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# Ambivalent Architecture: The Architecture Of “Distraction” The Influence Of Tele-Technology On Architecture And Urbanism

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Ambivalent Architecture: the Architecture of “Distraction”  
The influence of tele-technology on architecture and urbanism

by

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B.Arch.Sci, Shahid Beheshti University , Iran, 2005

A design thesis project

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In partial fulfillment of the  
Requirements for the degree of

Master of Architecture

In the Program of

Architecture

Toronto, Ontario, Canada, 2012

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## **Ambivalent Architecture: the Architecture of “Distraction”**

The influence of tele-technology on architecture and urbanism

### ***Abstract***

The physical environment is being transformed by tele-technology and the emerging space of communication networks. Wireless tools, our instruments to engage with the emerging space of media, distribute our attention and dynamically switch between two distinctive operating logics to deal with the media and physical space. In addition to distracting us, they allow the users agency and fluidity of function in the physical space.

Through synthesized research into the socio-technical effects of media space and cybernetic architecture influenced by this emerging space, this thesis aims to find an architectural approach that approximates the simultaneous and distractive aspects of virtual space(s) we inhabit through our devices. An *ambivalent architecture* is proposed which reflects this pseudo-hyper-connectivity of cyberspace in the physical collective space, and promotes this socio-spatial transparency and gives agency to the inhabitants to engage with the space in different ways. In this architecture, the architect is the initiator of the spatial decision-making process which allows the public to constantly transform the nature of the architectural element with their active participation.

## **ACKNOWLEDGEMENT**

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## **Introduction**

## Background

*When was the last time you went to the bank and talked with a teller? How often do you meet with your friends face to face? How often do you interact with people through your cell phone? When was the last time you went to a bookstore? How much do you spend shopping online?*

If we compare our answers to these questions with the responses of the last generation, it will be clear that our daily lives have dramatically changed in the last decade. We are getting more and more dependent on our connectivity to the internet, and virtual communication platforms have become dominant forms of social interaction. As McKenzie Wark argues, tele-technologies add another layer to our understanding of nature, and our engagement with this “layer” is increasing. “From the telegraph to telecommunication a new geography has been overlaid on top of nature and second nature. Second nature, which appears to us as the geography of cities is progressively overlaid with a third nature of information flows, creating an information landscape which almost entirely covers the old territories” (Wark, 1994, p. 120). With progressive technological advancements, the physical realm, and specifically architecture and urbanism, seem to lose ground to this “third nature”. While this transformation depicts dystopian futuristic scenarios such as Wachowskis’s (1999) “the Matrix”

“We are all nomads, traveling between reality and unreality... this globalization of our society, through the mechanisms of information exchange and travel exchange, reconfigures our comprehension of space in motion.”

(Decq & Cornette, 1999), p39

trilogy in which human beings live in self sufficient cabins and interact via digital screens and artificial brain stimulations, some architects such as Herman Hertzberger consider this transformation as an opportunity for the architectural profession to redefine itself and its values; "It is good that we are losing ground [to the media space]. We should really lose ground and float and start swimming, because what we are doing now is [working on] too much ground and [producing] too much nonsense. Let us rethink what this profession could be"(Hertzberger, 2011).

### **Research Questions and Research Methodology:**

The research investigates the impact of recent technological advancements in telecommunication on the way "space" is perceived, and the subsequent effect on architecture, urbanism and the public realm to find an architectural approach that approximates the simultaneous and distractive aspects of virtual space(s) we inhabit through our devices. The background and questions on specific areas are divided into three chapters. A fourth describes an approach to explore these ideas in more depth within a design experiment.

### **Chapter One: Media Space and the Rise of the Screen Generation**

The first chapter explores the main socio-cultural impact of “teletopia<sup>1</sup>” based on the works of theorists such as Paul Virilio, Elie During, and Walter Benjamin. Since architecture is inseparable from society, any transformation in the way we live has a direct impact on the architectural space and consequently, on the architectural discourse. Main research questions of this chapter include:

*Q<sub>1a</sub>: What are main impacts of tele-technologies on daily life?*

*Q<sub>1b</sub>: If as Marshal McLuhan suggests, we get trained by tools and instrument we create, (McLuhan, 1964, p. 8) then.... how have these technologies trained us to operate?*

## **Chapter Two: Tele-Technology<sup>2</sup> and the Transformation of Architecture and Urnabism**

The second chapter briefly reviews the main originators of modern cities and the architectural design process of the modern era, and subsequently, investigates the impact of hybridization process on cities and buildings. The transformation of architecture on different scales is explored

“Cities must adapt to their citizens and not the other way round.”

*Francois Mitterrand,  
As quoted in (Virilio, 1997)*

---

<sup>1</sup>: “Teletopia” in Virilio’s terminology refers to a society in which everyone can be simultaneously connected with their social circle and virtually attend in different spaces and fulfill different tasks. (Virilio, 1997)

<sup>2</sup> An umbrella term to cover any technology which enables its users to act in from distance (e.g. telegraph, Internet communication). In this research, it particularly refers to wireless technology and the constant internet connectivity resulting from the emergence of smart phones.

through a review of cybernetic theory, urban economics, and political theory, and theorists such as Manuel Castells, Frans Vogelaar, W. J. Mitchell, and Hanna Arendt. Main research questions of the second chapter include:

*Q<sub>2a</sub>: How might the Information Revolution, particularly the Smartphone Revolution, affect architecture and urbanism?*

*Q<sub>2b</sub>: Have the technologies of the Information Revolution affected the way space is perceived?*

*Q<sub>2c</sub>: Could the popularity of virtual social platforms such as Facebook and Twitter significantly diminish the use of physical public space?*

### **Chapter Three: The “Fourth Dimension” and “Users’ Agency<sup>3</sup>” in Architectural Space**

Using an analytical case study approach, the third chapter reviews early architectural literature, proposals and projects in which the idea of users’ agency is entertained. Main research questions of this chapter include:

*Q<sub>3</sub>: How has architecture reacted to media space since the initiation of the hybridization process of the lived environment?*

### **Chapter Four: Design Exploration**

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<sup>3</sup>: “Agency” refers to the ability to act in the world. In the context of this research, users’ agency in an architectural space indicates inhabitants’ ability to participate in the spatial decision-making process.

Chapter Four describes a design exercise which explores these ideas in more depth with these main research questions:

*Q<sub>4</sub>: Should architecture come to rescue our attention deficit society or should it accommodate this transformation?*

*Q<sub>4</sub>: Considering the main theoretical conclusion of first two chapters [new attention regime, users' agency, and the flexibility of function], how can architecture facilitate the transformation of the hybrid world?*

## Chapter One

### Media Space and the Rise of the Screen Generation

"And, so, if my sentence twists, turns, and only gradually tapers to a point, don't fidget and don't bite your nails. Hardly anything, believe me, is more depressing than going straight to the goal."

*Gunter Grass*  
As quoted in (Price, Isozaki, & Koolhaas, 2003)

## 1-1 “Digital Renaissance”, Virtual Community and the “Screen” Generation

At the beginning of the twenty first century, we are now facing a fundamental change in our daily lives as a result of the development of wireless technology and social media. The rise of cyberspace, virtual community and Computer Mediated Communication (CMC) in sociology, media, and architecture are signs of new understanding of space and community. Compared with the long-established communication methods of writing, telegraph, and telephone, CMC has a relatively short yet rich history. Rheingold notes that CMC, “... is dating back to the 1960’s and 1970’s and, most directly, to the US Department of Defence-sponsored ARPANET with its discussion list “SF-Lovers” and email list “Human-Nets”” (as quoted in Wilken, 2011, p. 14). As a result of the early success of ARPANET communication, other platforms of virtual communication were developed: “computer bulletin-board system, via Multi-User Dungeons (MUD<sup>4</sup>s) and Multi-user Object Oriented systems (MOOs), and Internet-Rely-Chat systems (IRCs), and LucasFilm creation “habitat”<sup>5</sup> (as quoted in Wilken, 2011, p. 14). Now, after introducing the internet and social networking systems to the

“The Second World War and ballistics gave us digital computers. Cold War decentralization gave us the Internet. Terrorism and mass surveillance: the Kinect.”

*Matt Webb, CEO of design and invention firm Berg London, as is quoted in (Borenstein. January 2012, p. V)*

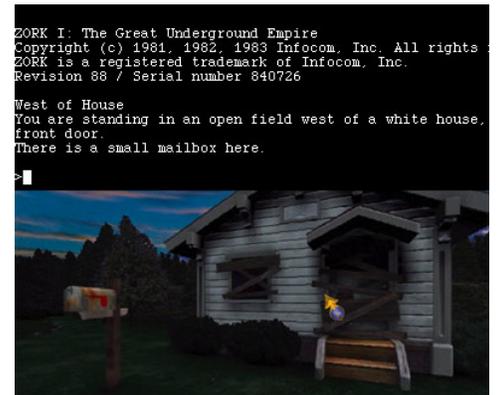


Figure 2: Zork, 1981, a text base multi-player virtual world simulation



Figure 1: Habitat, 1984, multi-player virtual world simulation

<sup>4</sup> Multi-player real time virtual world (figure 2)

<sup>5</sup> Online role playing game, 1984 (figure 1)

public, CMC has become an umbrella term which encompasses all types of virtual communication.

The smart phone revolution and the emergence of low-cost electronic communication devices expanded the new realm of virtual communication and shaped a new understanding of reality. Douglas Rushkoff describes this transformation as “Digital Renaissance”. With new ways of communication and engagement with our surroundings, the digital technology induced us to reconfigure how we experience the world in order to reconnect with it. “Renaissance moments happen when we experience a shift in perspective so that the stories, models, and language we have been using to understand our reality are suddenly up for grabs. But these renaissance moments are transitory, because as soon as our perspective is shifted, we settle into new convention” (Rushkoff, 2002, p. 17). Not only did digital technology transform the model we lived in, but also provided the opportunity to move outside this model. On the one hand, concepts and relationships which were considered as fixed and unchangeable are now subject to change. For instance, the emergence of ideas such as online shopping, mobile banking, and the new notion of security resulting from CCTVs revolutionized our daily routines (see fig 3 and 4). On the other hand, new ideas and relationships are emerging; digital gadgets such as the Nintendo “Wii” or the Microsoft’s “Kinnect” redefine our relationship with our surroundings technology; now things [computers] can see us!



Figure 3: a new notion of security: on 3 April 2012, a year after being kidnapped by the Chinese government, Ai Weiwei put a series of online 24-7 webcams for his supporters and the security services. "It is the exact day, one year ago, that I went missing for 81 days... So on the anniversary I think people may have worries. It's a gift to them: I'm here and you can see me," (Guardian, 3 April 2012)

The coordination of physical space, traditionally “the space”, and the emerging space of information and media is one of the key parts of this “digital” discourse. Manuel Castells, an urban sociologist, proposes a bipolar model to depict the relationship between the “space of place” and the “space of flows”, and he juxtaposes these two competing domains of human communication (Castells, 1996, p. 440). While this bipolar understanding of the relationship between digital space and physical space would work with the location based internet connectivity of the mid-1990s, the emergence of wireless technology, and specifically smart phones have made physical space and the space of information more interwoven. Smart phone users are constantly connected to the *space of information* while still physically participating in the *space of place*. Instead of considering two competing domains of interaction, “space of place” and “space of flows”, a new blurred and hybrid model of the environment emerges which better represents this coexistence. As Frans Vogelaar argues, the border between physical and media space has been diffused, and our environment has been hybridized. “Interesting as it is to consider urban/ architectural space and the space of information-communication networks as competing, even in a mutually exclusive framework of social interaction, it will be more fruitful to recognize the emerging interweaving of physical space and information space, and the fusion of analog space and digital networks” (Vogelaar & Sikiardi, *Identity*, 2010, p. 523). In this context, the term “Hybridity” refers



Figure 4: Wafa Bilal, an Iraqi born artist and photography professor at the university’s Tisch School of the Arts, as a part of art installation in collaboration with a museum in Doha, Qatar positioned an online webcam on the back of his head. “A project like this is meant to establish a dialogue about surveillance.” (CNN, Dec 2010)

“Time (duration) and space (extension) are now inconceivable without light (limit-speed).”

Paul Virilio, 1997, p: 9

“Today’s society is caught in a moment of complexity and acceleration. Speed, movement and displacement have changed our vision of space, cities and landscape. The rapid development of communication networks compresses time to such an extent that we can no longer build up a clear image of the city or of the living space.”

(Decq & Cornette, 1999), p39

to the fusion of the local and tangible physical space and the intangible and global information networks.

## 1-2 Distraction<sup>6</sup>

In addition to transforming the environment we inhabit, this hybridity has changed human beings and the way we think. Similarly to Charlie Chaplin's film "Modern Times" in which he plays a factory worker who mimics the repetitive actions of the machine, the digital generation that is absorbing the notion of "the net" and the computer is rising. The consequences of new technologies create new methods of thinking and form new lifestyles. As Neil Leach states the computer generation behaves in a similar way to a computer; "They identify with them [computers], play with them, and mimic their operations.... Non-linear, multiple-layer thinking is in –Deleuzian surfing, Fractals, rhizomes and clones, fluidity and flux: these are the buzz words of this new generation" (Leach, 2002, p. 29).

To "sense" and to gain information from the dataflow of information space, wireless devices such as cell phones have become extensions of the human body. Connectivity to the global net, the understanding of our position with GPS systems, interacting with augmented information superimposed on physical space, are some instances of stimuli in physical space which can

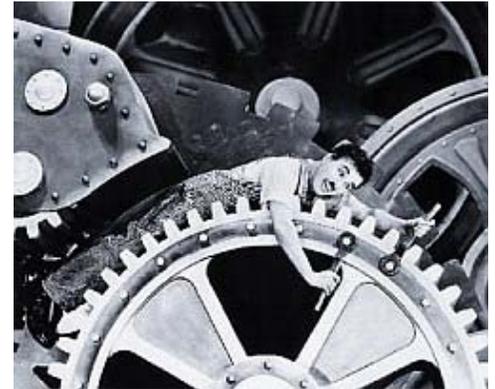


Figure 5: In "Modern Times", Charles Chaplin plays as a factory worker who unintentionally absorbs characteristics of the machine in the industrial era. In this scene, he is literally eaten by the machine.

"The body's inner phantom has an irrepressible tendency to expand, to integrate every sufficiently responsive prosthesis into its motor system, its repertoire of movements, and make it run smoothly. This is why the car is not an instrument of piece of equipment that you simply sit in but something that you merge with."

(Spuybroek, 2008 , p. 33)

<sup>6</sup> Distraction, or the distribution of attention, is a consequence of a new attention regime resulting from hybridization of the lived environment.

be sensed and be interacted solely through these devices. While these portable parts of our bodies bring new opportunities such as ubiquity, we need to distribute our attention to deal with new stimuli. We need to dynamically switch between two distinctive operational logics to deal with the physical space we immediately inhabit and this information space. As Elie During, philosopher and researcher in the notion of space-time, puts it, this “viscosity” leads to distraction. “We are suffering from a new form of mass distraction. The cause of this phenomenon cannot be reduced to an external chaos distracting our minds from much more important and necessary chores: it corresponds to a structural transformation, a new regime of attention (and inattention) that is all more adapted to our technological environment since it is, essentially, induced by it through the massive use of the cognitive prosthetics” (During, 2010, p. 267).

The notion of distraction in architectural discourse is slightly different than in other discourses. According to Walter Benjamin, in any other body of knowledge or art, concentration is the way an object or an idea is understood; however, architecture is mainly perceived by the users in a state of distraction. “Architecture has always represented the prototype of a work of art the reception of which is consummated by a collectivity in a state of distraction “ (Benjamin, 1968, p. 241).

“Distraction and concentration from polar opposites which may be stated as follows: a man who concentrates before a work of art is absorbed by it. He enters this work of art the way legend tells of the Chinese painter when he viewed his finish painting. In contrast, the distracted mass absorbs the work of art. This is most obvious with buildings.

*Walter Benjamin, (Benjamin, 1968, p. 241)*

Even though the notion of distraction has been associated with negative meanings through time, the distribution of attention resulting from tele-technology can be seen as a new skill in this new environment. We manage to deal with physical and information space and according to During we may even intentionally switch between them to have a break from our routine. “Distraction refers not to the inability to concentrate, to mere inattention per se, but rather involves attention directed elsewhere, a concern with the peripheral, marginal, and neglected. Conceived in this way, distraction signals openness to contingency and happiness. Distraction, like losing oneself in a city, is a skill to be learned and honed, it requires that time spent on the “training grounds” (During, 2010, p. 276).

The distribution of attention can be seen as a skill with which we can shape a multi-layered understanding of the space for inhabitants. The inhabitant’s situation would become similar to our daily experience with a computer screen. We probably have more than one active window open and we can dynamically switch between different software and applications with different operating logic; we manage to work on a project, have a quick chat with a friend, check out the news and send a message to a client. Even though it sounds impossible to concentrate on any single task in this situation, this is more or less the way we operate nowadays. We have been trained by our tools and instruments, in this context our computers and cell phones, to

Dutch celebrity physician Ted Troost on the notion of Haptic using an instance of an athlete:

“If he or she learn to make the equipment (such as the ball or bicycle) part of his feeling, he becomes one with that equipment. ... The same applies to the opponent.”

(Spuybroek, 2008 , p. 34)

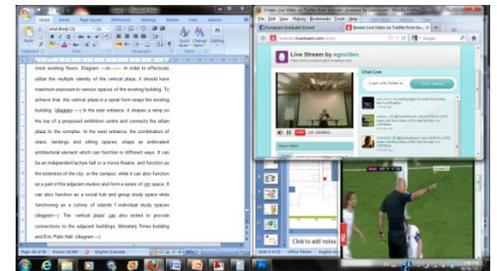


Figure 6: a screenshot of the author’s monitor while writing this essay; in one window a live lecture by Slavoj Zizek is being broadcasted from EGS tweeter account while in another window a live Euro Cup match is being played in silent mode.

“Without even leaving, we are already no longer there.”

*Nikolai Gogol, as is quoted in Virilio 1994, p: 9*

actively distribute our attention between different levels of consciousness, and yet stay concentrated on the main task. The main task is also just a “click” away from being replaced with another task. As During continues “when it comes to the new regime of attention, what is at stake is not so much the dizziness or vertigo that may accompany sensorial hyper-stimulation or informational saturation, as this higher-level skill that enables us to articulate various spatio-temporal frameworks of experience” (During, 2010, p. 270).

In the hybrid lived environment, wireless devices in general, and smart phones in particular work as a sixth sense with which we can communicate with digital stimuli. In other words, in addition to the immediate understanding of our surroundings with the use of our organic senses, with this added digital sense, we can exchange information from mediated stimuli of media space. The distribution of attention for us has become a new skill to deal with our daily routines.

The next chapter investigates how this new attention regime affects the architectural space, and what causes distraction in the physical space. It starts with a brief review of the architecture of the modern era to find out how the architecture of the “screen” generation should differ from the architecture of the “machine” era.

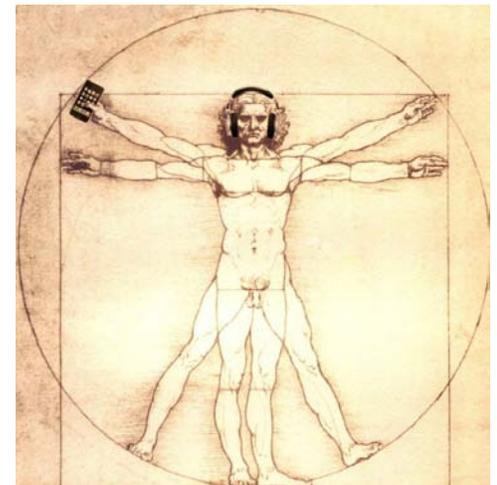


Figure 7: In the hybrid world, it seems hard to imagine Da Vinci's Vitruvian Man without an instrument to interact with the media space.

## Chapter Two

### Tele-technology and the Transformation of Architecture and Urbanism

Physical spaces and objects should not be seen in isolation. Instead, they should be considered in the context of and in relation to the network systems to which they belong.

*Frans Vogelaar*  
(Vogelaar & Sikiardi, Identity, 2010)

## 2-1- Modernism; Functional Architecture and Urbanism

In the mid 1800s, industrialization fostered urbanization in most developing countries. Since the pre-nineteenth century cities were unable to adapt with the pace of transformation, they became disintegrated and dispersed by new forms of energies imposed by new industries. Booming manufacturing plants and factories changed the structural rationale behind this urban growth. With the transportation revolution, factories occupied urban transportation hubs to easily access the global network of market. Moreover, the mass production of cars radically transformed cities, and vehicular access cut through the long-established urban tissue. In order to provide a fast physical connectivity, a series of national networks of expressways, secondary roads, and transportation interchanges were proposed. The evolution of steel and concrete provided new possibilities in construction. As Koolhaas explains, the coexistence of booming economies and rising land prices in strategic parts of cities, the emergence of the structural frame, the Otis safe elevator, the telephone, and the artificial air conditioning system constructed a new urban phenomenon -- vertical reproduction of urban plots or the "Vertical City" (Koolhaas, 1994, pp. 81-82). Furthermore the polluted and inefficient industrial processes shaped compatible

"A city made for speed is a city made for success.

*Le Corbusier, as is quoted in Maas, 2001*

and incompatible functional zones. The necessity of physical interconnectivity in industry and in business intensified the centrality of urbanism in different scales and boosted the generation of homogenous and segregated districts. Visionary proposals, such as “Ville Radieuse” by Le Corbusier, overlaid these different layers of transformation in inner cities focusing on a vertical extension of cities. Proposals such as “Garden City” or “Broadacre City” envisioned the horizontal urban expansion and separation of live-work space to enhance the quality of life in modern cities.

The machine aesthetic of industrial inventions such as cars, and the rational design process of industrial building such as bridges, warehouses, and transportation hubs inspired modern architects to redefine architecture as a machine to inhabit. Since what a machine does is its main identity, function became the priority in modern age architecture. The architect in this paradigm analyses inhabitants’ needs and the context of the project, turns this analysis into a detailed physical program, then translates the function into a three-dimensional architectural object. In the “machine” era, cities and buildings were realized as machines on different scales. Thus the idea of the “functional city”, with an emphasis on segregated functional zones, shaped the majority of cities in the modern era.

“...[F]orm ever follows function.”  
*Louis Henri Sullivan. 1986. p: 14*

With the Information Revolution, and the emergence of the hybrid environment, most contemporary interactions happen

through the constant and immaterial connection to the global net; therefore, most of the modernistic approaches towards architecture and urbanism needed to be revised. In this chapter, the impact of tele-technology on different scales in the architectural discourse will be analyzed:

- First, “tele-presence<sup>7</sup>” and “geographical liberation”, as spatial consequences of ubiquity will challenge deterministic functionalism and architectural authorship of modern architecture. The idea of participatory architecture<sup>8</sup> and “users’ agency” will be reviewed in this part.
- Then, the challenges of the urban economics of the hybrid and the concept of the segregated functional city in the urban transformation section will be discussed.
- The last section will analyse the renaissance of the public sphere.

## **2-2- Spatial transformation: “inhabitants’ agency” and “geographical liberation” as results of “tele-presence”**

### **2-2-1. Tele-presence:**

Telecommunication challenges the concept of “presence” as one of the critical ideas in architectural discourse. As Joshua

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<sup>7</sup> Being present at a distance through a device

<sup>8</sup> Any users’ participation in the design process. In this research, it refers to an architecture which provides opportunities for users to transform it based on their need. Spatial Identities such as privacy, function and access can be modified with active participation of inhabitants.

Meyrowitz notes, “electronic media led to a nearly total dissociation of physical place and social “place” so that where we are physically no longer determines where and who we are socially” (Meyrowitz, 1985, p. 115).

There is no need to be physically present in a space in order to communicate or fulfil a function. Tele-technologies provided the opportunity to meet at distances or to be “tele-present”; therefore, the notion of being “present” becomes ambiguous. Furthermore, the continuous connectivity and superimposition of new layers of augmented reality into the physical architectural tissue have also altered the notion of transition from one space into another. We can physically move through physical spaces and yet be continuously connected to the information space and interact with others through this connection. As Virilio argues, “[C]urrently, with the instantaneous broadcasting revolution, we are seeing the beginning of a “generalized arrival” whereby everything arrives without having to leave, the nineteenth century’s elimination of the journey combining with the abolition of departure at the end of the twentieth, the journey thereby losing its successive components and being overtaken by arrival alone” (Virilio, 1997, p. 16). International communication networks shaped irreversible super connections that operate beyond conventional human understanding of space and time. In addition to communicating with our social circle in a particular physical space, we interact



Figure 8: the paint ball project, an interactive art installation by Wafa Bilal. In an online game, players all around the world tele-control a paint ball gun and shoot the artist. (Bilal, 2008)

both locally and across time zones and cultures via virtual communication networks.

## 2-2-2. Geographical liberation and the versatility of the “function”

The disassociation of the physical environment and the notion of being present leads to the next critical challenge in architectural discourse; telecommunication can lead to an actual liberation from geography. As Virilio argues there is no need to move geographically in order to fulfil different functions; “[W]e are seeing a reversal in trends: where the motorization of transport and information once caused a general mobilization of population, swept up into the exodus of work and then of leisure, instantaneous transmission tolls cause the reverse: a growing inertia; television and specially remote control action no longer requiring people to be mobile, but merely be mobile on the spot” (Virilio, 1997, p. 20). Advancements such as cloud computing have made it possible for users from different locations to cooperate and work on the same projects.

As During puts it, “the gift of ubiquity appears as a dream come true as innumerable interfaces locally implement spatially separate and yet simultaneously unfolding processes” (During, 2010, p. 276). As a result of ubiquity, the function of a space, which used to be its main identity and the main indicator of its form, becomes more versatile. Since there is no need to physically move in a space in order to be present in different

“Without even leaving, we are already no longer there.”  
*Nikolai Gogol, as is quoted in (Virilio, 1997, p. 9)*

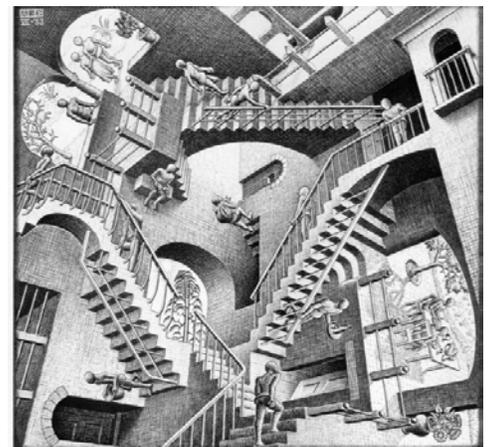


Figure 9: "Relativity" by M.C. Escher. Inhabitants interact without considering their physical axis.

spaces, this “abolition of departure” impacts the homogeneity and purity of space. The transition between contradictory identities of a physical space, as Zellner describes, can happen smoothly based on the inhabitants’ activities. A public space can turn into a colony of private islands of inhabitants using their cell phones while a bedroom of a condominium can function as part of an office with “cloud computing.” “The globalized liquid “soft architectures” of digital media flow over, under and through the local, concrete and “hard architectures” of our contemporary cities, creating an intermediate, “floating” environment, an interface between public and private, collective and subjective, provincial and planetary” (Zellner, 1999, p. 9). Spatial qualities which used to be considered as opposing identities of a space can coexist in a space. As Vogelar puts it, not only is the boundary between public and private space being blurred by hybrid space, the “traditional terms of spatial distinction” are losing their validity (Vogelaar & Sikiardi, Identity, 2010, p. 528). In fact the data flow of the information network determines the identities of the space.

### **2-2-3. The Agency:**

In addition to “geographical liberation” and “tele-presence”, wireless technology transforms the modernistic relationship between the architect, the outcome of the architectural process, and its inhabitants, and advocates “participatory architecture” and “user agency”. Bruno Latour says the world can be seen as a network of interacting agents which are not limited to human

beings. “Anything that does modify the state of affairs by making a difference is an actor.... Thus the questions to ask about any agent are simply the following: does it make a difference in the course of some other agents’ action or not? Is there some trial that allows someone to detect this difference?”( Latour, 2007, cited in Jaskiewicz, 2011, p. 56) The relationship between architecture and its users can also be considered from this view point.

Throughout history, humans and architecture transform and evolve through their interaction. As Jaskiewicz describes, this constant transformation can be vividly seen in “primitive architecture” such as nomadic settlements and slum cities where their environment is in constant transformation which is directly influenced by the needs of the inhabitants (Jaskiewicz, 2011, p. 56). As buildings became more rigid and the construction process became more complex, the ability of the public to transform their environments became more and more limited. Modern architecture, which resulted from The Industrial Revolution, can be identified as the peak point of the disassociation of inhabitants and the building. “Architecture came to be seen as the conscious art of creating massive and perdurable structures and came to see itself as no more than that art, which is one of the reasons for their present problems and uncertainty” (Banham, 1984, cited in Jaskiewicz, 2011, p. 57).



Figure 10: ““Vectorial Elevation” is an interactive art project originally designed to celebrate the arrival of the year 2000 in Mexico City’s Zócalo Square. The website [www.alzado.net](http://www.alzado.net) enabled any Internet user to design light sculptures over the city’s historic centre, with eighteen searchlights positioned around the square. A personalised webpage was produced for every participant with images of their design and information such as their name, dedication, place of access and comments.” (Lozano-Hemmer, *Vectorial Elevation*, 1999)

In general, media space enables amateur urbanites to participate in and to act in some aspects of life which were once the purview of professionals. Broadcasting and publishing are two examples -- wireless technologies have simplified tasks and processes which used to require a group of professionals in order to produce outcomes. Expensive and massive tools and equipment are now minimized and assembled in tiny and inexpensive PDAs. Twenty years ago, it seemed impossible to imagine a platform for the public to broadcast or publish their outcomes, now anyone can broadcast and publish almost anything from anywhere by cell phones. In a similar way in architecture, wireless technologies give the inhabitants the agency to participate in the spatial decision-making process by providing the opportunity to use the physical space based on their needs. In this participatory architecture, the authorship and predetermined identities of a space, such as its function and privacy zones, can be easily modified by the inhabitants.

### **2-3 : Urban transformation, hybridized city**

Cities are confronted by the hybridization process on a larger scale. The smartphone revolution has mobilized the use of the internet for the public and consequently connected physical places and the digital worlds. We carry our cell phones everywhere and they are constantly connected to the global net. The new generation of location-based applications reintroduced the urban tissue as the extension of the digital realm and made it



Figure 11: Similarly to the Mexico installation the Vancouver version of “Vectorial Elevation” allowed users all around the world to manipulate powerful light beams and transform Vancouver’s skyline during 2010 Winter Olympic. (Lozano-Hemmer, Vectorial Elevation, 2010)

“Our societies are increasingly structured around the bipolar opposition of the Net and the Self.”

*Manuel Castells, (Castells, 2004, p. 440)*

possible to play, interact, and even advertise digitally in physical place. Applications such as Foursquare, Google-map, and Layar, augmented a constantly transforming layer of data on the urban tissue and superimposed a new series of territories and functions on the physical urban tissue which is solely communicable via smart phones or PDAs.

Furthermore, the Information Revolution and its infrastructures constantly redefine the conventional urban tissue by introducing anti-spatial connectivity via tele-technology. The duality of virtual and physical connection, as Virilio anticipated, structures the hyper modern urbanism in which the main challenge is to effectively analyze and overlay two types of connection; “today’s urbanists find themselves in a similarly dangerous position. One the knife’s edge between the virtual urbanity of the information machine and the actual urbanity of the city, they are torn between the permanent requirements of organizing and constructing the real space -- with its land problems, the geometric and geographic constraints, of the centre and the periphery -- and the new requirements of managing the real time of immediacy and ubiquity” (Virilio, 1997, p. 13).

This anti-spatial connectivity redefines urban economics as one of the main originators of cities. Fundamental urban definitions such as zones, distance, and neighbourhoods in the “functional city”, which are solely based on physical connectivity, are about to transform. William J. Mitchell, in his essay, *e-Bodies*,

*e-Buildings, and e-Cities*, analyses this impact by categorizing three types of cost (and benefits) associated with assigning particular activities to a specific urban location. Each category creates a layer of composition of urban tissue, and the final architecture and urban pattern in cities is mainly the result of overlaying these layers. All three types of cost, [“fixed costs”, “interactive costs”, and “churn costs”], and the balance between them, are affected by new technologies in different ways. The final result of this metamorphosis, transforms the physical urban tissue (Mitchell, 2002).

The first category, which Mitchell identifies as “fixed costs”, includes costs such as rent and benefits like the pleasure of climatic and scenic attraction, that are directly associated with the locale and are the least affected category by telecommunication. “Interactive costs” result from interaction with other activities such as financial transactions, and “churn costs” are associated with relocating. The most vivid impact of tele-technologies is on the interactive costs where advanced telecommunication technologies diminish the necessity of physical interconnection between spaces and activities; therefore, it is now possible to be tele-present and fulfill a function from a distance (Mitchell, 2002). Even though physical connections between different users are not fully eliminated, and there are still many functions and services which need physical connectivity, temporal linkage between activities is selectively loosened. For instance, although we still need to

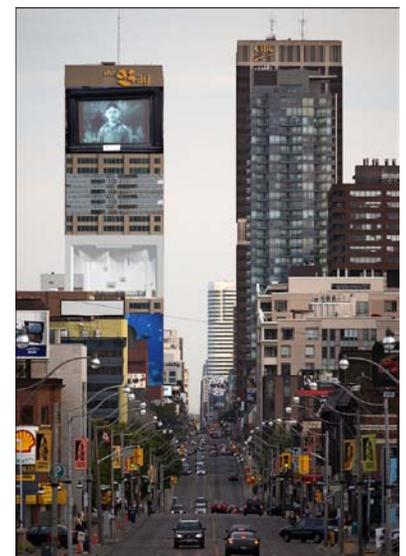
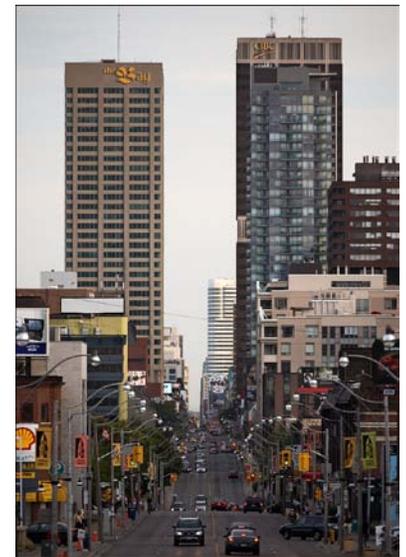


Figure 12a: an urban shot of a function based city resulted from the Industrial revolution. Figure 13b: a possible shot of a hybridized city influenced by the Information Revolution.

physically go to the dentist to get the service, most of our financial activities can take place online. The emergence of online libraries, online movie providers, shopping with smart phones, and transformation of branch banks to ATMs are instances of this change. Not only does the reduction of interactive costs decrease, and in some cases cease, the need of physical connectivity and centrality of urban activities, it also fosters the elimination of incompatible functions in the urban pattern. The aim of “function based zoning by-laws” are to separate residents from incompatible activities such as industrial or office buildings. Virtual communication can potentially decontaminate the physical space by reducing the need of physical connectivity, and dematerialization of a part of daily activities. For example, virtual connectivity decreases transportation pollution and allows industries to fragment their organization so the non-contaminating parts of industries can exist alongside residents. In addition to shaping more effective urban combinations, Mitchell notes such changes can create more efficiencies in today’s economy, and that, “electronic mobilization” also effects churn costs and leads to “dematerialization” and “miniaturization” of needed objects (Mitchell, 2002).

#### **2-4 : Transformation of public space; death or renaissance?**

*Are we experiencing the end of public space? Are we heading towards a “city without streets”? What is the*

*necessity of physical public space in a “Facebook” society?*

These questions show that the emergence of virtual communication platforms challenges the necessity of physical public space by introducing a more convenient way to interact. To anticipate the role of public space in the future of cities, the definition of public space has to be reviewed. Here, the idea of public/private space can be understood as the spatial translation of individual and communal space. Since it deals with territorial claims, the degree of public uses of a place can be defined by a series of spatial terms such as accessibility, responsibility and supervision. By definition, private space is shaped to provide space for a particular series of activities; therefore, it has limited accessibility for particular users who are also responsible for its maintenance and supervision. This particularity makes it easier to anticipate the activities of a private space, even though it cannot be entirely predicted. In Hanna Arendt’s reading of the distinction between public and private space, private space is a place for “labour” and “work”. According to her, “labour” contains “the quotidian process of household” which is necessary to the “biological cycle [not shared] of human existence”, and “work” represents the “shared activity of men and women which fabricates the world”, while public space is the space for “action” which in Arendt’s political theory is the ultimate purpose of human life (Baird, 2011, pp. 28-30). Public space is a platform for a group

“Action and speech create a space between the participants which can find its proper location almost anytime and anywhere. It is the space of appearance in the widest sense of the word.”

*Hanna Arendt, Human Condition, p. 168*

of diverse citizens to engage in a communal activity, or as Hanna Arendt puts it, a place to “appear to others as they appear to me” (cited in Baird, 2011, p. 99). Thus, the nature of the public space is predominantly associated with the nature of the communal activity which is defined in the “real time” with the negotiation between diverse participants. Since the concurrence between multifarious participants is not predictable, the function of public space is unforeseeable. The boredom resulting from the high anticipation and familiarity associated with private space encourages us to participate in the public space to expose ourselves to unexpectedness in order to discover something new. This unexpectedness, which stimulates urbanites’ consciousness of activities in public space, is a key identity of physical public space that is missing in virtual communication. Furthermore, tele-technologies have provided new layers of unexpectedness in physical urban settings. Not only might we be stimulated by components of the physical public space, with the use of the right tools we might get access to new layers of clues and unexpectedness superimposed by the digital space. “Flash mob”, “Location Based Games”, and cell phone applications such as “Serendipitor”(Figure 13) and “Inneract” (Figure 14) are instances of this enrichment.

## 2-5 : Transformation- Conclusion

*How are architecture and urbanism affected by the hybridization of the lived space? Can architecture come to*

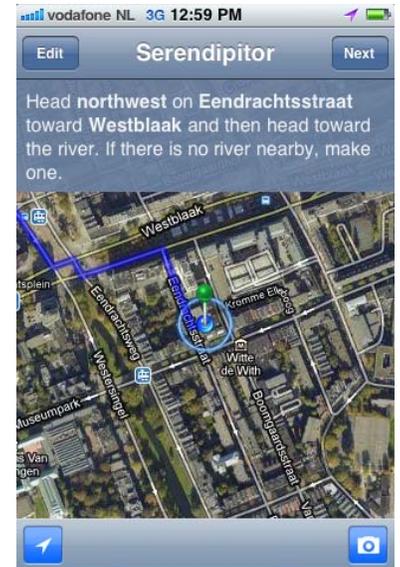


Figure 14: "Serendipitor", is an iPhone app developed by Mark Sheppard. Unlike Google Maps, which always provides the shortest commute, this application recommends different paths based on the available time of the user to roam through the urban tissue, and provides new understanding of the city.



Figure 13: "Inneract", an iPhone app developed by Lauren McCarthy, provides opportunities for virtual unexpected communication with strangers which can lead to physical interaction.

*rescue our attention deficit society? Should architecture accommodate this hybridization? When my cell phone [my computer], as my instrument to engage with the media, is my office, library, movie theatre, school, and I can creatively switch between them, why shouldn't the space I inhabit accommodate these uses?*

To answer these questions, we first need to clarify whether architecture could rescue our attention deficit society, or accommodate this hybridization. Since space is part of the larger environmental picture, this thesis pursues an architectural approach that approximates the simultaneous and distractive aspects of virtual space(s) we inhabit through our devices. Hypothesizing an architectural reaction to this phenomenon requires an analysis of the architectural impact on the hybridization of the environment.

Human beings, and consequently the lived environment, have been experiencing a major paradigm shift as a result of the emerging space of media and information and communication technologies. Mass distraction as augmented by media space over physical space, has shaped a new attention regime in which distribution of attention has become a skill to enable people to deal with the interaction of the two. The identity of a physical space is no longer just fixed and predetermined by the designer. With the constant transformation of our lives and the way we use

"Space does not reflect the society, it expresses it, it is a fundamental dimension of the society, inseparable from the overall process of social organization and social change."

*Manuel Castells (2004, p. 441)*

physical space, wireless technologies augment a fourth dimension of “time”, a “temporal dimension”, in three dimensional space and gives urbanite the opportunity to actively participate in the decision-making process. “The distribution of attention” as the emerging skill of the hybridized world also enables users to engage with the fourth dimension of time in the physical space. In the urban scale, virtual communication has influenced the urban economy and has reduced the need of spatial connectivity. It fosters the ideas of decentralization of the city, fragmentation of conventional compatible uses, and recombination of uses in a more efficient and effective way. Even though the public sphere has also been influenced by the emergence of virtual communication, the fact that physical public space is still the main context of our exposure to unexpectedness and discovery has not changed. Moreover, new technologies can enhance the communal participation of citizens in the public space in new ways; therefore, “renaissance” seems an appropriate term to describe the transformation of public space by tele-technologies.

## Chapter Three

### The “Fourth Dimension” and “Human Agency” in Architectural Space

"The second question might well be "For how long is this useful?" The acceptance of the redundancy of design by the designer is essential. At present it is left to the rest of the community to do this. However, until the designer becomes concerned with determining the rate of redundancy of his design - not merely the life of the product - we will continue to electrify the grandfather clock rather than hand out wrist watches."

*Cedric Price, 2003, p: 14*

### 3-1 Introduction

The amalgamation of time and space does not have a long history in architectural discourse, and until the beginning of the twentieth century, space was perceived independent of time. With the rise of modernism, Sigfried Giedion introduces a new space-time concept based on Minkowski's four-dimensional integration of space and time and Einstein's theory of relativity (Hensel, Menges, & Hight, 2009, p. 19). This spatio-temporal definition of physical space implied a dynamic definition of space. After the formation of space in its temporal context; however, it becomes static and cannot transform through time. So even if a modernistic architectural space has its early roots in time, it cannot attain the transformation speed of its originators. The "pseudo-dynamics of architectural modernism" as Neil Spiller describes, "have left us ill-prepared for the physical and spatial changes that are daily rocketing toward us" (Spiller, 1998, p. 7). With the emergence of the computer, and its ability to analyse and manipulate the physical world in a short time, a true spatio-temporal understanding of space emerged in architectural discourse.

In the following section, critical literature and experiments on the new relationships between space and time, between architects, the building and its inhabitants, and the impact of the new relationships on architectural authorship and the conventional role of architects will be reviewed. It starts with the early literature of the 1960s and 1970s. Although the technologies

needed to realize these ideas were generally unavailable, and most of these proposals were never realized, their conceptual impact on the next generation of architects who were interested in this discourse is unquestionable.

### **3-2 Architecture of the fourth dimensi, a reaction to modernism**

In the 1960s and 1970s, architects such as Yona Friedman, Nicolas Negroponte and Peter Cook were part of a movement which criticized the foundation of modernistic architectural design processes as a deterministic approach. This approach was based on user passivity, and its priority was the function of the outcome of the architectural design process. They criticised the architectural approach in which architects collected and analyzed the project data, and based on their analysis, organized spaces and composed architectural form. The emergence of the computer and its ability to analyse data appeared as a “problem solving” tool to improve design standards in architectural design processes. Acknowledging the problem- solving skill of computers and envisioning the “fourth dimension” of space, Friedman (1975) and Negroponte (1970) proposed design systems in which the transformation of life can be reflected in the architecture. Through a survey of technological architectural experimentation, Peter Cook (1970) challenged the conventional concept of “Architecture”. Two projects by Cedric Price in integrating the main concepts of “data

“Architecture should have little to do with problem solving, rather it should look for desirable conditions and opportunities hitherto through impossible.”

*Cedric Price, 1966*

*As is quoted in Hardingham, 2007, p:11*

flow” of “tele-technologies” and architecture will be reviewed at the end of this section.

### 3-2-1 “Flatwriter”, Yona Friedman

The weakness of deterministic architecture, according to French urban planner and architect Yona Friedman, lies in the designer’s inability to fully analyse the needs of inhabitants and to anticipate the possible future changes in a client’s life. “As an architect my problem is understanding how to assume the responsibility for the design of a building while knowing little or nothing about its users, as well as knowing when it is time to stop so as to leave room for their choices” (2008, p. 23). In his book, *Towards a Scientific Architecture* (1975), while critiquing the deterministic architecture of the modern era, Friedman depicts a scientific and more democratic design process which generates a series of design choices that can serve the future needs of users (figure 15a,15b). Rather than providing a solution, or as he described “a piece of hardware”, the architect is responsible for designing and developing a process which can be responsive to probable changes in time. He developed a system for the computational analytic design machine which he called “Flatwriter.” As Wilken describes, Friedman’s envisioned this machine as a way to generate a catalogue of several million residential plans. Future users were given access to this data to choose the characteristics of the place they wanted to inhabit by answering a series of questions. The machine would generate a

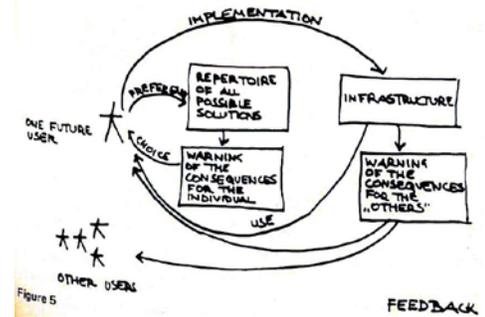
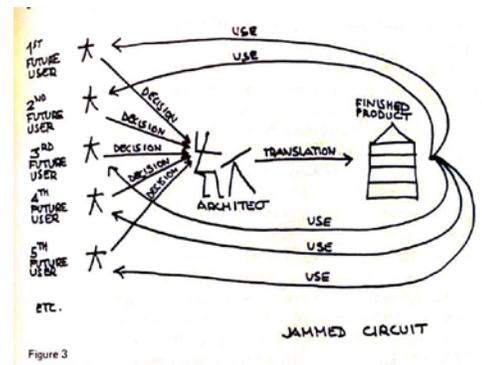
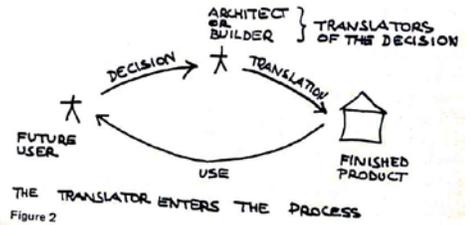


Figure 15a: Diagram which shows the conventional role of architect as the translator client's needs to architectural product. 15b.Diagram shows the weakness of this process in dealing with future users. 15c. Diagram illustrates the proposed process of 'flatwriter'. (Friedman Y. , *Toward a Scientific Architecture*, 1975, pp. 4,5,7)

second versions of data based on the analysis of each inhabitant's inputs (Wilken, 2011, p. 91). (Figure 15c) In eight steps "The Flatwriter" as Friedman describes, "Allows each future inhabitant of a city **a**: to choose the plan and characteristics of his apartment,... **b**: to choose the location of his environment in the city and receive an immediate "construction permit" **c**: to be informed of the particular consequences, directly concerning him and his home, of which new choice or new decision being made throughout the city" (Friedman , 1975, p. 59).

"The new urban society must not be shaped by the urbanist. Social differences between various districts should evolve spontaneously..... The structures that form the city must be skeletons, to be filled in as desired. Additions to the skeletons are dependent on the initiative of every inhabitant."

*Parts of Manifesto of Mobile Architecture, 1956,*

*Yona Friedman, 1999, p: 14, 15*

### **3-2-2 "Architectural Machine", N. Negroponte**

Around the same time Friedman introduced "Flatwriter", Nicolas Negroponte, an American architect and a co-founder of Media Lab at MIT, criticises the deterministic modern architectural design process and takes a similar approach toward implementing new tools in the architectural design process. As he elaborates in the beginning of *Soft Architecture Machines*, he was interested in incorporating computers in the architectural design process to make "the built environment responsive" to the inhabitants (Wilken, 2011, p. 95). "Architecture", he states, "unlike a game of checkers with fixed rules and a fixed number of pieces, and much like a joke, determined by context, is the croquet game in Alice in Wonderland, where the Queen of Hearts (society, technology, economics) keeps changing the rules" (Negroponte, 1970, p. 3). What he proposed is an architecture which can adapt and evolve based on the changes of needs of the inhabitants. In fact, he went

beyond a visionary proposal and with the cooperation of MIT's Media Lab started to develop the necessary software for the "Architectural Machine."

### 3-2-3 "Experimental Architecture", Peter Cook

In 1970, Peter Cook, British architect and co-founder of Archigram, published *Experimental Architecture*, a book in which he aimed to catalogue the notion of experimentation "out of architecture" (Cook, 1970, p. 7) by documenting the late 1960s architectural experimentation with new technological innovations. He reviewed a wide variety of "technologized" spatial organization and analysed critical projects designed by architects such as Arata Isozaki, Archigram, Team 10, Cedric Price, and many others. Technology in his book was used in its broadest meaning, from structural and engineering innovations to tele-technologies. The main theme of this book, as Cook describes, is the "turn to eclecticism" in the reaction to modernistic architectural design; "The word [eclecticism] itself had derogatory implications only a decade ago [1960s] (architecture was to be pure and discriminating), but it now implies a positive openness and absorption of anything that might be useful to a project" (Cook, 1970:14 cited in Wilken, 2011,p 95). As Wilken describes, "Cook's thesis, in effect, is that "experiment in architecture is the disintegration of architecture", at least, this is the disintegration of capital "A" "Architecture", which, Cook suggests, is more the result of a broader architectural disintegration." (Wilken, 2011, p. 96)

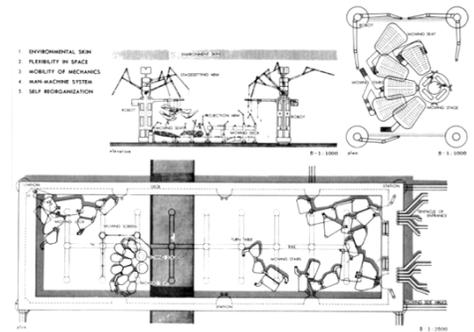


Figure 16a: Arata Isozaki, re-programmable public entertainment area, Theme Pavilion, Expo 70, Osaka. Diagram of principal parts: 4 moving robots, moving stairs, moving seats, Figure 16b: one of robots in action. (Cook, 1970, p. 153)

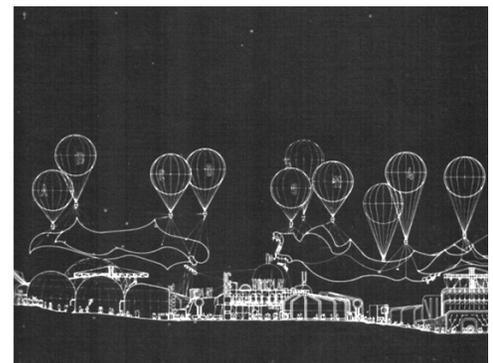


Figure 17: Instant City, Archigram, trucked unit operating in a field, 1969 (Cook, 1970, p. 143)

Cook anticipated that a type of architecture would emerge which is more responsive to the life of its inhabitants. “It is possible to discuss architecture not only as throw-away but as more closely related to a particular situation in a particular time. It can be much more related to the ambiguity of life “ (Cook, 1970, p. 67).

The impact of technology, and specifically the emergence of computers, is apparent in the writings of all three architects, and they have very similar concerns. The common thread lies in their questioning the modernistic architectural design process in which the “Architect” develops a perfect and fully solved “Architecture” based on a comprehensive physical program analysis. In addition to challenging the possible imperfections in this process, and its inability to anticipate the fluidity and ambiguity of the future life of the inhabitants, Flatwriter and Architectural Machine, challenge the role of the architect in this process and suggest that if the role of the architect is to find the best possible solution, a software can fulfil this role more effectively. They both try to redefine the city [and the building in Negroponte’s vision] as a biological system and to revive the organic method of urban growth in which cities and buildings evolve based on the constant negotiation of inhabitants. In both cases, the computer was seen as a problem-solving tool which can analyse data, inhabitants and sensory inputs, and translate them into spatial organization. As Wilken argues, both Negroponte and Friedman intentionally rejected the computer as a

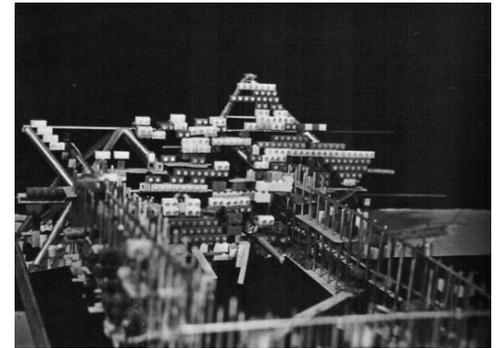


Figure 19: Plug-in City, Archigram, 1966 (Cook, 1970, p. 106)

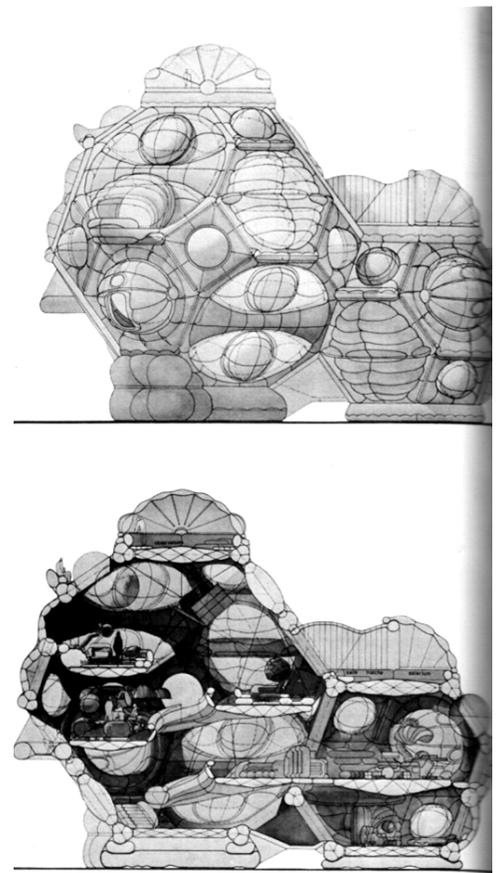


Figure 18: experimental pneumatic house, Jean-Paul Jungman, 1967 (Cook, 1970, p. 60)

representational tool. “For example Friedman warns about “wandering off into visualization”, and Negroponste concurs, arguing that “the picture-making part of computer graphic has obscured some deeper issues” (Wilken, 2011, p. 98).

### 3-2-4 “Fun-Palace”, “The Generator”, Cedric Price

Even though the impact of new technologies can be seen in most of the “experimental architects,” for Cedric Price, the British architect and theorist, tele-technology became an integral part of his design process in projects such as “Fun Palace,” (1960) and “Generator”(1976-79). His projects and design philosophy sought an alternative to the conventional architectural process. More specifically, in reaction to the authoritarian role of fixed function in the architectural design process, he incorporated technologies to pursue unpredictability and multiplicity of use. “Fun Palace”, according to M. L. Lobsinger, was supposed to be a “temporary multi-programmed [and reprogrammable] twenty-four-hour entertainment centre that marries communications technologies and standard building components to produce a machine capable of adapting to the users’ needs and desire” (Lobsinger, 2000, p. 24). It was proposed as a complex comprised of an unenclosed steel frame structure with various movable facilities incorporated with the latest communication technologies to enable self-participatory education and entertainment and promote social experimentation via technological engagement. As he describes, “the creation of temporary, adaptable structures that

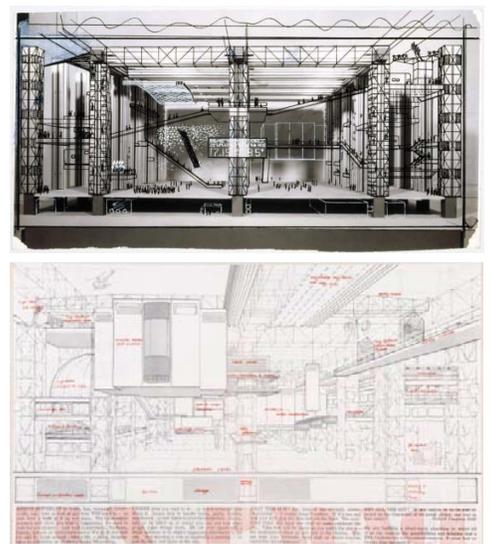


Figure 20a, 20b: Fun Palace, Cedric Price 1960

can be altered, transformed or demolished, serving the need of the moment” [“free space” or “calculated uncertainty”] works as a catalyst to encourage and facilitate social and spatial interaction for and between users [“philosophy of enabling”]. (Price, 2003)

Price developed the idea of multiple use and “free space” further in the Generator Project (1976). As a proposal for a visitor centre for the Gilman Paper Company, it was to be comprised of 150 wooden cubes which could be programmed and assembled in various configurations and create various spatial organizations. A central computer would engage with visitors and based on their choices and their inputs, it would generate the cubes. (Price, 1986, cited in Mathews 2003) “Free space” as he explains, “must be seen not merely as the canvas for a new piece of architecture but as a continuing resource to be fertilised by the introduction of built structuring which does not in itself and through its very form imply a particular use....TIME AND TIMING enable FREE SPACE to become an operational matrix” (quoted in Mathew, 2007, p. 246). Pursuing the idea of “free space” and continuous transformation of architecture led him to challenge and redefine architectural authorship and the role of the architect. “What do we have architecture for? It’s a way of imposing order or establishing a belief, and that is the cause of religion to some extent. Architecture does not need those roles anymore ...I as an architect don't want to be involved in creating law and order through fear and misery. Creating a continuous dialogue with

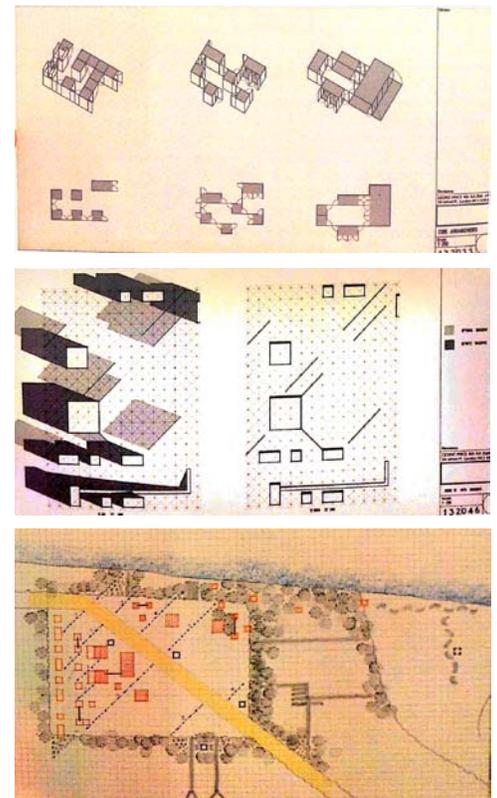


Figure 21a: Axonometric view of cube arrangements, Generator, 1976-1979. 21b: Shadow studies, Generator. 22c: Diagrammatic plan, Generator (Mathews, 2007)

each other is very interesting; it might be the only reason for architecture that is the point" (Price in interview with Hans Ulrich Obrist, Obrist, 2003).

The augmentation of time on architectural space is apparent in both projects. The significance of Price's visionary proposals lies in the fact that they were proposed in the 1960s and 1970s when tele-technologies had just emerged. Ideas such as constant transformation of "free space" and "calculated uncertainty" can be read through the lens of the "data flow" of the information age. Even though they were proposed in the 1960s and 1970s when tele-technologies and computers had just emerged, the architectural system Price proposed mimics the operating system of computers. For instance, Fun-Palace and the Generator both work similarly to a motherboard which provides infrastructure for possible modifications by the user. However, he refuses to use the computer as just a representational tool in his process of thought. He saw the architectural design process as a system in which the architect is the programmer, and the success of the system is in its ability to facilitate possible transformations in the future.

Physical transformation and movement are the main components of these visionary proposals. In both projects, the proposed architecture is a series of elements which processes data in real time and accordingly transforms it physically in real time. Since technologies needed to realize these ideas at the time



Figure 22: "Hylozoic Ground", presented in the Canadian Pavilion in Venice 2010, is simulation of the idea that everything, even objects, has agency and can feel and interact with its surroundings with physical movement. (Beesley, 2011)

were not fully developed, these proposals did not get realized. However, they provided a theoretical groundwork for the next generation of architects to implement the idea of transformation in an architectural space. In a more ecologically aware society, projects such as Philip Beesley's "Hylozoic Ground" (fig22), "Muscle Tower II" (fig 23), a recent experimentation developed by Hyperbody, and proposals such as "Trans-porter" by Kas Oosterhuis, are more contemporary instances in which the data flow can cause actual transformation and physical movement in an architectural element.

### **3-3 Wireless technology, transformation with minimum physical intervention**

By the end of the twentieth century, digital technology became advanced enough to be used by architects to manifest the fourth dimension of space. As Jaskiewicz states, the tele-technological effects on architecture and the spatio-temporal understanding led to two different approaches to architecture -- "participatory architecture" and "autonomous architecture" "in which the "dance of agency" between humans and architecture can be intensified" (Jaskiewicz, 2011, p:57). An "autonomous architecture" [responsive architecture] can comprehend the needs of its users and transform accordingly, while in a "participatory architecture" users and inhabitants engage in the process of spatial transformation and play an active role.



Figure 23: "Muscle Tower II", Hyperbody's morphing tower. (Jaskiewicz, 2011)



Figure 24: "Trans-porter" is a morphing structure which physically transforms based on the needs of its inhabitants. (Zellner, 1999, p. 71)

“Sendai Mediateque” as an instance of participatory architecture and the “Wind Tower” as an example of autonomous architecture, two projects by Toyo Ito are early precedents of integrating media and physical space. Even though in both projects architectural space accommodates the transformation of the information space, the spatial flux is achieved with minimal physical transformation. In the “Wind Tower”, two computers analyse the data of the site, such as noise, and people movement, and translate this into an interactive light projection on the skin. In the Mediateque, with the minimum physical intervention on the fifth floor, a wide range of spatial compositions can be achieved.

With the emergence of wireless technology and constant access to the global net, the majority of needed spatial modification happens in the virtual realm. Without any physical transformation, and simply due to internet accessibility, inhabitants can turn an architectural space into a library, a movie theatre, or use it in any other way with less energy and at a much faster speed.

Projects such as “the Why Factory Tribune”, also known as the Orange Mountain, designed by MVRDV, and OMA's proposal for “Multi-Media Building” for Hong Kong, are successful precedents of participatory architecture without physical transformation of architectural elements. In the “Multi-Media Building” proposal, in order to accommodate the unexpectedness of the future needs of the university, OMA proposed “a flexible

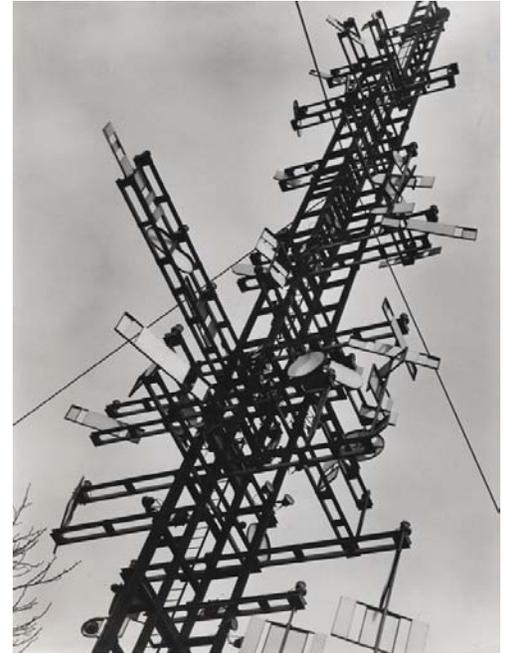


Figure 25 Tour Cybernétique designed by Nicolas Schöffer in 1961, is one of early precedents of an autonomous sculpture piece in which lights and their reflections in the rotating mirrors were controlled and manipulated by a computer. (Habasque & Ménétrier, 1963)

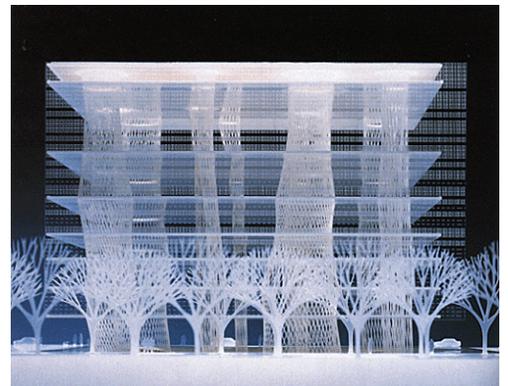


Figure 26 Sendai Mediateque, is designed as a transparent cube in which contemporary media is presented [flexibility, transparency and immateriality], and the boundary between inside and outside is dissolved. Thin floor “plates” float suspended on organic “tubes,” with the four edges sealed with glass facades, “skin”. (Sendai Media Center, 2001)

hardware [physical elements] and a fluid software [programs and services]". (OMA, 2004). In addition to a series of new pieces of hardware and redefining the existing tissue of the school, OMA superimposed a new layer of circulation [corridors, ramps, escalators, and elevator] on the existing buildings. In addition to smoothing the circulation of the school, the added connectors can dissolve into spaces and become part of spaces that they connect based on the needs of students. Similar to the OMA proposal and without any substantial transformation, the "Orange Mountain" works as an amphitheatre, a lecture hall, a series of individual and group study space, and a part of the "Why Factory" department.

Although the idea of an architectural element which accommodates the transformation of its users has an established history in the architectural discourse, the emergence of digital technology and particularly wireless technology can be considered as a turning point in this process. With the gradual enhancement of wireless technology, needed transformations are shifted to the digital realm. "Autonomous Architecture" and "Participatory Architecture" are considered as the main architectural interpretations of this turning point. In the design component of this thesis, participatory architecture will be investigated in more depth. The desired outcome is an architecture which does not physically transform to accommodate the transformation of its users' needs, but has multiple identities which allow the inhabitants to use it in different ways.

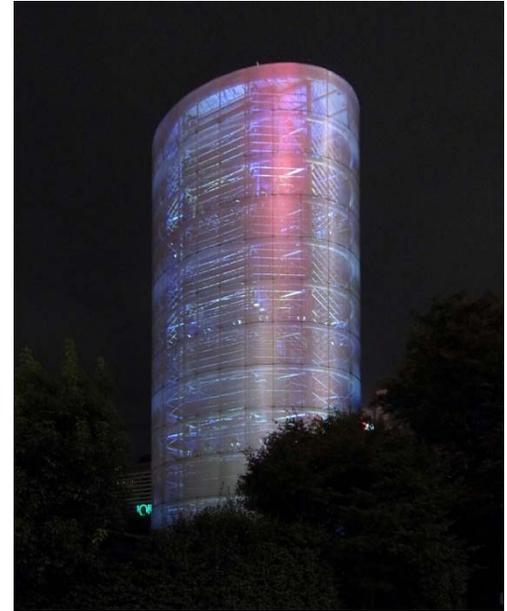


Figure 29: In the " Tower of Wind" project, an anonymous industrial building designed and built in 60's, was turn to an urban icon in which computers translate the surrounding activities into lights and transform the skin of the building. (Tower of Winds, 2008)

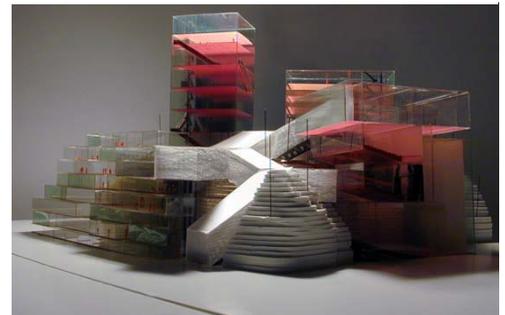


Figure 28: (MULTI-MEDIA BUILDING, HONG KONG KOWLOON, 2004)



Figure 27 (The Why Factory Tribune, 2008)

## Chapter Four

### Design Experiment:

#### Ambivalent Architecture, the Architecture of Distraction

‘Don't know what I want but I know how to get it’  
(Sex-Pistols, 1976)

Dance! Dance! Dance! Otherwise we are lost!  
*Pina Bausch* (Wenders, 2011)

## 4-1 Introduction

The groundwork for the design component of this research includes a review of the terms and ideas which have formulated the analysis of the architecture of this “hybrid world”. This issue, as conceived, begins at the crossroads of three distinct yet interwoven lines (figure 30).

- 1- The new “attention regime”, resulting from the hybridization of the physical space, requires the distribution of attention to enable urbanites to engage with multiple stimuli simultaneously in different layers of consciousness.
- 2- The identity of the physical space is not fixed and predetermined by the designer. [space with multiple heterogeneous identities in flux]
- 3- Wireless technologies provide tools for users to participate in the spatial decision making process.

Based on these three main concepts and the concept of space as a fundamental dimension of society, this research proposes an ambivalent architecture which accommodates this hybridization process, and gives agency to the inhabitants to engage with it in different ways. In this architecture, the architect is the initiator of the spatial decision making process which allows the public to constantly transform the nature of the architectural element with their active engagement with that space. Even though ambivalence is associated with uncertainty, in the context of this research, it refers to contracting and competing identities

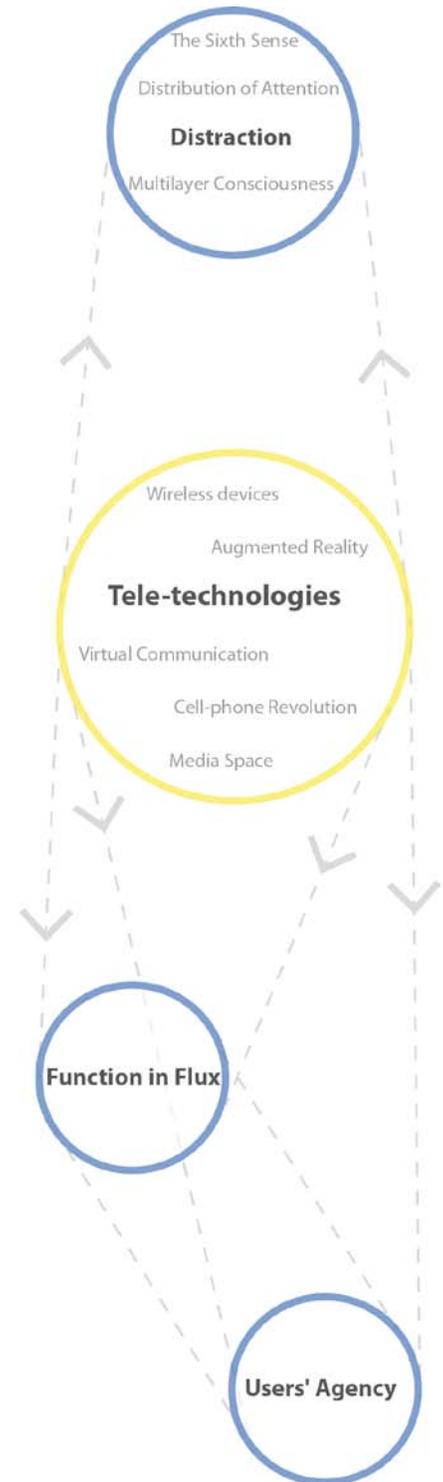


Figure 30: Tele-technologies and their impact of architecture, a conceptual ground work for the design component of this research.

embedded in an entity. Ambivalent Architecture can be defined as an architectural element with multiple embodied identities, which enables inhabitants to engage with its contrasting characteristics and to form diverse spatial formation. Participants' "Idensity"<sup>9</sup> shapes the identity of the space.

Definition of **ambivalence**:

noun

[mass noun]

the state of having mixed feelings or contradictory

ideas about something or someone:

*Oxford Online Dictionary*

Since any physical enclosure causes restrictions, users participation is also limited. For instance, an urban telephone kiosk cannot transform into a stadium simply because it is physically limited to accommodate only one user at a time. Therefore, in order to maximize the spatial transformations of a space, its users have to be fully defined first.

#### **4-2 Typology- Program Selection**

The impact of tele-technologies can be seen in any architectural typology, and "educational space" has been selected as the typology to investigate in this proposal for the following reasons:

- 1- Since the "educational space" in essence works with data and information, the media space and wireless technologies have vividly and thoroughly affected it with a wide range of new possibilities from wireless equipments to online courses and activities.

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<sup>9</sup> The word "idensity", as the hybridization of density and identity, was firstly used by Vogelaar to "address the logics of today's economy of attention." (Vogelaar & Sikiardi, *Idensity*, p. 529) It has roots in contemporary Media and cultural phenomena such as public voting in talent shows. The future of a TV program can change based on the public votes. In other words, public idensity forms the storyline of the TV program.

- 2- Educational space has diverse users with a wide range of possible needs. Moreover, it has a fast user flow; students and researchers get replaced with new users after their study period. In other words, not only do its inhabitants have transforming diverse needs, the inhabitants themselves also change over time.
- 3- Scholars are mostly influenced by tele-technologies.
- 4- Territorially, the educational space has an “ambivalent” identity. It is public in a sense that it is often publically accessible , while it can be completely disconnected from the public on certain occasions.

The educational space in the history of architecture can be defined as a place for users [students] to “gain” information. This process can take place in three main ways:

- 1- The “transferring” of information from a source with more information [professors, teachers, etc] to users with less information [students]. This gaining process led to the generation of more conventional and teacher oriented spaces such as classrooms and lecture halls.
- 2- By (re) creating information in laboratories and workshops.
- 3- By exchanging information with peers and classmates. Social spaces such as cafés, student lounges, and group study spaces, are instances in which students can exchange information.

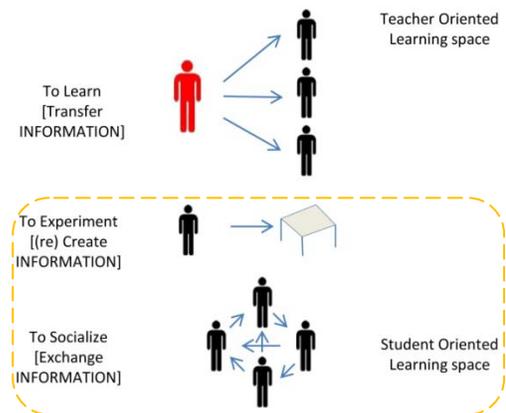
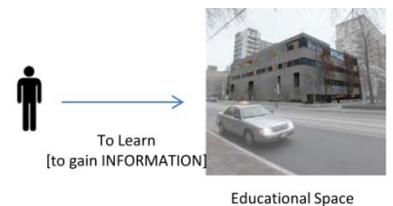


Figure 31: Three main uses of an educational space, in which two main uses of an educational space in tele-topia is bounded.

Constant connectivity to the global net mainly impacted the first gaining process in which information is transferred from professors to students. The internet made it possible for students to reach more information and more easily. The huge success of online courses and learning activities could be a sign of this transformation. Therefore, a more realistic picture of the educational space in the hybrid world functions more as a place to “(re) create” and to “exchange” information (figure 31): similar to a “think tank”, or a multidisciplinary research centre. Educational institutions such as Media Lab in MIT, Science Centre in TU Delft, and trans LAB, founded and directed by Marcos Novak, are shaped as multidisciplinary research facilities with multiple products and accessible to a wide range of users. They offer researchers with different areas of expertise places to gather, work, and interact.

Even though Ryerson University, as a polytechnic educational institution, has a variety of researchers, most research is pursued in an isolated field of knowledge with minimum exposure to other expertise. The Digital Media Zone, the sole multidisciplinary research facility of the university, mainly interacts with the engineering department. This design exercise proposes a new Media, Technology and Art (MTA) research facility for Ryerson University.

### 4-3 Site Selection Process and the brief:

Since the MTA will be the physical research hub for Ryerson University, all facilities which may work with the MTA were identified (figure 32). In the next stage, underutilized spots on and approximate to the campus were listed (figure33).

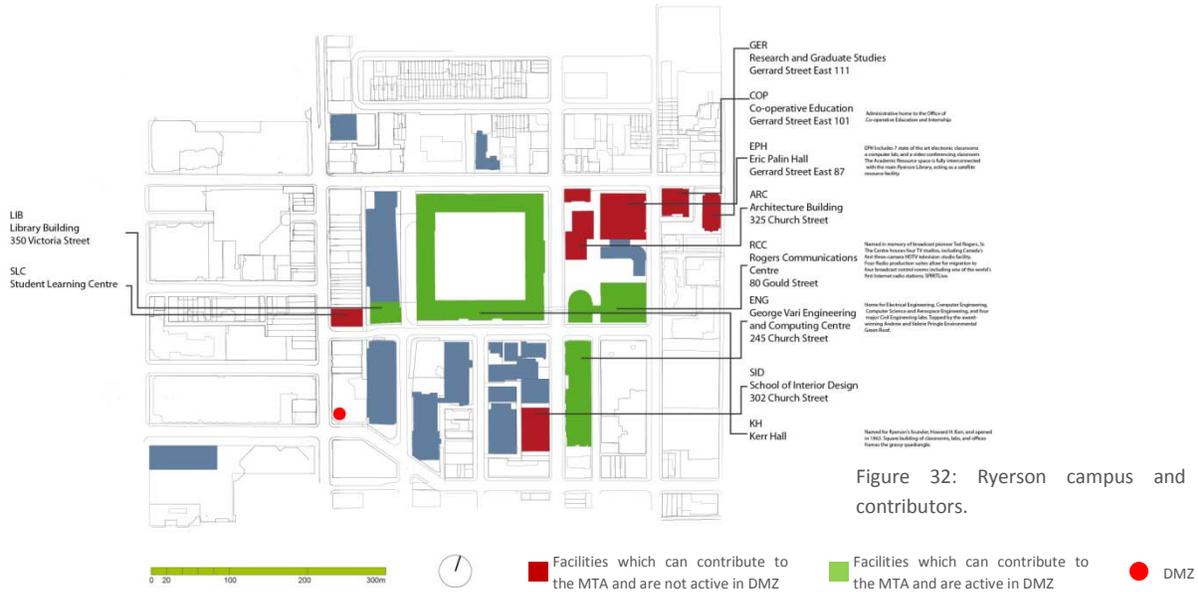


Figure 32: Ryerson campus and potential MTA contributors.

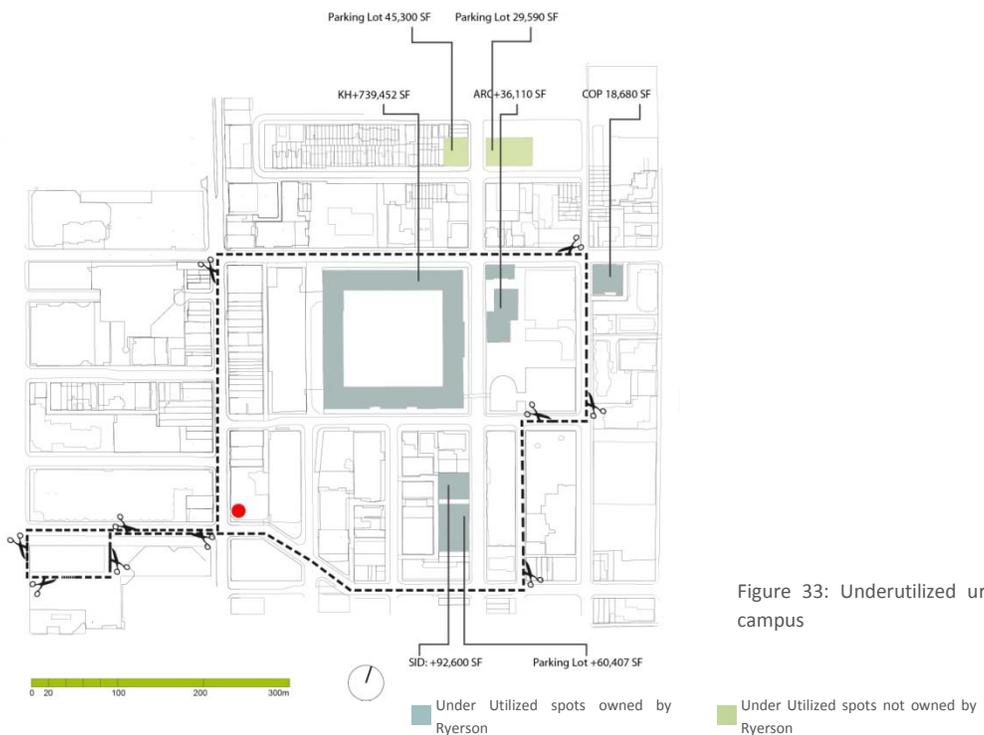


Figure 33: Underutilized urban plots adjacent to the campus

Superimposition of these data led to the next diagram (figure34) which identifies more appropriate areas, the current Architecture building and existing School of Interior Design, accessible from the heart of the campus (Kerr Hall). Future extensions were considered in the architectural and structural design of the existing Architecture Building, making it the best site for the MTA.

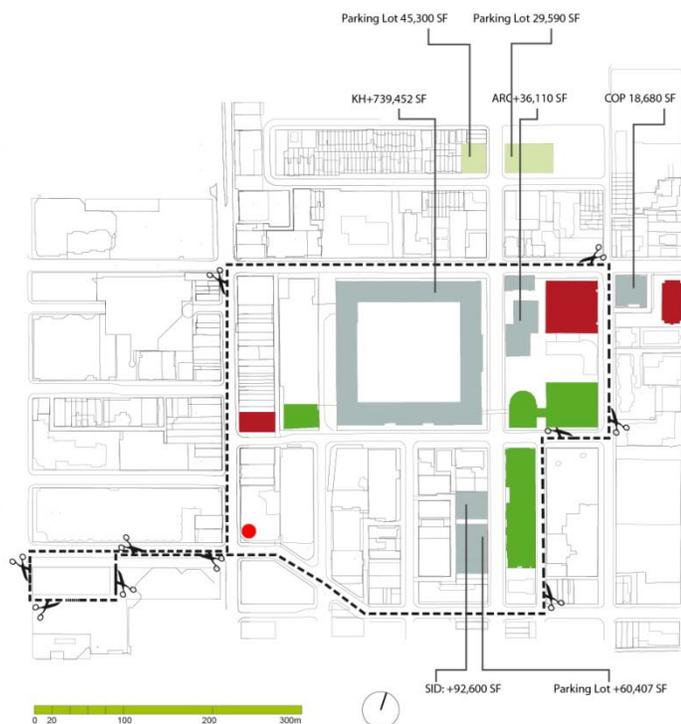


Figure 34: Site selection, synthesized diagram

An available and active site allows this researcher to consider an architectural element with multiple identities. The brief of the project is based on the main conclusion of the research and also on the capability of the site.

The goal of this project is as follows:

*The design of a research facility with an independent identity which can also function as the extension of its immediate context (Architecture building and Ryerson Campus) as well as the neighbourhood and the city [competing identities] based on the needs of its users [inhabitants' agency].*

**4.4 Site Analysis:**

The existing Architecture building is located on the east side of Kerr Hall at the heart of the campus (figure 35). On the south side, an urban plaza works as a hub which connects the adjacent dormitories, the School of Media, (Rogers Communication Centre), Eric Palin Hall, and the Architecture building. The west entrance of the Architecture building is on Church Street and could serve as the gate to the neighbourhood, with the east entrance connecting the building to the rest of the campus.



Figure 35: Site Analysis, Neighbourhood scale

Inside the building, two atriums shape an interwoven vertical circulation path. (Figure 36). The visual connectivity of this

path into the studio spaces, in addition to its generous width, makes a lively temporal social space. An analysis of the existing spaces shows the physical program of the building was developed with a focus on teacher base spaces (Table 1, and figure 36). Therefore, if the extension of the MTA is to benefit the existing building, it needs to provide more student base spaces.

Table 1: Architecture Building Area Analysis

	Ground Floor	First Floor	Second Floor	Third Floor	Total	Ratio
Student Lounge	0	0	0	0	0	0.0%
Cafe	0	0	0	0	0	0.0%
Social Hub	0	0	0	0	0	0.0%
Atrium [Exhibition]	97	97	0	0	194	2.7%
Resource centre	210	0	0	0	210	3.0%
Workshop	672	0	0	0	672	9.5%
Cad Lab	0	0	161	0	161	2.3%
Studio	0	447	673	1297	2417	34.1%
Classroom	158	115	0	0	273	3.9%
Lecture Hall	274	220	0	0	494	7.0%
Office	0	255	580	0	835	11.8%
Circulation+Void+W.C	359	636	356	473	1824	25.8%

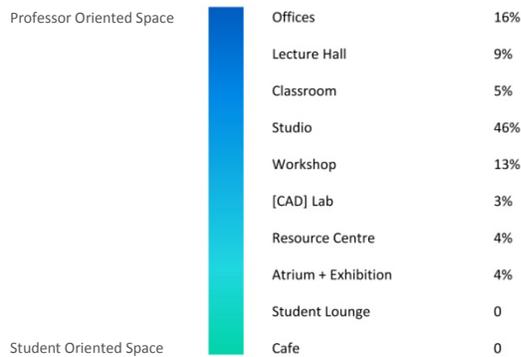
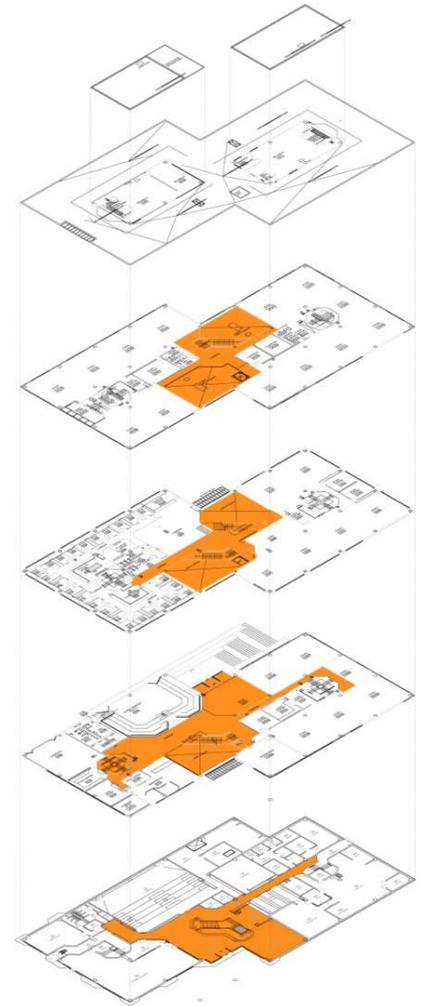


Figure 36: Architecture Building Area Analysis



#### 4.5 Proposed Program Analysis:

Using an analysis of similar precedents, a preliminary physical program was formulated. Based on the project brief, possible users of the extension were identified and the proposed program was categorized accordingly. Figure 38 shows the

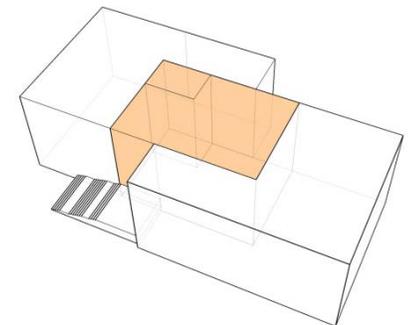
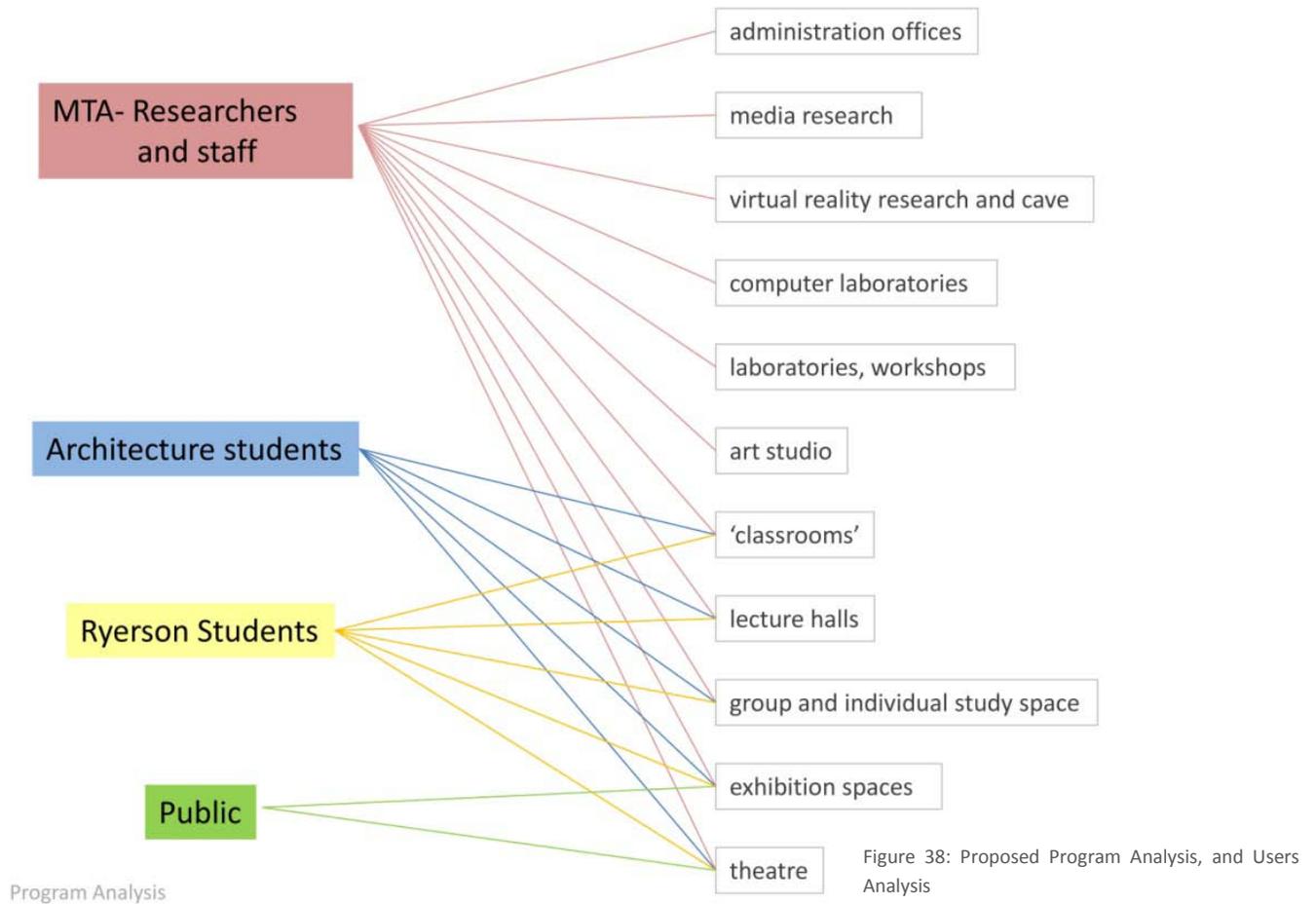


Figure 37a, 37b: Architecture Building Circulation Analysis

accessibility of each space for each user category. Thus, the physical program can fall into two main categories (figure 39):



1- MTA Research Facility: it includes more private and specialized parts of the program which are mainly accessible to staff and researchers.

2- Vertical Plaza: more public and social parts of the program which work as ambivalent architectural spaces form the vertical

plaza. Based on the needs of its users, it can be a part of the city, the neighbourhood, the campus and the MTA.

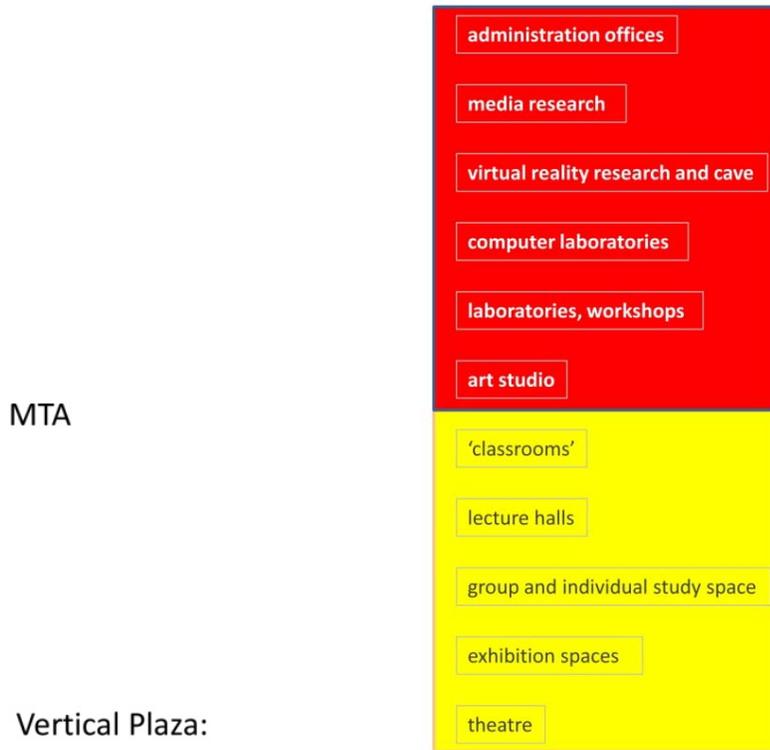
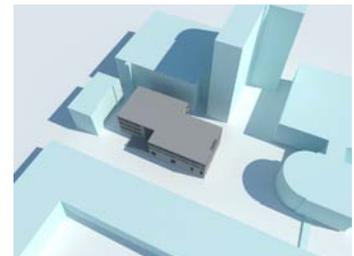
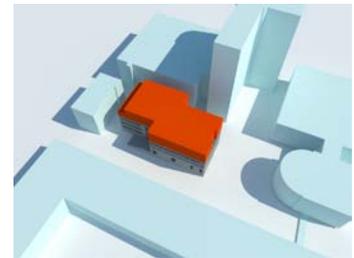


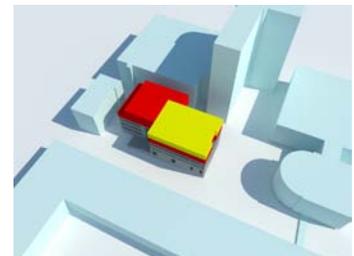
Figure 39: Two main parts of the proposed program



a: existing Architecture Building



b ■ Maximum Extension Allowance



c ■ MTA ■ Vertical Plaza  
Figure 40a-c: Massing Process

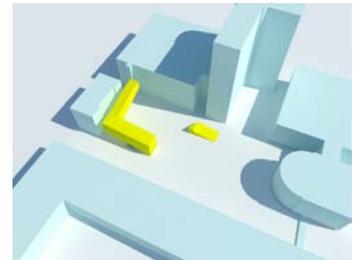
#### 4.6 Massing:

According to the Ryerson University master plan, the maximum allowance of possible extension on the Architecture Building is 36,110 sqf or 3,354 sqm (Ryerson University Master plan, pp 42,43). Considering the footprint of the existing building, roughly 1,700 sqm, the area of the extension would be equal to two more existing floors (figures 40a - 40c). In order to effectively utilize the multiple identity of the Vertical Plaza, it should have maximum exposure to various spaces of the existing building. To

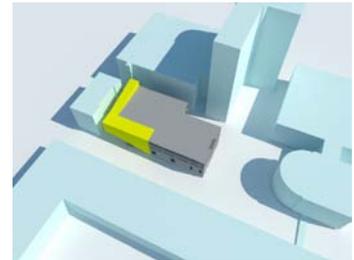
achieve this, the Vertical Plaza is in a spiral form wrapping the existing building (figures 30d - 39e). At the east entrance, it shapes a ramp on the top of a proposed exhibition centre and connects the urban plaza to the complex. At the west entrance, the combination of stairs, landings and sitting spaces, shape an ambivalent architectural element which can function in different ways. The Vertical Plaza can also be formed to provide connections to the adjacent buildings, Monetary Times Building (MT Building) and Eric Palin Hall (EP Hall). The most structurally efficient location for the MTA is where the existing structure can be used; nonetheless, it was shifted to open up a space for the roof garden (figure 39 f-g). The roof of the MTA was tilted toward the north to decrease direct exposure to sunlight and to increase the exposure to north daylight. (figure 39 h).



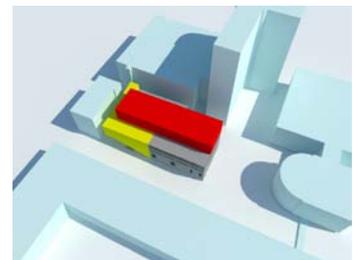
Figure 41d: Final Massing



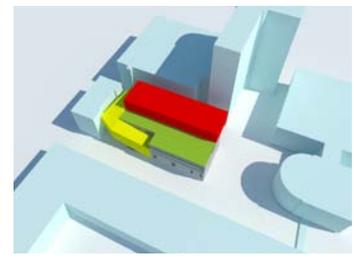
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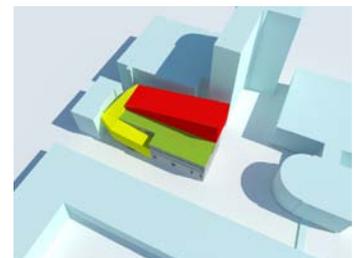
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h

Figure 39d-h: Massing Process

## 4.7 Spatial analysis:

### 4.7.1. The **Vertical Plaza**, an ambivalent boundary with multiple identities:

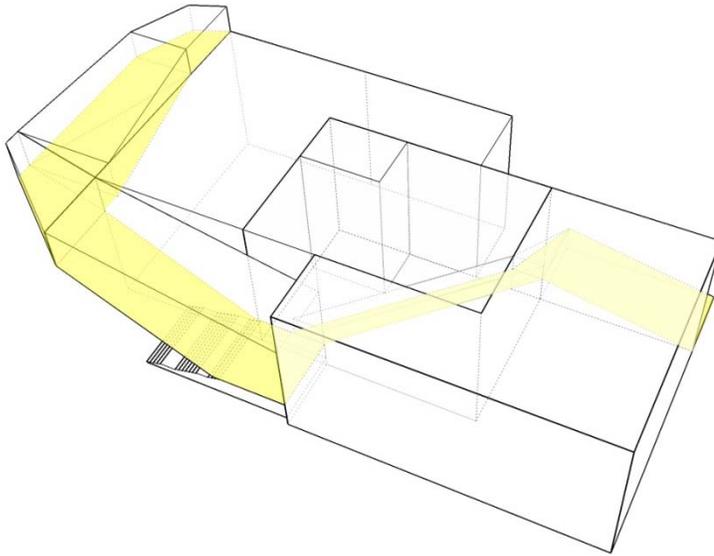
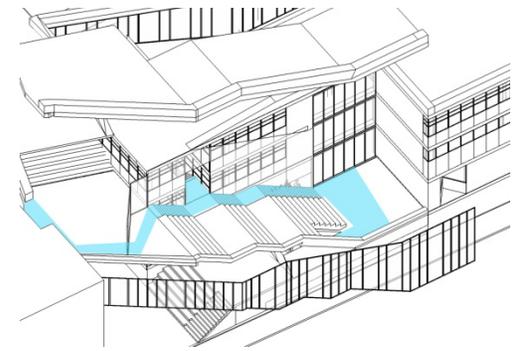


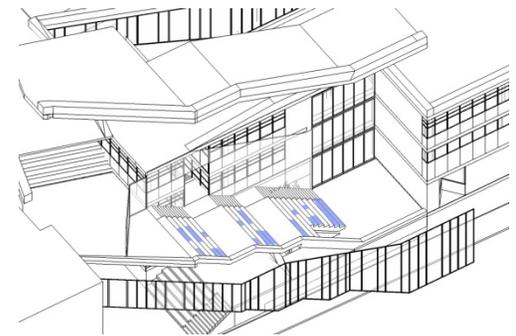
Figure 42: Vertical Plaza

The Vertical Plaza is situated on the boundary of the proposed MTA and its context. At the east entrance, it starts with an exhibition space which can function as an independent space and as part of the existing architecture building or MTA.

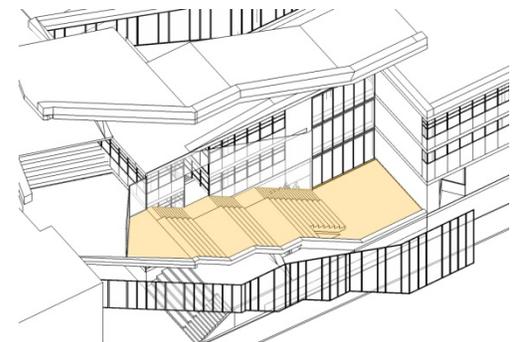
The roof of the proposed exhibition space serves as a ramp to connect the urban plaza to the building. At the west entrance, the Vertical Plaza can be an independent lecture hall or a movie theatre, and function as the extension of the city or the campus, while it can also function as part of the adjacent studios and form a series of crit space, as a social hub and group study space while, or a colony of islands of individual study spaces (figure 42 a-d).



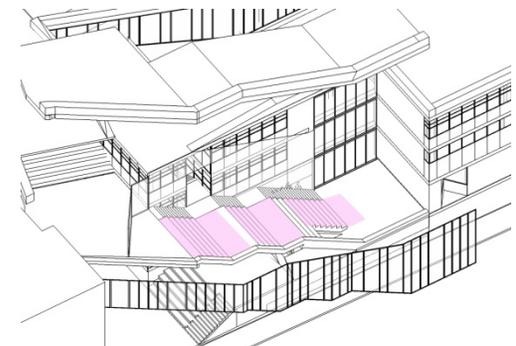
a- a part of the circulation path



b- Individual and Group Study space, Social Hub



c- Lecture Hall



d- The extension of adjacent studio spaces [crit space]

Figure 43a - 42-d: Various characteristics of the Vertical Plaza at the West entrance



Figure 44a: Vertical Plaza Turning to a movie theatre, 43b: Vertical Plaza turning to a series of crit spaces

Since it is situated adjacent to the School of Architectural where students are professionally trained to intentionally engage with the space, students will work as the catalyst in the constant transformation of the Vertical Plaza. In addition to the juxtaposition of various activities adjacent to the existing studios, the controlled transparency of the facade and controlled visual connectivity makes it possible for students to engage in any event on the Vertical Plaza while purposefully distracting them. It also works as a circulation path which connects the existing Architecture Building to the MT Building and EP hall.

Figure 45: Vertical Plaza at the West entrance



4.7.2. The **Roof Garden**: a morphing open space which works as the focal point of the existing building and the proposed facility



Figure 46: Roof Garden, Perspective

More conventional educational institutes may be less active during the summer and spring, but MTA may need to expand in the summer months. Since it does not need to be thermally maintained, an open space may be a more efficient threshold for the possible extension. The roof garden works as the focal point of the existing building, vertical garden, and the MTA (Diagrams). It can also work as an open space to showcase the architectural experiments of the students.

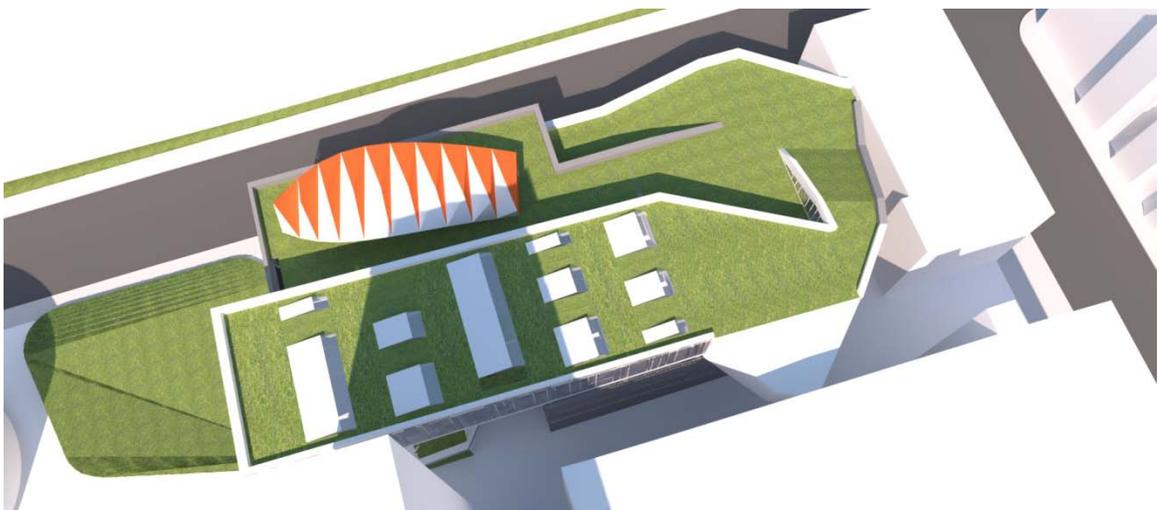


Figure 47: Roof Garden, Birds' eye view

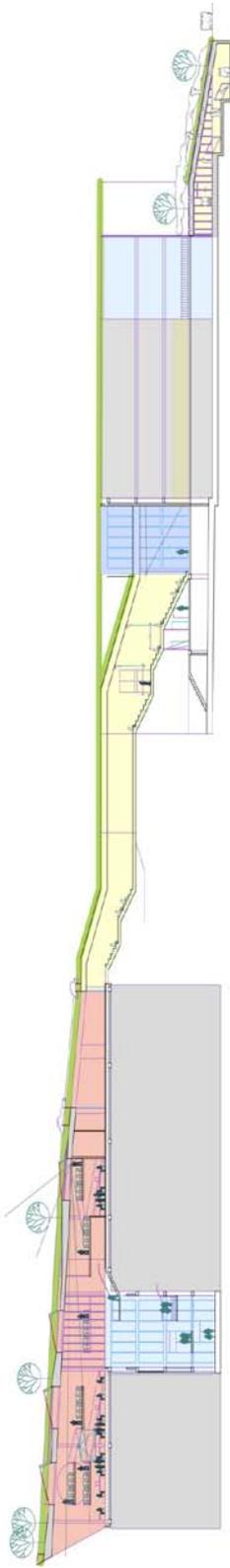


Figure 49: Unfolded section of the proposed extension

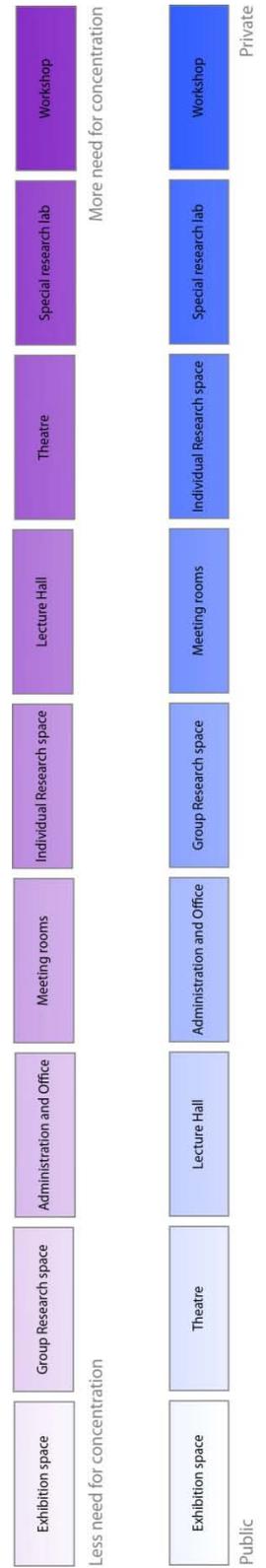
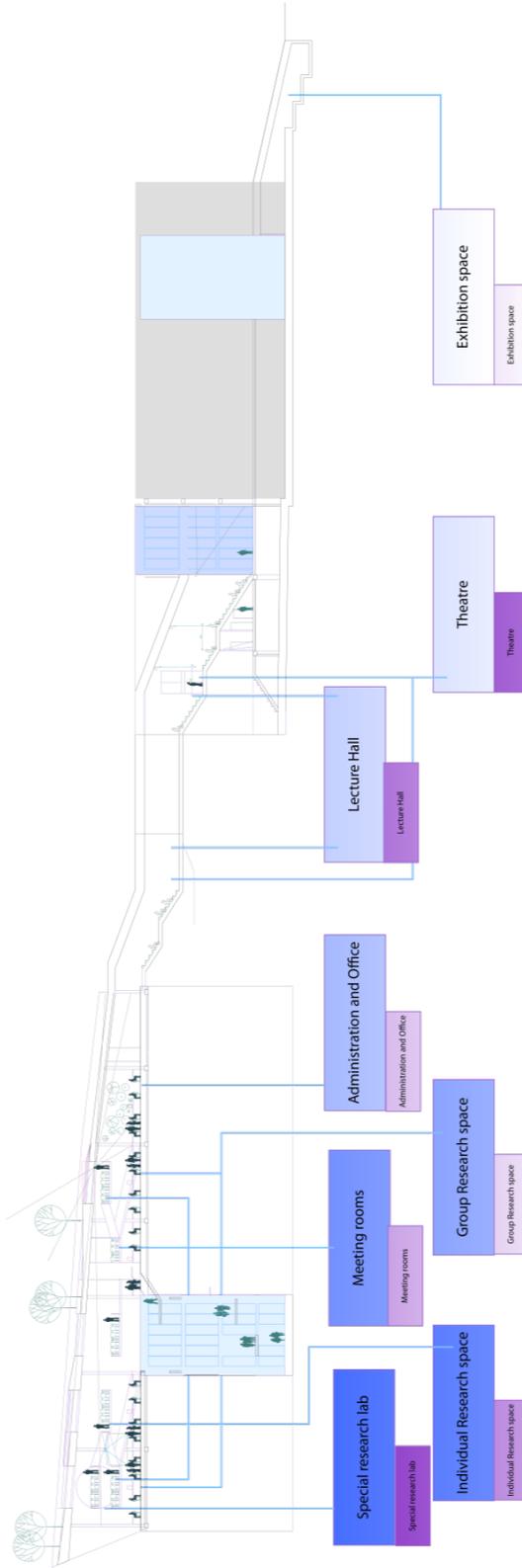


Figure 48: Proposed program Analysis

### 4.7.3. The **Media, Technology and Art Research Facility**



a

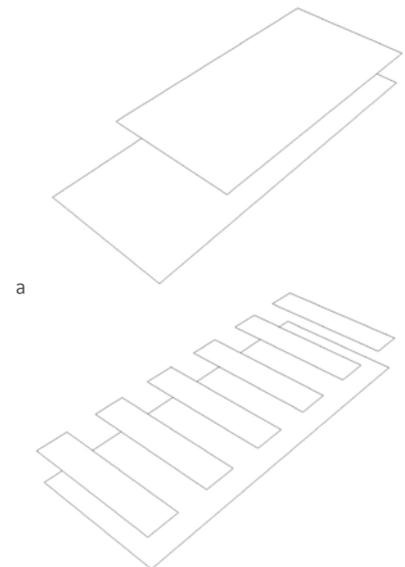
Figure 50a-b : MTA, interior shots

How would the new attention regime impact the lived environment? How could we, as designers and architects, contemplate active distraction as a new skill in our planning strategies? If the distribution of attention enables us to manage a wider range of stimuli simultaneously, perhaps with the new attention regime, we can imagine an architectural platform which exposes its users to multiple physical connections. In other words, bring the convenience of working and altering operation logic on the computer screen into our physical life, and provide an architectural platform in which inhabitants can communicate with each other in various spatial ways.



b

The traditional definition of a research facility may not fit in the new attention regime of the hybridized environment. In the MTA, which is mainly proposed to facilitate the collaboration between various disciplines, multi-layer connectivity of inhabitants leads to unexpected encounters and therefore, unexpected



a

b

Figure 51: MTA Design Process, a: providing maximum visual connectivity, b: bridges, visual connectivity through different levels

collaborations. Even though any potential connection can also work as a potential distraction, inhabitants of the new attention regime are used to distribute their attention to different stimuli simultaneously. The architectural strategy to maximize potential connectivity in different layers was to physically open up the research facility and minimize the physical partitions. Maximum visual connectivity leads to maximum potential connections and consequently potential interactions and collaborations. As shown in figures 51a-b, the needed space was organized to maximize visual connectivity. The tilted roof provides the opportunity to shift the second floor bridges vertically to shape different levels of privacy and concentration. (figures 51c-d, and 52)

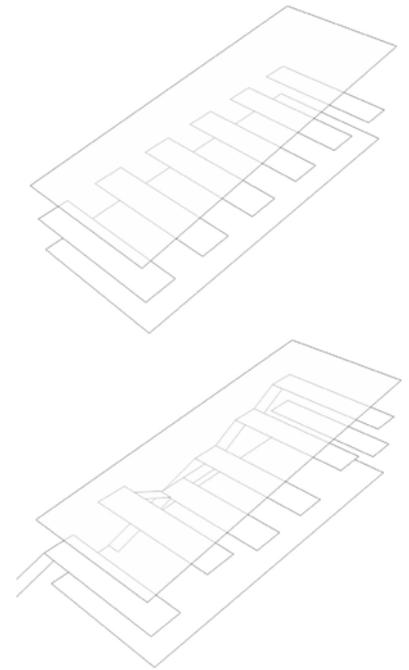


Figure 51 c-d : MTA Design Process, tilted floor allows different positions for bridges. Bridges are connected to the main floor and each other via ramps.

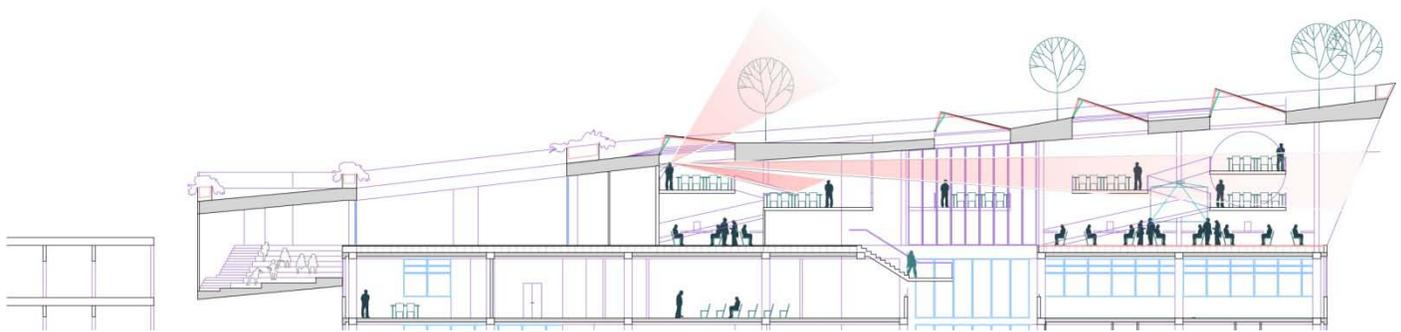


Figure 52: MTA longitudinal section

#### 4.8 Envelope and Materiality:

Since the activities inside the Vertical Plaza and the MTA are versatile and transform based on their users, the envelope also needs to accommodate and represent this transformation. The initial idea was a geometrically morphing facade, which could be programmed to adjust the transparency and the light of the internal space (figure 53a-b). Using the same approach, another

facade was developed in which the needed transformation is embedded in the material itself. "Opaque smart e-foils" developed by studio Roosegarde in Rotterdam can be programmed to become increasingly transparent. Therefore, the exterior and the interior boundary of the VP and MTA are covered with this material to provide morphing transparency. (figure 55a-b, 56a-c, appendix 2)



Figure 56: a-c Facade's Transformation based on the activities

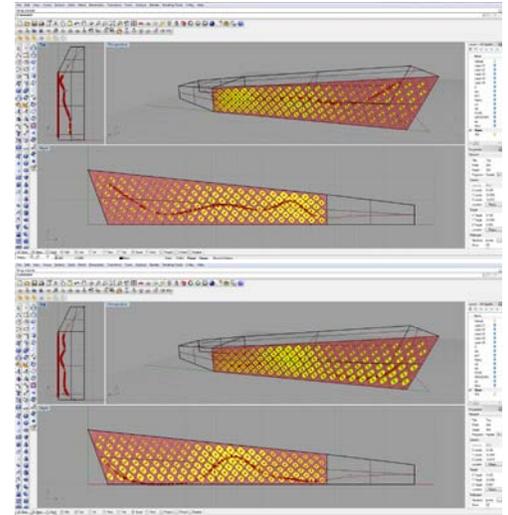
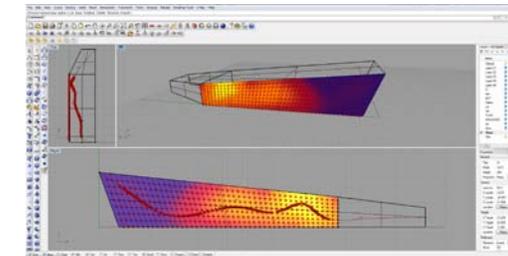
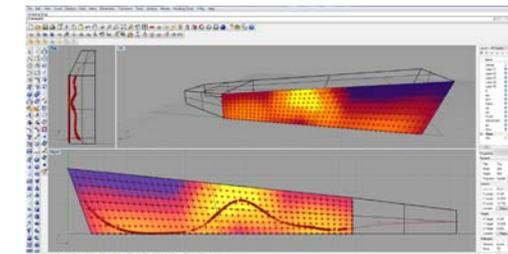


Figure 53 Initial envelope concept, physically morphing facade



■ Minimum Transparency ■ Maximum Transparency

Figure 54: Finalized Envelope concept. Morphing facade with morphing material



Figure 55a-b : "Intemacy". Programmable Material developed by Roosegarde Studio (Roosegarde, 2011)

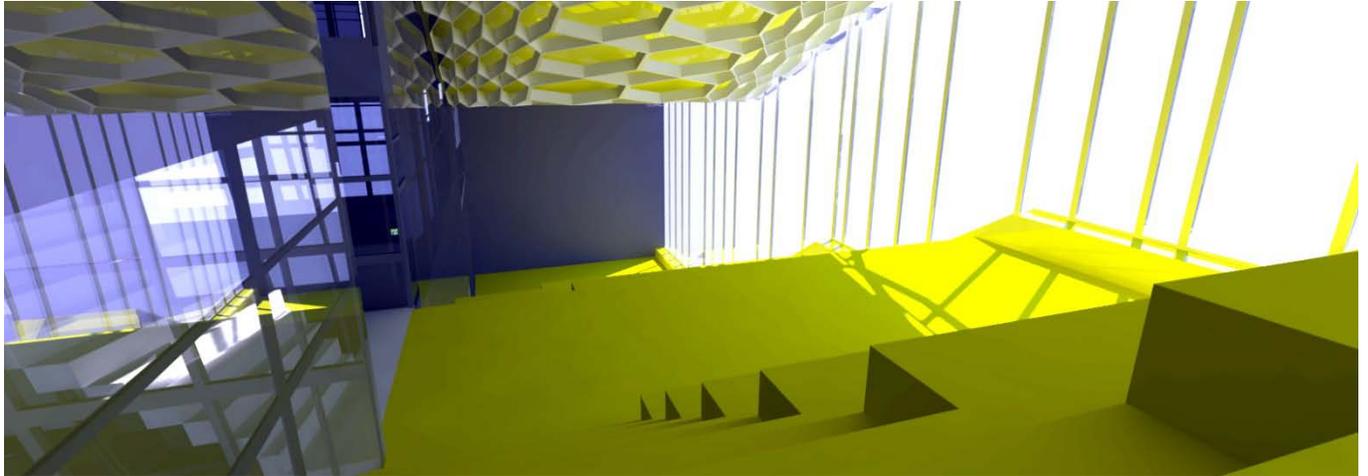


Figure 57: Vertical Plaza at the West entrance

The Vertical Plaza introduces a new layer of circulation path through and within the Architecture Building, the EP Hall, and the Monetary Times building. The resultant circulation path enhances social encounters and makes the buildings, especially the Architecture Building and the Vertical Plaza more permeable. Considering the versatile function of the Vertical Plaza and that in some cases this circulation path may get interrupted by other activities, the existing circulation network can work as an alternative path.

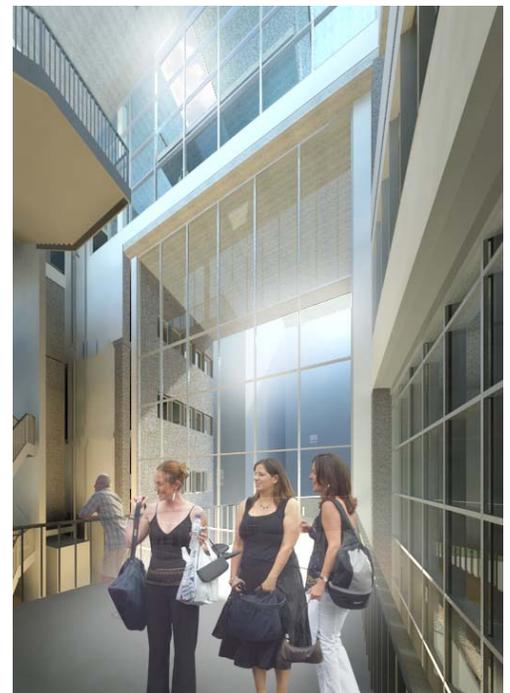


Figure 58: Existing Vertical circulation path, and its extension through MTA

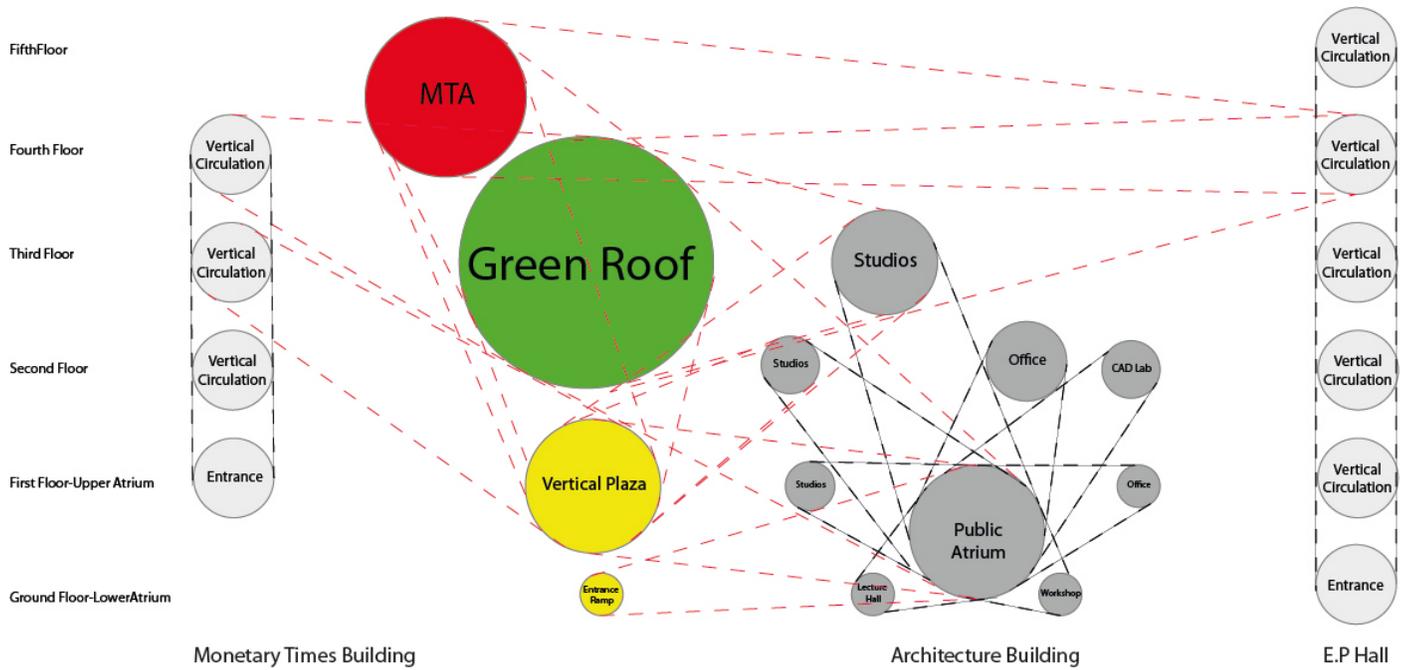
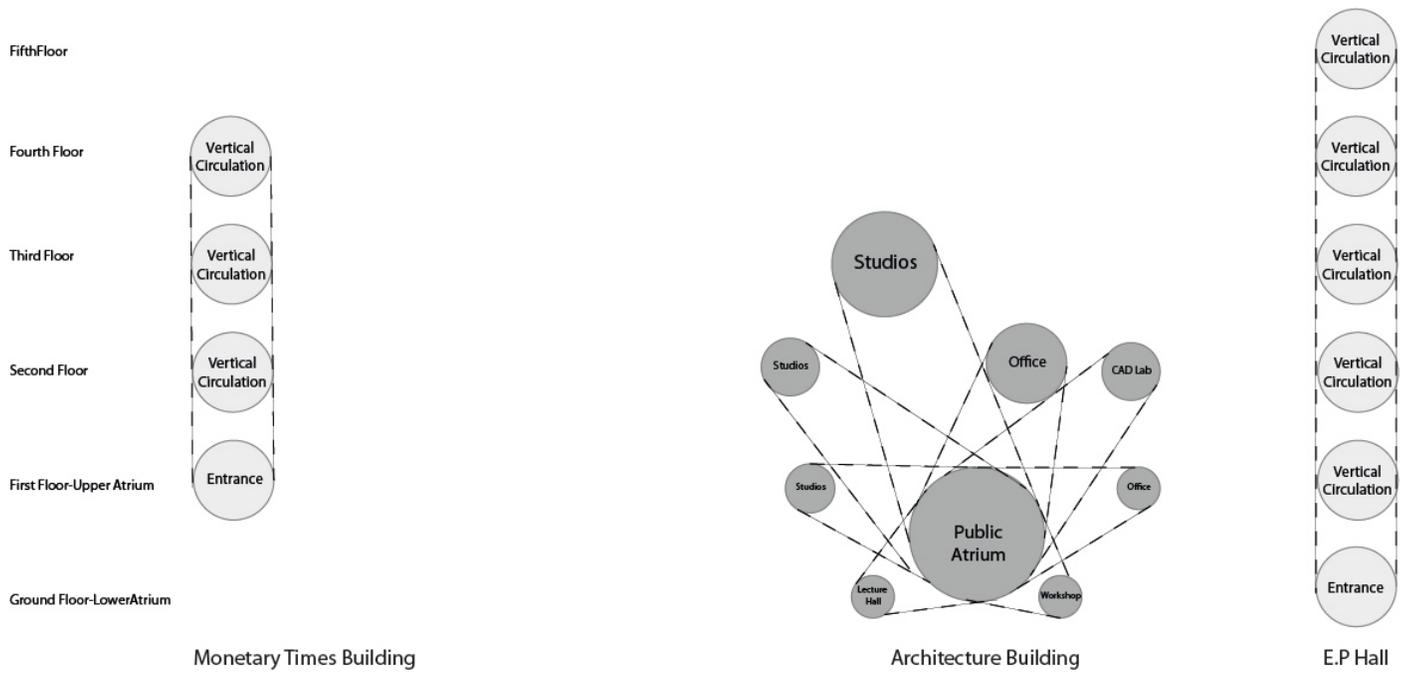


Figure 59: Existing Vertical circulation path and the superimposed circulation Path

## Speculation and Questions Beyond this Research

By means of the mimetic impulse, the living being equates himself with objects in his surroundings.

*Adorno* (Leach, 2002, p. 25)

We become what we behold.

*Marshall McLuhan* (1964, p. 33)

## 6.1 Speculation

This research attempted to explore the architectural impacts of the hybrid environment resulted from the fusion of media and physical space *to find an architectural approach that approximates the simultaneous and distractive aspects of virtual space(s) we inhabit through our devices*. In addition to introducing toolsets to work with, technologies provide rule sets to think within. As Adorno argues, we identify our tools by mimesis; we become more similar to the technologies we use (Leach, 2002). Main result of the mimesis of tele-technologies and wireless devices can be identified as multi-layer processing. We need to actively distribute our attention to deal with two distinctive operating logics, physical and virtual, in our daily life. Therefore, distraction becomes a new skill in the new hybrid environment. I believe architectural transformation is a part of social metamorphosis, and rather than resistance, it needs to accommodate, even facilitate, the hyper-connectivity of the cyber space in the physical world. Thus, architectural impacts of the new attention regime [versatility of function and inhabitants' agency] were identified. In the design experiment which was formulated to create physical spaces that operate the way the internet does through simultaneous presence and permeable circulation, these theoretical ideas were investigated more in depth in the design process of a creative space [a think tank].

We shape our tools and thereafter our tools shape us.

Marshall McLuhan (1964, p. 8)

In order to better layout the groundwork for further research, a series of architectural techniques which were implemented to create new forms of collective physical spaces can be extracted:

**- Promoting continuous space:**

Promoting continuity and dissolvable boundaries makes functional zones and activities more intermingled; therefore, the function of a continuous space is more versatile. Spaces with contracting identities can melt together to shape a whole.

**- Visual connection and juxtaposition of activities:**

As a result of new attention regime, inhabitants are trained to distribute their attention in different layers of consciousness while focusing on the main task. Therefore, activities which used to be considered as distracters, are not necessarily unpleasant anymore. In other words, visual connectivity to heterogeneous activities not only does not distract inhabitants, but it also provides opportunities for unforeseen interactions. The awareness of activities in adjacent spaces gives the agency to the inhabitants to engage with different activities in different layers of consciousness.

**- Permeability of circulation and proximity of programs:**

**- Hybrid zones:**

Since most of needed transformations to alter the identity of a space now take place in the virtual realm, hybrid zones with competing identities can efficiently and effectively facilitate the

transformation process. Take the Vertical Plaza as an instance; the simple combination of a dynamic circulation path and a social study space, with a series of static uses such as lecture hall, and crit space in an entity, made it possible for its users to easily transform it with minimum physical alteration.

## **6.2 Further research:**

Some questions for further research include:

- Can architecture resist against the mass distraction forces of the media age? And if it can, how could it fulfil this role?
- This thesis mainly explored the architectural transformation in a creative space. What are main impacts of this transformations in other typologies such as housing, hospitals, and retails which are effected differently by media space?
- Considering mass distraction with its positive and negative consequences as an inseparable outcome of the hybrid environment, can we as architects and designer optimize this phenomena in different typologies?
- How does distraction affect public engagement in the physical space?
- Can active disconnection become a strategy in the architectural design process?

## **6. Appendices**

## **Appendix 1:**

### **Glossary of Terms:**

#### **Agency:**

The ability to act in the world

#### **Ambivalent Architecture:**

Ambivalence in the context of this research refers to contracting and competing identities embedded in an entity. Ambivalent Architecture can be defined as an architectural element with multiple embodied identities, which enables inhabitants to engage with its contrasting characteristics and to form diverse spatial formation.

#### **Autonomous Architecture:**

Autonomous architecture [responsive architecture] can comprehend the needs of its users and transform accordingly.

#### **Distraction:**

Distraction, or the distribution of attention, is a consequence of a new attention regime resulting from hybridization of the lived environment.

#### **Hybridization Process:**

See Hybridity.

#### **Hybridity:**

The fusion of physical and media space.

#### **Idensity:**

The hybridization of density and identity, was first used to "address the logics of today's economy of attention." (Vogelaar & Sikiardi, p. 529) It has its roots in contemporary Media and cultural phenomena such as public voting in talent shows.

#### **Participatory Architecture:**

Any users' participation in the design process. In this research, it refers to an architecture which provides opportunities for users to transform it

based on their need. Spatial Identities such as privacy, function and access can be modified with active participation of inhabitants.

**Tele- presence:**

Being present at a distance through a device.

**Tele-technology:**

An umbrella term to cover any technology which enables its users to act in from distance (e.g. telegraph, Internet communication). In this research, it particularly refers to wireless technology and the constant internet connectivity resulting from the emergence of smart phones.

**Teletopia:**

“Teletopia” refers to a society in which everyone can be simultaneously connected with their social circle and virtually attend in different spaces and fulfill different tasks. (Virilio, 1997)

**Users' Agency:**

In the context of this research, users' agency in an architectural space indicates inhabitants' ability to participate in the spatial decision-making process.

## Appendix 2:

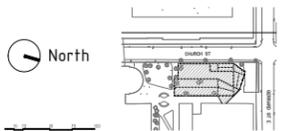
### Drawings:

Sheet Name	Description
Ap2-01	Ground floor plan
Ap2-02	First floor plan
Ap2-03	Second floor plan
Ap2-04	Third floor plan
Ap2-05	MTA main floor plan
Ap2-06	Sections A, B
Ap2-07	Section C

PROJECT :  
 Ryerson Media, Art, and  
 Technology [MTA]  
 Research Facility

COMMENTS :

LEGEND :

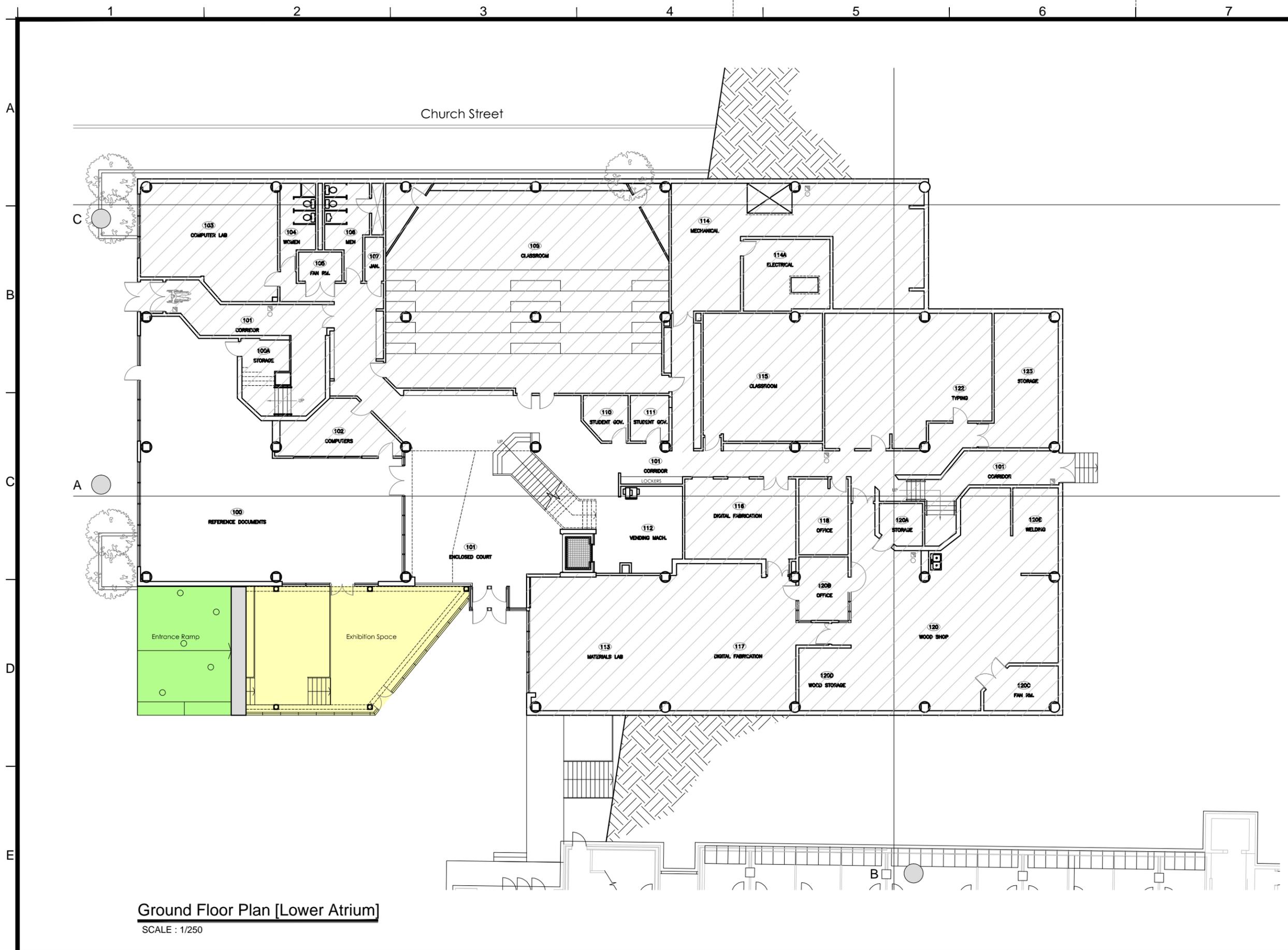


- Existing Arch. Building  
[Physically untouched]
- Vertical Plaza
- Roof Garden

SHEET TITLE :  
 Ground Floor Plan [Lower Atrium]

SHEET NO. AP2-01

SCALE: 1/250



**Ground Floor Plan [Lower Atrium]**  
 SCALE : 1/250

PROJECT :  
 Ryerson Media, Art, and  
 Technology [MTA]  
 Research Facility

COMMENTS :

LEGEND :



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 [Physically untouched]

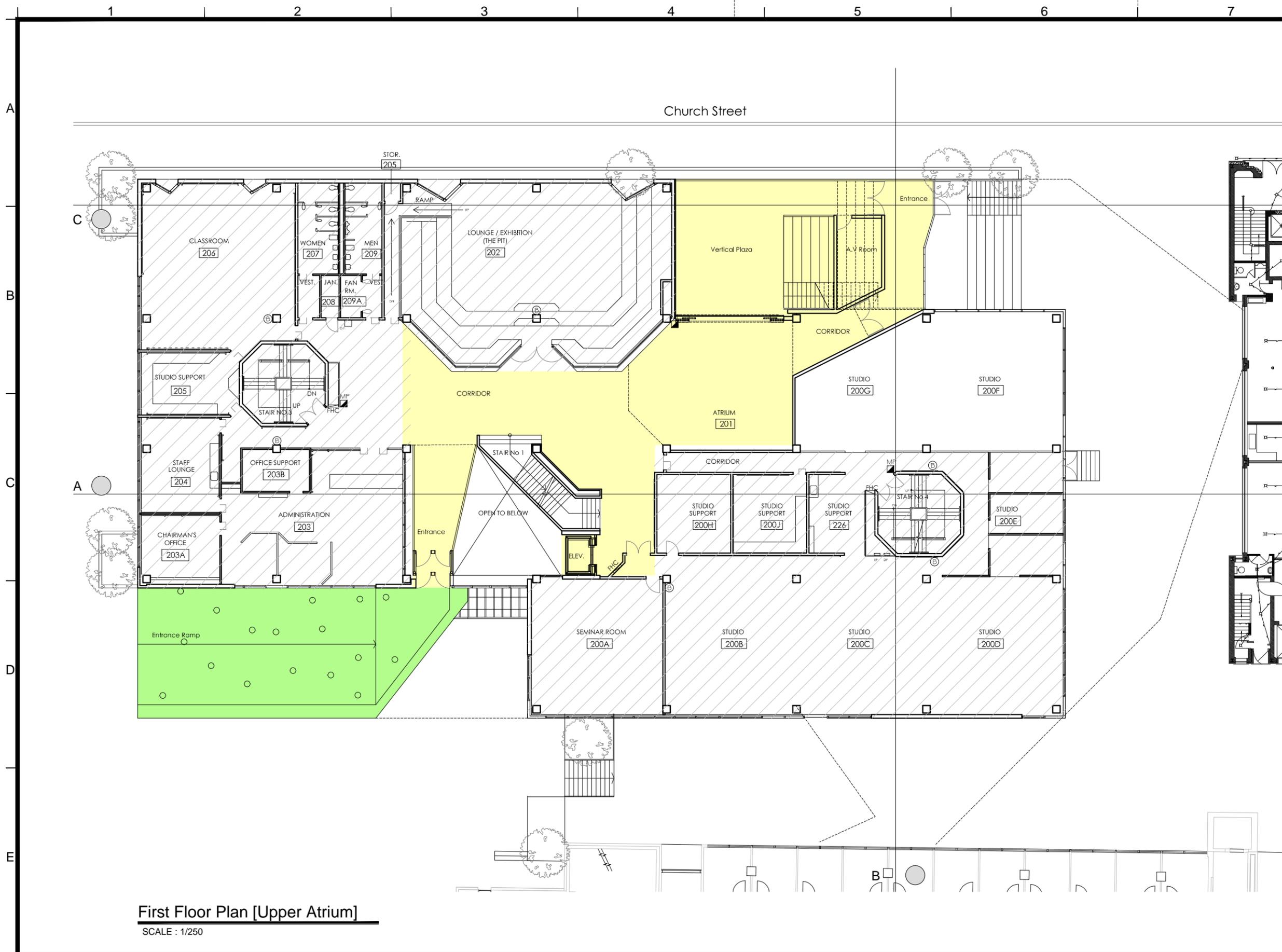
Vertical Plaza

Roof Garden

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 First Floor Plan [Upper Atrium]

SHEET NO. AP2-02

SCALE: 1/250



**First Floor Plan [Upper Atrium]**

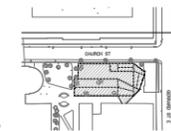
SCALE : 1/250

Church Street

PROJECT :  
Ryerson Media, Art, and  
Technology [MTA]  
Research Facility

COMMENTS :

LEGEND :



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[Physically untouched]



Vertical Plaza



Roof Garden

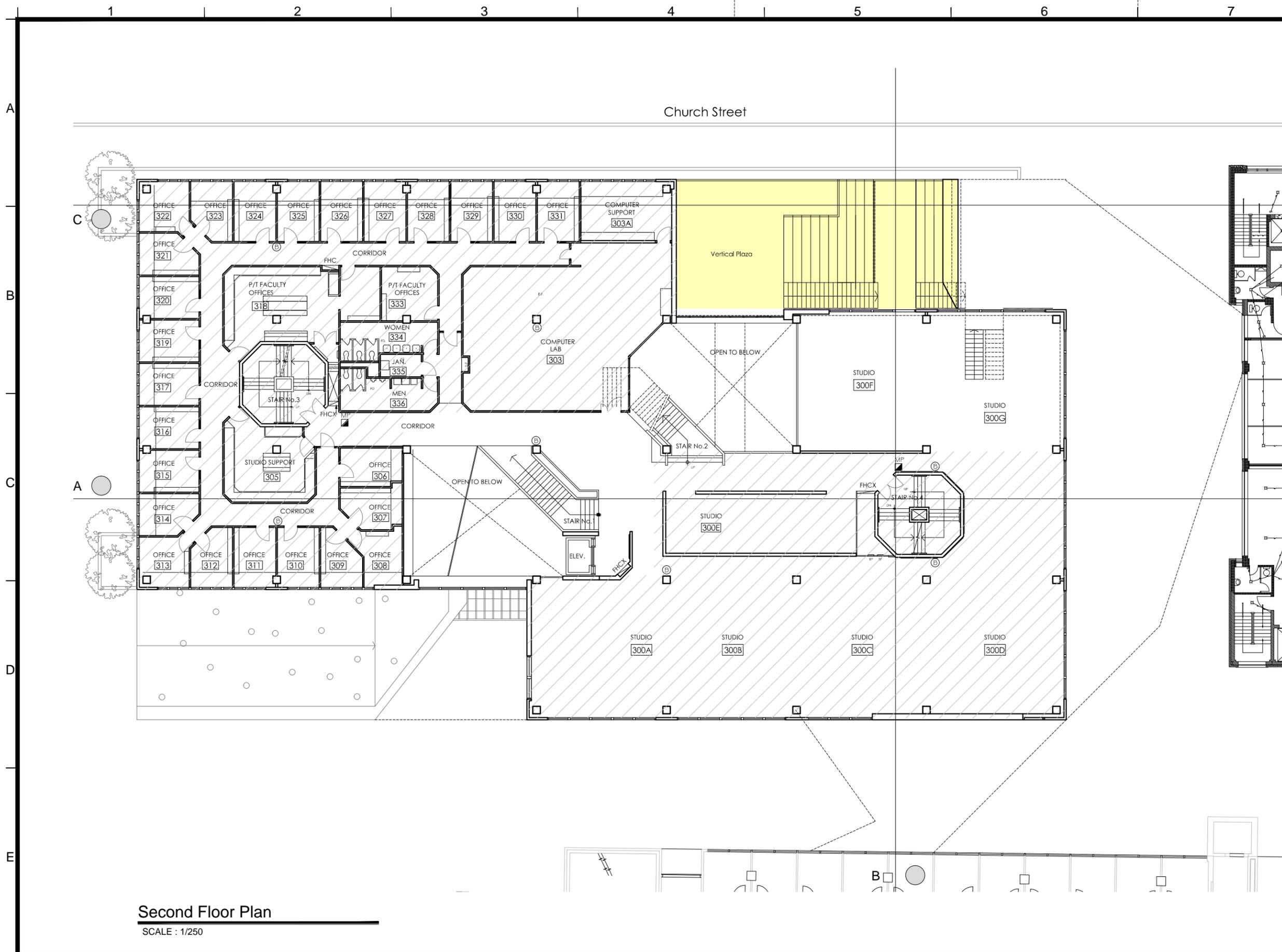


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Second Floor Plan

SHEET NO. AP2-03

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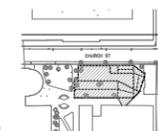


**Second Floor Plan**

SCALE : 1/250

COMMENTS :

LEGEND :



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[Physically untouched]



Vertical Plaza



Roof Garden

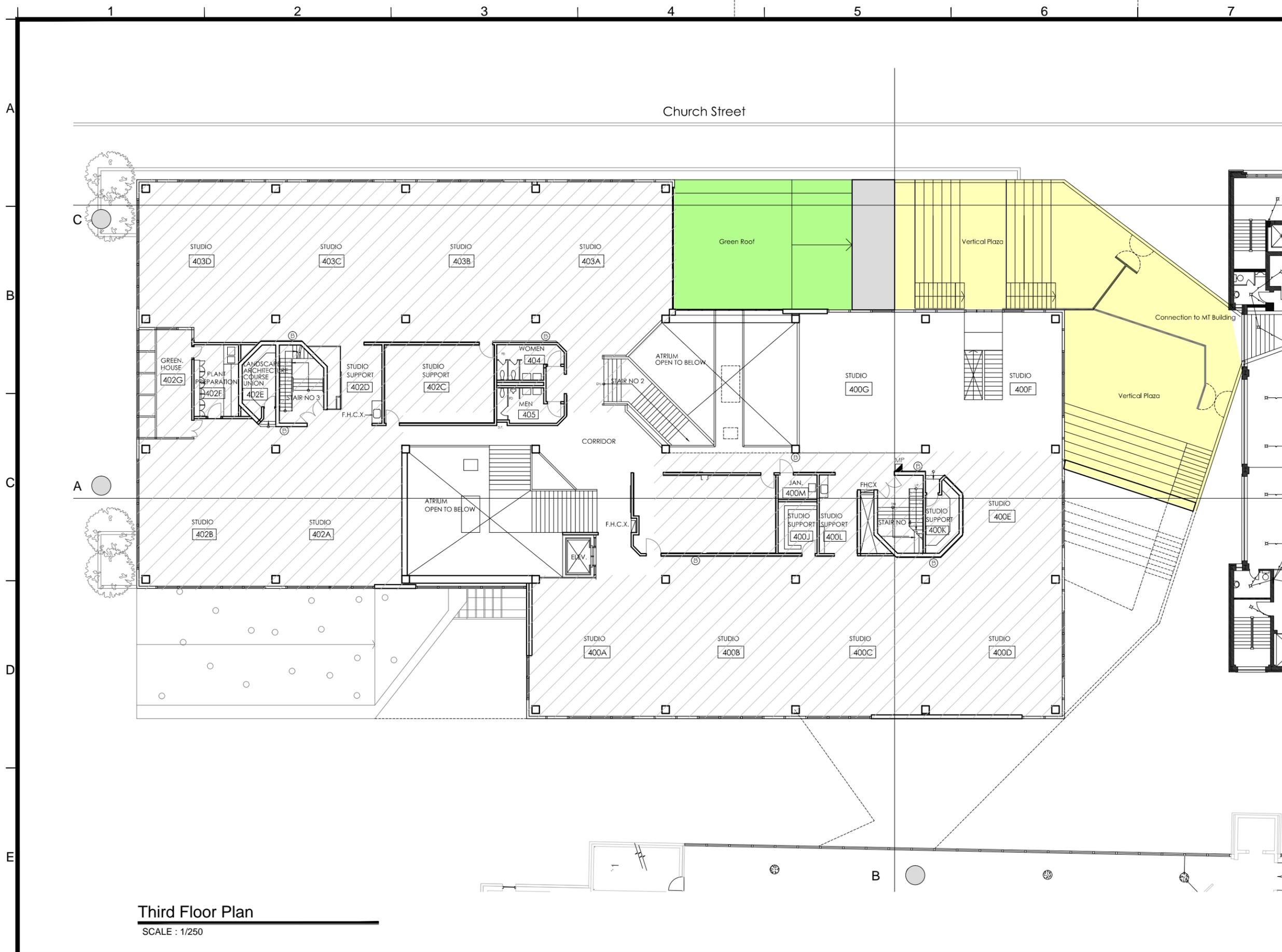


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Third Floor Plan

SHEET NO. AP2-04

SCALE: 1/250



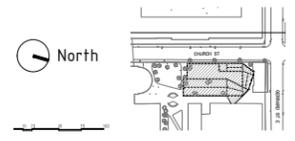
Third Floor Plan

SCALE : 1/250

PROJECT :  
 Ryerson Media, Art, and  
 Technology [MTA]  
 Research Facility

COMMENTS :

LEGEND :

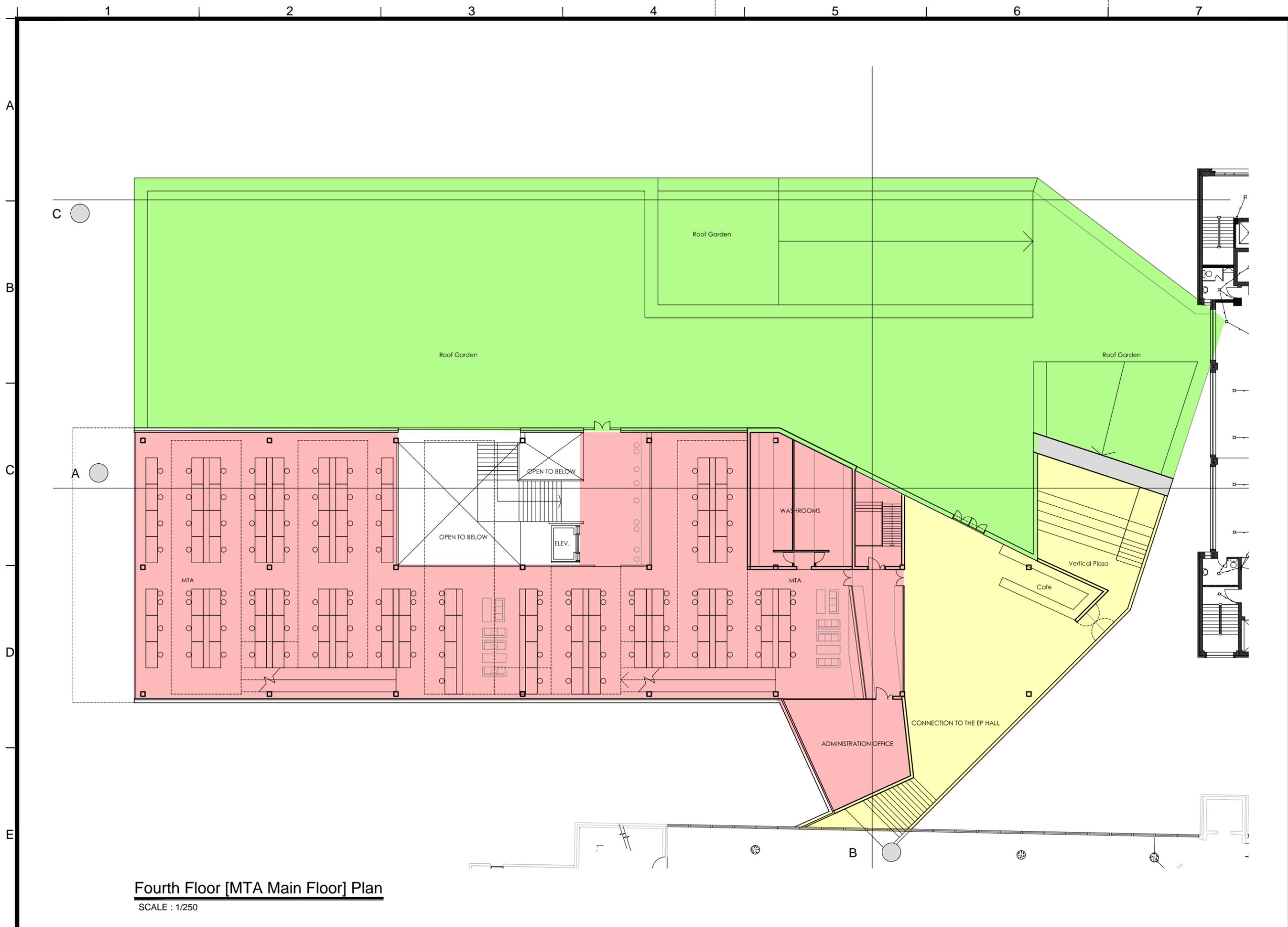


- Existing Arch. Building  
[Physically untouched]
- Vertical Plaza
- Roof Garden
- Roof Garden

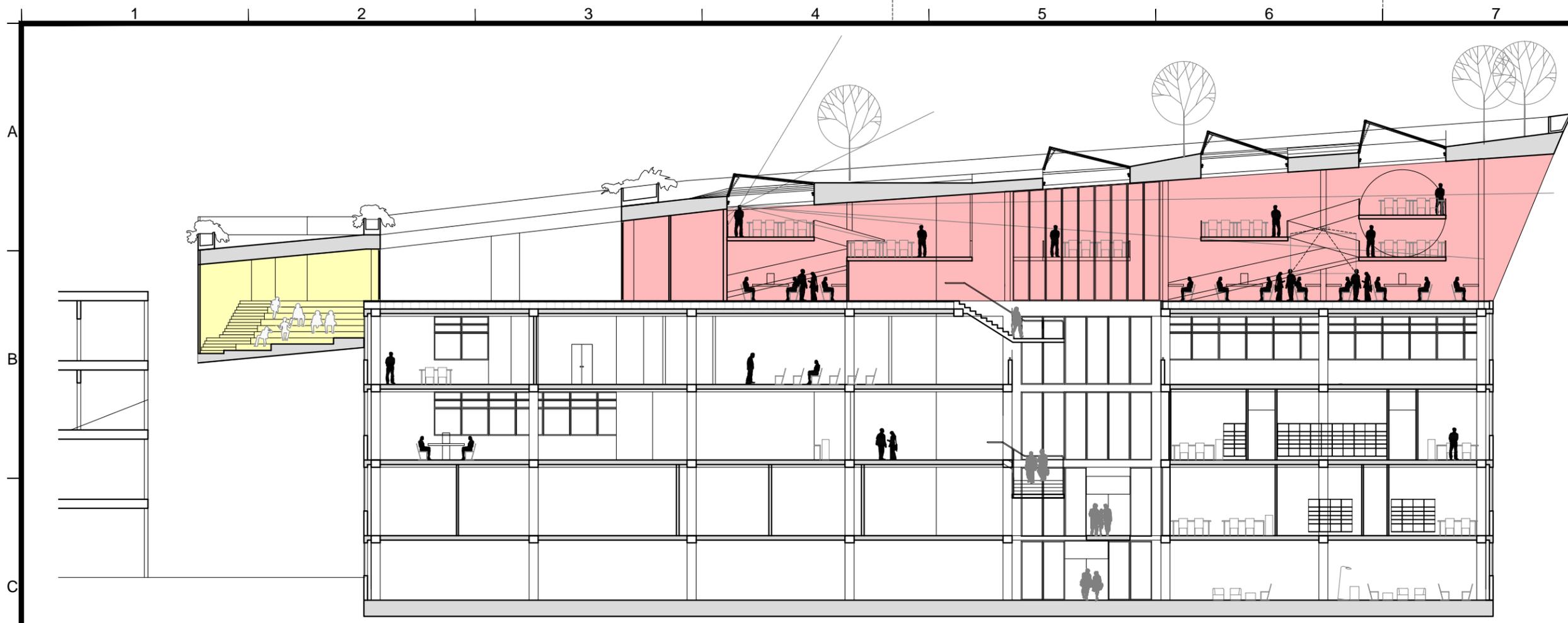
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 Fifth Level

SHEET NO. AP2-05

SCALE: 1/250

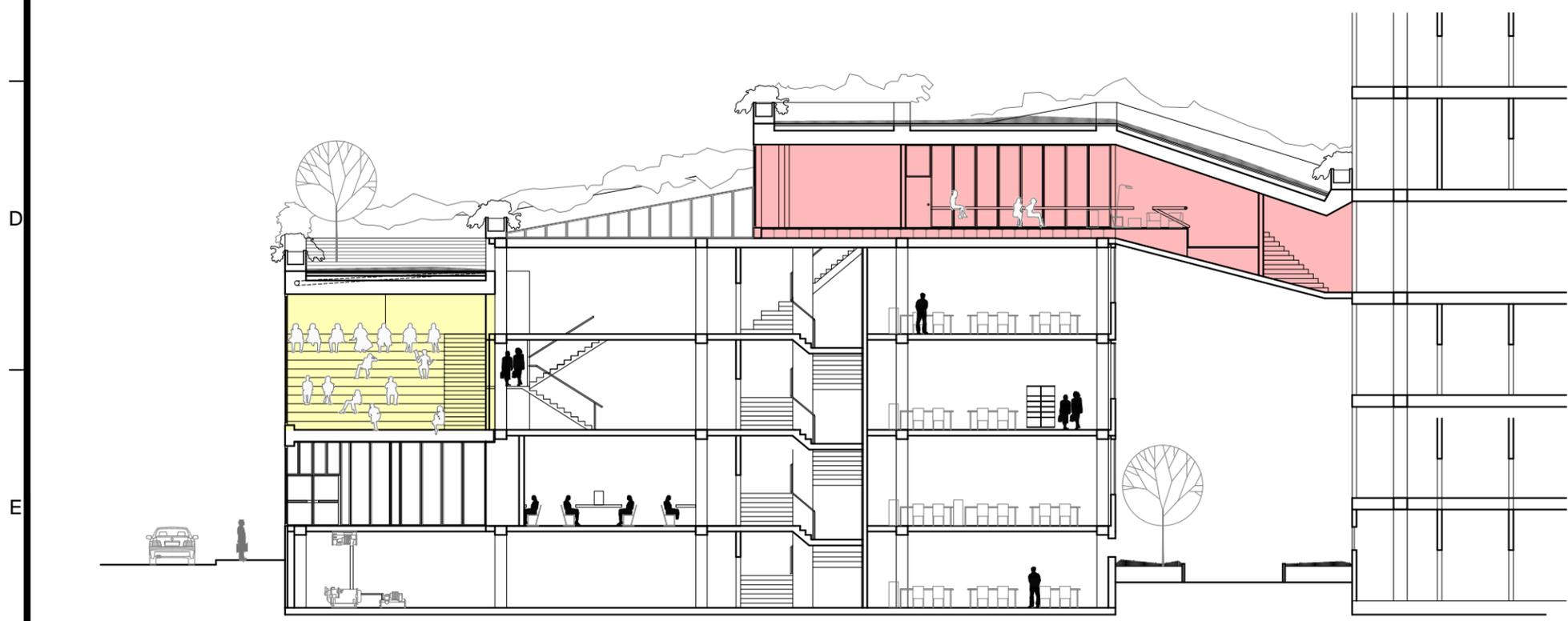


**Fourth Floor [MTA Main Floor] Plan**  
 SCALE : 1/250



**Section A**

SCALE : 1/250



**Section B**

SCALE : 1/250



PROJECT :  
Ryerson Media, Art, and  
Technology [MTA]  
Research Facility

COMMENTS :

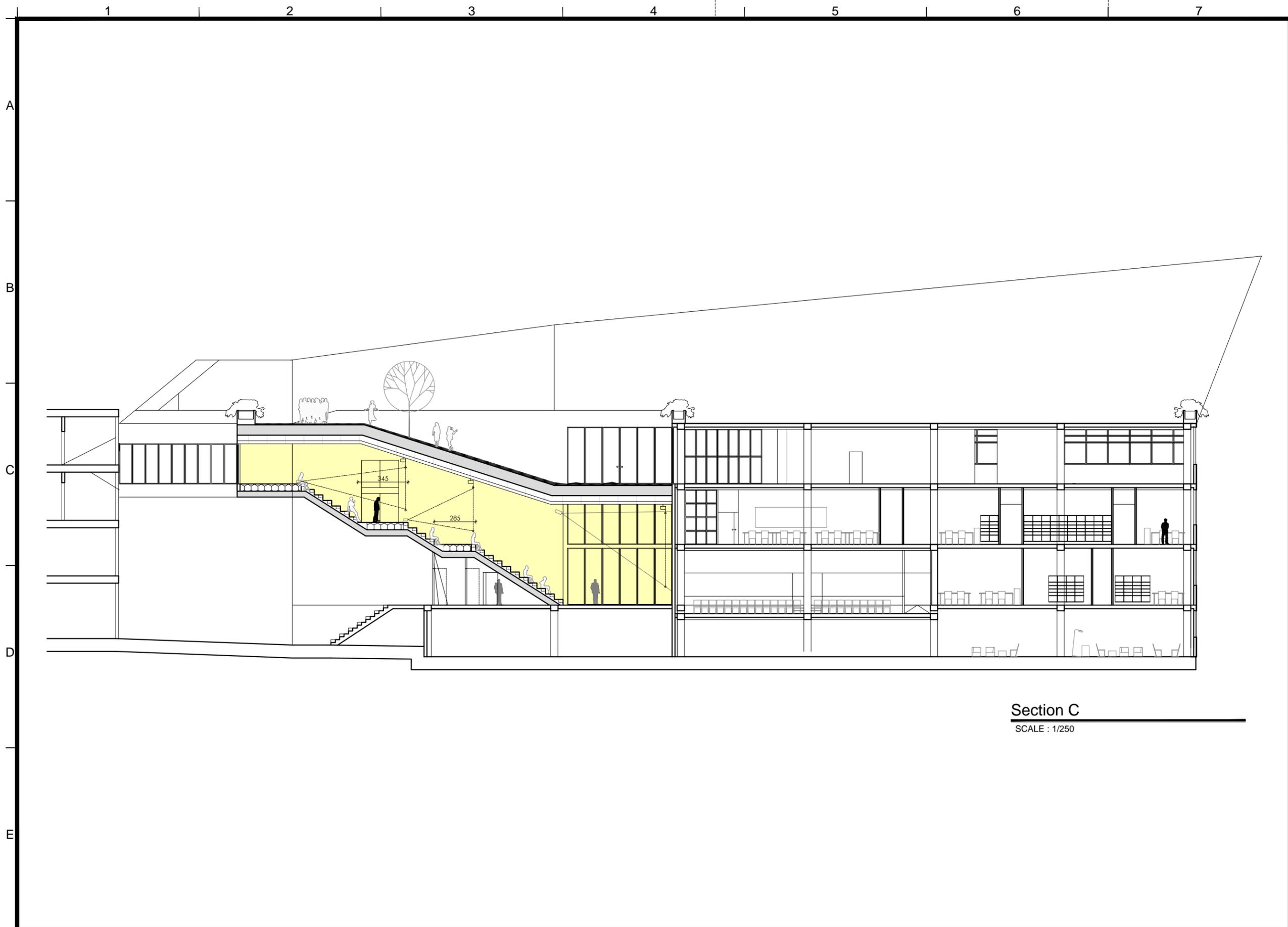
LEGEND :

- Vertical Plaza
- Roof Garden

SHEET TITLE :  
Sections A, B

SHEET NO. AP2-06

SCALE: 1/250



**Section C**  
SCALE : 1/250



PROJECT :  
Ryerson Media, Art, and  
Technology [MTA]  
Research Facility

COMMENTS :

LEGEND :  
Vertical Plaza

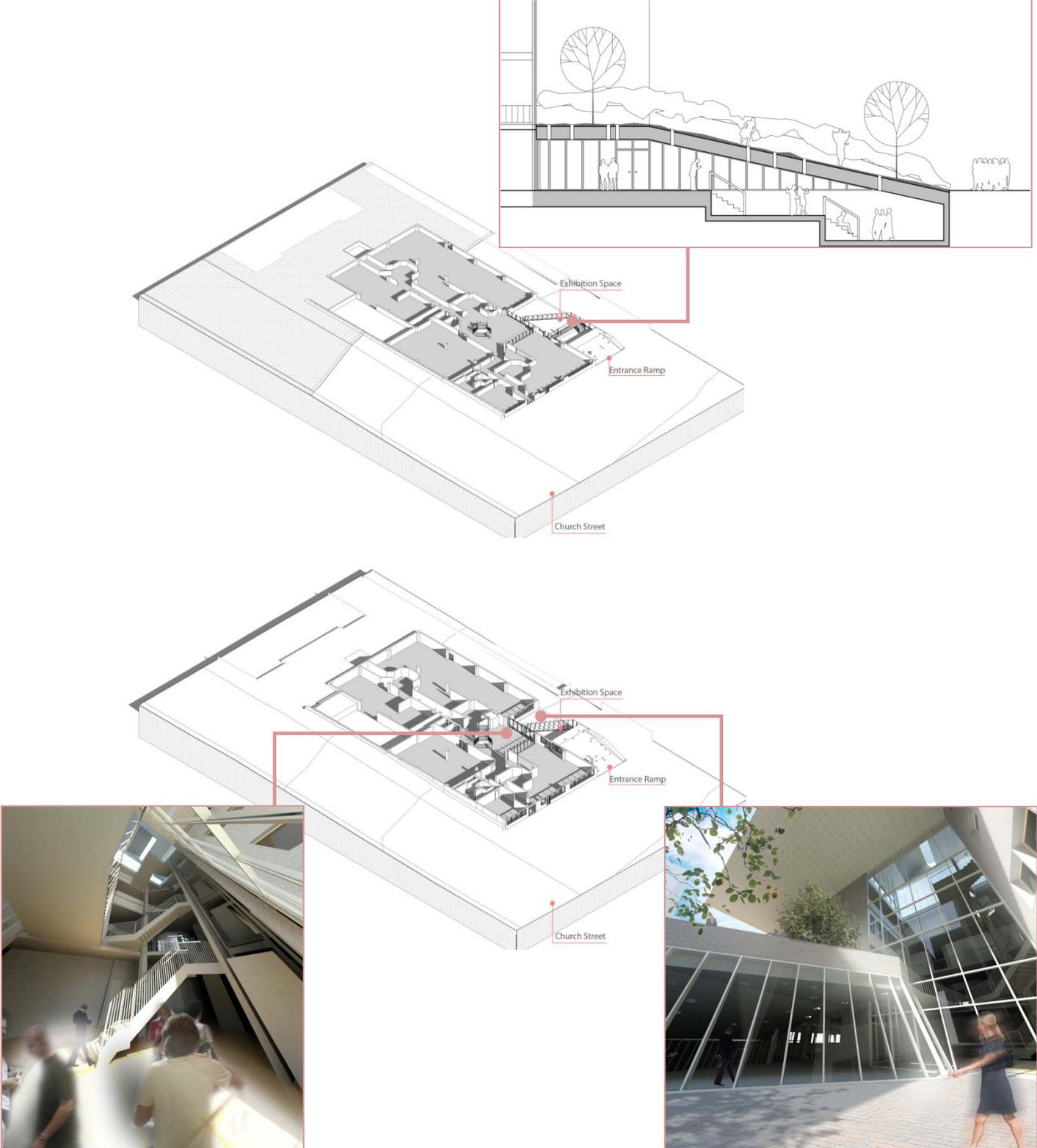
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Section C

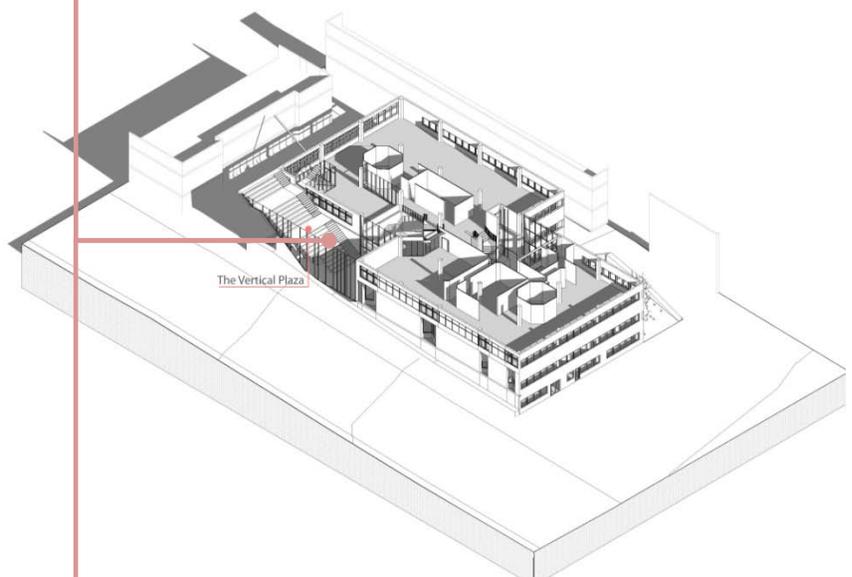
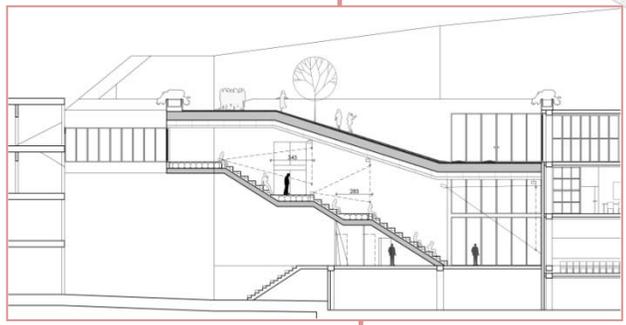
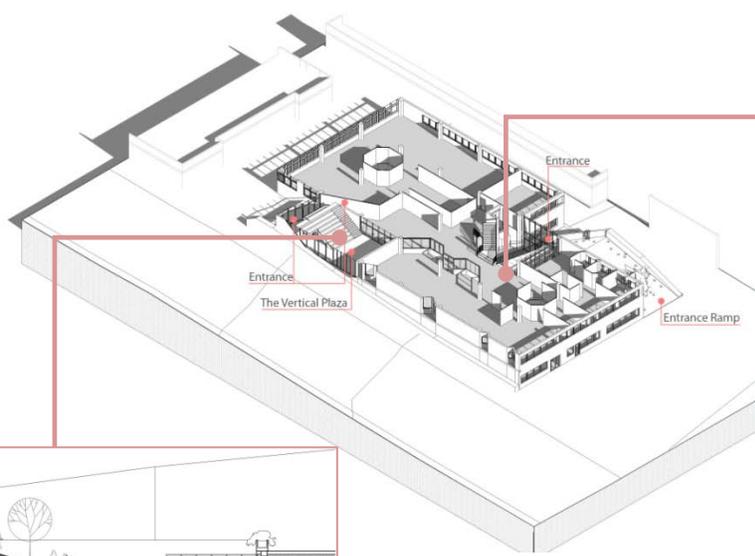
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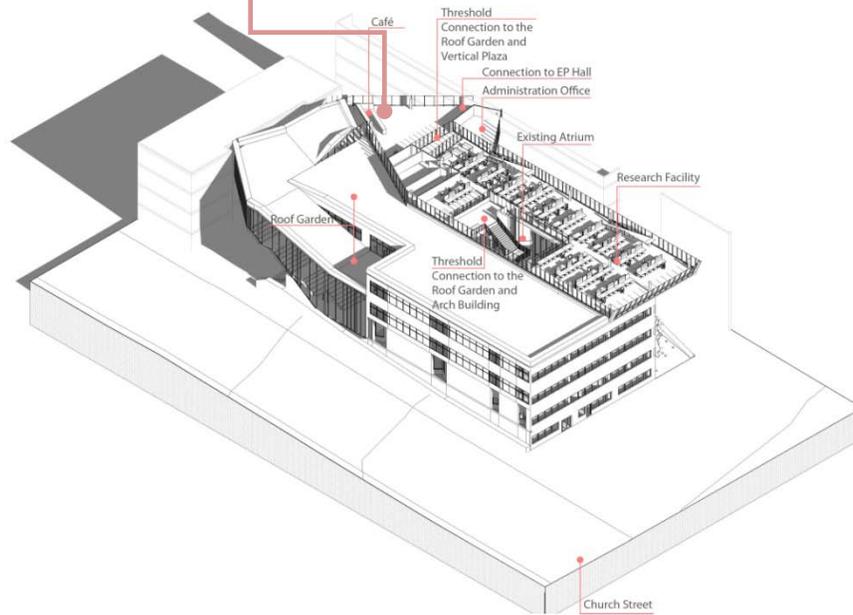
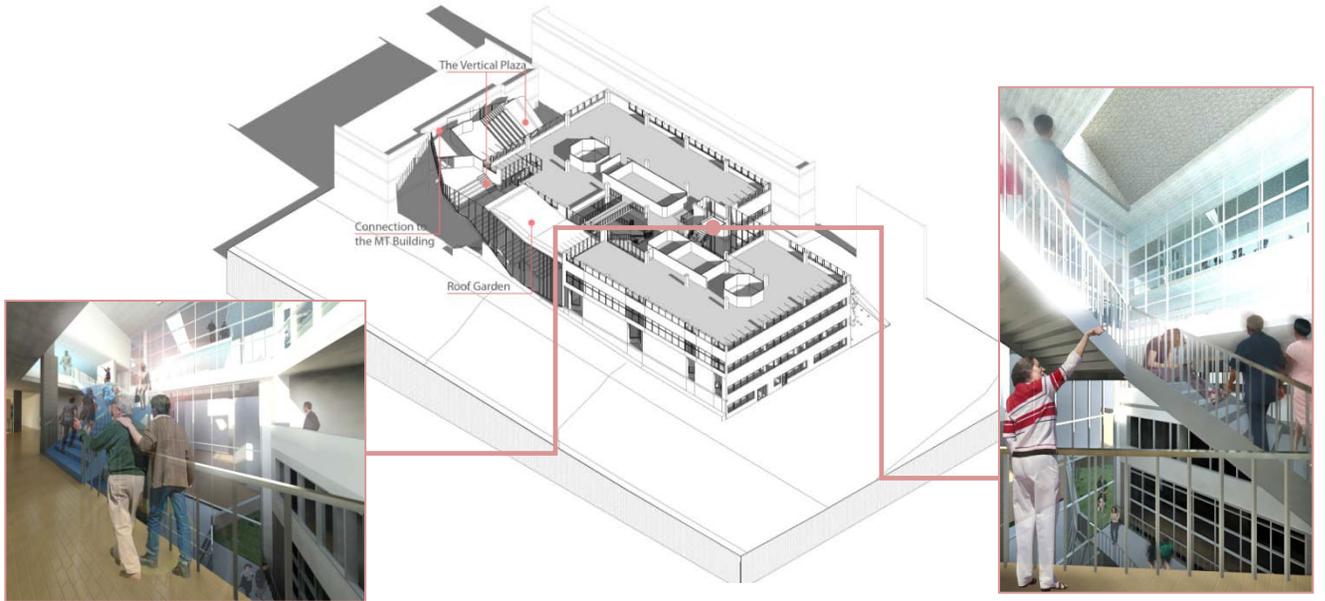
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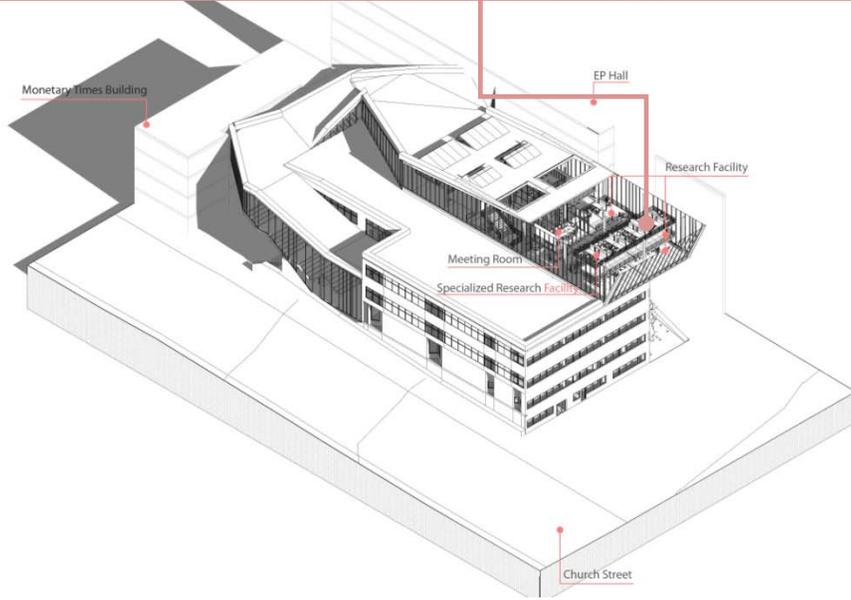
**Appendix 3:**

**Horizontal Sections, Exterior and interior shots:**









## Appendix 4:

### Initial Experiments::

#### Functional House, Functional Neighbourhood

This experiment was initiated to explore the idea of functional hybridity in a space; a space with various functional identities which can work as the extension of other spaces. In order to effectively form a physical program, a house for my family [two main residents and a possible guest] was chosen for the brief of this exercise. (diagrams 1,2) With short surveys, the amount of time which each inhabitant uses a particular space was documented, (diagrams 3-5) and consequently, the summary of space-use diagram was resulted from overlaying three diagrams.(diagrams 6, 7). Since the hypothetical project was isolated from an actual context, the site's energies such as neighbourhood, shadow, view,... were not incorporated in the process, and the space-use diagram forms the boundary of the house (diagrams 8,9) . Nevertheless, the site's constraints can be implemented in this stage to form the final outline of the house. In the final house, in addition to spaces that have a particular identity, family-room works as a hybrid space which can be a temporal extension of other spaces. In fact, the identity of family-room is defined with 'real time' negotiation of inhabitants.

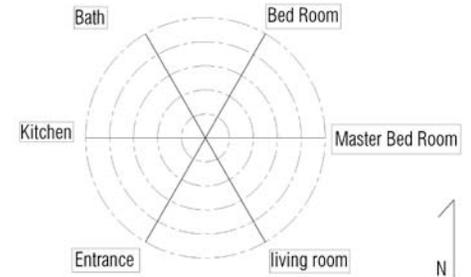
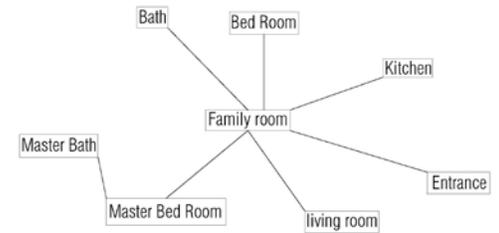


Diagram 1, 2: Physical program and the interrelationships between different functions and their orientation

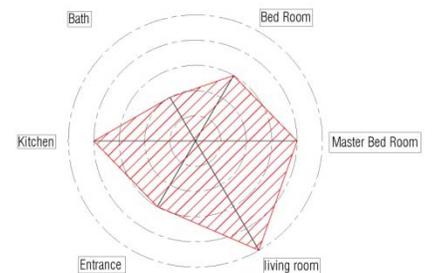


Diagram 3: space-use diagram, resident 1

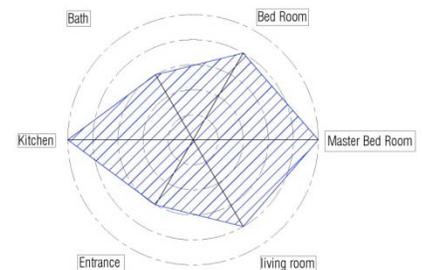


Diagram 4: space-use diagram, resident 2

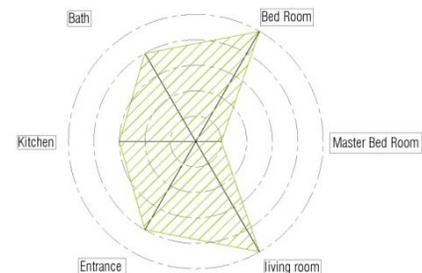


Diagram 5: space-use diagram, Guest 1

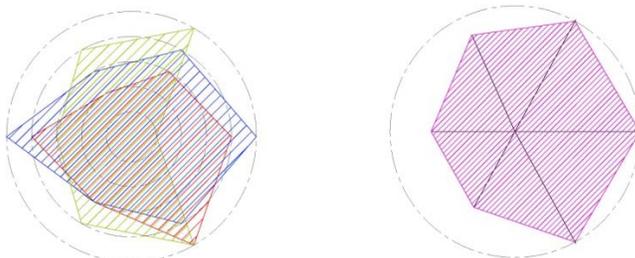


Diagram 6, 7 : Final space-use diagram, final boundary of the house

With the same approach and considering the impact of each individual house on the whole, a neighbourhood can be imagined. (diagram 10) Since any individual space is facing outward to get view, sunlight, fresh air,... the growth of the neighbourhood is limited.

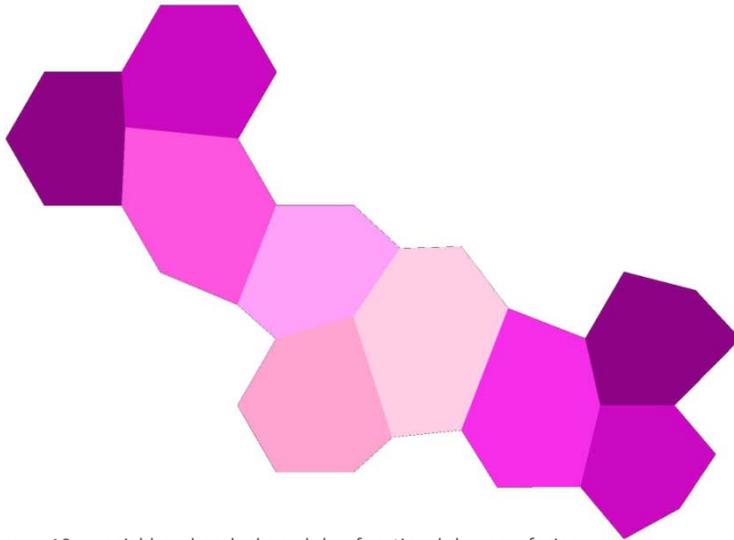


Diagram 10 : neighbourhood shaped by functional houses facing outward

In the next stage of this experiment, the spatial organization of the house got inverted to shape a series of inward facing spaces. Therefore, a courtyard plays the same role as the family-room in the prior proposal. In a bigger picture of the neighbourhood, even though access nodes are public, they can work similarly to court yards and be an extension of any adjacent resident. In other words, based on the live negotiation of neighbours, a access node can turn to an extension of a space. Territory wise, access hubs in the neighbourhood are hybrid.

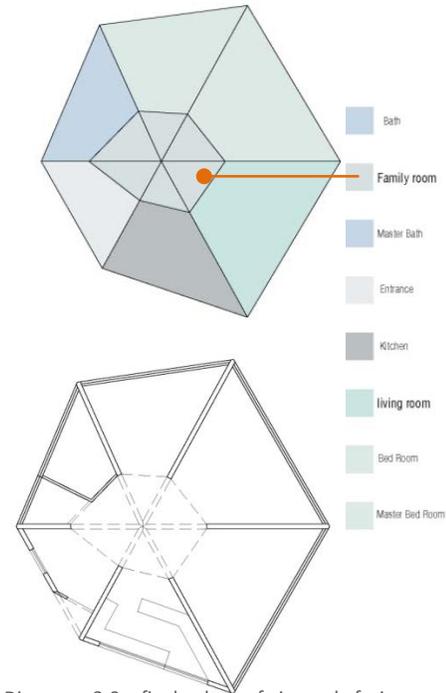


Diagram 8-9 :final plan of inward facing functional house

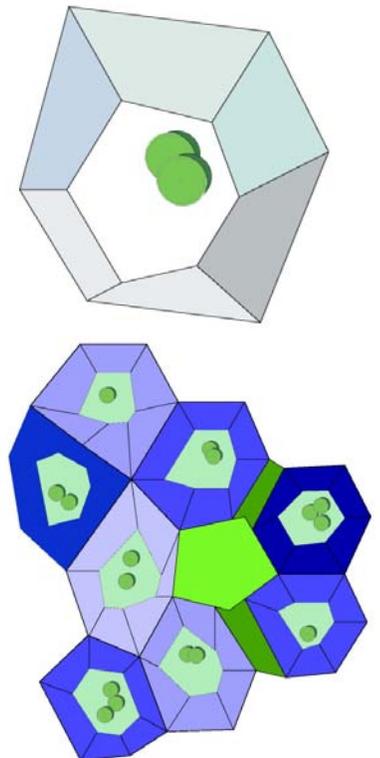


Diagram 11-12 :outward facing house and neighbourhood

## Morphing Triangles

The main goal of this exercise is to explore a space with hybrid relationship with its context; hybridity of openness and closure, solid and void. The skin and volume of a space shape the brief of this experiment. The activity of a space can define its relationship with its surroundings. Since the function became a variable, the relationship should also be flexible. Flexible skin is not a new phenomenon and has been explored for more than a century. The emergence of HVAC and glass industry in addition to inspiration from traditional Japanese houses, in which different layers of the skin can be easily manipulated by inhabitants, led to transparent enclosure in modern age (diagram).

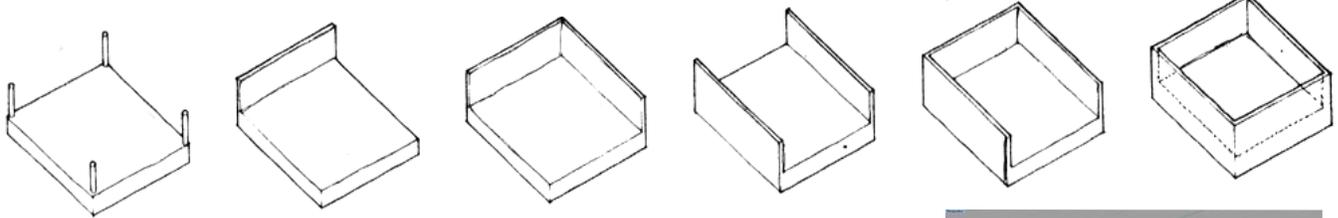


Diagram 13 :Diagram which shows the progressive openness of the skin while the geometry of the space remains the same

Transparent skin provides visual connection between inside and outside; however the geometry of the space remains the same. In this experiment, by modification of the proposed skin, the whole geometry of space changes. (diagram 15-17)

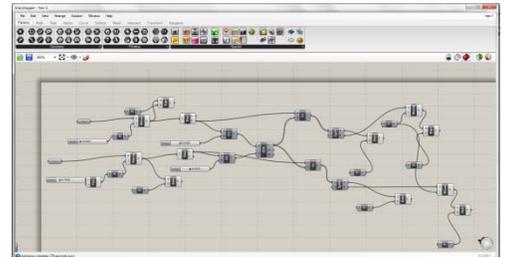


Diagram 14 : the grasshopper definition of a component of proposed skin (diagram 15)

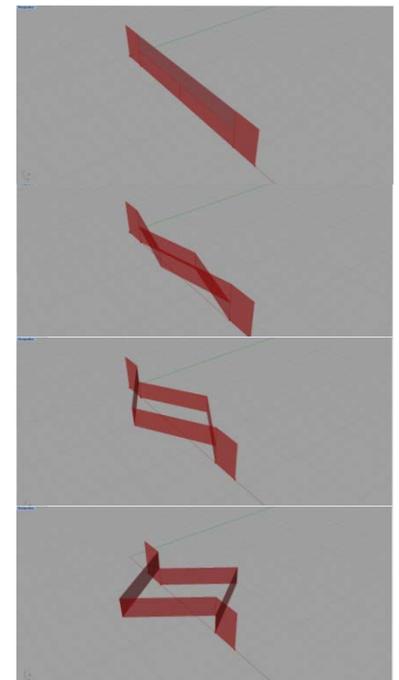


Diagram 15 : the performance of proposed component

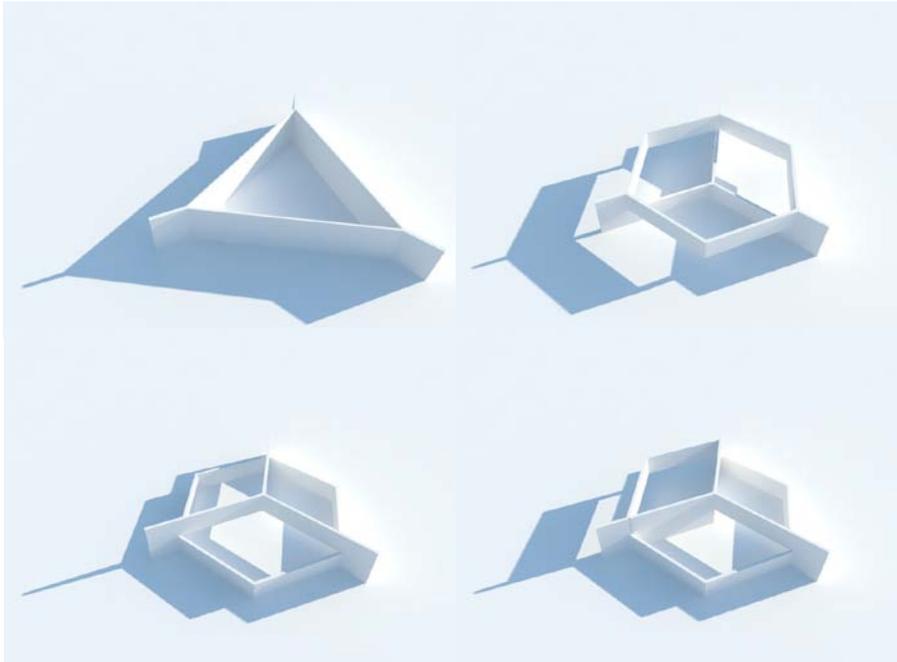


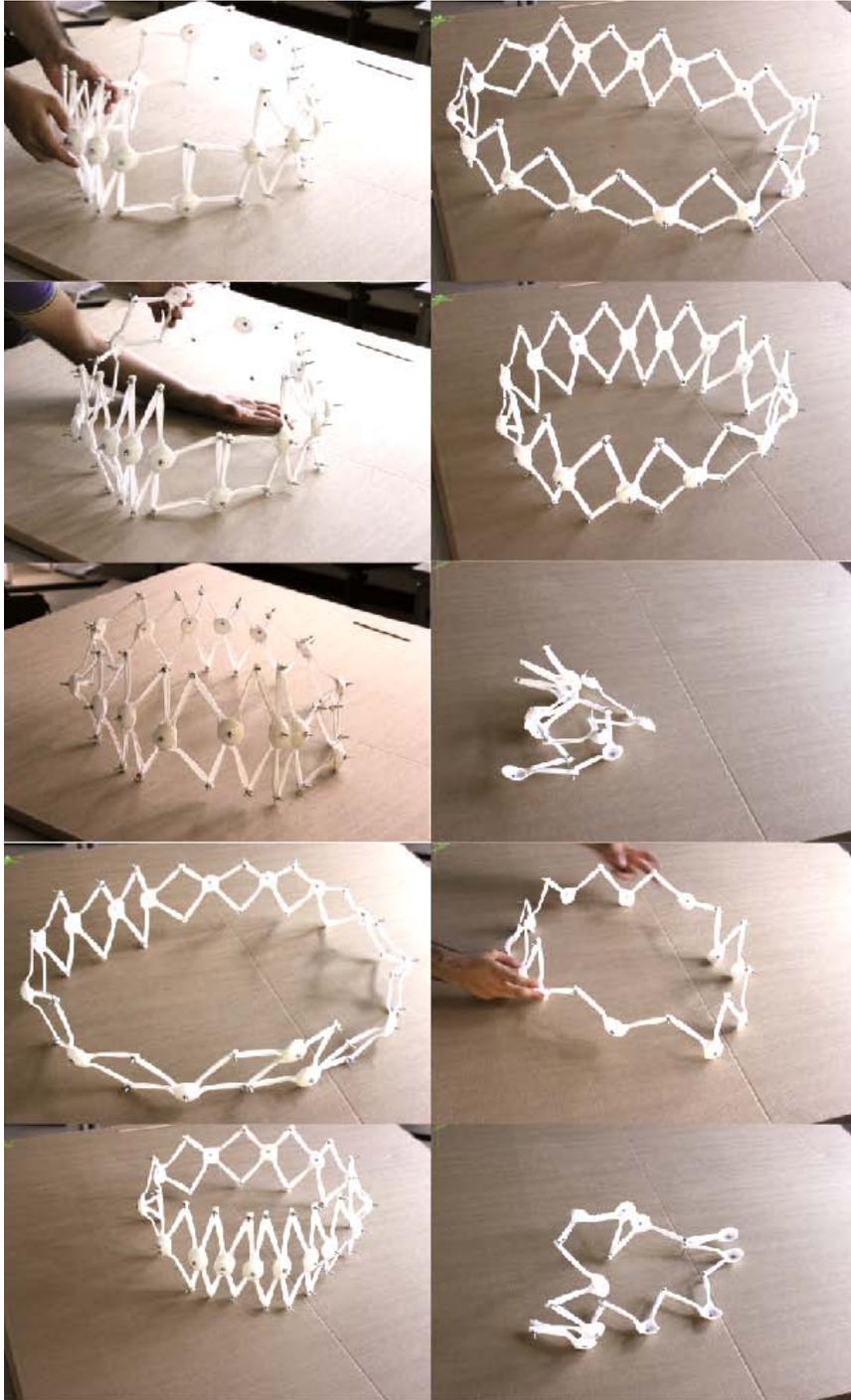
Diagram 15 : Three folding components form a folding triangle which can turn to a hexagon. Based on the fold direction, various spatial quality can produced.



Diagram 16 : a combination of fully opened triangles

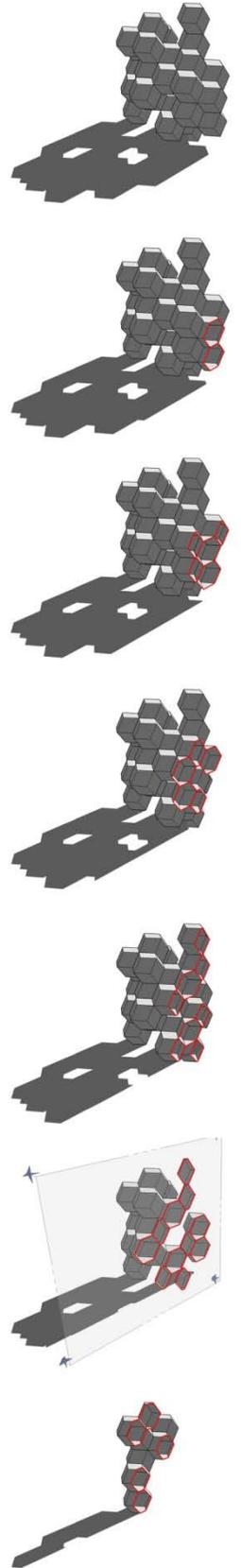
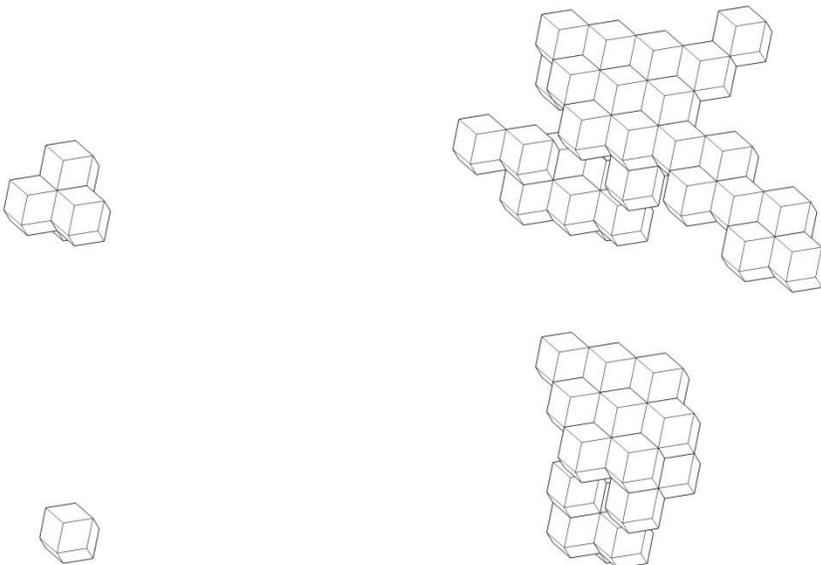
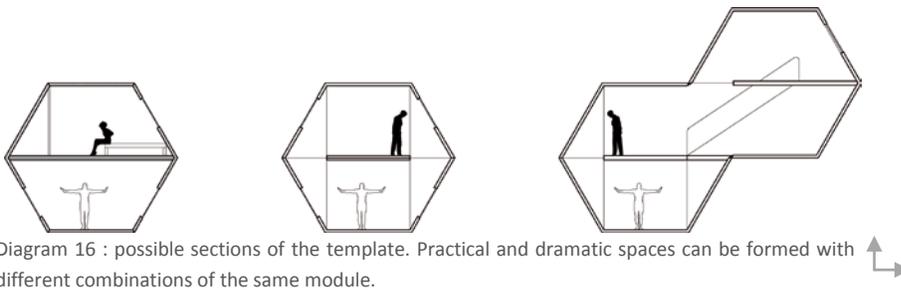
## Spoons

With the same brief as the Morphing triangles, the experiment with spoons led to a space whose geometry can change based on the transformation of its skin.



## Diamond House, Diamond Neighbourhood.

The augmentation of a 'temporal dimension' on space challenges the fixity of architecture, and provides a platform to think about architecture as an organism which can grow based on the needs on inhabitants and its contextual constraints. This experiment aimed to explore hybridity of identities which are related to the state of architecture, identities such as finished or in progress. The result is an architectural template which can form an architectural object that is simultaneously finished and in progress.



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<http://oxforddictionaries.com/definition/english/ambivalence?q=ambivalence>

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