

**The Emergence of a Superstructure:
Griffintown's Revival Inspired by Surviving Industrial Artifacts**

by

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

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ABSTRACT

Montréal's Griffintown is a neighbourhood facing multiple transformations. Formerly a working class district gathered around warehouses and industries based along the La-chine Canal, it is home today to various avant-garde artistic groups. It is simultaneously under pressure of rampant condominium redevelopment. This thesis explores a means of reinforcing the identity of the area based on the re-use and celebration of existing, industrial artifacts.

Existing infrastructure is examine as a potential host for related programs of renewable energy, recycling, waste treatment, and urban agriculture, thus Acting as a means to re-generate a public engagement with public utility processes.

The rail viaduct in particular is explored as a means of incorporating both a new public utility as well as remaining an existing means of public transportation. The architecture of this new urban armature extends to engage with two buildings of great heritage and cultural value, both in need of being preserved and valorized before it is too late. These buildings have the potential to become urban anchors and community landmarks, particularly in conjunction with development of adjacent urban plazas and landscapes.

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CHAPTER 1: INTRODUCTION

Griffintown is a neighborhood of great potential and is located at the edge of Montréal's downtown core. Industrial complexes, workshops and workforce housing once constituted this very busy district, providing density and buzzing activity that has since vanished. This condition is particularly striking along the border of the transit infrastructure that was implanted to connect greater Montréal to the city core.

Within the industrial past we may find clues to the potential of this area as an engine house for the surrounding district and as a place to manage and produce the inputs and output of urban life cycles. Inspired by the role of the New-City Gas complex in the light revolution of Montréal, the utilitarian aspect of the project is central to the theme of integrated cycles. This is supported by the observatory aspect found in the deteriorating CN wellington station on the edge of the Lachine canal.

These two points along the elevated CN railroad tracks leading to the Bonaventure central station have the potential for strong public space: celebrating history through interpretation, understanding and the *requalification* of precious structures.

Integrating industrial function closely related to the surroundings that they support is focusing the project on the relationship of diversity in uses of urban spaces. Building on the possibilities that sustainable alternative can provide cleaner waste treatment processes in order to support and balance the imminent densification of Griffintown.



Photograph exemplifying the relation of Griffintown (left part of the picture) to the Lachine canal and Montréal's downtown, From Société du Havre de Montréal, 2005.

Site Reading Stratification



Undesirable Attention (crisis)

I use the term [crisis] with reference to historical situations where it is possible to perceive fractures dividing the consciousness that architecture, the arts and culture have had of their own identity and the task specific to them.

(de Solà-Morales 1996, 4)

here is the hypothesis that the history of architecture...is marked by a series of critical episodes, some of which have parallel crisis in economics, politics and society.

(de Solà-Morales 1996, 4)



Abstract model showing future developments.

Crisis 1: Developer's Pressure

The district of Griffintown is now becoming the main centre of development proposals and of active land speculation in Montréal. Many projects have appeared, some with the approval to go into the first phases of construction. Most of the projects lack strong contact to the neighborhood of Griffintown. Their only aim: grabbing this exquisite urban location and its incredible views to the downtown and canal Lachine.

The limitations of the proposed typology and the lack of urban support to mitigate these projects to their immediate surroundings is alarming.

Future Negative

It results in a disrupted juxtaposition, the emergence of a counter culture and interesting small artistic community afforded by cheap housing reinforces the importance of cultural diversity commonly ignored in most residential projects pushed by promoters. Suddenly these small groups of great cultural importance become threatened by the economic pressure and the unfortunate and seemingly unavoidable gentrification of their neighborhood.

Crisis 2: Urban Renewal

An eraser attitude, or systematically removing everything to build anew, has a very important environmental impact and is incredibly expensive in terms of cost. On a large scale it requires important studies, consultation and a long construction/demolition process that hinder the quality of life for the district inhabitants during these periods. The demolition of the Bonaventure Highway to create a urban boulevard and residential buildings is a change that does not hold much of an improvement to something that has more potential and character.

Should we erase the mistakes of the past or grow from them?

Urban Development as Political Overlap

It is even more important to advocate for the need of immediacy in urban interventions. Strong plans of interventions guide the development over longer periods of 10 to 25+ years, but actions should take place in one to three years lapses. This way politicians execute something over one mandate and greater plans outlast their elections.

Constantly improving small parts to progressively morph critical urban conditions is important to provide a diversity of interventions and a better relation to the immediate context. Adding on progressively as medieval cities would, just as Griffintown did evolve over time.

This approach reinforces the importance of gathering grounds and community 'hearts' building. Where an iconic or representative building acts as the pivotal point; an intensification of activity in the city.



Proposal drastically transforming the urban landscape
architect Eric R. Kuhne
CivicArts (London-based firm)



“District Griffin”
Devimco promoters scaled down proposal after strong opposition from the district residents.



“District Griffin”
Devimco promoters scaled down proposal after strong opposition from the district residents.

The construction of the Devimco proposal is not compromising the implementation of the system proposed in this thesis. It is even potentially activating the proposal by augmenting the numbers of inhabitant in the district. Their presence justify the need for better output management. The success of the Devimco proposal depend on the quality of the realization, but the creation of public space has become more important against the privatization of this very important place in the city.

CHAPTER 2: THE OPPORTUNITY OF PLACE

Sightlines

I & II : Views from the rooftops of the New-City Gas complex.

III : View of the Peel Bassin from the 2nd level entry way of the CN Wellington station.

IV : Rotating Bridge on Lachine Canal

V & VI : Views IN and OUT of the downtown along the Bonaventure Hhighway



I.



II.



III.



IV.



V. photo: Julien Roumagnac



VI.

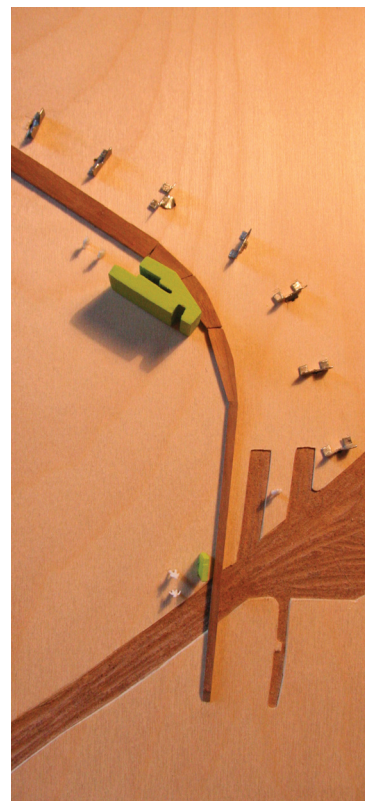
Identity

Place should have a clear perceptual identity: recognizable, memorable, vivid, engaging the of attention, differentiated from other locations.

(Lynch 1962, 225)

Historical identity sporadically reveals itself from the many artifacts remaining on the site, from cranes to bridges to trusses and buildings. The project will draw on these to inform its components and their placement on the site.

One of the most remarkable artifacts is the New-city Gas complex which has retained all of its glory despite poor care and the mutilation caused by the construction of the elevated railroad.



Abstract model locating the two key heritage buildings.



Photographs of the New City Gas complex in its actual condition.

The complex was built in sequence through 1848-1859-1861. John Ostell, architect, urbanist and promoter, was responsible for the design of the two oldest building still standing today, recognizable by their raised lantern roof and the impressive brick arches resting on stonework foundations. Ostell's architectural style evokes the monumental *prestance* of religious construction.

The degradation of the building envelope is alarming, but the complex has retained its main material characteristics. Unfortunately, it is slowly crumbling under the years of negligence and the lack of protection from the public authorities.

Similarly the CN Wellington building has an untold story. This building was the host of the boat and train traffic operators for the mouth of the Lachine canal, where it meets the Peel Basin. Connecting and disrupting the passage, orchestrating the traffic of this busy industrial sector of the city, its architecture had a singular presence on the canal, with this strange looking top floor projection, observing the action in all directions, there is incredible potential for amazing views of the basin, the downtown skyline, the trains and the canal. Its current state recalls a building standing up after a bomb blitz. It currently acts both as a street canvas for graffiti artists and a squatting place for the homeless.



Photographs of the CN Wellington building.

Perceptual territories should fit social territories, and visible traces of time should recall critical histories.

(Lynch 1962, 222)

Infrastructure

The overpowering presence of transit infrastructure has a monumental quality. Passing under these elevated roads is an intriguing experience and the scale relation to the pedestrians is so particular and can bring awe in the observer as much the giant pillar of a cathedral can.

Common lack of ambition tends to lead these spaces to become dumping grounds and informal parking space. This situation accentuates the sense of uneasiness one can feel when crossing this no-man's land: uninhabited, desolate and in a rebuked state.



Photographs of the infrastructure and the wasteland condition of this area.



Urban Scale

The site by its location provides the setting for a magnification of the entrance to city. The skyline is part of the first impression that many visitors and travelers have from train and car windows driving towards Montréal's downtown. The narrow strip between the two transportation axes is filled by dormant green spaces. Most of these unused spaces casually act as snow dumping areas throughout the winter, leaving these green areas deteriorated from the salt and calcium absorption. The connection of these green patches once reinforced has the potential to act as a situation connector for the various recreational areas bordering the canal thus becoming a green band reaching for the city core. This green belt could support park installations and favour the pedestrian movement in this area.



View toward the downtown and the mountain,
From Société du Havre de Montréal, 2005.



Abstract model showing the
alignment of the existing
vegetation.

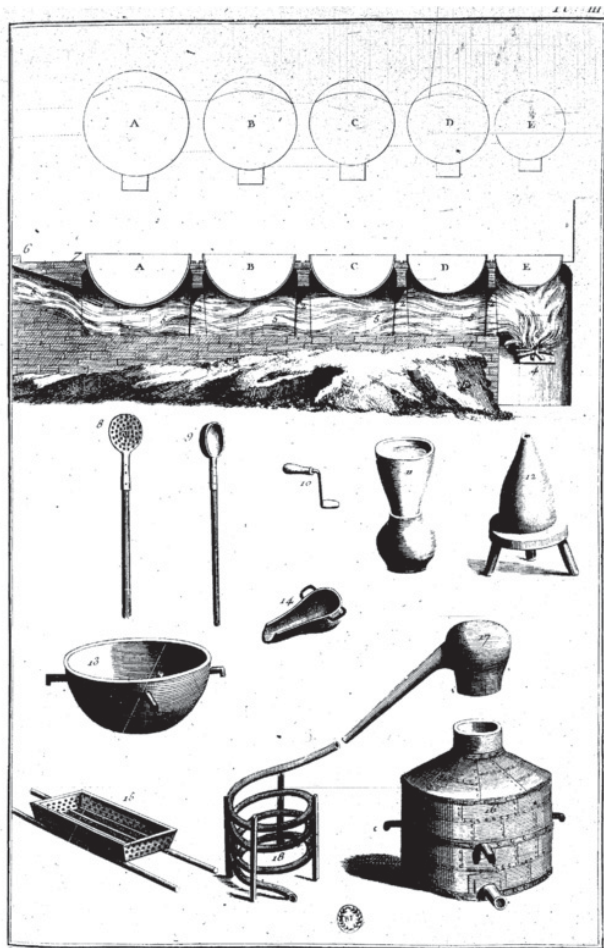


Abstract model displaying
the vacant strip between
the neighbourhoods and
the passage under the
elevated railway.

CHAPTER 3: INTERVENTIONS

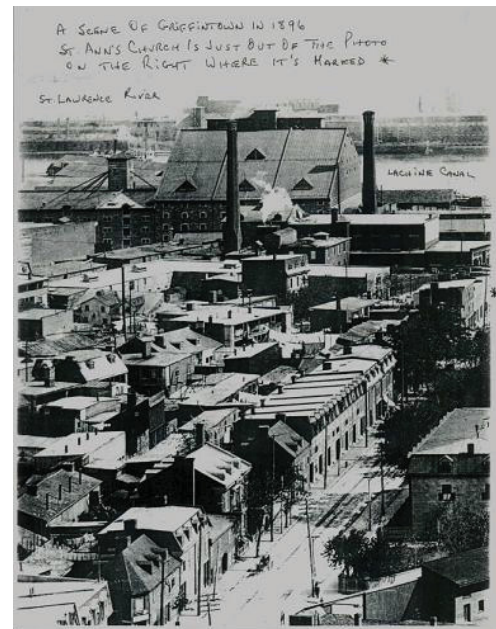
Stance

The industrial heritage of the neighborhood should not be negated by the new development proposals. Therefore, this proposition evolves around the creation of a processing plant within the city, that will serve the neighborhood and facilitate research for future implementation of more sustainable solutions to waste management. One design objective is to provide public spaces within this facility that educate the people on how such installations are crucial in the development of cities and the needs of the future.

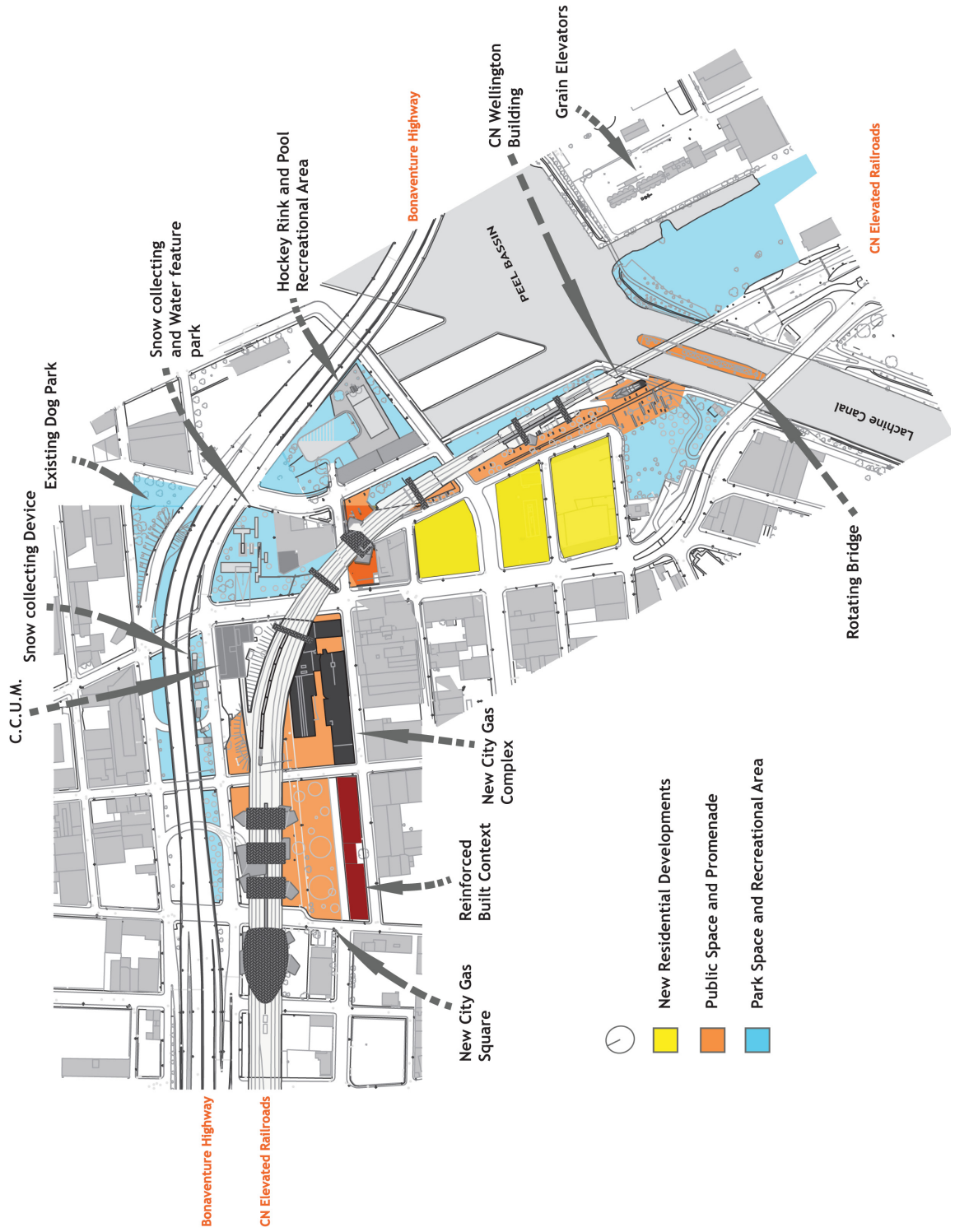


*OEconomie Rustique,
Sucrière.*

Example of process, From Encyclopédie de Diderot, 1751-1772.

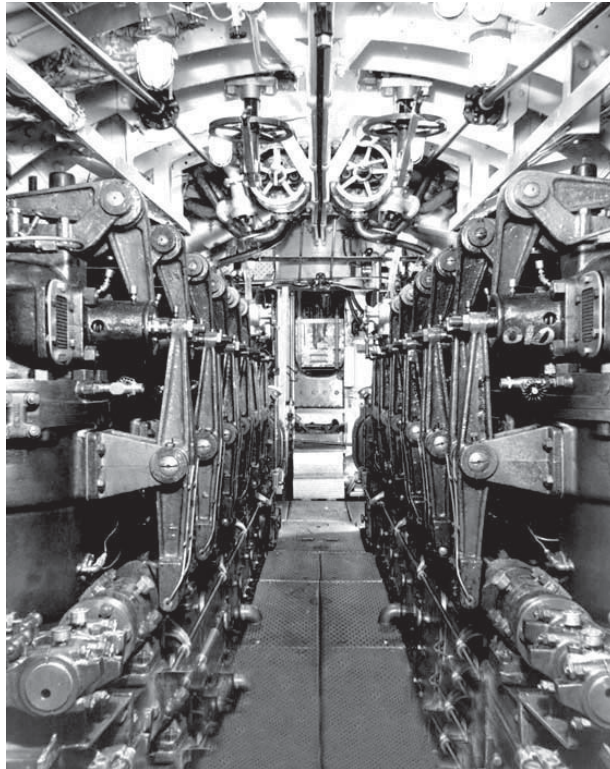


Scene of Griffintown, Flanagan, 1896



Engine House

The industrial heritage has the 'potentiel évocateur' to revive this city's memories and create an added value to the future metamorphosis of the sector. With further programmatic installations, the proposed project could regain its title as the engine house of the city. In the project, the industrial processes would be combined with research and development in order to provide solutions for a more sustainable future. Visiting such an installation could exemplify the complexity of the system and also be an educative institution for the grand public.



Engine room of the USS O - 8 (SS 69),
From Russell McKechnie collection, 1942.



Abstract model exemplifying the processes locations and purifying nod along the water flow in the public places.

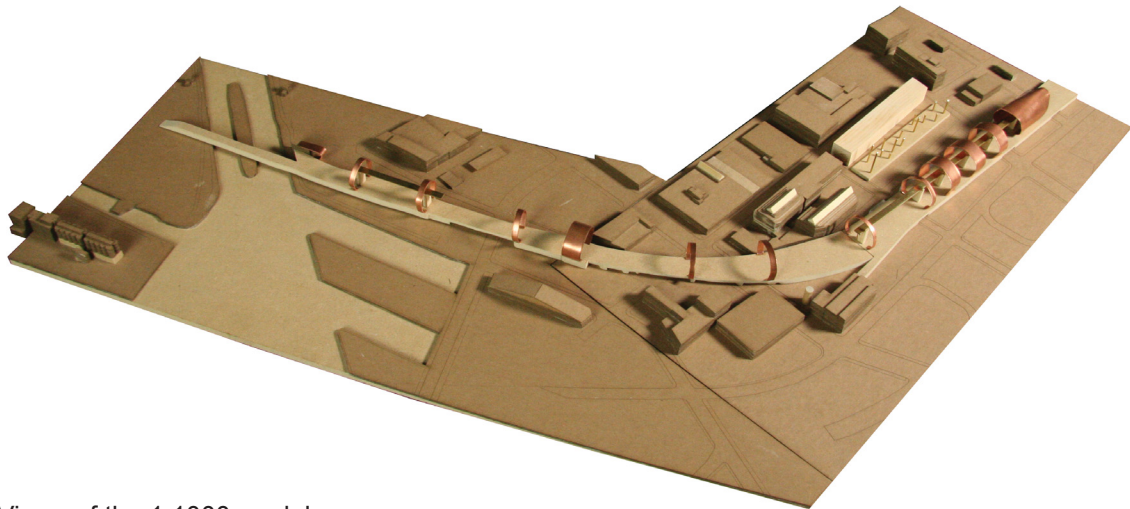
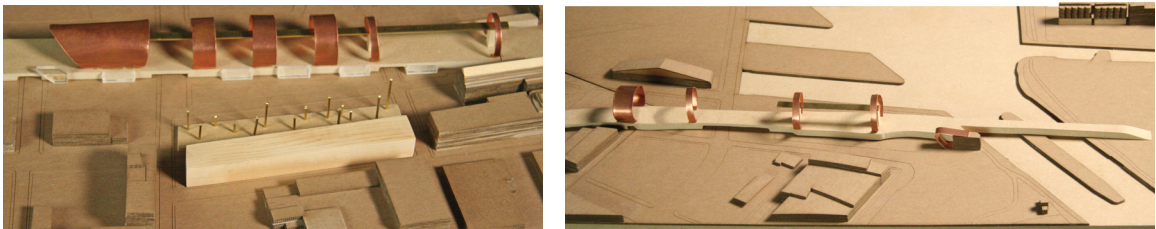


Abstract model of the superstructure enveloping the elevated railroad.

Emergence

Above the Industrial Wandering

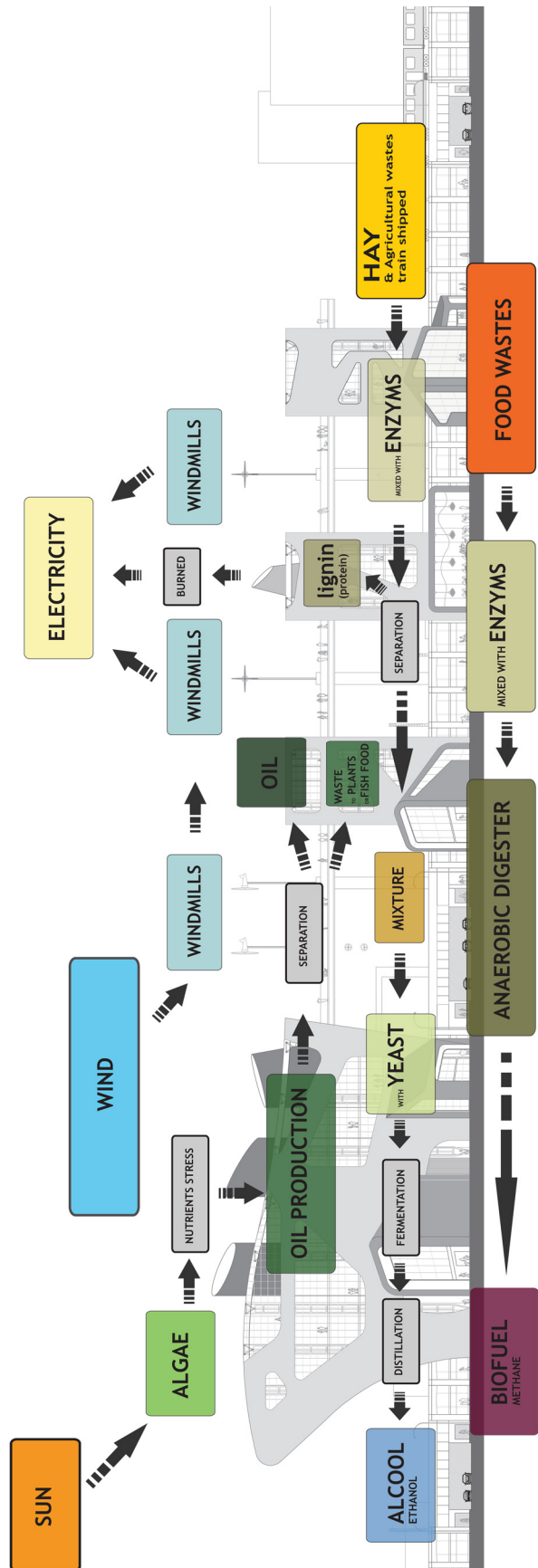
The intervention takes hold on one of the most disregarded places in the district, the elevated railway. The reuse of the existing space beneath the railroads combined with a superstructure enveloping the whole. This move creates a new level to the cityscape and provide this landmark presence that emerges from the neglected spaces. Inspired by all the industrial artifacts laying around the site. The integration of the whole becomes a space of contemplation on the city's industrial past, present and future.



Views of the 1:1000 model

Visual Climaxes must correspond to the most intensive or meaningful activity locations; the principal sequences should be along the important lines of circulation.

(Lynch 1962, 222)



ENERGY CYCLES

PRODUCING ENERGY FROM VARIOUS SOURCES AND WITH DIFFERENT PROCESSES

Sustainable Food Cycle

Closed loop cycle processes the waste output into input for another use and reduces overall waste.

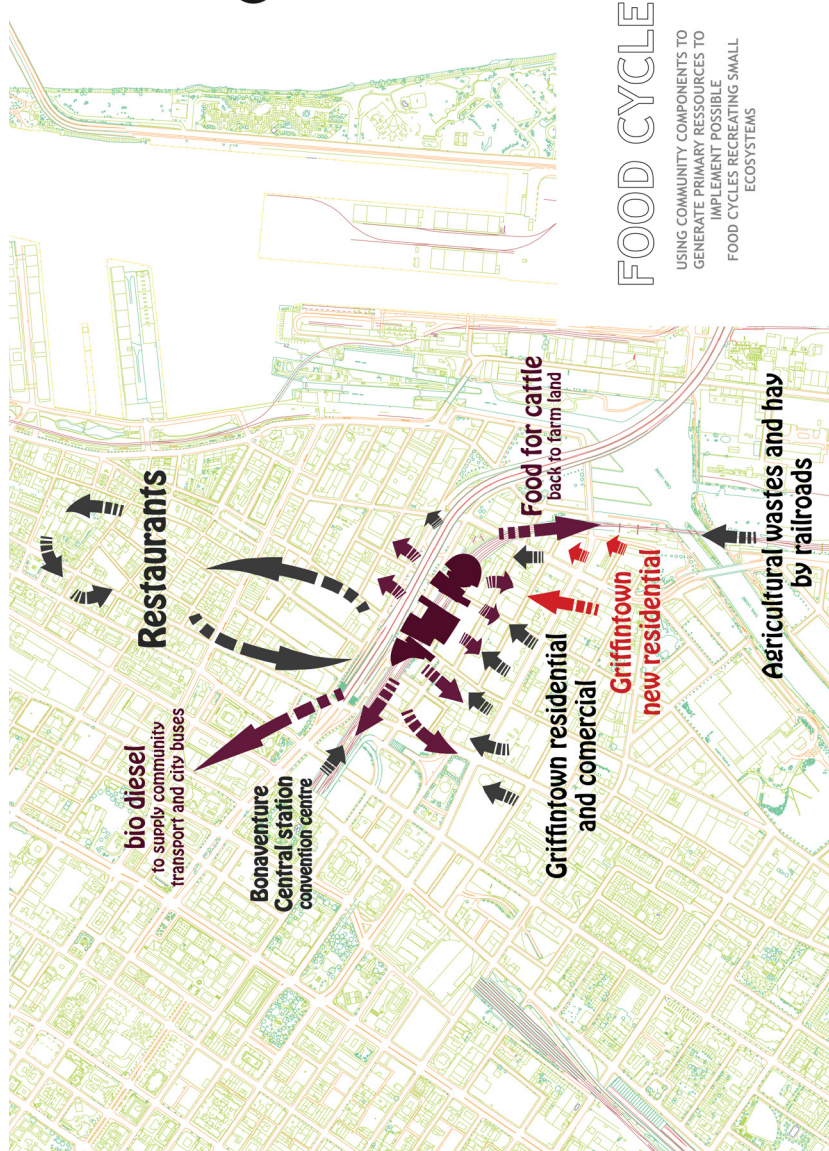
The surrounding area hosts many restaurants and the proposed institute would be directly linked to the Bonaventure convention centre. Since very few composting initiatives are in place in the city, the project will recuperate food waste to transform it into energy with anaerobic digesting and composting. The compost, in turn, is fed to worms that multiply and can be used as food for a system of aquaculture. The aquaculture is interesting, because it grows fish that can be sold back to the restaurants themselves. The aquarium becomes a place of discovery and an attraction for visitors. In the same manner, coffee grounds from the cafés can be used as a growing substrate with good nutrients for mushroom culture. This operation takes place within the darker areas of the building. The used grain from the production of beer can be used for mushroom culture, feeding fish and cattle. While people enjoy their beer at the brewery the fish in tanks eat the by-product. The relations of the program components can bring an interesting interior design relationship between spaces. The decor becomes an active component of the life cycles.

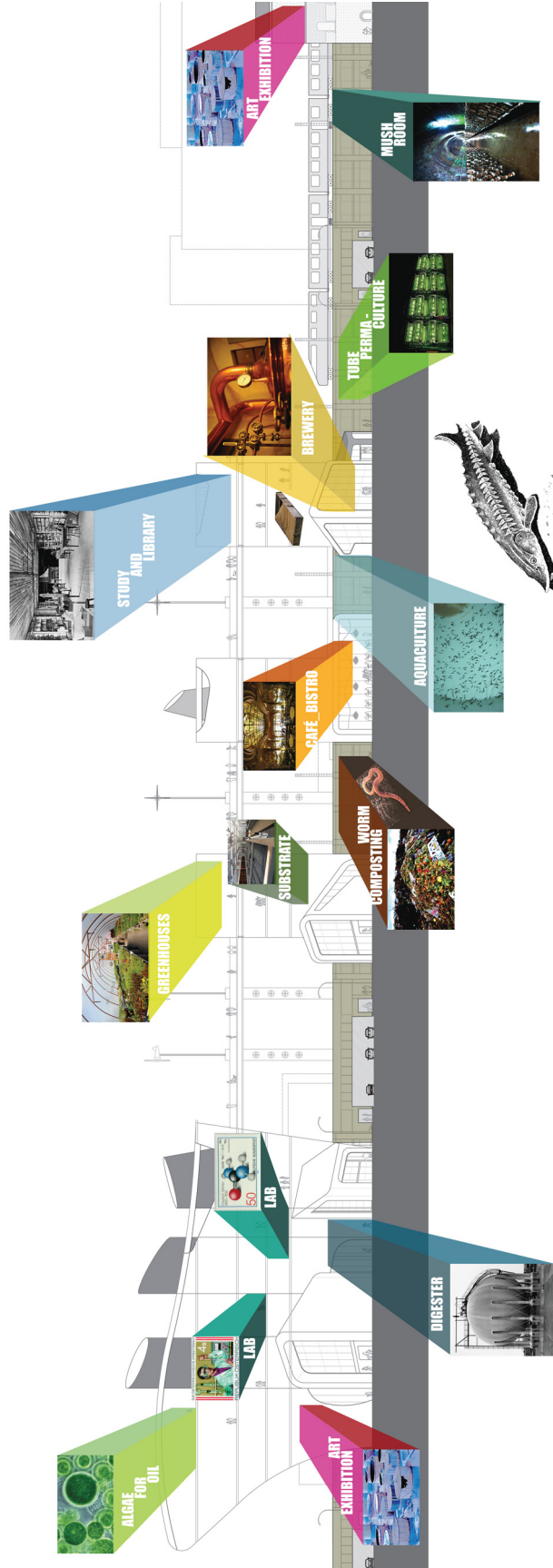
Actions are more constructive when informed by an idea that fits into a larger understanding of ourselves and the world.

(Wood 2005,16)

...the environment has part to play in the intellectual, emotional, and physical development of the individual...

(Lynch 1962, 227)



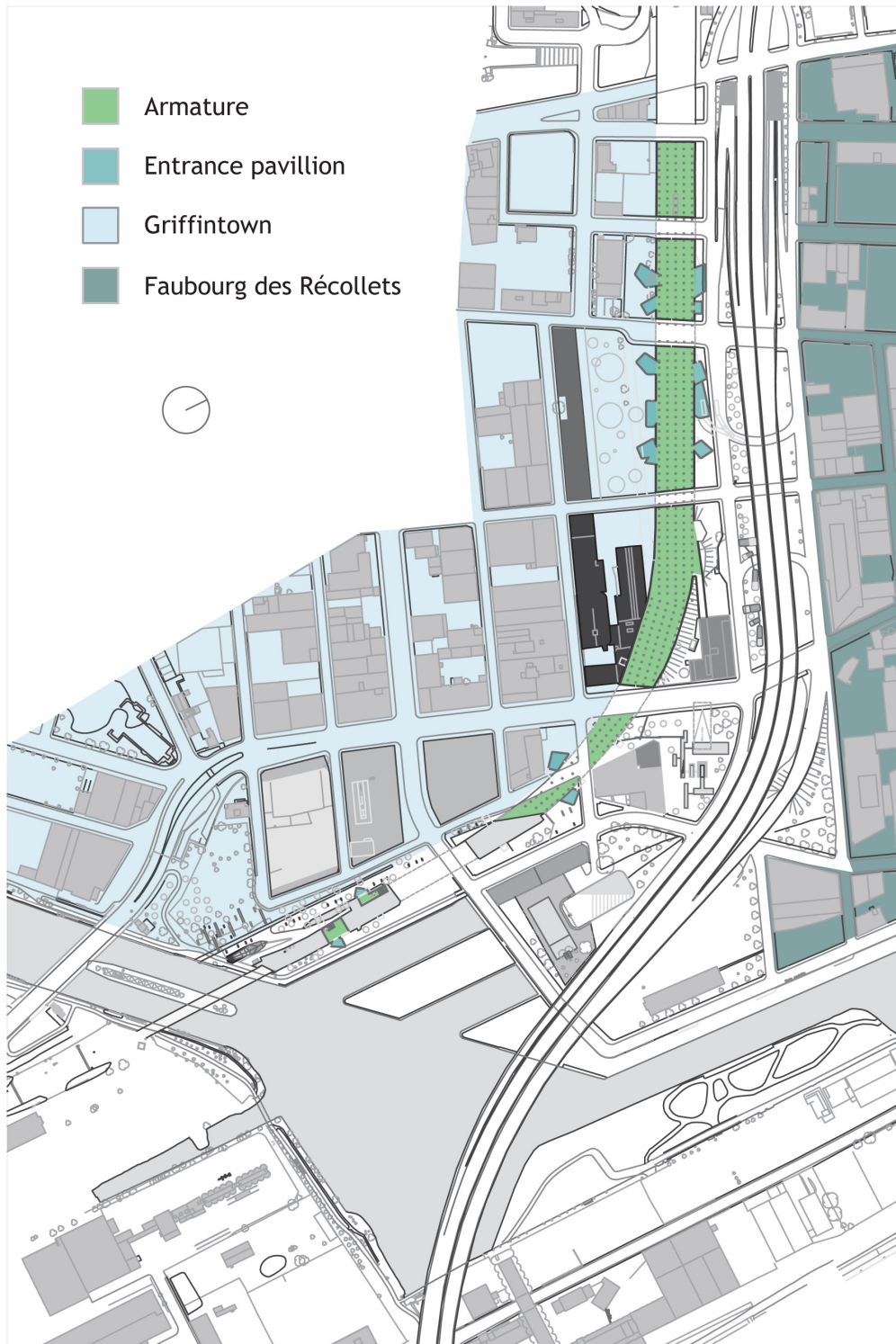


PROGRAMMATIC

PLACING THE PIECES
and PROCESSES

Armature

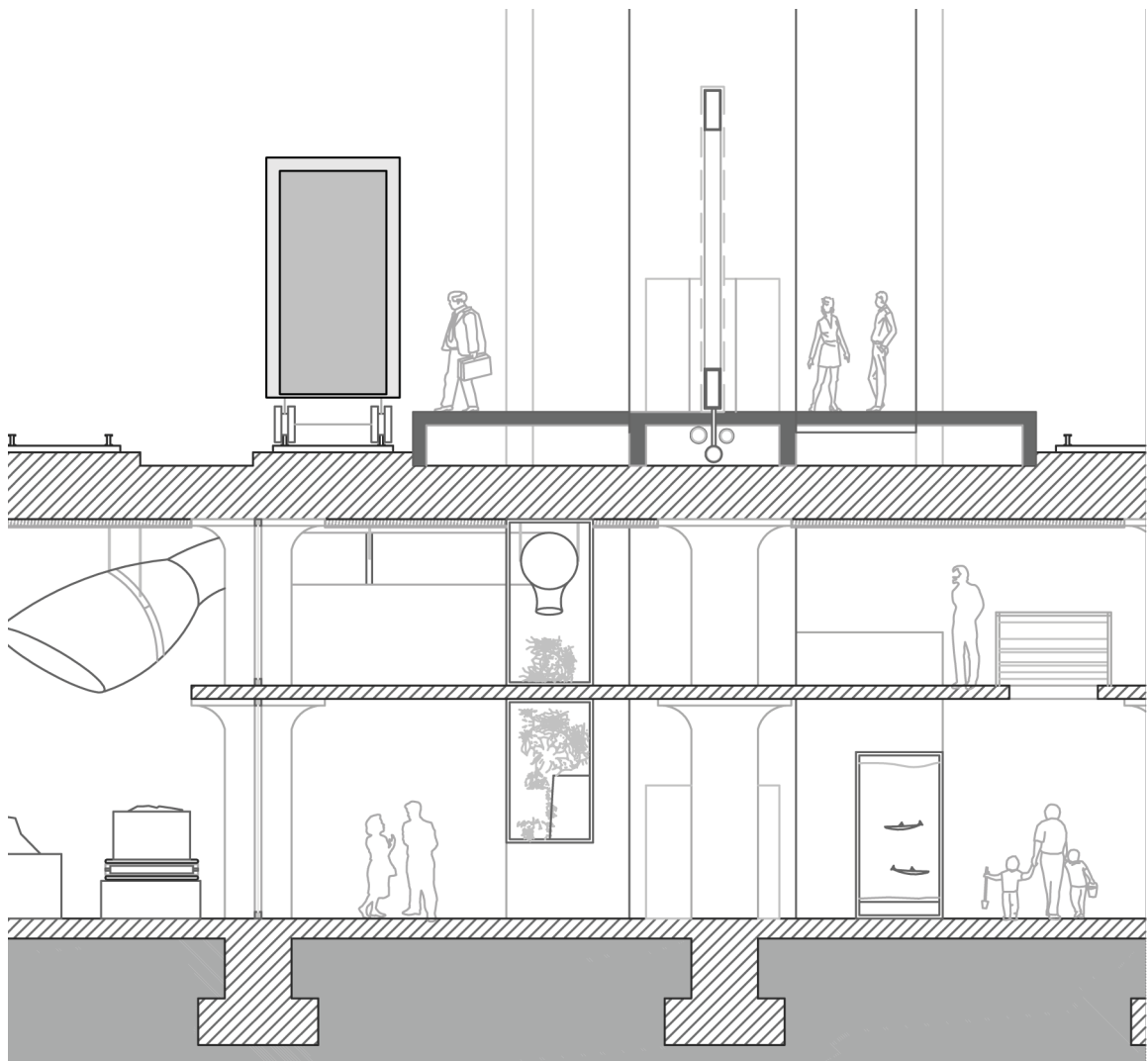
Weaving together both intervention and Griffintown's edge as a marked transitory moment in the city, the elevated railways becomes an armature for the implementation of the program: the city connector itself. Creating an anchor for all the interventions.



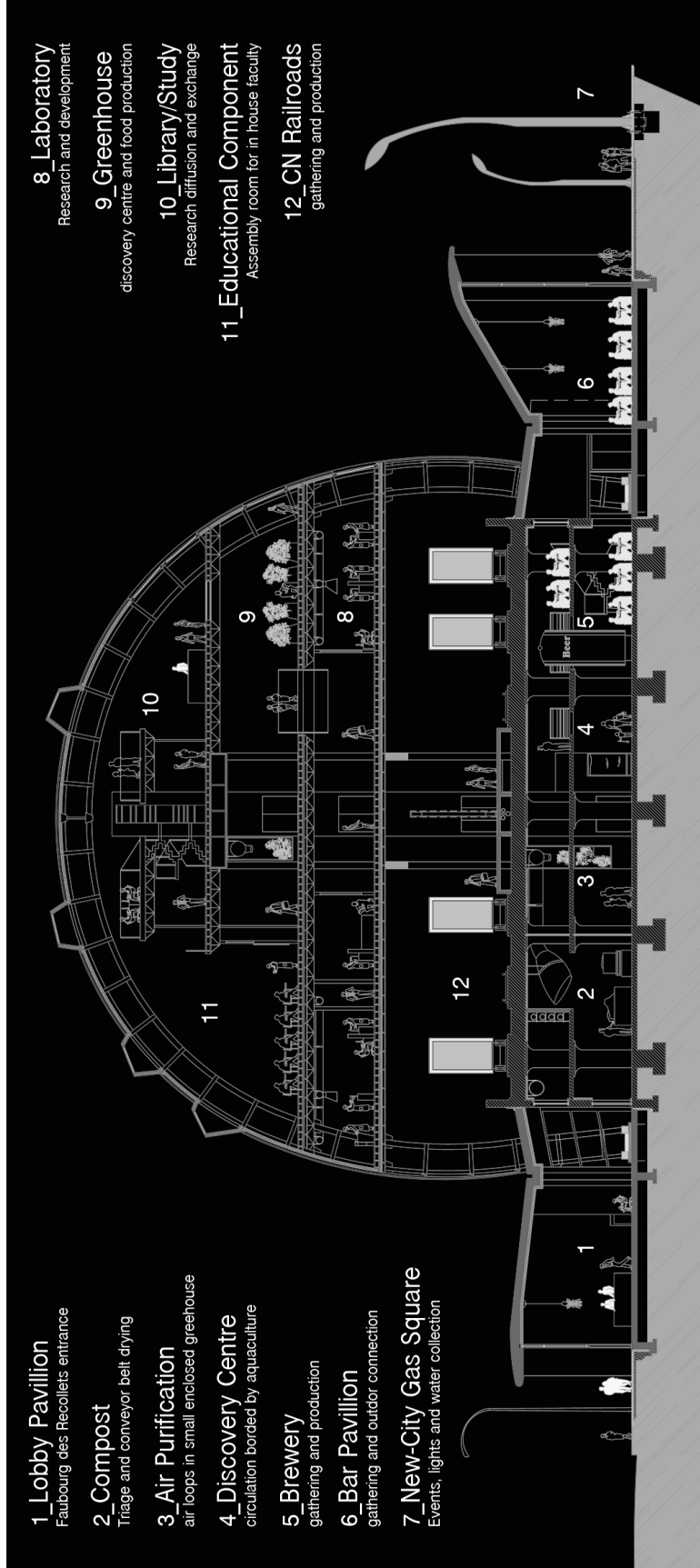
It will connect on a pedestrian level by opening space inside of the armature to the street. It will provide connection to the upper part of the superstructure. Eventually it will become an organ of the city infrastructure by hosting several processes of management: water, waste and energy for the adjacent expanding and densifying residential developments. The juxtaposition of program within the armature is part of the overall promenade and educational adventure in the building: creating opportunity, gathering spaces and magnifying the steps of treatment and production.

An educative environment would visibly encourage attention and exploration, particularly when the observer is not task-oriented.

(Lynch 1962, 227)



Close relationship of the program, processes and circulation.



1 Lobby Pavilion

Faubourg des Recoillets entrance

2 Compost

Triage and conveyor belt drying

3 Air Purification

air loops in small enclosed greenhouse

4 Discovery Centre

circulation bordered by aquaculture

5 Brewery

gathering and production

6 Bar Pavilion

gathering and outdoor connection

7 New-City Gas Square

Events, lights and water collection

8 Laboratory

Research and development

9 Greenhouse

discovery centre and food production

10 Library/Study

Research diffusion and exchange

11 Educational Component

Assembly room for in house faculty

12 CN Railroads

gathering and production

Superstructure

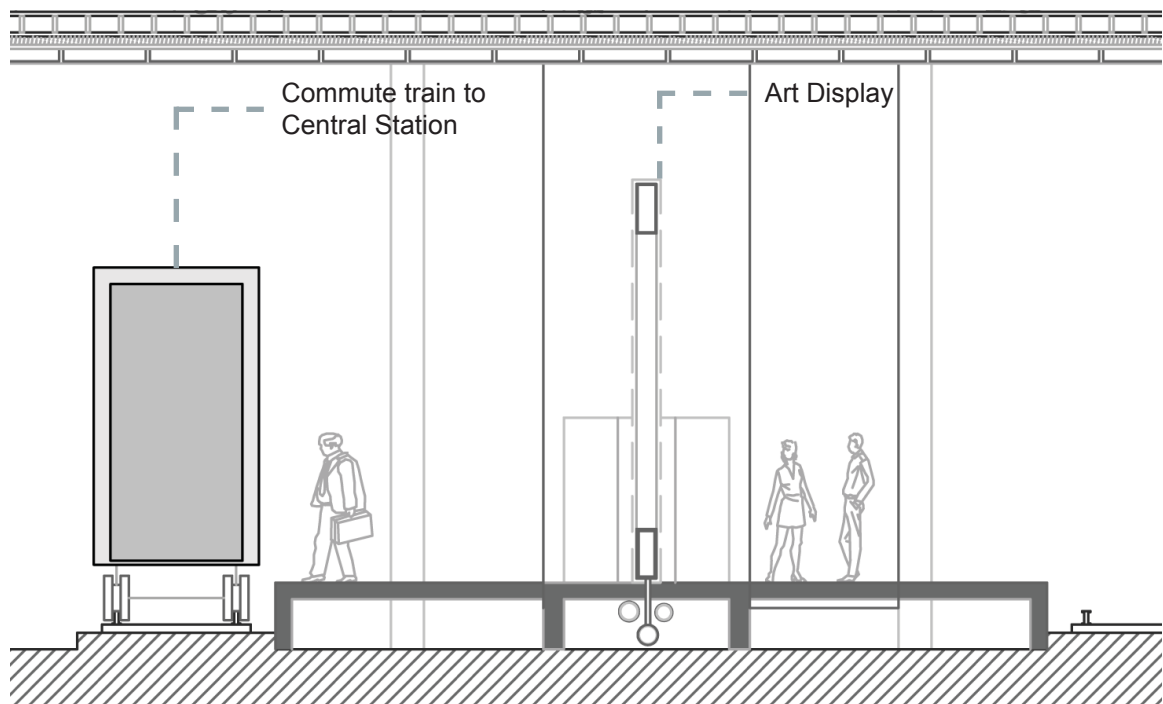
Recongnizability of prominent points, lines and edges make orientation possible.

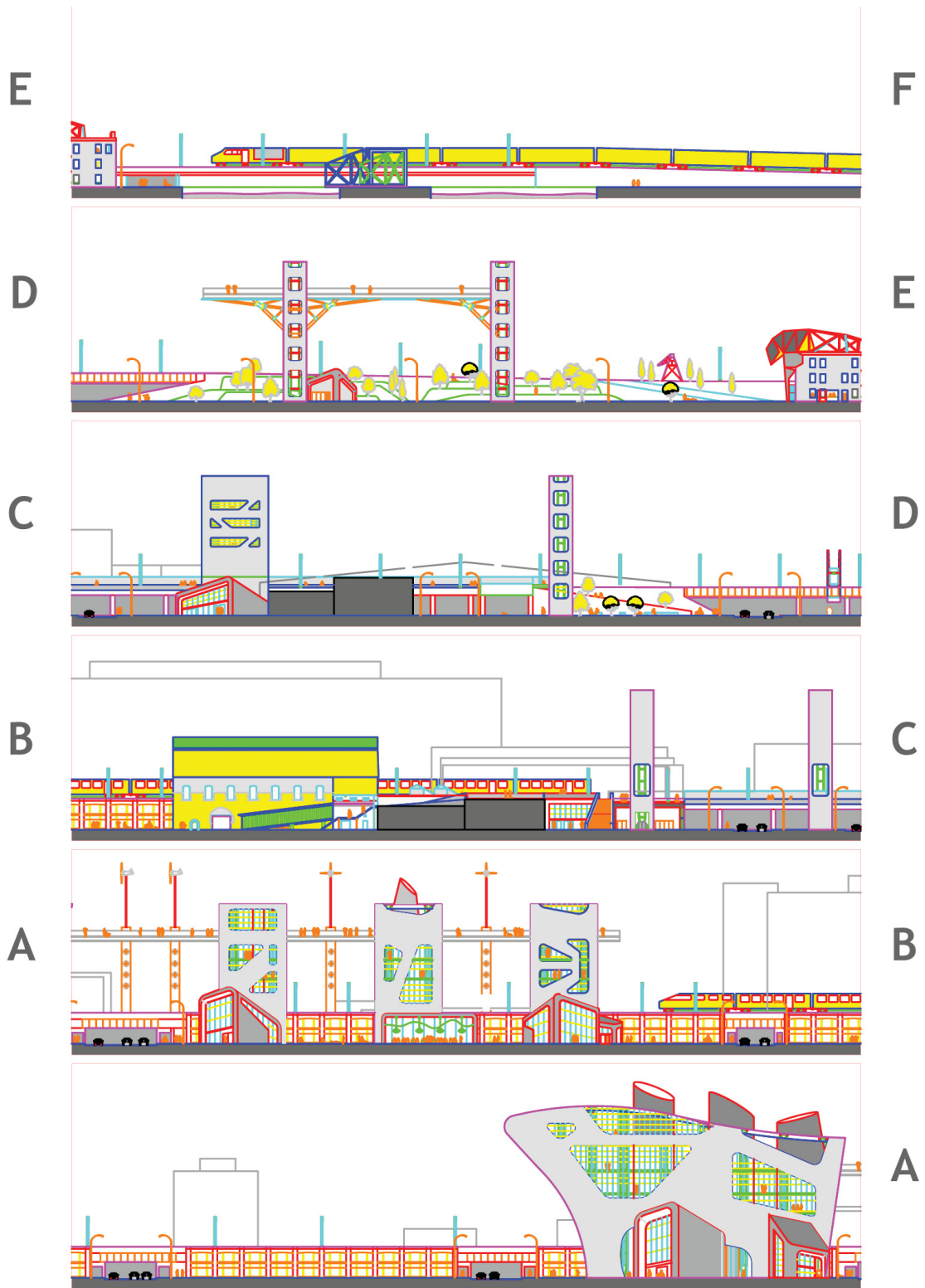
(Baljon 1992,67)

The superstructure provide servant spaces for the processes taking place in the armature. The processes gain importance by the juxtaposition of working office space, research laboratories and the display of the mechanical core system. Several important parts of the processes are located in the superstructure. The upper floors are host to greenhouses for fruit and vegetable growing as well as the algae lab. The greenhouses need stronger support, but the algae can be suspended in plastic bags cells that can distribute the load.

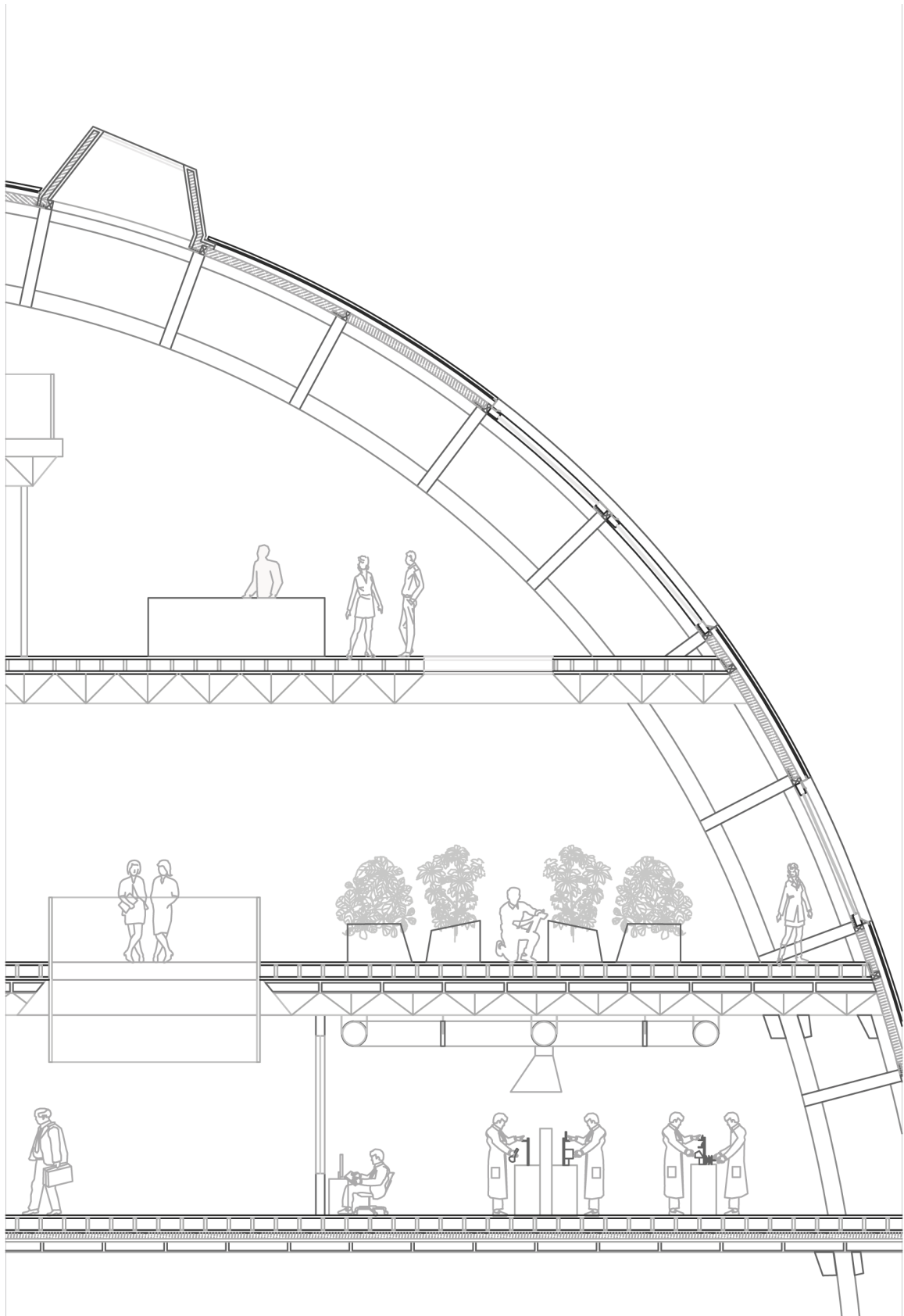
An elevated promenade links the higher floors of the different parts of the superstructure, providing views to the city from unprecedented angle and height. The elevated promenade passerellas link a series of windmill towers providing electricity to the whole complex.

A sustainably fueled train shuttle would link the new public square of the New-city gas complex to the city core. A series of station platforms inside the superstructure would act both as waiting areas and exhibition support for larger diffusion of the overcrowded art vaults of the MACM (Musée d'Art Contemporain de Montréal).





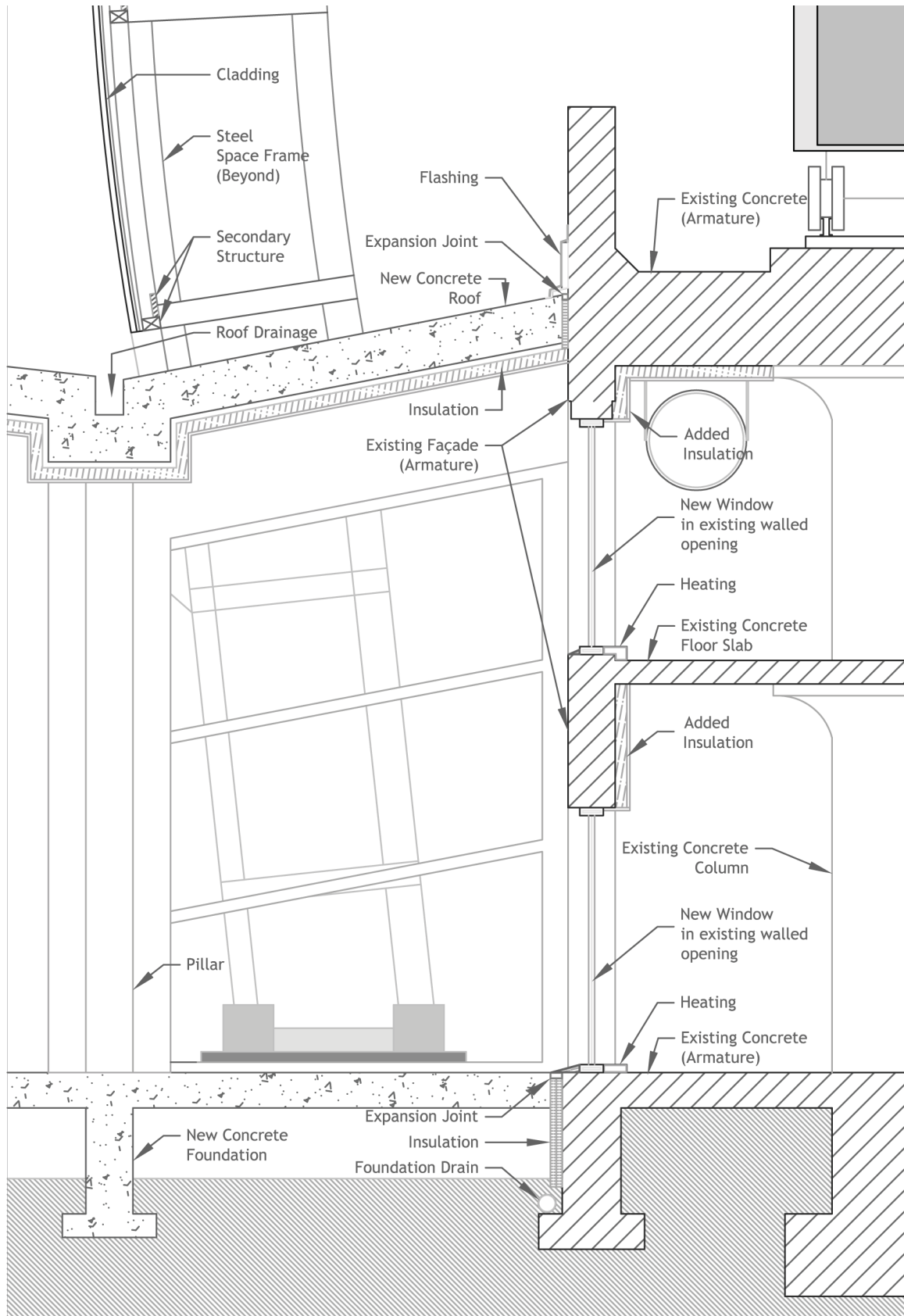
Continuous elevation of the project separated in 6 parts.



Superposition of programs in the superstructure.



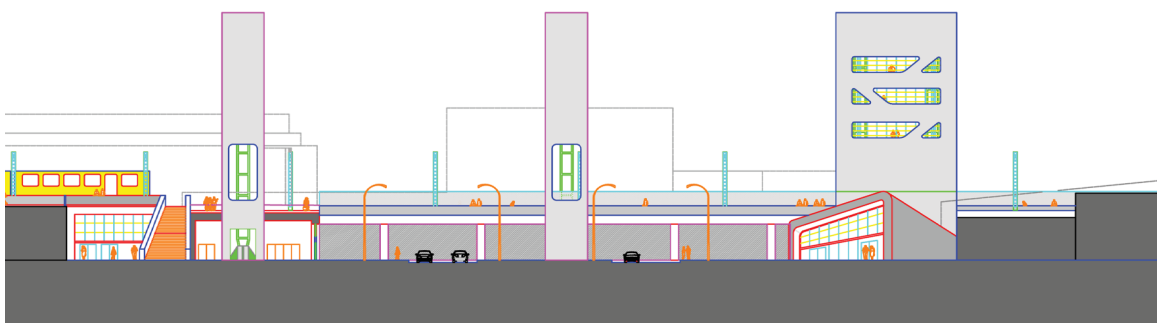
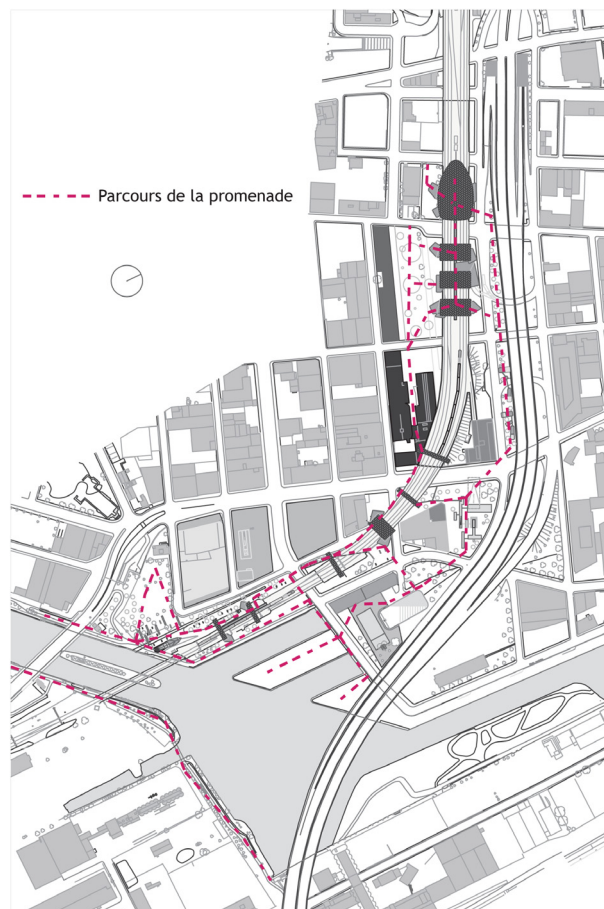
Model of one structural member of the superstructure and its distance from the armature.



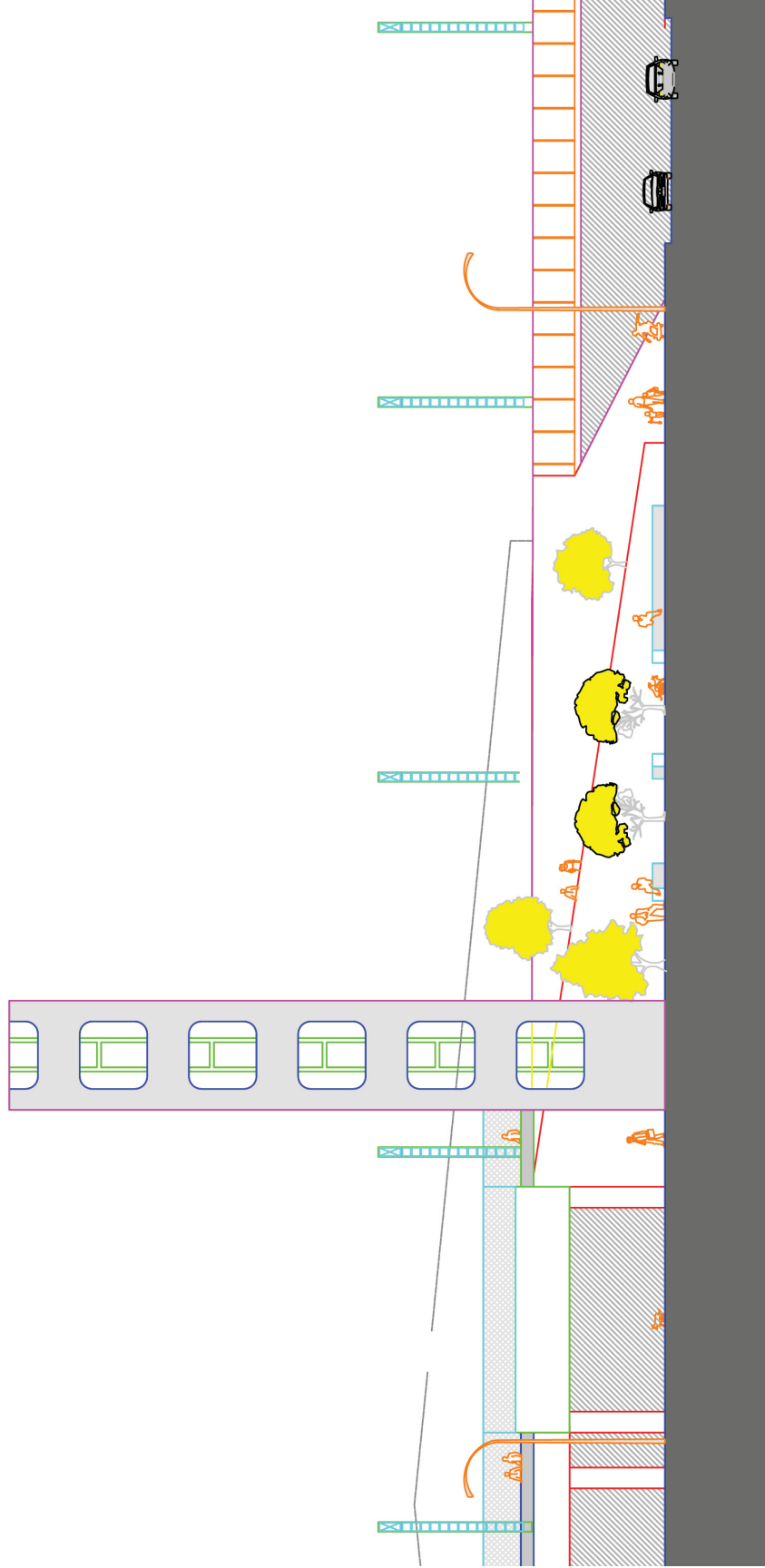
Detail of the connection between the new entrance pavilion and the existing armature.

Promenade

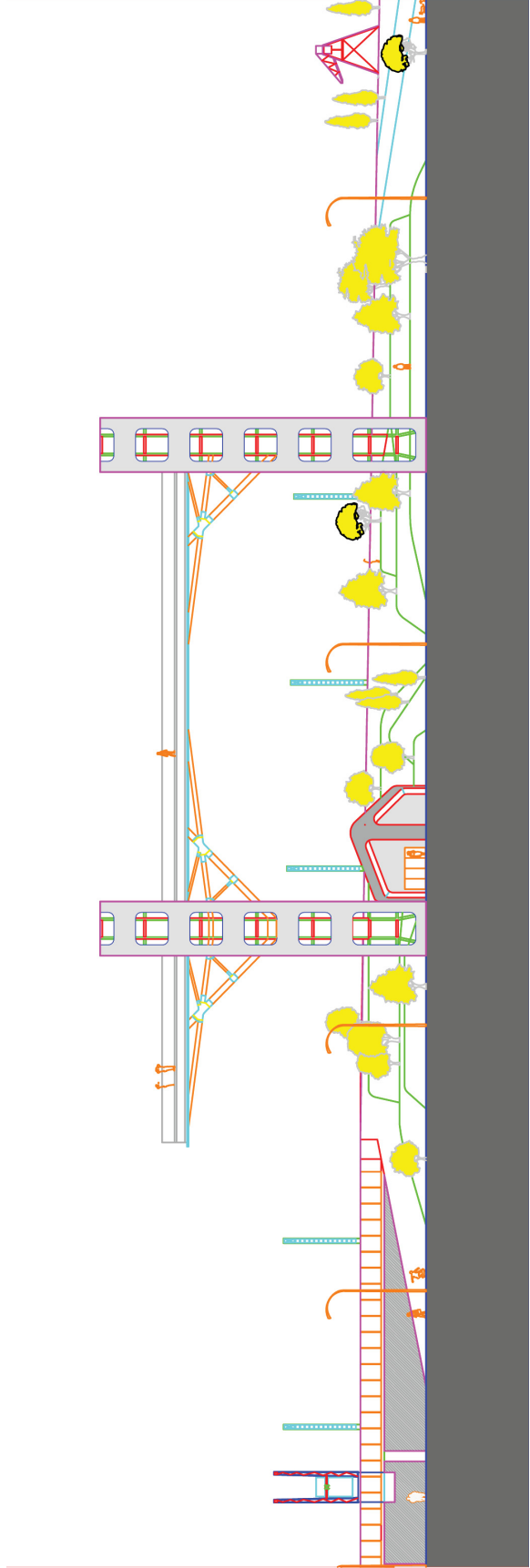
The whole program links and expands itself throughout the promenade. It connects the superstructure rings and their elevated promenade and the green spaces to provide new passages and routes for the city's wanderers. Connected by viewpoint, belvederes and informal spaces it is punctuated by the industrial artifacts. At times setting up a distant view on them or bringing us closer to the object, they become sculptural elements sparking the imagination of the observer or simply recalling distant memories.



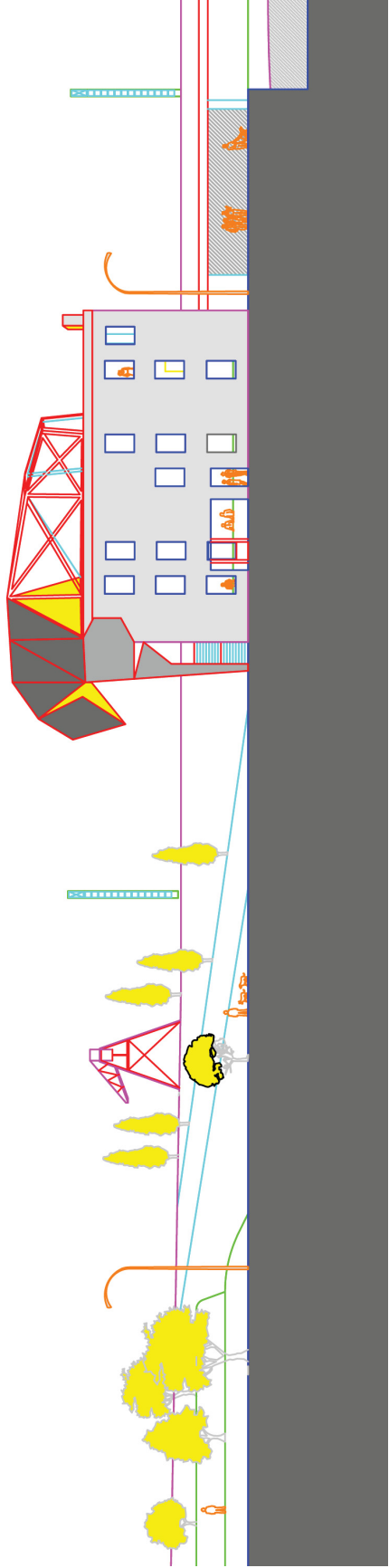
The water treatment linked to the New City Gas complex back entrance and roof access.



The transition point to go under the rails or continue at tracks level.



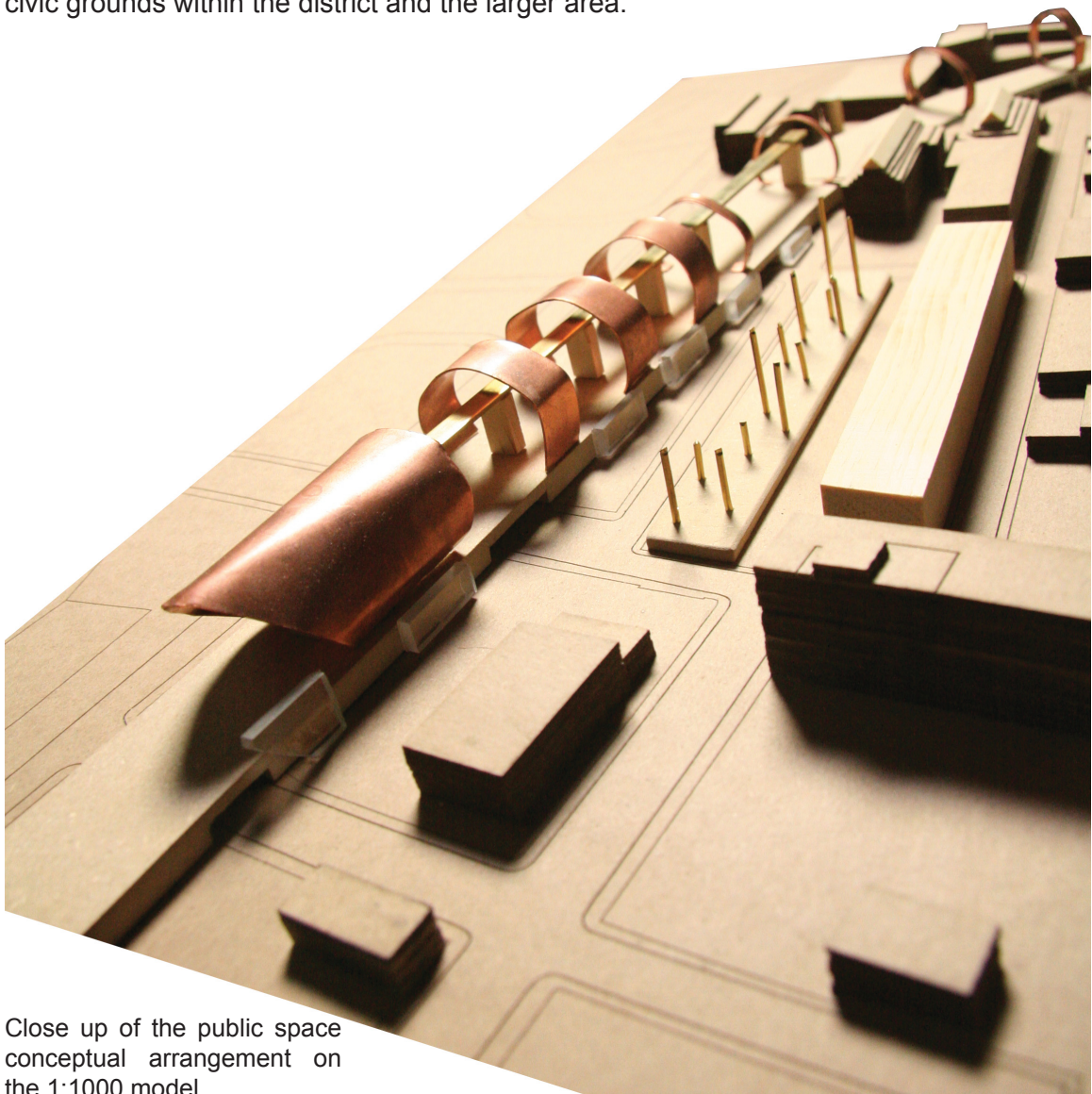
The Belvedere overlooking the Peel Basin and silos.



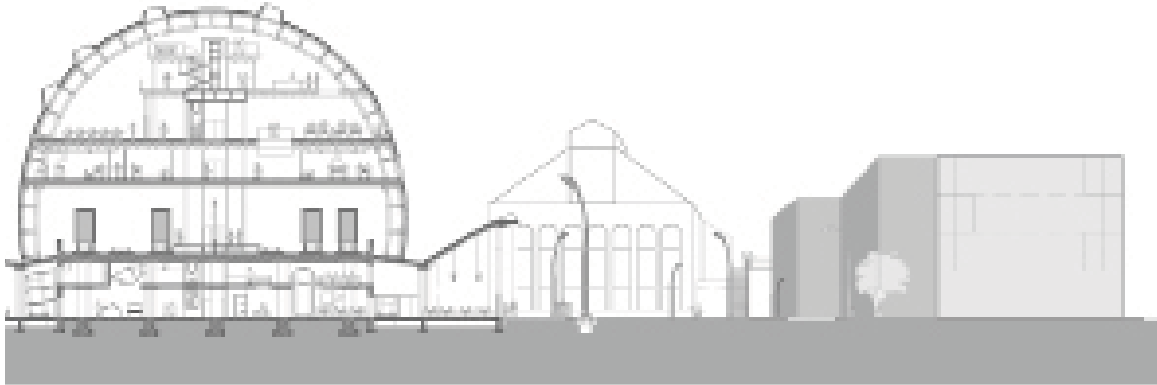
The CN Wellington lab and the old train crane on the elevated banks.

New City Gas Square (Public Space)

Providing a steadier built context around the empty lot in front of the New-City Gas complex would help define a public space for Griffintown. This location and its iconic building have the potential to activate the urban promenade and offer a strong base for a more united community. The New-City Gas could be transformed into a satellite for the MACM, but necessary renovations are mandatory for the whole complex. Parts of the building would act as an interpretation centre and information for the visitors. Community activities and gathering could take place in and around the complex to promote and valorize its significant history and the social impact it had on the city. The reconditioning of this city block serves as a turning point in the design and hopefully could hold a central place in terms of civic grounds within the district and the larger area.



Close up of the public space conceptual arrangement on the 1:1000 model



View from the public square towards the New City Gas complex.



View from the public square towards downtown.

Urban Forestry Lab

Canal Side Nod

Acting as Montréal's tree nursery satellite, this laboratory is dedicated to in-city experiments. Compiling information and evolving the resistance of the tree species and exploration of cross-breeds suitable for the harsh conditions to which they are exposed in polluted soil, shallow ground, draught, sulfuric and CO2 emissions.

It is the starting point of the superstructure, an intervention at the small building scale that propels the the rest of the intervention to greater dynamism.

This laboratory would be organized inside the abandoned CN Wellington building and a parasitic structure would act as a crane, marquee and green house as it sprawls off the roof. The tree plantation would extend from this point on the side of the canal all along the grass banks of the elevated railroad.

On the ground floor, a bar would perform the link between the building and the public space in front of the canal the whole bordered by the now static turning bridge. Events and Special occasions could activate the bridge and make a pedestrian passage between the two sides of the canal. The nightclub program will help to activate the area and the building itself during longer periods through the day. While in the public space, kiosk vendors would support the traffic of people and provide food, beverages and goods for the users.

Sketch of the
add-on structure
to the CN building



CHAPTER 4: CONCLUSION

I believe that this scheme is able to implement itself in part or totally and to offer strategical support to all of the future development proposals as well as building an event architecture that acts as catalyst to the interest in that sector of the city and promotes the innovation in sustainable living.

Better use of resources and waste disposal within the city's dense areas while promoting the closed cycle philosophy for community services is a new way of articulating the dense urban fabric. Making us face a reality we can't avoid as a society in a not so far future.

We cannot count on new knowledge alone to save us from becoming relics of our own history.

(Wood 2005,17)

This reality ties in with understanding history and the value of the built artifact. Understanding our past is a way of providing identity references to the neighborhood and the community that populates it. It is important to find new programs to be implemented in such buildings to activate these artifacts, but also take more care of their conditions before they become unsalvageable. The valorization of industrial heritage is important to learn about the current state of our city and to improve the surrounding of these sites is ultimately what can bring them back in the everyday life of the urban community.

Architectural history and the add-on approach complement each other by enhancing heritage with modernity and creating a much more coherent urban fabric that what most tabula rasa developments propose. Celebrate the difference; do not eradicate the memories, grow from them.

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