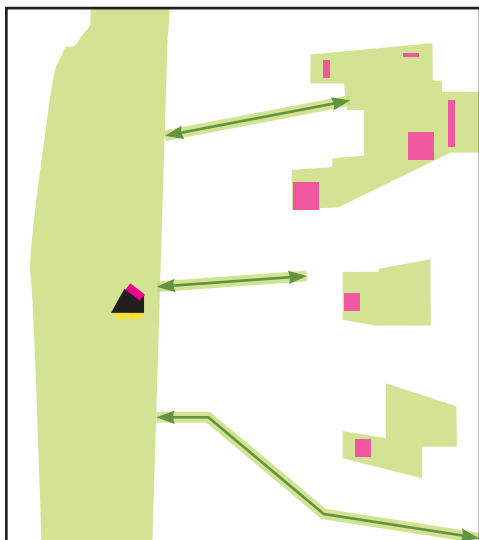
Site Plan and sections showing proposed program locations within the corridor.



Site sections at Centre for Suburban Ecologies, showing the variety of ground conditions across the site, including field, marsh, woodland.



Suburban Ecologies Centre Site Plan indicating the strategies used to define the edge of the Corridor, the location of the Centre's program elements, and their relationship to the nature corridor.



Centre for Suburban Ecologies in relation to existing utility/access corridors and public buildings.

## Defining *Patches*

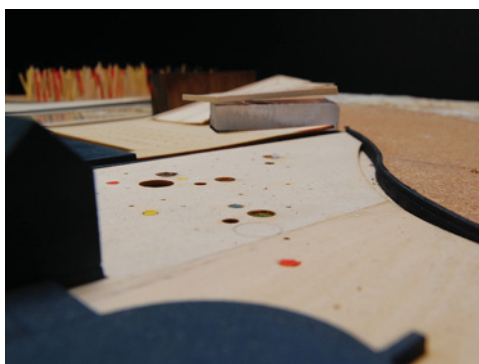
The site of the Centre for Suburban Ecologies is located at the edge of the existing floodplain in the southern end of the Ninth Line Corridor. This location also has a strategic relationship to the existing network of green corridors, which connect into the subdivision and which provide an access route to the Centre that avoids major roads.

The building is located closer to the Ninth Line edge, rather than in landscape or closer to the wetland, in order to establish a stronger relationship with the subdivision. The building and its program develop a presence in the community and serve to define the site as a public space.



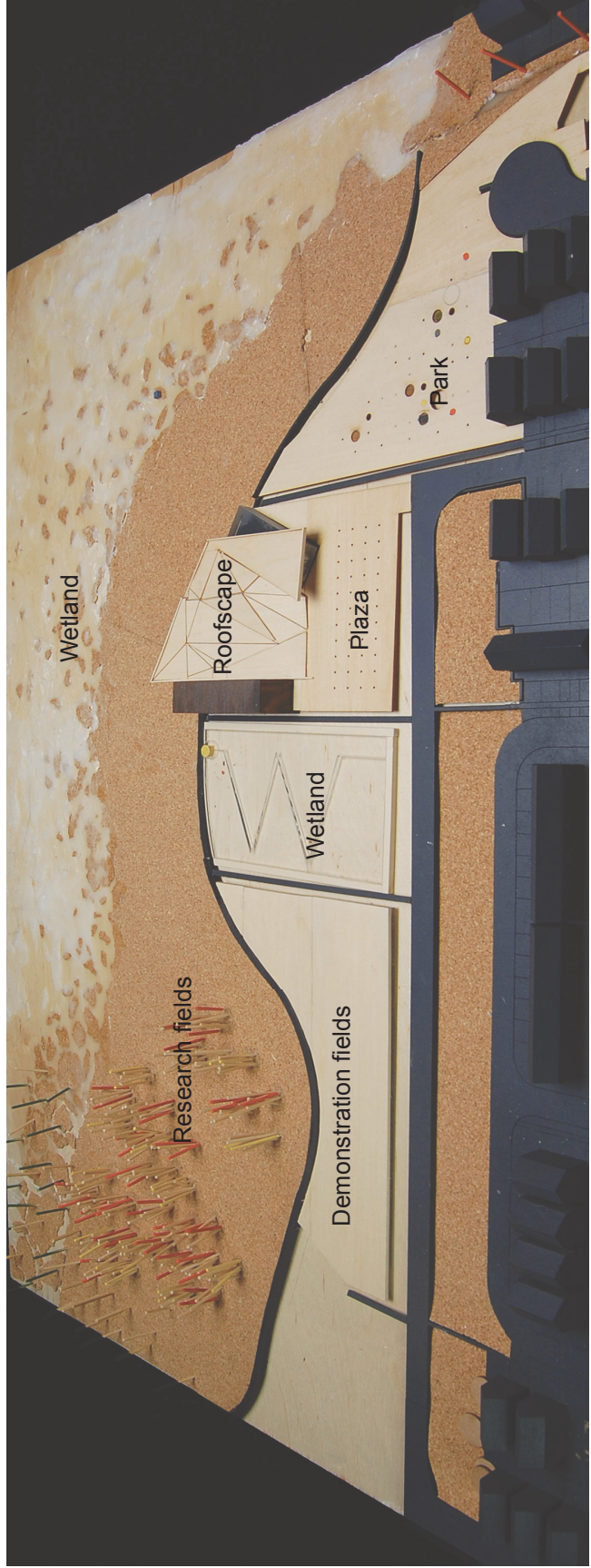
Model: view of new site edges from south.

The primary architectural gesture establishes a new edge within the site which brings together the built and natural elements of the landscape. This edge takes the form of a continuous retention wall which functions as a flood wall in the event of a regional flood, but which also acts as the threshold between the landscape of the suburb and that of the wetland. Distributed along this wall are research and demonstration fields which support the research mandate of the Centre for Suburban Ecologies, including energy generation fields, a small-scale constructed wetland, orchards and farm plots, as well as plantings which take advantage of the various ground conditions between field and wetland.



Model: approach to Centre through neighbourhood park.

To encourage pedestrian access across the site,



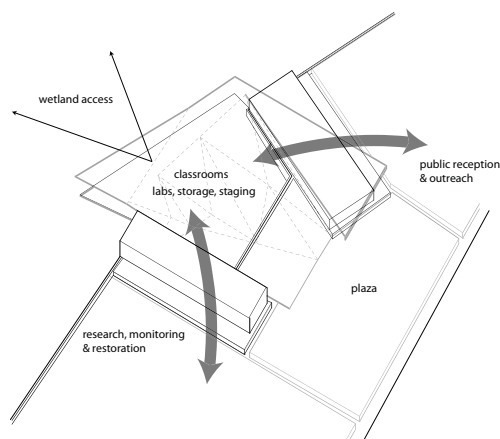
Site Model showing relationship of natural and built elements across edges of the site.

existing sidewalks are extended across Ninth Line and carried through the demonstration fields, across the wall and into the wetland. The wall establishes a threshold into the preserved open space, and marks the change in landscape.

The Centre for Suburban Ecologies is also located along the edge marked by this wall, but the building mediates between programs and between landscapes by both literally and figuratively blurring the edge between them.

### **Building to Program (Developing An Architectural Language)**

The Centre for Suburban Ecologies consists of three architectural components. Firstly, the building block which contains office space to support the science and research component of the Centre; secondly, the public program block which contains public outreach and reception facilities; and thirdly, the middle roof landscape which encloses a large open space containing classrooms, laboratories and storage space, and the top side of which becomes an interpretive landscape combining both the science and public programs.

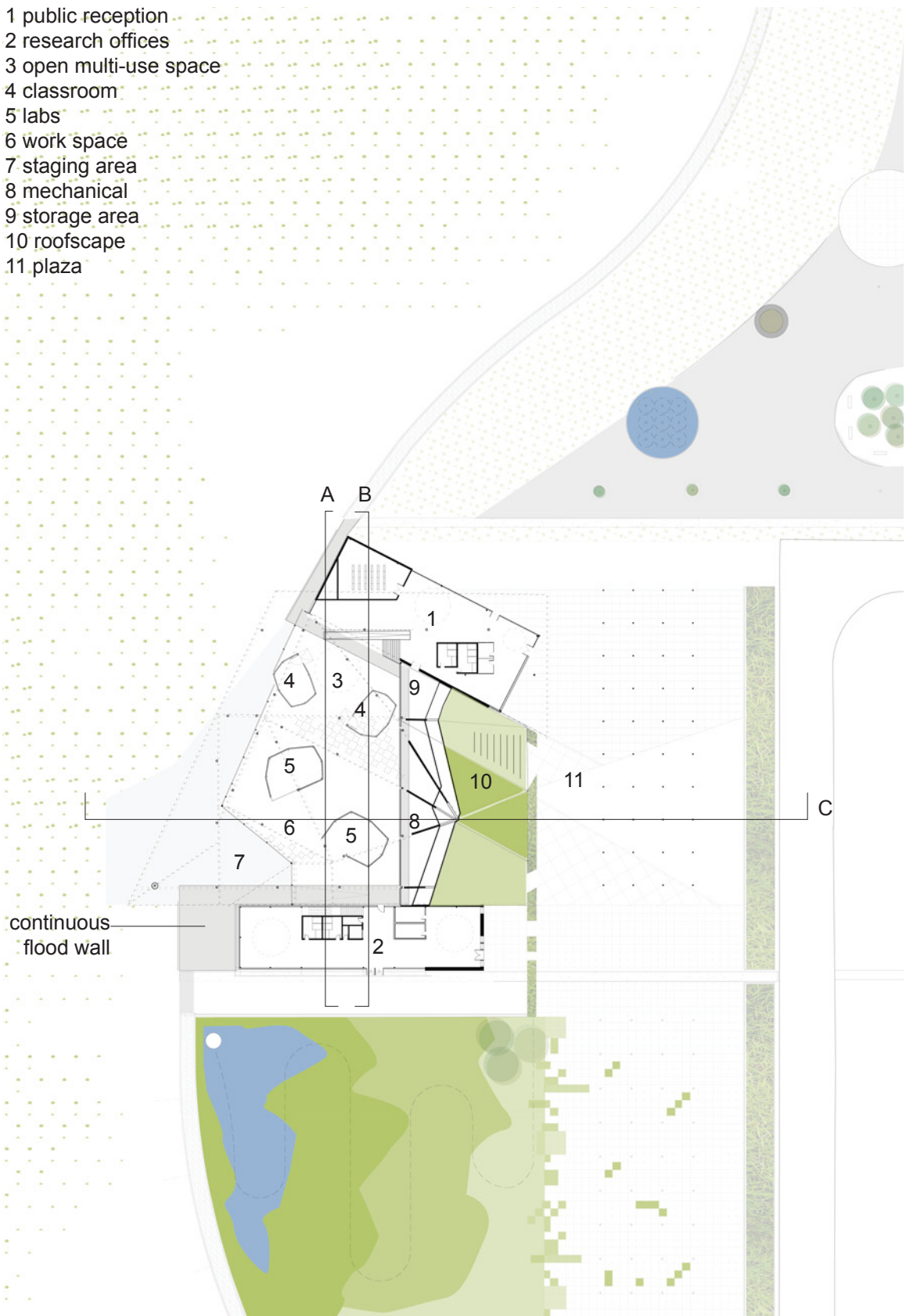


Program strategy.

The research block has a direct relationship to the research fields and to the space under the roof, and has access to the roofscape from the second level.

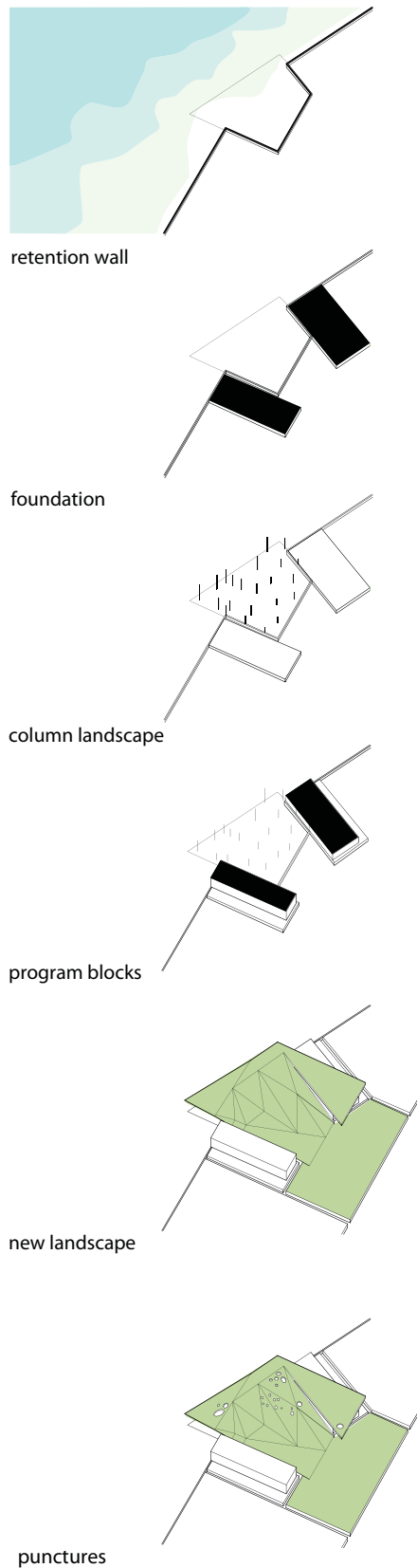
The public block is oriented to the neighbourhood park and the approach through the utility corridor.

- 1 public reception
- 2 research offices
- 3 open multi-use space
- 4 classroom
- 5 labs
- 6 work space
- 7 staging area
- 8 mechanical
- 9 storage area
- 10 roofscape
- 11 plaza



Building plan in its immediate context.





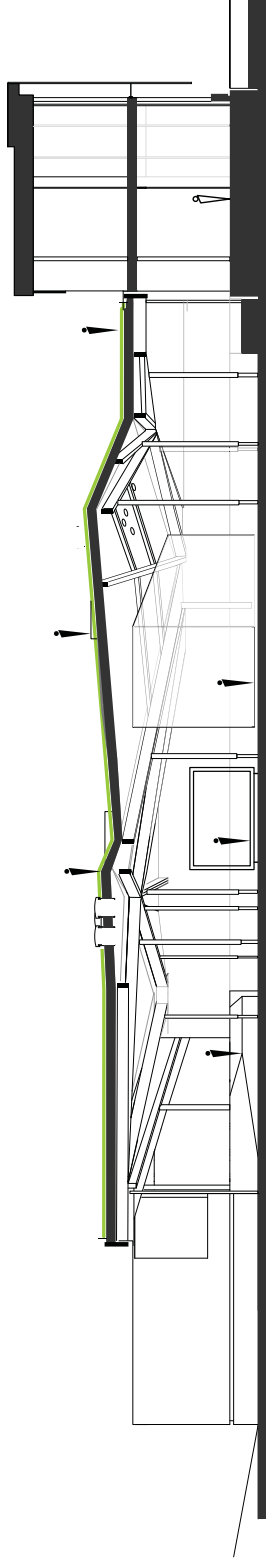
Schematic building strategy: assembly of elements.

By rotating this block in relation to the main geometry of the building, a number of different spaces under the overhanging roof are created, suggesting a more informal relationship to the site.

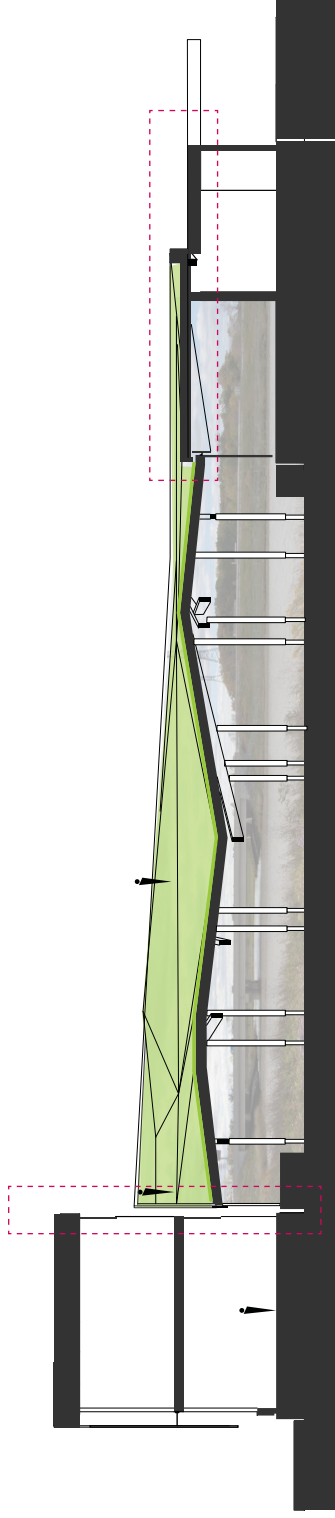
The roofscape connecting the two building blocks rises out of the plaza in front of the building, and functions as a middle landscape in which the two programs meet.

The retention wall that runs across the site establishes a 1.5 m grade change between the level of the subdivision and that of the wetland. This grade change allows the building to maintain a residential height and massing on the Ninth Line side, but to open up to the scale of the highway and the landscape on the other side.

In keeping with the intention of exploring multiple responses to a given condition, the roof has a different relationship to each of the program blocks. It slips past the research block, and floats above the public block. The threshold between the research block and the roofscape is distinct, whereas the relationship between the public block and the roofscape is much more fluid and open. It was felt that the research program already has a purposeful relationship to the landscape and to any activity occurring on or under the roof, and that it was more important to give the offices a greater degree of privacy from the public program. Conversely, the public block is allowed to spill out into the space under the roof, and out into the land-

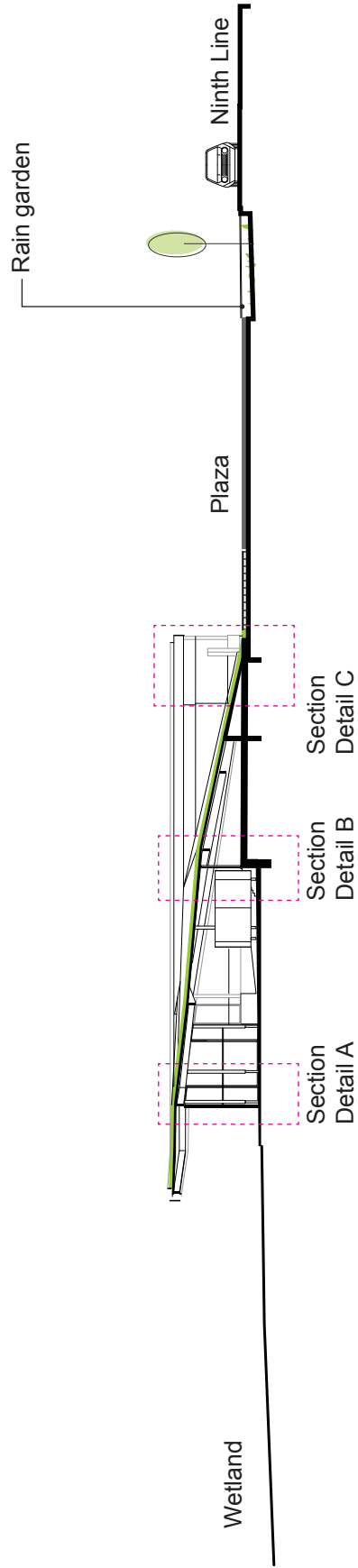


Section A: View into building showing public reception space on the left and the research offices on the right. The open space between the two accommodates freestanding pavilions which are used as classrooms and labs.

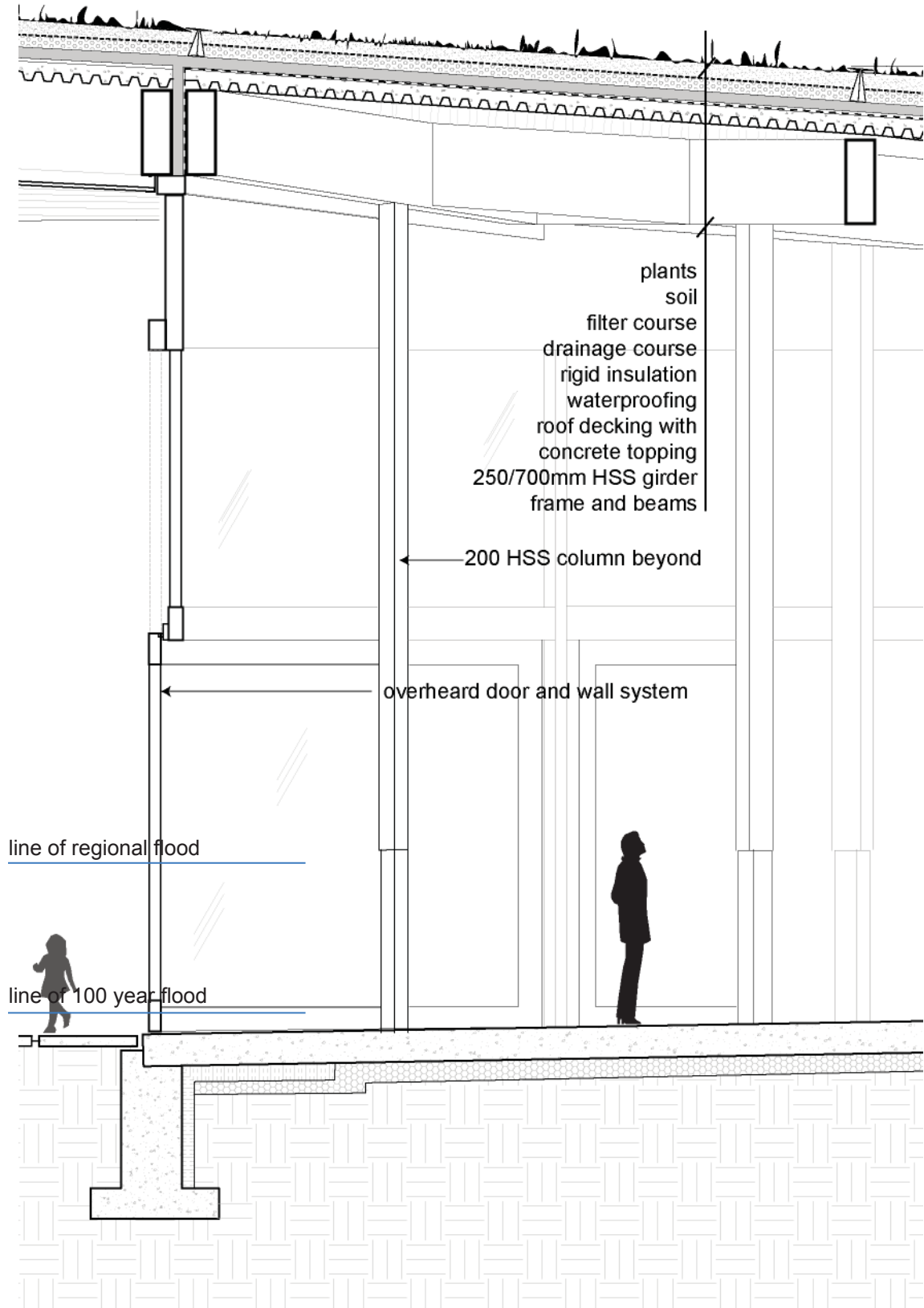


Section B: View out from building showing the two landscapes created by the roofscape. The lower level opens up to the wetland, while the roof slopes down to the plaza in front of the building.

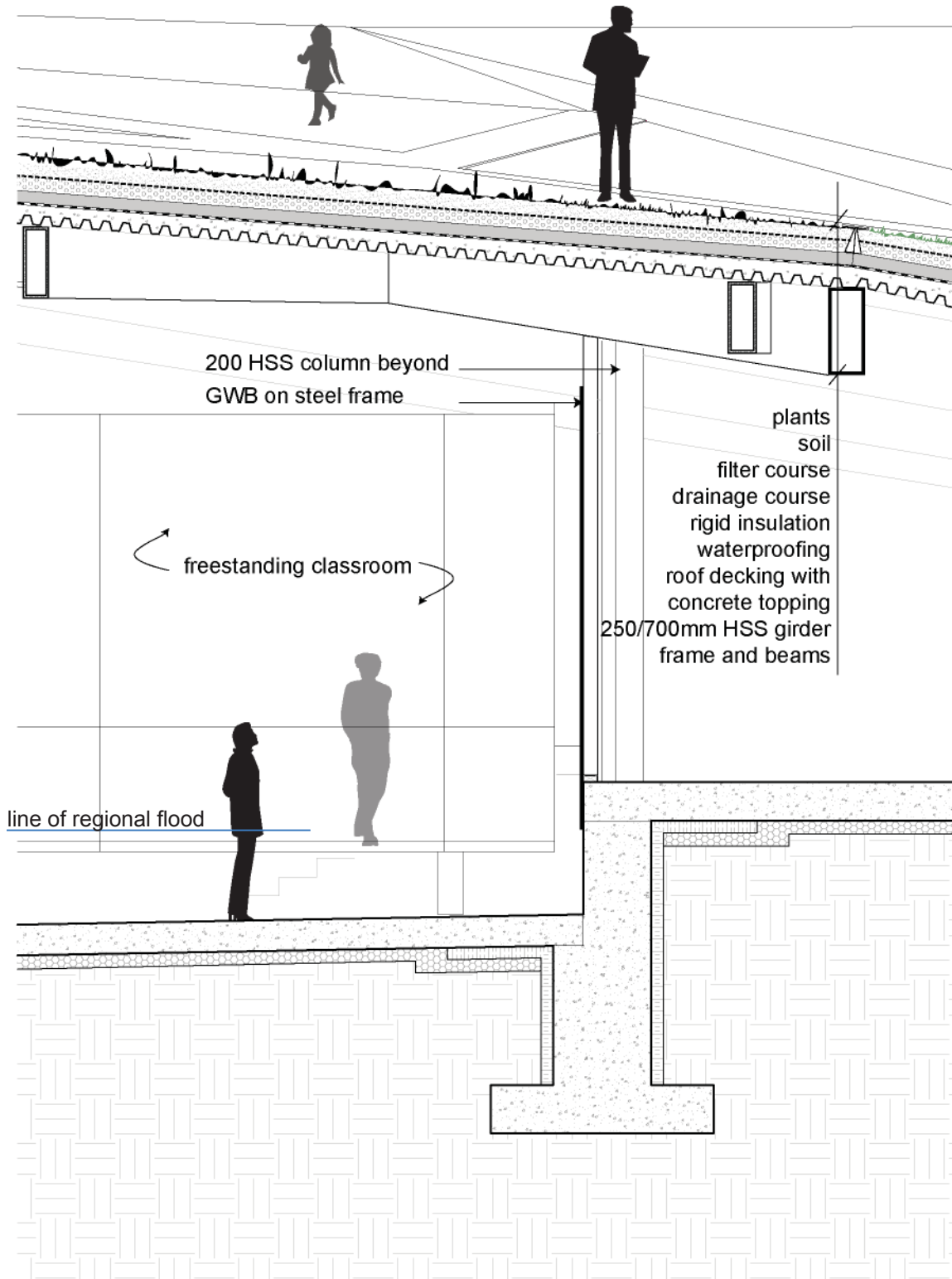
Building Sections showing relationship between program blocks and roofscape. The roofscape has a different relationship to each program block, adjacent to the research block and overlapping the public block.



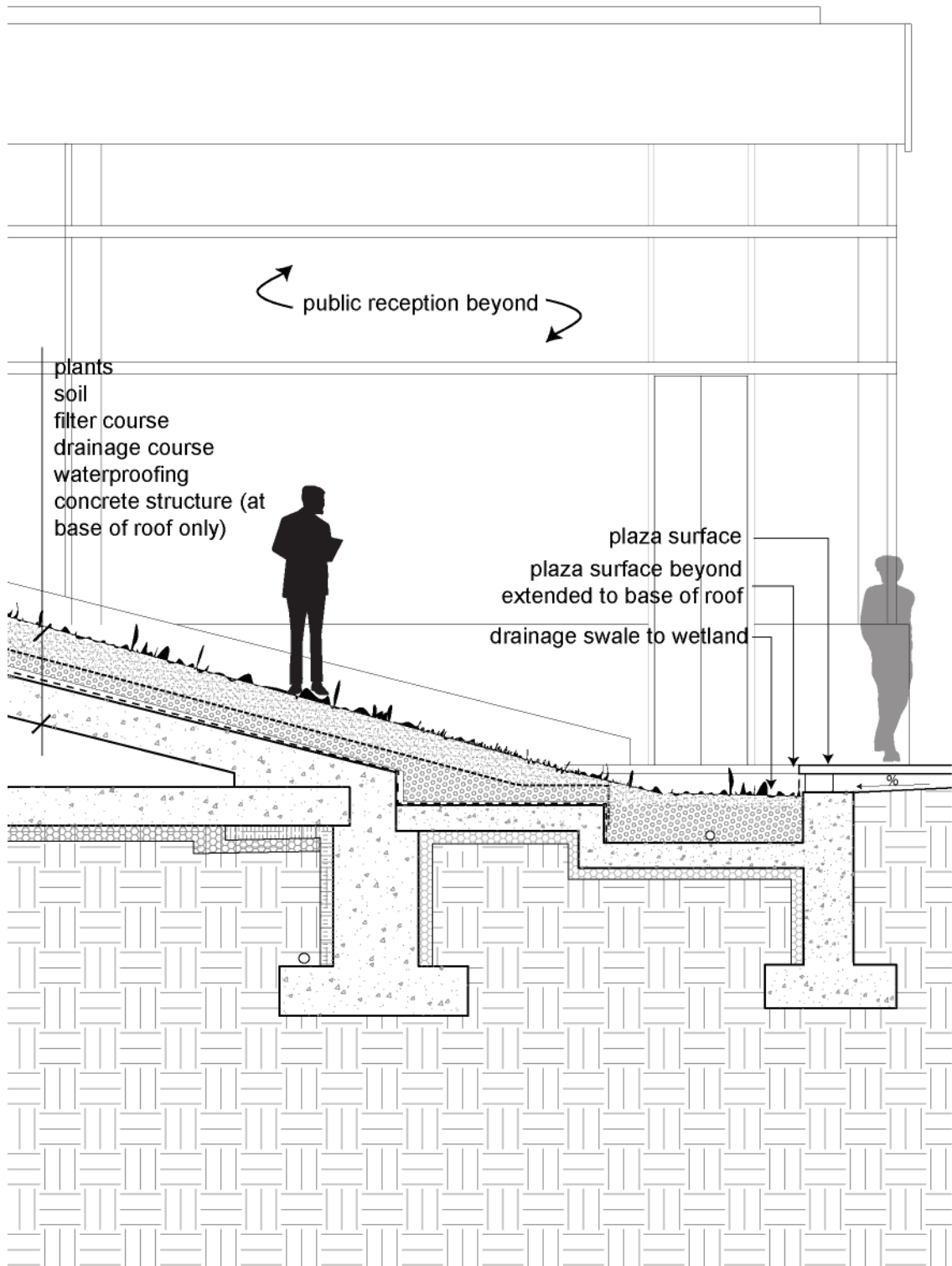
Section C, from Ninth Line edge to wetland landscape. The sloped roofscape compresses the expansive landscape of the Corridor to create a more human-scaled landscape on the plaza, and also allows the lower level to open up to the wetland.



Section Detail A, scale: 1:50, showing edge between interior and exterior. All structural and service components are kept above the regional flood line.



Section Detail B, scale 1:50, showing grade change at the retaining wall within the building.

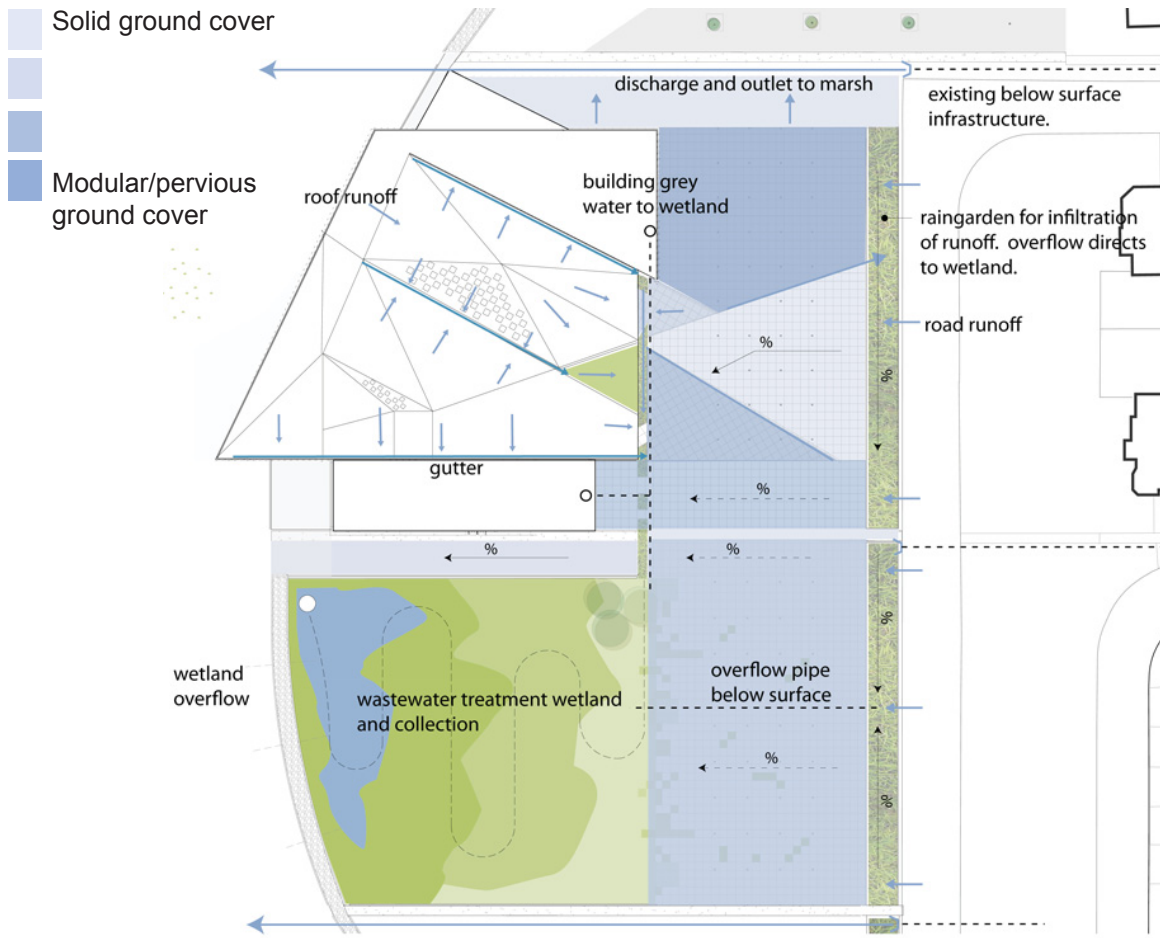


Section Detail C, scale 1:50, showing transition from plaza surface to roof. Drainage swale at base of roof directs roof runoff to wetland.

scape to encourage exploration of both.

The roof is intended to function as a didactic tool in the Centre's program. The structure of the roof is expressed on the underside, showing the hierarchy of structural components. The irregular spacing of columns follows the rationale of the structure, and serves to delineate spaces in the otherwise open room. The landscape on the top of the roof also becomes a teaching tool in demonstrating the growing of various plants and the introduction of ecological processes at the building level.

The roof and plaza collectively manage stormwater

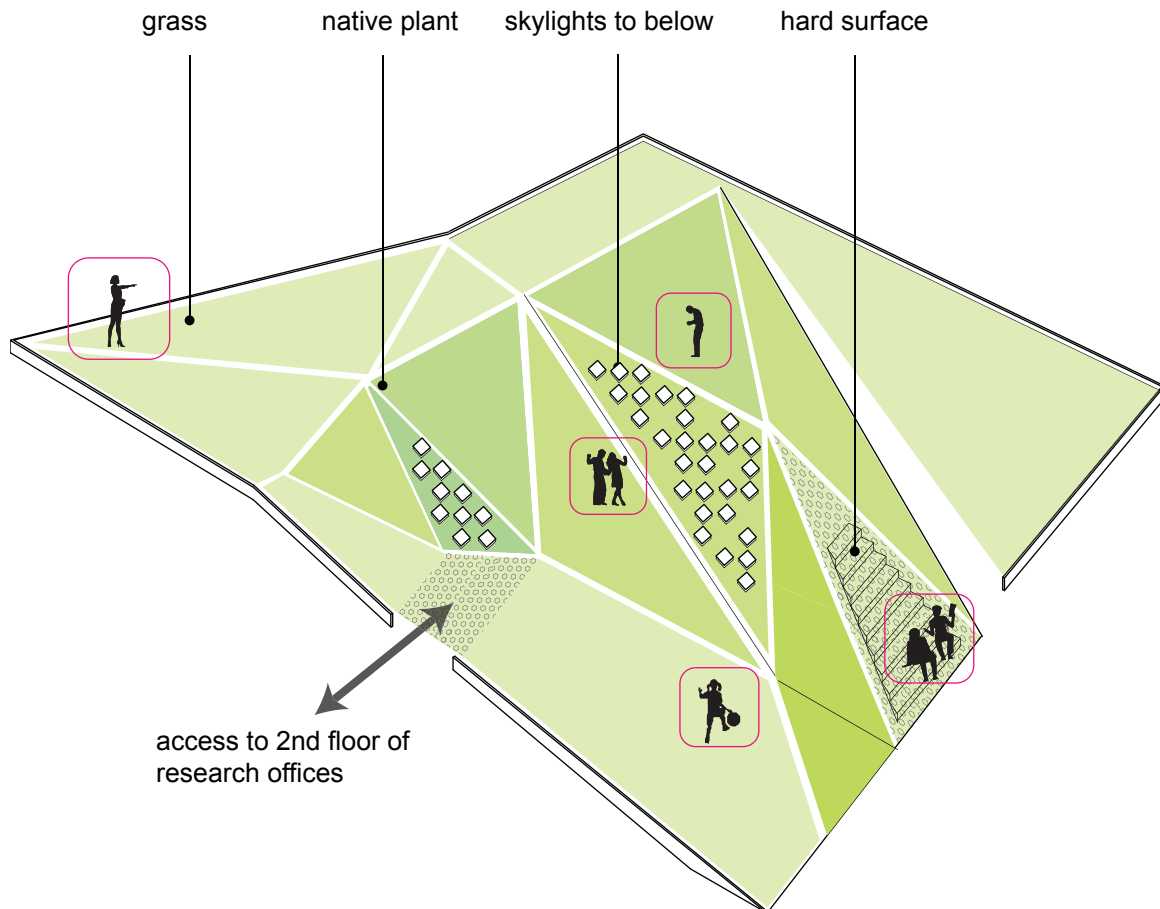


Managing stormwater runoff at the building level.

runoff on the site. The gutters along the edge of the roof, and the valleys in the middle of the roof, direct water downward to a trough at the base of the roof, which in turn directs this water to the small wetland to the south of the building, where it is filtered, collected and recycled for grey-water use in the building.

The plaza is covered with a number of different surfaces of different permeabilities, such as modular rubber tile, stone block, and traditional asphalt. This strategy creates surfaces for different activities, but also becomes a way of managing rainwater. The more pervious surfaces allow water to infiltrate into the ground, while the solid surfaces are sloped to direct runoff to the wetland. The demonstration of these different approaches is also intended to inform residents of the suburban communities of different methods for dealing with their own properties.





Roofscape planting and program. The landscaped roof functions as a middle ground between the research and public programs. It contains a number of vegetation types, including grass and native plants. The grass-covered areas can function as outdoor classrooms or provide seating for events which might take place in the plaza.

## Program to Landscape (Extending into the Field)

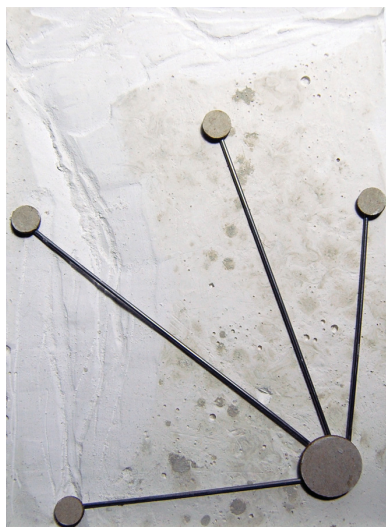
In order to facilitate various forms of engagement with the site, it is important to activate the element of time. The site should accommodate programmatic fluctuation on daily, seasonal and annual cycles.

Long term change will occur in the process of restoring the site as a nature corridor: the evolution from left over space to a rich landscape will give the site a new identity, and place it in the collective memory of the city.

The program of the Centre can be used to identify notable sites, such as paths and trails, important thresholds and intersections, thought out the rest of the Corridor, and to mark them accordingly, This strategy would create connectivity though the Corridor.

The Centre's program is also able to expand into the space of the wetland and the plaza according to seasonal conditions. Measuring and monitoring devices can be brought out in appropriate weather conditions to collect data. When positioned in the plaza, these devices can become a signifier to residents in the subdivisions, notifying of a pending event and even encouraging people to undertake their own data collection or site exploration.

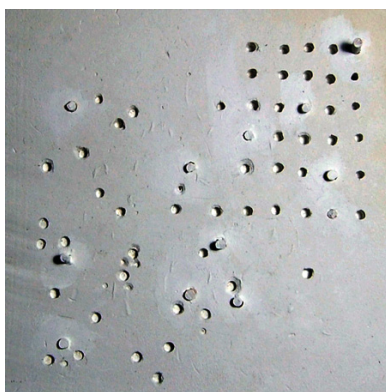
Additional landscape elements, such as benches, platforms and canopies can be erected during



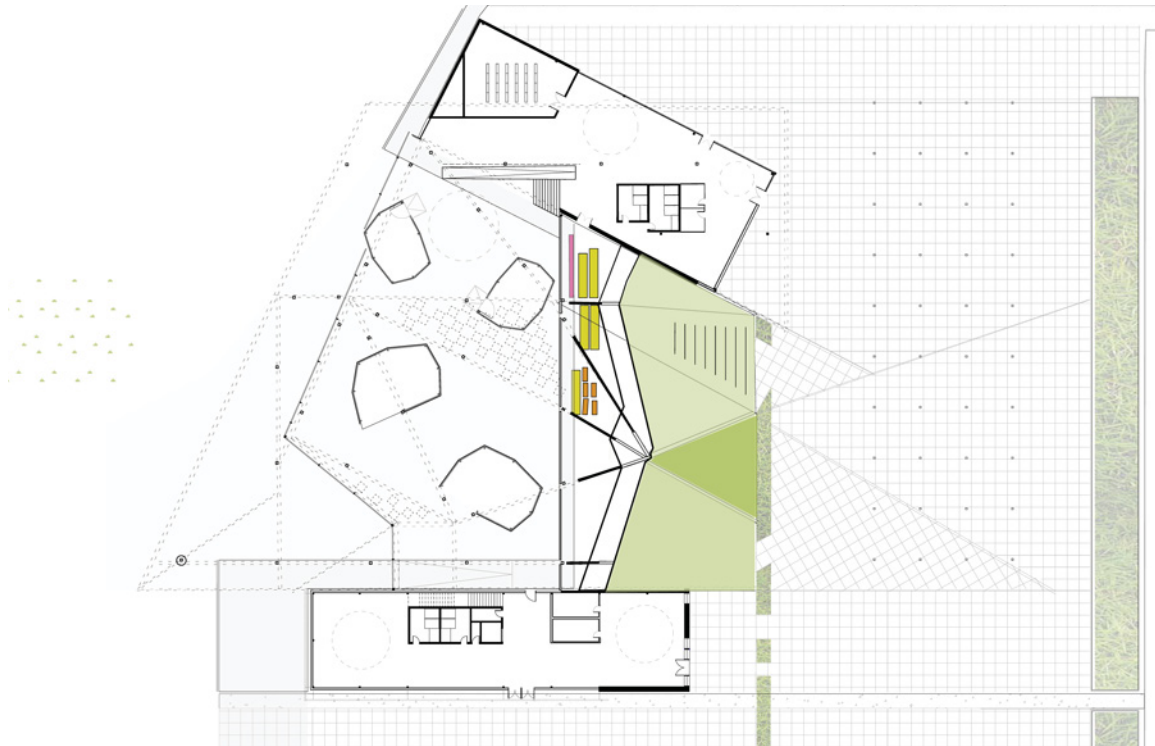
Concept model: Extending into the field.



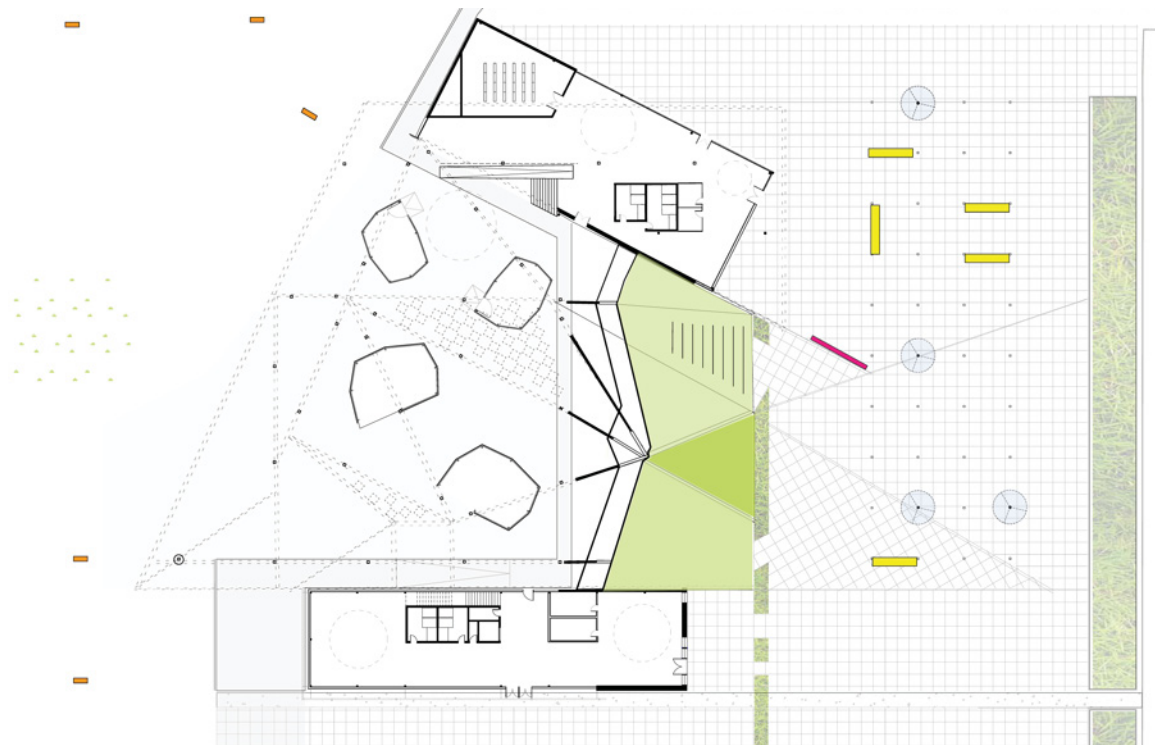
Concept model: Textures of the field. Introducing a variety of ground surfaces to accommodate different activities.



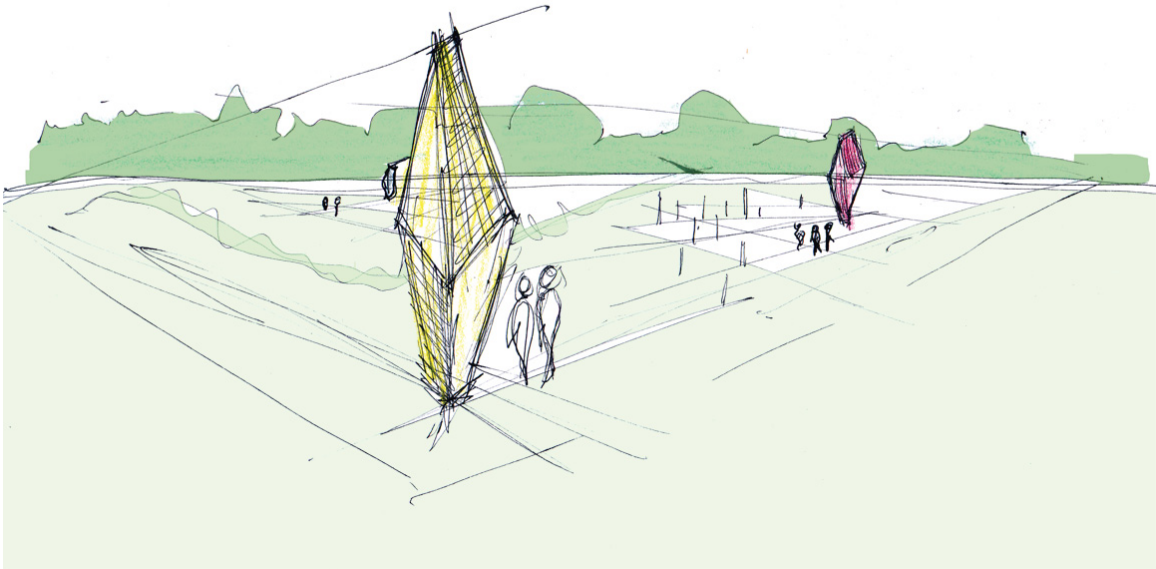
Concept model: Field. Pattern and rhythm of elements extend activity into the site.



Building plan in winter: lower level is enclosed, providing a large open space for classrooms and labs.



Building plan in spring/summer/fall: additional uses encouraged through introduction of temporary landscape elements. The enclosing wall on the lower level raises up to open the space to the landscape.

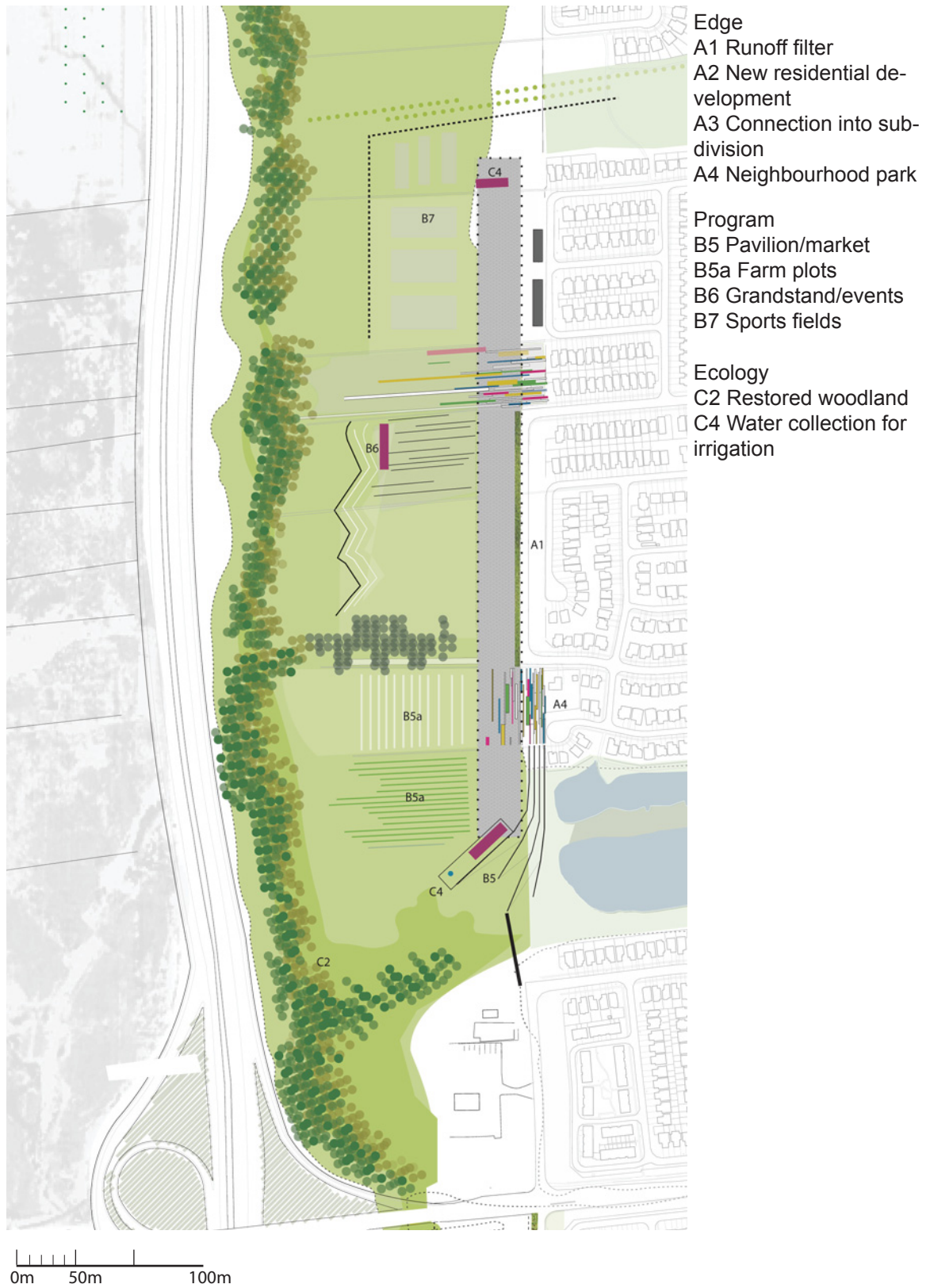


Temporary fixtures are brought into the field to encourage activity. These fixtures should be related in their materiality and assembly, but they can have various functions: some might collect and filter water, others might attract specific types of birds, while others still provide shelter for various activities such as picnicking or watching events.

warmer month to expand the program and to encouraging other uses, including play and leisure activities, community events such as movie viewings, and farmer's markets.

From the strategies discussed above, and within the parameters established by the Centre for Suburban Ecologies, some thought was given to the development of the rest of the Corridor. A second program scenario emerged: The proposed Mississauga West Fairground will accommodate seasonal events for the region, such as carnivals and fairs, farmer's markets and music festivals, but will also contain the additional layer of community based amenities, such as sports fields.

Buildings should be strategically located to define



Potential future development within Corridor, occurring within the framework established by the Suburban Ecologies Centre.

the Fairground site, but they should also be allowed to function independently for daily or weekly events, or to define the site for larger, rare events such as fairs. The expressive architectural moves and demonstrative ecological strategies should keep in line with those of the Centre for Suburban Ecologies, while considering the impact of the program on larger scale ecologies.

## CHAPTER 4: CONCLUSION

In the course of this thesis, much time was spent researching and trying to understand the landscape and ecology of the site. Ultimately, it was decided that the technicalities of either were largely outside of the scope of this thesis - I am neither a landscaper nor an ecologist, and I realized it was important to address these as an architect. I have tried to deal with the ideas of landscape and ecology by interpreting their respective principles and applying them to architecture. That said, the time spent trying to understand the conditions created by the landscape and ecological processes was effective in that it generated a program and architectural language that are entirely different from the existing built conditions.

This thesis has intentionally avoided addressing issues of the validity or sustainability of the suburban lifestyle. Rather, it accepts that there is a continuing demand for single-family housing, and that suburbia will definitely not disappear any time soon. Accepting this, it was still a challenge to find the potential in the existing context. Issues of scale and distance prove to be major obstacles in creating places that will attract numerous and diverse users. Thus, the use of a very specific program as a tool to explore the ideas of public space was effective. The Centre for Suburban Ecologies established certain parameters within which public space could be accommodated. One of the strategies explored was that of fostering collective re-

sponsibility for a site by engaging residents in the evolution of the site: the replanting of the Corridor as a community event, the explanation of fluctuating ecological processes at large and small scales; and the cycle of events which can take place in the plaza of the Centre. To speak of the effect that this would have on the community is admittedly speculative: it is impossible to create public space from scratch because active, meaningful public space arises out of the habits and actions of the people who use it. However, this thesis hopes that, in creating conditions which could accommodate multiple uses, a space or a building would be adopted and adapted for a variety of events and uses in the community.

The initial goal of creating the potential for collective public space was most strongly expressed through the examination of edge and of porosity. By bring dissimilar programs together, creating overlaps between them and by facilitating a degree of programmatic flexibility, various types of spaces and relationships can be created. Further study might consider how these principles could be applied to other programs within the suburb.

The work here has attempted to suggest that there are multiple answers to suburban problems - neither land-use, nor building use should be singular. As city suburbs such as Mississauga expand to their limits, it is an opportune time to consider alternative ways of building and relating to the landscape, and to each other.



## APPENDIX

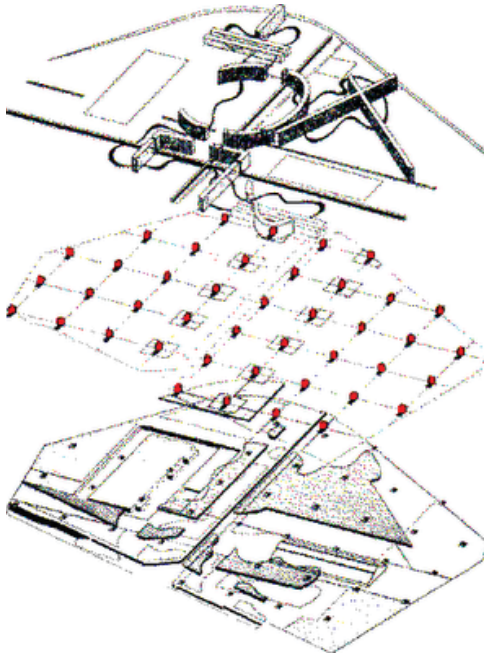
### Precedents

#### Landscape: Park De La Villette

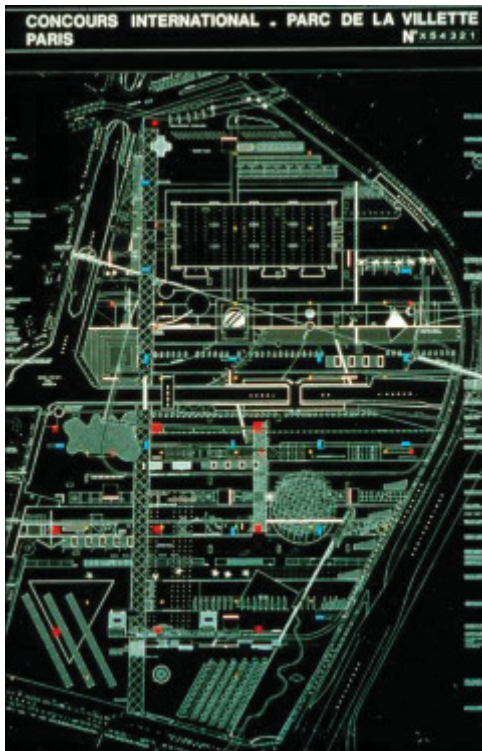
##### *Strategy 1: Bernard Tschumi*

Key influence: Strategy for maintaining overall coherence of a large site through theme and variation. He states:

Rejecting the idea of introducing another mass, even of a linear character, into an already encumbered terrain and respecting the extensive requirements of the program, we proposed...: to distribute the programmatic requirements over the total site in a regular arrangement of points of intensity, designated as folies. Deconstructing the program into intense areas of activity places according to existing site characteristics and use, this scheme permits maximum movement through the site, emphasizing discoveries and presenting visitors with a variety of programs and events (Tschumi 1994, 13).



Bernard Tschumi, Parc de la Villette.  
From [escapsule.blogspot.com](http://escapsule.blogspot.com)



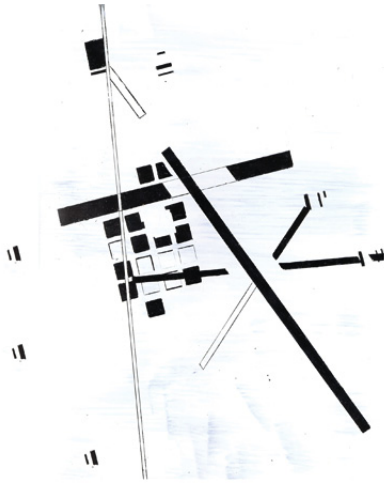
OMA/Rem Koolhaas, Parc de la Villette  
Proposa;. From [www.oma.eu](http://www.oma.eu)

##### *Strategy 2: OMA/Rem Koolhaas*

Key influence: Strategy for generating an urban park over time, by “combining programmatic instability with architectural specificity”(OMA/Rem Koolhaas).

The proposal consists of five key points: 1) Distribution of program in horizontal bands across the site to create a continuous atmosphere in its length and perpendicular, rapid change in experience; 2) Distribution of facilities such as kiosks, playgrounds, barbecue spots, mathematically according to different point grids; 3) Nature as an architectural element. Eg. the addition of a “round

forest”; 4) Connections; 5) Superimpositions (OMA/Rem Koolhaas).



Brown and Storey Architects. Downsview Park. From [www.browncandstorey.com](http://www.browncandstorey.com)

### Urban and Natural: Downsview Park Proposal, Brown and Storey

Key influence: Open space can become public space by strengthening the relationship to adjacent neighbourhoods.

Brown and Storey’s proposal for Downsview Park attempts to achieve this by

localizing responsibility over the various ‘chunks’ or ‘patches’ of neighbourhoods and park spaces that, through adjacencies and relationship, will establish “frameworks for dynamic relationships, behaviour and self-organization (Mitchell and Van Deusen 2001, 111).

### Landscape and Building: Novartis Car Park, Foreign Office Architects



Foreign Office Architects. Novartis Car Park. From [www.f-o-a.net](http://www.f-o-a.net)

Key influence: formal strategy derived from the interaction of various systems (structure, circulation, nature), and their effect on each other.

According to Jodidio, the project bridges the natural and the artificial:

Rather than simply place a picturesque park on top of a conventional car park, our ambition is to produce a new composite...the Thick Park, where features of each organization are used to enhance the other organization, [resulting in a project that] is produced as an extension of the urban ground, constructed as a systematic transformation of the lines of the circulation diagram into a folded and bifurcated surface (Jodidio 2006, 102).

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