

**Building a Neighbourhood:
Interpreting Montreal's Plateau to Redefine
Contemporary Mass Housing Typologies**

by

Emily Campbell

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

at

Dalhousie University
Halifax, Nova Scotia
March 2013

© Copyright by Emily Campbell, 2013

DALHOUSIE UNIVERSITY
SCHOOL OF ARCHITECTURE

The undersigned hereby certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled “Building a Neighbourhood: Interpreting Montreal’s Plateau to Redefine Contemporary Mass Housing Typologies” by Emily Campbell in partial fulfilment of the requirements for the degree of Master of Architecture.

Dated: March 18, 2013

Supervisor: _____

Reader: _____

Reader: _____

Reader: _____

DALHOUSIE UNIVERSITY

Date: March 18, 2013

AUTHOR: Emily Campbell

TITLE: Building a Neighbourhood: Interpreting Montreal's Plateau to Redefine
Contemporary Mass Housing Typologies

DEPARTMENT OR SCHOOL: School of Architecture

DEGREE: MArch

CONVOCATION: May

YEAR: 2013

Permission is herewith granted to Dalhousie University to circulate and to have copied for non-commercial purposes, at its discretion, the above title upon the request of individuals or institutions. I understand that my thesis will be electronically available to the public.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

The author attests that permission has been obtained for the use of any copyrighted material appearing in the thesis (other than brief excerpts requiring only proper acknowledgement in scholarly writing), and that all such use is clearly acknowledged.

Signature of Author

CONTENTS

Abstract	vi
Acknowledgements	vii
Chapter 1: Introduction	1
Meaningful Urban Dwelling.....	2
Method of Analysis	4
Chapter 2: Analysis.....	6
The Plateau	6
Interpretation	7
Fundamental Principles	12
Networks.....	13
Diversity	15
Choice.....	17
Hierarchy	19
Gradient.....	20
Chapter 3: Testing	23
High-rise	26
Site Selection.....	23
Le Quartier des Spectacles	27
Choosing a Site Within the Neighbourhood.....	29
Chapter 4: Methodology	32
Dwelling	32
Typology	32
Morphology	33
“Street”	35
Topology	35
Composition.....	38
Building.....	39
Exterior	39
Interior.....	40
City	42

Chapter 5: Conclusion	45
Appendix.....	48
Urban Morphology	48
Housing Typologies	53
Streets in the Plateau	55
Streets in a Building.....	65
Confirming the Fundamental Principles.....	72
Organization of Program in the Upper and Lower Plateau.....	83
In-Between the Dwelling and the City.....	85
References	90

ABSTRACT

After the industrial revolution, the increase in population of urban centres created a severe housing shortage. In North America there were two contrasting responses to house the masses, the urban tower and the garden city suburb. These solutions have since been criticised harshly as blunders of modernism. Today, we are undergoing unprecedented urbanisation and a changing paradigm. We are again in a position where the idea of mass housing needs to be rethought. Low-rise mixed-use neighbourhoods, such as Montreal's Plateau, can provide sustainable vibrant urban environments. However, given the current paradigm, there are instances where buildings of higher density are necessary. How can successful urban neighbourhoods be re-interpreted to develop a design methodology for buildings of higher density?

ACKNOWLEDGEMENTS

I'd like to thank my family and friends that have supported me throughout architecture school. One of the greatest parts about completing my architecture degree at Dalhousie University was the studio culture. I've learned so much from my friends and colleagues. Specially, I'd like to thank Michael Zabinski, Chris Bouey, Keltie Wagstaff, Andrew Hill, Olena Chorny, Ian Higenell, and Jacob Morrow.

This thesis started with a deep love of a place, the Plateau. My experiences there, and later in-depth research, helped me to define the role of the built form in creating such a meaningful experience. I'd like to thank all the people that played a role, both in my experience and research of Montreal: Ian MacAulay, Tyler Rozicki, Hassan Sayed, Andrea Kornacki, Stéphanie Treuhaft, Michel deBroin, Kurt Kaulbauch, Aboudi Hassoune, Valerie Higenell, Greg Tymoshenko, and Laura Shrum. My experience of that place was truly magical and led to the passion and enthusiasm I've had throughout this research.

I'd like to thank my committee: Niall Savage, Grant Wanzel and Maria Elisa Navarro Morales. I took on a very big thesis topic, both in terms of scale and complexity. If it wasn't for your faith that I could do this, I don't think I would have.

CHAPTER 1: INTRODUCTION

Certain dense low-rise mixed use neighbourhoods, such as Montreal's Plateau (fig. 1) support a vibrant street life and a meaningful relationship with the built environment. The goal of this thesis is: first to *analyse* this neighbourhood to determine what elements or qualities of the Plateau support a positive urban experience and, second to develop and *test* the principles found in this analysis through the design of a contemporary mass urban housing prototype.

The Plateau in Montreal has been chosen as the topic of study for this thesis. Three main reasons inform this choice. First, as stated above, the Plateau functions well as a neighbourhood. Its streets remain vibrant throughout the day and night. The density is sufficient for many types of business and mass transit to be sustained. Overall it is considered to be a very desirable place to live.¹ Second, despite changes in demographics, use, advancements in building or transportation technology, the Plateau has continued to achieve the aforementioned qualities that make it a good neighbourhood. Third, the Plateau encourages meaningful urban dwelling, a concept of central importance to this thesis that will be further elaborated on.



Fig. 1 Dense low-rise mixed use neighbourhood. Plateau, Montreal, QC.

¹ The claim that the Plateau is a desirable place to live is based on observation and the case studies mentioned in this thesis.

Meaningful Urban Dwelling

Building on the work of Heidegger and Merleau-Ponty, the Norwegian architect Christian Norberg-Schulz in his book *The Concept of Dwelling* (1985), claims that society is moving away from *meaningful dwelling*, and suggests that architecture could bring us back towards *meaningful dwelling*. The work of Norberg-Schulz serves as a basis to define meaningful dwelling in the context of this thesis. Dwelling is, for Norberg-Schulz, being in the world. He defines three modes of dwelling: collective, public and private.² Dwelling can happen in a settlement, urban space, an institution and a house. However, to be able to truly dwell, Norberg-Schulz suggests one must have a meaningful relationship with the built or natural environment.³

Dwelling can become meaningful in two ways, either through identification or inhabitation. First, Norberg-Schulz claims that dwelling becomes meaningful through identification, that is, when a person identifies with his or her environment.

2 Christian Norberg-Schulz states urban space is where collective dwelling takes place. Collective dwelling implies that people come together in physical presence, but not necessarily agreement. Conversely, public dwelling implies both a coming together and agreement (Norberg-Schulz 1985). In the context of this thesis the word 'urban' or the public realm will be composed of both collective and public dwelling within the context of a city.

3 The relationship between identification and a meaningful relationship with the built environment has been stated by many of Norberg-Schulz's contemporaries including Edward Relph, Juhanni Pallasma and Herman Hertzberger. (Relph 1976, Norberg-Schulz 1985, Pallasma 1994, 2005, Hertzberger 2009)

This identification creates a sense of belonging. Identification is related to a person's memory. For example, after spending a summer living in a Plateau triplex, a person has a positive association with the exterior stairs. This association comes from the fact that they remember sitting there on warm summer nights drinking wine and laughing with friends. An element of the built environment, in this case an exterior staircase, triggers memories and in doing so, a person is able to identify with that element. Whenever one sees a similar staircase, those same feelings are evoked.

Secondly, space can also gain meaning through inhabitation. Dutch architects, Herman Hertzberger and Aldo Van Eyck state that not all architecture is equally open to the acts of inhabitation. Hertzberger and Van Eyck share the notion of polyvalent space; a fixed space that has the potential to be interpreted by the inhabitant.⁴ Diagoon Dwellings built in Delft, the Netherlands in 1967-71, (fig. 2, 3) are a good example of a polyvalent space. The framework of the home (stairs, entry, services) is always constant, yet each inhabitant has appropriated it in a different way. For example, the front space was used as a garage, carport, office or family room. (fig. 4) Each home becomes unique in its interpretation, thus

4 Polyvalent space is not neutral and flexible, but suggests inhabitation. Hertzberger uses the analogy of a chess game to describe polyvalent space. A finite amount of pieces exist. Each piece has specific moves or rules governing the way they can be played. Despite the fixed or rigid nature of these rules, a chess game can be played in an infinite amount of ways. Likewise, polyvalent space is fixed or rigid in nature but can be inhabited in a number of ways.

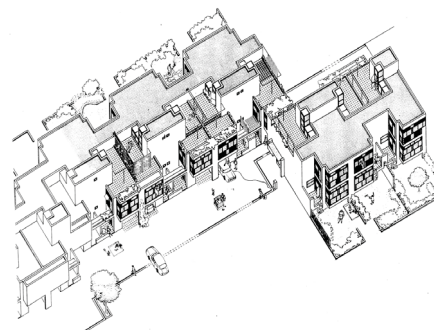


Fig. 2 Diagoon Dwellings, axonometric (Hertzberger 2009)



Fig. 3 Diagoon Dwellings, photo (Hertzberger 2009)

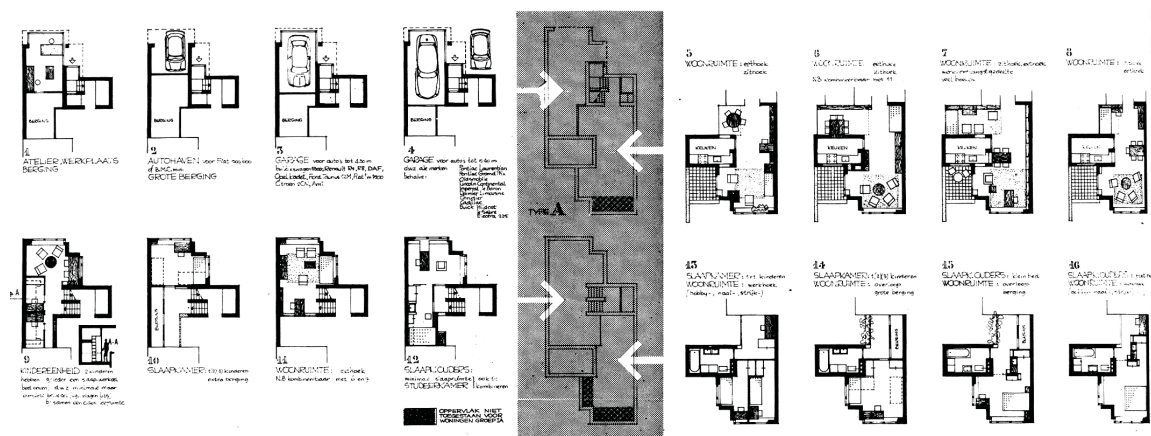


Fig. 4 Diagonal Dwellings, post-occupancy study of different spatial configurations by the occupants. (Hertzberger 2009)

meaningful to its inhabitants.

It follows that the elements of a street, such as a stoop, front garden or sidewalk, have the potential to support meaningful dwelling through inhabitation or identification. An analysis of the Plateau was undertaken in order to find what specifically about the neighbourhood supports the meaningful urban dwelling it fosters.

Method of Analysis

A method of analysis has been developed largely based on Christian Norberg-Schulz's concepts of morphology, typology and topology. Morphology is the physical articulation of the built form. An exterior staircase or balcony could be considered a morphological element. (fig. 5, 6, 7) Typology is the classification of the parts that make up a building or city. For example, the row-house or triplex⁵

5 A triplex is three stacked dwellings all accessed directly from the street. The triplex of Montreal is generally in a row-house formation attached directly to other buildings on each side. A complete description of the housing typologies considered in this thesis is included in the appendix.

are housing typologies. Topology is the physical organization of built form. For example, the Plateau's topology can be described as physically connected dwellings with a small setback from the street. The relationship between morphology, typology and topology demonstrates the place where meaning is found in the built environment.

Norberg-Schulz also considers the relationship between morphology, typology and topology to be where meaning can be found. Each city has distinct morphological elements that allow that city to be identified. Going back to the previous example, (fig. 7) the exterior staircase is a morphological element characteristic of a specific type of dwelling, the triplex. Triplexes are composed of three stacked dwellings which create a need for the staircase. The staircase is placed outside, rather than inside, because the buildings are set back (topology) from the sidewalk.⁶ This example shows that physical characteristics of a place can be analysed in terms of morphology, topology and typology. It is these physical characteristics, like the staircase, that allow a person to identify with or inhabit a space. Therefore, it is these physical characteristics that allow for inhabitation and identification, thus meaningful urban dwelling.

6 The external placement of the staircase is also a result of economics. It is more expensive to enclose a staircase than to leave it outside.



Fig. 5 Balcony on Chateaubriand Street, Plateau, Montreal, QC.



Fig. 6 Stoop on Chateaubriand Street, Plateau, Montreal, QC.



Fig. 7 Exterior Staircase on Mont-Royal Avenue, Plateau, Montreal, QC.

CHAPTER 2: ANALYSIS

The Plateau

Nine different areas in the Plateau were studied in terms of morphology, topology and typology.⁷ (fig. 8) These areas were chosen because they are representative of the diversity of street types within the Plateau. One of the main findings of this study was the relationship between topology and typology.

⁷ The complete study of these nine streets with further observation is included in the appendix.

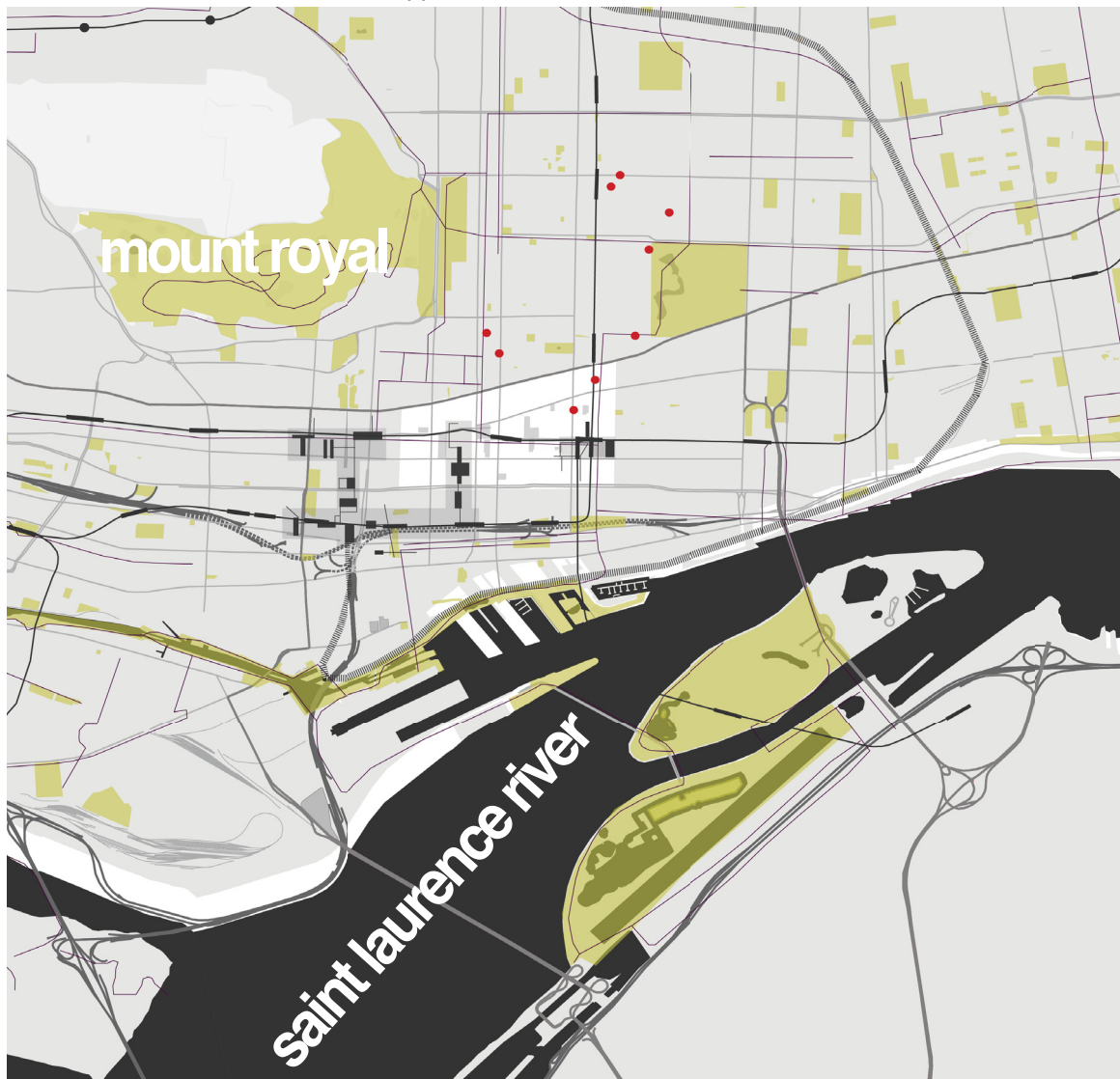


Fig. 8 Map locating 9 case studies indicated by red dots.

That is, the relationship between the setback on each street and the types of housing and supporting activities. For example, a less busy street may have a smaller setback, less dense housing typologies and a correspondingly active program such as a small business or quiet cafe. Conversely, a busy street with a larger setback has more dense housing typologies and more active program such as a bar, restaurant or important public building. Thus different types of streets encourage a specific relationship with the built environment and its program.

Interpretation

Initially, the Plateau was interpreted literally. It seemed that the streets give structure to a meaningful neighbourhood. Therefore the assumption was made that “streets in the sky” (fig. 11, 12, 13, 14) would have an analogous impact. The theme of bringing a street into a building has been quite prolific in modern architecture. Six case studies were chosen among buildings that are considered to have an “interior street” by either the designer or by critics and academics. In these cases the interior street is defined as the circulation elements. Precedents are listed below in historical order.⁸

Narkomfin Moses Ginzburg (1928, Moscow)

Unité d’Habitation Le Corbusier (1951, Marseilles)

Weesperstraat Herman Hertzberger (1966, Amsterdam)

Nemausus Jean Nouvel (1988, Nimes)

Simmons Hall Steven Holl (2002, Cambridge)

8 House Bjarke Ingels Group (2010, Copenhagen)

In these buildings, the interior street can be generally

⁸ The complete study of the six precedents with further observation is included in the appendix.



Fig. 9 Triplexes on Henri-Julien Avenue, Plateau, Montreal, QC.

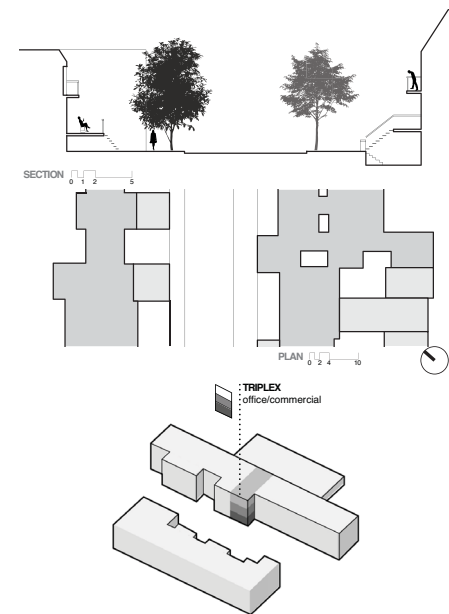


Fig. 10 Morphology, Topology and Typology of St Denis street.

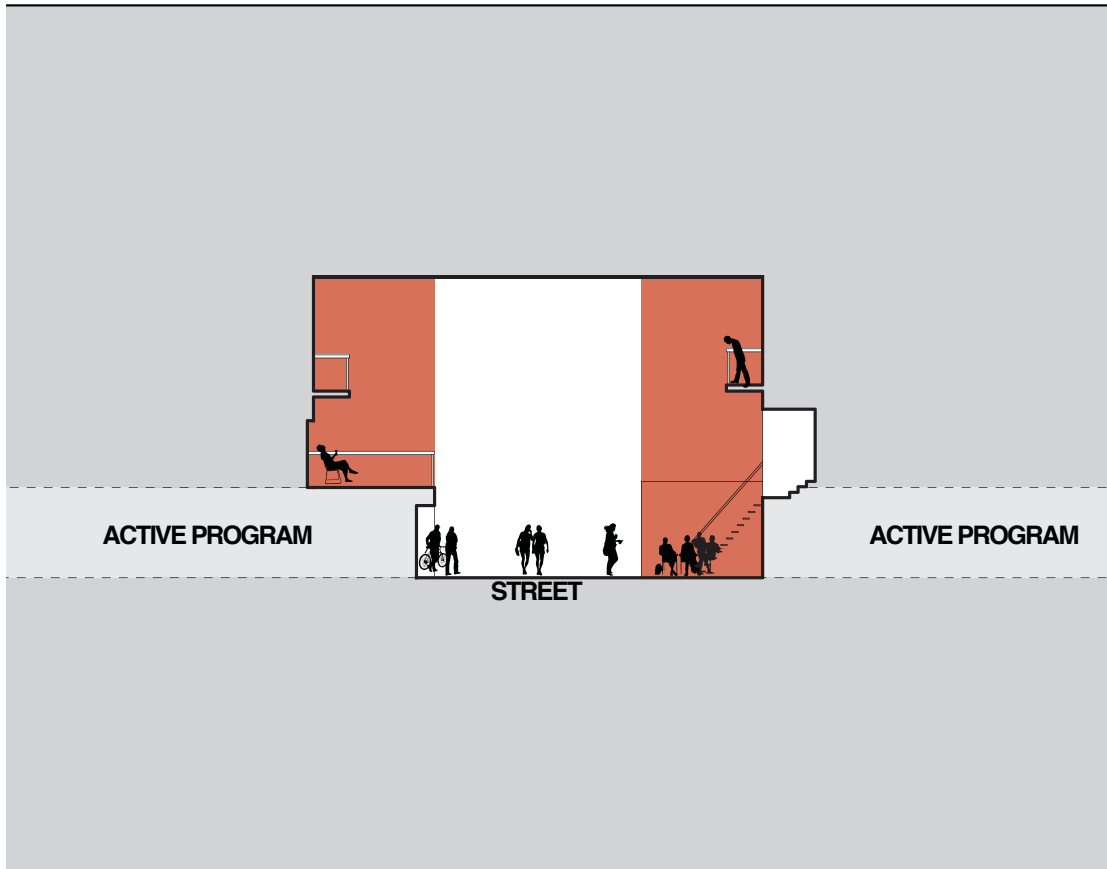


Fig. 11 Schematic section of a “main street” within the building.



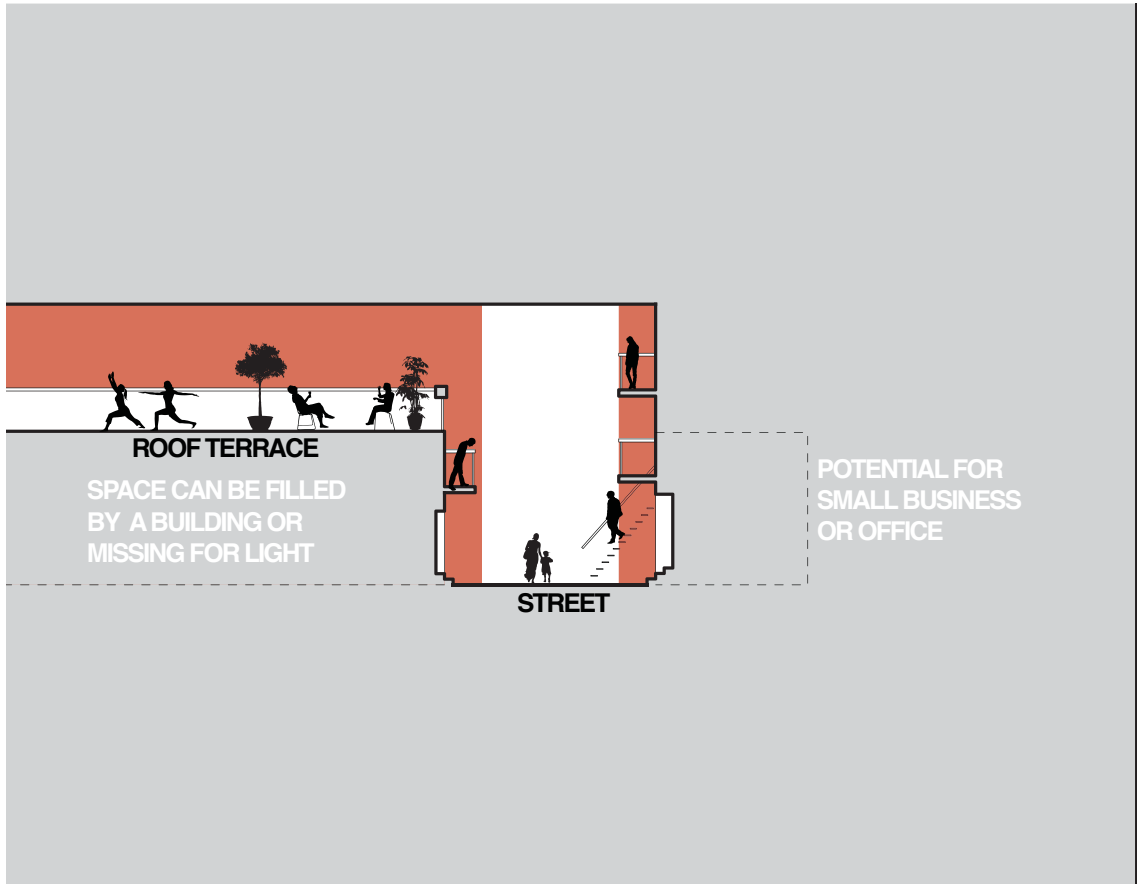
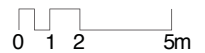


Fig. 12 Schematic section of a “residential street” within the building.



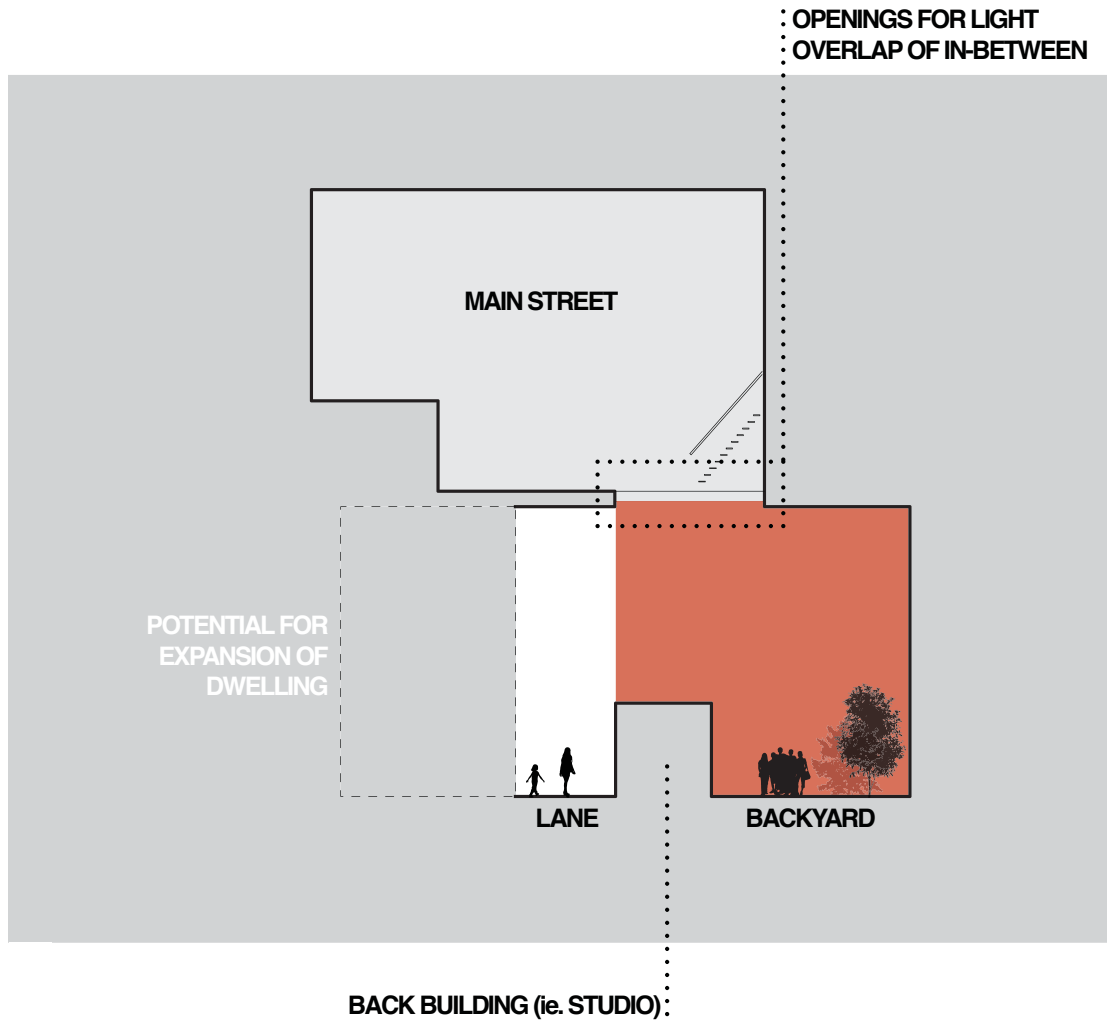
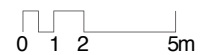


Fig. 13 Schematic section of a “laneway” within the building.



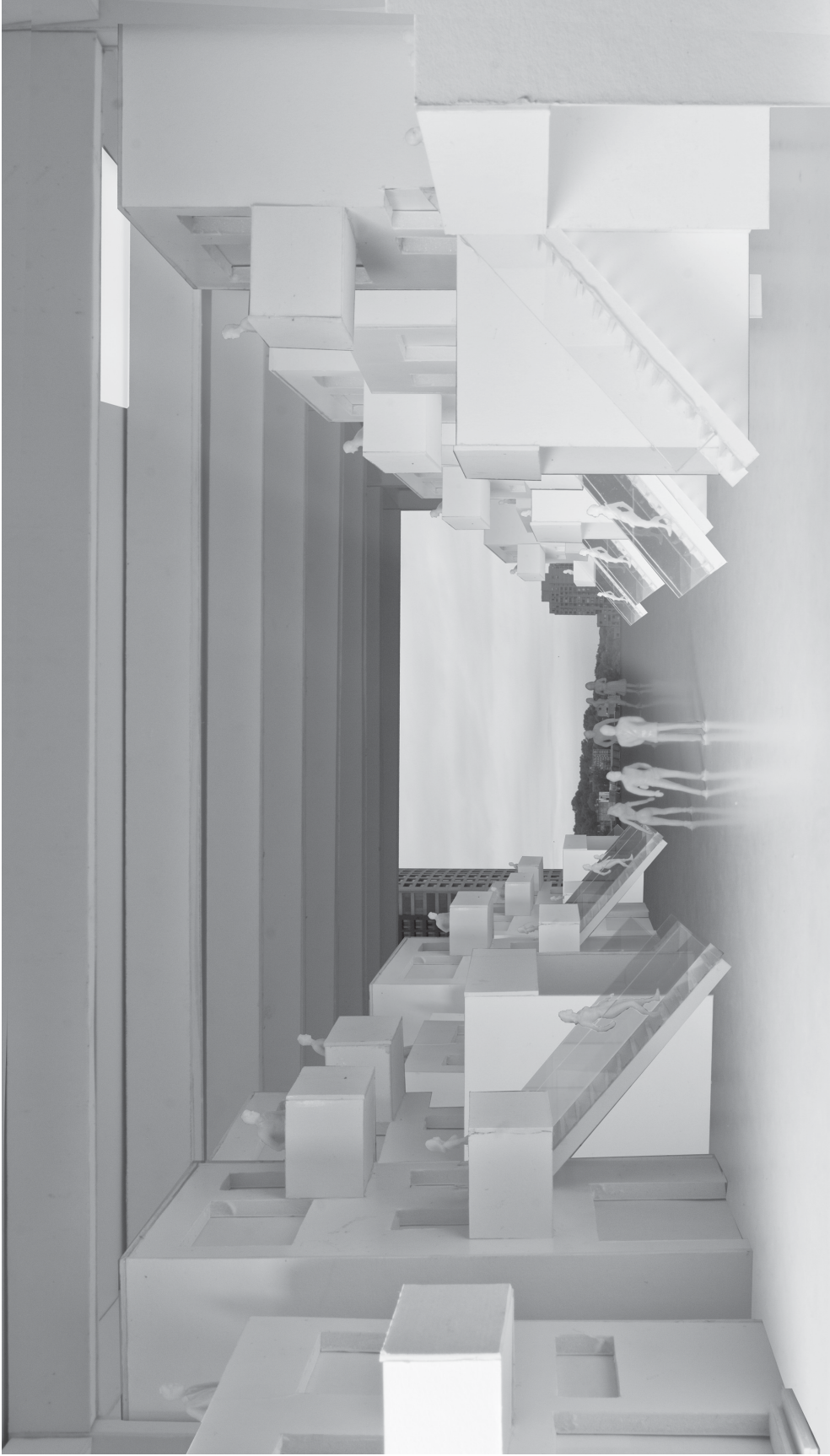


Fig. 14 Schematic 1:50 model of a "main street" within the building.

defined as one or all of the corridors connecting the dwellings. These corridors are usually designed to give street-like qualities. One example of an interior “street” is an extra-wide corridor flanked with public programming. Superficially the corridor then appears like a street. While each case study replicates the appearance or some aspects of a street, the overall quality of the street is not achieved in the building. The interior streets did not replicate the same meaningful relationship with the built environment that is found in the actual street. The typology is adapted superficially, but not in substance.

One major problem that emerged in this study is the disconnection of the building to the city. It is not the street alone that must be considered. It is rather, the street as a part of a system, the neighbourhood, and ultimately the city. In order to understand how a neighbourhood operates, fundamental principles⁹ that govern a city and neighbourhood were derived and studied to then be tested and applied to the design of a large building.

Fundamental Principles

A neighbourhood operates as a *network* within a larger system, the city. Within this network there is a *diversity* of buildings, activities and streets, which

⁹ These fundamental principles were tested anecdotally through interviews with five Plateau residents ranging in age from 28-42. The interviewees drew, mapped and collaged their daily experiences. Although the fundamental principles were created based on analysis, they were modified and refined based of the results of the interviews. The complete results of the study are included in the appendix.

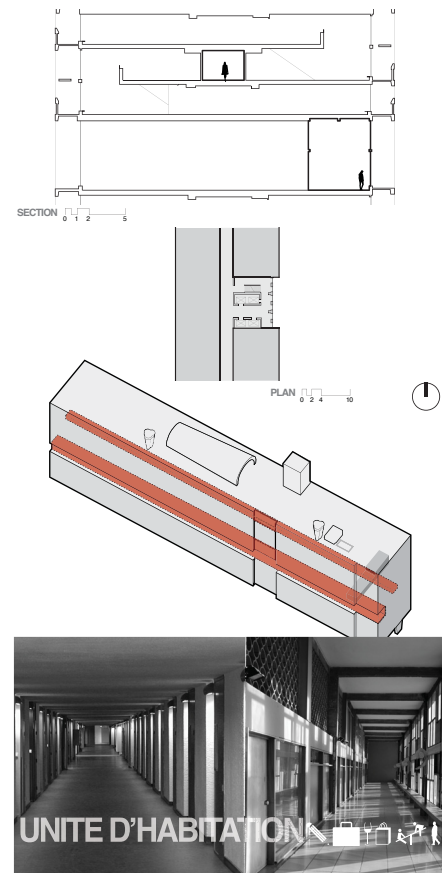


Fig. 15 Morphology, Topology and Typology of Unité d’Habitation in Marseilles.

presents *choice* to the inhabitant. The diverse buildings, activities and streets are organised *hierarchically*. For example, a busy street has active program, a quiet street has less active program. The hierarchical elements are organised along a *gradient*. That is, a middle ground mediates between most active and least active program. A series of thresholds define different types of activities and streets creating a gradient between public and private dwelling.

Networks

A neighbourhood is composed primarily of housing. The network of housing is supplemented by well distributed program, parks and amenities. Housing is connected to program, parks and amenities by streets. The network of a neighbourhood can be explained by using an analogy of the body. Parks and amenities are analogous to organs. Organs, such as the heart or lungs have a specific function in the body. The heart or lungs would be useless to the body if they did not form a system connected by veins and arteries. In this analogy, housing would be the organs and the streets would be the veins and arteries that connect the organs. The body would not work without this connection. In the same way, housing would not function if it was not connected to other program as part of a system.

Networks can exist at a variety of scales. A city, neighbourhood or district, are all networks. As previously mentioned, a network is composed of many elements including multiple dwellings. A large building can also be composed of multiple dwellings and function like a network. For a building to achieve the same experiential quality as a neighbourhood it must have the same elements as a neighbourhood: program, parks and amenities. These elements

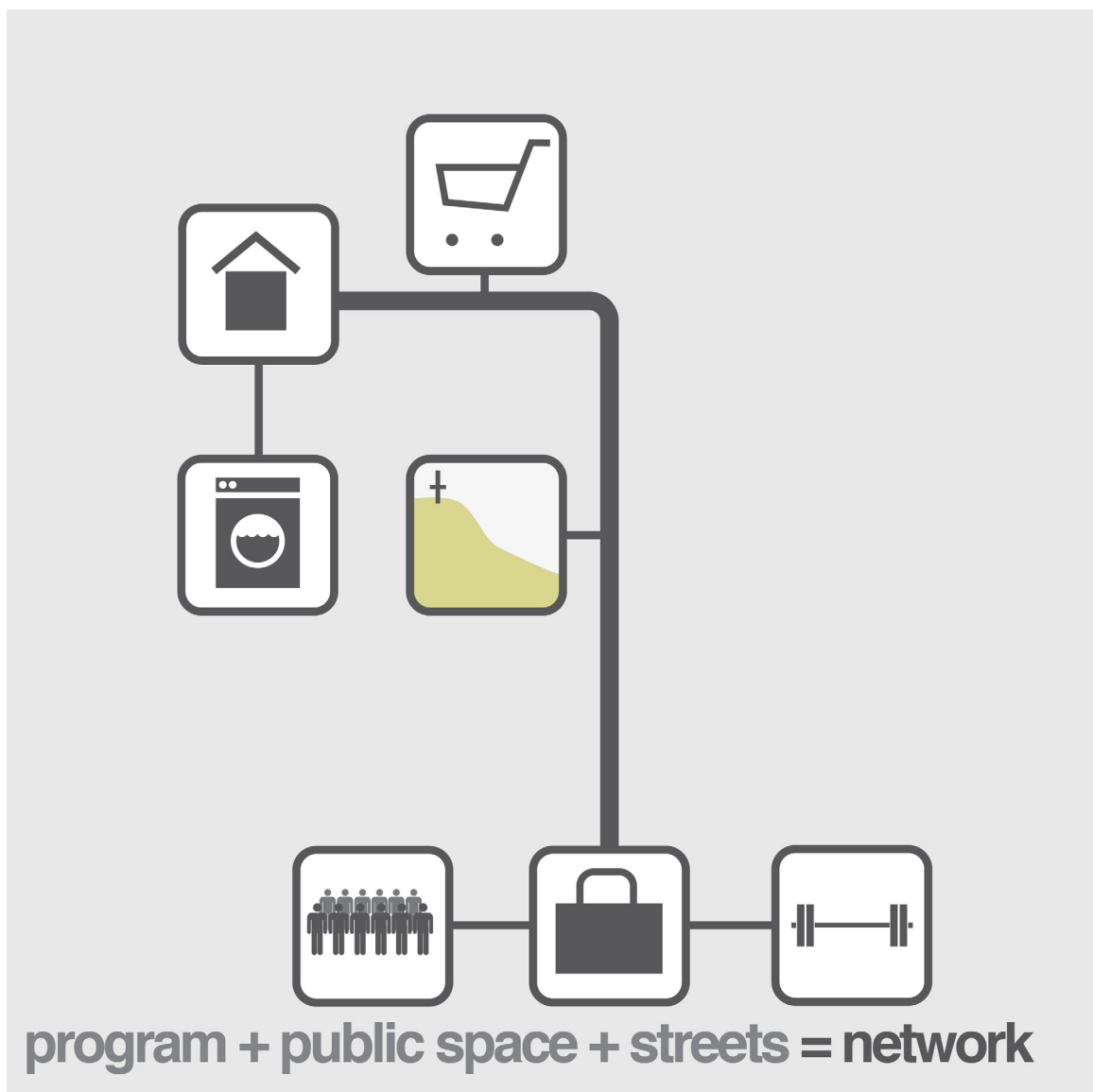


Fig. 16 Diagram of network principle showing the connection between housing, program and public spaces by streets

must be well integrated into the network. In the neighbourhood, program is connected to housing by streets. In the building, program is connected to housing by corridors or an elevator. The nature of the relationship of housing to all other elements determines how well it functions as a network. The neighbourhood can be used as the basis to determine how to connect housing to program, public space and amenities.

Diversity

Diversity within each network is vital to its success. Many early modernist urban plans segregated buildings by function. For example, they often zoned housing separate from leisure activities. The separation of activities is in contrast to neighbourhoods, such as the Plateau, where an office, home and restaurant can all be within one block. The role of diverse program within the city is to support activity and a street's vibrancy, knitting together individual dwellings. American author and activist Jane Jacobs is one of the most notable critics of Modernist urban planning. Jacobs believes that despite the fact that modernist urban planning seemed to make sense in paper, in reality it ultimately contributed to what she claims is the "Death of Great American Cities." In her book of a similar title (Jacobs 1961), Jacobs advocates for diversity of uses. Jacobs states that diversity offers "mutual support" of one activity to the other.

To illustrate the mutual support of diversity, two non-diverse neighbourhoods will be compared to



Fig. 17 Diversity of street and neighbourhood type. Saint Denis Street, Plateau, Montreal, QC.



Fig. 18 Diversity of street and neighbourhood type. Marie-Anne Street, Plateau, Montreal, QC.



Fig. 19 Diagram of diversity principle

a diverse neighbourhood. First, a neighbourhood composed exclusively of businesses is only in use while those businesses are in operation, normally during the day. In contrast, a neighbourhood that is composed primarily of housing is only in use while people are home, normally during the evening. Conversely, a mixed use neighbourhood with both housing and businesses is populated for a longer period of time. Activity on the street provides safety

to the people in the dwellings and customers to the businesses. They are mutually beneficial. To give an example, on the way home from work, a person may pass a restaurant with beautiful smells wafting out the window. The person could stop into that restaurant because they are hungry at that time. The same chance would not present itself in a strictly residential or strictly commercial neighbourhood. Both housing and supportive program provide a reason for people to be on the street making them active and supporting a vibrant urban environment.

Choice

Diversity creates options, which allows for choice. Choice of activity, movement and experience are a few examples of the choice that exists within the Plateau. To illustrate this concept two examples will be explained: choice of routes and choice of activity. First, in the Plateau, inhabitants are given the choice between multiple possible routes from one place to another. Each choice has a different motivation. For example, one route may be quick, another, scenic. People might take a longer route if it is more pleasant, but appreciate having the option to choose. The diversity of routes corresponds to a diversity of experience provided by each street. This choice has many benefits for the neighbourhood and the life of its inhabitants. For example, having a choice makes walking along the street an exciting experience keeping the street active and safe. Secondly, the type of program forms a network that provides enough variation for choice. The

variation of program is limited by market forces. If there is only enough population in a neighbourhood for one grocery store, a second one will go out of business. There is an ideal amount of diversity of program that gives a person just enough choice. An inhabitant of the Plateau can get almost everything they need from their neighbourhood, but may have to go further for something special. For example, a person may make the 15 minutes walk to Mile End because that is where their favourite bagel

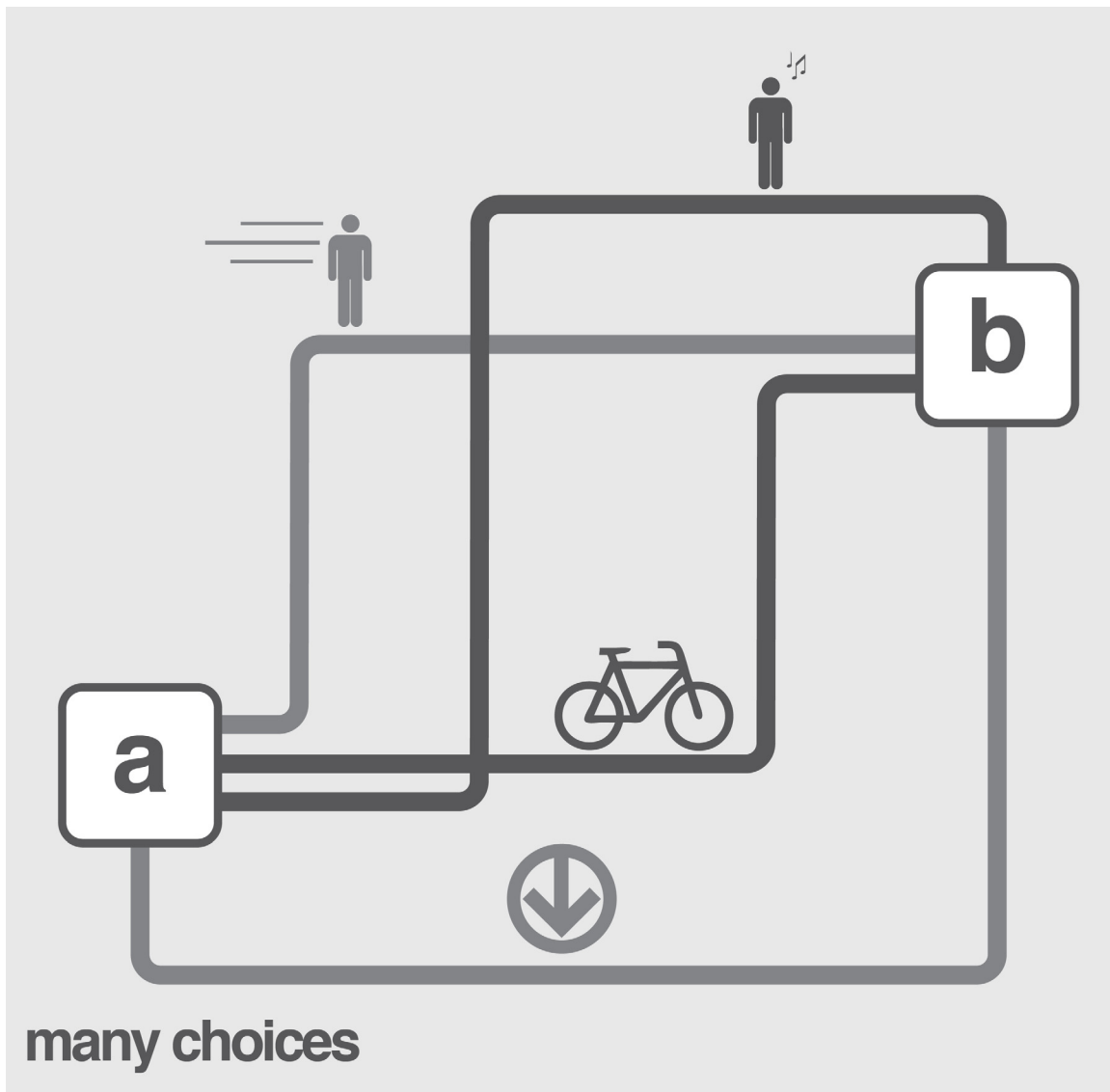


Fig. 20 Diagram of choices showing choice in route and consequently experience.

is. Despite the economic basis for choice, it also plays the important role in preventing inhabitants of one neighbourhood from becoming insular.

Hierarchy

Diverse program is organised hierarchically within a neighbourhood. In brief, a hierarchy of streets corresponds to a hierarchy of activity or program. That is, active program occurs on main streets, while less active program occurs on secondary



Fig. 21 Diagram of street and activity hierarchy.

or tertiary streets. The same is true of housing typologies. Dense housing typologies occur more frequently on main streets, where less dense housing typologies occur on secondary or tertiary streets. Therefore, there is a greater proportion of program on active streets and a greater proportion of housing on less active streets. That is, a busy street may be composed of restaurants, institutions and businesses in addition to housing. Whereas a quiet street may be composed primarily of housing dotted with less active program like a seamstress or laundromat.

Program exists on a variety of scales based on its outreach. For this purpose those scales will be the city, neighbourhood and home. City scale program draws people from different neighbourhoods, such as museums or performing arts centres. Neighbourhood scale programs are used mostly by people within the neighbourhood; for instance a convenience store or corner pub. The scale of the home on the other hand is limited to the dwelling since it is used almost exclusively by its inhabitants. The most active program and city scale program is generally located at the intersection of main streets forming nodes of activities. Generally some form of public space coincides with these nodes.

Gradient

Dwelling type and program are organised along a gradient. In other words, the public realm is not sharply demarcated from the private realm, rather there is a gradient between private space and public

space. Herman Hertzberger would define the space between private and public as the in-between, where different modes of dwelling intersect.¹⁰ “A place where two worlds overlap, rather than a sharp demarcation.” (Hertzberger 2009, 32) The physical definition of the in-between can be ambiguous since it is simultaneously in contact with both the private and public realms. For example on a balcony a person is visually connected with the public realm, the city, but physically connected with the private realm, the home. (fig. 22) The in-between is a place for “meeting and dialogue.”

A gradient can also be found in the organisation of program. One cannot assume that a main street will have only active program and the densest housing typologies. Nor can one assume that a quiet street will have only less dense housing typologies and no

¹⁰ In reference to Christian Norberg-Schulz theory, the modes of dwelling are defined on p. 2 of this as collective, public and private.



Fig. 22 Balcony on Chateaubriand Street, Plateau, Montreal, QC.

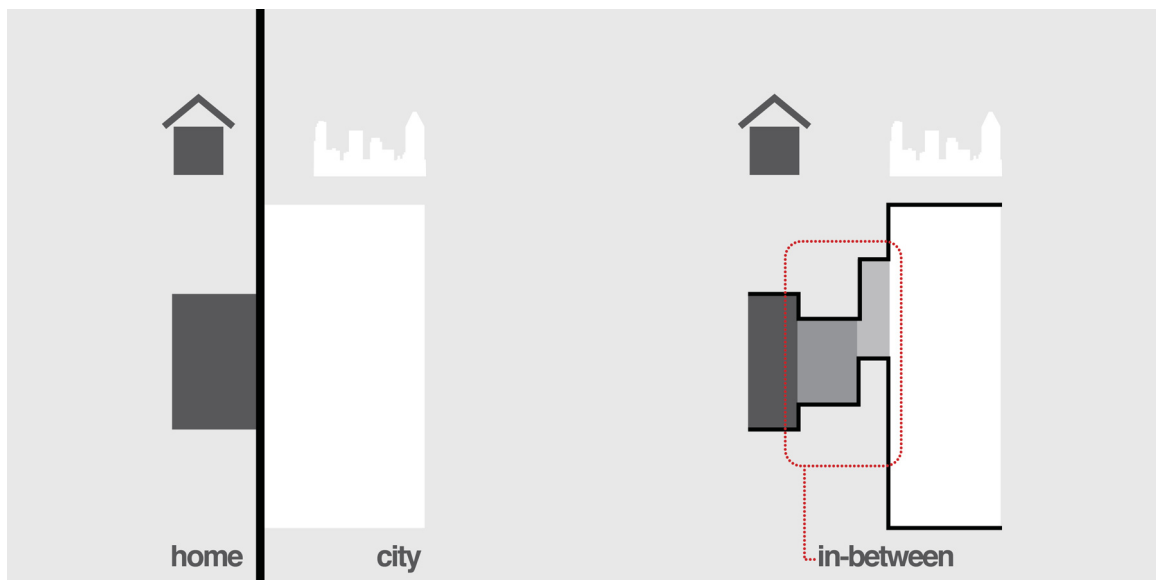


Fig. 23 a,b Diagram comparing the lack of gradient between home and city in a high-rise (left) to the in-between space present in the plateau. (right)

active program. In other words, a main street will have mostly active program and housing typologies, but will not be composed exclusively of active program.

CHAPTER 3: TESTING

In many ways, the interior streets found in the case studies¹¹ failed to support meaningful dwelling as they did not operate under the same principles as a neighbourhood. After a close study of the Plateau in Montreal, the following principles were drawn: networks, diversity, choice, hierarchy, and threshold. The main difference between the Plateau street and interior street is that the Plateau's streets function as part of a system, where the interior streets do not. In some of the case studies and many tall buildings, there is little attention paid to the relationship of one floor to the next or to the street. This creates a fundamentally disconnected experience within the building from one floor to the next. The principles found in the Plateau will be applied to the design of a tall building. By using these principles as a design methodology, the concept of an interior street has the potential to do more than superficially replicate the street, but to establish meaningful urban dwelling and integrate into the city.

High-rise

Neighbourhoods such as the Plateau demonstrate the success of a dense low-rise urban fabric. However, there are places where this type of urban fabric is not suitable. The high price of land in the city centre or near transit nodes creates a situation where high density is the only economically viable option. Therefore these areas are already composed

¹¹ Complete case studies of streets can be found in the appendix.

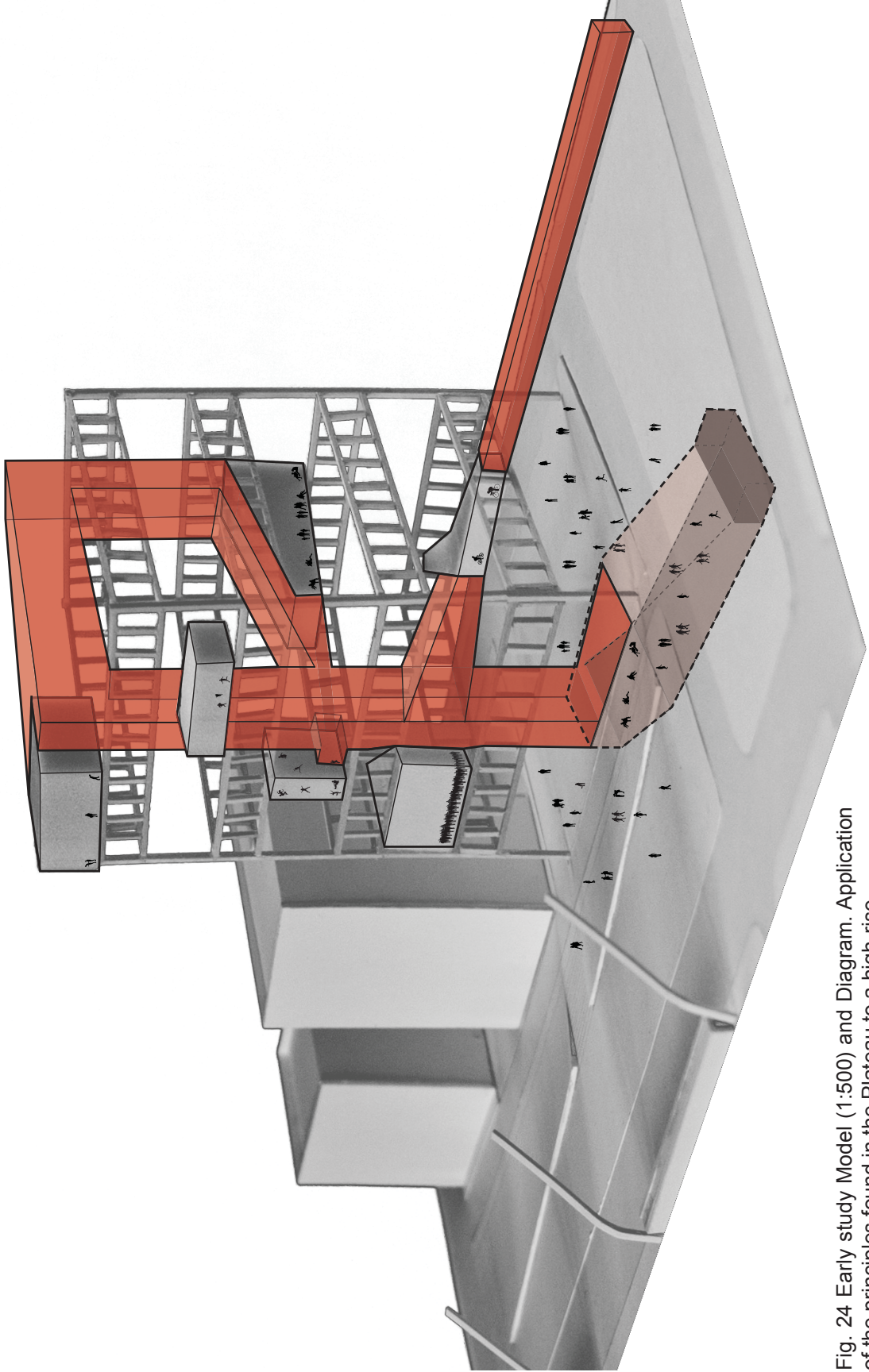


Fig. 24 Early study Model (1:500) and Diagram. Application of the principles found in the Plateau to a high-rise.

of tall buildings. A large amount of pedestrian and vehicular traffic in the city centre makes it undesirable to live on the ground floor. The exhaust vent or loading bay of a skyscraper does not make a good neighbour. Additionally, low-rise buildings are in stark contrast to the scale of existing tall buildings and would lie mostly in their shadows.

In addition to the suitability of tall buildings in certain areas, high-rises have many positive aspects. A tall building can be significantly more efficient in terms of systems and resources employed than low-rise fabric. Density of housing and intensity of program has the potential to reduce one's reliance on automobiles. The high-rise building typology,



Fig. 25 Collage that superimposes the Plateau fabric onto the chosen site. It is evident in this collage that low-rise fabric is not suitable in this area. The site selection is elaborated upon in the following chapter.

when appropriate, responds to the current paradigm of urbanisation and climate change.

Site Selection

The re-interpreted residential high-rise typology has a place where increased density is necessary within a city and dense low-rise mixed use fabric is not appropriate. The city centre generally has



Fig. 26 Rendering proposing the suitability of the proposed typology.

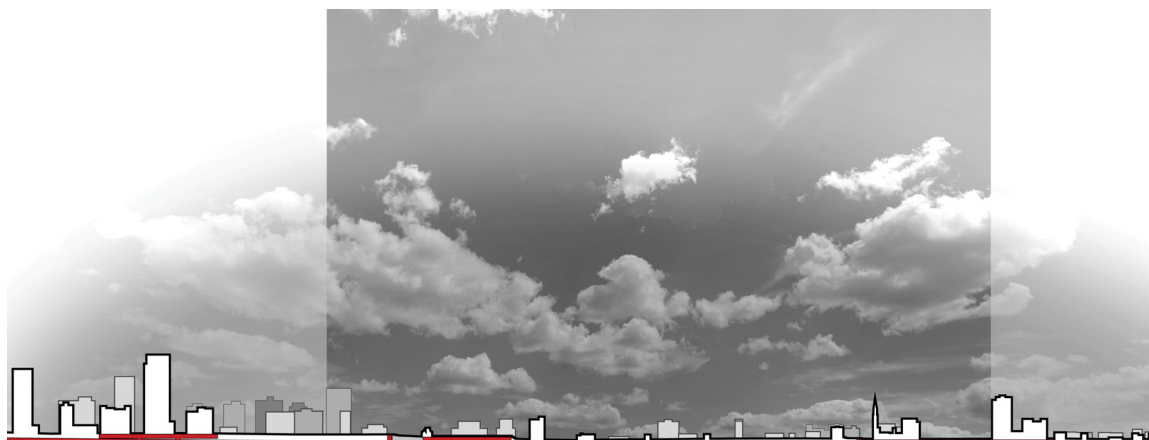


Fig. 27 Section of Downtown Montreal. Le Quartier des Spectacles, is highlighted by the darker sky.

high land prices and a corresponding high level of density. Likewise, these environments are generally not suitable for low-rise housing as it is too noisy on street level. Le Quartier des Spectacles is an under utilised neighbourhood between the dense high-rise central business district and dense low-rise Plateau. (fig. 27) The neighbourhood is punctuated by vacant lots and under utilized post-industrial buildings. Le Quartier des Spectacles is also the location of one of the busiest subway station in the city, Berri-UQAM. This neighbourhood has the potential for density, therefore it is a good testing grounds for the re-interpreted residential high-rise typology.

Le Quartier des Spectacles

Le Quartier des Spectacles is the entertainment district of Montreal. The neighbourhood acts as the performing arts hub of the city containing many prominent performance venues and other institutions. There is a very low proportion of people living in the area. (fig. 28) The area is populated instead, primarily by daytime users or seasonal

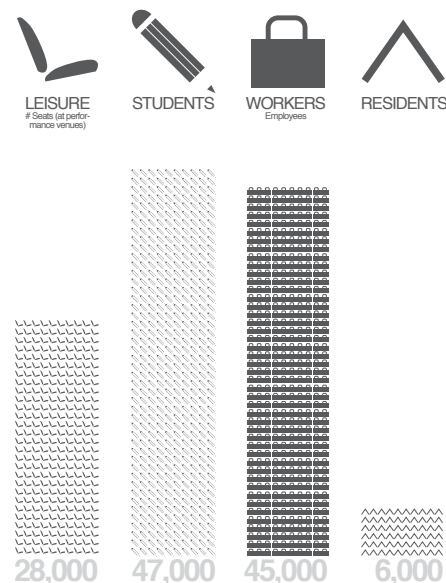


Fig. 28 Neighbourhood demographic showing the low proportion of residents. (information: Ville de Montréal Jan 2009)

users such as office workers, students, tourists or festival/performance goers. As a result of this unbalance, Le Quartier des Spectacles is left largely empty in the evenings or off festival season.

In addition to the low amount of residents, the strong presence of the underground network also contributes to the lack of street life in le Quartier des Spectacles in Montreal. While the underground network is convenient for moving around the city in the winter or other unfavourable weather conditions, the connection of the underground to street level is generally marginal and does not support street life; it is instead disconnected from street life. Yet, the circulation in the underground network has the potential to become an extension of the circulation space of a building, a place where urban dwelling can occur.

There is currently a large amount of development going on in le Quartier des Spectacles. The area is targeted as one of the major zones of development in *Montreal's 2025 plan*. (Ville de Montréal Jan 2009, 5) Certain aspects of this plan are beneficial to the neighbourhood. For example, many of the public spaces of the neighbourhood have been renovated and pedestrian priority paving has been added. Other aspects of the neighbourhood, such as the high density and tall zoning have the potential to have negative affects on the neighbourhood. Without regulation, new buildings will likely be driven by market forces, rather than considering possible affects on the neighbourhood as a whole.

Tall buildings that are disconnected from the ground would perpetuate the neighbourhood's problems of low activity in the evening and off festival season. Therefore a prototype of development is necessary within this area. The re-interpreted residential high-rise typology could become this prototype. That is, the methodology developed in this thesis could govern further development in Le Quartier des Spectacles and other similar neighbourhoods.

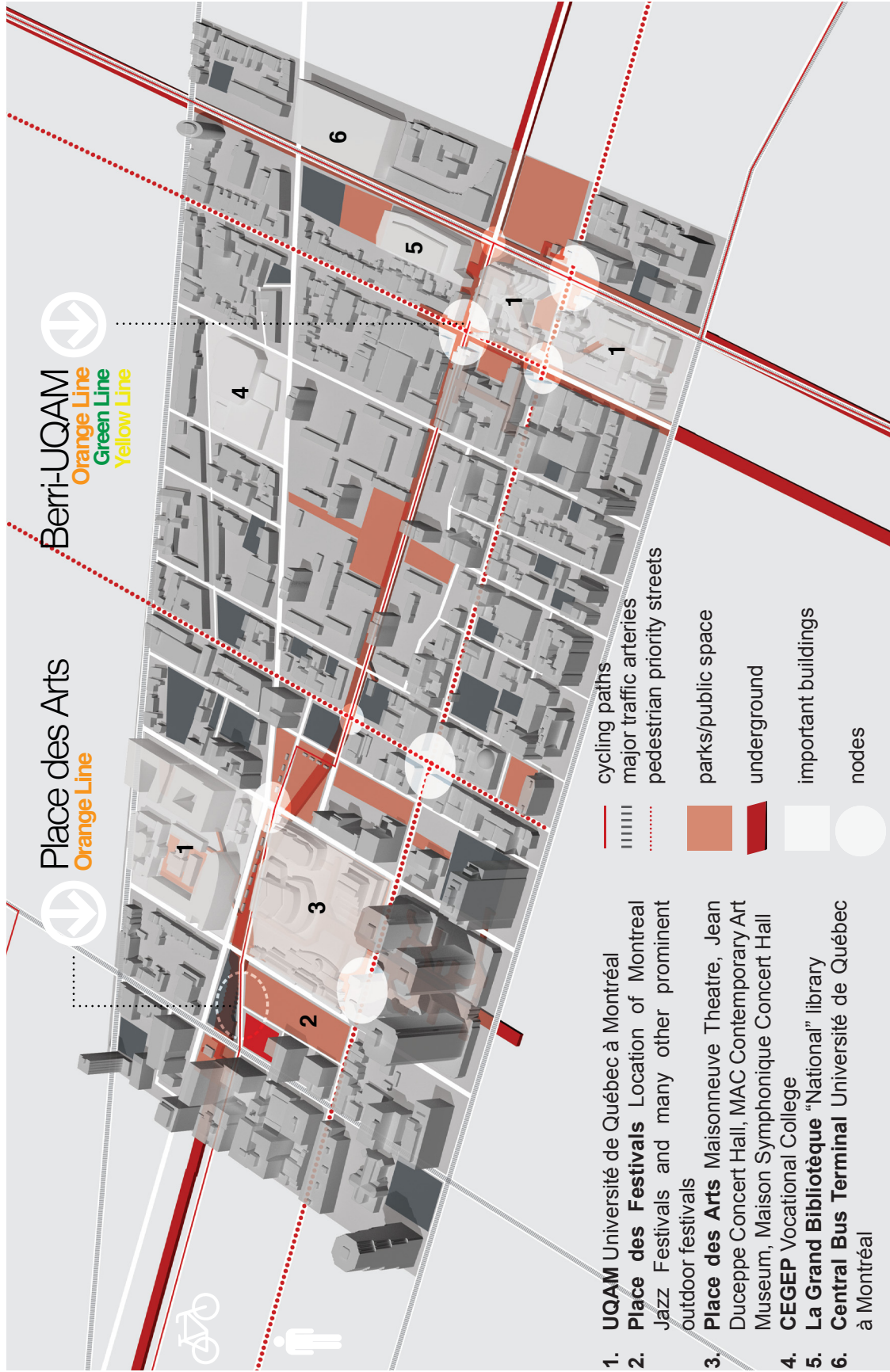
Choosing a Site Within the Neighbourhood

This methodology of design could be applied to any site in this neighbourhood that is of suitable scale for a high-rise. Simply put, the selected site must be on a transit corridor and be of similar scale to the surrounding buildings. A specific site within Le Quartier des Spectacles will be selected based on the potential of a building on that site to positively affect the neighbourhood. The factors in determining this potential are as follows: important public buildings, the underground, public space and flows of pedestrians, cars and bicycles.

The relationship of important buildings, transit, public spaces, paths and edges to each other forms nodes within the neighbourhood. American urban planner and writer Kevin Lynch defines a node as a "strategic

foci” of a person experiencing the city.¹² Lynch goes on to state a node generally occurs at the crossing of paths or “concentrations of some characteristic” (Lynch 1960, 72). Nodes become places of bustling activity and gathering. As such, a node has a very important role within a city or neighbourhood. Through the analysis of Le Quartier des Spectacles many functional nodes were found. However, there is one place (fig. 29, indicated by a dashed circle) where there it would make sense for there to be a node, but by observation there is not. This location should be a node because it is between two subway exists, on a cycling path and adjacent to the most used public space in the neighbourhood. It is likely that the area does not function as a node because it is bounded by two vacant lots. Therefore, one of those blocks has been selected as a site to test the prototype.

12 Kevin Lynch defines the term ‘node’ in his book *The Image of a City* (Lynch 1960). In *The Image of a City* Kevin Lynch concludes that people commonly identify a by the following elements: paths, edges, districts, nodes and landmarks. The method for identifying important places or ‘nodes’ within the neighbourhood was roughly based on Lynch’s theory as laid out in this book.



1. **UQAM** Université de Québec à Montréal
2. **Place des Festivals** Location of Montreal Jazz Festivals and many other prominent outdoor festivals
3. **Place des Arts** Maison neuve Theatre, Jean Duceppe Concert Hall, MAC Contemporary Art Museum, Maison Symphonique Concert Hall
4. **CEGEP** Vocational College
5. **La Grand Bibliothèque** "National" library
6. **Central Bus Terminal** Université de Québec à Montréal

Fig. 29 Analytical axonometric of le Quartier des Spectacles.

CHAPTER 4: METHODOLOGY

The proposed design methodology seeks to achieve the qualities found in the Plateau in a high-rise. The way the neighbourhood and built form works, not its appearance, serves as the basis of the analysis. With references to principles derived from the Plateau, morphology, typology and topology¹³ are used to make design decisions about a building at four scales: dwelling, “street”, building and city.

Dwelling

At the scale of the home, typology and morphology of the Plateau define unit type and how each unit interacts with the interior street within the building.

Typology

The Plateau is used as a basis to determine the number of unit types, their size and respective density within the building. In the Plateau there are five dominant housing types. Within these five types¹⁴ there is enough diversity of housing to support a large variety of inhabitants and businesses. There are five analogous unit types in order to support the same diversity of users and use in the building. (fig. 30)

In the Plateau the size of each dwelling type

13 Refer to p.7 for the description of analysis of the Plateau. This provides a basis for the terms morphology, topology and typology as they are used here.

14 A complete description of the studied housing typologies in the Plateau can be found in the appendix.

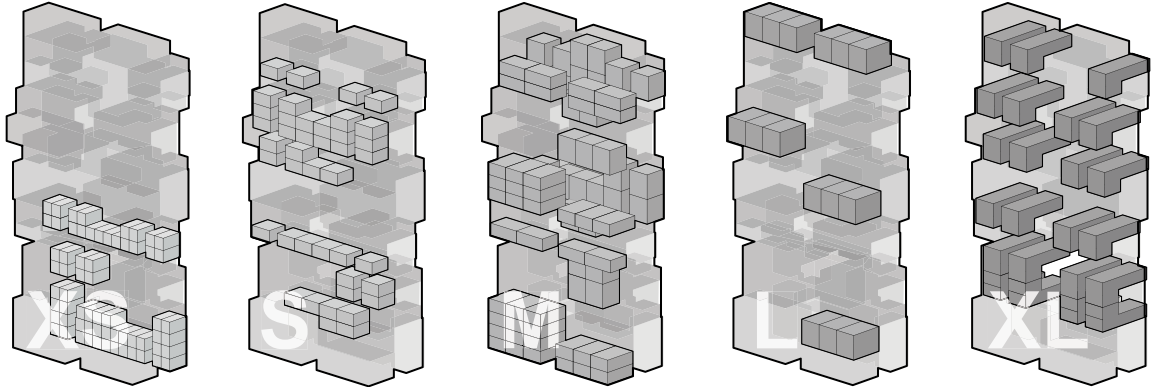


Fig. 30 Schematic of unit types within the building ranging from smallest (left) to largest (right).

corresponds directly to the density and level of activity. That is, larger units are less dense and less active, where smaller units are denser and more active. For example, in the Plateau, the maisonette¹⁵ is often occupied by families. The large housing size and lower level of activity is suitable for a family. To give an example in the building, smaller units are suitable for people who don't need much space and want to live in a busy area. Unit size and density work together to be appropriate for specific users.

Morphology

The morphology of the Plateau defines the space in between the dwelling and the city. This space allows for both inhabitation and identification and is therefore the condition for meaningful dwelling. The literal transposition of the morphology found in the Plateau wouldn't make sense within a building. However, the Plateau's morphology can be used as a guideline to determine the size of the in-between space and the level of interaction between the

¹⁵ This housing type would be analogous to the XL unit.



Fig. 31 1:50 Study model of the in-between, XL unit. Interaction of the dwelling with the interior "street".

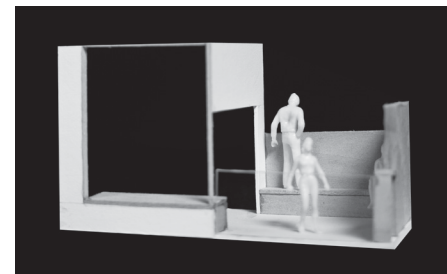


Fig. 32 1:50 Study model of the in-between, XL unit. Interaction of the dwelling with the exterior.

dwelling and the street.¹⁶

The size and shared or individual nature of the in-between space in the Plateau varies based on the unit type. The size of the in-between space is related to the size of the dwelling. That is, the larger housing types in the Plateau have more space between the dwelling and the street. This space has two purposes: first, for the inhabitant to appropriate and make their own, and second, to create a buffer zone between the home and the street. In the Plateau, certain user groups such as families benefit from having larger in-between spaces. Conversely, smaller housing types generally have a smaller in-between space that is partially shared. Where individuals reside in smaller unit types, the shared nature of the in-between space encourages social interaction with ones neighbours.

The shared or individual nature of the in-between space in the building varies by unit type. This variation happens in the connection of the in-between space to the shared parts of the corridor. The smallest unit types have the smallest in-between space that is directly connected to the corridor. The largest unit types have the largest in-between space and is removed from the corridor. By using the Plateau's in-between space as a guideline, the space within the building achieves an appropriate level of connection for the inhabitants of that specific dwelling.

¹⁶ A series of models were constructed to study the interaction of the dwelling with the exterior of the building and the interior "street". The complete study can be found in the appendix.

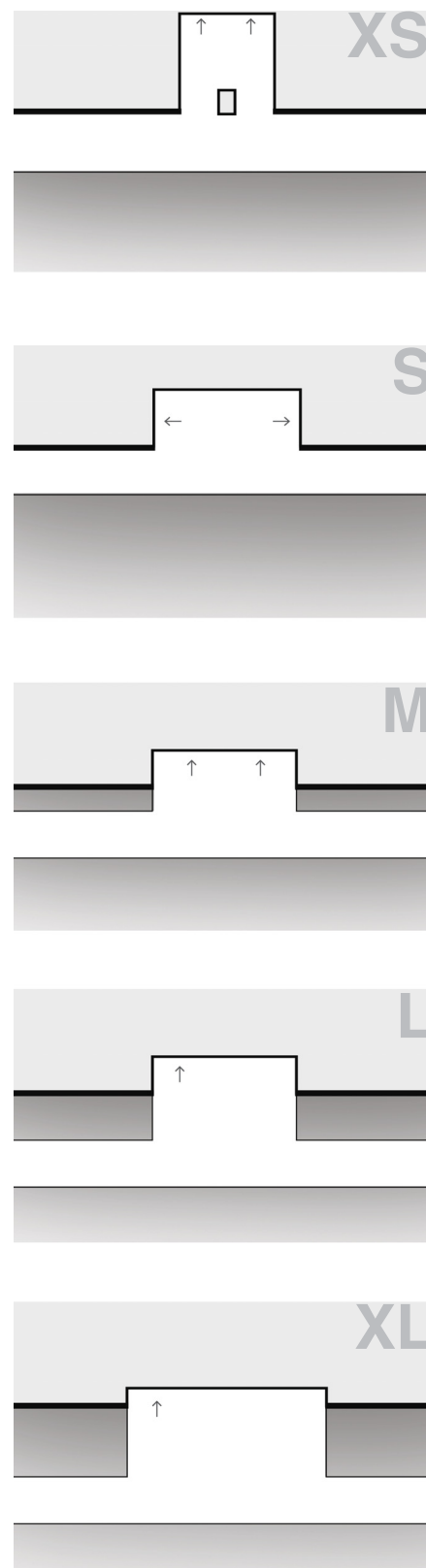


Fig. 33 Diagrammatic plan showing the interaction of each unit type with the interior "street".

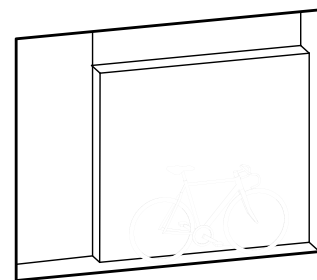
In the Plateau, the level of interaction of the dwelling to the street has a direct relationship to the size of the dwelling. The largest housing types interact the most and smallest housing types, the least. This interaction plays a role in creating a gradient from public to private. The largest housing types have more room inside to create this gradient. The smaller housing types lack the interior space to form a gradient. Therefore, smaller types require more privacy, or less interaction with the street. This relationship is maintained in the building to develop the same gradient from public to private that exists in the Plateau. Within the building this achieves a balance between architecture that encourages social interaction and respects the inhabitant's privacy.

“Street”

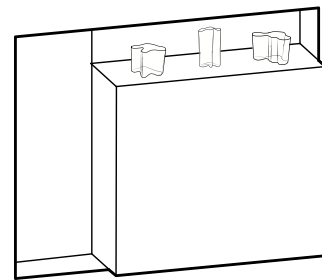
In a neighbourhood there is a diversity of streets, which allows the inhabitants of the neighbourhood to choose what kind of experience they want. The streets are organised hierarchically based on their level of activity. The study of the Plateau led to the observation that a street's level of activity and character is directly correlated to its topology and programmatic composition. In the building, these two variables are used in a similar way to create a variety of street types and experiences.

Topology

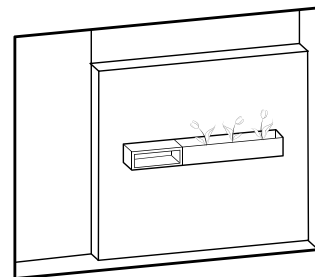
The topology of the Plateau is analogous to the spatial organisation of the interior streets in the building. The busiest streets in the Plateau, like



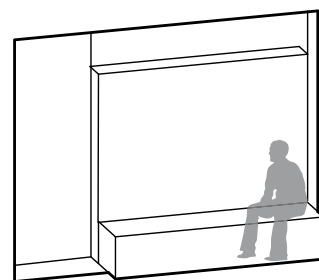
storage



high ledge



low ledge



bench

Fig. 34 Potential for inhabitation. Different ways the inhabitant can appropriate a space.

Mont Royal Street, have a larger setback, whereas the quieter streets, like Marie Anne Street, have a smaller setback and less dense housing types.¹⁷ The most dense and smallest housing types have more space for public amenities, resulting in more shared space and a more active street. Within the building the streets with most activity, like the social street (fig. 35), are more spacious with more natural light and higher vertical open spaces. The larger

¹⁷ The complete analysis of both Mont Royal and Marie Anne appear in the study of streets in the appendix.



Fig. 35 Rendering of the commercial interior “street”.

dimensions and higher levels of natural light in the active corridors mimic the larger setbacks of busy streets. In the building, unlike the Plateau, there is both vertical and horizontal circulation. The vertical streets in the building act like main streets which connect outside of the neighbourhood, or building. The horizontal streets connect internally within the building. If this methodology was applied to design neighbouring buildings the horizontal streets could also connect adjacent buildings.



Fig. 36 Rendering of the commercial interior “street”.



Fig. 37 Rendering of the residential interior “street”.

Composition

The programmatic composition also affects the level of activity and character of streets in the Plateau. The busiest streets have the densest housing types and the most active program. If there are more people living, working and inhabiting the neighbourhood it will be more active. The lower portion of Saint Denis Street, for example, is composed of dense unit types

like the walk-up and triplex.¹⁸ This area also has many restaurants, bars and shops and therefore a high level of activity. The relationship between the programmatic/unit composition of streets in the Plateau to the level of activity of the street is used to define the unit and programmatic composition of the interior streets within the building.

As a comparison to Saint Denis Street, consider the social “street” in the building. (fig. 35) The social street occupies four stories between the eleventh and fourteenth storey. The bottom level of the social street is composed exclusively of active program like restaurants; the upper levels containing dense unit types such as the XS units. In contrast, a residential street within the building, analogous to Marie Anne Street is composed of less dense housing typologies like the XL unit. (fig. 37) There are only a few spaces within this “street” for low activity businesses, such as a seamstress or dentist office, to occur.

Building

At the scale of the building, the whole neighbourhood is used as a reference. The topology of the Plateau is used to define the exterior expression of the building and the interior configuration of the building’s elements, such as circulation and housing.

Exterior

In the Plateau, there are groupings of dwellings, or

¹⁸ The program and housing typologies of two areas within the Plateau were studied. This study can be found in the appendix.

blocks. Each block has a specific characteristic or architectural language which allows the inhabitants to identify with the place that they live. A building is much larger than a block. On the street the inhabitants are physically removed from their dwelling. The topology of the Plateau is translated into an articulation of the overall building form into blocks that are perceptible from the ground level.

In the Plateau, people are able to identify their dwelling and block because they enter it directly from the street. Within the building, this is not possible on upper levels. Each dwelling type interacts with the exterior in a specific way, whether it is a Juliette balcony or a large terrace. The inhabitant experiences this interaction from the inside of the dwelling and can therefore recognise this from the exterior of the building. Each block is composed primarily of one unit type on each side of the building. The distinct composition of each block allows it to be recognisable from the exterior of the building.

Interior

Within the interior of the building, the Plateau serves as a basis to define the circulation pattern and programmatic distribution. First, the Plateau's diversity of streets was used as a basis to define a diverse set of experiences within the building. The streets in the building, like in the Plateau, are organised in a way that provides the inhabitant with choice of route or experience. That is, to choose a quick route over a scenic route. This circulation happens in the Plateau by the open ended block

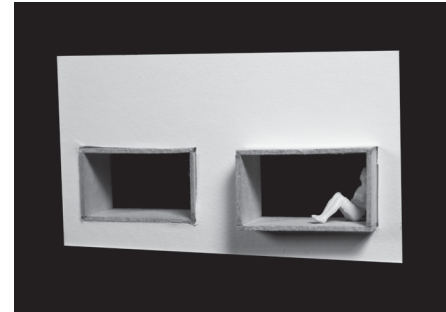


Fig. 38 1:50 Study model of the in-between, XS unit. Interaction of the dwelling with the exterior.

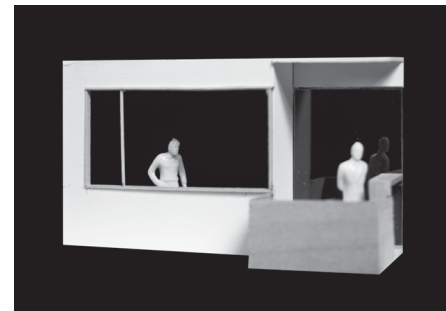


Fig. 39 1:50 Study model of the in-between, L unit. Interaction of the dwelling with the exterior.



Fig. 40 1:100 Sectional model used to study the interior form of different “streets”, This conceptual model shows a gradient of activity from the quietest street at the bottom right to the busiest street at the top right.

patterns, with no dead ends. Within the building there are three vertical streets that connect each horizontal street, that allows for a choice of circulation. For example, the inhabitant could take the smaller stairs that double as a fire escape, the elevator, or the large staircase in the centre of the building. That is, there are many possible routes, with no “dead-end” corridors. (fig. 41) Each route

has a different experience and could be used for a different reason.

Second, the Plateau serves as a basis to distribute program throughout the building. In the Plateau, the most active program occurs at nodes, the intersection of two streets. Instead of occurring at a node, neighbourhood scale program within the building, such as a convenience store or corner pub, occur along an interior street. Locating program within the street, rather than just at a node, creates a destination and a reason for a person to go down the interior street, animating it. Larger city scale program, such as a museum or performing arts centre, would occur at a node, the intersection of a horizontal street and vertical street. The main vertical street would be used by anyone within the city. In contrast, the horizontal streets would be used mainly by the inhabitants of the building contributing to a sense of community and furthering the hierarchy of streets.

City

One reason why the Plateau works so well as a neighbourhood, is how it connects to the rest of the city. The city's main streets, subway stops or bike lanes are integrated into the Plateau and achieve a high level of activity. First, the building must connect to the existing circulation paths and infrastructure of the city. For example, a horizontal path from the adjacent subway stop connects within the building to the ground floor and the main vertical street. Second, in the Plateau there is a programmatic

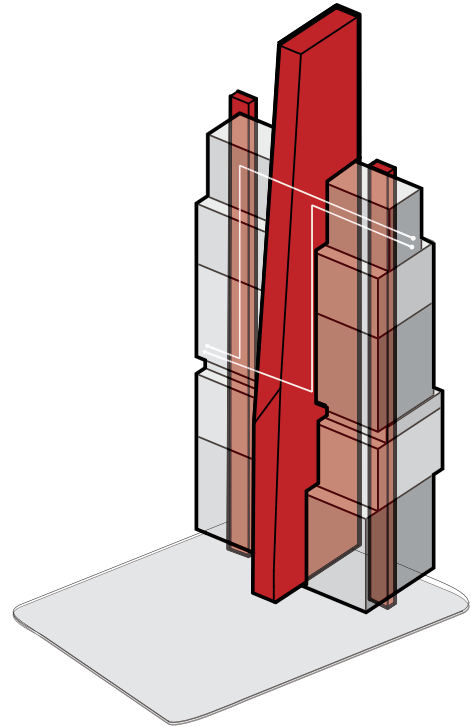


Fig. 41 A choice of circulation.

intensity along main paths to support activity bringing people into the Plateau. Likewise, there must be a reason to go up, or destinations along the buildings main “streets.”

Overall, the methodology can be considered as a number of architectural strategies. (fig. 42) Each architectural strategy draws on the fundamental principles to bring the high-rise typology closer to the experience of the Plateau. Although this strategy has been tested on one specific site, the methodology could serve on other sites.

1. Position tower based on site conditions.
2. Divide tower into “blocks”
3. Articulate each block
4. Orient public space towards landmarks
5. Insert program
6. Connect vertically using a main vertical “street” and two secondary “streets”
7. Connect horizontally using secondary streets that give a choice of routes.
8. Connect to both street and square with public space.
9. Place active program at street level to ensure vibrancy.
10. Connect to the subway

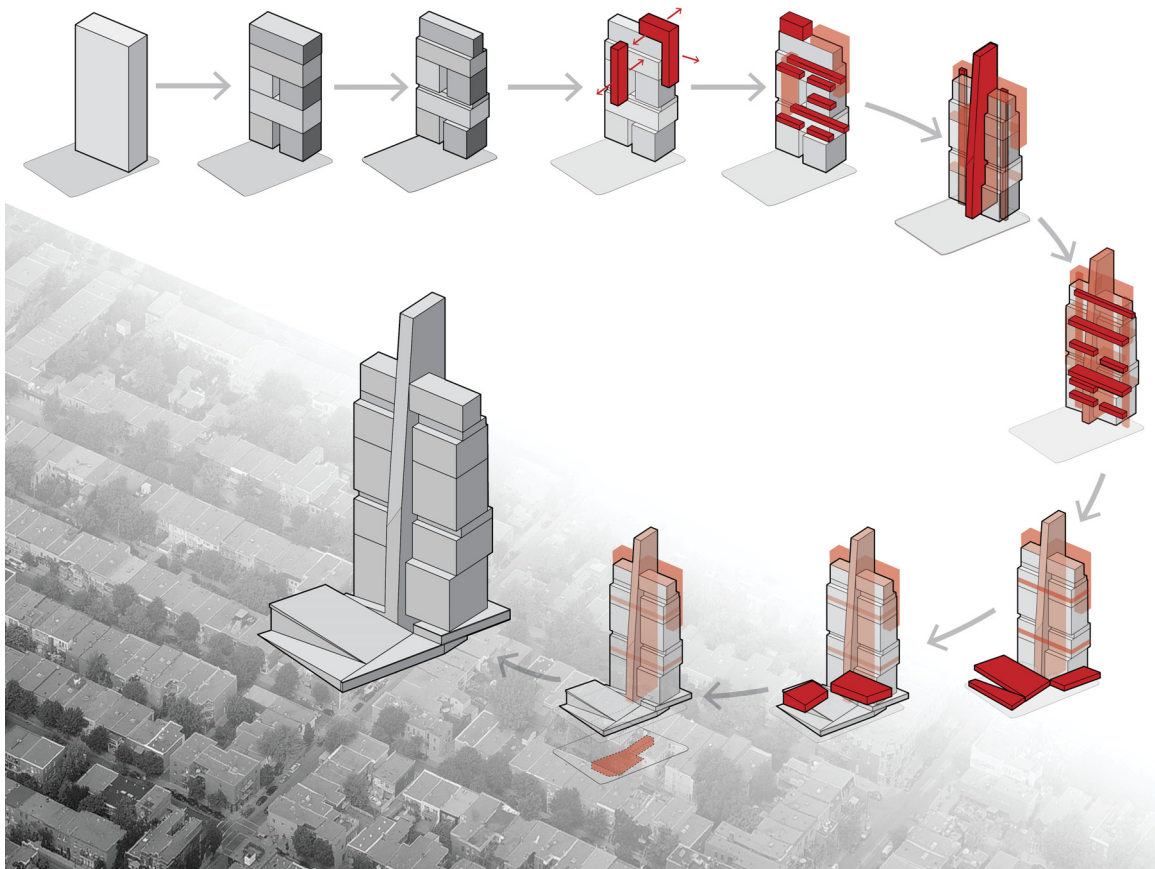


Fig. 42 Design moves to bring the high-rise typology closer to the Plateau.



Fig. 43 Connection in section. Longitudinal Sectional Rendering, drawn at 1:125.

CHAPTER 5: CONCLUSION

The goal of this methodology is to bring qualities found in a vibrant urban neighbourhood, meaningful dwelling, into a tall building. The methodology first identifies an urban place worth studying and second determines why it is successful. Principles contributing to the success of this neighbourhood are then translated in substance, not appearance, into a different building typology. While appearing different, elements within the building, such as a corridor, can serve the same role as elements within the Plateau, such as a street. The experience of each floor, or interior street, is different than the common high-rise corridor and the Plateau street. However, the analysis of the Plateau made it evident that both diversity and hierarchy of interior streets supports a meaningful experience, where monotonous corridors do not. To give another example, the proposed morphology within the building encourages both identification and inhabitation. This is achieved by understanding the role of the Plateau's morphology and translating morphology's significance to create an in-between space that is appropriate to the dwelling type and street activity.

The methodology still needs further investigation to deal with the issue of disconnection. For this method to achieve the same quality found in the Plateau it must be connected to the city and achieve a high level of activity. First, the building needs to be connected to the city in a way that people would want to continue travelling vertically in the building.

In his book *The Social Life of Small Urban Spaces*, William Whyte suggests that vertical transportation, specifically stairs, are a major deterrent for people using public spaces (Whyte 1980). The building would need to be designed in a way that going up is an inviting thing to do. Further investigation must be put into the design of the vertical circulation paths.

Second, Whyte also suggests that one of the main attractions for public spaces is people (Whyte 1980). The streets within the Plateau become public spaces. For the streets in the building to be used in the same way they must attain a high level of activity. There needs to be a reason to go down an interior corridor like one would go down a street. As stated earlier, placing program within, or at the end of the street could achieve a sufficient level of activity. However, further investigation of the amount and types program that could encourage enough activity. Perhaps, city scale program or work spaces could vertically connect say the social street to the commercial street for example.

In conclusion, the resultant building is more than just a building. It is a piece of urban infrastructure. High-rises are traditionally designed as autonomous buildings. The proposed methodology challenges current practices to develop a sense of urbanity within a building while connecting to the existing urban fabric. One of the most beautiful things about the Plateau is how it has continued to achieve meaningful urban dwelling throughout many years and with different types of occupants. It is the goal

of this thesis to create a building that does the same thing: provides a space for the uncertainty of urban life to be carried out. While suggesting a level of inhabitation, the built form does not dictate exactly what that may be. The Plateau's physical structure¹⁹ supports French Canadian culture to make a place. The proposed building does the same thing, gives room for the inhabitants to build a home and a neighbourhood.

¹⁹ Morphology, Typology and Topology as they relate to each other.

APPENDIX

Urban Morphology

Buildings set the stage for the life of a city to take place. They contain the urban dweller, making the street a “place.” Christian Norberg-Schulz states “Urban spaces ... are like any kind of place, conditioned by the built form of the boundaries.” (1985, 56) Each city has different morphological characteristics that determine the identity or character of that place. A study was undertaken to identify and understand the building articulation that characterizes Montreal’s Plateau. The role of each morphological elements was determined through observation and analysis by the author.

1. Exterior Stair

The exterior stair is the most prominent and identifiable feature of Montreal housing. These stairs are quite steep and can be very inhospitable during the winter. However, they are the pride and joy of Montrealers. The stairs are used for all sorts of social purposes: neighbours will sit and chat on their shared stair, inhabitants will sometimes sit on the stairs to watch their kids or passersby. It is ultimately a place of meeting and connection. The exterior stair extends the procession of entering the household, blurring the line between public and private.

2. Terrace

This condition occurs on streets populated by



Fig. 44 Exterior stair



Fig. 45 Terrace

commerce and restaurants. The increased dimension from standard front balconies increases the space between the city activity and the dwelling. This corresponds to the increased activity on the street. However, due to the high pedestrian traffic occurring on these streets, the terrace is a great place to watch people. Walking down the street, one can frequently observe these terraces filled with groups of people, dining or socializing.

3. Commercial/ Restaurant Ground Floor

The ground floor on busy streets is frequently occupied by a shop, restaurant or restaurant terrace. The wider setback on these streets gives room for more public or collective functions to take place on the ground floor, mediating the street activity to the home.

4. Overhang

Many buildings have an overhang or decorative structure enveloping the windows on the top floor of a building. These serve to protect the window from rain and contribute further a sense of identity.

5. Front Balcony

A small balcony of 1.2 to 1.5 meters depth can be placed over the door of all typologies. When multiple balconies exist they are stacked. The front balcony is quite small, barely large enough for a small table and two chairs. Despite its meagre size, these balconies are very well used and serve as a significant element to activate the street. On a street



Fig. 46 Commercial/restaurant ground floor



Fig. 47 Overhang



Fig. 48 Front balcony

every dwelling would have one of these balconies. Therefore, it takes only one household occupying their balcony at any point in time to contribute a sense of life to the street.

6. Cornice

The cornice serves to give a vertical termination to the building. This increases feelings of containment within the street, giving the street a distinct form and implying an urban “ceiling.”

7. Stoop

The stoop takes the place of the exterior stair on more narrow streets. It is generally covered and provides a place for a person to pause before they enter their dwelling, to find their keys, put down a shopping bag etc.

8. Recessed Door

Many doors are pushed into the dwelling. This gesture pushes the urban world into the dwelling, softening the threshold. This also gives the inhabitant a place of personal expression. These doors are often painted distinct bright colours and display the number of the household. The combination of the changing building materials and the paint colour of the door allows the inhabitant to identify their dwelling.

9. Back Balcony

The back balcony occurs off of the kitchen. It serves a fairly marginal purpose of storing garbage or other



Fig. 49 Cornice

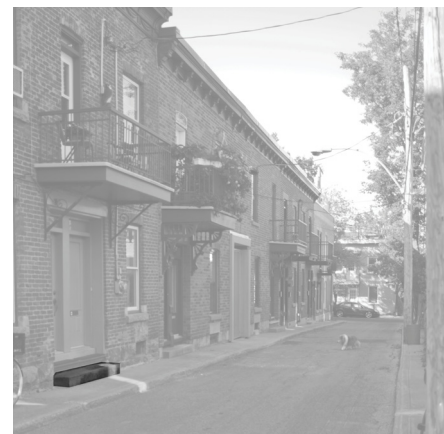


Fig. 50 Stoop



Fig. 51 Recessed Door

large items (bicycles). Sometimes it is turned into a small urban garden or used for a barbeque. However, since these balconies occur in the laneway, not the street, they are shaded. The balconies on the top floor are the only ones who receive enough sunlight to grow plants. Like the front balconies, they are generally stacked one on top of each other.

10. Fire Escape Stairs

Like the exterior staircase in the front, this is another element that is distinctly of Montreal. Spiral stairs intended as a fire escape fill the back courtyards, dotting laneways. Sometimes these are used as a primary access to a residence, especially in a walk-up building. They are a place for meeting your neighbours or waiting for dinner on the barbeque to be cooked. Where the front exterior stairs are the formal entry, the fire escape stairs become a casual and informal gathering or circulation space.

11. Trees and Hedges

Montreal is full of trees. They serve some very important roles: to help give human scale to the street, increase visual appeal of the city, and to mediate between the city activity and the dwelling. When all the leaves are on the trees (generally when one's window would be open) the tree becomes a visual and auditory screen to the city, filtering the noise and increasing privacy of the dwelling. Trees occur on all types of streets: laneways, busy vehicular streets, quiet residential streets, grand boulevards etc. Smaller trees or shrubs serve to

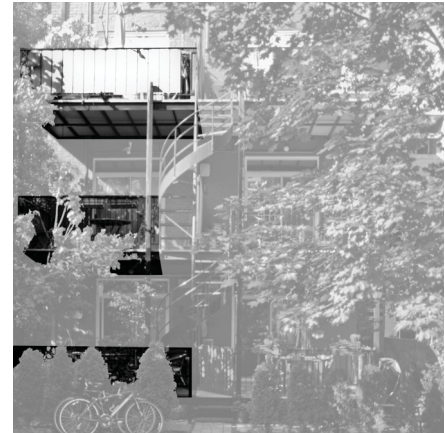


Fig. 56 Back Balcony



Fig. 57 Fire escape stairs

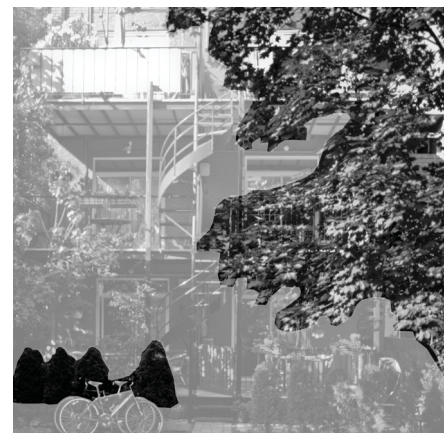


Fig. 58 Trees and hedges

demarcate the street and the small front (or back) yard of the ground floor dwelling. This helps to define the space, clearly marking what is owned by the resident versus what is public.

12. Bay Window

Contrastingly to the recessed door, the bay window is a protrusion of the dwelling into the realm of the city. This articulation usually occurs in a more public room of the house, such as the living room. In many Montreal apartments this room has now been converted into a bedroom. A window seat is generally incorporated into the bay window. Sitting on that window seat places the dweller in-between the dwelling and the city. If the window is open (as it often is in the summer) the dweller has equal sensory experiences of the city and of the dwelling.

13. Recessed Balcony

Like the recessed door, the recessed balcony pushes the realm of the street into the realm of the home. This is used for smaller dwellings that occur either on a busy street or in a laneway. The balcony serves to unify the street with the house claiming the extra visual space for the tight dwelling.

14. Protrusion to the Street

On a quiet residential street, the last building before the adjoining street is pushed towards the street. In a sense, this gives shelter to the in-between spaces of the dwellings on the quiet residential street. This element is used as a method of mediating between



Fig. 52 Bay window

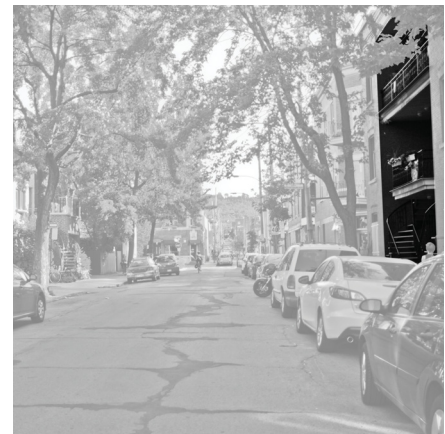


Fig. 53 Recessed balcony



Fig. 54 Protrusion to the street

the activity on the busy street to the activity on a quieter street.

15. Office Ground Floor

On busier residential streets the ground floor is often turned into an office or other business (daycare, seamstress etc.) This flexibility creates a mix of uses and a vibrancy. As many of the units were originally conceived for a large family, this also allows the front of one's residence to be used for a business and the back for a home. This is particularly useful if there is no longer a large family living there.

Housing Typologies

All described housing typologies are attached on one or both sides depending on the position within the block. They are joined by a shared firewall. These definitions were created by the author using the framework set out by Heckman et al. 2011, de la Riva et al 2000, Hanna and Dufaux 2002. The names of housing typologies varies greatly depending on place and time, somewhat subjectively. Therefore, in defining these typologies the goal is to be consistent in use and coincide with generally accepted notion of housing typology by Montrealers.

Maisonette

This is a grand unit occupied traditionally by just one family. These units contain three stories and are often fronted by an exterior staircase. In contemporary applications, the ground floor has typically been modified into an apartment or office,



Fig. 55 Office ground floor



Fig. 56 Maisonette on Cherrier Street, Lower Plateau, Montreal, QC.

leaving the two upper floors for the owner.

Row House

A one or two story unit. Less grand than the maisonette. This type has less potential than the others for modifications such as an added apartment, an office or shop. This typology is sometimes referred to by locals or real estate agents as “cottage.”

Walk-up

Many stacked flats accessed by a shared staircase. This typology typically ranges from 6 to 12 units. Depending on the location the ground floor is frequently nonresidential. Notable between these buildings and say an apartment block is the lack of an elevator.

Duplex

Two stacked flats each accessed individually directly from the street. Like the row house, this type has less potential than others for modification. Compared to others duplexes generally have quite small dwellings.

Triplex

Three stacked flats each accessed directly from the street. Access is private for the ground floor unit, and shared for the upper two units. Access is usually from an exterior staircase for the second floor dwelling and an additional interior staircase for the third floor dwelling. A triplex offers the most potential for modification of any typology. Each floor



Fig. 57 Row houses on St. André Street, Upper Plateau, Montreal, QC. (Image from Google streetview, 2009)



Fig. 58 Walkups on Bernard Street, Outremont, Montreal, QC.



Fig. 59 Duplex on Marie-Anne Street, Upper Plateau, Montreal, QC.

generally contains a large dwelling intended for a family.

Other “plexes”

The notion of a “plex” can continue having up to six units. In these cases a suffix is added ie. quadruplexes, quintuplexes or sixplexes. These types occur frequently, but less often than the prolific triplex. One advantage that occurs occasionally in this type is a large ground floor unit.

Streets in the Plateau

Nine different streets in the Plateau were studied in terms of morphology, topology and typology. These streets were chosen as they are representative of the diversity of the neighbourhood. All drawings were completed by the author with the assistance of another student, Brent Schmidt. The drawings are estimated based on photographs and measured drawings of similar typologies in *“Plex” Housing: A Renewed Tradition*. (2000)



Fig. 60 Triplex on Mont Royal Avenue, Upper Plateau, Montreal, QC.



Fig. 61 Quintuplex on Mentana Street, Lower Plateau, Montreal, QC. (Image from Google streetview, 2009)

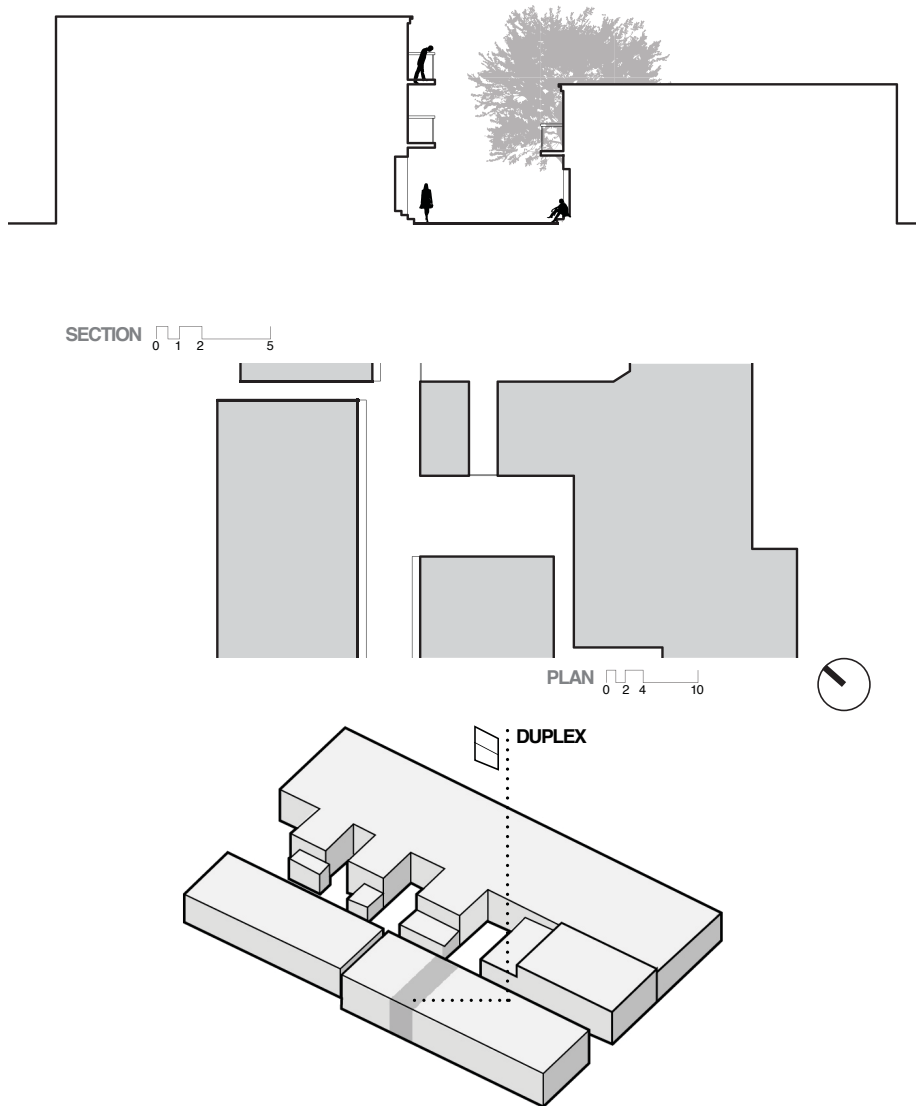


Fig. 62 Plan, Section, Orthographic and Photograph of Chateaubriand Street Montreal, QC.

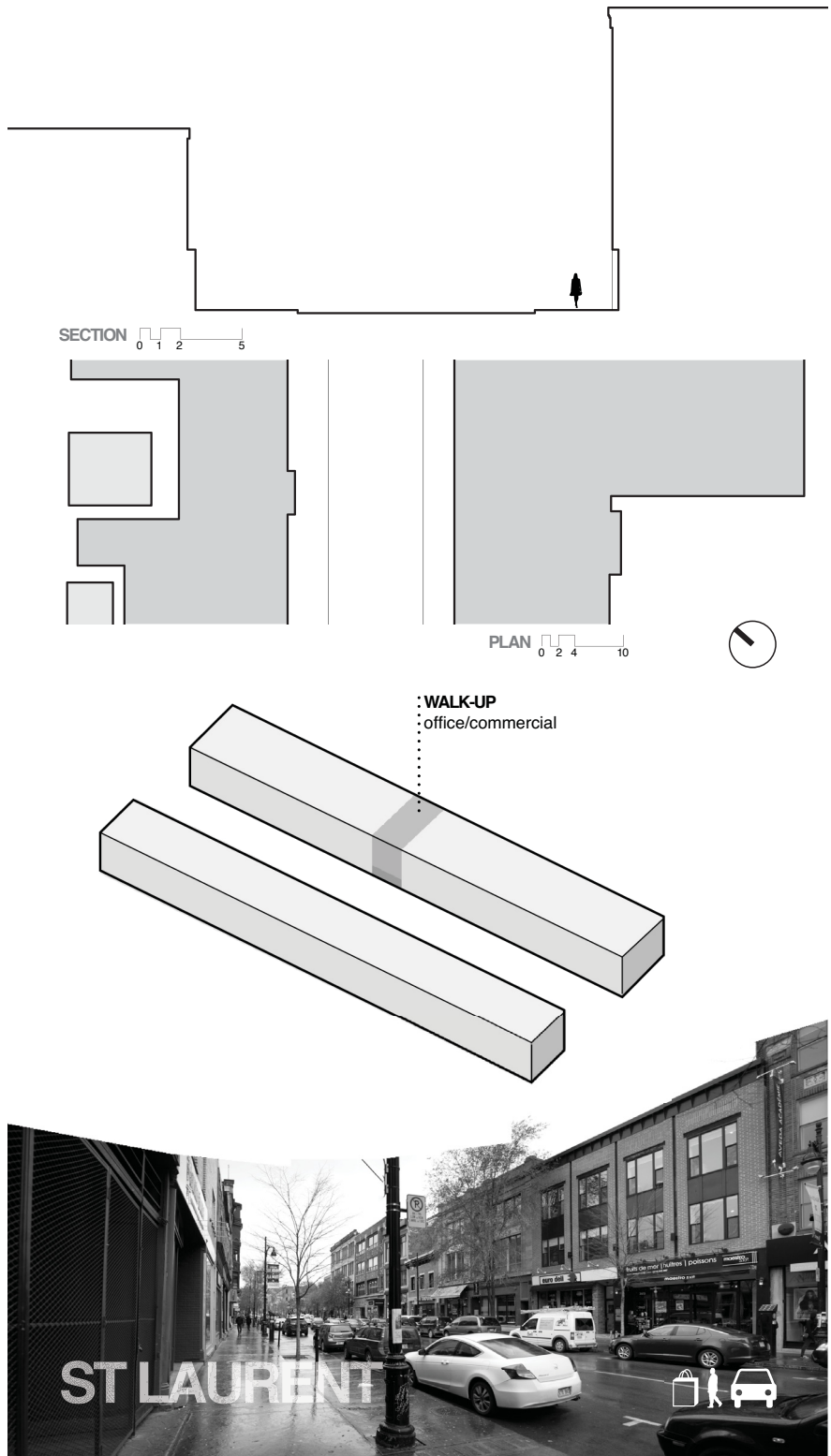


Fig. 63 Plan, Section, Orthographic and Photograph of St Laurent Boulevard Montreal, QC.

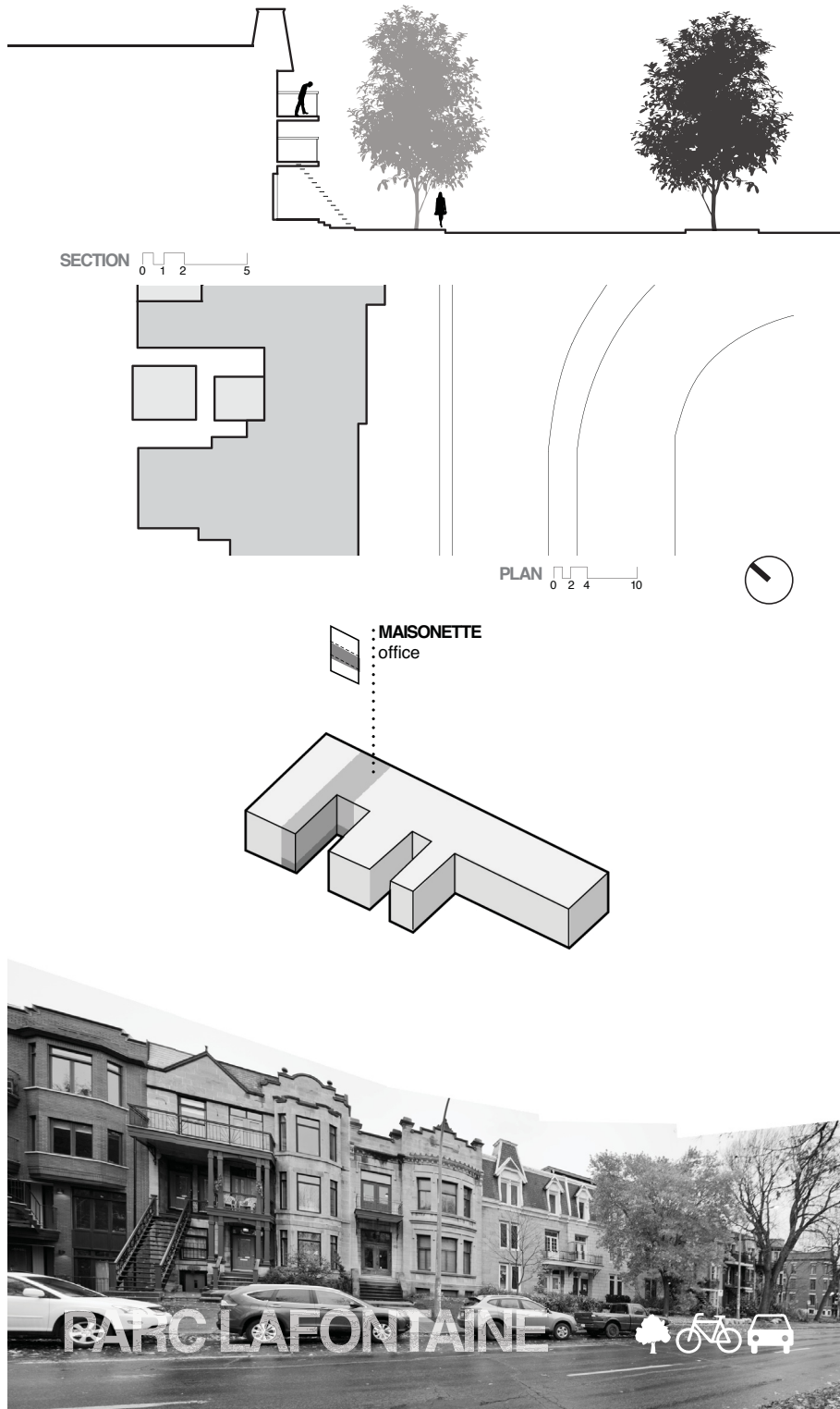


Fig. 64 Plan, Section, Orthographic and Photograph of Parc Lafontaine Avenue Montreal, QC.

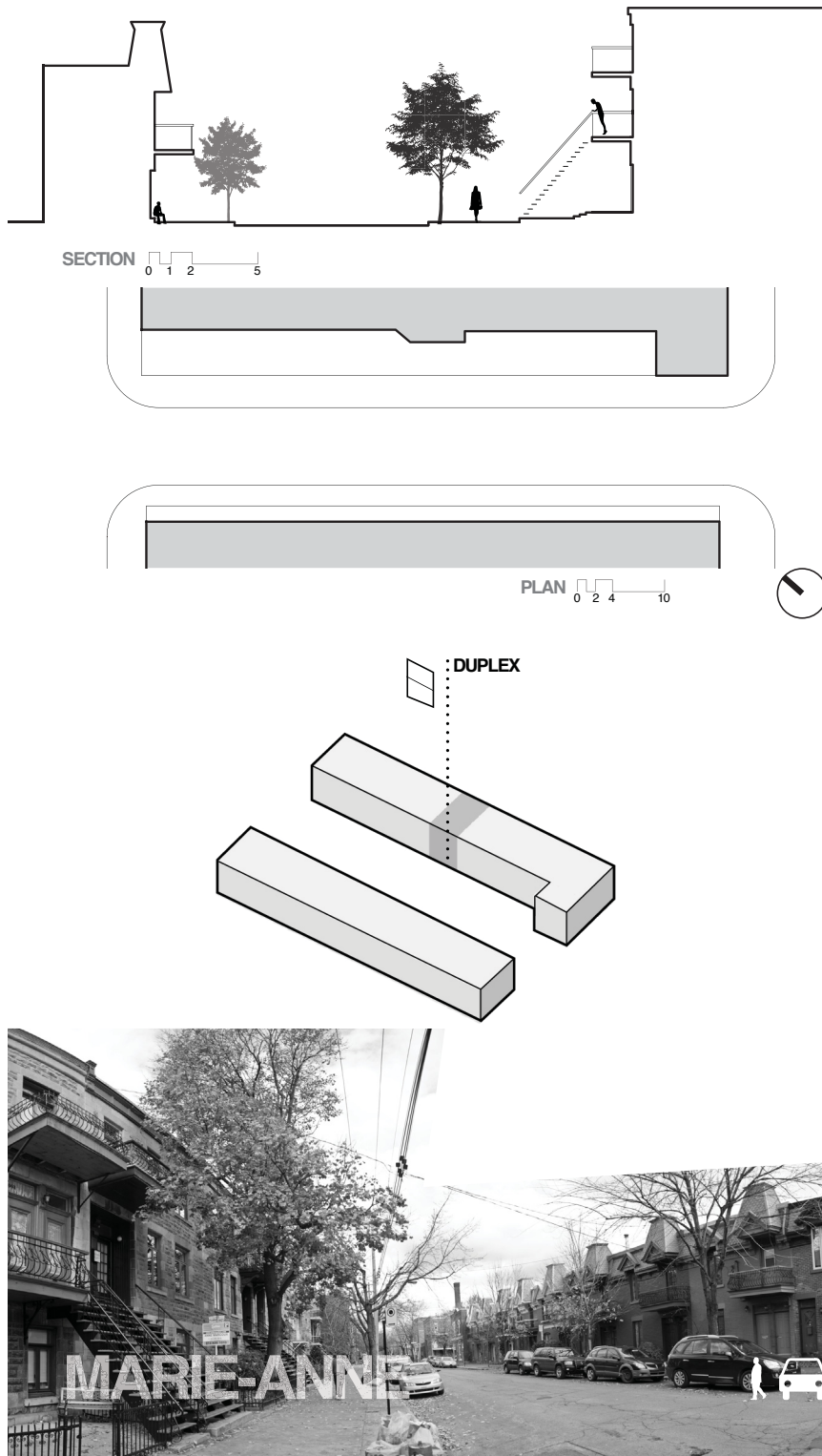


Fig. 65 Plan, Section, Orthographic and Photograph of Marie-Anne Street Montreal, QC.

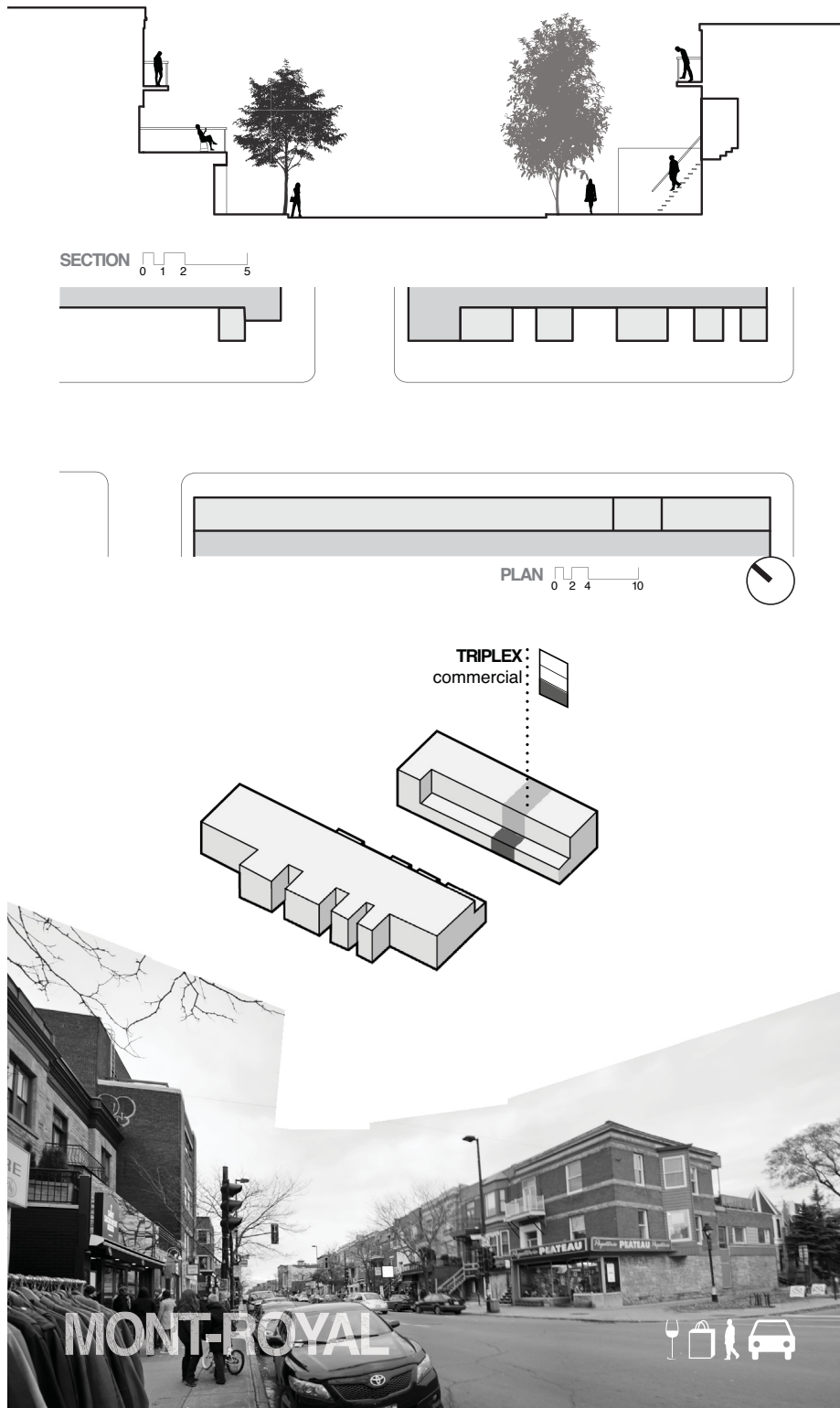


Fig. 66 Plan, Section, Orthographic and Photograph of Mont Royal Avenue Montreal, QC.

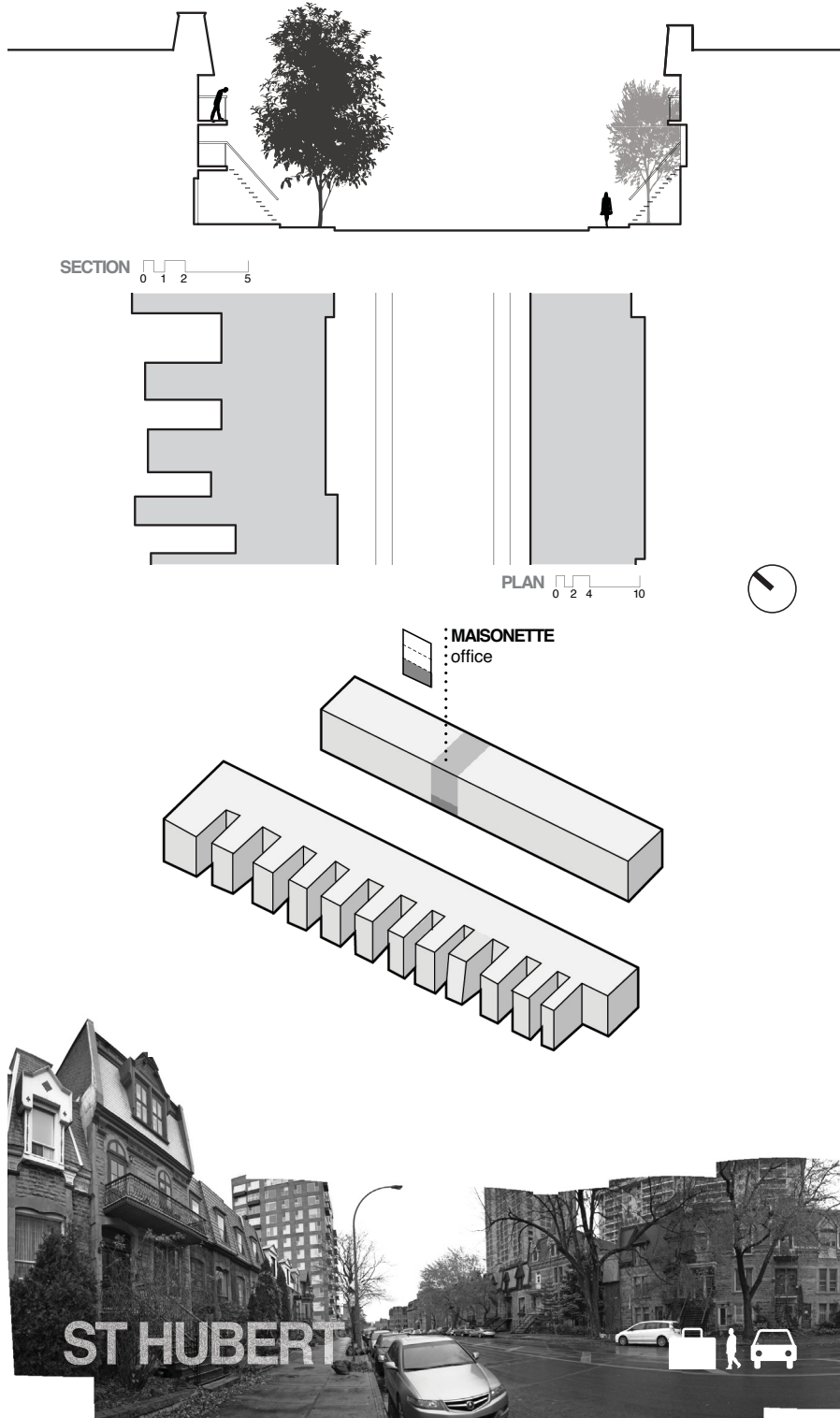


Fig. 67 Plan, Section, Orthographic and Photograph of St Hubert Street Montreal, QC.

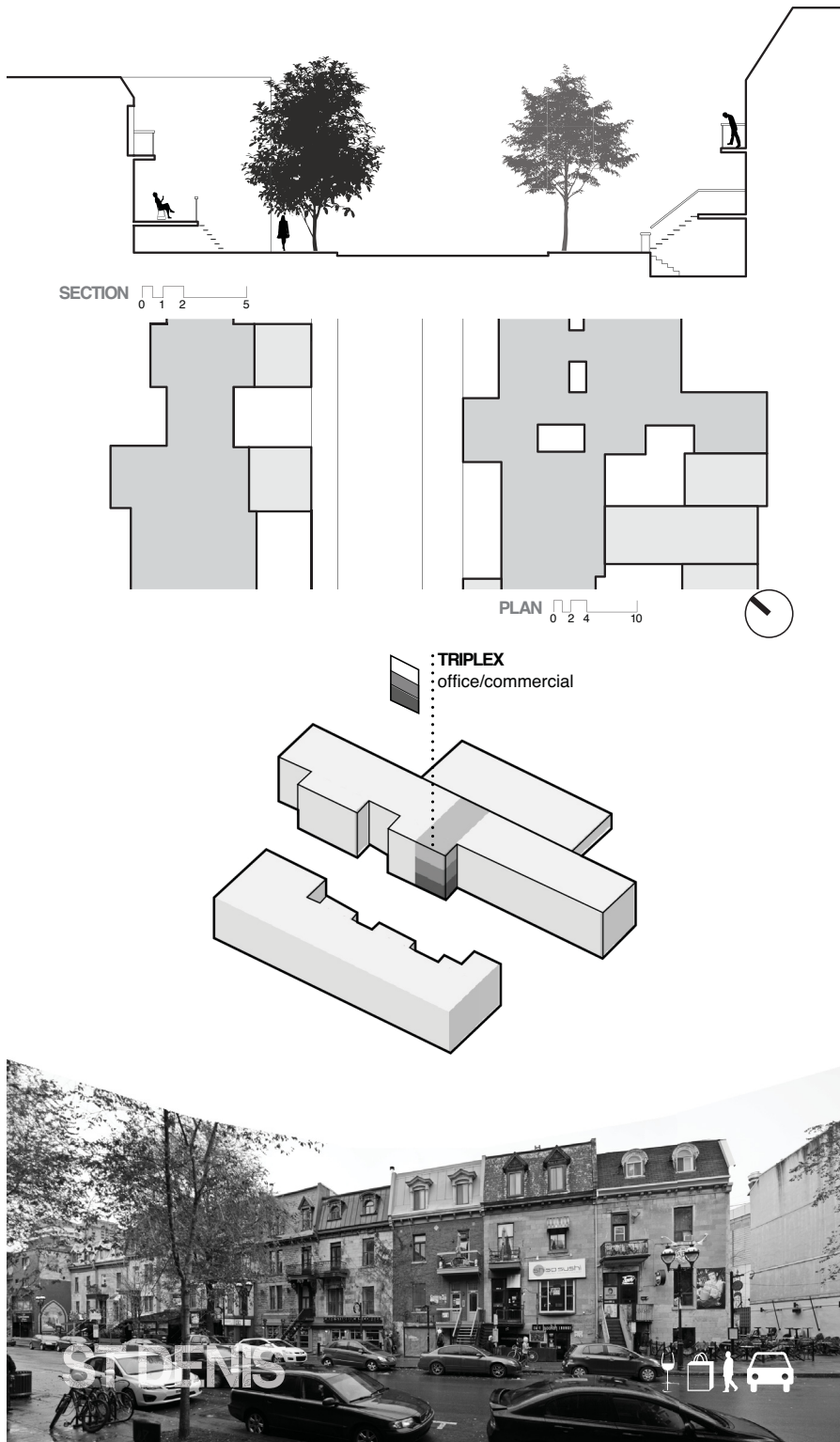


Fig. 68 Plan, Section, Orthographic and Photograph of St Denis Street Montreal, QC.

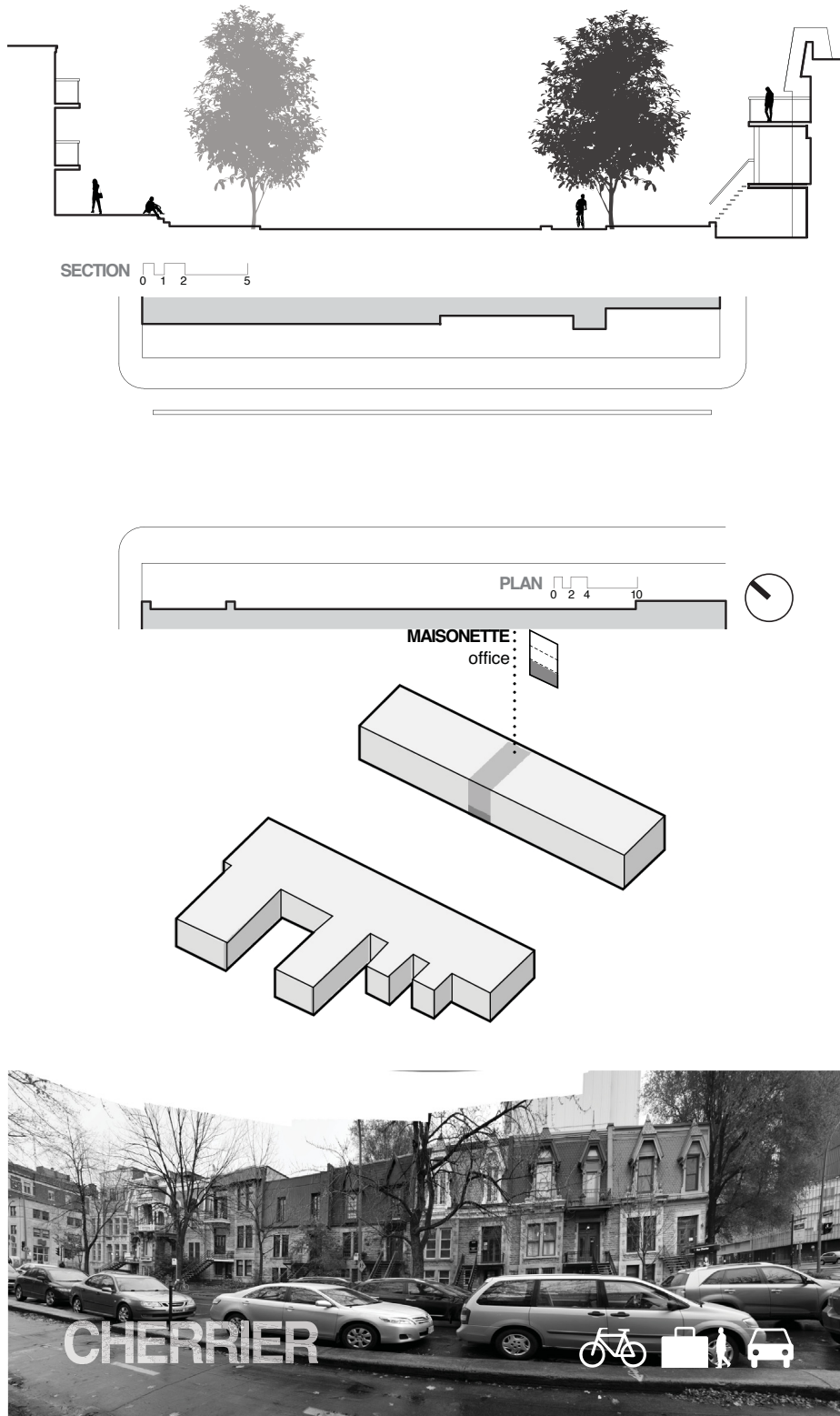


Fig. 69 Plan, Section, Orthographic and Photograph of Cherrier Street Montreal, QC.

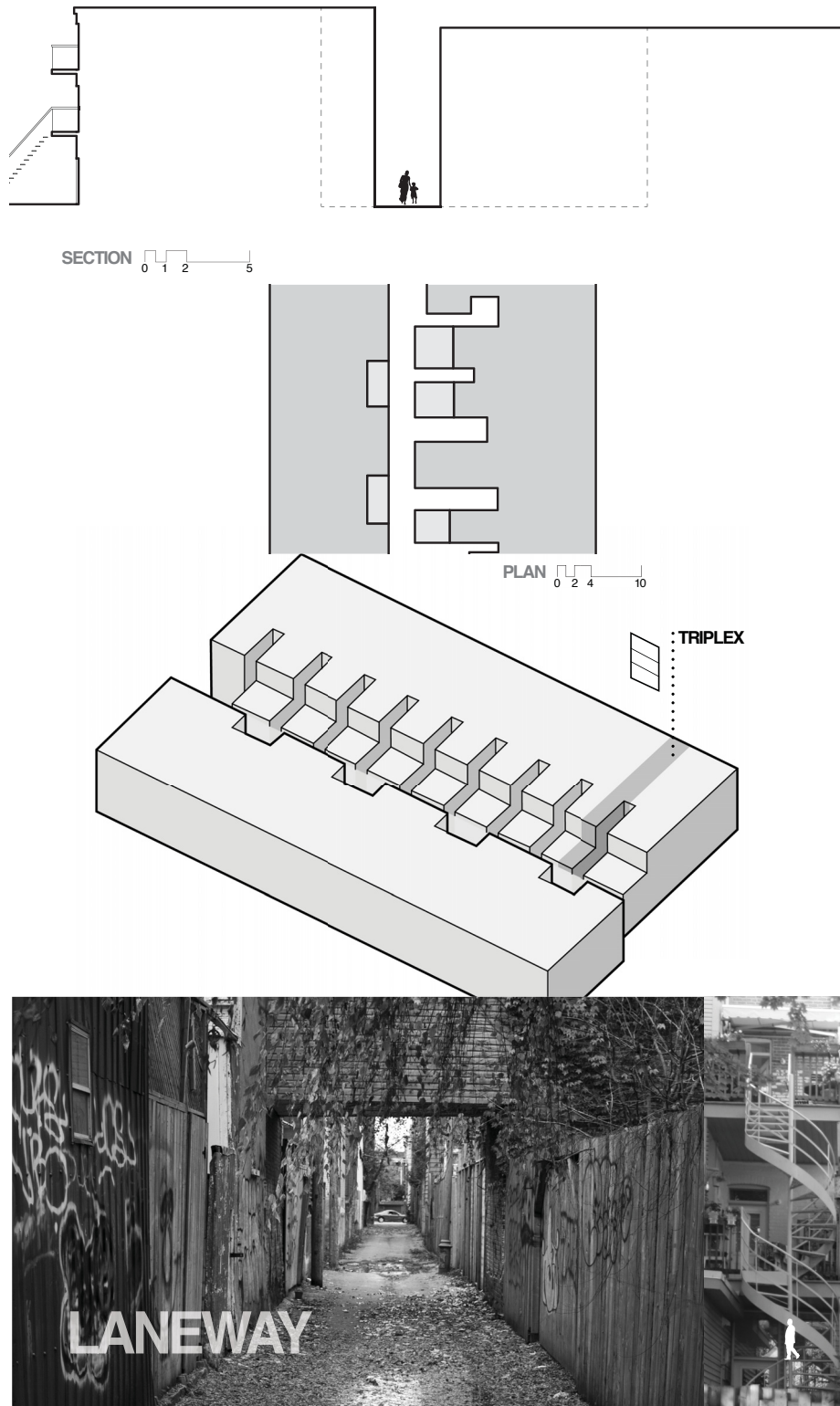
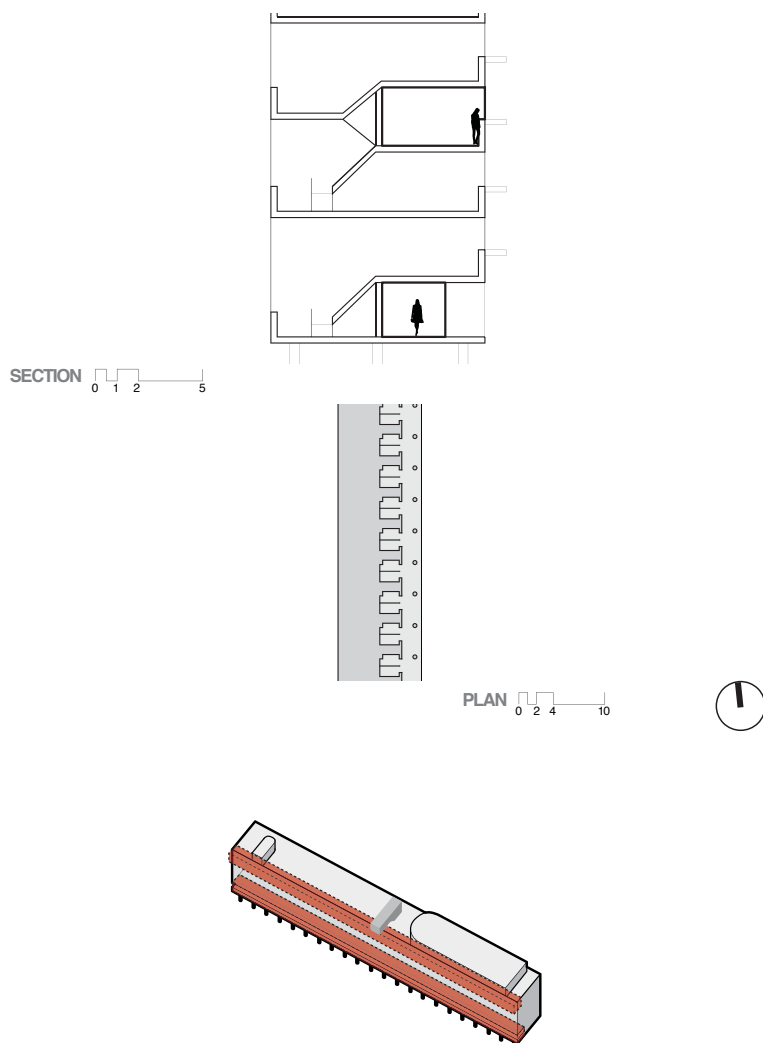


Fig. 70 Plan, Section, Orthographic and Photograph of a Laneway (unnamed) Montreal, QC.

Streets in a Building

The theme of bringing a street into a building has been quite prolific in modern architecture. Six case studies are chosen among buildings that are considered to have an “interior street” by either the designer or by critics and academics. These buildings were analysed in the same method as the streets. The complete results of this study are presented in the following pages.



YEAR
1928

LOCATION
Moscow, Russia

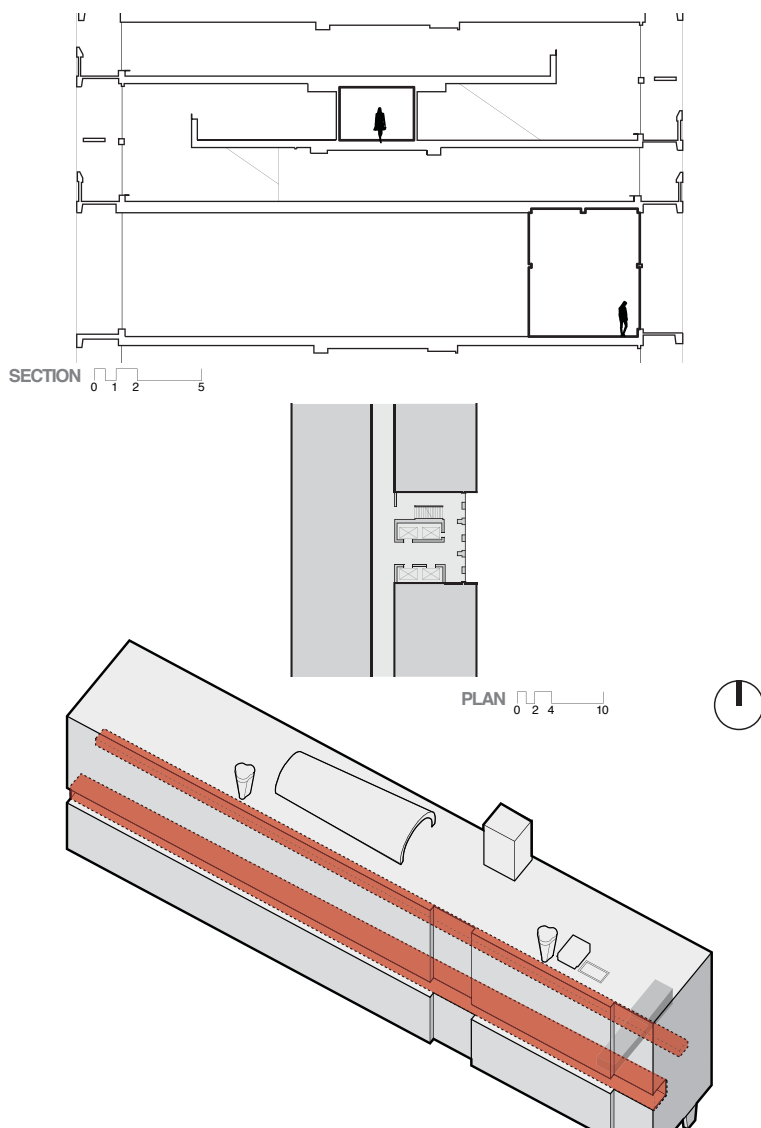
ARCHITECT
Moses Ginzburg and I. Milinis

PROGRAM
Collective Housing
Canteen
Kitchen
Gymnasium
Library
Nursery

RELEVANCE
Narkomfin was the first notable example of bringing the “street” into the building, as an experiment of Communist Russia towards collective housing. The argument was that the dwelling could be less spacious, giving over the extra room to shared amenities. Architecturally, this is also one of the first times the corridor was seen every third floor, allowing double-height units and providing more opportunity for chance meeting. This building exhibits some of the architectural characteristics of le Corbusier’s five points: roof garden, strip windows, pilotes and free facade. (Sherwood 1978, 118-119)



Fig. 71 Moses Ginzburg, Narkomfin, Moscow, Russia (2007)



YEAR
1945-1952

LOCATION
Marseilles, France

ARCHITECT
Le Corbusier

PROGRAM
Housing
Commercial
Roof terrace including
a running track, kinder-
garten, gym and wading
pool
Offices
Hotel

RELEVANCE
This building was seen as the culmination of le Corbusier's work in housing. Superficially, this building has been endlessly emulated in contemporary architecture. Le Corbusier sought to create a vertical garden city, containing all the functions of a city or neighbourhood within the building. All units are double oriented and contain double height spaces. (Sherwood 1978, 120-125; Jenkins 1993; ed. Heckmann and Schneider 1994, 150-151)

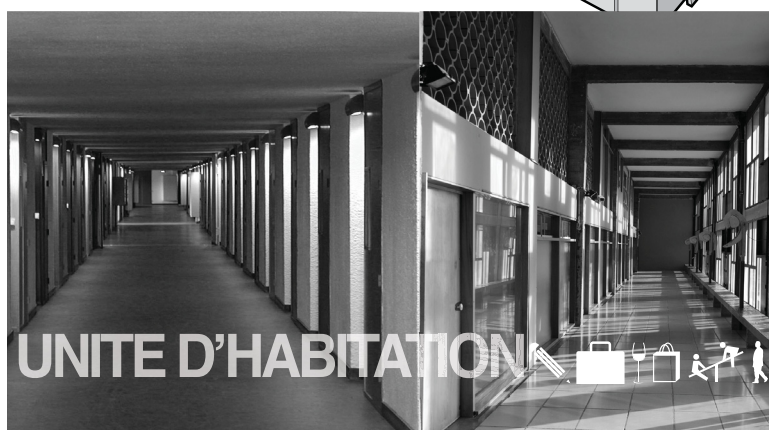


Fig. 72 Le Corbusier, Unité d'Habitation, Marseille, France (2010)

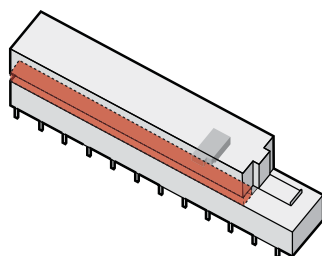
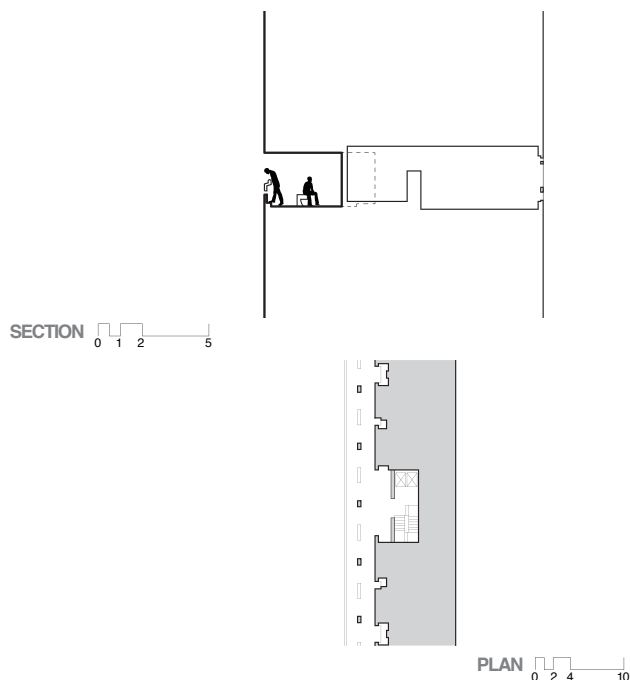


Fig. 73 Herman Hertzberger, Weesperstraat, Amsterdam, the Netherlands. (Hertzberger 2009)

YEAR

1959-1966

LOCATION

Amsterdam,
the Netherlands

ARCHITECT

Herman Hertzberger

PROGRAM

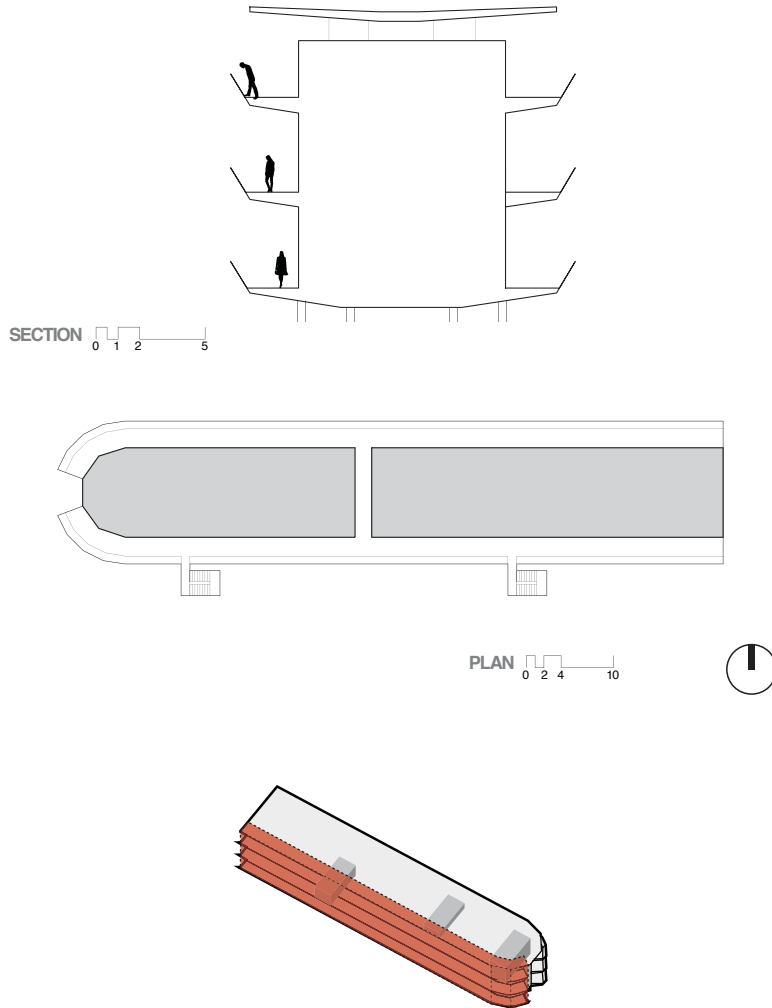
Student Residence
(floor shown is housing for
students with a family)

PROGRAM

Student

RELEVANCE

Herman Hertzberger believes in a gradient between the private and public realms, rather than a sharp distinction. The articulation in this plan provides that gradient, while suggesting appropriation and inhabitation of the “street” and public realm. This intense use is evident in photographs. Architects should, “indicate the possibilities that are inherent in the design and within everyone’s reach.” (158) Although this was one of Hertzberger’s early projects, this project strongly illustrates his ideas about transition from public to private and architecture’s ability to suggest inhabitation. (Hertzberger 2009)



YEAR
1988

LOCATION
Nimes, France

ARCHITECT
Jean Nouvel

PROGRAM
affordable housing

RELEVANCE

Jean Nouvel used the corridor to gain space for the units. Despite their uniform appearance, the Southern corridor is a public walkway, whereas the Northern corridor is the back balcony of the dwellings. There is little demarcation in the semi-private balconies. Depending on context, this could cause the meaning of the balcony to go two ways: an under-utilized no-man's land or a utopian shared space where all the residents can find a common ground. Photographs of the inhabited building suggests it has headed towards the former, however this suspicion has not been validated. (ed. Steinemann and Mateo 2008, 24-31; ed. Heckmann and Schneider 1994, p.160-161)



Fig. 74 Jean Nouvel, Nemausus, Nimes, France (2010)

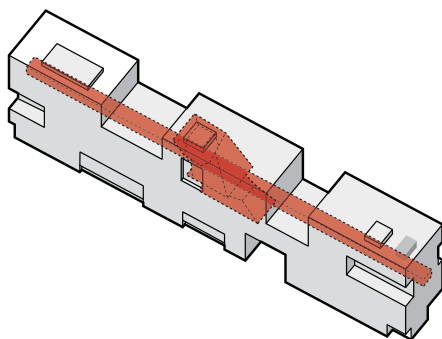
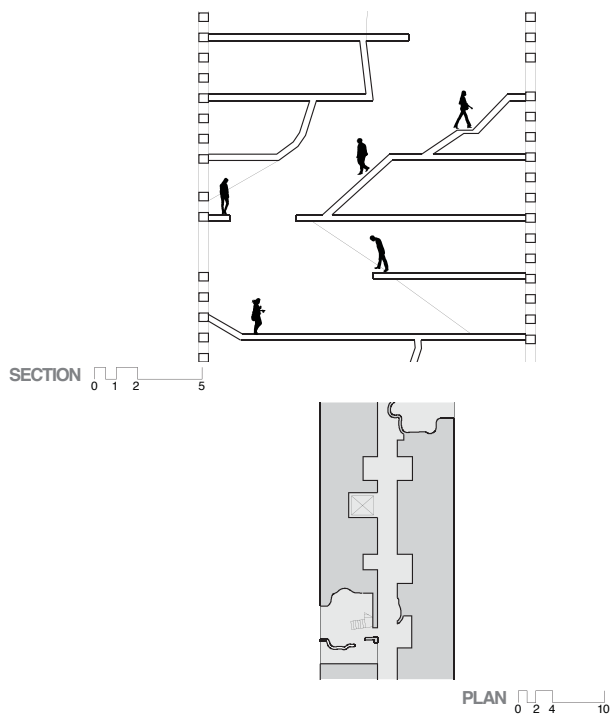


Fig. 75 Steven Holl, Simmons Hall, Cambridge, Mass, (2005)

YEAR
1999-2002

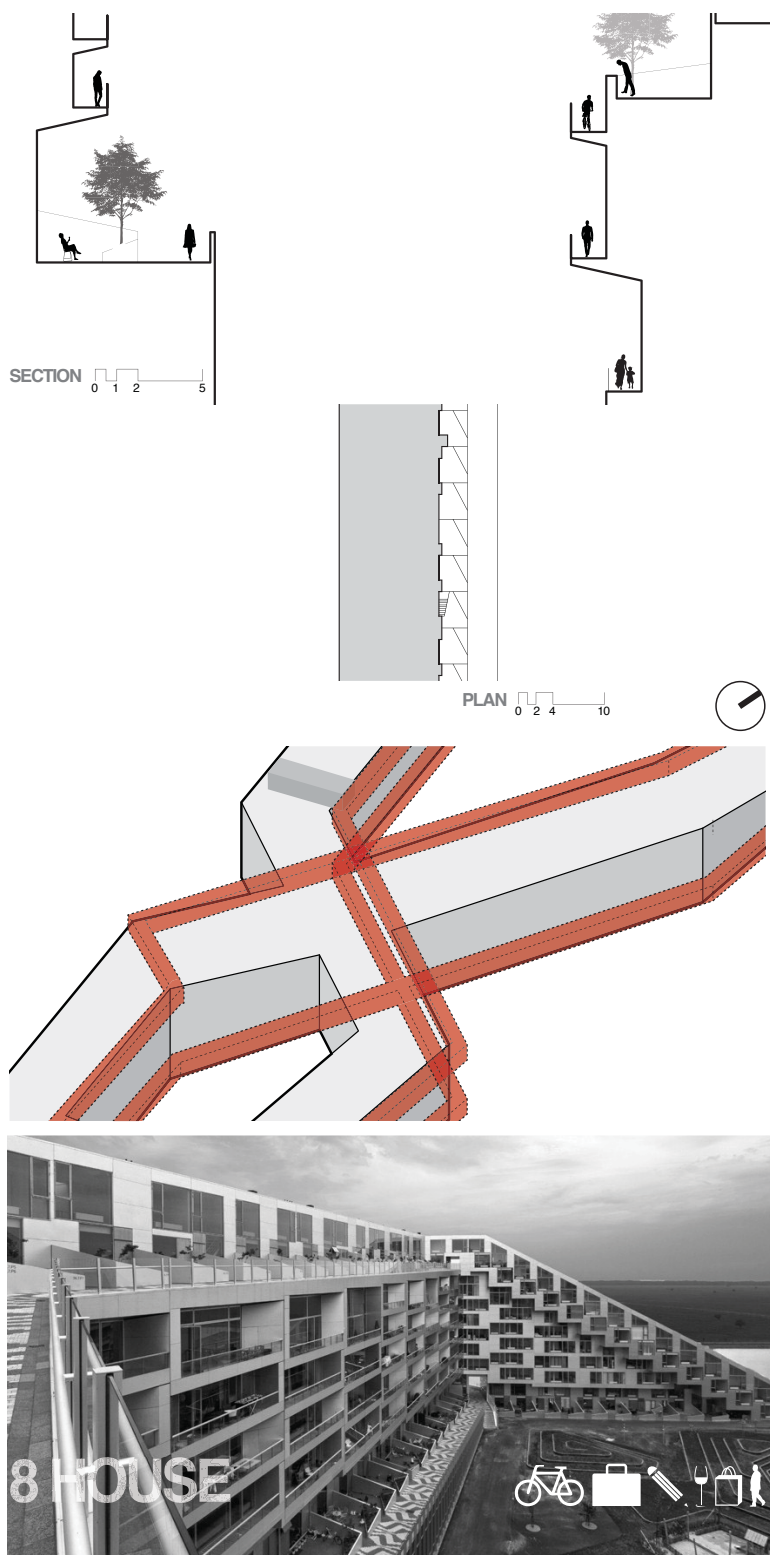
LOCATION
Cambridge, Mass

ARCHITECT
Steven Holl

PROGRAM
student residence

RELEVANCE

This project is the first studied to show a significant vertical connection. Five vertical shafts connect the wide corridors. Likely due to fire regulations, these shafts are largely disconnected from the corridor. This project brings up the question of fire separation in spaces that are vertically connected. In this case, Holl chose to deal with the issue by enclosing the shafts in glass or with a door. The problem with this solution is that it cuts sensory experience of the street and reduces the probability of chance meeting along these vertical corridors. More public program (kitchen, lounge etc) is housed within these shafts, therefore they become a gathering point or destination in and of themselves. (Holl 2007, p. 118-129)



YEAR
2010

LOCATION
Copenhagen,
Denmark

ARCHITECT
Bjarke Ingels Group

PROGRAM
apartments
condominium
townhouses
office
commercial

RELEVANCE
The 8 House brings this research full circle, as it is the closest of the studied examples to a true street. There are two main exterior paths that ramp up the building on the southern facade. These paths serve to connect various levels both visually and physically. It is evident that dimensionally and proportionally this creates a built environment closer to that of the street. Like with much of Hertzberger's work, the semi-private spaces are demarcated using low walls. The walls vary in height creating more privacy towards the street and less towards the resident's direct neighbour. (Bjarke Ingels Group's website, <http://www.big.dk/> accessed Oct 2012)

Fig. 76 Bjarke Ingels Group, 8 House, Copenhagen, Denmark. (Bjarke Ingels Group 2012)

Confirming the Fundamental Principles

The fundamental principles were conceived of intuitively. Speaking to residents of the Plateau served to confirm and refine intuitions about how the Plateau operates. The study method is qualitative. It is meant however, not as a sociological study, rather just to give a sense of how people live: what is important to them and what their experience of the city is. All of the interviewees live within the urban limits of Montreal in a low/medium rise building accessed directly from the street (plex or walk-up). Their current inhabitation is important as these are the types of dwellings that are being studied and re-interpreted.

The interviewees were asked a series of questions and asked to explain the answers both in words and by drawing. The interviewer prompted if additional description was required. Each person produced a map and collage of their neighbourhood and a map to Place des Arts. The map and collages were based on experience. Some examples of questions asked to help prompt the interviewees are as follows:

1. Where do you live?
2. How do you get to work?
3. Where do you buy your groceries?
4. Where do you go out for fun? to eat?

VALERIE**AGE 28****OCCUPATION** Research Scientist**NEIGHBOURHOOD** Plateau

Valerie said she chose the neighbourhood that she lives in because of its cafe, butcher, cheese shop, the big trees, traditional Montreal triplexes and beautiful stained glass windows. She had a great experiential understanding near her work and home, but little in-between. Valerie travels primarily by bus and was always aware of how transit found its place within her personal network. Contrary to most other interviewees, Valerie did not have many friends that lived in her neighbourhood.

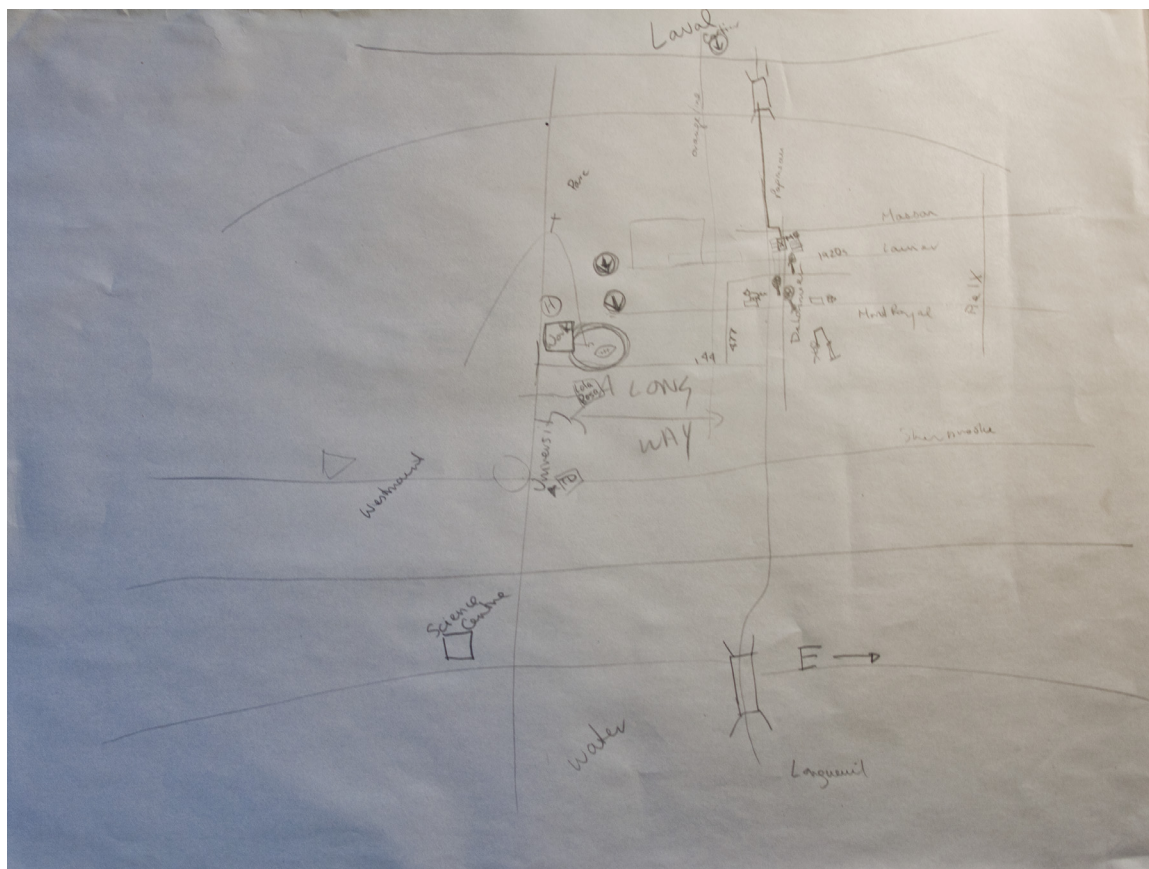


Fig. 77 Valerie's drawing of her neighbourhood.

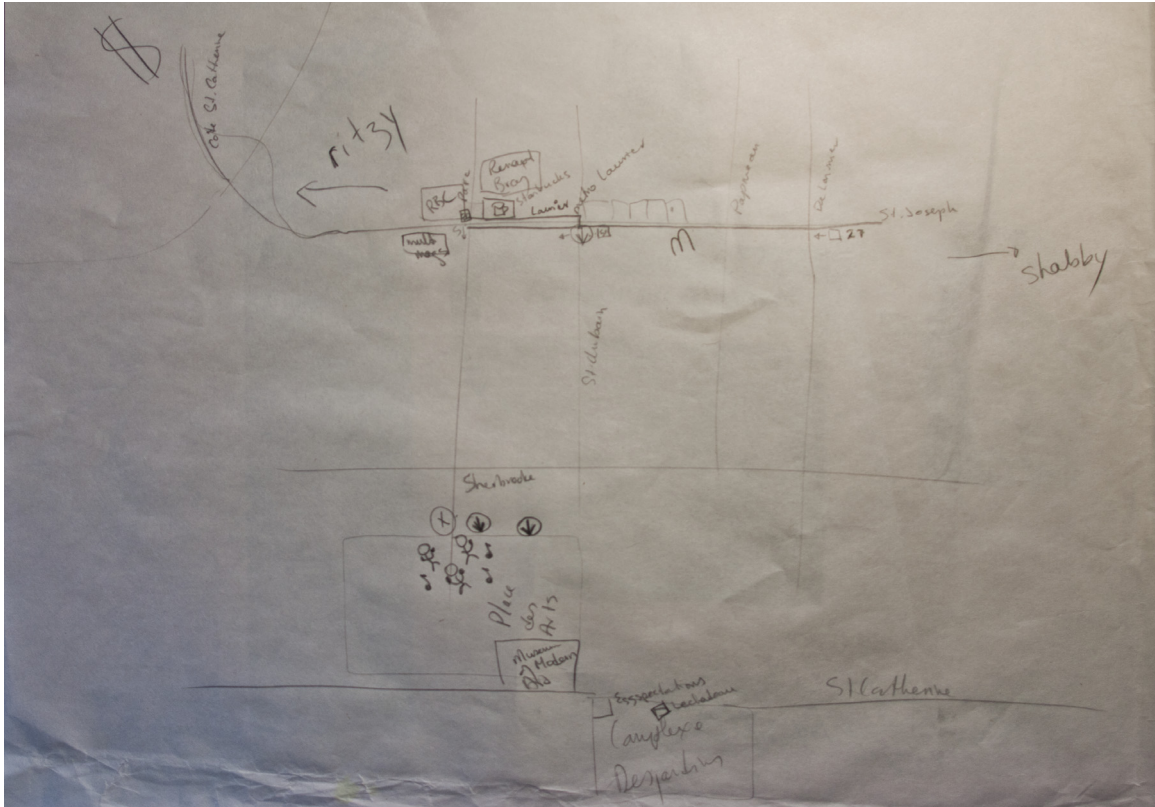


Fig. 78 Valerie's map of her home to Place des Arts.



Fig. 79 Valerie's collage of her neighbourhood.



Fig. 81 Greg's map of his home to Place des Arts.



Fig. 82 Greg's collage of his neighbourhood.

IAN**AGE 28****OCCUPATION** Musician**NEIGHBOURHOOD** Lower Plateau

During the interview, Ian said many notable things showing ownership of his neighbourhood. “That’s my fountain,” “I have my depaneur.” Although a variety of people use that fountain, or depaneur, he identifies it as his. That says a lot about how he relates to the neighbourhood. He feels some sort of pride or ownership. As an urban dweller he doesn’t get his groceries from one place, rather a series of places. “Franco’s is where I get peanut butter” Most of Ian’s routes were along the main streets.



Fig. 83 Ian's drawing of his neighbourhood.

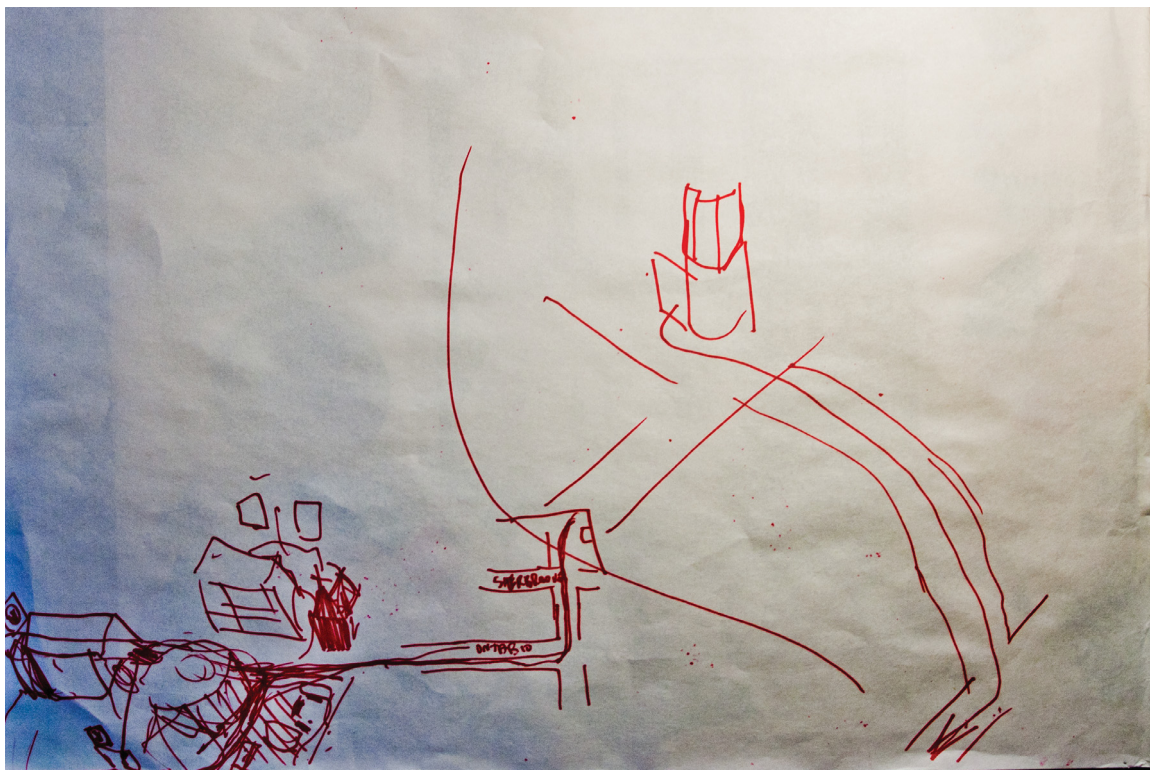


Fig. 84 Ian's map of his home to Place des Arts.



Fig. 85 Valerie's collage of her neighbourhood.

LAURA (first)**AGE 29****OCCUPATION** Self-employed (child care provider/music teacher)**NEIGHBOURHOOD** Mile End**ANDREA (second)****AGE 30****OCCUPATION** Fundraising and Events Assistant**NEIGHBOURHOOD** Mile End

These two are considered in conjunction as they did the map and collages together. Both of their neighbourhoods were considered as very small. To Laura she placed a specific emphasis on sidewalks and back alleys. Andrea avoided main streets and liked to take different routes every time. Her maps showed a utopian view of Montreal full of trees, happiness and sunshine.

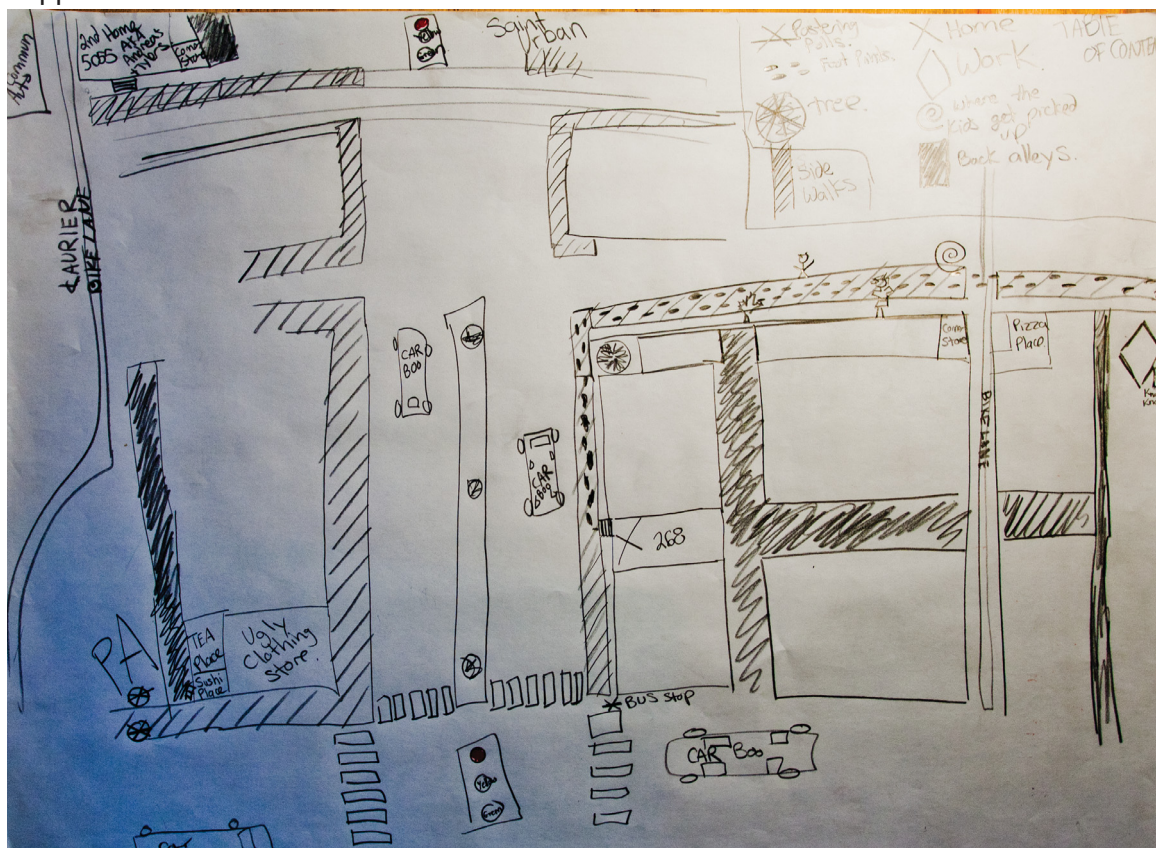


Fig. 86 Laura's drawing of her neighbourhood.



Fig. 87 Laura's map of her home to Place des Arts.



Fig. 88 Laura's collage of her neighbourhood.



Fig. 89 Andrea's drawing of her neighbourhood.



Fig. 90 Andrea's map of her home to Place des Arts.



Fig. 91 Andrea's collage of her neighbourhood.

Organization of Program in the Upper and Lower Plateau

To develop the fundamental principles the organization of program and housing typologies were studied. Program is on the top. Active program such as a bar or restaurant is the darkest gray and less active program such as a dwelling is the lightest gray. On the bottom is housing typologies. The most dense housing typology (walkup) is the darkest gray, with the least dense housing typology (duplex or row house) as light gray. Note institutions are represented as white as they do not factor into the study of housing typologies

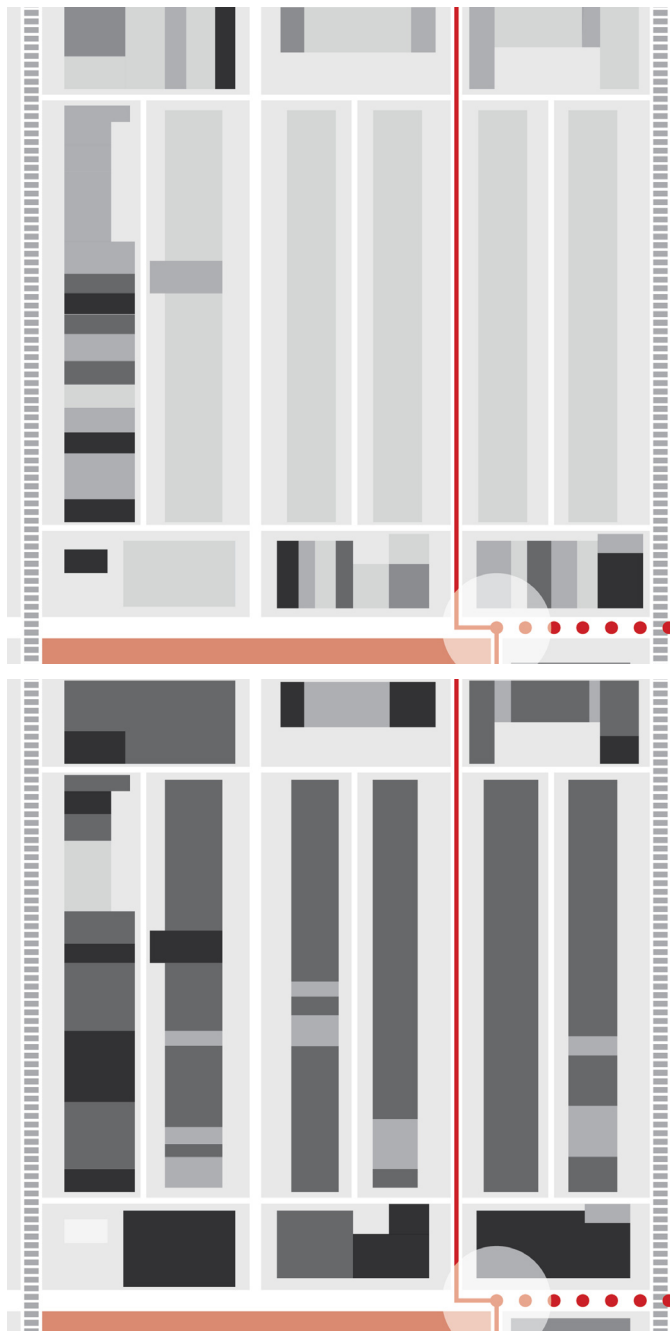


Fig. 92 Program on Parc Avenue (upper Plateau)

601 dwellings

- 1 park
- 15 commercial (shops)
- 6 restaurants/bars
- 5 cafes
- 4 daycares
- 3 offices
- 2 convenience stores
- 1 grocery store
- 1 hotel
- 1 laundromat

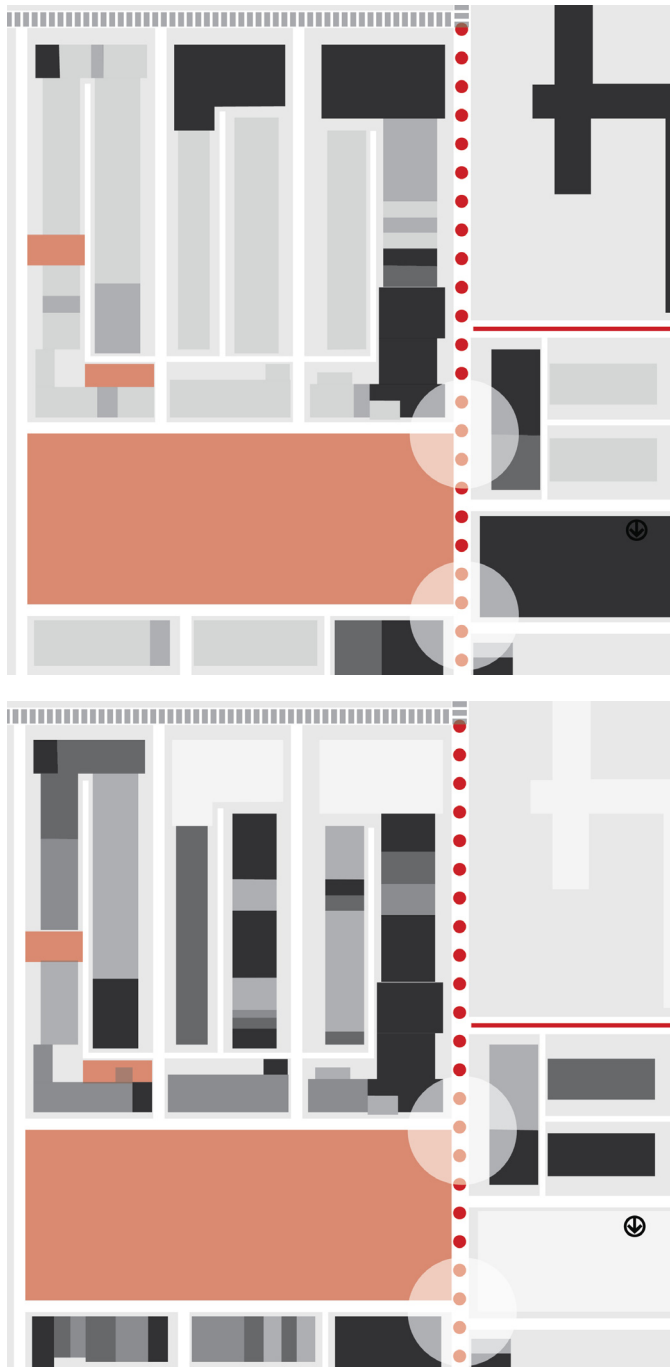


Fig. 93 Program on St. Denis Street
(Lower Plateau)

284 dwellings

- 16 restaurants/bars
- 8 commercial (shops)
- 6 offices
- 5 convenience stores
- 4 cafes
- 3 parks
- 3 bed and breakfasts
- 3 institutions
- 2 schools
- 1 hotel
- 1 metro

In-Between the Dwelling and the City

A series of 1:50 models were used to explore the relationship between the dwelling and the interior “street” or exterior of the building.

In-Between the Dwelling and the City

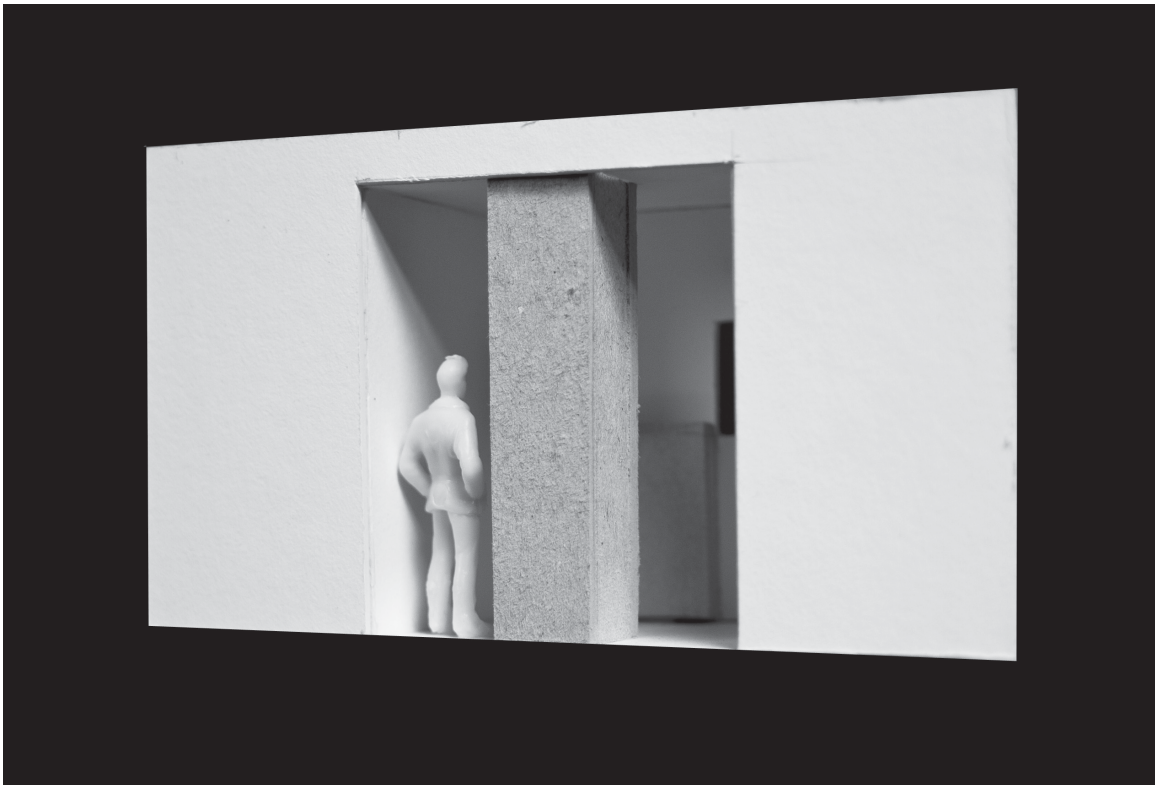


Fig. 94 In-between the dwelling and interior "street", XS unit.



Fig. 95 In-between the dwelling and interior "street", S unit.

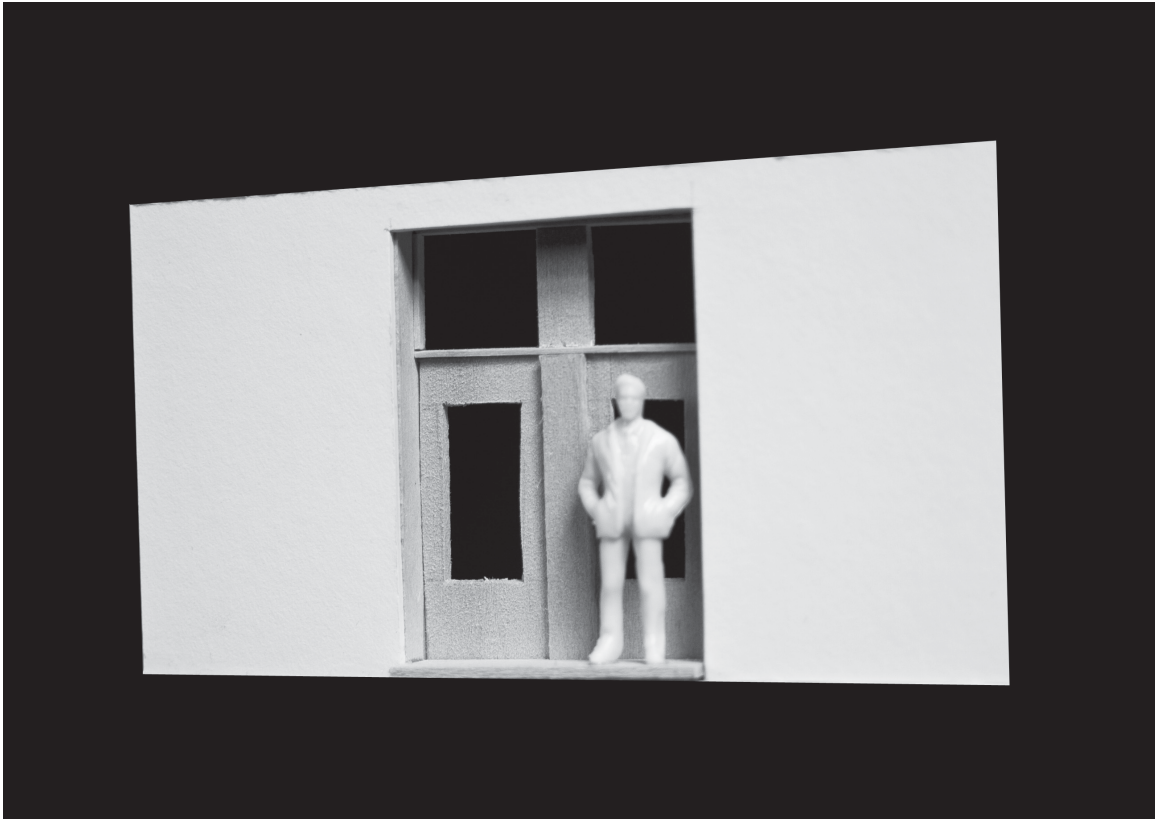


Fig. 96 In-between the dwelling and interior "street", M unit.



Fig. 97 In-between the dwelling and interior "street", L unit.



Fig. 98 In-between the dwelling and interior "street", XL unit.

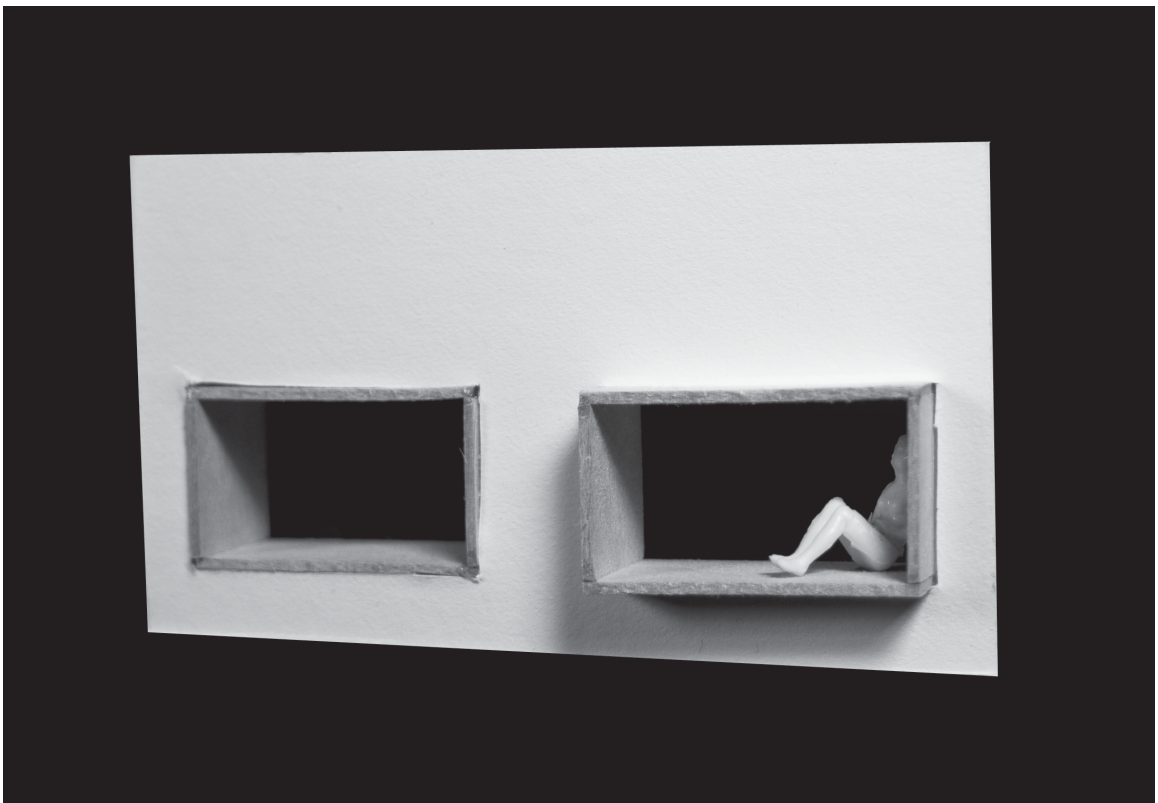


Fig. 99 In-between the dwelling and exterior, XS unit.



Fig. 100 In-between the dwelling and exterior, S unit.

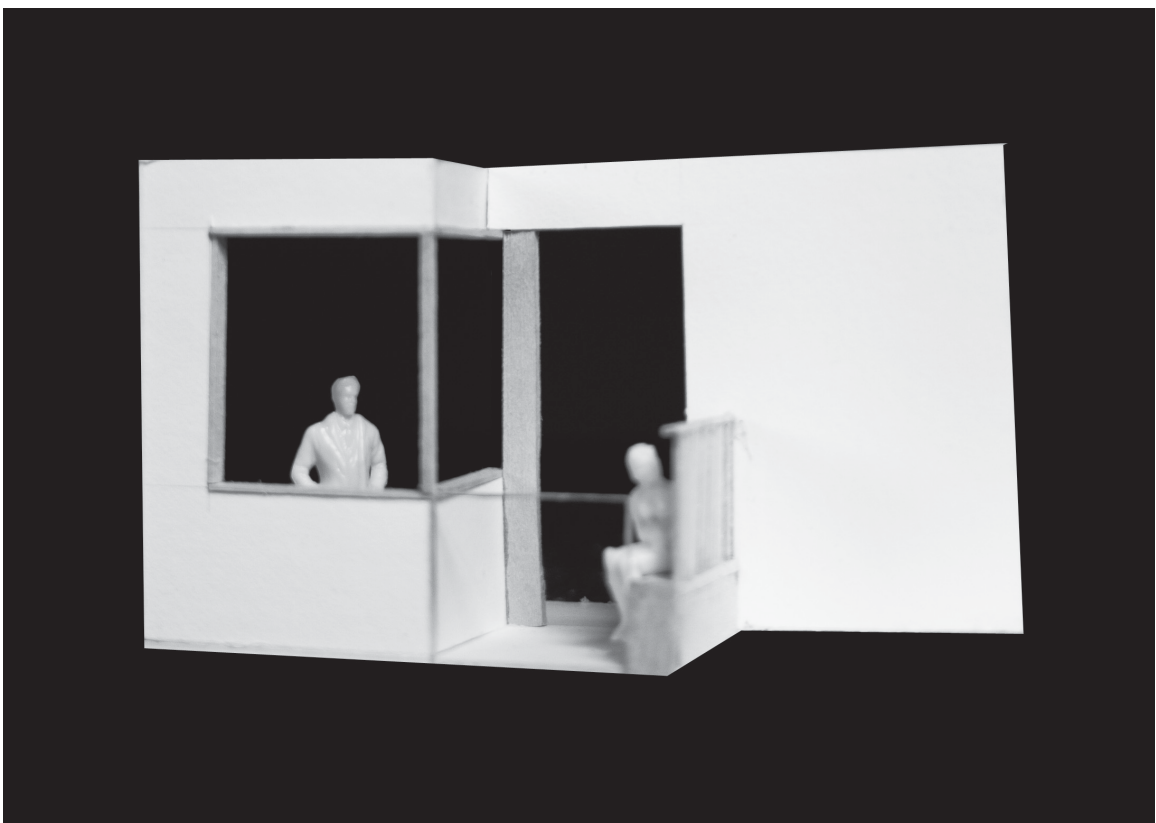


Fig. 101 In-between the dwelling and exterior, M unit.

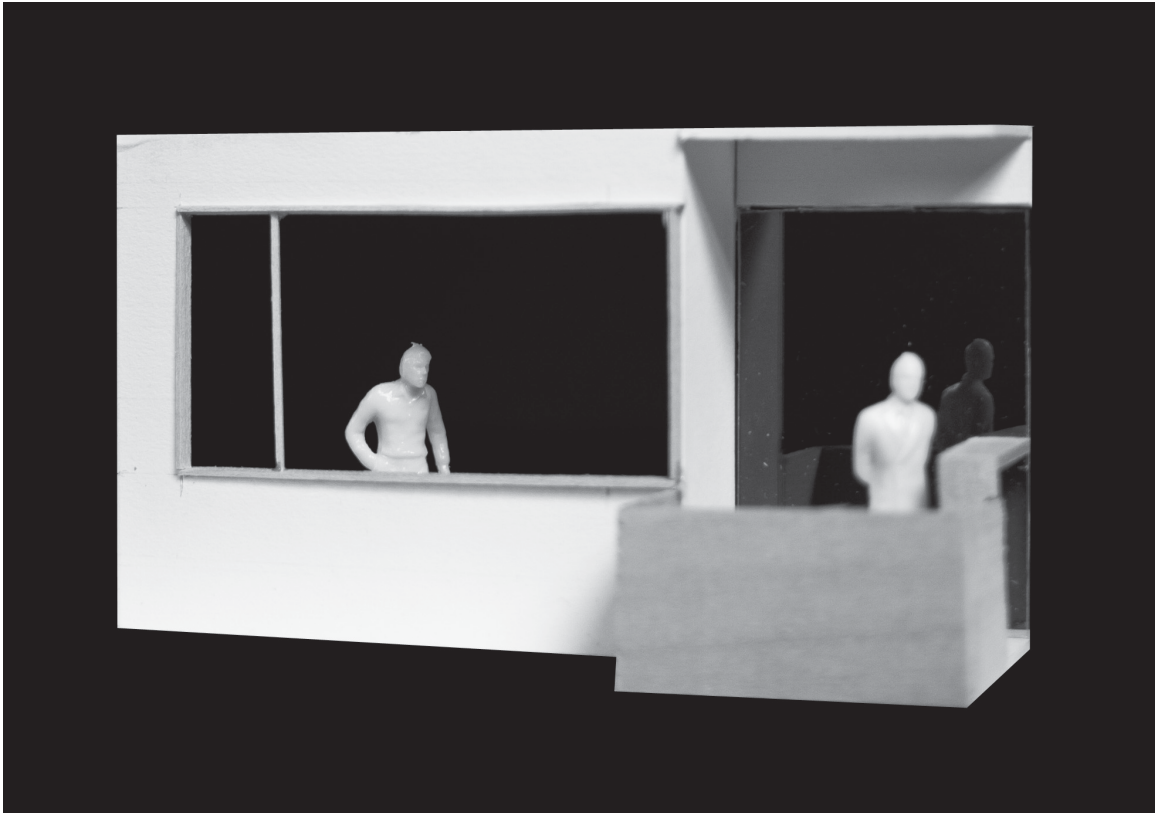


Fig. 102 In-between the dwelling and exterior, L unit.

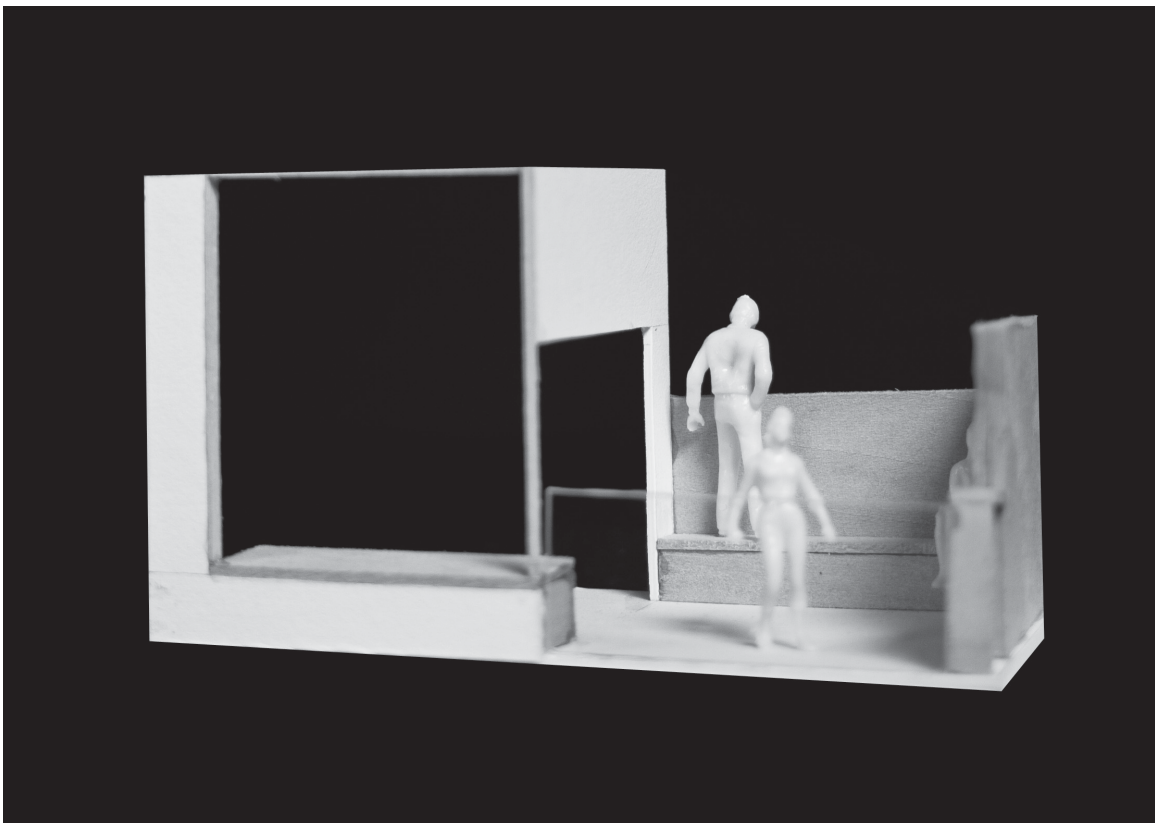


Fig. 103 In-between the dwelling and exterior, XL unit.

REFERENCES

- Bachelard, Gaston, and M. Jolas. 1994. *The Poetics of Space*. Boston: Beacon Press.
- Bjarke Ingels Group. 2012. 8 House. Copenhagen, Denmark. Accessed October. <http://www.big.dk/#projects-8>.
- Bobić, Miloš. 2004. *Between the Edges: Street-Building Transition as Urbanity Interface*. Bussum, Netherlands: Thoth Pub.
- Cullen, Gordon. 1971. *The Concise Townscape*. New York: Van Nostrand Reinhold Co.
- de La Riva, Richard, and Canada Mortgage and Housing Corporation. External Research Program. 2000. *"Plex" Housing: A Renewed Tradition*. Ottawa: CMHC.
- Frampton, Kenneth. 2007. *Modern Architecture: A Critical History*. London: Thames & Hudson.
- Gehl, Jan. 2010. *Cities for People*. Washington, DC: Island Press.
- Google Streetview. 2009. Photographs, Montreal, QC. <http://maps.google.ca>.
- Heckmann, Oliver, and Friederike Schneider, eds. 2011. *Floor Plan Manual Housing*. Basel: Birkhäuser.
- Heidegger, Martin. 1971. *Poetry, Language, Thought*. Toronto: Harper & Row, 1975.
- Hertzberger, Herman, and Ina Rike. 2009. *Lessons for Students in Architecture*. 6 rev ed. Rotterdam: 010 Publishers.
- Holl, Steven. 2007. *Architecture Spoken*. New York: Rizzoli.
- Jacobs, Jane. 2011. *The Death and Life of Great American Cities*. New York: Modern Library.
- Jencks, M., and Nicola Dempsey. 2005. *Future Forms and Design for Sustainable Cities*. Amsterdam: Architectural Press.
- Koolhaas, Rem. 1994. *Delirious New York: A Retroactive Manifesto for Manhattan*. New York: Monacelli Press.
- Koolhaas, Rem, Bruce Mau, Jennifer Sigler, Hans Werlemann, and Office for Metropolitan Architecture, eds. 1995. *Small, Medium, Large, Extra-Large: Office for Metropolitan Architecture, Rem Koolhaas, and Bruce Mau*. New York: Monacelli Press.
- Lewis, Robert D. 2000. *Manufacturing Montreal: The Making of an Industrial Landscape, 1850 to 1930*. Baltimore, Md.: The Johns Hopkins University Press.
- Liang. 2005. "Simmons Hall" Flickr. Accessed October. <http://www.flickr.com/photos/li->

- anagh/137108891/
- Lynch, Kevin, and Joint Center for Urban Studies. 1960. *The Image of the City*. Cambridge, Mass.: MIT Press.
- Mehrabian, Albert. 1976. *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*. New York: Basic Books.
- Montréal 2025 Imaginer > Réaliser: Un monde de créativité et de possibilités*. 2009. Montreal, QC: La Ville de Montreal.
- Montreal Master Plan*. 2004. Montreal, QC: Ville Montreal.
- MP, Neil. 2010. "Le Corbusier, Unité d'Habitation, Marseille" Flickr. Accessed October. <http://www.flickr.com/photos/29727266@N02/5151685365/sizes/l/in/photostream/>
- Norberg-Schulz, Christian. 1985. *The Concept of Dwelling: On the Way to Figurative Architecture*. New York: Rizzoli.
- Pallasmaa, Juhani. 2005. *The Eyes of the Skin: Architecture and the Senses*. Chichester: John Wiley & Sons.
- Panero, Julius, and Martin Zelnik. 1979. *Human Dimension & Interior Space: A Source Book of Design Reference Standards*. New York: Whitney Library of Design.
- Patt, Trevor. 2007. "Narkomfin" Flickr. Accessed October. <http://www.flickr.com/photos/trevorpatt/1633482485/sizes/o/in/photostream/>
- PPU Le Quartier Des Spectacles: Pôle Du Quartier Latin*. 2012. Montreal, QC: Ville de Montreal.
- PPU Le Quartier Des Spectacles: Secteur Place Des Arts*. 2007. Montreal, QC: Ville de Montreal, Arrondissement Ville Marie.
- Quinteiro, Luis Garcia. 2010. "Nemausus" Flickr. <http://www.flickr.com/photos/luis186104/5359750674/sizes/o/in/photostream/>
- Radice, Martha. 2011. "Ethnography of a Street: When is a Place Not a Place." *Anthropology News* 52 (3): 13.
- Relph, E. C. 1976. *Place and Placelessness*. London: Pion.
- Richler, Mordecai, and M. G. Vassanji. 2007. *The Street: Stories and Memoirs from St. Urbain Street*. Toronto: Penguin Canada.
- Sherwood, Roger. 1978. *Modern Housing Prototypes*. Cambridge, Mass.: Harvard University Press.
- Steinemann, Ramias. 2008. *Global Housing Projects: 25 Buildings since 1980*. Barcelona:

ETH Actar.

- Urban, Florian. 2012. *Tower and Slab: Histories of Global Mass Housing*. New York: Routledge.
- Weiß, Klaus-Dieter. 2004. "From Isolation in the Peripherie to the Highrise of Homes in the City." In *High-Density Housing: Concepts, Planning, Construction*, edited by Christian Schittich, 13-25. Basel: Birkhauser.
- Whyte, William Hollingsworth. 1980. *The Social Life of Small Urban Spaces*. Washington, D.C.: Conservation Foundation.
- Wurst, Eberhard. 2004. "Inside and Outside — the Search for Special Qualities in Contemporary Housing." In *High-Density Housing: Concepts, Planning, Construction*, Translated by Elizabeth Schwaiger, edited by Christian Schittich, 27-43. Basel: Birkhäuser.
- Young, Michael Dunlop, and Peter Willmott, 1962. *Family and Kinship in East London*. Baltimore: Penguin Books.
- Zumthor, Peter. 2006. *Atmospheres: Architectural Environments, Surrounding Objects*. Basel: Birkhäuser.