EXCESS OF THE MINIMUM: REVISITING EXISTENZMINIMUM THROUGH CROSSPROGRAMMING IN HALIFAX

by

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ABSTRACT

Keywords: existenzminimum, crossprogramming, mixed-use residential

In response to a growing trend of single-occupancy living in Western societies amidst social situations that can be isolating (i.e. aging of the population, prolongation of early adult years, immigration), this thesis investigates an alternative minimal housing complex typology. Crossprogramming is used to counteract isolation by initiating social interaction between two potentially alienated groups and their neighbours. The typology developed is tested on Quinpool road in Halifax, Nova Scotia, and is intended for students from away (i.e. international and out of province) and retirees from Nova Scotia. The thesis proposes a multigenerational housing complex supplemented by multiple programmed spaces, some intended for shared use between the residents and others for the neighborhood at large.

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CHAPTER 1: SETTING IT UP

1.1 Vision Statement

Cities filled with individuals living alone in their dwellings: this is not the preamble of a futuristic motion picture, this is our reality. Since 2011, and a first at the time since the Canadian Census was created, there are more Canadians living in single-occupancy than living as couples with children.[1] Not the heterotopia anymore, this living trend has been growing for decades, and not just in Canada, but across Western societies.[2] It reflects a change of lifestyle, a more liberal way of living. As pioneer sociologist Alice Rossi explains, this situation is the result of the "longer number of early adult years prior to marriage; the interim between marriages among divorced adults and the lower rate of remarriage among divorced women; and the considerable gap in longevity by sex."[3]

In Canada, but also globally, population is increasingly aging,[4] young adults stay in university for a longer period of time,[5] and the number of immigrants is greater every year.[6] All these situations are potentially

1 “Canadian Households in 2011: Type and Growth,” Statistics Canada, accessed May 15, 2017, https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-312-x/98-312-x2011003_2-eng.cfm.

2 Alice S. Rossi, *Caring and Doing for Others: Social Responsibility in the Domain of Family, Work, and Community* (Chicago: University of Chicago Press, 2001), 30.

3 Ibid.

4 United Nations, Department of Economic and Social Affairs, Population Division. *World Population Ageing 2015* (Report, New York: United Nations, 2015), 1.

5 "Trends in the Age Composition of College and University Students and Graduates," Statistics Canada, accessed February 22, 2017, http://www.statcan.gc.ca/pub/81-004-x/2010005/article/11386-eng.htm.

6 "Diversité ethnique et immigration," Statistics Canada, accessed June 2,

isolating because they are associated with a limited social network (i.e. no family members are visiting or alive, integration to a new community).

Should we be preoccupied by the fact that living alone is a growing living trend? It has been demonstrated by an important number of studies that our body negatively responds to being alone.[7] Although people communicate virtually on the phone or the Internet, there is "no substitute for the sensory, social, and hormonal stimulation of face-to-face interaction."[8] Why do students go to coffee shops to study? Why do seniors living in nursing homes prefer to sit on a porch adjacent to a busy street and not in a quiet backyard? Whether people acknowledge it or not, we are gregarious beings. We may want to live alone, but we biologically need to feel each other's presence. This can be directly addressed through the development of residential typologies that provide opportunity for interaction by balancing private, common, and public programs.

Building on this principle, this thesis investigates how architecture can accommodate single-occupancy as a lifestyle reflecting contemporary values, while also exploring how it can create momentum for social interaction to counteract isolation. The thesis architecturally responds to the problematic by developing an alternative type of minimal housing complex, choosing Halifax, Nova Scotia, and more specifically the unpretentious and diversified Quinpool Road as testing site. Halifax is a good case study because there is currently a need for single-occupancy dwelling, especially for retirees and students, and there is a general shift of the housing demand towards smaller households.[9] Minimal housing is therefore a realistic solu-

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2017, http://www.statcan.gc.ca/pub/11-402-x/2012000/chap/imm/imm-fra.htm.

7 JoAnn Grif Alspach, "Loneliness and Social Isolation: Risk Factors Long Overdue for Surveillance," *Crit Care Nurse* 33 (2013): 9.

8 Rossi, *Caring and Doing for Others*, 31.

9 City of Halifax, Department of Planning. *Halifax Housing Needs Assessment* (Report, Halifax: City of Halifax, 2015), 3.

tion. Furthermore, Halifax has also seen an increase in the 55-and-older population group[10] as well as international and other Canadian provinces students, two groups that could potentially live in isolation.[11] Making the argument that retirees and students can benefit from living in the same residential complex, the target population is newly arrived students who come from out of Nova Scotia and local retirees who want to downsize but do not want or are not ready to live in a nursing home.

The alternative typology developed seeks to demonstrate that living in single-occupancy does not have to be associated with loneliness and isolation. It envisions our cities as perhaps filled with individuals living on their own, but in an environment filled with opportunity for social interaction.

1.2 Motivation

Based on my research, I see a need for intergenerational typologies that are both attractive to retirees and students. Baby Boomers (i.e. born between 1946 and 1965),[12] a third of the Canadian population in 2011,[13] have been used to living independently and do not look forward to living in the nursing homes their parents lived in.[14] They want something different. They see nursing homes as institutional, repressive environments where food and human relationships do not correspond to their belief system.

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10 Ibid.

11 Jonathan Williams, *International Students and the Future of Nova Scotia's Universities (*Report, Halifax: Students NS, 2013), 4.

12 "Generations in Canada," Statistics Canada, accessed May 15, 2017, http://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-311-x/98-311-x2011003_2-eng.cfm.

13 Ibid.

14 Bruce Moore, "Baby Boomers Don't Want to Live in Older People's Homes," *The Guardian,* April 9, 2013, accessed May 31, 2017, https://www.theguardian.com/society/2013/apr/09/baby-boomers-old-peoples-homes.

This is especially stressful for the LGBT[15] community members who are pushed back into the "closet" when they enter the nursing home. Canadian society has matured into acceptance and has been changing laws to reflect this increase in democratization. Unlike hospitals, most nursing homes have remained homophobic. This means designers have to think not only outside the box, but beyond the boxes of compartmentalization ,categorization and segregation. The idea of students and seniors living together itself is not new. Some experimental retirement home projects in the Netherlands and the United States have provided housing to a small number of students (these projects are reviewed in chapter 5), the result of the two groups living together is positive, which is very encouraging. As a student from outside of Nova Scotia, living right next to a retirement home, I feel confident that combining these two groups would allow both to benefit from each other's experience and knowledge. However a question arises: if Baby Boomers are not interested in living in nursing homes, why would students be?

There is no existing intergenerational typology that provides single-occupancy living units as well as social spaces on the Halifax peninsula. Recently, the most common typology gaining popularity with developers is the twenty-storey apartment tower. It is a concern as this trend has been altering the current low density that is characteristic of the landscape of the city. Groups of citizens have been showing their disapproval, but the city has continued to approve developers' projects, the renovation of Fenwick Tower on Fenwick Street for instance.

15 LGBT stands for lesbian, gay, bisexual, and transgender.

Figure 1: Fenwick Tower seen from Queen Street.

Another frustrating case is the pair of high-rise apartment towers built by developer Dino Capital on Wellington Street, whose size does not suit the existing streetscape of two-storey high single-family houses and which was approved by the city although residents manifested their disapproval in three public hearings and a lengthy petition.[16] To react to the disengagement of the city, architects must make a stand by developing and proposing alternative typologies that foster healthy urban communities. As acknowledged by the Department of Planning of the City of Halifax, there is a need for more housing options.[17] A palette of diverse typologies, between the high-rise residential tower and single-family house, must be developed in Halifax. I am particularly motivated in challenging the way multiple-unit housing is designed because there is currently no dense low-rise mixed-use residential complex on the peninsula.

16 Jacob Boon, “Ridiculous Development Approved Out of Spite,” *The Coast*, January 14, 2015, accessed May 31, 2017, http://www.thecoast.ca/RealityBites/archives/2015/01/14/ridiculous-development-approved-out-of-spite.

17 City of Halifax, *Halifax Housing Needs Assessment*, 6.

Through this thesis, I address the issue of housing need for single-occupancy dwelling amidst a potentially isolating social climate. I hope to contribute to the architectural discourse on housing by promoting the idea that lively living environments result from a combination of different programs and spatial experiences. We all know that apartment buildings grouping bachelor units joined by miserable corridors and surrounded by asphalt for parking make terrible living environments. I choose to propose an alternative that I believe is much more appealing in order to reinforce how absurd these buildings are, and more importantly to propose better possibilities. I believe that if we promote appealing alternatives, especially by involving the public, there is hope for great projects to be built.

1.3 Organizational Overview

The thesis report is structured around five chapters: *Program Definition*, *Theory & Vision*, *Site Selection*, *Looking Back to Better Move Forward*, and *Architectural Proposal*.

In *Program Definition* (chapter 2), key terms and concepts used to elaborate the design problematic are explained and the program is defined.

In *Theory and Vision* (chapter 3), building on theory and investigation, the argument of the thesis is developed. The report follows the fact that the thesis involves mostly three scales: fragments of space, the space of the building, and the space of the neighbourhood. *Theory and Vision* begins with the fragments of space, the cocoons (i.e. the development of residential units that cater the needs of individuals) and the program/events (i.e. the development of social spaces that cater essential luxuries while creating just enough disruption to catalyze social interaction).

Before moving to the scale of the building, the neighbourhood and block chosen to test the thesis are introduced in *Site Selection* (chapter 4). I felt necessary to develop an urban strategy before moving on to the scale

of the building.

In *Looking Back to Better Move Forward* (chapter 5), I present a mixed-use residential typology investigation which leads to the programmatic articulation of the fragments of space in dialogue with its urban context (i.e. indoor and outdoor public and common social spaces, thresholds, and residential units).

The final chapter, *Architectural Proposal* (chapter 6), presents the findings of the thesis. It closes the loop by reflecting and suggests potential field application of the research.

CHAPTER 2: PROGRAM DEFINITION

This chapter clarifies the vision statement: develop an alternative multigenerational proposal that accommodates single-occupancy living while counteracting social isolation. Consequently, it provides more explanation on the program and defines key terms. Following the vision statement, the concept of minimum housing and social spaces in the residential complex are discussed. Further clarification is also given on the population groups: students from outside of Nova Scotia and local retirees.

2.1 Minimum Housing Units

2.1.1 Definition

The type of residential units I am interested in developing cater to all essential needs of an individual: eating, resting, and maintaining good hygiene. My definition reintroduces the one developed by functionalists who participated in existenzminimum. According to my vision, living in a minimum housing unit implies to go back to the essential, to what has value. Echoing principles of existenzminimum, which is presented in the third chapter, this means to choose quality over quantity. It means to live in a space that feels just right in terms of size, light, air, and views. It does not mean to live in deprivation, where everything is reduced to its bare bones, and which feels like living in a cell in a prison. On the contrary, the minimum housing unit is a retreat in the city, just like a cocoon is to a caterpillar.

Figure 2: The perfect cocoon: a unit that accommodates all the essential needs of an individual, a comfortable retreat.

2.1.2 Significance: Minimize to Optimize

Minimal housing for the elderly is not a utopian proposal in a North American context. According to studies led by the Senior Council and the Community Development Council in 2013 in the United States, the baby boomer generation is planning on moving into smaller dwellings.[18] As a student, I have noticed and experienced myself that when they can afford it, students prefer living on their own in a more compact space rather than sharing an apartment with roommates. On one hand, providing more minimum housing units for single-occupancy would release pressure on the housing market by freeing single-family and row houses currently owned by single retirees or multiple students.[19] [20] On the other hand, and this is critical in this thesis, including minimum housing units within a complex would create enough density to justify providing common facilities, services and spaces for social interaction.

2.1.3 Program Description

There are two types of housing units in the complex: the cocoon, or typical unit, and the maisonnette. Most of the units are cocoons, they are designed for singles, student or senior. The maisonnettes are meant for single-parents: 1 student and 1 or 2 children. A few maisonettes, located in the most social areas, can be shared by one student and one retiree. They could be family related or not. I decided to not just accommodate single-occupancy living in order to be more inclusive. Accommodating current housing needs is important, but it does not mean that we cannot propose new possibilities, look towards the future by proposing progressive change.

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18 Kathleen McComick, “Building for the Generations,” *Urban Land* 73 (2014), 56.

19 City of Halifax, *Halifax Housing Needs Assessment*, 70.

20 Joan Bakewell and Dawn Foster, "Should older people downsize to help solve the housing crisis?" *The Guardian*, September 28, 2015, accessed June 6, 2017, https://www.theguardian.com/commentisfree/2015/sep/28/should-older-people-downsize-housing-crisis-homes

2.2 Excess of the Minimum

2.2.1 Definitions

2.2.1.1 Isolation and loneliness

Linking isolation and loneliness, sociologists Betty Havens and Madelyn Hall define them as the "subjective expression of dissatisfaction with a low number of social contacts and negative feelings about being alone that occur irrespective of choice."[21] Factors of isolation are health and disabilities, gender, the loss of a spouse, living alone, having reduced social networks, aging, and transportation issues.[22]

2.2.1.2 Social Interaction

Erving Goffman, one of the most influential American sociologists of the twentieth century, states that:

> [Social] interaction (that is, face-to-face interaction) may be roughly defined as the reciprocal influence of individuals upon one another's actions when in one another's immediate physical presence. An interaction may be defined as all the interaction which occurs throughout any one occasion when given a set of individuals are in one another's continuous presence; the term 'an encounter' would do as well.[23]

Goffman mentions that interaction is verbal or gestural,[24] that it is an interchange,[25] and that it implies diverse forms of communication.[26] I would add to his definition, in the context of the thesis, that simply being in the presence of the other is also part of social interaction, as it demon-

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21 British Columbia Ministry of Health, Children's, Women's and Seniors Health Branch, *Social Isolation Among Seniors: An Emerging Issue* (Report, Vancouver: British Columbia Ministry of Health, 2004), 9.

22 Ibid.

23 Erving Goffman, *The Presentation of Self in Everyday Life* (New York: Doubleday, Anchor Books, 1959), 15.

24 Ibid., 107.

25 Ibid.

26 Ibid.

strates the choice of not being alone. It demonstrates openness to social interaction.

Extrapolating from Goffman, we can define spatial conditions that support social interaction:

- Individuals need to physically be together, therefore there has to be space that allows for that;

- Settings create "occasions," or opportunities to exchange;

- Settings sustain a "continuous presence." This involves the notions of time and number of people potentially interacting. To maximize interaction, there has to be obviously more than two people in the same space and they have to stay within that space long enough to interact.

Setting is a key term as it involves architecture. Goffman's definition of setting is influenced by theatre. It involves "furniture, décor, physical layout, and other background items which supply the scenery and stage props for the spate of human action played out to be, within or upon it."[27] These elements are all part of the architectural vocabulary. Without mentioning the term architecture, Goffman still implies that it is vital for creating social interaction opportunities. This reinforces the fact that architecture has a role to play in catalyzing interaction.

2.2.1.3 Social Spaces

It is essential to introduce sociologist Henri Lefebvre's notion of space in order to define the concept of social spaces. As a setting for social interaction, architecture creates more than volumes or purely functional forms. Spaces conceived by designers become lived spaces when experienced, and also perceived spaces. To Lefebvre, social space is a product of three dimensions of space: spatial practice, representation of space, and

27 Ibid., 22.

representational space. Spatial practice is space as lived and experienced daily.[28] Representation of space is a "conceptualized space."[29] It is the space designed by "all of whom identify what is lived and what is perceived with was is conceived."[30] Representational space is a projection of our dreams, it is passively experienced.[31]

Space is therefore not only what we designed; it is experienced in everyday life and is the reflection of our imagination. For instance, designers plan streets with lanes for cars and sidewalks for pedestrians (i.e. representations of space). However, I can decide to walk in the middle of the street if I want to and I can also decide to drive my scooter on the sidewalk, even though it is not allowed (i.e. spatial practice). In certain circumstances, streets become stages for festivals or strikes and they become meaningful, they gain emotional value (i.e. spatial practice and representational space). There are streets that people like to take not because they are more convenient, but because they remind them of good memories (i.e. representational space). All these perceptions of the street are interconnected and make it a social space. Everyday life and the projection of our imagination onto space are key elements. My vision of social spaces builds on this and will be presented in more details in the third chapter.

2.2.2 Significance: Essential Luxuries

There are essential luxuries that go beyond essential needs. It is hard to justify providing them in all individual units in an effort to maintain affordability. However, they strongly contribute to enjoyment as well occasions for much needed interaction and exchange. Spaces to do laundry, to welcome guests or to exercise are examples of essential luxuries. When not

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28 Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Malden: University of Blackwell, 1991), 38.

29 Ibid.

30 Ibid.

31 Ibid., 39.

included within a residential complex, it is assumed that residents will find these amenities outside within the city. However, not all cities are planned in a way that makes these accessible. For instance, neighbourhoods that are strictly residential and lack an efficient commuter system make it very challenging for retirees who cannot walk long distances and students who are not locals and do not possess a car. It is much more convenient to have access to services and facilities within the building, which at the same time benefits the whole neighbourhood if not restricted to the use of residents. Moreover, they are the essential complements to residential units. As Victor Bodiansky notes in his Habitat Charter manifesto in 1953:

> To satisfy the needs of the body by standard means [...] which relates to comfort[;] to create a framework and forms in which men's spiritual and emotional life can develop freely which relates to pleasures[;] It is here that we see the full meaning of the definition of habitat as a cell integrated into a socially organized body.[32]

Accessible facilities and services are more than convenient, they are essential.

2.2.3 Program Description

The last two subsections are setting the theoretical basis for the notion of *excess of the minimum*. *Excess* is the essential luxury that complements *minimum*. I chose this word because it challenges the pejorative connotation that can be perceived in *minimum*, and therefore balances it.

Excess refers to spaces for social interaction. It takes different forms in the complex: it is indoor and outdoor, it is plaza, courtyard, hall, circulation space, laundry and workout space. Social spaces surround the residential units, respecting a gradient of privacy to maintain the retreat character of the cocoons. Opportunity for social interaction is then found everywhere? Not necessarily. I believe it has to be catalyzed. Programming strategies are catalysts and they will be further discussed in the third chapter. I chose to develop two social spaces in particular, a laundromat facility

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32 Victor Bodiansky, "Notes on the Subject of a Habitat Charter," A*nnals of Public and Cooperative Economics* 24 (1953): 292.

that is also a bowling club, called the laundrobowl, and a revisited maritime kitchen that is also a living room and a space for celebrations. These will be introduced in chapter 3 and presented in the last chapter in more details.

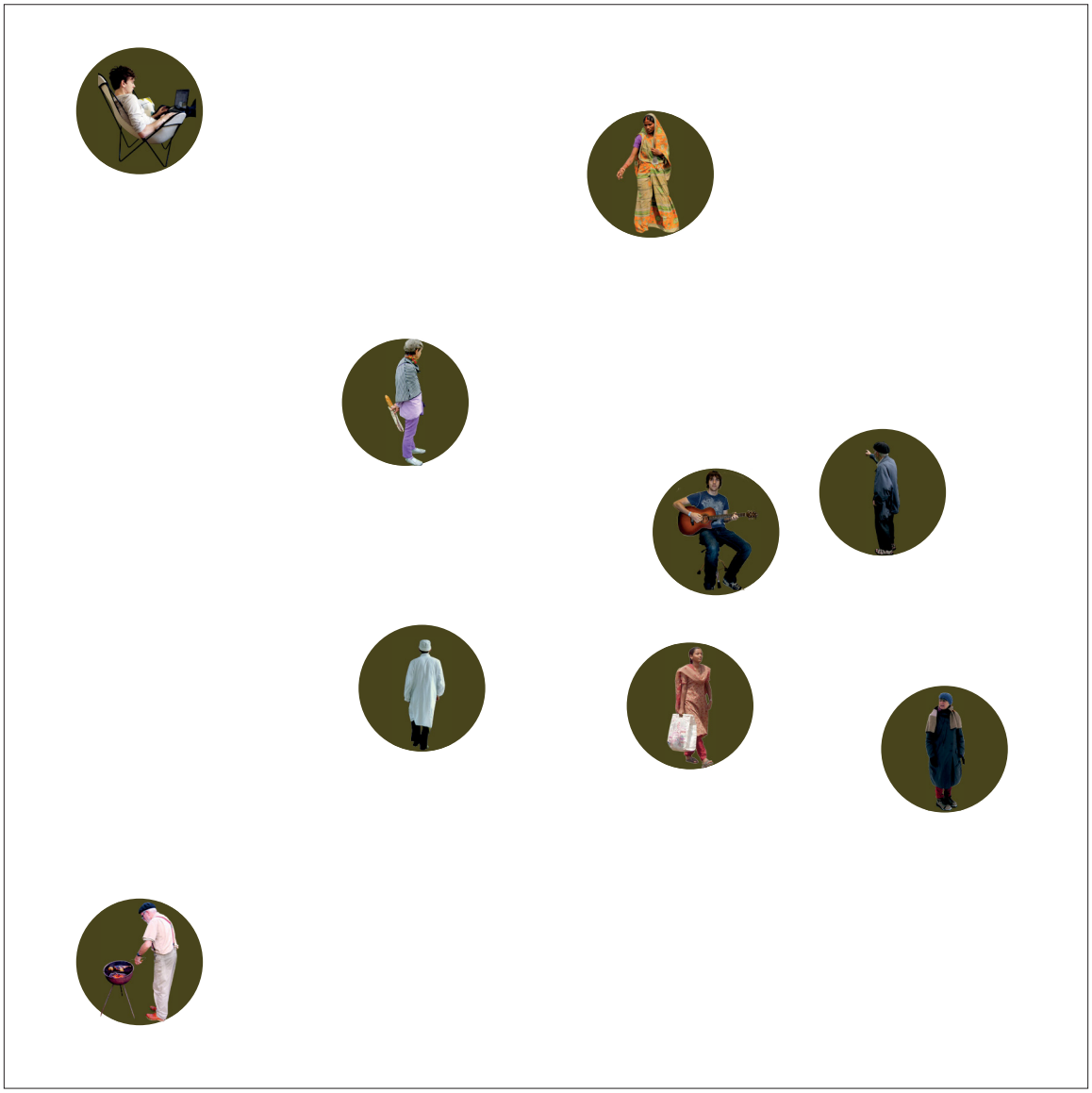

Figure 3: Individuals living alone in their cell, isolated from each other in the absence of social interaction opportunity.

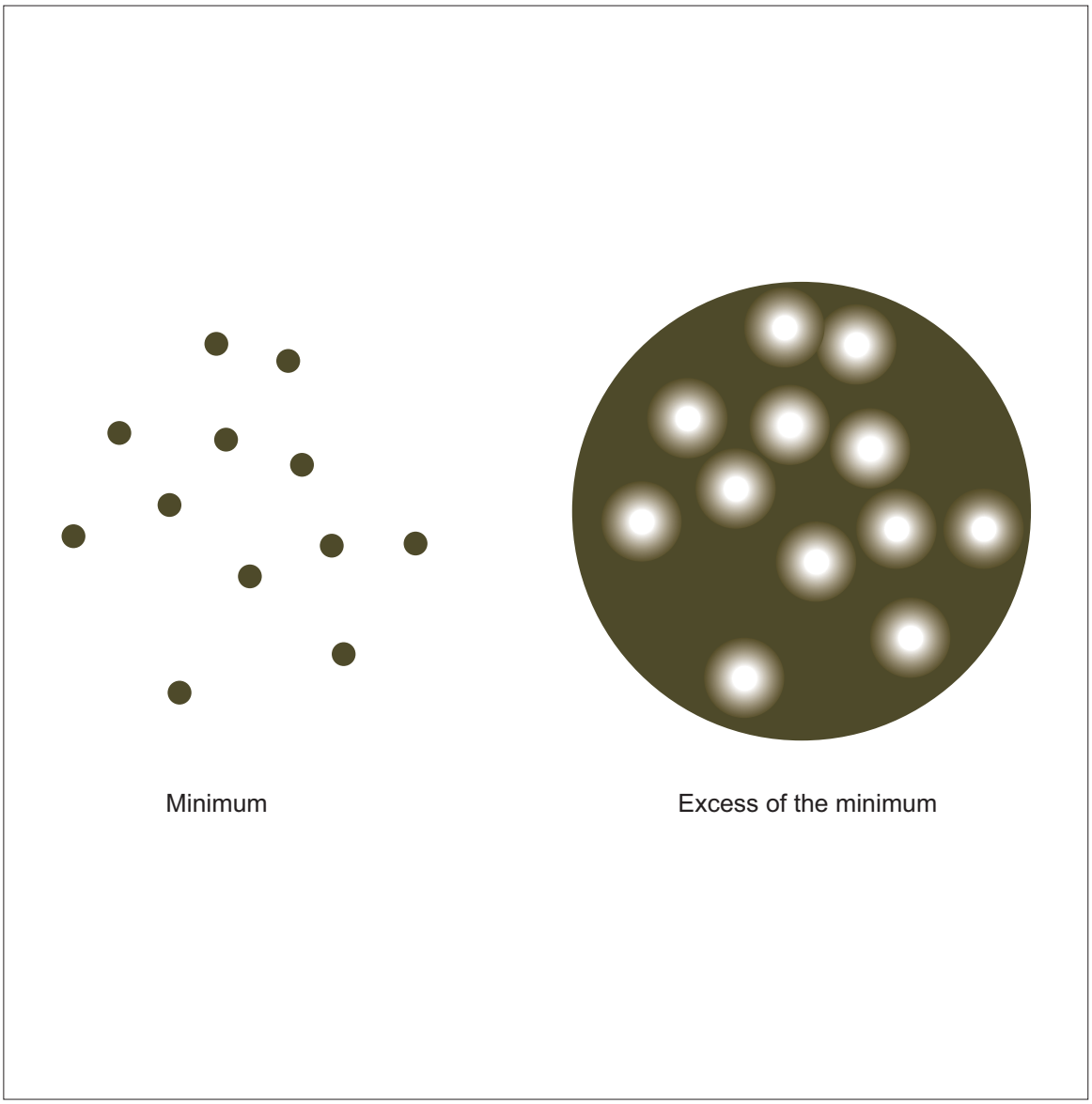

Figure 4: What is around the cocoons, the living environment, is a key element for breaking isolation and should be investigated in this way in architecture.

2.3 Designing for Students and Retirees

Finding a typology that can appeal to students and retirees is part of the research. A first step is to understand who the two groups are and what they need. The following section sketches a portrait of the two groups, which could also serve as a set of guidelines for other intergenerational projects beyond this thesis. I will also discuss the implications of the design.

2.3.1 Students From Away

2.3.1.1 Definition of Students From Away

The term *students from away* refers to people committed to university level studies whose hometown is not Nova Scotia, whether they come from another Canadian province or from a foreign nation. In 2012, they were 20,738 which represents 46% of university students in Nova Scotia.[33] In 2030, they will represent 58%.[34] A study from Dalhousie University in Halifax shows that most international students come from the following countries, the first in the enumeration being the most popular: China, India, Saudi Arabia, the United States, Iran, Nigeria, Pakistan, Bermuda, Kuwait, and Brazil.[35] Another study on immigration in Nova Scotia completed by the provincial government demonstrates that most newcomers come from the United Kingdom, China, the Philippines, the United-States, India, Egypt, Israel, Bhutan, Iran, and Germany.[36] The two studies indicate that China, India, Iran, and the United States are countries where an important concentration of newcomers are from.

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33 "International Students Fact Sheet," Students NS, accessed February 22, 2017, http://studentsns.ca/research/fact-sheets-data/international-students-fact-sheet/

34 Ibid.

35 Dalhousie University. *From a National University to an International University: Building on International Opportunities That Inspire* (Report, Halifax: Dalhousie University, 2012), 7.

36 Nova Scotia Office of Immigration. *Nova Scotia Immigration Trends 2008-2012* (Report, Halifax: Government of Nova Scotia, 2013), 3.

There is no specific age group targeted as age does not define a student. Nonetheless, "over 75% of students [are] between 17 and 27 years of age and over 90% of them [are] under age 40."[37] Although students can be dwelled in dormitories on university campuses, after their first or second year they usually move out to an off-campus apartment. Single-parents, often left aside in housing provided by universities, are included in the population of interest because they reflect contemporary life. In the same order of ideas, students with physical disabilities are also included. Local students would be welcome to live in the complex, but special attention is given to students from away as they are more susceptible to feeling isolated.

2.3.1.2 Isolation Lived by Students From Away

Currently representing “the fastest growing section of Nova Scotia’s university student population and [because they will be a major] source of enrolment increases for the foreseeable future,"[38] students from out of Nova Scotia must be seriously taken into consideration in the design of student housing. They can feel homesick, lonely, and isolated at arrival if they do not have local social support.[39] It was demonstrated that they “often develop support networks within their own national groups and with colleagues from different countries,"[40] from which they benefit greatly. However, the most influential support comes from locals.[41] I can confirm this based on my personal experience. Being from Montreal and French being my first language, when I moved to Halifax to do my masters, I built an instant connection with another architecture student who could speak French

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37 "Trends in the Age Composition of College and University Students and Graduates," Statistics Canada.

38 Jonathan Williams, *International Students and the Future of Nova Scotia’s Universities (*Report, Halifax: Students NS, 2013), 1.

39 Ibid., 24.

40 Ibid.

41 Ibid.

fluently. It felt comforting, as though I could completely be myself with her not only because of language, but also because we shared similar beliefs and traditions, her mom being native from France. Spending most of my time with my new friend, and rarely speaking in class, my integration to the Halifax community would have been difficult if I would not have had roommates who were locals. I really started interacting with my colleagues and consequently with locals outside of home and school after first connecting with my roommates. I am not alone in this experience, research shows that greater interaction with locals "correlates with fewer academic problems, fewer social difficulties, improved communication competency and better general adaptation to life overseas."[42] Therefore, having the opportunity to interact with locals everyday and directly within the environment where they live could be game-changing in a context of single-occupancy living.

2.3.1.3 Portrait of Students From Away

This section draws a portrait of students from away to better understand who they are and what they need. Being one myself, I am using my personal experience as well as what I have observed in my colleagues as a starting point. Five key areas incorporate these characteristics: physical abilities, cognitive abilities, life experience, time, and connection to current world.

Physical Abilities

Physical abilities are related to senses (i.e. in particular vision, hearing, and touch), strength, mobility, and flexibility. Even though no age group is targeted in particular, we can assume that their general health and physical abilities do not stop students from away from living in an autonomous way. They have enough energy to accomplish daily tasks, go to class, and have leisure activities. Except for universal accessibility, there is no design challenge associated with this.

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42 Williams, *International Students and the Future of Nova Scotia's Universities*, 24.

Cognitive Abilities

In regard to this thesis, cognitive abilities mostly relate to memory and language. Memory should not be a design challenge in the case of students, but language in contrast can impact. Since students from away chose to study in English, we could assume that their language level is proficient enough even if it is their second language in most cases, though I have noticed in my work as a teaching assistant at the School of Architecture of Dalhousie University is that the language level of international students is not always adequate for academic studies. Using language in an everyday life context is different, but still, it could represent a barrier. In terms of design, a first insight would be to make sure that they can orient themselves in the complex in an intuitive way, colour coding elements and using icons for instance instead of words.

Life Experience

Considering that most students from away are between 17 and 27 years of age and have had to move to another city for their studies, they do not likely have a large accumulation material goods (i.e. furniture) or perhaps have had to get rid of most of them. This means that providing furnished units can be an interesting option for them - I would have found it very convenient, considering that students from away have little knowledge of what is available in their new city and usually have no social networks. Not having to find furniture, alone and without a vehicle, would have saved me a great deal of time and energy.

Time

Classes, papers, exams, and chores leave little time for simple relaxation. Moreover, beyond their increasingly busy schedule, students also often have an usual one. For instance, they study on the weekend or leave their studio or laboratory after midnight. The idea of integrating facilities not intended for academic activities within the complex came from seeing

friends, and myself, experiencing difficulties in finding services and amenities located at a reasonable distance between school and home, open for long hours. Having access to a laundromat, a gym, or a place to study within the residential building is a great advantage. Finding a balance between school and personal life is also a challenge, especially for graduate students. Having access to a garden or a pool a few seconds away from their apartment for a walk or a swim would make it easier.

Connection to current world

Most students today were born with technology, regardless of where they come from because of globalization. They know how to use cellphones, computers, and other digital devices. They easily understand and use the latest technology. For instance, using an elevator activated by a touchscreen or a prepaid magnetic card to pay for a service or access their apartment would not be a problem. Smart phones and computers require electricity and wifi; access to wireless internet and charging stations would be a plus.

2.3.2 Local Retirees

2.3.2.1 Definition of Local Retirees

Local retirees could be defined as people who have lived most of their life in the city or town where the complex takes place. They are 55 to 80 years of age and retired from work. In this thesis especially, they live alone and are looking for a transitional living accommodation between the place in which they spent most of their life and the nursing home. This age group represented 19% of the Halifax population in 2011, some 73,860 people.[43] Retirees who need constant special medical care or suffer from dementia are not included in the target population (e.g. Alzheimer's). The intent of the thesis is to accommodate single-occupancy, and consequently

43 "Census Metropolitan Area of Halifax, Nova Scotia," Statistics Canada, accessed February 22, 2017. http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-cma-eng.cfm?LANG=Eng&GK=CMA&GC=205.

an autonomous lifestyle. Retirees are expected to actively participate in the life and management of the complex, providing them an occupation, and hopefully the feeling of being useful and needed which can contribute to their well-being. Having a physical disability would not stop them from playing an active role, however the loss of autonomy would.

2.3.2.2 Isolation Lived by Retirees

Isolation felt by retirees in the age group targeted is a well known phenomena.[44] The National Seniors Council of Canada (NSCC) notes that isolation "has an impact on the person's self-esteem and confidence, which decreases their connection with the community and inhibits them from accessing health care services, thus perpetuating [the issue]."[45] In its 2014 Report on the Isolation of Seniors, The NSCC suggests measures to counteract the phenomena: raise public awareness, "promote improved access to information, services and programs,"[46] address the situation through "social innovation,"[47] and "support research to better understand the issue."[48] These recommendations are addressed in the thesis. Access to facilities within the complex directly addresses the second measure. A residential complex intended for them would certainly draw public attention to the issue, especially in the situation where they are combined with students. The idea also demonstrates social innovation.

2.3.2.3 Portrait of Local Retirees

Just like for students from away, we can draw a portrait of local retirees. The same five key areas can be considered: physical abilities, cog-

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44 National Seniors Council. *Report on the Social Isolation of Seniors 2013-2014*. (Report, Ottawa: Government of Canada, 2014),8

45 Ibid.

46 Ibid.,18.

47 National Seniors Council. *Report on the Social Isolation of Seniors 2013-2014*, 18.

48 Ibid.

nitive abilities, life experience, time, and connection to the current world.

Physical Abilities

Physical abilities of retirees, or rather disabilities, influence the design for this age group. Retirees are more likely to be limited in terms of mobility, flexibility and dexterity. The integration of elevators, stairs that are easy to climb, seats to rest in circulation areas, heavy furniture with wheels, and ergonomically shaped door knobs are example of design adaptations. These will be discussed further in the section *Design Implications*.

Seniors' senses are also not as acute as when they were younger: their senses of vision, hearing, and touch are declining. This could affect their faculty to orient themselves in the building. Vivid colours, sculptural elements acting as visual cues, and materiality changes to distinguish zones could be potential solutions. The question of orientation in the complex is brought up again. For students, this is an issue related to language and cultural references, for retirees it is related to physical abilities. A space in which everyone can intuitively circulate should be part of the architectural solution.

Cognitive Abilities

Language is not an issue for local retirees. However, memory is, and it can decline with time. Even if the group targeted lives in an autonomous way, simple features should help establish a routine to help residents in their daily life. For instance, a niche could be located at a reachable distance from the main door in an apartment to help residents not lose or forget their keys. These features could also benefit some students who might be disorganized or easily distracted.

Life Experience

Retirees have been accumulating a rich diversity of experiences through the years. They may have accumulated material (i.e. objects, furni-

ture) to which they associate emotional value. The design will have to take that into account. Sufficient storage and display features will have to be provided. If furnished apartments were an interesting option for students, retirees may not benefit from it. This suggests a single apartment layout should be flexible enough to accommodate both groups.

In contrast to students, retirees have had time to get used to a routine, to things being done a certain way. They have habits and are used to certain standards. For instance, locals from Nova Scotia are in most cases used to a modern kitchen layout, using north American appliances. Some people could argue that they could be reluctant to change. I disagree with that. Retirees are from the Baby Boomer generation, they fought for change, especially causes like the civil and women's rights movements. Their generation is more progressive than the generation of their parents. I think that they would appreciate some change as long as it respects the fact that they have possessions to which they are attached, have habits, and are used to certain living standards.

Time

Retirees do not work anymore and their schedule is more flexible. According to many studies, retirees want to live in community and feel needed.[49] An example can be found in *8 Support*, a group of retirees living at 8 House, a mixed-use residential project in Denmark designed by Bjarke Angels Group which is analysed in the typology investigation. *8 Support* was formed after a retired resident noticed that other residents, especially families with young children, were very busy. Residents can contact the group via a web platform and get help with any "practicalities."[50] The founder decided to assist other residents because he said he had the time

49 McComick, Kathleen. “Building for the Generations”, Urban Land 73 (2014), 56.

50 Ila Bêka and Louise Lemoine, *The Infinite Happiness*, Copenhagen: Ila Bêka, Louise Lemoine, 2016. Video.

and wanted to feel useful.[51] The service is completely free. This example is interesting because it supports the fact that a similar behaviour could happen in the complex. In terms of design, social spaces can cater this type of behaviour.

Connection to Current World

Retirees were not born with today's digital technology. Using cellphones and computers can be challenging for them. As mentioned, their vision and touch are often diminishing. In the example of the elevator activated by a touchscreen given above, retirees could have difficulty using this device. A screen with large and contrasting icons that is not too sensitive to touch (to allow for mistake) could potentially work. Seeing students using it and having the opportunity to get help from them would also be beneficial.

Because of media, seniors are aware of what happens in the world. They do not necessarily use social media as much as students and might not get a diversity of pieces of news as quickly. However, they are connected with the local community. Over time, they have built a network of acquaintances and friends. They are part of social circles and know the local scene.

2.3.3 Intergenerational Living

2.3.3.1 Intergeneration versus Multigenerational

The terms "intergenerational" and "multigenerational" are often interchanged to describe architecture projects where two or more generations are combined within the same housing complex, although their meaning is slightly different. Feliciano Villar, professor of developmental psychology at the University of Barcelona, highlights the nuances that differentiate each term:

> The term “Intergenerational” implies the involvement of members of two or more generations in activities that potentially can make them aware

51 Ibid.

> of different (generational) perspectives. It implies increasing interaction, cooperation to achieve common goals, a mutual influence, and the possibility of change (hopefully, a change that entails improvement). In contrast, "multigenerational" is usually used in a related but far broader sense: it means to share activities or characteristics among generations, but not necessarily an interaction nor an influence among them.[52]

The objective is to create opportunity for social interaction; students and retirees living in the same building and using the same facilities will not necessarily lead to cooperation, mutual influence, and the possibility of change. The research and design tools that are developed must focus on finding a way to catalyze these phenomena. Therefore, the objective of the thesis is to design a typology that is intergenerational and not multigenerational.

2.3.3.2 Benefits of Combining the Two Groups

Both groups possess qualities that can benefit the other. In terms of physical abilities, students have the strength and energy that retirees are lacking. On the other hand, living in immersion with locals can help students improve their language skills and facilitate their integration. Retirees also have time, which students do not. Students have a fresh perspective on the world from which retirees could benefit. Coming from away, they can also "expand the cultural wealth of [local] communities"[53] and can help retirees stay connected with the world. Local retirees have more experience and a certain wisdom. Their knowledge of the local scene and their connections could make the transition process of students easier. They are ideal people from whom to receive pieces of advice and could act as mentors. The complementarity of their abilities and disabilities can make a difference in both groups' lives.

2.3.3.3 Design Implications

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52 Feliciano Villar, "Intergenerational or Multigenerational? A Question of Nuance," *Journal of Intergenerational Relationships* 5 (2007): 116.

53 Williams, *International Students and the Future of Nova Scotia's Universities,* 1.

As an inclusive complex, and based on the portraits of the two population groups, it is highly recommended that the site and the building be universally accessible. The design will follow the seven principles established by the United Nations in 1997.[54]

Equitable use

No privilege is given on a particular group of residents. The building is useable by anyone (e.g. no-step entries).

Flexibility in use

The living environment accommodates a variety of individual choices and adapts to the user's varying functional abilities (e.g. kitchen counter at various heights).

Simple and Intuitive

Aspects of the domestic environment are easy to understand regardless of experience, knowledge, language skills or concentration level (e.g. light switch always located at the same position in relation to entrance door).

Perceptible information

The building communicates all necessary information effectively regardless of ambient conditions or user's varying cognitive or sensory abilities.

Tolerance for errors

The design minimizes hazards and adverse consequences of unintended actions by all users (e.g. built-in shower seats).

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54 Eckhard Feddersen and Insa Ludkte, *Living for the Elderly: A Design Manual* (Basel: Birkhauser, 2009), 10.

Low physical effort

Everyone can use dwellings efficiently, comfortably and with minimal fatigue (e.g. locate basic living requirements at entrance grade level).

Size and space for approach and use

The housing provides appropriate size and space of approach, reach, manipulation and use regardless of user's body size, posture or functional abilities (e.g. wide doorways and passages, reachable cabinets).

CHAPTER 3: THEORY & VISION

3.1 Minimal Living

The first sub-chapter of *Theory and Vision* develops a vision for the cocoons based on precedents from 1920 to 1960. I decided to focus the research on this innovative and exciting period because it is when the discourse around minimum housing started and reached its peak. I also included my research on the Japanese concept of minimum housing as it influenced modernists. The sub-chapter ends with a design charette which focussed on experimenting with layouts to initiate the design phase.

3.1.1 The Minimum Dwelling

Minimum housing, originally referred as "minimum dwelling," was simultaneously developed in Germany and the Soviet Union after World War I. German and Soviet architects influenced a movement towards living in more compact and ergonomic housing units called existenzminimum. This section focuses only on the residential units developed during the period. The building scale is addressed in chapter 5, just before the typology investigation.

3.1.1.1 Origins in Germany

Germany experienced a major housing shortage after WWI and found a solution in minimum dwelling: optimization of private space in order to massively provide affordable dwelling. Under the obligation of providing housing for all Germans, as stipulated in Article 155 of the 1919 Weimar Constitution,[55] German architects developed housing units not just in terms of minimally-acceptable floor space, but also in terms of provision of fresh

55 Susan R. Henderson, *Building Culture: Ernst May and the New Frankfurt Initiative 1926-1931*. (New York: Peter Lang AG, 2013), 4.

air and natural light.[56] Housing programs following these principles were developed across the country. Frankfurt's housing initiative under Ernst May referred as Das Neue Frankfurt from 1926 to 1931 gave birth to particularly innovative projects. Its housing plan can be summarized by three terms: quantity (of units provided), quality, and affordability.[57] The most renowned projects included apartments designed for small families. In these projects, the minimum size for a three-room apartment was 40 m^2.[58] Some apartments were smaller, like this two-bedroom flat at Hellerhof (33 m^2).[59]

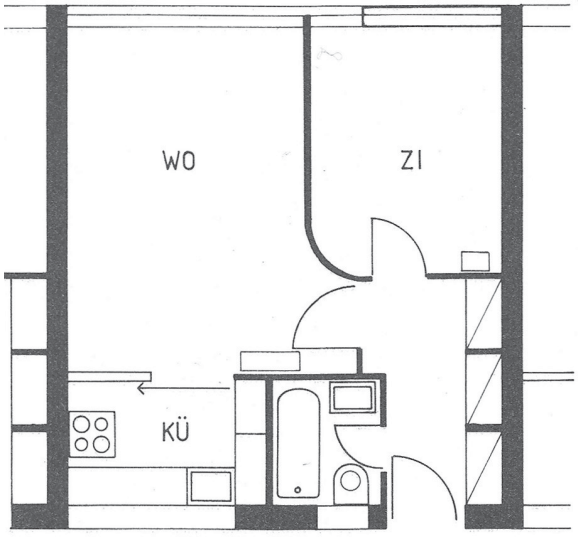


Figure 5: Two-room flat at Hellerhof; from Dreysse, *Ernst May Housing Estates,* 32.

Also part of the New Frankfurt, some projects were "addressing the needs of people living outside the nuclear family, such as the elderly,

56 Ibid.

57 D.W. Dreysse, *Ernst May Housing Estates: Architectural Guide to Eight New Frankfurt Estates, 1926-1930* (Frankfurt: Fricke, 1988), 32.

58 Karel Teige, *The Minimum Dwelling: The Housing Crisis, Housing Reform,* trans. Eric Dluhosch (Cambridge, Mass : MIT Press, 2002), 208.

59 Dreysse, *Ernst May Housing Estates*, 32.

homeless youth and [...] single women [...]."[60] Viennese architect Margarete Schütte-Lihotzky was in charge of single women housing design. These units were for temporary housing as it was rather usual to house singles at the time. The ideal of the nuclear family was still very important. In 1928, Schütte-Lihotzky designed a one-room apartment of 31 m^2 which was presented at the Congress of Women's Groups. Discussing the size of her design, she argued that comfort is not a matter of size :

> It is mistaken to think that comfort... depends on the number of rooms. Quite the contrary, the more rooms there are, the smaller they must be and therefore require greater upkeep. The correct arrangement and division of one space, designed for unconstrained movement in a manner as simple as can be, increases contentment much more than pride in having such-and-such many rooms. Through the openness afforded by a glass wall and by some free-standing furniture, the space appears roomy and large.[61]

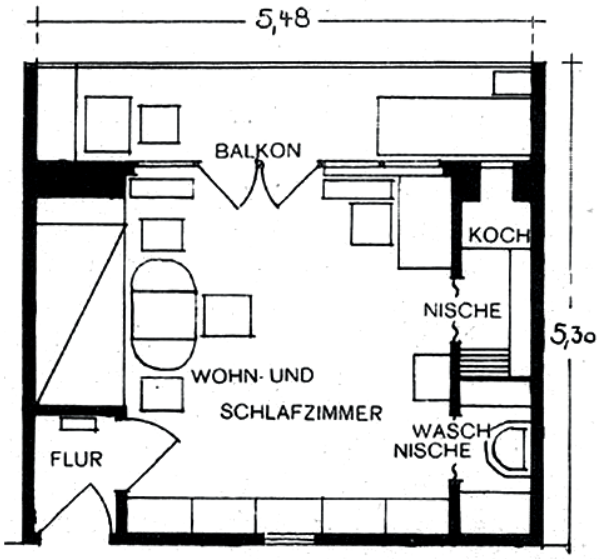


Figure 6: Grete Schütte Lihotzky, dwelling for a professional woman; from Henderson, "Housing the Single Woman," 362.

Her one-room apartment layout was simple. It had a long terrace with built-in storage that provided light and fresh air. Two niches included

60 Susan R. Henderson, "Housing the Single Woman: The Frankfurt Experiment," Journal of the Society of Architectural Historians 68 (2009): 359.

61 Ibid., 362.

a bed and vestibule on one side and a small kitchen and washroom on the other. This layout created a free central space that could adapt to different purposes and made the apartment feel more spacious. The bed could be used as sofa as suggested by the arrangement of a table and chairs right next to it. Schütte-Lihotzky's design strategy can be summarized this way: servant space is located along the peripheral walls, served space occupies the center (most of the space), and compatible functions are combined.

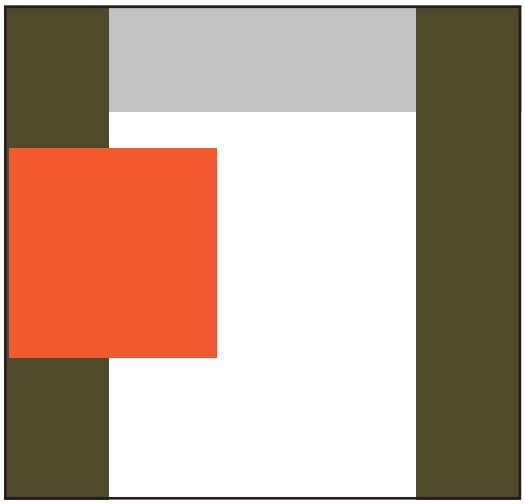


Figure 7: Diagram of Schütte-Lihotzky's single-women apartment. Gray indicates the terrace. The servant space is shown in brown and served space in white. Red indicates a combination of program, in this case the bed, a table and chairs to entertain.

3.1.1.2 Origins in the Soviet Union

In the Soviet Union, socialist ideals shaped a radical lifestyle which was reflected in the design of the residential unit. The most radical form taken by the dwelling was the minimum living cell which was a dwelling cubicle for one person. Living standards at the time suggested that 8 m^2 of private space per person was enough.[62] This cell was essentially a dorm room. It accommodated basic needs, "when biological needs make isolation from the collective necessary"[63]: sleep and maintain good hygiene.

62 Teige, *The Minimum Dwelling: The Housing Crisis, Housing Reform,* 96.

63 Teige, *The Minimum Dwelling: The Housing Crisis, Housing Reform*, 359.

Essential needs such as food and rest, and essential luxuries such as exercise and larger cleaning and maintenance tasks were accommodated in social spaces that had a capacity of 300 to 1,000 persons.[64] This type of unit was included in a complex typology called Dom Kommuna and will be discussed at the scale of the complex in chapter 5. In similar units, less radical but still compact, servant space was shared among fewer units. Designed by Barshch and Vladimirov in 1929 for the Building Committee of the Economic Soviet in Moscow, the cubicle illustrated below measured 1.60 by 3.75 metres. Built-in furniture made walls habitable, including a fold-up bed and storage. Another habitable wall dividing the two cubicles included a shower and a separate toilet and sink.

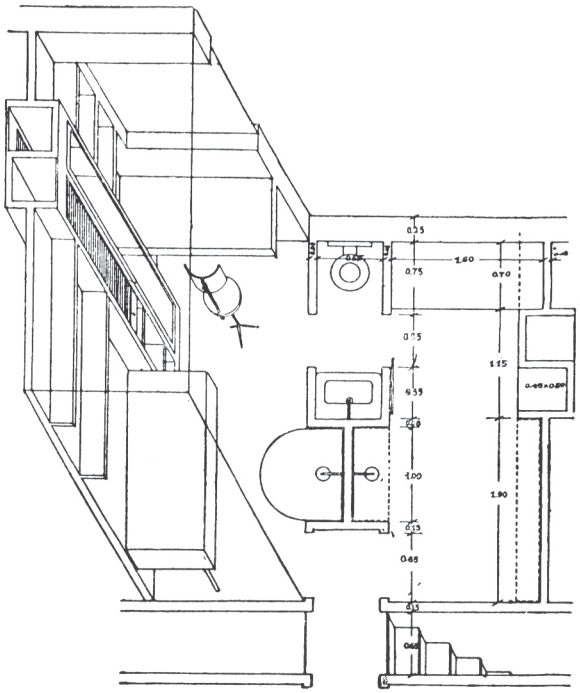


Figure 8: Axonometric view and plan of two cubicles with shared bathroom within an habitable wall; from Teige, *The Minimum Dwelling*, 358.

Like in Schütte Lihotzky's design, servant space is peripherally located. The architects' parties were different, which make the comparison

64 Ibid., 360.

unfair. The apartments for single-women were to accommodate a private, independent lifestyle, where the cubicles were for a collective way of living, they were rooms in a very large house.

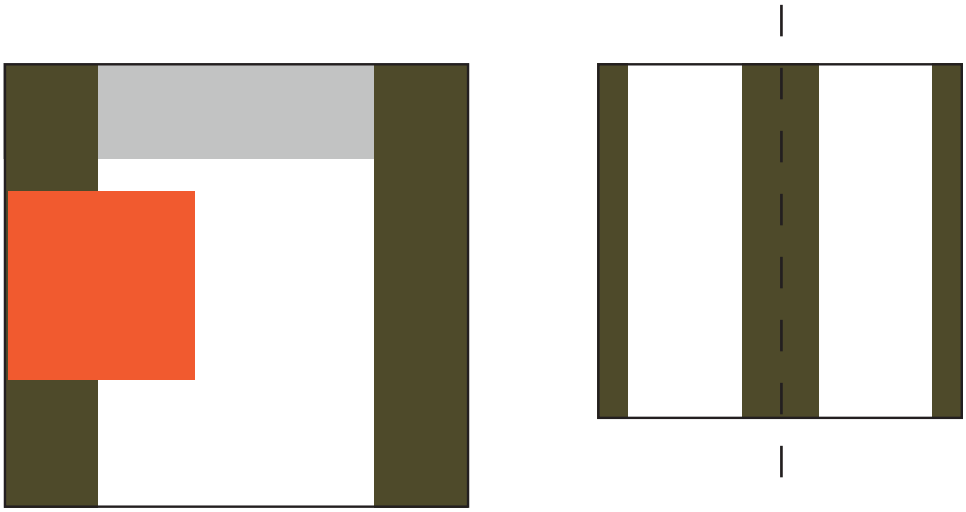
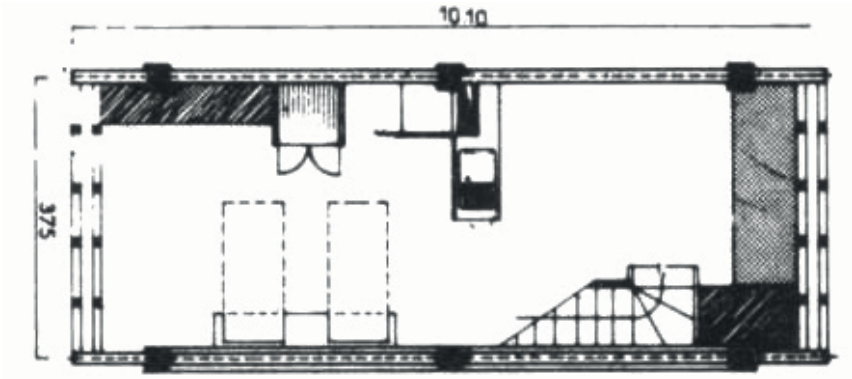


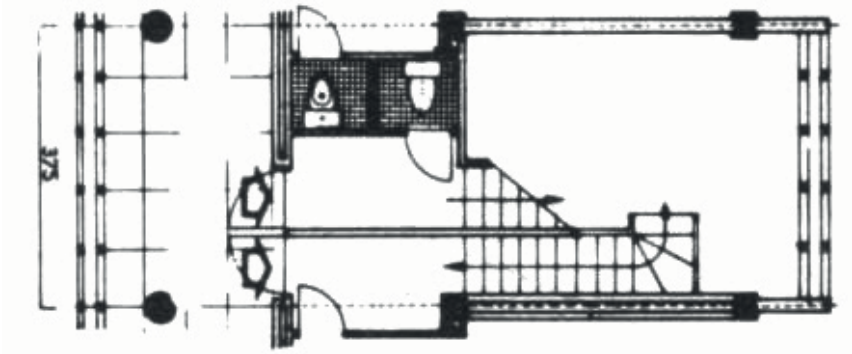
Figure 9: Diagrams of a single-women apartment and two cubicles.

Larger apartments of 27 to 30 m^2 were also included in some Dom Kommunas such as Narkomfin in Moscow by Mosei Ginzburg (1929). On two levels, accommodating a relatively independent lifestyle, these units had a full bathroom and a compact kitchen. They were however meant to be transitional units. Nuclear families living a "bourgeois" lifestyle were to eventually live in dwelling cells and use collective servant space, as part of the socialist agenda.[65] Servant spaces were once again gathered along the peripheral wall.

65 Teige, *The Minimum Dwelling*, 360.



Top floor



Ground floor

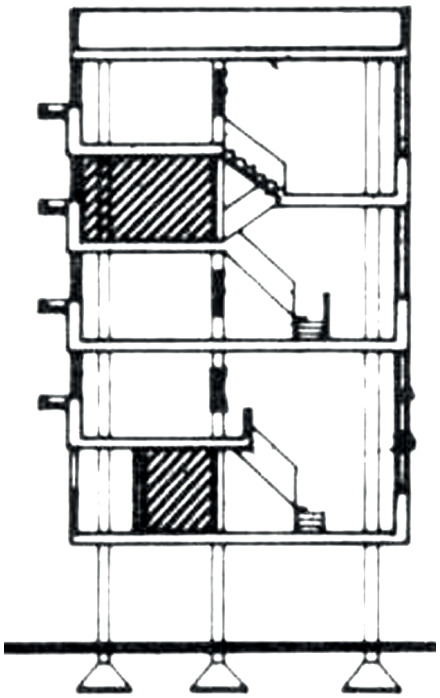


Figure 10: Narkomfin Apartments; from Sherwood, *Modern Housing Prototypes,* 118-119.

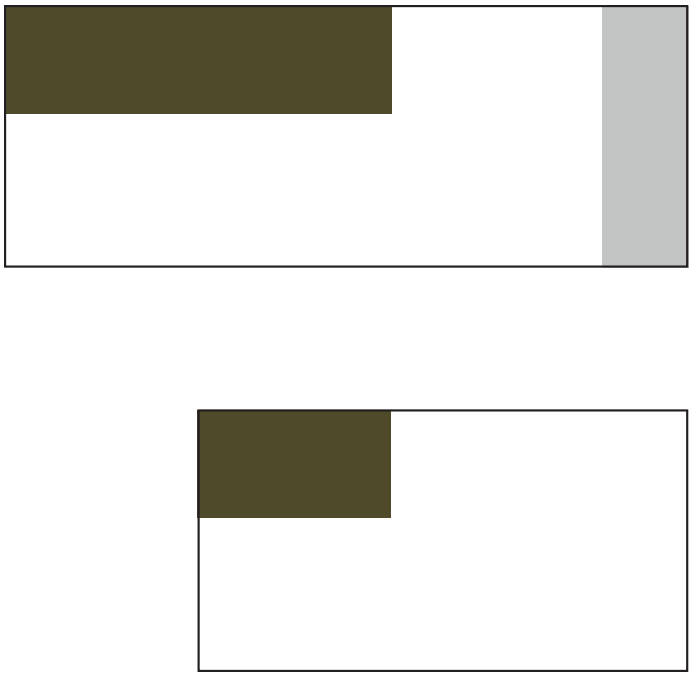


Figure 11: Diagram of Narkomfin apartments.

3.1.1.3 Modern Interpretation of Minimum

Influenced by German and Soviet architects, modernists first revisited the design of bourgeois typologies like the villa before taking interest in mass housing. Minimum dwelling was discussed in the International Congresses of Modern Architecture (CIAM) around 1928,[66] but housing for the subsistence minimum, as it was referred to, became one of the highest priorities for the international architectural avant-grade later as part of the resolutions of 1931.[67] Members of the CIAM developed "the concept of a mature modern dwelling"[68] and then applied "the insights and principles derived from this design to the rental multistory city apartment."[69] One principle was to "assign each dwelling function[...] its own space and

66 Teige, *The Minimum Dwelling*, 62.

67 Ibid., 216.

68 Ibid., 217.

69 Ibid.

equipment"[70] in response to the multifunctional antiquated single-room dwelling,[71] which was considered unhygienic. At the scale of the apartment, this principle compartmented the space into small bedrooms recalling the cubicle, a compact kitchen and a bathroom... to the benefit of a spacious living space.[72] Each resident had their own bedroom, or at least their own bed.[73] Essential needs were all catered within the dwelling unit. The modern agenda was not socialist; if in certain projects, meant for the low-income working class, common facilities were provided (usually laundry facility), it was clearly established that the dwelling unit was strictly private.

The idea of minimum dwelling took a different meaning depending on the spirit of the time and the lifestyle that accompanied it. In Germany, it was about providing quality housing to the nuclear family. The development of apartments for singles was mandated by necessity more than by choice and accommodated an independent lifestyle. Quite the opposite in the Soviet Union, where the ideal was singles sleeping in cubicles and embracing (or rather dealing with) living in collectivity. For modernists across Europe, it was about efficiency and hygiene. Nonetheless, principles of rationalization and functionalism were applied by all.

3.1.1.4 Functionalist Design Strategies

Reducing the size of space was essential in the design of minimum dwelling in order to keep costs low and provide mass housing. "It was the reform of the kitchen that first demonstrated that a space organized and furnished to effectively consolidate the operations of the apartment and its household can also substantially reduce its size."[74] Inspired by Taylorism

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70 Teige, *The Minimum Dwelling*, 217.

71 Ibid., 241.

72 Ibid., 217.

73 Ibid., 247.

74 Ibid., 218.

and the machine-like vision of housing,[75] the kitchen became a laboratory or a miniature factory instead of a living space. The layout was designed to "streamline all processes"[76] and "prevent interference of one operation with another."[77] Action listing and time-motion diagrams were design tools that shaped it.

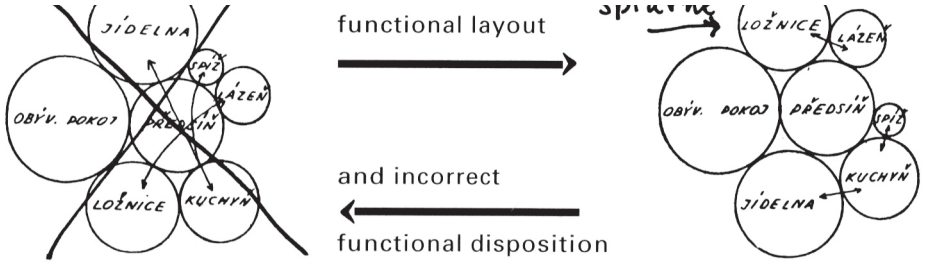

Figure 12: Functionalist diagram of a correct and incorrect layout; from Teige, *The Minimum Dwelling,* 219.

The famous Frankfurt kitchen developed by Schütte-Lihotzky is a perfect example of the application of these design strategies. She designed it by considering "ergonomical and practical aspects"[78] to make simple repetitive activities run as smooth as possible. Her methodology involved listing and numbering the steps involved in the preparation of a cake, which is one of the most labour intensive food. She organized the steps into a seamless sequence making sure to reduce back and forth between appliances and to locate everything at a reachable distance. The kitchen included electric appliances which in addition to the ergonomy of the layout revolutionized the preparation of meals, making it quicker and less labour-intensive.

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75 Dreysse, *Ernst May Housing Estates*, 4.

76 Teige, *The Minimum Dwelling*, 218.

77 Ibid.

78 Ibid.

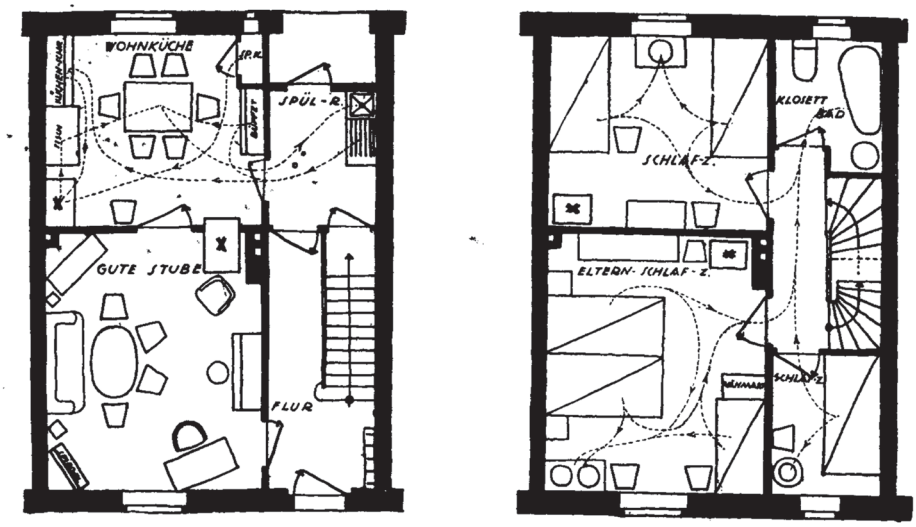

Figure 13:Example of motion diagram studying circulation patterns in an apartment by Bruno Taut in 1924; from Pai, *The Portfolio and the Diagram,* 180.

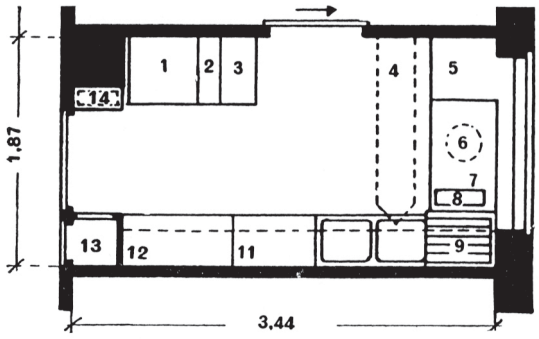

Figure 14: Plan of the Frankfort kitchen: stove (1), drawer for flour (2), gas stove (3), folding ironing board (4), food closet (5), rotating stool (6), work counter (7), garbage slot (8), sink and counter (9, 10, 11), closets for pots and pans (12), broom closet (1#), and heater (14); from Teige, *The Minimum Dwelling,* 219.

These design tools are still pertinent in the case of repetitive actions such as activities linked to chores, where saving time and effort is desirable (i.e. laundry, building maintenance, waste management). However, these strategies should be used only in these situations. Action listing and movement diagrams suppose that there is a right way of undertaking a task when in reality there can be more than one. Standardization was the zeitgeist of functionalists; I think it is important today to also remember that originality and diversity should colour what does not have to run efficiently.

3.1.2 Japanese Concept of Minimum

I am uncomfortable with the idea of reducing minimum dwelling to only a question of size, not because I disagree with living in smaller spaces, but because of how it could be interpreted. At the time of *existenzminimum*, spaces were reduced in size as a result of careful design. Le Corbusier wrote in *The City of To-morrow and its Planning* that "it is only Architecture which can give all the things which go *beyond* calculation."[79] Instead of associating minimum dwelling with 'smaller space,' it should be given the motto 'quality over quantity.' This would help promoting minimum housing in western societies, where larger is believed to be better.[80] The exhibition and series of conferences called *Urgent Imagination* presented in 2015 by the Western Front, an artist-run centre located in Vancouver, explored that idea through art installations. Photographs of iconic minimal dwellings showcasing their spatial and material qualities were placed across Vancouver. The artists criticized the idea that minimum housing is “seen as simply a socially necessary quantity of square feet,”[81] arguing that thus these spaces are compact, but that their qualities are what really make them great.

In the traditional Japanese conception of minimum, space is valued in terms of quality, and not size. Influenced by Buddhist ideas, a simple lifestyle is perceived as noble, and the concept of emptiness is not associated with void unlike the Western conception.[82] The *shoin* typology demonstrates that idea very well. It is a minimally-furnished flexible living space which is measured in terms of number of *tatami* floor mats that form

79 Le Corbusier, *The City of To-morrow and its Planning*, trans. Frederick Etchells. (London: Architectural Press, 1947), 71.

80 Michael Freeman, *Space: Japanese Design Solutions for Compact Living* (New York: Universe, 2004), 1.

81 “Beyond Minimum - Urgent Imagination,” The Western Front, accessed September 27, 2016, http://urgentimagination.front.bc.ca/program/projects/beyond-minimum/.

82 Freeman, *Space*, 1.

a space.[83] The tatami serves as flooring unit but also as bed. Sliding *shoji* and *fusuma* panels that can be opened or closed as needed to create boundaries and thresholds. Inspired by traditional Japanese dwelling, principles for minimum housing today could be multipurposeness, lightness, attention to detail, ergonomy, and flexibility.

Figure 15: Hinged tatami used for storage in a revisited 9-Tsubo House in Mitaka; from Freeman, *Space,* 221.

83 Ibid.

Figure 16: Lightness and flexibility; from Freeman, *Space,* 208 - 214.

Figure 17: Multipurposeness and ergonomy; from Freeman, *Space,* 205 - 93.

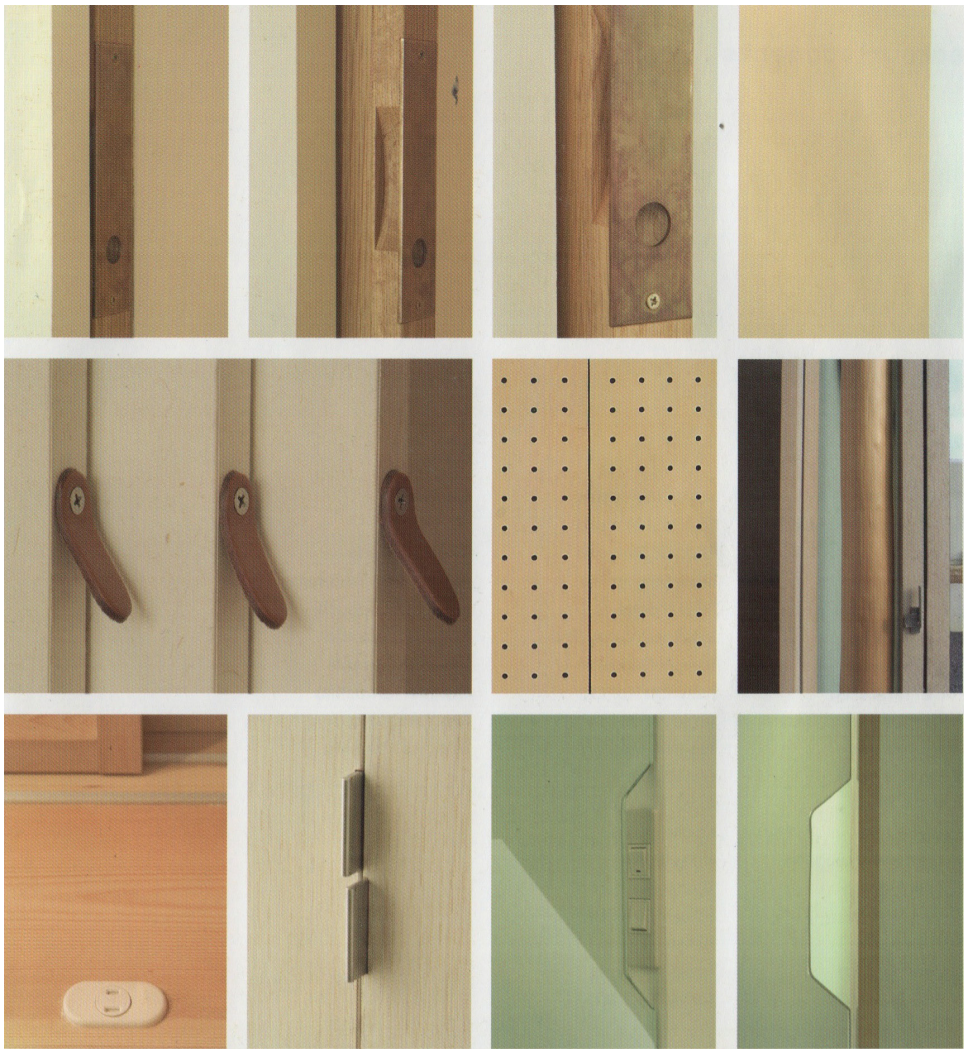

Figure 18: Simple, well-crafted details of cabinets and doors; from Freeman, *Space,* 223.

3.1.3 Testing it Out: Design Charette

A design charette was organized at the beginning of the research in collaboration with my colleague Celina Abba. The intention was to start thinking about the design, although the research was still on going, as to better understand the theory and start defining my vision for the cocoons.

At scale 1:20, standard size blocks of furniture, storage, and appliances where arranged in order to create layouts of minimal dwelling for single occupancy. For each layout, a different strategy was used: peripheral servant space to free a central served space, combination of servant space and built-in furniture in the center to create smaller functional zones, division of large zones with an habitable wall. Layout 7 was chosen to be recreated at full scale in order to experience how the space feels. The layout was reproduced on the floor of the exhibition room at the School of Architecture of Dalhousie University using tape and string.

After evaluating the design, we realized that it would be hard to live in that apartment if the ceiling was at a standard height because it felt crowded. Movement around the furniture was very restricted. Windows on both sides and a large terrace could help making the space feel more breathable.

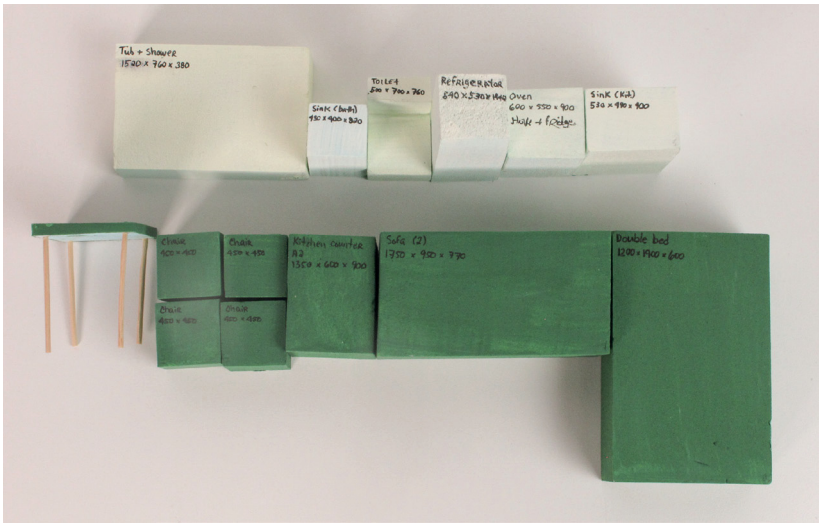

Figure 19: Sample of the furniture blocks made for the design charette.

Plan view

Side view

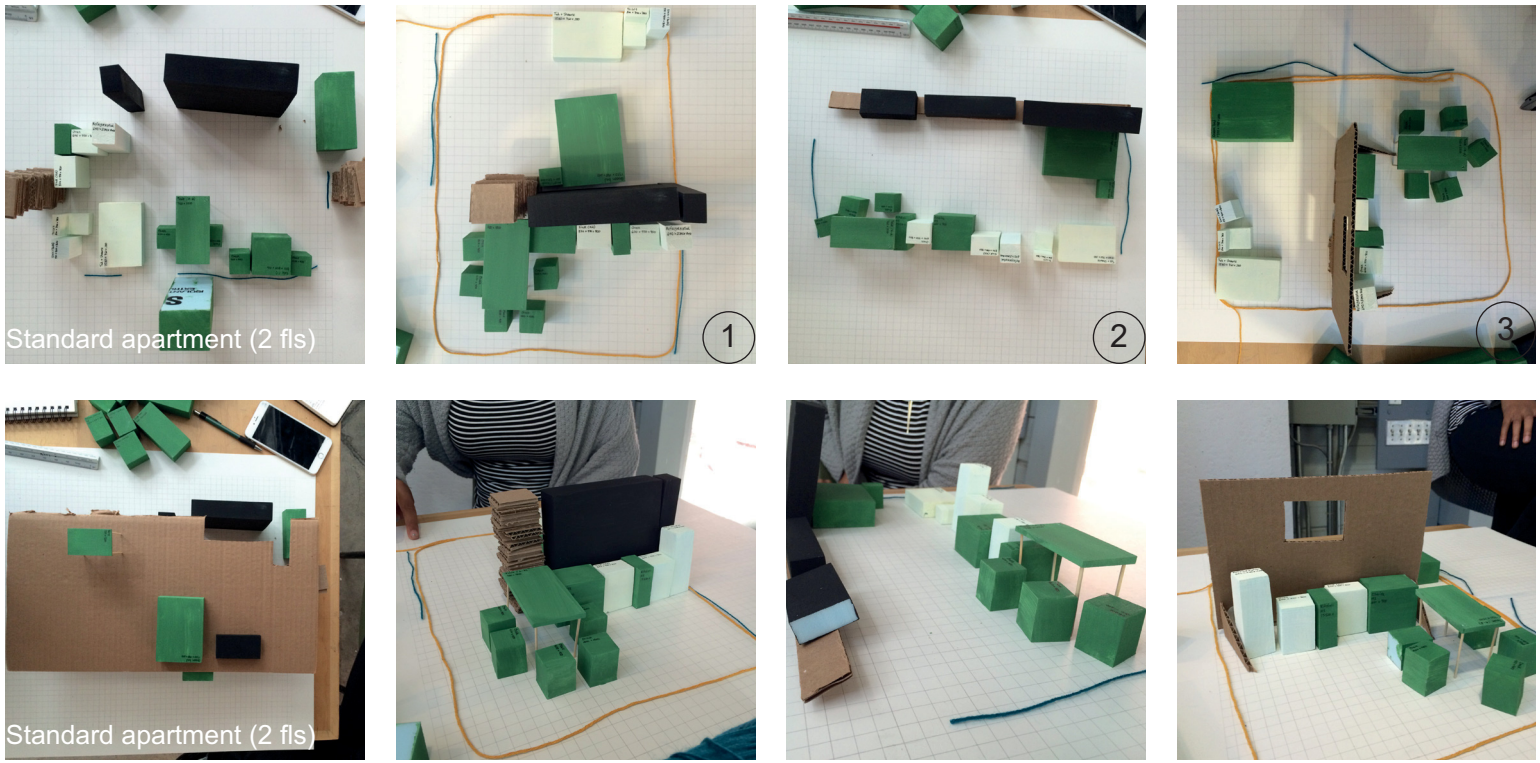

Figure 20: Apartment layouts assembled during the design charette.

Plan view

Side view

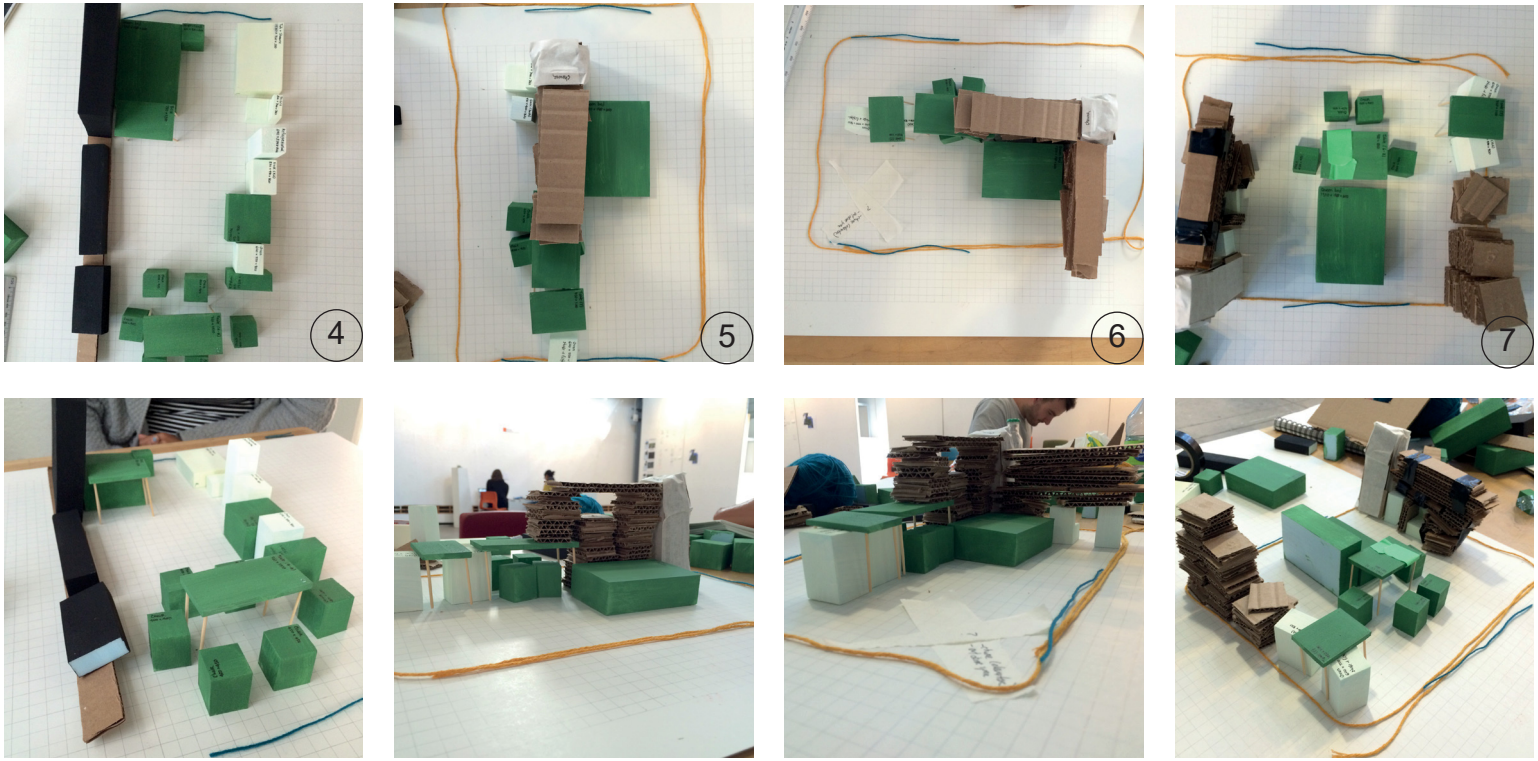

Figure 21: Apartment layouts assembled during the design charette (continued).

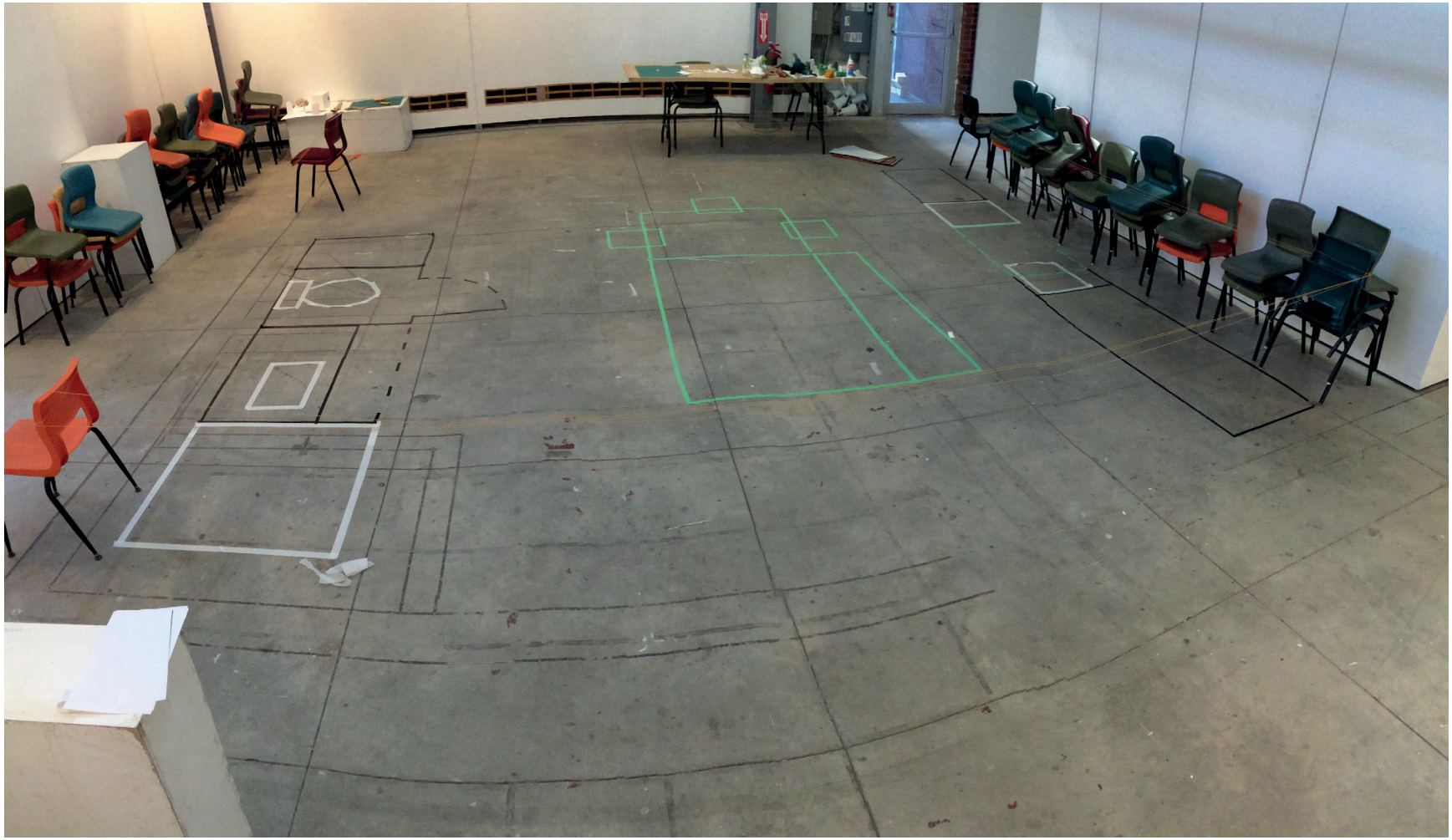

Figure 22: One of the 1:20 layouts, layout 7, was selected and reproduced at scale 1:1 with tape and string to get a sense of what it would feel to live in it.

The design charette reinforced the research findings on minimal dwelling and the Japanese conception of minimum by thinking through making. For instance, just like the functionalists, we felt necessary to define usages (i.e. eat, sleep, wash) and to fragment everyday life actions into steps in order to better understand a single person lifestyle and reorganize a coherent sequence of living zones including furniture and appliances. Notions of ergonomy and flexibility proved to be very important in attempting at reducing the size of the apartment. After realizing that we reduced the apartment to the bare minimum, we realized that we pushed the idea too far. This further made me realize that quality is as important (if not more) than quantity. After representing the layout we chose at full scale, I could not help but think about how adding a terrace, floor to ceiling windows with a nice view, and a large circulation space to interact with neighbours could potentially make the unit enjoyable. It reinforced the idea that we cannot think only in terms of dwelling unit when designing a residential complex. The quality of the unit depends on the quality of its environment .

3.1.4 Today's Existenzminimum

Just like existenzminimum reflected the spirit of the interwar period, our definition has to be shaped by the spirit of our time and the kind of lifestyle that we aspire to have today. If existenzminimum is only translated as "smaller space," developers and city officials could use it in an abusive way (i.e. cheaply build spaces that are not enjoyable). This could be dangerous in regions where building codes do not establish regulations, like in the Nova Scotia Building Code, which does not mention a minimum size for dwelling units nor establishes standards. Regulations in Ontario stipulate that a one-bedroom apartment should minimally measure 32 m^2.[84] Standards should be established for minimum dwelling.

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84 Karen Turner, "Tiny House Movement comes to Aylmer with construction of a 225-square-foot home," *Ottawa Citizen*, April 2, 2015, accessed May 15, 2017, http://ottawacitizen.com/life/homes/tiny-house-movement-comes-to-aylmer-with-construction-of-a-225-square-foot-home.

The motto 'quality over quantity' is a starting point. Part of the lifestyle that we are leaning towards is the desire to live alone: this already defines that the residential unit should accommodate an independent lifestyle and feel like a retreat. However, our definition should go beyond the cocoon and include the environment within it lives. As mentioned in my vision statement, I believe it is essential to provide an environment that fulfills essential luxuries or in other words, social needs. Italian design strategist Ezio Manzini points out that it is one of the most important challenges in the current discourse on housing, redefining *existenzminimum* for today:

> Today's 'existenzminimum,' must be translated into proposals that can appear [...] as opportunities to achieve a higher level of social quality (a term which in an initial approximation we can equate with "quality of life;" but in doing so we must eliminate the individualistic, hedonistic connotations which have been attached to this expression).[85]

He continues with:

> How to propose an existenzminimum which will appear attractive and will thus be freely chosen in the midst of a variety of alternative proposals [?] First of all, in order to be attractive the proposal must not correspond to a scenario of deprivation.[86]

Living independently must be accommodated in order to appear interesting to students and seniors, but the essential need for social interaction also needs to be fulfilled. The cocoons must be balanced with social space.

3.2 Excess as a Complement to XS

3.2.1 Social Space is About Action

In today's redefinition of existenzminimum, social space caters social interaction which increases the quality of life of residents and other citizens who experience the complex. Henri Lefebvre refers to it as a space of enjoyment. According to Lefebvre, it emerges "in moments, encoun-

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85 Ezio Manzini, "Design, Environment and Social Quality: From 'Existenzminimum' to 'Quality Maximum'," *Design Issues* 10 (1994): 41.

86 Ibid.

ters, friendships, festivals, rest, quiet, joy, exaltation, sensuality, as well as understanding, enigma, the unknown, and the known, struggle, play."[87] In his explanation, Lefebvre adds that it "cannot consist of a building, an assembly of rooms, places determined by their functions."[88] What he means is that an envelop, something purely material, does not provide enjoyment. I agree with him that it might not provide enjoyment in the way that he defines it, but I have to mention that a building has a materiality, tectonic, spatial relations, and layout that can stimulate a simple form of enjoyment. The feeling resulting from touching a smooth warm plaster wall (i.e. softness, comfort) or running through water falling from a gutter (i.e. play, excitement) are examples. If we do not reduce what a building is, I think the sensorial experience that we get from it connects us to our environment and adds to Lefebvre's definition of enjoyment. Nonetheless, I do not think that these simple forms of pleasure necessarily connect us to each other. To go back to Lefebvre, he completes his definition by adding that a space of enjoyment can only be created by "collective gestures and actions."[89] Based on this reflection, I establish a first principle for the design of the social space of the complex: it is about feelings/actions/reactions, more precisely it is centered on what happens when people interact.

This first principle raises a reflection: other people's feelings, actions, and reactions are hard to predict, especially when we consider that people act differently. Designers can think of multiple scenarios of everyday life in a tentative to dialogue with spatial practice (like functionalists). They can also project their own dreams of what space can be onto their representations of space to open new possibilities in spatial practice and encourage people to perceive space differently (like surrealists and situationists). The space created by designers remains in the world of represen-

87 Henri Lefebvre, *Toward an Architecture of Enjoyment*, trans. Robert Bononno. (Minneapolis: University of Minnesota Press, 2014), 152.

88 Lefebvre, *Toward an Architecture of Enjoyment*, 152.

89 Lefebvre, *Toward an Architecture of Enjoyment*, 147.

tations until it is experienced and reimagined by the other. Is it then possible to a priori create social space? I believe it is possible to set in place the adequate conditions to activate what is out of designers' control (or depend on the other) following architect and theorist Bernard Tschumi's programming strategies, which catalyze or provoke reactions from which social space emerge.

3.2.2 Catalyze Social Interaction Through Gentle Disruption

Influenced by disciplines outside of architecture (i.e. cinema, literature, politics, visual arts), Bernard Tschumi's research was, and is still, driven by "an alternative reading of architecture outside of formalist doctrines."[90] His research contributed to the deconstructivist discourse. His disinterest in form made him focus on what takes place in a space first to develop the architecture. Consequently, Tschumi agrees with Lefebvre in that “there is no architecture without everyday life, movement, and action.”[91]

I mentioned that people's spatial practice and perception of space (including social interaction) happen a posteriori. I also claimed that despite of not being able to create social interaction, conditions can be designed to provoke it. I will use Tschumi's notion of program and event to develop how this can be done:

> Events are different from programs. A program relies on repetition and habit; it can be written down and be prescriptive. In contrast, an event occurs unexpectedly. Your design may contribute to conditions for some future, unknown event to occur, but you do not “design” the event.[92]

This establishes program as a parameter that is controlled by the architect. I see the notion of event as essential in social spaces of the com-

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90 Bernard Tschumi, *Architecture Concepts: Red is not a Color* (New York: Rizzoli, 2012), 6.

91 Bernard Tschumi, *Architecture and Disjunction* (United States: MIT press, 1994), 23.

92 Ana Miljački, “2 Architects 10 Questions on Program: Rem Koolhaas + Bernard Tschumi,” *Praxis* 8 (2006): 8, accessed February 22, 2017.

plex because they could be 'ice breakers' that catalyze social interaction. Tschumi says that they are "turning points."[93] Even though he claims that they cannot be designed, he mentions that programmatic combinations can prompt their emergence.[94] Tschumi uses the term crossprogramming to refer to them. It is done by "using a given spatial configuration for a program not intended for it."[95] It is similar to a "typological displacement."[96] For instance, using a library as a swimming pool, a prison as a town hall, a car park structure as a museum.[97] The last example refers to Frank Lloyd Wright's Guggenheim in New York. They share a similar typology in their circular ramps, but have a totally different program. The Guggenheim gains its excellence, as notes Tschumi, in part "simply by subverting a typology and turning it into something else."[98] Crossprogramming can go further than borrowing a typology to repurpose it, like in transprogramming and disprogramming, which are variations of it. Transprogramming is "combining two programs, regardless of their incompatibilities, together with their respective spatial configurations."[99] Including a roller-coaster structure within a planetarium is an example. Disprogramming is defined as "combining two programs, whereby a required spatial configuration of program A contaminates program B and B's possible configuration."[100] For instance, in the case of a planetarium and a roller-coaster, visitors could take a roller-coaster to visit the exhibitions. The spatial configuration of the exhibition space would be shaped in dialogue with the roller-coaster's trajectory and requirements.

93 Tschumi, *Architecture Concepts*, 176.

94 Ibid., 186.

95 Ibid., 195.

96 Ibid.

97 Ibid.

98 Ibid., 187.

99 Ibid., 195.

100 Ibid.

Programmatic combinations seem to be limitless, but they have to be strategic and meaningful. Tschumi proposed combining a running track and a conventional library program for the competition of the Grande Bibliothèque in Paris. This combination came after realizing that the contemporary world has become more and more digital, which "has brought a converse focus on the body."[101] For him, the 21st century library is not just about "people study[ing] serious books while [sitting] around monumental tables."[102] He proposed that the 21st century intellectual would also be an athlete. His proposal did not pass the first round of judging unfortunately. He noted that the jury thought he was making fun of them.[103] However, two years later, trying to deal with the fact that the library lacked dynamism, the jury revisited the competition submissions and realized that Tschumi's proposal might have been the optimal solution.[104] His programmatic combination did not seem serious at first, but after all was really addressing an issue and thus was strategic and meaningful. I am not sure that this can be said of all the combinations proposed by Tschumi in his manifestoes; they are certainly amusing and provocative, but not always anchored in reality. This leads to one of my concerns: the complex proposal not being taken seriously because of the disruption caused by the programming combinations of the social space.

I take playfulness very seriously. I believe that if the disruption caused by a certain programmatic combination is too brutal, it loses its strength by going too far into irrationality. It needs to be more accessible to be taken more seriously. Tschumi does not mind creating confusion or even irritation through disruption. I do not think that this is something desirable in people's everyday life. It is inappropriate for a residential complex; fundamentally peoples' home. Unlike a museum or an attraction park, people will

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101 Tschumi, *Architecture Concepts*, 108.

102 Ibid., 108.

103 Ibid., 211.

104 Ibid.

experience it everyday. This does not mean that the combinations cannot be playful – obviously they have to be, because playfulness creates gentle disruption. I simply mean that they have to be conscientiously designed. In this I agree with revered architect Peter Zumthor, who suggests that architecture is a sensitive background for human life.[105] Like Zumthor, I think contemporary architecture ought to be radical, but there are limits:

> Although a work of architecture based on disharmony and fragmentation [...] may be able to convey a message, as soon as we understand its statement our curiosity dies, and all that is left is the question of the building's practical usefulness.[106]

I propose to create gentle disruption by combining playful and functional programs. Playful programs are entertaining and unexpected. They can be appreciated from both students and retirees. Functional ones are practical, they are related to chores or essential luxuries that cannot be provided to all individuals within the cocoons. The idea behind this is to get people to go outside of their cocoons occasionally by necessity, or give them a reason to do so whenever they seek company because of the functional program. This would make sure that there are people in these spaces to maximize potential for interaction. The playful program attracts and also gives a reason for staying in the space after the chore is done.

The social space of the complex includes more than one combination – I will refer to the combinations as program/events and social spaces in its plural form. A diversity of program/events creates a richness of experiences through the complex which contributes to making it a space of enjoyment. They re-create the excitement of the city at the scale of the block. Examples of program/events can be a laundromat/bowling club, common kitchen/party space, swimming pool/bistro, daycare/intergenerational playground, gym/projection space, workshop/knitting and video games space, mail/recycling/ping-pong space. I proposed earlier the idea that social space is all around the cocoons. I imagine the program/events pollinating

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105 Peter Zumthor, *Thinking Architecture* (Basel: Birkhäuser, 2010), 12.

106 Ibid., 12.

other spaces: circulation, hall, courtyard… they are in the building but also outside. The events are not restricted to the building.

I have formulated a first principle, that social spaces are about feelings/actions/reactions, more precisely that they are designed around what happens when people interact. This helped me formulate my second principle, that social interaction needs to be provoked by gentle disruption from programmatic combinations. Although Tschumi does not like to discuss form, the programmatic combinations have to be materialized. These principles inform the process, but not the material setting yet.

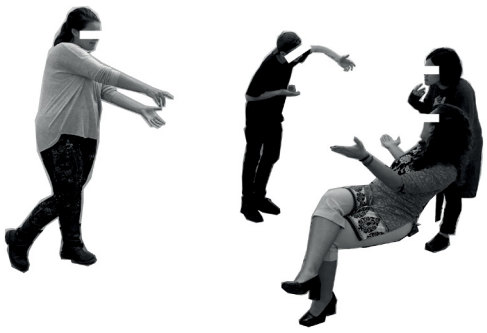
3.2.3 Take One! Action!

Following my first principle, I decided to work backwards to create the material setting of the social spaces in the complex. After imagining programmatic combinations that gently disrupt, I chose to work on the laundromat and bowling club, which I call the laundrobowl. Every time I was talking about the project, this one in particular was provoking a strong reaction. I thought for this reason that it was worth exploring. I tried to predict how people would interact in that space in order to inform the architecture. Inspired by performance art and theatre, I gave roles to four colleagues who agreed to participate in my simulation activity for fun (see annex for agreement letters). Two were asked to play students and the two others, retirees. The four participants were given instructions on the reason why they were in the laundrobowl: a student was trying to figure out how to do laundry, the other one needed something to do while waiting for their laundry, a retiree was playing cards alone also while waiting, and finally the other retiree was just observing them, seeking company. I asked them to simulate what their character would do knowing why they where in the space, letting them improvise. I told them that the simulation would have four scenes, that I would take one photograph per scene for further study. The four photographs are presented on the next page.

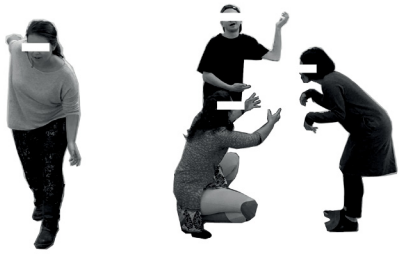
Through this activity, I wanted to show an example of how gentle

disruption can provoke social interaction. I thought the combination had an interesting balance of playfulness and functionality. It confirmed me that it was a program/event that had to be further developed and for that reason I made a conceptual collage of it using objects this time to progressively materialize the space. Based on the collage, I think it is a case of disprogramming. The spatial configuration of the bowling club should dictate the one of the laundromat because it is not as flexible. As represented in the collage, I think the impact of the disruption will have more strength if the two spaces form one. This establishes a first design decision.

01 A student is wondering how to use the washer while a senior lady is looking at him thinking she could help. Another senior lady is playing cards on her own, and another student is wondering what to do while her laundry is drying.



02 The two senior ladies acknowledge the presence of the student who needs help while the other student finds a bowling ball.



03 The ladies are showing the student how to do laundry and the other student plays bowling.

04 The ladies start playing cards together after breaking the ice with the laundry episode and the two students start playing bowling together.

Figure 23: Participants were asked to simulate what could potentially happen in a laundromat combined with a bowling club. The material setting is removed to focus on the action/interaction.

Figure 24: Objects are added to start envision an architectural setting. The nonexistence of physical barrier makes pollination between programs possible.

3.2.4 Applying Programming Strategies

I propose to study an example of Tschumi's work as well as architect and theorist Rem Koolhaas's, who worked around similar ideas, to help materializing the program/events. Both Tschumi and Koolhaas participated in the design competition for Parc de la Villette in Paris in 1982. Parc de la Villette is probably the most famous application of programming strategies, but I chose it regardless of that because it truly is a good example.

Both architects wanted to create a space for social interaction, and their proposals surprisingly use similar strategies. Tschumi's winning design applies his tripartite definition of architecture developed in *The Manhattan Transcripts* (1994): it "superimpose[s] points (of activities), lines (of movement), and spaces (of appropriation)."[107] A point grid is used as a "way to explode the park's programmatic complexity and reorganize it around the points of intensity of the folies."[108] The folies act as points of reference in space. The lines of movements, or paths, do not follow this structured organization; they intersect each other, leading towards points of interest.

In Koolhaas' proposal, layers of programs are juxtaposed to form "a kind of horizontal skyscraper."[109] Walking along the length of each program strip produces a continuous spatial experience, and walking perpendicularly to each strip creates rapid changes. Facilities are distributed according to a grid, like in Tschumi's design. Both designs balance structured and 'loose' elements: a grid (i.e. events like folies, buildings), joining elements (i.e. paths, infrastructure, buildings), and a series of fragments (i.e. organic shapes in the case of Tschumi and strips in the case of Koolhaas). Connection is a key element in both designs to create momentum. They both use intersection and superimposition. They create loci where people seeking for different things are brought up to the same location for an indeterminate

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107 Miljački, "2 Architects 10 Questions on Program," 12.

108 Ibid.

109 Ibid.

time. This programming arrangement creates possibilities.

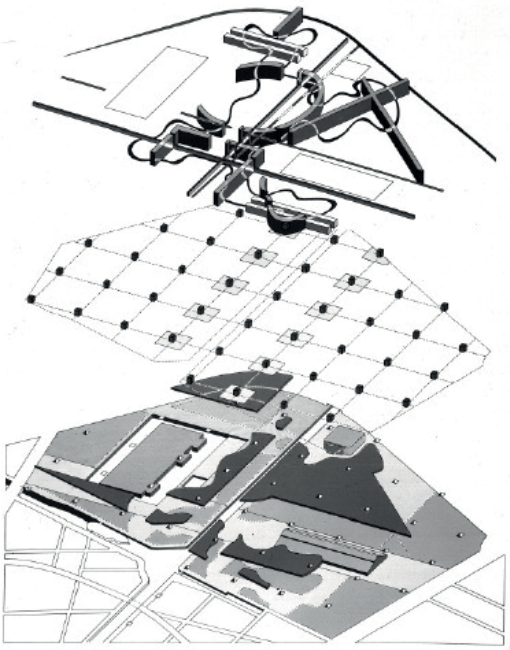

Figure 25: Bernard Tscumi's design for Parc de la Villette in Paris, where lines of movement, points of activities and spaces of appropriation are superimposed; from Miljački, “2 Architects 10 Questions on Program," 12.

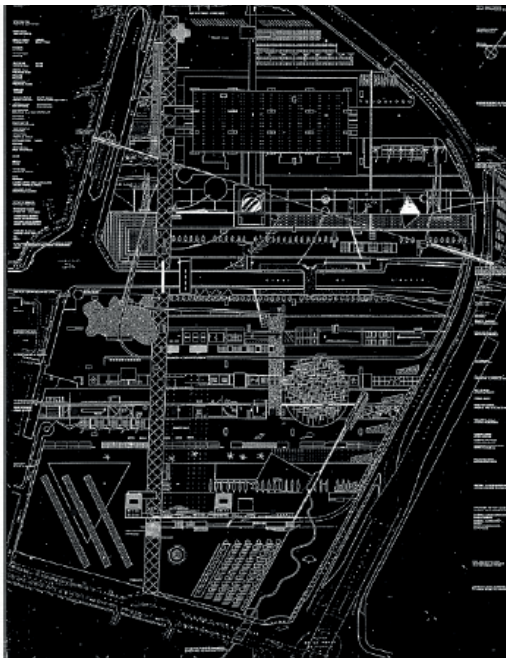

Figure 26: Rem Koolhaas' proposal for Parc de la Villette; from Miljački, “2 Architects 10 Questions on Program," 12.

3.3 Fragments of Space

This chapter presented the theoretical framework as well as my vision for the two main types of fragments of space in the complex: the cocoons, compact and flexible individual units, and the program/events, unexpected combinations of functional and playful programs. The development of these two types of fragments, the most individual and the most social, partially answers the research statement, one accommodates single-occupancy while the other caters social interaction, but does not fully respond to the design problematic. How do these two meet to form a coherent complex?

The strategies used by Tschumi and Koolhaas in Parc de la Villette provide a first set of design tools to help articulate the fragments into a complex. Their vocabulary of points of interest, lines of movement and programmatic fragments is particularly helpful. I already established two types of fragments which means that points of interests and lines of movement can be components that help joining the fragments in a clear way. I represented into diagrams four potential articulation strategies which can be used at various scales and are presented on the next page. They illustrate spatial pollination by layering, intersecting, clustering, and 'miscellaneousing.' Each colour can represent a particular program at the scale of the fragment of space, for instance layers of laundromat and bowling club. At a larger scale, they can represent elements of the complex, for instance program/events, thresholds, and circulation space. What are points of interest and lines of movement in the complex? This question will be answered after investigating pertinent typologies.

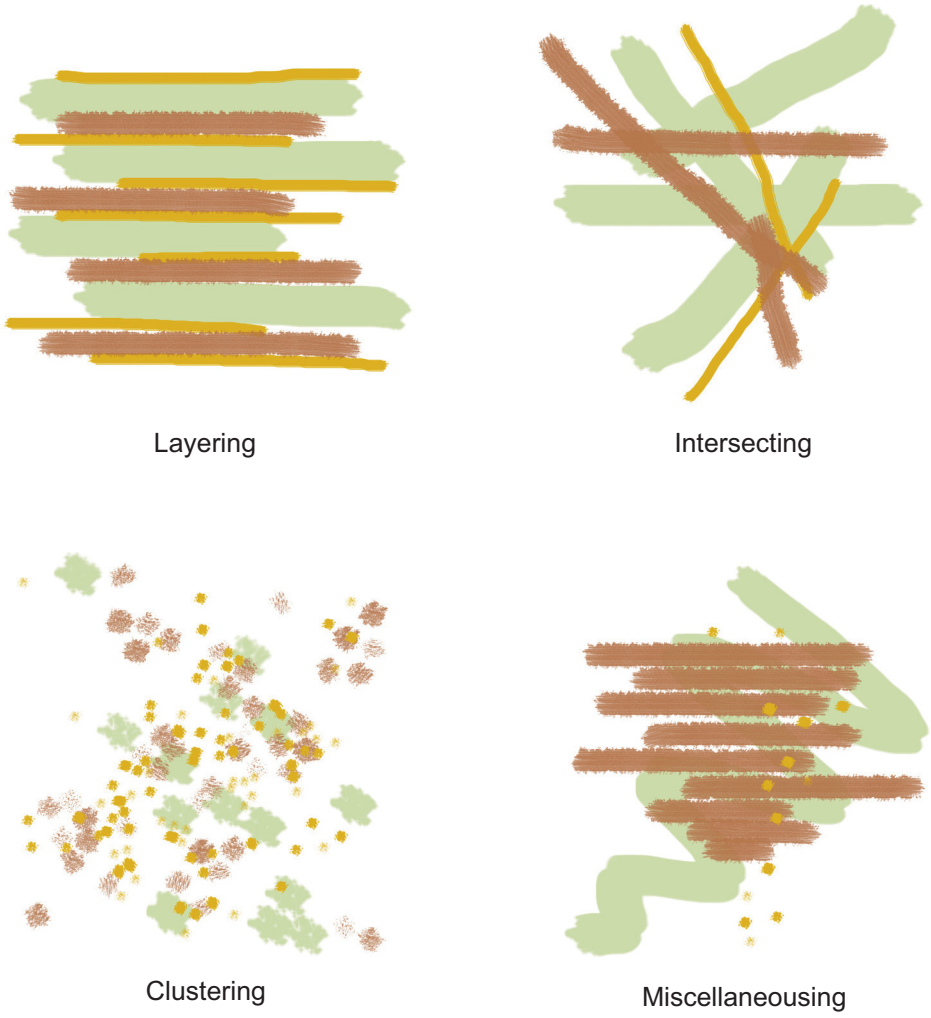

Figure 27: Spatial language diagrams: layering, intersecting, clustering, and miscellaneousing.

CHAPTER 4: SITE SELECTION

I chose to introduce the neighbourhood around Quinpool Road and the specific site selected before presenting the articulation of the complex. The first section of this chapter presents a portrait of the neighbourhood and the site as well as demonstrates why it is an appropriate context to test the thesis. The second section takes a closer look at the block, presenting a site analysis, density study and site principles. Finally, the third section presents an aesthetic study of the neighbourhood.

4.1 Recognizing the Potential of Quinpool Road

4.1.1 Portrait of the Neighbourhood

Quinpool neighbourhood is located in the West End district of Halifax peninsula. It is the densest area in the city and combines residential, commercial, and institutional zones. Unlike downtown or the South End, the area is still affordable. Its main artery, Quinpool Road is unique in Halifax.

The first word that comes to my mind to describe the neighbourhood is raw. On Quinpool Road, within a 10-minute walk you can get a haircut, bring your old shoes to the cobbler, buy tools at Canadian Tire, get fried chicken at KFC or a thanksgiving dinner at the Ardmore Tea Room (a small deli that has not changed since the 50s), buy fresh bagels for tomorrow's breakfast, paint a mug at Clay Café, shop at the antique stores, see a movie at the vintage Oxford Theatre... and much more. Bright billboards, cars passing by, students wandering around, dads walking with their toddlers, dogs waiting outside for their owners: Quinpool is not a glamorous artery, and it does not try to be. When you turn the corner to go a block away from Quinpool, a completely different landscape opens up: mature

trees and colourful wood-cladded Victorian houses. It is charming.

Quinpool area is eclectic, it is not perfect - and this is what makes everyone comfortable. As Robert Venturi, Denise Scott Brown and Steven Izenour note in *Learning From Las Vegas* (1977):

> Architects are out of the habit of looking nonjudgmentally at the environment […]. [They] have preferred to change the existing [...] rather than enhance what is there.[110]

I share Venturi, Scott Brown and Izenour's values in the sense that I think that Quinpool should not be discarded by designers just because it is not picture perfect or trendy. It is true that it is a car oriented street, that it does not have mature trees, and that its billboards could be perceived as "tacky," however I think it has the potential to become one of the most dynamic neighbourhoods in the city because it supports everyday life.

Figure 28: Local shops and international chains are juxtaposed on each side of Quinpool Road in Halifax, Canada; taken by Finlay Geddes, 2016.

110 Robert Venturi, Denise Scott Brown, and Steven Izenour. *Learning From Las Vegas*. (Cambridge: MIT Press, 1977), 3.

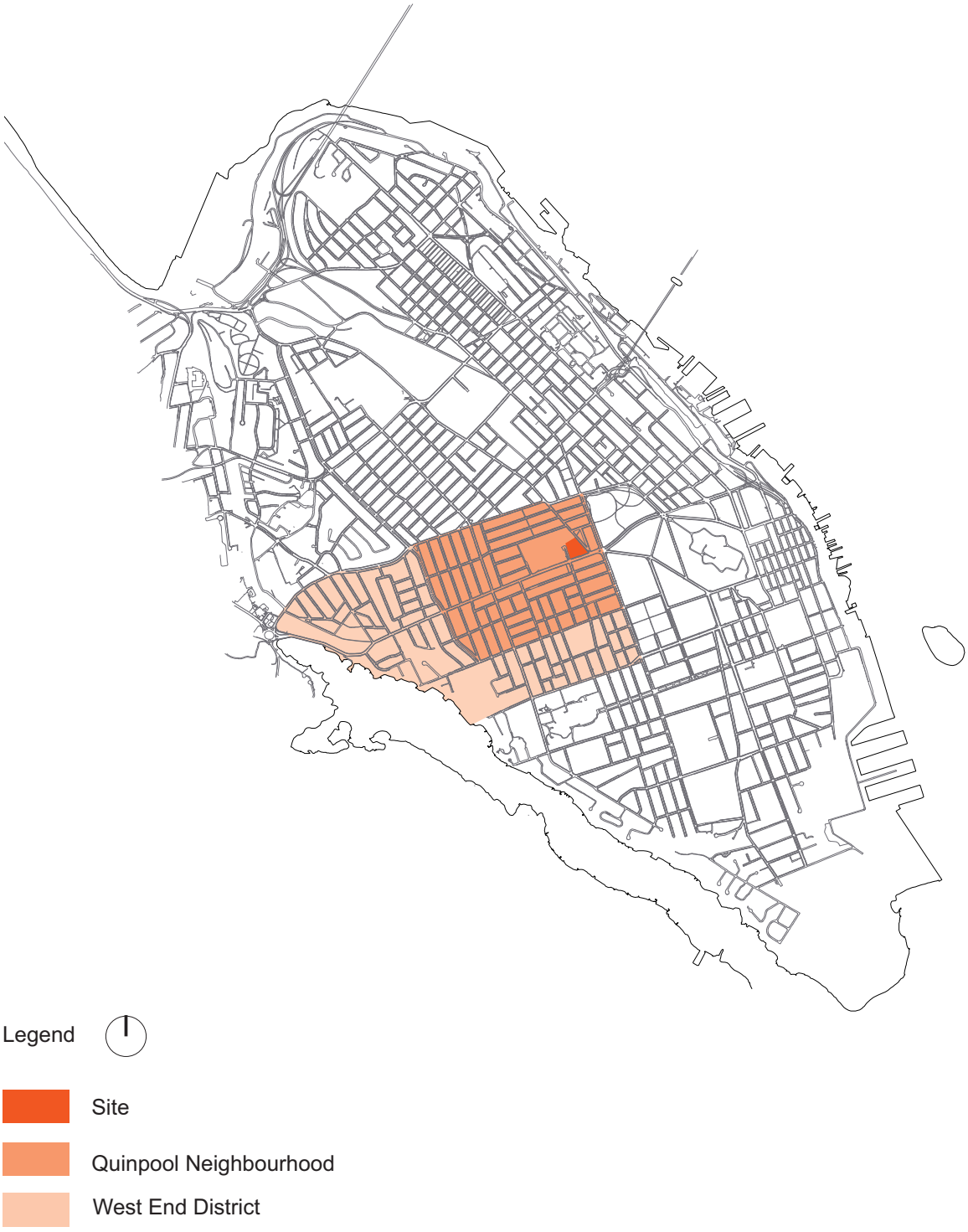

Figure 29: Quinpool district is centrally located on the Halifax peninsula.

Figure 30: Quinpool Road block elevation, facing the selected site, looking South. Quinpool is an enjoyable human-scale shopping street.

Figure 31: View of the selected site, 6067 Quinpool Road, looking North.

Figure 32: Windsor Street block elevation, looking East. This small residential area is quiet and full of mature trees.

4.1.2 Portrait of the Site

The site I selected is located at 6067 Quinpool Road, between Quingate Place and Windsor Street. Until recent demolition, this was the site of Saint Patrick's High School, which later became Quinpool Education Centre. This piece of land is currently still owned by the city and zoned as park.[111] However, the city seems to be open to a mixed-use residential development as they mandated the firm WSP to conduct a site study and propose a scheme.[112] The area of the site measures 3.5 acres (14,000 m^2).

6067 Quinpool's location is perfect for students and retirees. A car would not be required to live at the complex. The site is located within a five-minute bike ride from Dalhousie University's main campus, an eight-minute bike ride from St-Mary's University, and a nine-minute bike ride from Nova Scotia College of Art, the three largest universities of six in Halifax. Most bus routes have stops around the site, two are right in front of the site on Quinpool. All amenities the two groups need are situated within a twelve-minute walk of level ground. There is a car share station on Quingate if a car was ever needed to go outside of the peninsula. Retirees would find no need to relocate if their health deteriorates and they eventually need additional care. There is a specialized care centre, St. Vincent Home, located on the same block, right behind the site. Queen Elizabeth II Hospital is also very close, located within a five-minute walk of level ground.

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111 GIS data from the city of Halifax.

112 WSP and City of Halifax, *Quinpool 6067: Background* (Report, Halifax: WSP, 2015), 5.

Figure 33: 6067 Quinpool Road, the selected site to test the thesis.

Figure 34: 6067 Quinpool Road is located close to three of the six universities in Halifax, St-Vincent Home, and the hospital.

Figure 35: All amenities students and retirees need are located within a twelve-minute walk on level ground.

The social spaces in the complex can provide services that are not already offered on Quinpool. The closest laundromat is located at a seven-minute walk North of Quinpool and there are none South; having one in the complex, accessible through Quinpool, would benefit not only residents but the whole neighbourhood, which is home to 13,845 people.[113] Surprisingly, there is also no daycare. The amenities of the complex could especially serve people who live close-by. Approximately 3,800 people live within a ten-minute walk from the site. Acting as a good neighbour, the complex can benefit the existing community.

4.2 Understanding 6067 Quinpool Road

4.2.1 Site Analysis

This section presents the site analysis and principles formulated from the analysis.

4.2.1.1 Methodology

Road hierarchy, land-use by law, urban fabric pattern, population density, unbuilt space, type of ground surface, and tree repartition are the parameters that were studied. The site study focused on the Quinpool neighbourhood. This sector is easily walkable and includes most of the shops and services on Quinpool Road as well as some residential blocks. The blocks which were discarded on the north and south sides are very similar to the ones included in the study and would not have added any additional pertinent information. The analysis was completed using mostly Arc GIS and open data from the city of Halifax. The results are represented in the diagrams on the following pages.

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113 "Population by Polling District, Halifax Regional Municipality," Statistics Canada, accessed June 2, 2017, http://www.halifax.ca/municipalclerk/documents/2001-2006popbydist.pdf

Figure 36: Road Hierarchy in the Quinpool Area.

Figure 37: Land-use by law in the Quinpool Area.

Figure 38: Urban Fabric Pattern in the Quinpool Area.

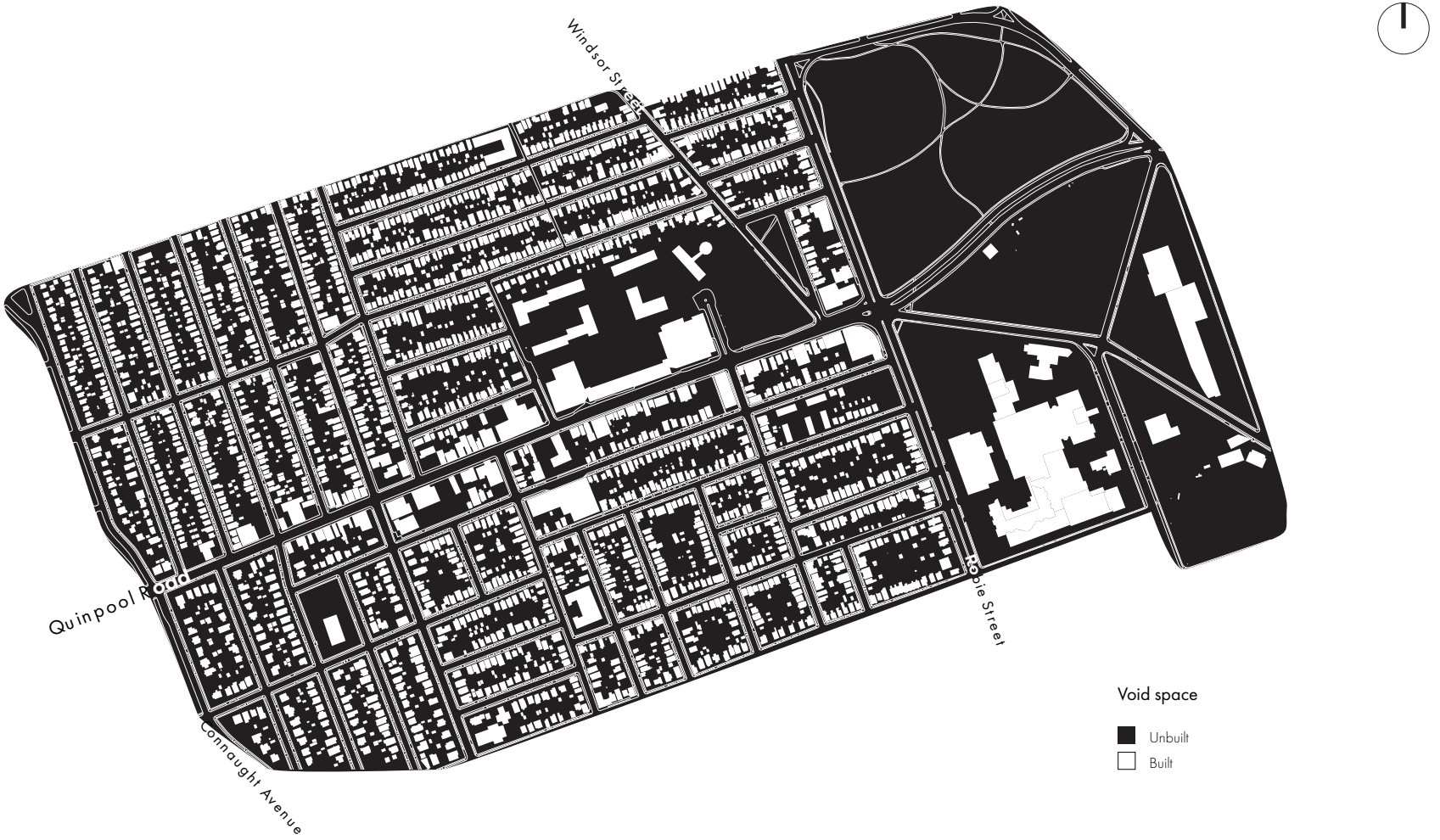
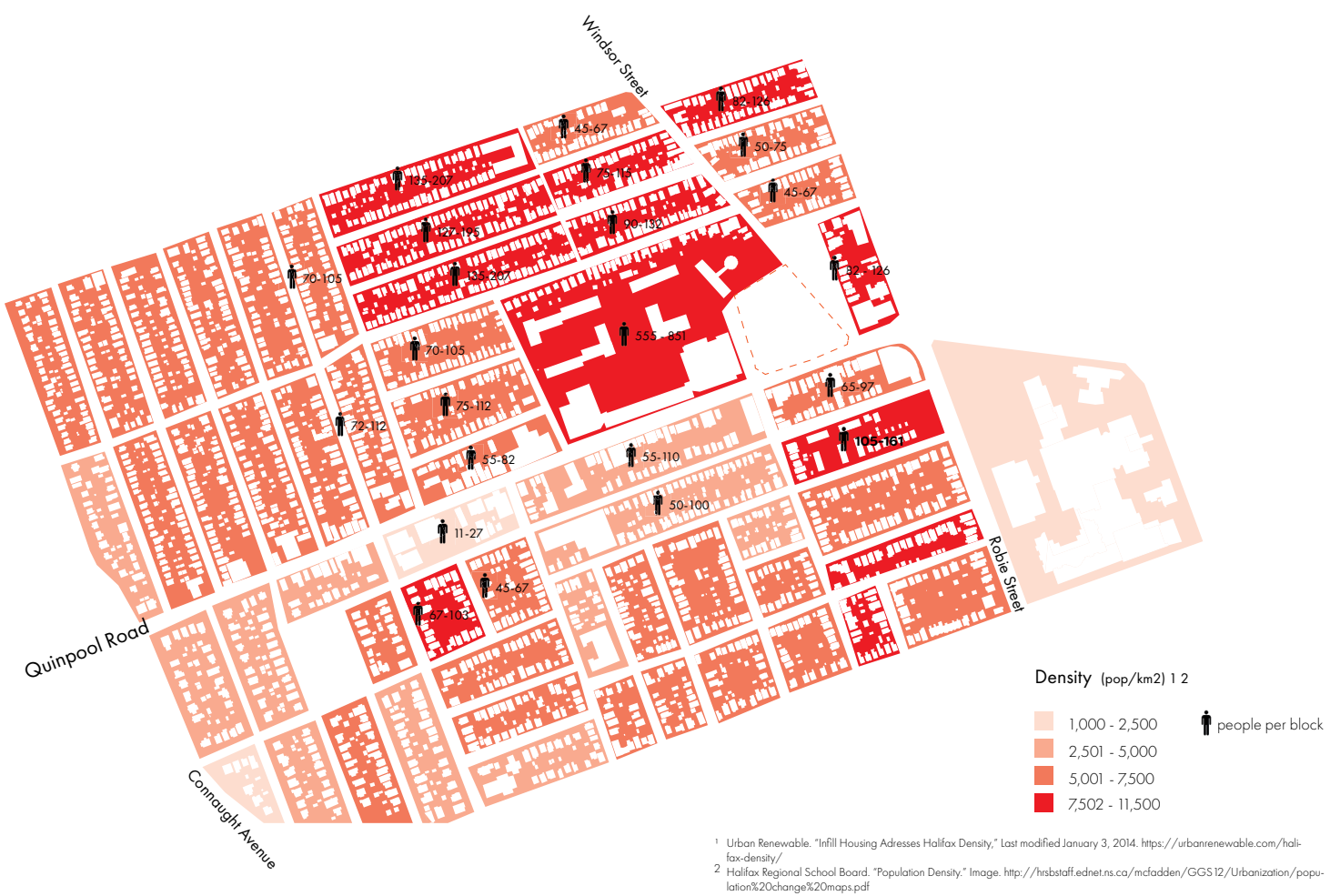


Figure 39: Unbuilt Space in Quinpool Area.



[1] Urban Renewable. "Infill Housing Adresses Halifax Density," Last modified January 3, 2014. https://urbanrenewable.com/halifax-density/

[2] Halifax Regional School Board. "Population Density." Image. http://hrsbstaff.ednet.ns.ca/mcfadden/GGS12/Urbanization/population%20change%20maps.pdf

Figure 40: Population Density in the Quinpool area.

Figure 41: Porous, Unknown, and Non-porous Surfaces in the Quinpool Area.

Figure 42: Tree Repartition in the Quinpool Area.

4.2.1.2 Results & Discussion

The diagrams and photographic surveys highlight different characteristics of the area. Quinpool, Robie, Connaught, Oxford, and Windsor are the most busy roads. Quinpool is clearly a shopping street. The blocks outside of the commercial zone are mostly residential, some are mixed-use. The built fabric has a similar fragmented pattern throughout except for one superblock located at the west of the selected site. Buildings run perpendicularly to the street. On average, they are seven to twelve meters wide. They are closely located to each neighbour, leaving a very narrow space between buildings. Their peripheral disposition forms a central space in the middle of the block. This space includes sheds and other small storage buildings. The urban fabric diagram makes the residential fabric seem very porous from the street to the center of the block as it highlights the space between each single building. These access points are generally blocked by fences, so this porosity does not exist in practice, although it could be interesting to exploit this in the site strategy.

The population density in the neighbourhood is 6,287 per km^2 on average.[114] The highest population density is mostly located around 6067 Quinpool Road and Welsford Park, where there are between 7,501 and 11,500 persons per square kilometre living on these blocks. The denser ones include buildings which are higher than what is permitted by the law Two apartment buildings are twenty-five and twenty-nine-storey although the height is limited to 10.7 meters in most areas of the neighbourhood and to 15.2 meters in the area directly surrounding the site. Current by-laws reinforcing the human-scale character of Quinpool should be respected.

There is surprisingly a lot of parking space along Quinpool Road, especially on the west side of the selected block where a small mall forms

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114 Sean Gillis, "Atlantic Canada's Densest Neighbourhoods: Quinpool Road," *Spacing Atlantic*, October 3, 2011, accessed June 2, 2017, http://spacing.ca/atlantic/2011/10/03/atlantic-canadas-densest-neighbourhoods-quinpool-road/

the only superblock of the street - this segment is quite long and unpleasant to walk by. The presence of parking lots directly accessible through Quinpool gives it a suburban character which is contradictory to its location on the peninsula. The neighbourhood is well deserved by public transit and easily walkable; there should not be so much emphasis put on car access. There are sidewalks along the main road and streets but the pedestrian circulation between residential areas and Quinpool is awkward, especially around the selected block, because of the parking lots. These are walkable, but not necessarily safe. Pedestrians should be given priority.

Noisier areas around the selected block are more susceptible to be along Quinpool because of car traffic. The noise level is lower on Windsor, where Welsford Park creates a buffer zone. The north portion of the site next to St. Vincent is also a quieter zone.

The commercial segment of Quinpool lacks vegetation. On both sides, except around the chosen site, there are very few trees and most ground surface is asphalt or paving. We can conclude that there is potential for more porosity, density, accessibility to Quinpool from the residential zones, and more vegetation.

4.2.1.3 Density Study Using the Floor Area Ratio

There are alternatives to high-rise apartment towers to achieve higher density as shown by the Plateau-Mont-Royal in Montreal, which is an example of high density mixed-used residential neighbourhood. The average building height is three storeys and common building types include duplex and triplex.[115] It has a density of 12,393 people/km², which is twice the average of the area of study.[116] This means that more density can

115 Jean-Claude Marsan, *Montreal in Evolution* (Montreal: McGill-Queen's University Press, 1981), 274-275.

116 "Statistiques: Un Brief Profil du Plateau-Mont-Royal," City of Montreal, accessed June 2, 2017, http://ville.montreal.qc.ca/portal/page?_pageid=7297,74739592&_dad=portal&_schema=PORTAL.

be achieved without building apartment towers or superblocks. Plateau-Mont-Royal's neighbourhood life can be attributed to its diversity and to the fact that the height of the buildings allows to maintain a healthy relationship to the street.

Using the Floor Area Ratio method (FAR), leading architect Jack Diamond demonstrated that tall buildings do not use land in a more efficient way than medium-height ones, in contrast to what some developers want us to believe:

> Contrary to current belief, residential densities above [an FAR of] 1.5 provide very little additional advantage in terms of land use. Clearly therefore, housing types in the middle range of density with floor area ratios of .75 to 1.5 provide a highly efficient alternative to high densities in high rise form.[117]

Instead of measuring density in term of people, FAR measures the ratio between the area of all the floors of a building and the area of the site on which it is built. Stacked row houses and medium rise stacked unit buildings have an FAR of 0.75 to 1.5, which as suggested by Diamond is perfect in an urban context. By maintaining a relationship with the street, these typologies create enough density to sustain an urban lifestyle as well as a sense of community: they provide a perfect setting for small businesses, justifies public investment in shared transit and amenities, and contribute to the life and dynamism of the neighbourhood.

4.2.2. Site Principles

Based on the analysis, the principles presented on the next page act as guidelines for developing the complex on site.

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117 Jack Diamond, "Residential Density & Housing Form," *Journal of Architectural Education* 29 (1976): 16.

Site Intervention Principles

• Keep the commercial area along Quinpool, respecting a setback for patio space;

• Reinforce the shopping street character of Quinpool by limiting the width of each commercial space to 12 meters to support the small local businesses;

• Give Quingate Place an urban character to justify its height;

• Reinforce the small residential neighbourhood character of Windsor;

• Reach a density of 11,500 people/km^2. Do not exceed 437 full-time residents (maximum density allowed in the by-law);

• Reach a FAR of 0.75 to 1.5. This represents a total floor area range of 10,500 to 21,000 m^2;

• Limit the height to four storeys to respect the existing fabric, keep a healthy proximity to the street, and make it enjoyable to walk by for pedestrians;

• Include vegetation to give the block a green oasis character: the site becomes the green lungs of Quinpool;

• Limit the use of non porous surfaces on the ground to balance the current excessive use of asphalt.

Figure 43: Site principles acting as a set of guidelines.

4.3 Visual Scan of Quinpool

To better understand residential, retail and institutional languages of the neighbourhood, I walked in the area limited by Robie Street on the East, Oxford Street on the West, Jubilee Road on the South, and Chebucto Road on the North. Camera in hand, I took photographs of typical architectural features, but also unusual ones that caught my eye. A montage is presented on the following pages.

The small residential areas outside of Quinpool Road mostly consist of typical Victorian houses from the Maritimes (i.e. Maritime Box house, Second Empire, Queen Anne Revival, Shingle style). They are wood or vinyl-cladded and painted various shades of white, gray, yellow, red, green, and blue. Wood windows are very common, especially double-hung ones. Dormers and bay windows are also common. Foundation walls are cladded with brick or stone, sometimes plastered. Each house has its own character, but the whole is harmonious.

Quinpool Road is very eclectic in terms of colour and architectural features. Elements from the 1950s to the 1990s are represented. Window displays are one to two-storeys high, full glazing. There is no signage uniformity. There are many different types of doors that creates a rich diversity. Cladding materials vary depending on the function and scale of the buildings: ribbed concrete, stucco, wood board, shingles, vinyl siding, brick, corrugated steel, stone, terracotta. The city and a group of business owners have started a branding campaign in which they are trying to reshape the image of Quinpool to give it a vintage feel, which I think could work well with its current eclecticism. New buildings should have character. Some billboards already contribute to this aesthetic, but more focus should be given to the buildings. The facade of the complex on Quinpool reinforces this by revisiting art deco features to echo the period in which existenzminimum occurred.

Figure 44: Visual scan of Quinpool area: windows of residences on Windsor Street; taken by Bradley Farrish, 2017.

Figure 45: Visual scan of Quinpool area: double hung and sliding windows, shades of dark blue-green and warm beige; taken by Bradley Farrish, 2017.

Figure 46: Visual scan of Quinpool area: signage and display windows on Quinpool Road; taken by Bradley Farrish, 2017.

Figure 47: Visual scan of Quinpool area: rows of windows and horizontality; taken by Bradley Farrish, 2017.

Figure 48: Visual scan of Quinpool area: eclectic blend of door types; taken by Bradley Farrish, 2017.

Figure 49: Visual scan of Quinpool area: various signage strategies; taken by Bradley Farrish, 2017.

Figure 50: Visual scan of Quinpool area: eclectic yet harmonious palette of materials and colours; taken by Bradley Farrish, 2017.

Figure 51: Visual scan of Quinpool area: miscellaneous elements expressing the character of Quinpool Road; taken by Bradley Farrish, 2017.

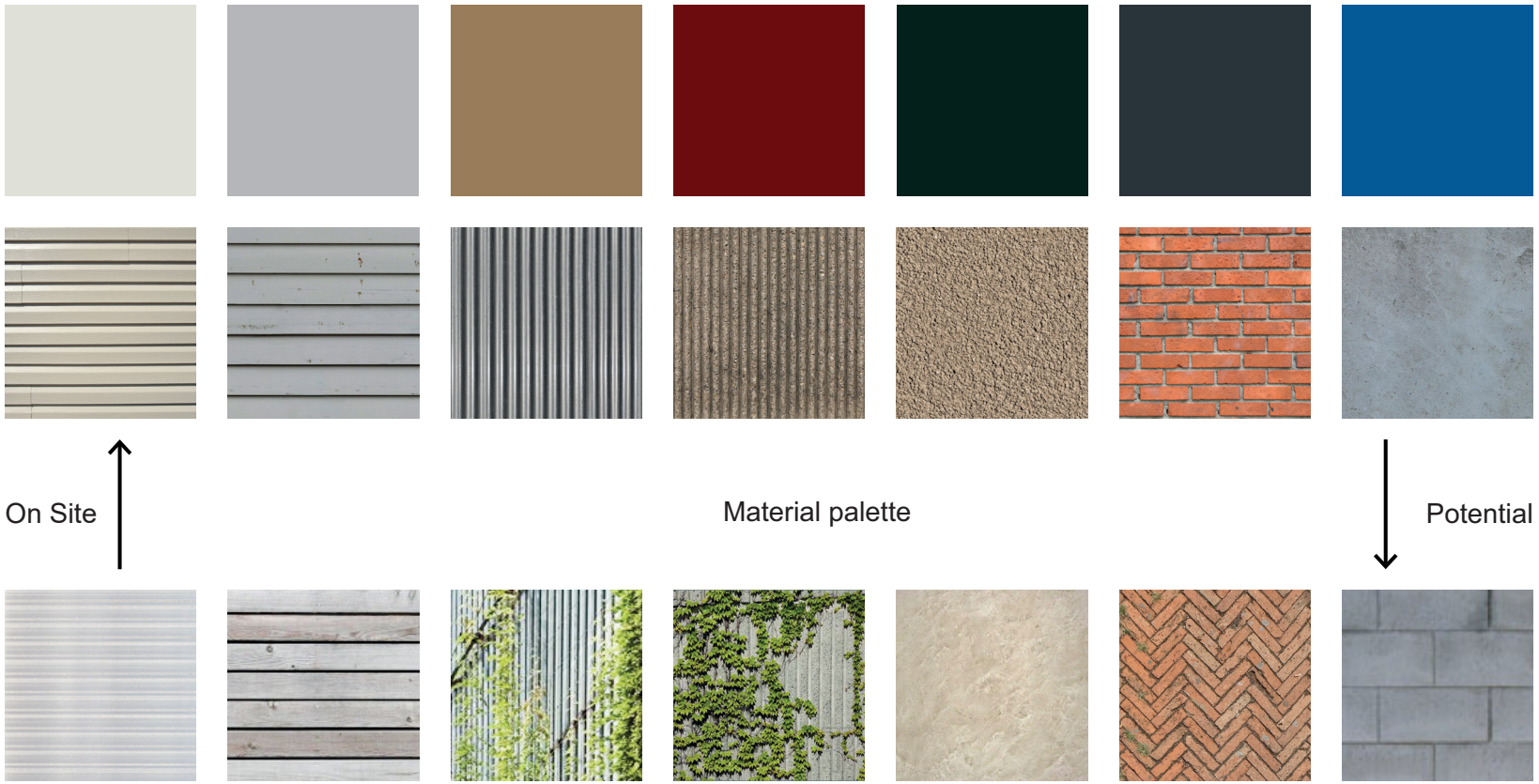

Figure 52: This material palette isolates existing materials and proposes potential ones engaging an architectural dialogue.

CHAPTER 5: LOOKING BACK TO BETTER MOVE FORWARD

This chapter focuses on the articulation of the complex at the scale of the block. The first section is an historical overview of mixed-use residential typologies that became benchmarks in the field. It is followed by a typology investigation in which different projects were studied according to principles. The components that were particularly successful were isolated and recombined on site in a meaningful way in the last section.

5.1 Social Condensers

The social condenser is a mixed-use residential typology that was developed by the avant-garde in the 1920s. It segregated functions of private life and converted them into collective spaces, aiming at transforming relationships between residents and influence their social behaviour.[118] The first experimental projects were brought about by the constructivists in the first quarter of the 20th century in the Soviet Union.[119] Even if the typology is mostly associated to them, it can be recognized elsewhere, in less radical forms, for instance in Germany, especially in Frankfurt am Main, but also in Austria during Red Vienna, and in modern projects across Europe in the 1940s and 1950s, especially Le Corbusier's Unité d'Habitation.

5.1.1 Soviet Union Experiments

The construction of social condensers in Soviet Union was made possible because of the participation of governmental power and total land availability that came with it.[120] Architects received an unprecedented

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118 A+T Research Group, *This is Hybrid: An Analysis of Mixed-Used Buildings by A+T* (Spain: A+T Architecture Publishers, 2011), 54.

119 Ibid., 48.

120 Ibid.

mandate to materialize a new lifestyle based on Marxist principles.[121] As mentioned in the third chapter, the Dom Kommuna is the experimental typology that was created. The small size of the residential cells was compensated by spacious social spaces. I am reintroducing Narkomfin (Ginzburg, 1929) as an example. The complex included a glazed building for communal services and a long housing block using a Corbusian architectural language of "pilotis, ribbon windows, and roof terrace"[122] that was sitting on an arcadian-like park.

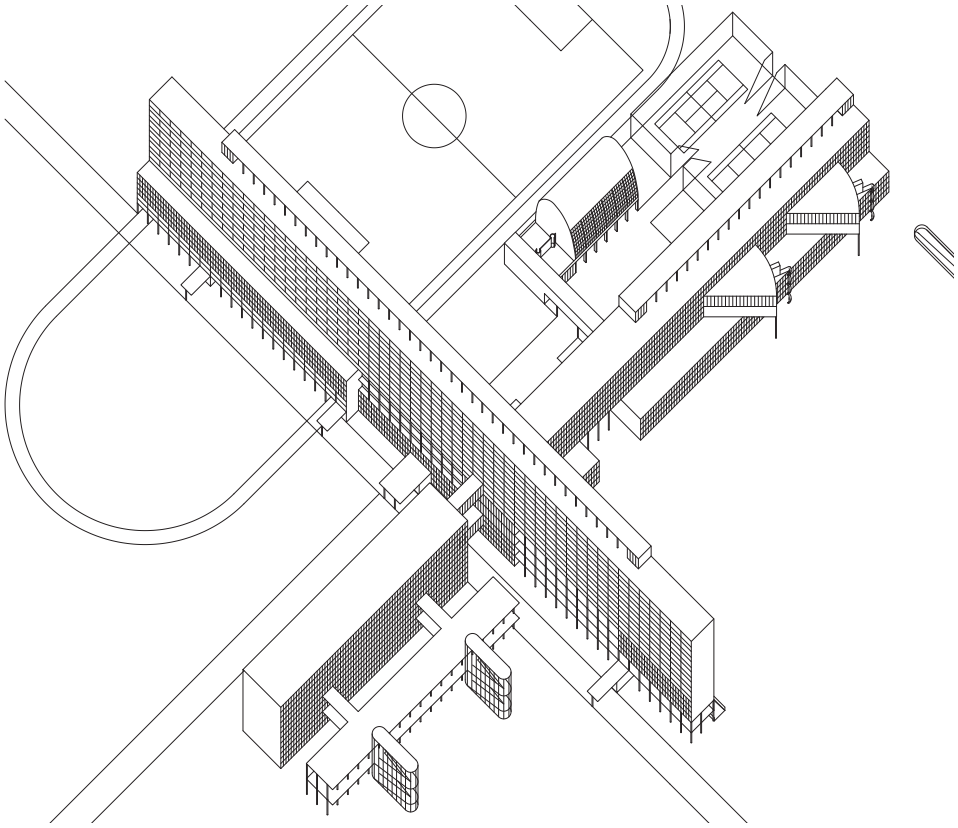

Figure 53: Narkomfin apartments; from Daniel Movilla Vega and Carmen Espegel Alonso, "Hacia la Nueva Sociedad Comunista," 63.

121 Victor Buchli, "Mosei Ginzburg's Narkomfin Communal House in Moscow: Contesting the Social and Material World". *Journal of the Society of Architectural Historians* 57 (1998): 160.

122 Ibid., 170.

For the first time in social housing, circulation was designed as a social space, as an "opportunity for events and socialization."[123] The first drawing below illustrates the rest and recreation hall and the second one, the dining hall at Narkomfin. In the original design, the glazing of the public space was meant to be glass doors that could be open to the greenery and provide fresh air.[124]

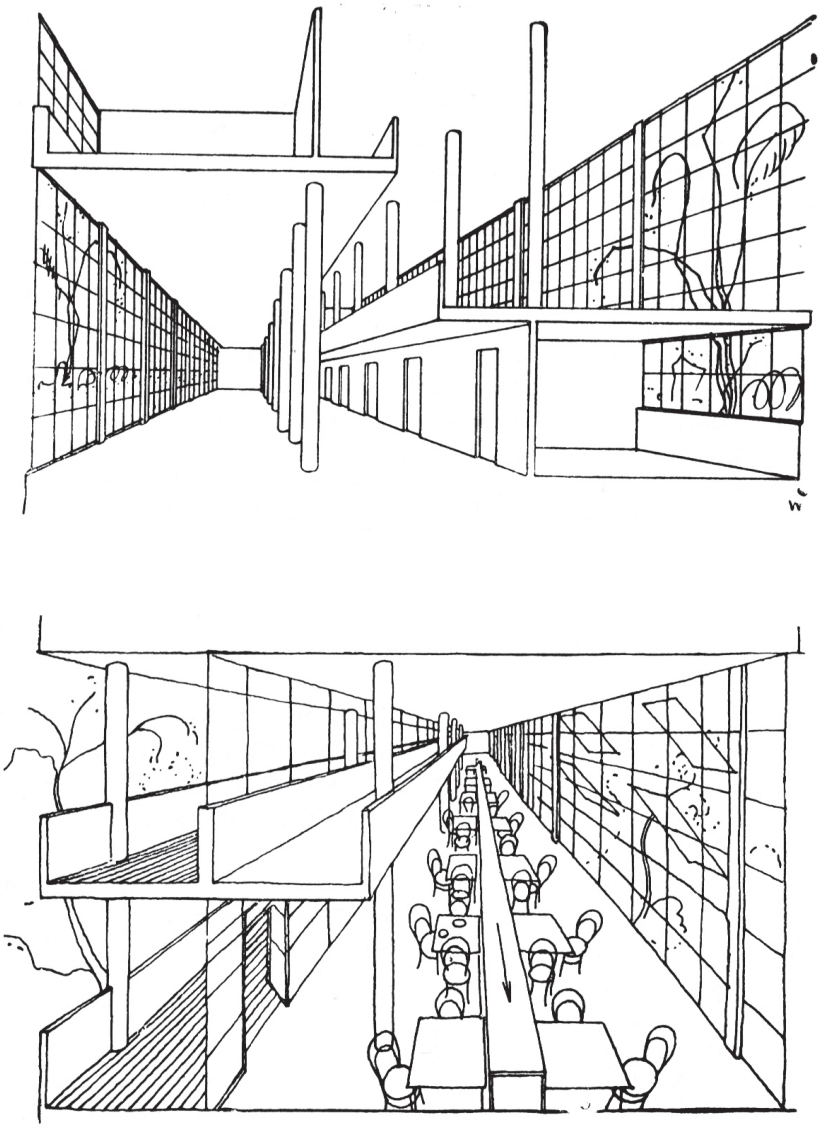

Figure 54: Rest and recreation hall and dining hall at Narkomfin; from Teige, *The Minimum Dwelling*.

123 A+T Research Group, *This is Hybrid*, 54.

124 Jean-Louis Cohen, *The Future of Architecture Since 1889* (London: Phaidon, 2012), 174.

The communal house materialized some of the ideas of 19th century early socialist Charles Fourier's phalanstère.[125] Childcare was assured by professionally trained staff in a crèche located in the complex, leaving parents "free to pursue their work and political lives."[126] A positive aspect of the collectivization of most functions is that it encouraged women to become part of public life.[127] However, it also placed them under continual "mutual surveillance and increased control."[128] After its construction, it received much criticism, arguing that the typology suffered a "lack of understanding of the meaning of self in a socialist collective,"[129] having pushed its principles too far. Even Ginzburg joined the critical discourse by admitting that the self was not allowed to develop: the life of the residents was "split [...] into two unequal spheres; the small individual sphere (to which only sleep is given) and the larger social sphere (to which everything else is given."[130]

I questioned myself while developing the cocoons about what it meant to accommodate single-occupancy living. I thought at certain times that maybe it did not mean that absolutely every aspect of life would be supported within the private units, maybe the kitchen could be shared between two units. After studying the Dom Kommuna, it confirmed that my intention was and still is not to impose a lifestyle, but rather support and propose one. Most of the units have to accommodate all functions life, because this is were we are at currently, but it also have to provide opportunity to live in a more collective way. This is why I added maisonettes to the independent cocoons and used programming strategies as a way to make

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125 Cohen, *The Future of Architecture Since 1889,* 169.

126 Buchli, "Mosei Ginzburg's Narkomfin Communal House in Moscow," 174.

127 A+T Research Group. *This is Hybrid*, 54.

128 Ibid.

129 Buchli, "Mosei Ginzburg's Narkomfin Communal House in Moscow," 175.

130 Ibid., 176.

them attractive. Using social spaces has to be a choice, residents must not be 'forced' to do so such as in the Dom Kommuna.

5.1.2 Siedlungen and Frankfurt Initiative

The interwar period was a time of new social reforms. The development of the Siedlung (i.e. autonomous housing development) was made possible because of the commitment of public authorities, lobby groups, and cooperatives.[131] Slums in the cities were a major preoccupation which brought to light questions of zoning and quality of life (hygienist movement). The typology was often intended for the city outskirts and consisted of housing with facilities, but unlike the Soviet type, it was not radical. It had a different objective, aiming at providing a "city of well-being"[132] more than a city of collective living. The typology was characterized by housing projects with "standardized building materials, [Schütte-Lihotzky's] kitchens, municipal swimming pools, and open-air schools."[133] The quality of the projects built during that period is quite impressive and their design generated lively environments.

Frankfurt's housing initiative under Ernst May was one of the most successful ones, as mentioned previously in the third chapter. May and his team put into practice Ebenezer Howard and Raymond Unwin's garden city principles.[134] It became "the paradigmatic model for modernist garden city planning."[135] The different projects were medium-rise apartment buildings and houses including courtyards and gardens. Attention was given to land-

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131 Cohen, *The Future of Architecture Since 1889,* 176.

132 Ibid.

133 Ibid.

134 Ibid., 181.

135 Sarah Bonnemaison and Christine Macy, "The Dwelling-Garden Dyad in Twentieth-Century Affordable Housing," in *The Routledge Companion to Biology in Art and Architecture*, ed. Charissa N. Terranova et al. (New York: Routledge, 2017), 108.

scaping to create a "total environment."[136] Some projects included garden designer Leberecht Migge's allotment gardens, which provided families with lots for producing vegetables and fruits. Composting devices to feed the gardens such as composting toilets were designed by Migge. These 'green' initiatives were imagined well before LEED and the whole movement towards sustainable design.

As part of this total environment idea, Frankfurt's projects also included social diversity, combining houses and apartment units of various sizes. Margarete Schütte-Lihotzky disliked the idea of segregating housing for single-women and family houses. She thought this would alienate women and suggested instead that they be included into family communities.[137] Under the paradigm of the nuclear family, most of the units were designed for families even if some groups such as single-women were accommodated.

The mechanization of the household was a strategy used by May's team to reduce the burden of chores and consequently give more time for experiencing the total environment. The Frankfurt kitchen as well as common laundry facilities with electric washing and drying machines are examples. In the same spirit as the complex developed in this thesis, the residential units allowed people to live independently while the facilities catered essential luxuries (i.e. laundromat, daycare, swimming pool, gardens, library). Frankfurt's projects were an example of good balance between private and social spheres.

Although these projects seem almost perfect, the units tended to be expensive for factory workers, and were mainly leased to white-collar workers. Some projects did not include all the landscaping that was initially designed or did not build all the facilities because of a lack of funding at the end of the 1920s. It is the crash of 1929 that definitely put an end to the

136 Ibid., 185.

137 Henderson, "Housing the Single Woman," 360.

initiatives.[138]

There is nothing more sad than a beautiful project with a lack of landscaping. It is often the first element to be removed when financial resources are limited. Especially in an urban context like Quinpool Road, landscaping must be present to create pleasant views, attenuate 'island heat' effect, create a buffer zone between the street and the cocoons, and increase the quality of life. It does not necessarily have to be provided in the form of planted beds, trees or productive gardens: rain, mineral, and moss gardens, rain water basins, playground structures, artificially shaped topographies, dog runs, patios and plazas are all alternatives. I mentioned previously that the social spaces of the complex are indoor and outdoor: they are not restricted by the building's envelope. To me, removing landscaping elements is just as absurd as removing some stairs or bathrooms in the building because they are critical to the quality of the living environment. Landscaping must be considered as being just as important as the building.

5.1.3 Mixed-use Residential Housing in Red Vienna

Red Vienna's social housing projects also combined minimum dwelling units with facilities, but they were built in the heart of the city.[139] The dominant building type was the courtyard apartment complex, the Hof.[140] Communal facilities were provided in large housing blocks and included "schools, daycare centres, laundries, [...] and shops."[141] In Frankfurt, residents of Siedlungen had to take the train to get to the city and run errands. In Vienna's projects, shops were accessible by walk. One of its most interesting characteristics is that this arrangement benefited not just

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138 Ibid.

139 Cohen, *The Future of Architecture Since 1889,* 180.

140 Ibid.

141 Ibid.

the residents but all citizens.[142] The intent was political. Through social welfare, social democrats wanted to demonstrate the "superiority of a socialist city" to a capitalist one.[143]

This was the result of a social project, and we can still see this idea in contemporary projects such as Vinzirast designed by gaupenraub+/- in 2009, which combines living units for students and people who used to be homeless as a way to reintegrate society. The four storey building was bought with the help of donors and renovated into shared apartments and social spaces. The apartments include three bedrooms, a kitchenette, a water closet, and a bathroom. On each floor, four units share a common kitchen and a spacious living room. The top floor is a workshop with access to a terrace. The ground floor is very porous, there is a coffee shop open to the street. The openness towards the neighbourhood contribute to making the two resident groups feel like they are part of the community.

Vienna's social condenser is very inclusive, in terms of its dialogue with the city and social agenda. I think part of the social spaces have to be open to the public to facilitate the integration of the complex within the neighbourhood. Common facilities accessible only to the residents also have to be provided to form a gradient of privacy. I do not necessarily think that we have to reinvent the wheel: the ground floor can be public and upper floors private with common spaces, just like at Vinzirast. I mentioned in the site principles that the shopping street character of Quinpool Road had to be reinforced. A way to respond to this is to include spaces for local businesses with direct access on Quinpool. I imagined that these can be quite transparent, be open to the street but also to a back alley or courtyard.

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142 "80 Years Of Social Housing In Vienna," Wolfgang Foerster, accessed February 22, 2017, https://www.wien.gv.at/english/housing/promotion/pdf/socialhous.pdf.

143 Ibid.

5.1.4 Le Corbusier's Contribution

In *The City of Tomorrow* (1947), Le Corbusier claims that architecture can change people's lives, an idea that stayed with him all through his career.[144] He denied being political, responding to Soviet Union architects who criticized him for not labelling his plans with more socialist terms (e.g. People's Hall, Syndicalist Hall), although they shared similar functions.[145] Le Corbusier suggested that the "real Revolution [lay] in the solution of existing problems," not in the labeling.[146] Like the Soviets, he believed in the concept of a residential complex of the minimal cells and common facilities, although not at the expense of individual freedom. For instance, units had to have different layouts to accommodate various lifestyles like in his houses in Pessac (1925).[147] Although he was in favour of diversity in regard to the apartment layout, he was against it in regard to the façade and overall aesthetic. He valued uniformity in detail (e.g. alignment, simplicity, purist elegance).[148] Like the Germans, he thought that the success of the materialization of his ideas was in standardization and mass-production.

Le Corbusier's contribution to the social condenser is unavoidable with Unité d'Habitation, the culmination of his research on housing and communal living.[149] Inspired by the monastery (Certosa di Ema especially), he believed in "total individual privacy" and meaningful collective activities.[150] In Marseille, they included twenty-six different functions: gymnasium, shopping centre, health clinic, daycare, park, etc. Unité was conceived like a

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144 Charles Jencks, *Le Corbusier and The Tragic View of Architecture* (Cambridge, Mass.: Harvard University Press, 1974), 71.

145 Ibid.

146 Ibid.

147 Ibid., 74.

148 Ibid.

149 Ibid., 138.

150 Ibid., 139.

small village for 1,600 people.[151] Its interior shopping street is open to the public through one access, the main entrance, which is controlled by staff members. Instead of having it on the ground floor like what would be done in Vienna, he elevated it and sandwiched it between apartment floors. Its brutalist aesthetic makes the building feel not like a monastery, but more like a "gigantic ocean liner ploughing through the seas of verdure of its surrounding park."[152] Its bold sculptural character sets it apart from the other buildings of the neighbourhood.

Unité d'Habitation combines elements from all main visions of the social condenser. I am not convinced that the 'small village' translates well for the thesis. Recreating the richness of experience of the city is extremely interesting, but the complex must be inclusive and not exclusive. A scaled down version of Unité with the landscape design of the Siedlung and the urban character of Red Vienna's projects is an interesting vision for the complex.

5.1.5 Maintenance, Safety and Social Diversity Issues

Some social condensers unfortunately failed and were demolished. Pruitt-Igoe in Saint-Louis, designed by Minoru Yamasaki (1956, demolished 1972), is one of the most notorious counterexamples. Barbican, before its complete renovation done recently (Chamberlin, Powell & Bon, 1956-1978) and Park Hill (Jack Lynn, Ivor Smith, and Lewis Womerley, 1959-1961) is another counterexample. The main issues with these social condensers was a lack of maintenance, safety deficiencies, and a poor social diversity. The lack of maintenance can be attributed to the fact that there was no or not enough staff. Social spaces belonged to everyone yet no one assured their maintenance. For the complex, I propose that public areas be maintained by staff and that program/events be run according to a cooperative model by students and retirees. Non-residents could pay an

151 Ibid.

152 Ibid.

affordable membership to use the social spaces publicly accessible, like at public pools and libraries. The city could provide the extra funding as these spaces would serve the whole neighbourhood, justifying the expense.

Safety issues in the projects that did not work were related to a lack of security staff, but furthermore to their architecture. Planner Jane Jacobs suggests in her famous *The Death and Life of Great American Cities* that blind corridors and staircases accessible to anyone are at the source of the problem. However, she notes that public access is not always an issue. What makes a difference is the number of "eyes" watching the space.[153] She discusses a model of interior street that worked in a social condenser, without mentioning which one it is:

> The corridors were well designed to induce surveillance from within the buildings themselves. Uses other than plain circulation were built into them. They were equipped as play space, and made sufficiently generous to act as narrow porches, as well as passageways. This all turned out to be so lively and interesting that the tenants still added another use and much the favorite: picnic grounds - this in spite of continual pleas and threats from the management which did not *plan* that the balcony-corridors should serve as picnic grounds. (The plan should anticipate everything and then permit no changes.) The tenants are devoted to the balcony-corridors; and as a result of being intensively used the balconies are under intense surveillance. There has been no problem of crime in these particular corridors, nor of vandalism either. Not even light bulbs are stolen or broken, although in projects of similar size with blind-eyed corridors, light bulb replacements solely because of theft or vandalism customary runs into the thousands each month.[154]

This brings about the idea that social spaces on which people (residents and citizens) have an eye on can provide a feeling of safety and also literally make the complex safer. A buffer zone like a patio used by the residents between the cocoons and a large common circulation space could provide 'eyes.'

The social diversity issue was due to the fact that the units were intended to only one type of tenant. Because of the lack of maintenance

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153 Jane Jacobs, *The Death and Life of Great American Cities* (New York: Modern Library, Random House, 1993), 56.

154 Ibid.

and safety issues, these projects attracted criminal gangs and all kind of illicit activities. This obviously made these complexes unattractive to most people except for those who really could not afford anything else. By combining seniors and students from away (including single-parents) and by having a strategy to maintain the building and assure safety, I am hoping to avoid social diversity issues.

5.2 Hybrids

Hybrids emerged in the first quarter of the 20th century, at the same time as social condensers, but in North America where the overlapping of functions became unavoidable in dense cities such as New York.[155] The rigidity of the urban weft, the expensive price of land as well as the 1916 zoning resolution, establishing a setback, all contributed to the birth of high-rise hybrid buildings such as the Rockefeller Centre (Raymond Good, 1930-1929) and the Downtown Athletic Club (Starret and Van Vleck, 1930).

Hybrids are a variation of mixed-use buildings combining retail, leisure, office, and residential functions. What distinguishes them from other mixed-use buildings across time is that they house functions that can be profitable.[156] Their main characteristics are that they have a diversity of uses, they are funded by public-private initiatives, their insertion is generally adapted to the urban fabric, and they house public uses.[157] Hybrids and social condensers share similarities in their program, but the intention behind them is very different. Social condensers are designed to achieve self-sufficiency.[158] In contrast, Hybrids are "thought out [...] to create intensity and vitality in the City [and] to attract flux of outside users or even

155 A+T Research Group, *This is Hybrid*, 13.

156 A+T Research Group, *This is Hybrid*, 13.

157 Ibid., 60.

158 Ibid.

favour mixing and indetermination."[159] Hybrids that include a residential function grew back in popularity recently with the work of firms such as Bjarke Ingels Group (BIG), Office for Metropolitan Architecture (OMA), Steven Holl Architects, and MVRDV. Steven Holl claims that contemporary hybrids have the potential, as 21st century incubators, to form public space, programmatic juxtapositions, cultural condensers, and super green architecture.[160]

Located in Ørestad South in Copenhagen and completed by BIG in 2011, 8 House is a pertinent example of Hybrid. Although the size of the building is impressive and almost intimidating at first, it manages to support social interaction between residents by the juxtaposition of a wide promenade (common component), private terraces, and residential units. A resident expressed in a documentary on the project directed by Bêka and Lemoine in 2016 that:

> Everybody feels like you can trust everybody. It's very nice. This is a big surprise because I think that when you look around for a flat, they are lovely, they have a smart design, but the social architecture really works. The way it's made when I come out of my door [makes me] say hi to the neighbours. Exactly as how it was intended. You can't help not [saying hi], because you would be a weird person. You do talk with people. People do stop when they come from [the promenade] to talk to the dog [laughs] and then talk to me afterwards.[161]

Although the outdoor circulation is well designed at 8 House (i.e. it creates opportunity for social interaction and allows to admire the landscape), the indoor circulation is particularly complex. In Bêka and Lemoine's documentary, two segments show a mailman and then a delivery boy struggling to find the location of some apartments in the complex. Perhaps the complexity of the geometry combined with the size of the program

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159 Ibid., 55.

160 Steven Holl, prologue to T*his is Hybrid: An Analysis of Mixed-Use Buildings by A+T*, by A+T Research Group, 6-9. (Álava: A+T Architecture Publishers, 2011), 8.

161 Ila Bêka and Louise Lemoine, *The Infinite Happiness.* Video. Copenhagen: Ila Bêka, Louise Lemoine, 2016. Video.

made the planning of circulation challenging. A clear circulation strategy contributes to an enjoyable experience of the building. The idea of using circulation as a social space seems to be a winning solution in both social condensers and hybrids.

5.3 Housing Youth and the Elderly

5.3.1 The Dormitory

Alvar Aalto's dormitory for the Massachusetts Institute of Technology successfully presents a version of *existenzminimum* which is appealing to students. Baker House is a canon of Modern architecture for its human touch on functionalism and its "stylistic independence."[162] In *Space, Time and Architecture* (1949), architectural critic Sigfried Giedion recalls "the ambitions of early modernists to achieve an 'existenzminimum' in their housing units"[163] and highlights the fact that Baker House's "bedrooms and workrooms... were as small as possible without destroying the vitality of the atmosphere."[164] This was due to the design quality of the building: attention to natural lighting, materiality, views, and spatial experience.

5.3.2 The Retirement Home

Retirement homes welcoming students have started to emerge in the Netherlands (Humanitas Retirement Home in Deventer) and in the United States (Cleveland Retirement Home), but not yet in Canada. Good feedback has been received from both groups who live there. In a video report on intergenerational housing made by CBC in 2016, a ninety-one-year-old resident of Cleveland Retirement Home mentioned that “it [is] wonder-

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162 Paul Bentel, "The Significance of Baker House," in *Aalto and America*, ed. Stanford Anderson et al. (New Haven: Yale University Press, 2012), 239.

163 Ibid.

164 Ibid.

ful to have students [t]here. It makes [retirees] feel younger."[165] Students also appreciate living with seniors, especially for the feeling of being part of a community. The only similar initiative found in Canada is at Columbia Gardens Retirement Home in Invermere, British Columbia, where a common room is changed into a learning and play room twice a week to welcome kindergartners.[166] It has proven to benefit both children and seniors, which is encouraging.[167] However, the intergenerational blend only happens twice a week, in a room that is essentially labelled as common room, which limits the possibility for events. The experimental projects mentioned above are essentially retirement homes open to students, they are not a new typology and are not necessarily adapted to students. The issue is not etymological, but rather architectural. These complexes do have spaces planned for social interaction, but these generally consist of rooms labelled as "common," or essentially empty rooms with a few chairs and tables. Retirement homes would benefit from crossprogramming to maximize potential for social interaction. They can also benefit from the idea of providing a total environment to link indoor and outdoor space as well as programs accessible to the public in order to open them up to their urban environment, consequently avoid alienation. A pertinent complex needs to be an attractive option for both groups, and the idea of living in current retirement homes is not attractive to students (nor to retirees honestly).

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165 Canadian Broadcasting Corporation, *Music Students Living at Cleveland Retirement Home*. Cleveland: CBC News - The National, 2016. Video.

166 Kate Hammer, "Kindergarten in a retirement home proves a hit with young and old," *The Globe and Mail*, December 30, 2011, accessed June 2, 2017. http://www.theglobeandmail.com/news/national/kindergarten-in-a-retirement-home-proves-a-hit-with-young-and-old/article4103165/

167 Ibid.

5.4 Typology Investigation

5.4.1 Charette II Methodology

There is crossprogramming at the scale of the building as it combines the ideas of multiple typologies: the monastery (i.e monastic cells), the dormitory (i.e. individual rooms and common services), the modern slab block apartment (i.e. social spaces accessible to the public in Unité d'Habitation). Following the definition of crossprogramming, I imagined that the complex can borrow the most successful components from selected projects of these typologies, recombining them on site in a way that makes sense on site.

Project Selection

Through the research completed for the historical overview, key buildings shown through. Most of them were occidental, and I thought expanding the range would be enriching, especially in this context where international students are included. Twelve pertinent projects were selected: Baker House (slab block dormitory, Alvar Aalto, 1949), Vinzirast (medium rise block apartment, gaupenraub+/-, 2013), Unité d'habitation (slab block apartment, Le Corbusier, 1952), Certosa di Ema (abbey, 14th century), Le Thoronet (abbey, 1200), round earthen dwelling from China (medium rise stacked units, 1905), Narkomfin (slab block apartment, Moisei Ginzburg, 1930), family house from Burkina Faso (low rise joined units, 1450), Buchgrindel (walkup apartment, Theo Hotz og, 1985), 8 House (combined apartments and row houses, Bjiake Ingels Group, 2008), Linked Hybrid (series of high rise apartment blocks, Steven Holl, 2009), and Villa Olympica (slab block apartment, Carlos Ferrater, 1992). I discarded projects that failed (i.e. were demolished due to a high level of criminality for instance). My intention was not to 'hide' these cases; I thought it was not appropriate to include them for this activity because everyone already knows that they do not work in practice. Some of these projects were discussed in the historical overview and lessons were learned.

I decided to keep an open mind for the selection by not restricting size and location. Not all the residential units can be classified as minimal dwelling, although a variety of unit types, from minimal to spacious, is present in each project. These projects were not overlooked because they have other qualities that are interesting and can be adapted. The selection as a whole had to show a range of different solutions across time, highlighting changing architectural paradigm as a reflect of society (i.e. culture, mentalities, socio-economic issues).

Evaluation Process

I organized a second design charette after the one for the residential units, in which my colleague Bradley Farrish and I established principles to guide the articulation of the complex. Based on the theoretical background and the site analysis, we formulated five principles: openness, privateness, diversity, pollination, and fairness. Openness was related to the urban strategy, it meant that public zones were porous and accessible to pedestrians. Privateness meant that there was a gradient of privacy between public zones and private zones. It also meant that the complex was safe, especially for residents. Diversity meant that the project created a palette of different spatial experiences. Pollination meant that social spaces could pollinate each other. Finally, fairness meant that all residents had access to social spaces and could experience the same diversity of spaces. It involved universal access principles.

I looked for strategies responding to the principles and evaluated their relevance. The results were formatted into a grid. I assigned 'yes,' 'maybe,' or 'no,' adding the main arguments for the response in the grid. In order to compare the projects, I gave a numeric value of one to the answer 'yes,' of zero to 'maybe,' and of negative one to 'no.' The addition of all the answers gave a final score which could range from five points to 0 points, five obviously representing a very pertinent solution. The objective was to highlight successful strategies that could be borrowed and adapted on site.

	OPENNESS urban context receptivity	PRIVATENESS privacy gradient	DIVERSITY variety of spatial experiences	POLLINATION potential for events	FAIRNESS living experience equality	SOCIAL INTERACTION OPPORTUNITY SCORE yes + 1 no - 1 maybe + 0.5
BAKER HOUSE Alvar Aalto 1949 Cambridge, USA	**MAYBE** . If there were plazzas at each main entrace; . If height would vary to adjust to family houses . If snake-like shape was expanded to be more extraverted	**MAYBE** . If the main corridor was public, if a threshold leading to the apartments was added (add a layer)	**YES & NO** . Diversity indoor but not outdoor	**MAYBE** . If each common rooms accessed through the main corridor were more porous, intersected more	**YES** . Everyone has equal access to everything in the dorm	**2.5**
VINZIRAST gaupenraub+/- 2013 Vienna, Austria	**YES** . Main entrance leads to ublic space at the back	**YES** . Layers of privateness vertically (floor to floor)	**MAYBE** . Variety in plan, but not in section	**MAYBE** . If the sequence of public spaces on the ground floor was not interrupted by doors	**YES** . Everyone has equal access to everything in the building	**4**
UNITÉ D'HABITATION Le Corbusier 1952 Marseille	**YES** . Ground floor is open **NO** . Public zone requires public to take elevator, too far from street	**YES** . Layers of privateness vertically (floor to floor)	**YES** . All parts of building used for living spaces . Shape and light modulated to create different ambiances	**YES** . On the roof **MAYBE** . If programs on interior street were not like cells	**YES** . All units have equal access and equal conditions (of light and air)	**5**
CERTOSA DI EMA 14th century Florence, Italy	**MAYBE** . Building has to be less introverted, there could be wide passages crossing through it	**YES** . Very articulated, subdivided, depth of layers	**YES** . Almost labyrinthine	**NO** . No intersection between subdivisions	**YES** . Repetitive configurations	**2.5**
LE THORONET ABBEY 1200 Provence, France	**MAYBE** . The courtyard is juxtaposed to a hall that could be public	**YES** . Interesting depth of layers without all being subdivisions; palette of sizes and opennesses	**YES** . Variety of indoor and outdoor spaces	**MAYBE** . Size of rooms would allow; . Loggia around the courtyard could branch out to link more spaces	**YES** . Cells have same size, equal opportunity	**3.5**

Figure 55: Typology Investigation. Thirteen projects from the 13th to the 21st century, built around the world, were analysed according to principles established to maximize social interaction opportunities. The matrix allows to isolate successful strategies in order to combine and adapt them on site.

	OPENNESS urban context receptivity	PRIVATENESS privacy gradient	DIVERSITY variety of spatial experiences	POLLINATION potential for events	FAIRNESS living experience equality	SOCIAL INTERACTION OPPORTUNITY SCORE yes + 1 no - 1 maybe + 0.5
ROUND EARTHEN DWELLING 1905 Hongkeng, China	**NO** . Intended to be introverted, very hermetic because of blind wall and hidden access	**YES** . Layers of privateness vertically and horizontally; circle divided into 6 circles arranged like russian dolls	**YES** . But repetitive (a quarter of the circle is different, as a whole it is repetitive)	**NO** . Hierarchy of rooms, could pollinate if walls had openings or were transparent, if circles crossed eachother	**YES** . Circular shape helps, all at eaual distances, all live in same unit type	1
NARKOMFIN Moisei Ginzburg 1930 Moscow, Russia	**NO** . Not intended to be public, but intended to be common	**MAYBE** . Building is introverted from stranger's perspective, but not necessairly indoor from resident's; narrow indoor circulation leading directly to units	**YES & NO** . Many different collective programs, Repetitive configuration	**MAYBE** . If programs were less segregated	**YES** . Same units, same opportunities	1
FAMILY HOUSE 1450 Burkina Faso	**NO** . Boundary not porous	**MAYBE** . If cells were subdivided or had threshold	**MAYBE** . Organic shape could be mixed with more rigid ones to create diversity	**MAYBE** . If cells were porous or intersected each other	**NO** . Hierarchical	0
BUCHGRINDEL Theo Hotz ag 1985 Zurich, Switzerland	**MAYBE** . If central main alley was completely open, no doors	**YES** . One staircase delivers 2 apartments, quite private	**MAYBE** . If there were public programs easily accessible from the street; common programs combined to the passages; if courtyards add different conditions	**MAYBE** . If public and common programs were added and juxtaposed to courtyards and main hall	**YES** . Same circulation patterns and private space	3.5
8 HOUSE Bjarke Ingles Group 2008 Copenhagen, Danemark	**YES** . Access from street; all public programs at periphery . Problems with curious starngers taking pictures on promenade level 10	**YES & NO** . Privacy gradient from promenade to units . Visitor problem to be adressed through architecture (private section narrower and etc)...	**YES** . In plan and section, different sizes, shapes, used from ground to roof	**YES** . Mainly through use of promenade	**NO** . Hierarchical	2

Figure 56: Typology Investigation (continued).

	OPENNESS urban context receptivity	PRIVATENESS privacy gradient	DIVERSITY variety of spatial experiences	POLLINATION potential for events	FAIRNESS living experience equality	SOCIAL INTERACTION OPPORTUNITY SCORE yes + 1 no - 1 maybe + 0.5
LINKED HYBRID Steven Holl 2009 Beijing, China	**YES & NO** . Ground floor public, proportions make it public . Interior street accessed through elevator	**MAYBE** . Need one more layer between units at level of promenade and activated promenade; . Noizy programs close to units	**YES** . Palette of spatial experiences	**YES** . Interesting blend of programs grouped together; . Physical or visual links . Circulation space pollinates programs	**NO** . Hierarchical; most units have to take the elevator to get to the elevated promenade where hotspots are located	**1.5**
VILLA OLYMPICA Carlos Ferrater 1992 Barcelona, Spain	**MAYBE** . Access to courtyard provided, but height (6 storeys) and size of access could discourage public	**YES** . One staircase for two apartments . Clear seperation of private and public	**MAYBE** . Rich diversity outside of the building but not inside	**MAYBE** . Outdoor but not indoor	**YES** . Same apartments with same accesses	**3.5**

Figure 57: Typology Investigation (continued).

5.4.2 Results of the Investigation

The grid reveals that Unité d'Habitation scores the highest with five points, the average score is two and a half. Looking back, I am indecisive about my evaluation for the first principle (i.e. openness). Based on the drawings, I thought that Unité did not dialogue with the neighbourhood, did not have a balance between introversion and extroversion, and that the access to the interior street was not inviting. After watching a virtual visit of the building, I changed my mind. The building is comparable to a small village. There is only one public access point leading towards the interior street which could appear as a lack of porosity. In reality, the lobby is quite inviting. It is elegant without being too luxurious and there is a lot of people coming in and out, greeting each other. I started to see the idea of having one main entrance point as a great solution for creating momentum as it brings the public and residents together in the same lobby. It also allows to control access to the building to ensure the safety of the residents which is an extremely important point. The diversity of public, common, and private spaces, the interior street, and the through apartment floor layout are the elements that were the most interesting.

Looking at the overall scores, Vinzirast comes second highest with four points, followed by Le Thoronet abbey, Buchgrindel, and Villa Olympica which all score three and a half points. Certosa di Ema scores two and a half, 8 House scores two, Linked Hybrid scores one and a half, and the round earthen dwelling from China scores one. The family house from Burkina Faso and surprisingly, Narkomfin have the lowest score with zero point. I was expecting more from Narkomfin as it is often mentioned as a canon of minimum dwelling. I felt common and private spaces were too segregated which did not create momentum for interaction. The layout was very rigid and repetitive. There was also not a large diversity of spatial experiences.

Some assumptions I had were challenged. I thought Linked Hybrid would score higher and Le Thoronet abbey lower for instance. Steven Holl's project has an incredible interior public street, but it is not easily accessible to all. Having to take the elevator to get to the street multiple floors above is a weaker point. In contrast, Le Thoronet abbey is very 'fair': each cell has equal access to a rich diversity of common areas. I appreciate its layers of privacy.

The grid has its limits: some isolated solutions are excellent, but the overall score does not represent this (e.g. the sequence of common areas articulated along the main circulation of Linked Hybrid's interior street). In the end, the overall score is more or less helpful, but the activity helped me see possibilities for the complex. I listed the elements with the most potential in a 'wish list' for the proposal. These components include:

- Unité d'Habitation's section: it makes possible cross-ventilation in the apartments. I ended up not using it because it was making the access corridor too dark and was not universally accessible. However, I kept the cross-ventilation principle in the final proposal.

- 8 House's promenade at the condo level: it creates a great gradient of privacy by juxtaposing a large circulation space to private gardens. The proximity of the gardens to the promenade increases the potential for social interaction. The only issue is that the public can find their way onto the promenade and this irritates some residents. I think this type of promenade has to be separated from the public access and be reserved to the residents' use only.

- Linked Hybrid's bridge/promenade: the layering of circulation space and programs produces an interesting programmatic pollination. I think this can make a great public promenade and can be a way to articulate the program/events. Holl chose to locate it high in the air. I think it would be more appropriate on the ground floor so that the public can access it from Quinpool. This can also keep the public on the ground floor to

ensure better safety of the residents.

- Villa Olympica's programmed courtyard: Unlike in other projects where the exterior space is just lawn, Villa Olympica defines zones and provides a rich palette of experiences. The public can access the courtyard through very large portals.

5.4.3 Investigation on Site

While I was working on the evaluation, I scaled and printed plans, sections and elevations of the projects to place them on a massing model of the site at the same scale. Having them all at the same scale allowed for comparison. It became much more easier to visualize what strategies were working and which ones were not by being able to play with them on site. Especially for large projects such as 8 House and Linked Hybrid, which were twice as big as the site, I started cutting some parts and rearranging them to create new possibilities. One outcome from this activity is that I got a much better sense of scale of the site.

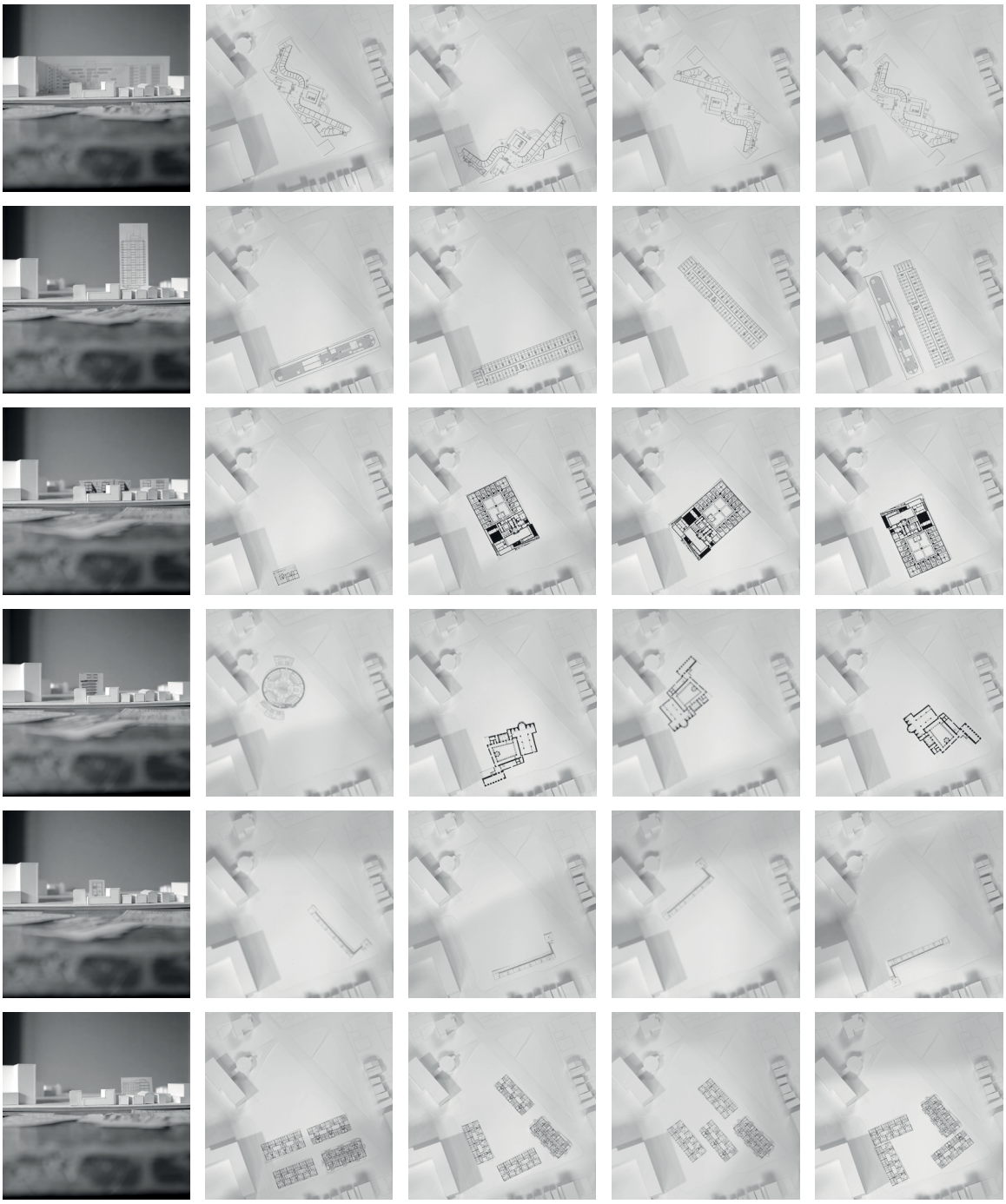


Figure 58: Sample of the photographic survey of the typology investigation in elevation (photos at the left) and plan (photos at the right). All the projects chosen for the investigation were printed at scale 1:700 and then placed on site. This activity allowed to get a better sense of the size of the site.

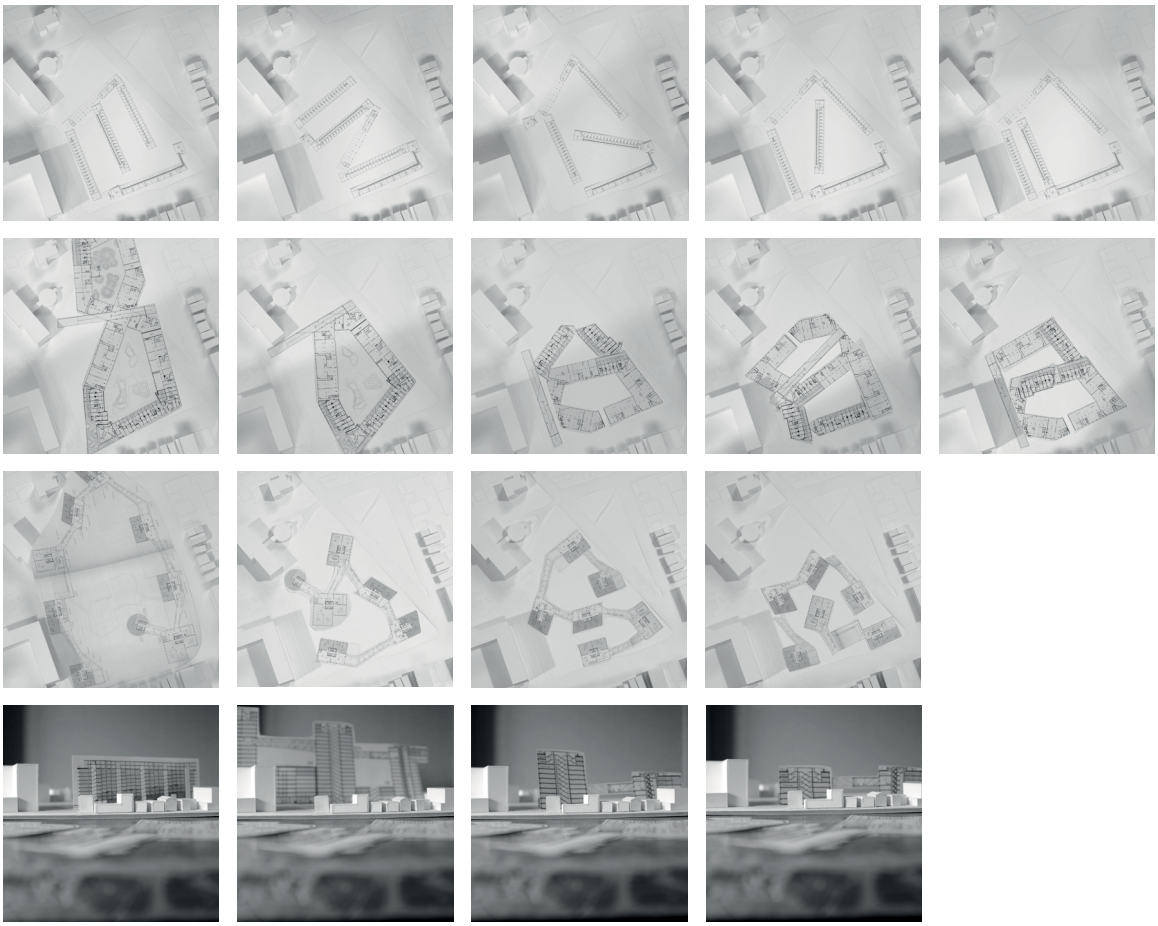


Figure 59: Sample of the photographic survey of the typology investigation (continued). Narkomfin, 8 House, and Linked Hybrid are large projects and I found interesting to start fragmenting them and reconfiguring them to start engaging with the site and explore new possibilities.

5.5 An Alternative Typology

5.5.1 Concept Materialization

Following Tschumi's tripartite definition of architecture (i.e. fragments of space, lines of movement, and points of interest), I already established that cocoons and program/events are fragments of space and I asked what could constitute points of interest and lines of movement in the complex. Influenced by the typology investigation, I propose that a main circulation space acts as a line of movement along which fragments of space are layered. It is an activated promenade which pollinates the program/events. Flux of people come and go along or across it towards the program/events. Halls are points of interest which are junctions between vertical and horizontal lines of movements.

I see this concept materialized as a long and narrow building, like a snake or a ribbon, which forms courtyards. The circulation space is highlighted by the shape. The program/events can be accessed physically and visually because of its narrow width. Explorations are shown in the photographs on the following page.

5.5.2 Adaption of Formal Explorations

The formal explorations were placed on site and tested according to the site principles. In order to adapt the building to the different site conditions (i.e. Quinpool, Quingate, Windsor, St. Vincent nursing home), the height of the building, established at four storeys previously, was lowered on the Windsor segment to dialogue with the scale of the residential fabric and also on the interior segments forming the courtyards to benefit from South light. Appropriate setbacks were added: 7 meters on Qunipool to give enough space for patios, 5 meters on Quingate and St. Vincent nursing home, and 3 meters on Windsor. The ground and first floor on the Quinpool and Quingate corner was removed to create a sheltered public plaza and link the courtyard the closest to Quinpool to the street to give it a more public character.

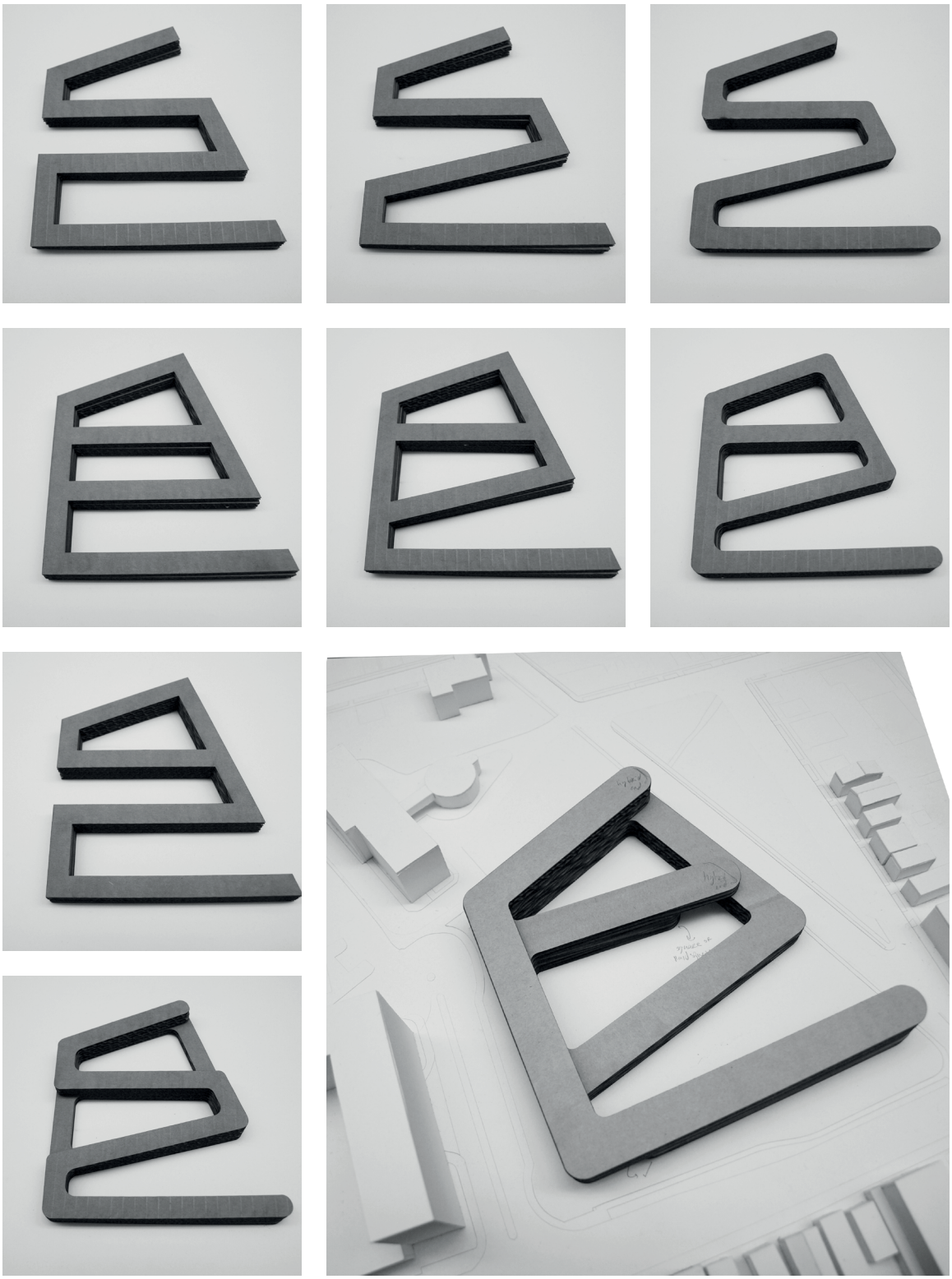


Figure 60: Complex articulation development on site: sketch models. The largest photographs represents the proposed massing which evolved from the programming explorations on site.

5.5.3 Programming Explorations

I chose formal explorations that were particularly promising and I tested different programmatic fragment articulations along the main circulation space. From the start, I decided that the ground floor of the complex had public programs and the upper floors had residential units and common programs. This separation of public, common and private ensures the safety of the residents.

The location of the fragments had to create interesting pollination potential, but also dialogue with the site's conditions. I represented them with white paper. Points of interests, important circulation nods, were represented with colorful paper and vertical circulation space was represented with yellow string. I annotated the models, cut and added parts to the shape when necessary, and labelled them in order to keep track of the process. I went back and forth between some explorations, combining some of their features. The following pages show a sample of different explorations.

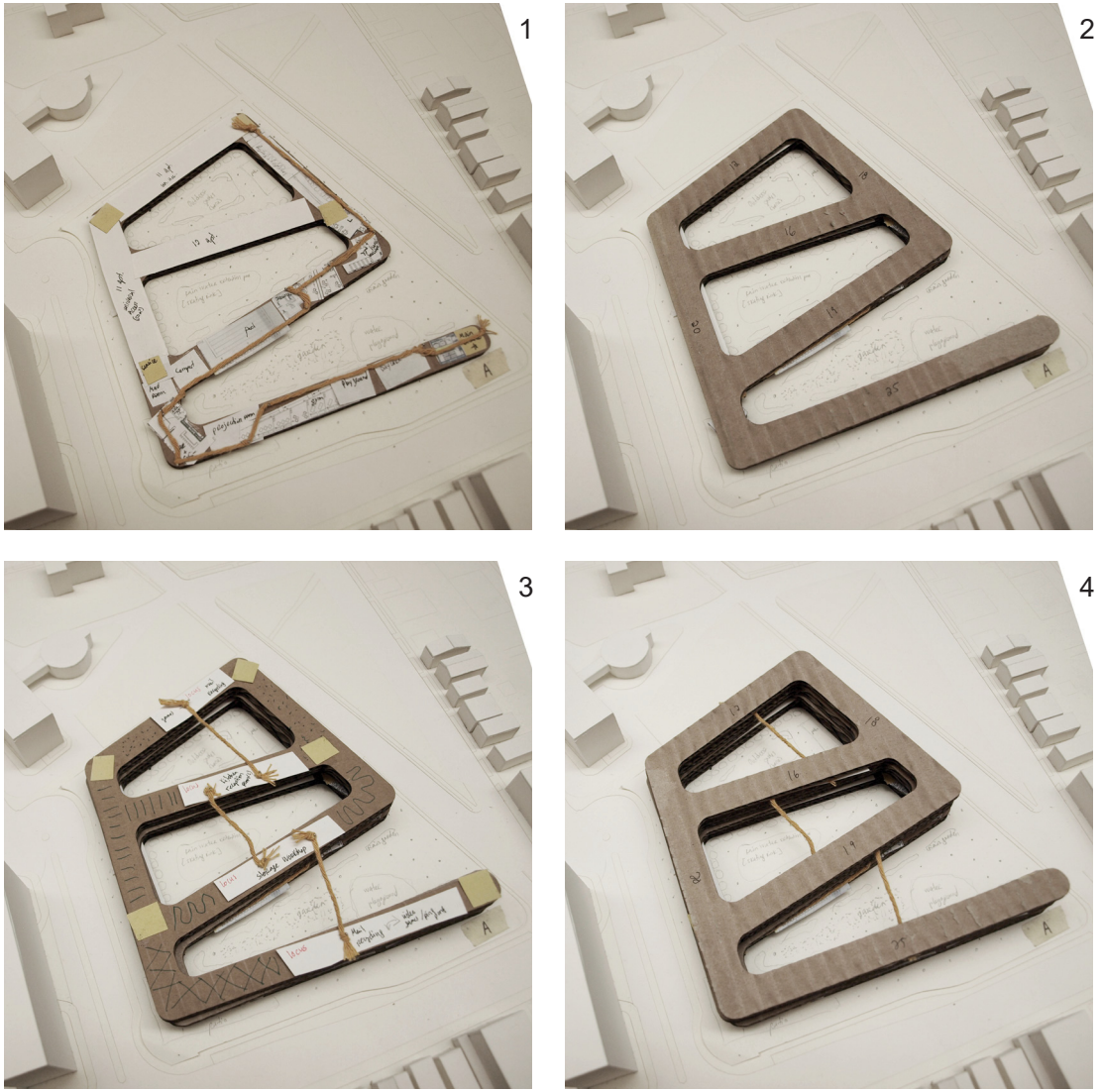


Figure 61: Complex programmatic articulation development on site: sketch model A.

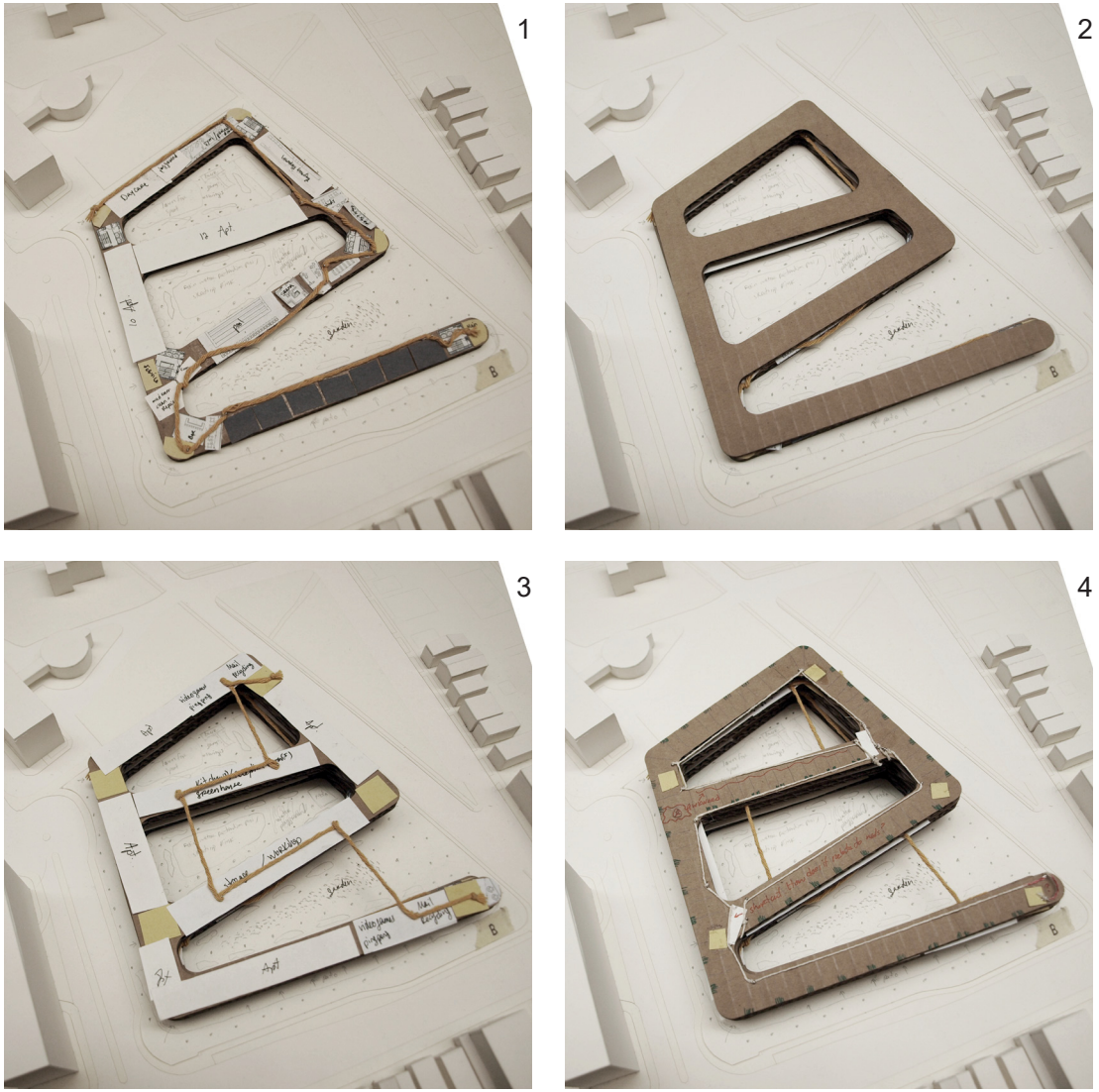


Figure 62: Complex programmatic articulation development on site: sketch model B.

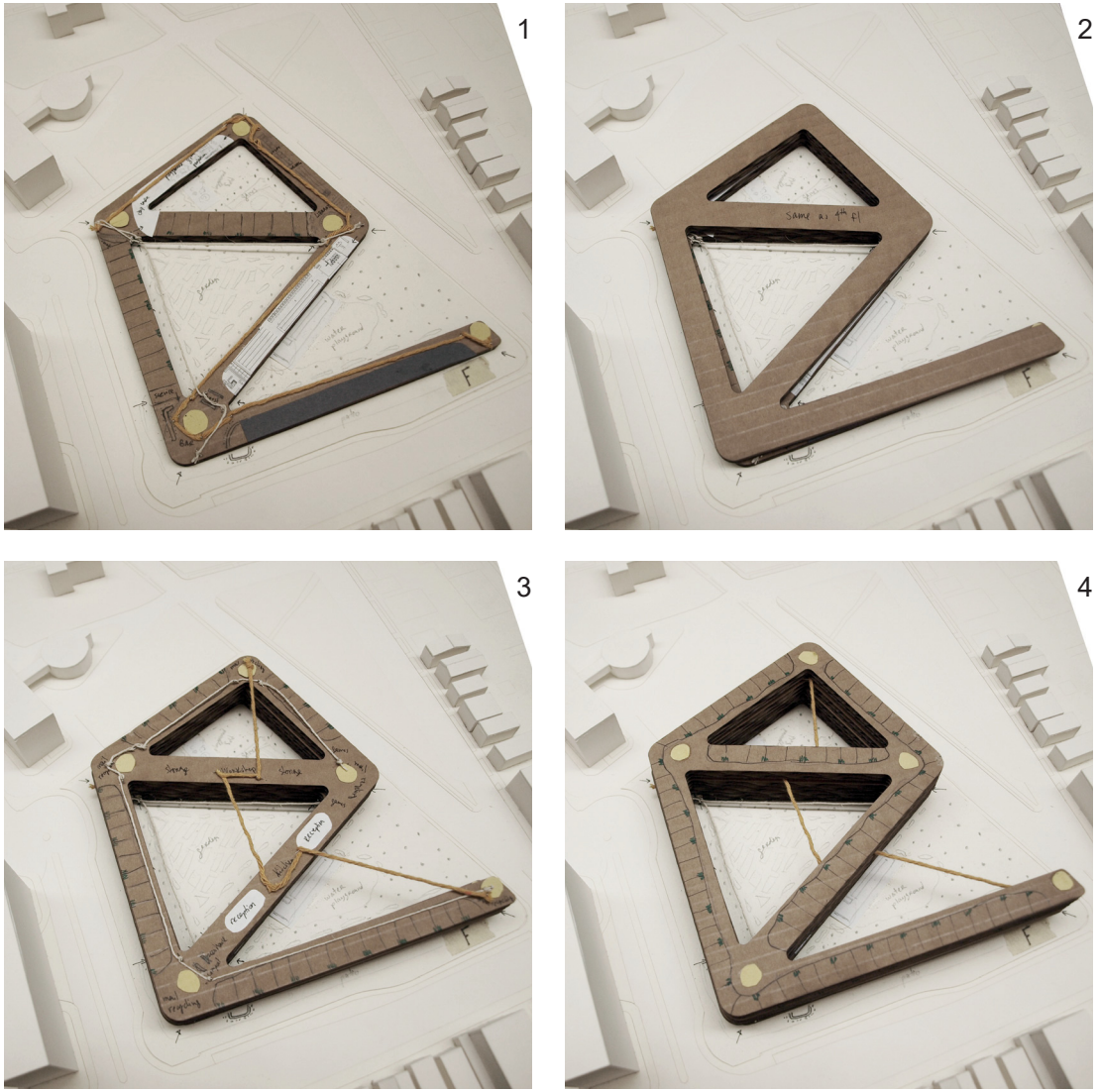


Figure 63: Complex programmatic articulation development on site: sketch model F.

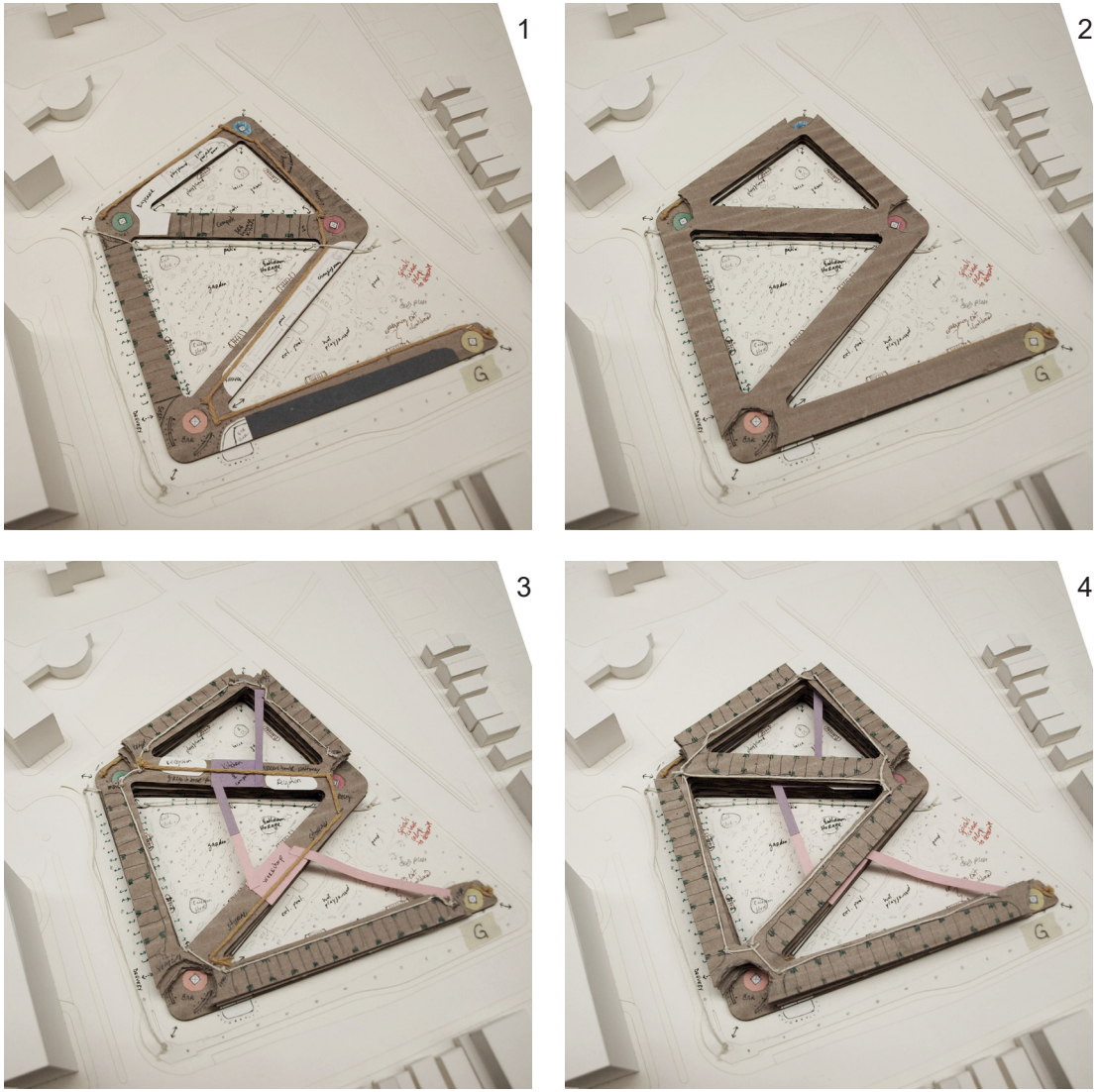


Figure 64: Complex programmatic articulation development on site: sketch model G.

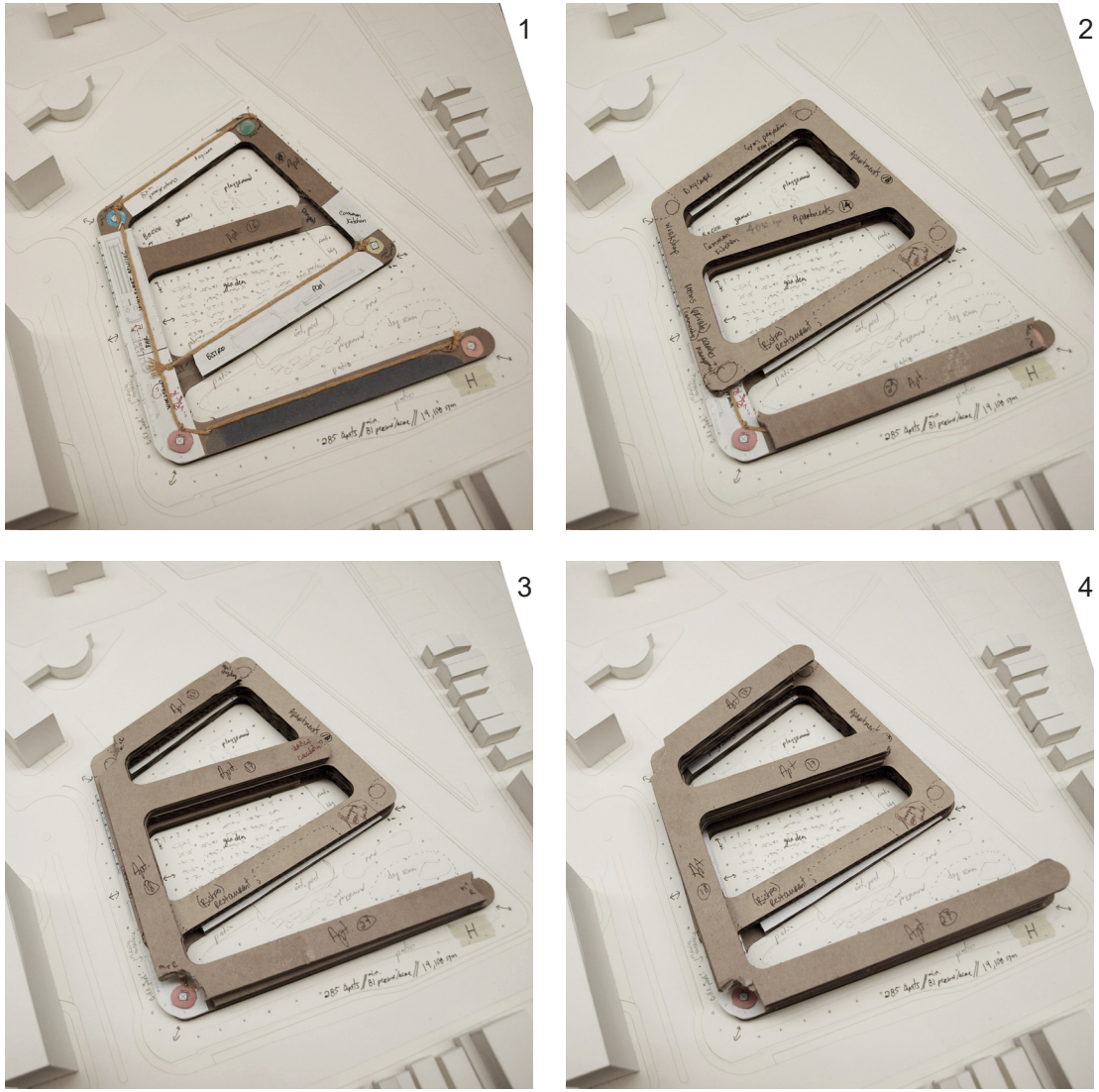


Figure 65: Complex programmatic articulation development on site: sketch model H.

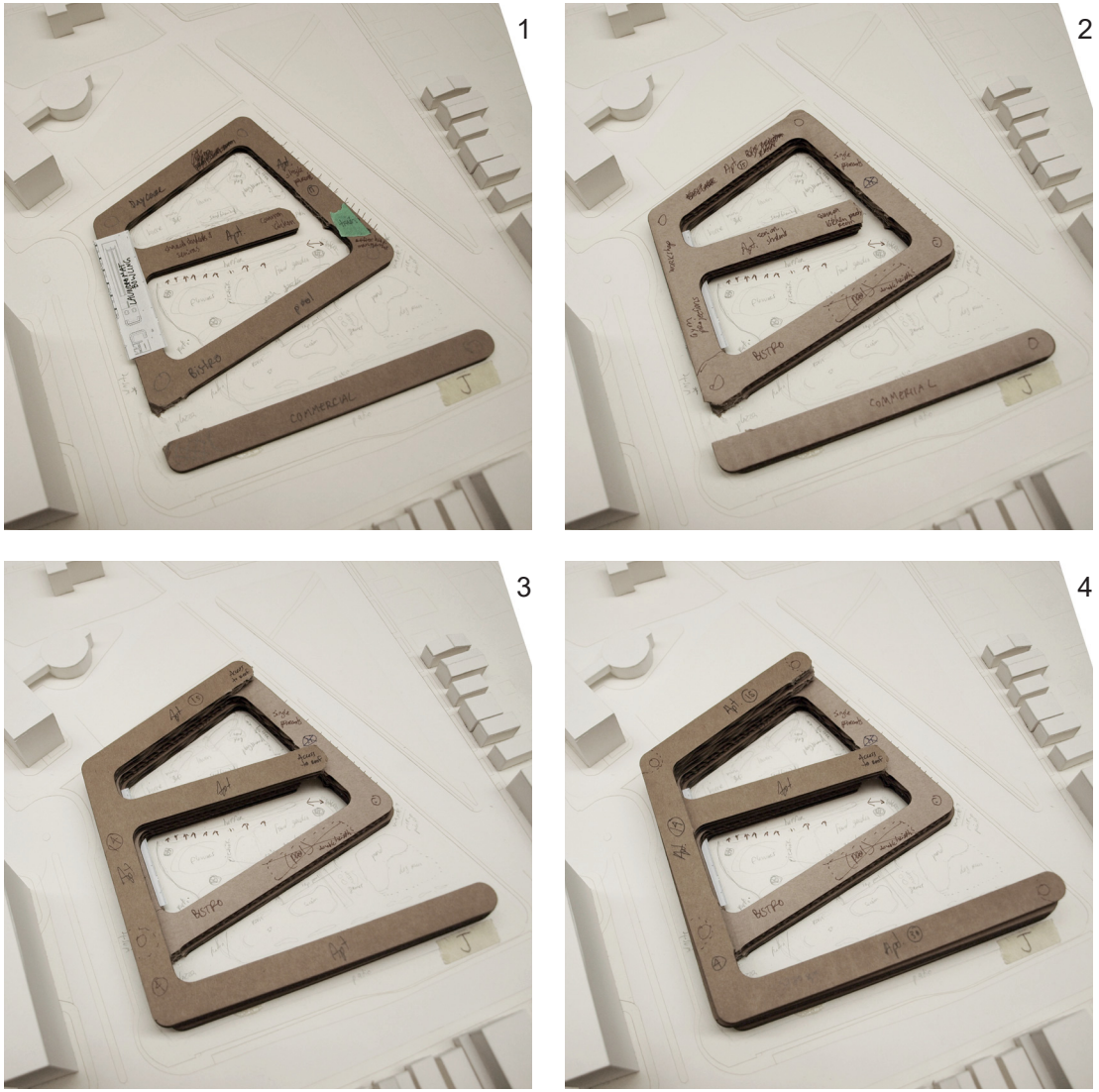


Figure 66: Complex programmatic articulation development on site: sketch model J.

5.5.4 Scheme of the Proposal

The scheme I propose and which evolved from the design process is represented in the photographs of an abstract model. The first photograph represents the ground floor, the second one shows the first floor and the last one represents the third and fourth floors.

On the ground floor, the public activated circulation space juxtaposed to the program/events is represented in clear Plexiglas in the model. The courtyards created by the ribbon-shaped building are coloured by the character of the program/events nearby, creating a diversity of experiences (in green).

Figure 67: Programming model representing the ground floor. Public programs are represented in red, common ones in blue, public circulation spaces in Plexiglas, common circulation spaces in polycarbonate, and gardens in green.

Figure 68: Programming model representing the first floor. Public programs are represented in red, common ones in blue, public circulation spaces in Plexiglas, common circulation spaces in polycarbonate, commercial spaces in corrugated cardboard, gardens in green, maisonnettes for students and seniors in oak wood, maisonnettes for single-parents in maple wood, and cocoons in pine wood.

Nodes of vertical and horizontal circulation, the halls on each corner are entrance points (clear plexi blocks). Four-storey high, they act as visual cues.

On the upper floors, following the idea that social spaces complete the cocoons, a buffer zone is placed between the units and a common circulation space to respect a gradient of privacy and reinforce the retreat character of the units (in polycarbonate).

Figure 69: Programming model representing the second and third floor. Public programs are represented in red, common ones in blue, public circulation spaces in Plexiglas, common circulation spaces in polycarbonate, commercial spaces in corrugated cardboard, gardens in green, maisonnettes for students and seniors in oak wood, maisonnettes for single-parents in maple wood, and cocoons in pine wood.

CHAPTER 6: ARCHITECTURAL PROPOSAL

This last chapter presents the proposal from the scale of the block to the scale of the fragments. The proposal is then evaluated and the outcome of the thesis is discussed.

6.1 Overview of the Complex

The main entrance is located on the corner of Quinpool and Quingate because it is the fastest route to the universities and is situated right next to a bus stop. At the right on Quinpool, there are spaces for small businesses with double height ceiling. Their transparency reveals green space at the back. A sheltered plaza leads towards the main part of the building. In the hall, a public circulation space leads at the right to a bistro juxtaposed to a swimming pool. This segment of the promenade, on two levels, ends with the building management and waste disposal facility at the beginning of Windsor.

In the hall, at the left, the circulation space leads to the laundrobowl and continues to the daycare at the back of the block, facing St. Vincent nursing home.

The Windsor segment facing the park includes maisonnettes for single-parents, which are based on the same module as the cocoons, joining two to form one unit accessed directly from Windsor.

Three exterior spaces are shaped by the building on the ground floor. The first yard joining Windsor to Quingate is characterized by water because of the swimming pool that extends towards it. It includes a sauna, a water play park, rain gardens, and a small basin. Patios for the bistro and the shops as well as a dog run complete its program.

The second courtyard is not accessible to the public. It is characterized by vegetation and food. It is shaped by the middle segment of the building which is formed of additional maisonnettes that could be shared by seniors and students who prefer living collectively. The communal kitchen, which is a revisited maritime kitchen is located at the end of this segment. This courtyard includes a communal garden for flowers and vegetables, picnic areas, sheds for compost, storage and bathrooms.

The second courtyard communicates with the third and last one which is characterized by play. Located right next to the daycare and the maisonnettes' patio, it includes intergenerational playground structures, sand boxes, a lawn bowling field, and a lawn for various games.

Residents can access the second floor via the halls. This floor includes a common gym that is also a projection room to make it possible for residents to watch a movie while working out, or simply watch a movie if they do not feel like working out. The communal kitchen is a vertical segment that includes spaces for celebration on this floor. A common circulation space with view on the courtyards and the street is juxtaposed to the entrances of the apartments. The third floor is similarly articulated. At this level, above the kitchen and the party spaces, is a green room which opens towards a roof top terrace above the maisonnettes on Windsor. The total built floor area is 20,900 m^2. It includes 85 units, which is the twice the neighbourhood's average.

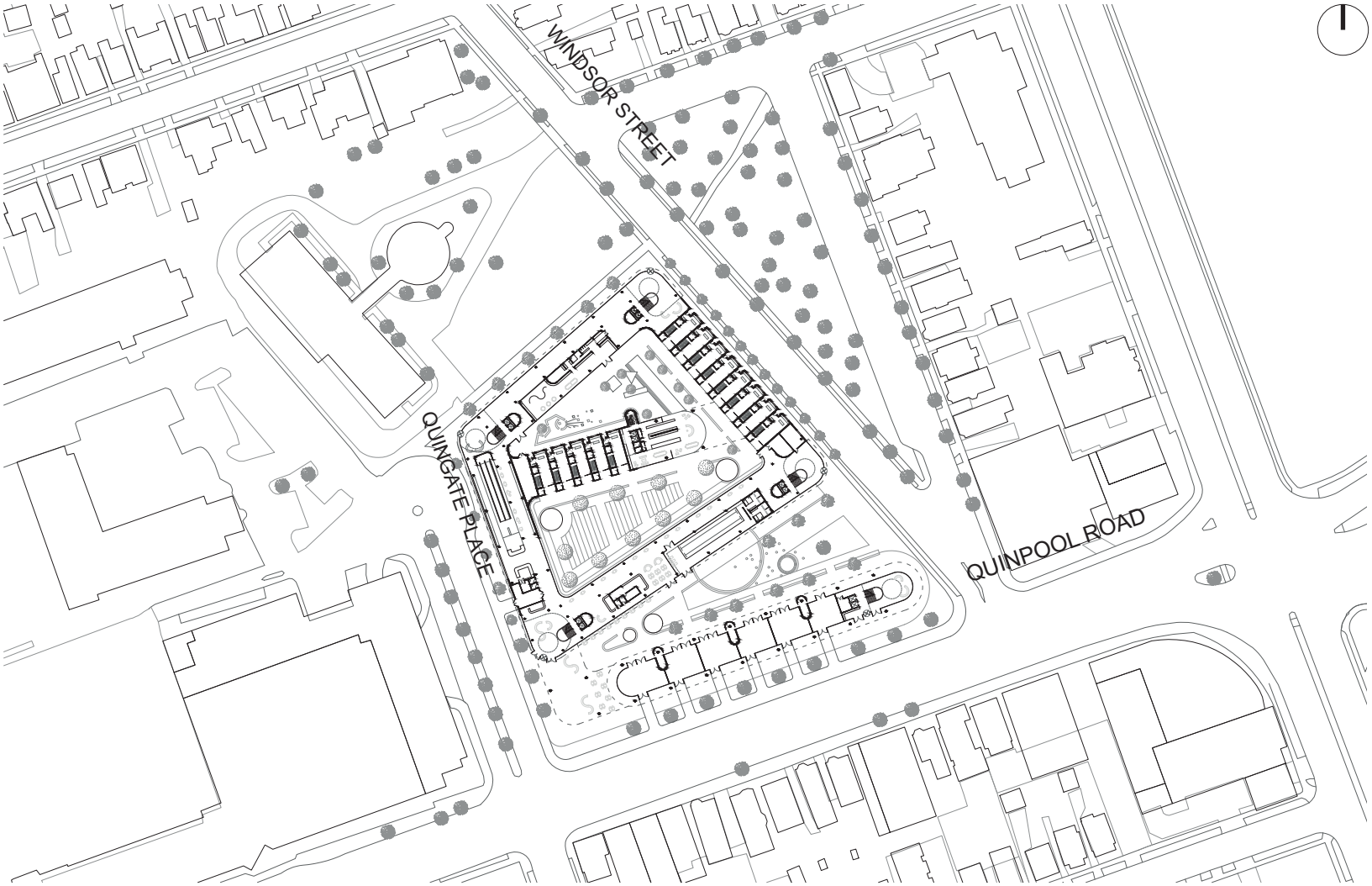


Figure 70: Plan of the ground floor at scale 1:2,000.

Figure 71: Plan of the ground floor at scale 1:1,000.

Figure 72: Section A-A at scale 1:200.

Figure 73: Section B-B at scale 1:200.

The aesthetic of the complex revisits an art deco language with its smooth lime plaster coating, soft curves, metal ledge, and elegant extruded signage. Elements on the Quinpool façade such as the curtain wall, the wood panels of the terraces, and the doors give the building a contemporary character. I was very inspired by the architectural language of Red Vienna, Frankfurt Am Main under May, and 1930s Modern housing in Casa Blanca. I think the integration curves echoes with the playful character of crossprogramming, and furthermore make the building feel more accessible. I also think it suits the eclecticism of Quinpool.

The complex's façade on Windsor Street dialogues with the scale of the residential fabric of the street. The building takes the form of joined town houses. To echo the fact that houses on Windsor have their own character, elements like material finishes are made unique to the units in order to create diversity while maintaining a global coherence.

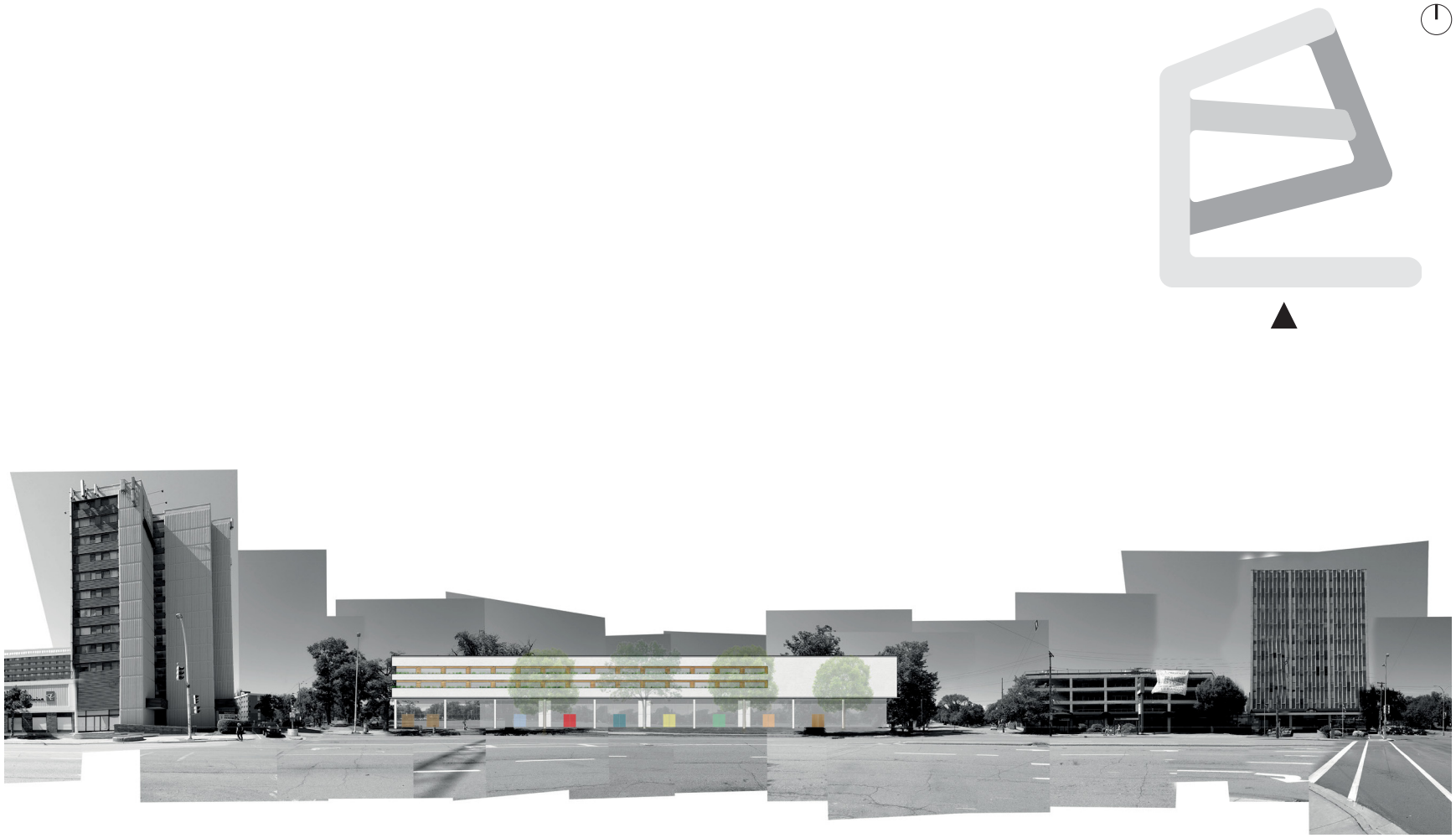


Figure 74: Façade on Quinpool Road.

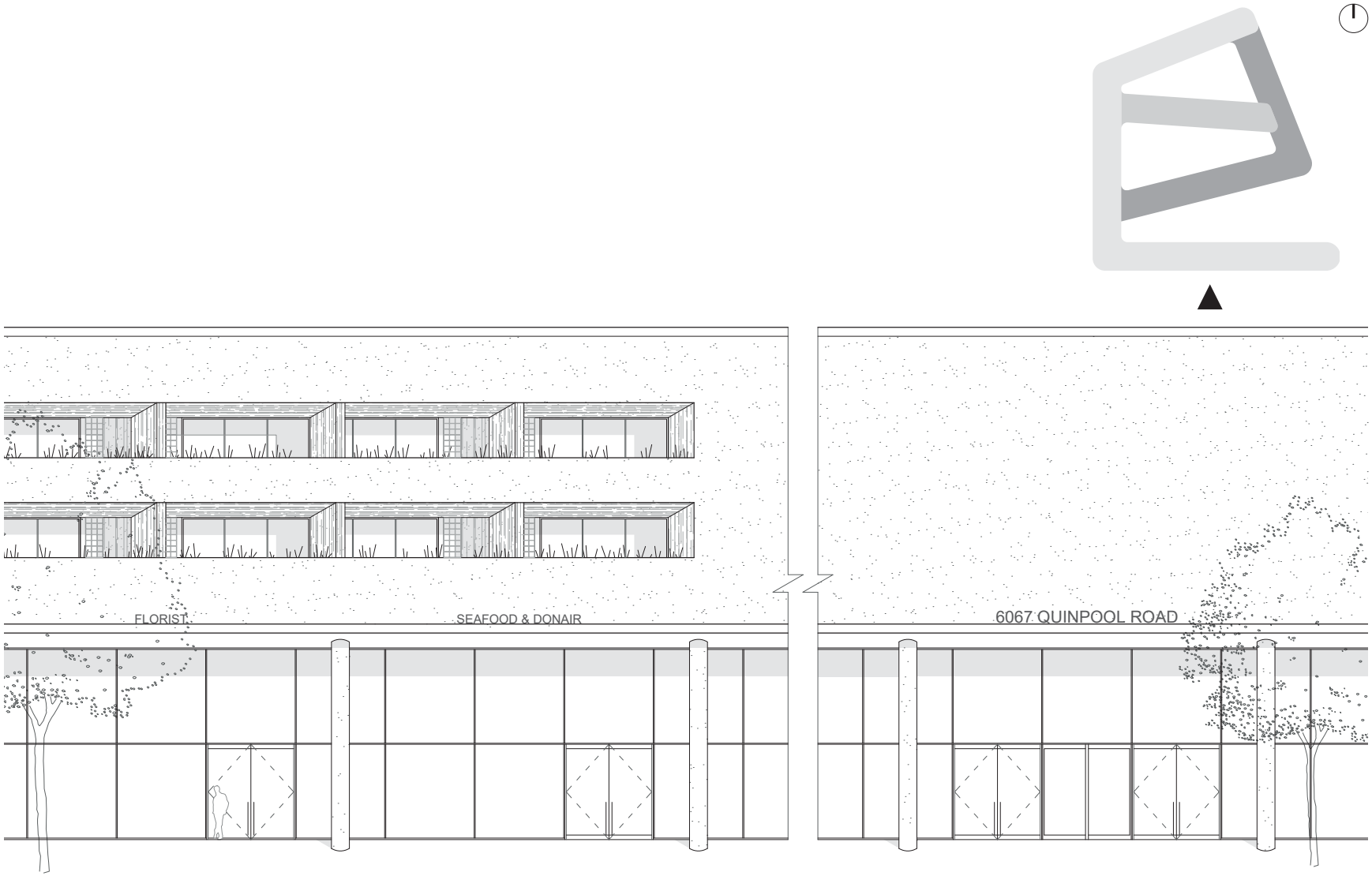


Figure 75: Segment of the façade on Quinpool Road at scale 1:200.

Figure 76: Segment of the façade on Windsor Street at scale 1:200.

6.2 The Laundrobowl

The laundrobowl is an example of disprogramming: the typical configuration of a laundromat was altered by a bowling club and a public circulation space to create disruption and open new possibilities for interaction.

Activities associated to a bowling club and a laundromat are compatible. I discovered that it takes forty-five minutes to wash one load of clothes in an industrial washing machine and around the same time to dry it, which gives just about enough time for four players to play 10 frames each. Consequently, it is possible to play a game of bowling between loads.

Two bowling lanes are sandwiched between two strips of laundromat. To use Lefebvre's terminology, I developed my representations of space based on precedents, action listing, and time-motion diagrams. The two laundromat strips were designed to make small repetitive tasks run smoothly: a basket of clothes is placed at the extremity of one of the stations, clothes are sorted out in built-in compartments, they are placed in the washer, then taken out of it to be placed just above it, placed in the dryer, taken out of the dryer to be placed on the ironing section of the block, and then are ironed.

One of the strips was juxtaposed with the circulation space to activate it. We can imagine that this open configuration can provide multiple interaction opportunities: walk by the laundrobowl just by curiosity, observe what activities are happening, have a drink at the bar, do laundry, and play bowling. It can also support different spatial practices because people are given alternative ways of engaging with the space, allowing them to choose to you the space the way that makes them the most comfortable (i.e. sit at a table between the circulation space and the bowling strip in order to watch but not actively participate or load a washing machine and play bowling). The last dimension of space according to Lefebvre, representational space, is also addressed by the spatial configuration. The programming combinations suggest an open mind about using the space with creativity.

Figure 77: The laundrobowl.

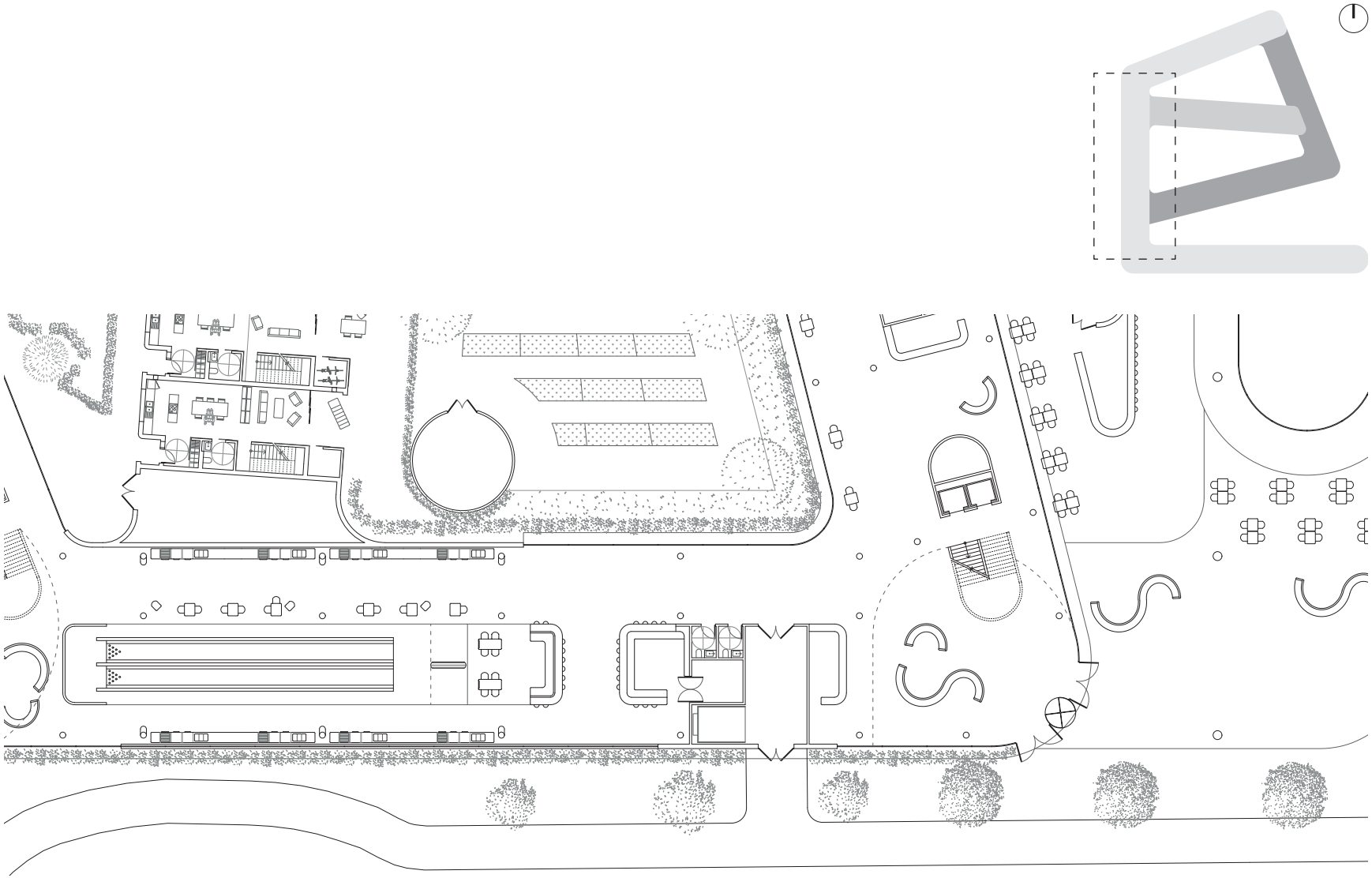


Figure 78: Laundrobowl at scale 1:400.

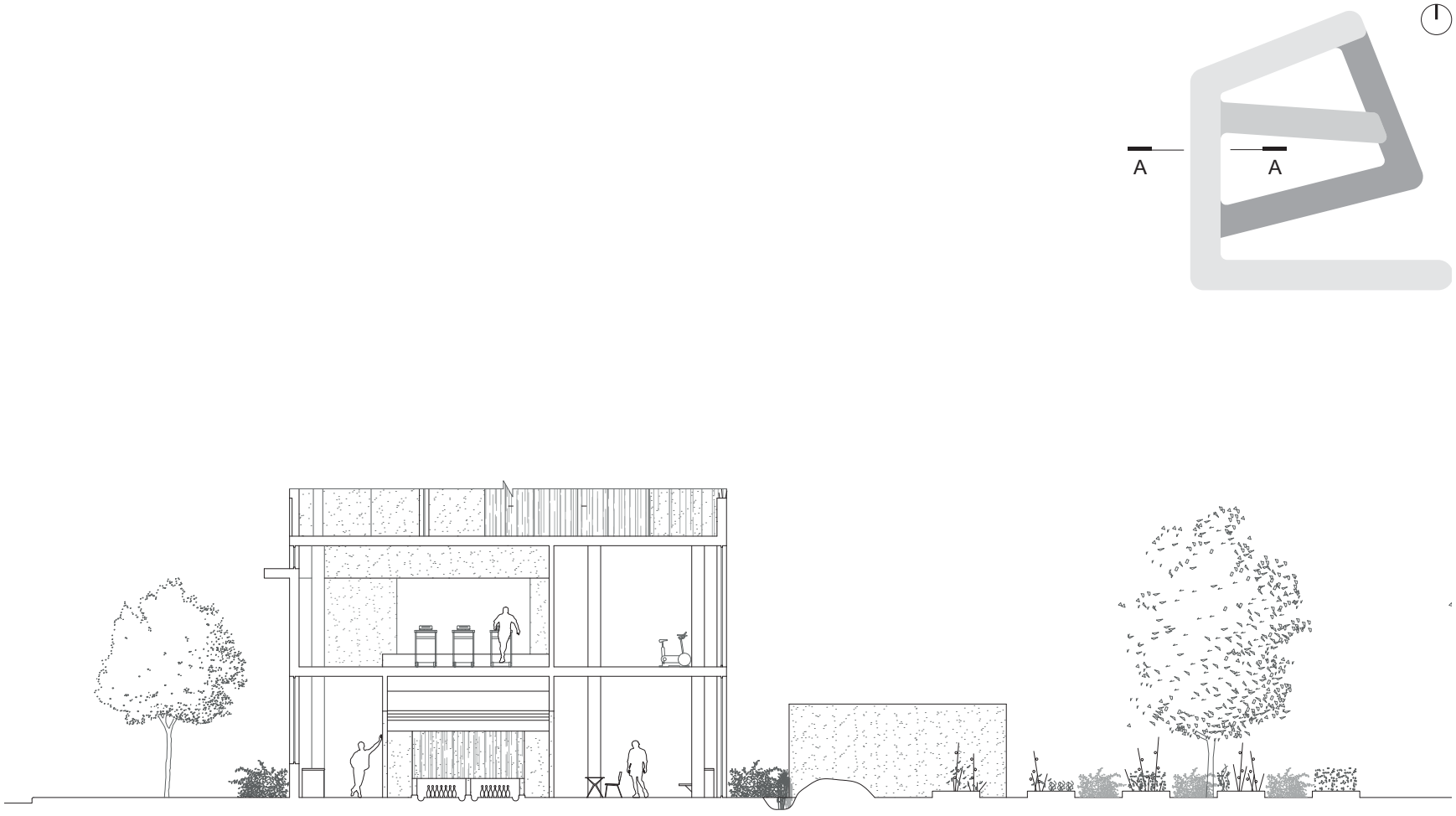
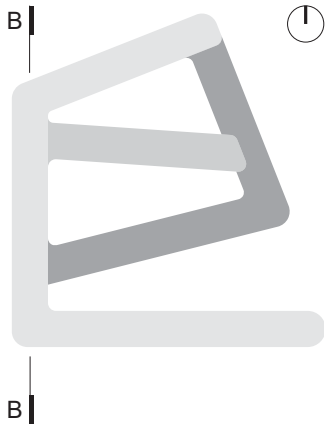


Figure 79: Section A-A of the laundrobowl at scale 1:200. The section shows the cinegym, a gym combined to a projection space for the residents and located above the laundrobowl.



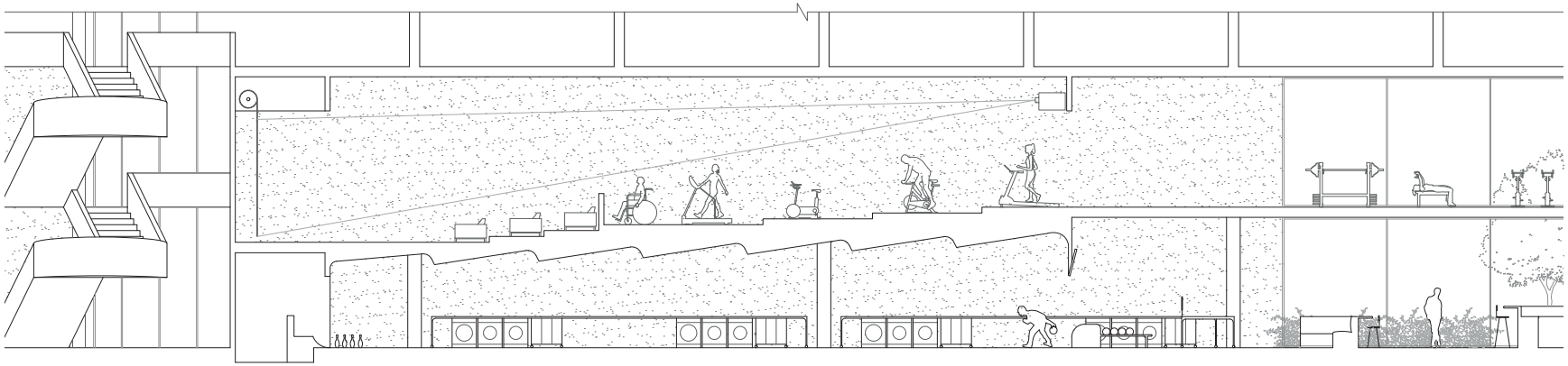


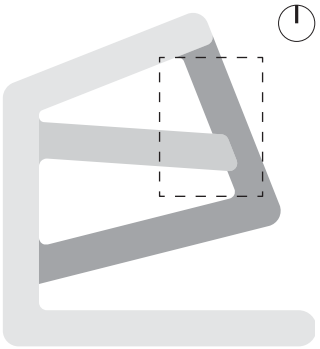
Figure 80: Section B-B of the laundrobowl at scale 1:200.

6.3 The 21st Century Maritime Kitchen

The common kitchen was inspired by the character of the Maritime kitchen which is a social space. It often serves as living and party room, where people come in and out, and dinner turns into a celebration. I planned it like a scaled-up version of a home kitchen combined to a living room and opened on a patio and the communal garden. The layout of the kitchen is arranged around four stations: one for slow preparation, one for food that simmers, one for grilling and using a wok, and one for quick preparation. The concept of these stations is based on research on the different ways of cooking in the three countries of origin of most international students in Halifax: Iran, China, and India, in addition to local cuisine. Focusing on what they have in common, I realized that their cooking methods all require these stations.

The space above the kitchen, connected by the double height, is an extension of the kitchen/living room where after-dinner conversations and dance can be brought up into. This space can be rented by residents. We can imagine that this space could also act as meeting room for decision making regarding the complex. The different programs that it includes blend with one another in a way that makes sense intuitively. Food being something that gathers, something universal, I thought it would a perfect common social space.

Figure 81: The 21st century Maritime kitchen.



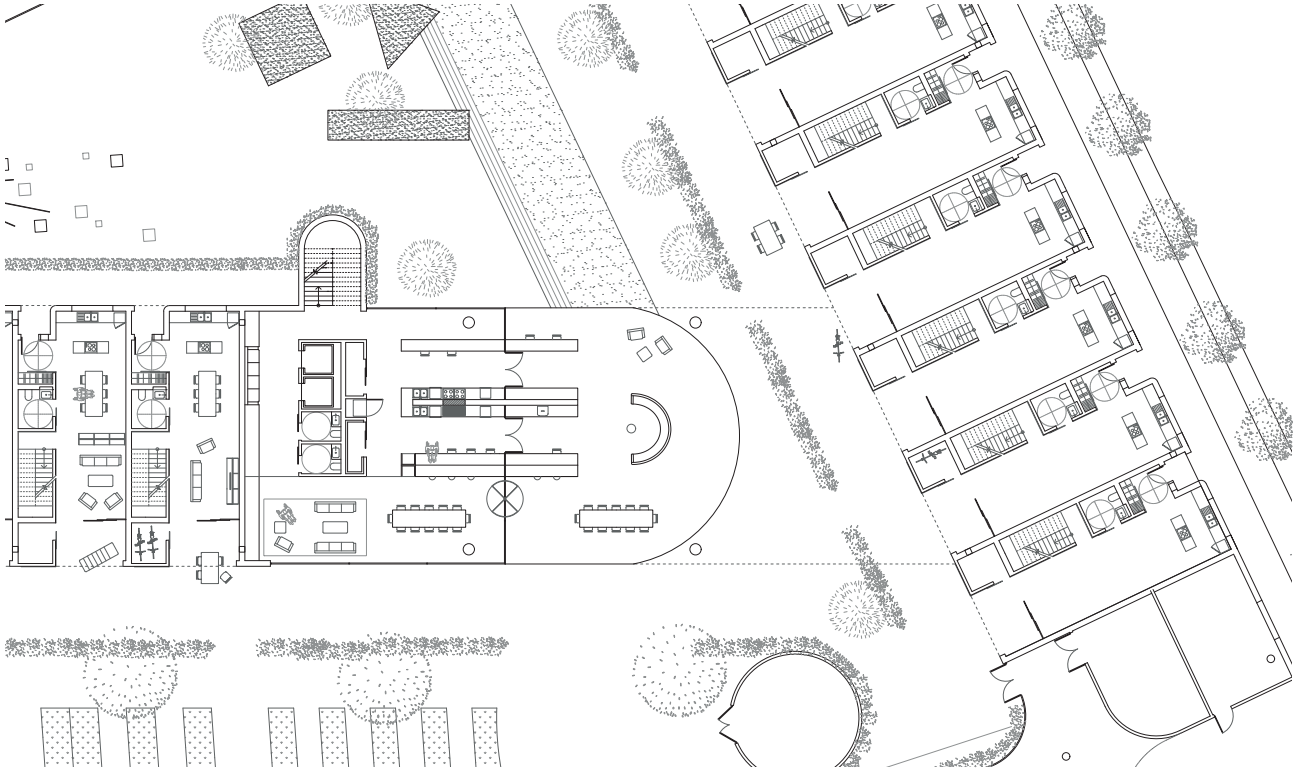


Figure 82: The 21st century Maritime kitchen at scale 1:400.

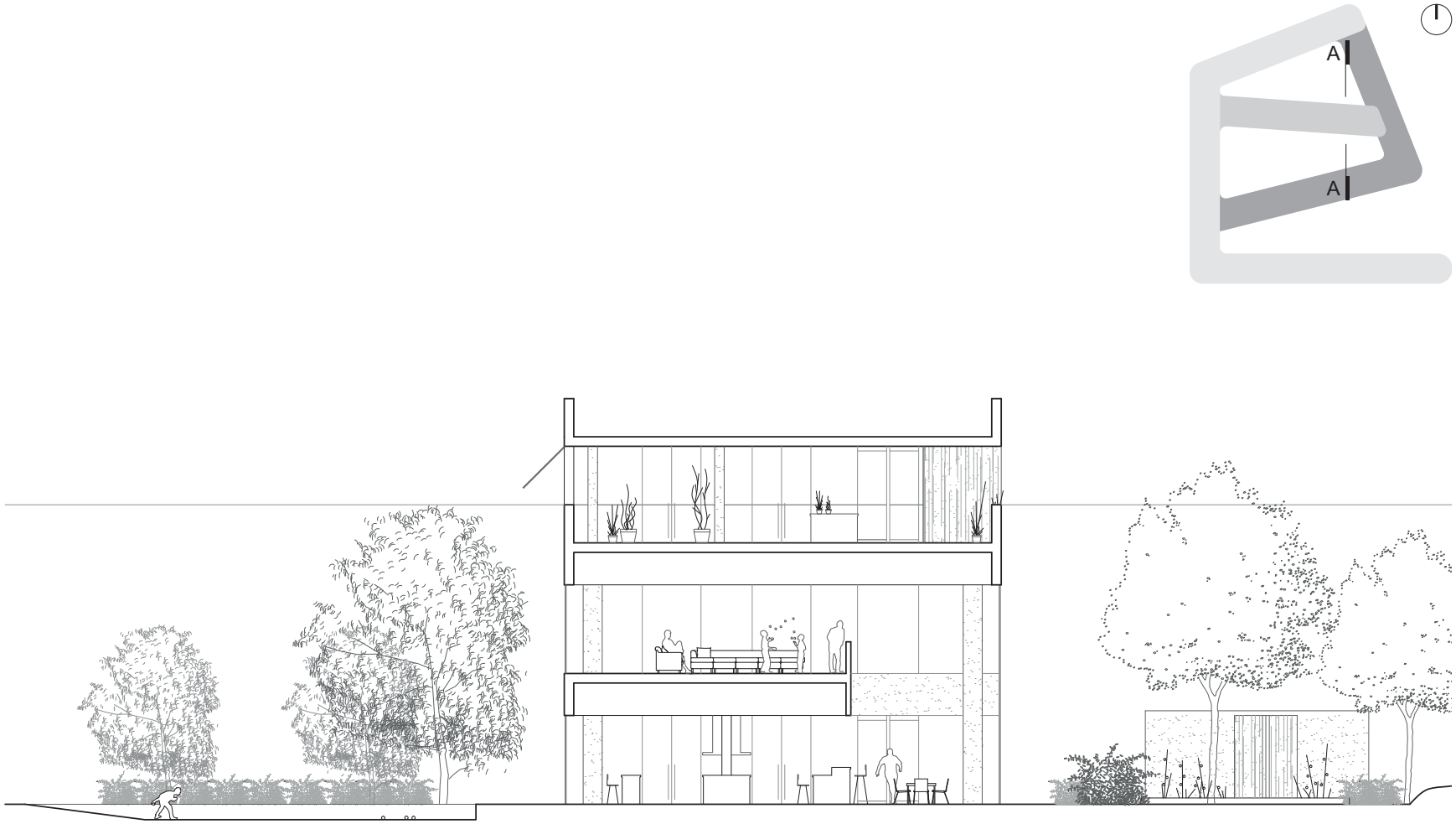


Figure 83: Section A-A of the common kitchen at scale 1:200.

6.4 The Cocoons

The cocoons are universally accessible, like the rest of the complex. Two apartments share a common entrance, a buffer zone, that can extend onto the common circulation space. In the apartment, servant space is located on the side and front walls to create an open living space that can adapt to different lifestyles. The side wall is a block including storage and the bathroom. The kitchen is at the front, adjacent to the common circulation space. Two zones can be formed by a modular piece of furniture on wheels that can provide additional storage, be a bookshelf or serve as display for art and objects. In the apartment of a senior, a dining room could be placed close to the kitchen and the back of the apartment could be a bedroom opening towards the terrace. In a student apartment, the kitchen could be used as a study room with a living room at the back that can become a bedroom at night. We can imagine that overtime, single-occupancy might not be desirable anymore as lifestyles change with society. In that case, units could be combined to accommodate couples, families, and intergenerational families.

Figure 84: The layout of the cocoons is flexible to adapt to different lifestyles.

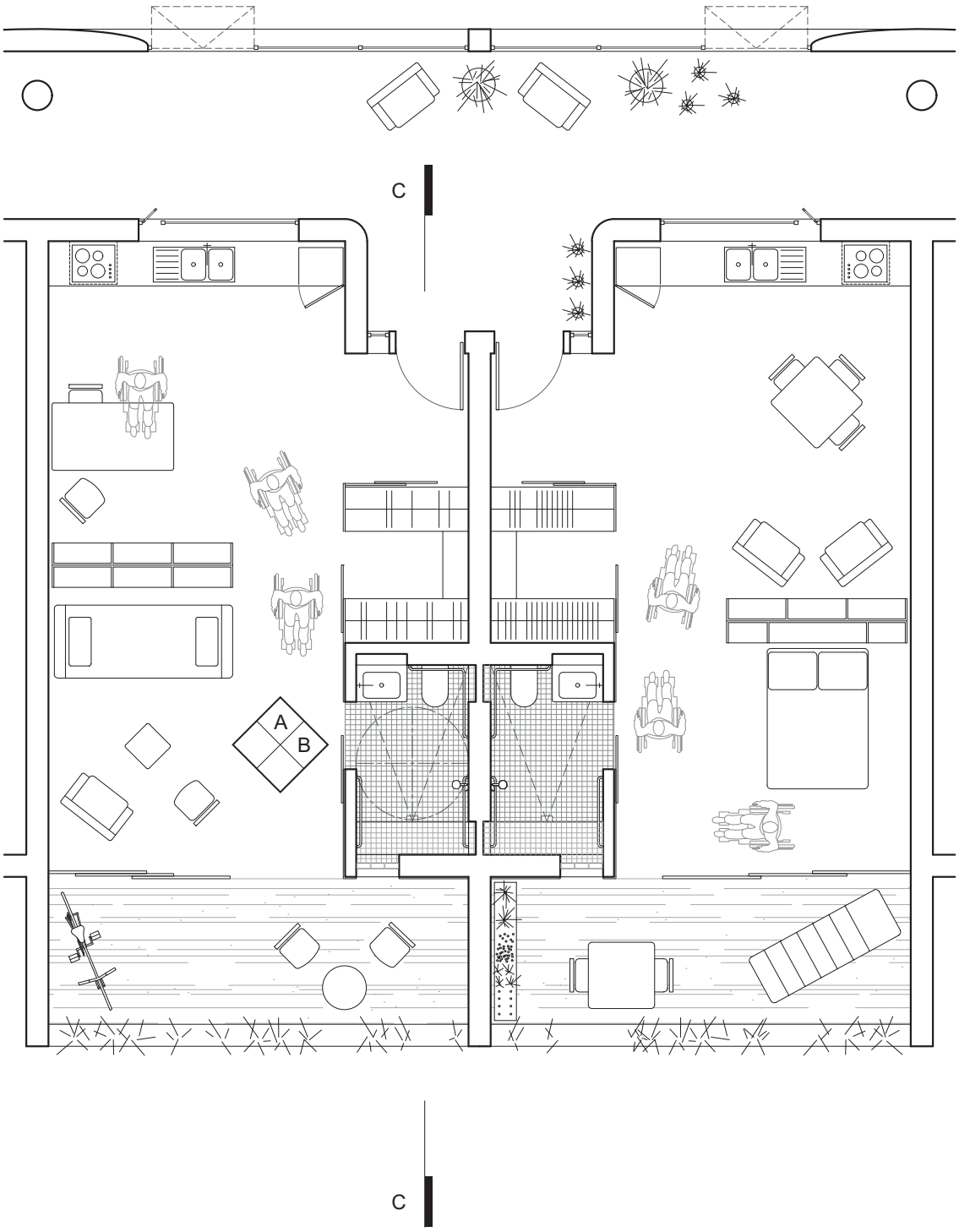


Figure 85: Typical cocoon floor plan . Note how the living area is large enough for a resident to have a social life in their apartment. This is the excess of the minimum that is so important for a single in a one bedroom apartment.

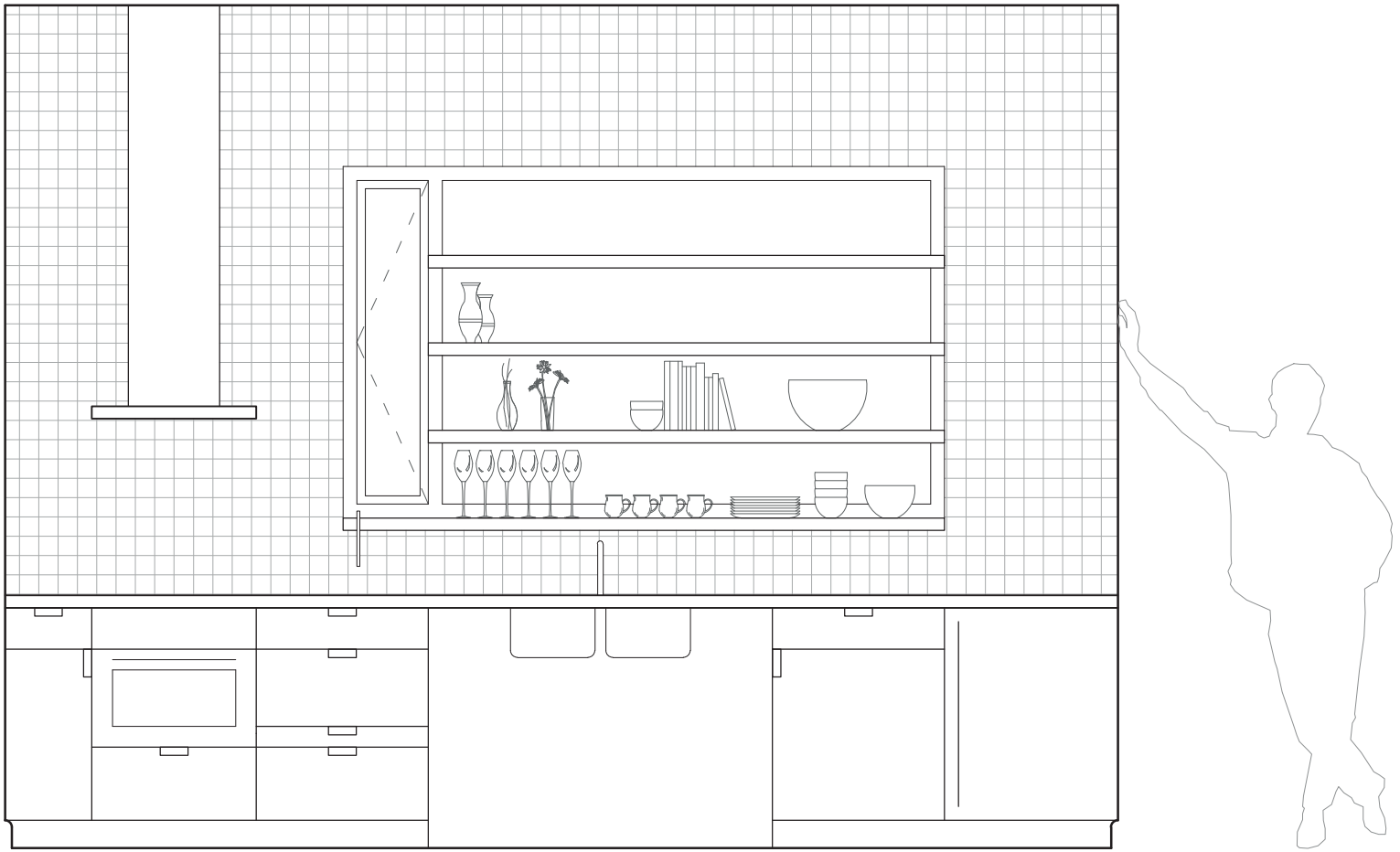


Figure 86: Interior elevation A of the typical cocoon at scale 1:25. Note the open space below the sink that allows access to the faucet for a resident in a wheel chair and yet does not stand out visually. There is a window behind the glass shelves that looks into the common circulation space for increased social contact and natural light. Cross ventilation is provided by the vertical window on the left of the shelves.

Figure 87: Interior elevation B of the typical cocoon. Note that the entire apartment is on one level, without threshold on the ground all the way to the balcony for easy access to wheel chai users. The doors slide easily. These enclose the "walking closet" and the bathroom.

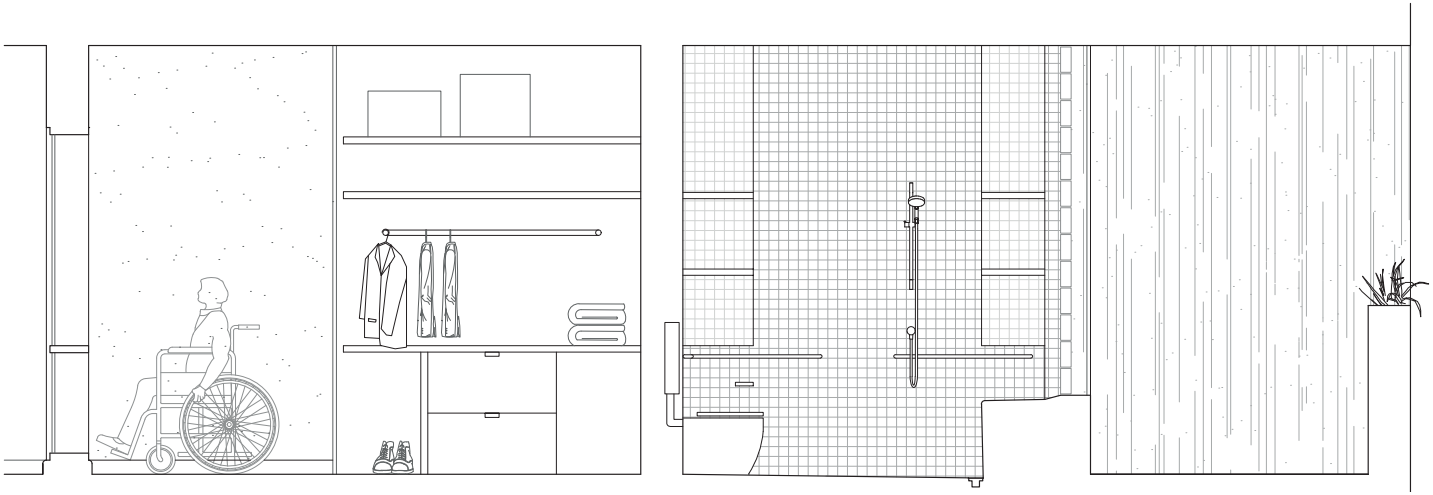


Figure 88: Interior elevation C of the typical cocoon. The design of the bathroom with a sitting area and hand held shower is inspired by Japanese bathrooms and also satisfies universal design requirements. This is a good example of multicultural/universal design.

6.5 Closing the Loop

This last section reflects on the proposal and the research. The proposal is evaluated, the outcome is discussed, and future field applications are presented.

6.5.1 Evaluation of the Proposal

6.5.1.1 Methodology

How to accommodate single-occupancy while providing momentum for social interaction to counteract isolation? This was my research question. In order to evaluate the proposal and reflect on it, I decided to evaluate it using the same principles and method used for the typology investigation. First, I isolated the projects that were the most influential and then I visually translated the written results into diagrams. Each diagram illustrates one strategy referring to a fragment of a project, viewed in plan or section as indicated in the grid. I highlighted the strategies that I directly borrowed in light gray. The new grid is presented on the following pages.

Figure 89: The results of the typology investigation are visually translated into diagrams.

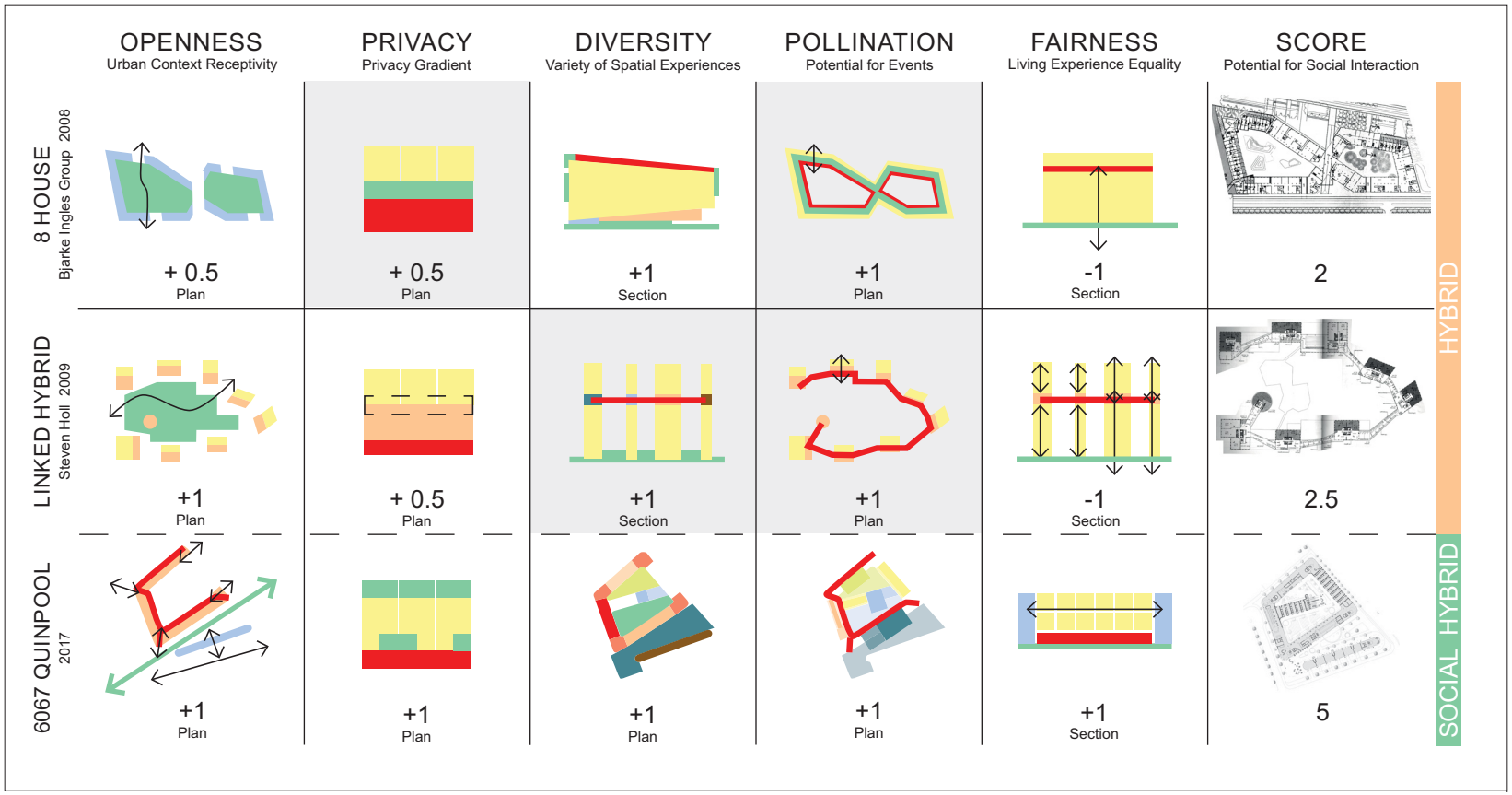


Figure 90: The results of the typology investigation are visually translated into diagrams and the proposal is evaluated.

6.5.1.1 Results

The porosity of the ground floor was the characteristic of the proposal that gave a perfect score for openness. The circulation space is illustrated in red, the program/events in pink, the shops on Quinpool in blue, the porosity of the public park is illustrated with a green arrow and the access points, with black arrows.

For privacy, the two buffer zones sandwiching the cocoons demonstrate the gradient of privacy. The cocoons are in yellow, the common circulation space is in red, and the common entrance as well as the private terraces are in green.

For diversity, all the different experiences are illustrated with their own colour. Representing the ground floor, the diagram highlights the richness of experiences provided by the different features including the public park, courtyards, halls, circulation space, and different program/events.

For pollination, again the diagram illustrates the ground floor. It demonstrates the overlap between program/events, for instance the indoor pool with the outdoor pool and the water garden. The shape of the building is hardly recognizable, demonstrating that form is not what matters; what happens in the space is the most important. Opportunities for social interaction go beyond the building.

The fact that the units use the same circulation spaces, have a relationship with the street, and have access to the same features (i.e. private terrace, common entrance, views, light and ventilation qualities for instance) make it a fair proposal.

The proposal gets a perfect score of five out of five – this is not a big surprise considering the fact that the scheme is based on the best features of iconic precedents.

6.5.2 Outcome of the Research & Proposal

Through the research and design process, I discovered conditions for maximizing social interaction opportunity that can be shaped by architecture. Spatial pollination is a first condition as it can generate new possibilities. In terms of programming, it can be done by combining different programs (i.e. crossprogramming) using configuration strategies such as layering, intersecting, clustering and miscellaneousing. It should be easy to find opportunities, for instance by juxtaposing program/events to a circulation space borrowed daily by important flux of people. If a physical barrier is required between programs, it should not fully disconnect them. This means that a visual, olfactory, or auditory relationship must remain to allow for pollination.

Another condition is not to impose constant social interaction, but rather make it an appealing choice. In the situation of juxtaposing circulation space to program/events, an alternative circulation path that directly leads from point A to point B should also be part of the project to act as a shortcut. Furthermore, there must also be a gradient of privacy between the most individual and the most social spaces. For instance, in the proposal, the most individual space is the private terrace provided to each unit. The common entrance shared by two units provide a minimal level of social interaction and the common circulation space juxtaposed to it provides a higher level of interaction between neighbours. The courtyards and common program/events add to the gradient by providing a high level of interaction between neighbours. The public circulation space on the ground floor is one step further towards a higher level of interaction because it is public and finally, the public program/events and outdoor space (i.e. water park) represent the highest level of social interaction. The richness of experiences is really what makes the proposal interesting.

The idea of combining the two groups helped me approach the design of the complex's components in a new way, but I realized in the process that the proposal has potential to provide a lively living environment

to any human being, whether they are students or retirees. Future projects, can borrow the idea of crossprogramming, richness of spatial experiences, and privacy gradient while providing more types of layouts to accommodate not just two population groups, but multiple. This would create even more social diversity which I think is essential.

The proposal's typology is a collage. A collage of different programmatic and spatial conditions. Most architects would label it as mixed-use residential or a combination of social condenser and hybrid, a social hybrid. There is something that makes me uncomfortable with these labels because they tend to oversimplify and compartment everything into boxes which cancels potential for hybridization, and restrains the emergence of new possibilities. The proposal is inclusive rather than exclusive. In practice, the character of this way of thinking about typology can potentially face zoning issues in places where by-laws are too limiting (i.e. label every piece of land, associating them with a singular function). This multifaceted vision of housing is intrinsically linked to urban planning and a dialogue with urban planning departments in cities is essential for its materialization.

I think that the strongest components of the complex are the program/events and the circulation spaces that support social interaction. The cocoons could be further developed. The idea of providing multiple layouts for instance could be explored.

The calendar associated to the project is something that I did not address and could be further explored. The proposal could be adapted for future development. For instance, students tend to leave in the summer which could make the complex feel less busy. Perhaps, at the convenience of these students, theirs belongings could be stored in a space specifically designed for this purpose and their unit could be rented. This would assure constant residential occupation to maximize potential for social interaction.

Furthermore, because the proposal is conceptual, I did not explore funding possibilities in detail, however I have ideas that can be studied

closer in the future. In the context of Halifax and considering that the project is intended for students and retirees, a partnership between universities, the National Seniors Council, and the City of Halifax could be made. The demand for single-occupancy housing for seniors and students justifies their potential interest. The project could be presented as an innovative solution that could give positive exposure to Halifax as a progressive city.

6.5.3 Thinking Beyond the Thesis

I would like to point out two things that I discovered through the research process, but decided to leave aside because they were outside of the scope of this thesis. Regarding universal accessibility, it could be interesting to research and propose aesthetically pleasant universally accessible designs. This could take the form of a pattern book or a review of good precedents. I noticed that the examples provided in literature are often outdated. Appealing solutions should be investigated in order to encourage designers, but also builders, clients, and the public to apply principles of universal accessibility. This is an essential aspect of inclusive projects.

More research could also focus on the application of crossprogramming using gentle disruption. The leap from theory to design can be challenging and therefore, developing principles and a set of recommendations or even proposals could help. Different contexts should be considered, not just residential, but also institutional and commercial.

To close the loop, I believe that architecture has to reflect current living trends focusing on quality of life, but it also has to question these trends, propose alternative possibilities. It should not follow the statu quo. Tschumi mentioned that architecture is about asking the right questions[168]; sometimes irrelevant questions are asked, such as "how can minimum housing provide a maximum number of units?" Part of the role of architects is to redefine these questions, thinking in new ways to find solutions.

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168 "Inventing Questions: An Interview With Bernard Tschumi," Evelyn Steiner, accessed July 10, 2017. http://www.uncubemagazine.com/blog/15708387.

My vision of an appealing alternative typology accommodating single-occupancy living counteracts social isolation. It is a sensitive collage of private and collective spaces dialoguing with its urban context. I hope to contribute to the housing discourse by supporting intergenerational living as a possibility worth exploring, maximum standards and universal accessibility as requirements for minimum housing, and playfulness as a serious way to generate social space.

APPENDIX: THEATRICAL ACTIVITY PARTICIPANTS AGREEMENT

Permission

Kate Checkeris

Tue 2017-07-04 2:32 PM

To: Kim Chayer <Kim.Chayer@Dal.Ca>;

Dear Kim,

I agree to have my photo published in your document.

Kate Checkeris

Sent from Mail for Windows 10

Agreement

Marc Dainow <m.dainow@gmail.com>

Tue 2017-07-04 6:05 PM

To: Kim Chayer <Kim.Chayer@Dal.Ca>;

Hi Kim,

I agree to have my photo be publiched in your thesis document.

Marc

--

Marc Dainow

MArch, BEnv.D

Re: The permission you seeketh

Pearl Chan <ymchanx@gmail.com>

Wed 2017-07-05 8:05 AM

To: Kim Chayer <Kim.Chayer@Dal.Ca>;

Dear Kim,

I agree to have my picture published in your thesis report.

Pearl Chan

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