

In Between

transition perception connection

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Abstract

The scope of this study focuses on the concept of In Between with the intention of creating a space of transition and connection between inside and outside, and the simultaneous perception of the two environments.

This study will explore the idea of the In Between within the context of a proposed student garden for Edmonton Clinic North, located within the University of Alberta campus in Edmonton, Alberta, Canada. The intention is to present a design idea that responds to transitioning from one environment to the other as well as exploring opportunities in creating a place that creates the sense of In Between.

The concepts of inside | outside, materiality and precedents are researched and analyzed to inform the understanding of the In Between. This research will contribute to the schematic design of the site that exhibits the sense of In Between.

Abstract

Extended

The scope of this study focuses on the concept of In Between--as a response to defined delineations between the interior and exterior environment as witnessed in most spatial design--with the intention of creating a space of transition and connection between inside and outside, and the simultaneous perception of the two environments.

This study will explore the idea of the In Between within the context of a proposed student garden for Edmonton Clinic North, located within the University of Alberta campus in Edmonton, Alberta, Canada. The intention is to present a design idea that responds to transitioning from one environment to the other as well as exploring opportunities in creating a place that creates the sense of In Between.

The research will begin with the exploration of the In Between which will be investigated through understanding the concepts inside | outside. Following that, the research of materiality and the analysis of precedents will further inform this study and provide a strong base in creating a design for the site. Finally, this study will conclude with a schematic design idea that exhibits the sense of In Between for the Edmonton Clinic North student garden.

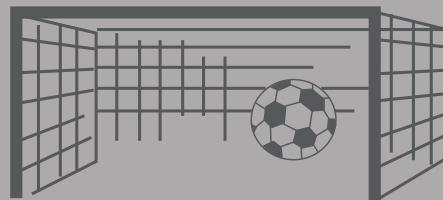
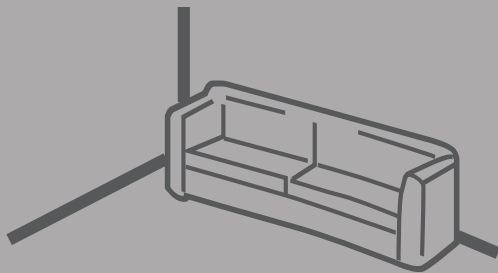


In Between

The concept of the In Between arrived when my interest in interior architecture and landscape architecture arose. I saw the two environments as parallels but varying greatly in the kinds of experiences that are perceived. Not only do the experience vary, I have observed a degree of separation between the interior and exterior environment, whether it is a physical or psychological disconnect.

This disconnect creates a barrier that limits interaction between the interior and exterior environments such as one where only a visual connection is viable. This limited visual connection allows one to observe, but not actually perceive, the condition of the other environment through our other senses. A defined threshold is also created with little concern for the experience and the fluidity of movement between the two environments. This separation through the qualities of a boundary defines the inside as a different entity from the outside.

It is my interest in the separation between the two environments that triggered the desire to establish the In Between: a continuity between the two environments--to create an In Between environment where the inside and outside coexist--and bring about the awareness and appreciation of the other environment.



In Between

Inside | Outside

**“The beginning of all understanding is classifications”
- Hayden White 1978, 22**

Before I can begin to grasp the concept of the In Between, there must be a greater understanding of what it constitutes. This chapter will first examine inside and outside as separate entities, as the In Between is seen as a phenomenon that occurs within the parameters of inside and outside. I will examine what it feels like to be inside or outside and how these perception can be generated through spatial design. This knowledge will be a tool that allows me to create the In Between environment: the coexistence and simultaneous perception of inside and outside.

My initial perception of inside and outside, like many others, is that a room is inside and a soccer field is outside. As the words inside and outside are muttered within the same sentence, one would almost instantly create an imagery that distinguishes it as though they are one but not the other (Bachelard 211). This quick judgement based on semantics restricts our imagination, to only consider inside/outside as something that is tangible, concrete and objective with no play in values. This play in values, whether it is through spatial design or perception, allows us to re-evaluate our understanding of inside and outside. As noted by Max Jacobson, “The feeling of being in or out is not limited to being physically indoors or outdoors. In a forest

you can feel very much inside; likewise, if your viewpoint from an empty adjacent dining room, you can feel very much outside a crowded kitchen.” (Jacobson, Silverstein, and Winslow 11-12).

Therefore,

What does it feel like to be inside or outside?

From the very beginning of our lives, the experience of being inside is one of many universal sensations, which begins when conceived in the womb of a mother: the feeling of being protected, safe, inclusive and nurtured (Franck 18). From there, it seems natural to create our own perception of an inside and an outside which could be something as ordinary as our own personal space being our inside, and everything else beyond it as outside (Franck 19; Jacobson, Silverstein, and Winslow 14). As described by Karen Franck:

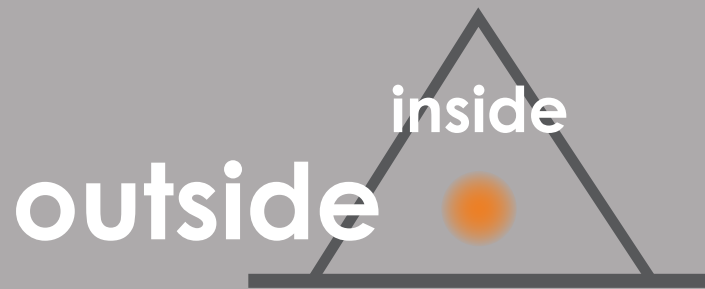
Which perspective do we adopt toward the enclosure architecture makes? If it has a roof and walls, do we imagine being within the sheltered space, or do we imagine being on the exterior, contemplating the form the shelter makes? Inside we are surrounded; we occupy space which has depth and shadow. Outside we are confronted by solidity and its surface. Inside we can smell, feel, hear as well as see the space for inhabitation, outside

we can see the exterior surface of its shell and perhaps we can see into it. Inside we are occupants; outside we are spectators. Inside our movements are restrained by the limits of the space, we are subject to the forces within the space. Outside we are not subject to those forces, our movements are not constrained by those limits. Inside more hidden, more private, to be discovered; outside is exposed, public, what is shown. (19)

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This perceptual distinction between inside and outside is a personal experience in relation to our body and it could be argued that the experience varies from person to person and is dependent on their personality, age, culture and sex (Thiis-Evenson 23). However, there are experiences that are shared across all people which “are based on recognition [...] with references to our bodily experiences” (Thiis-Evenson 25). These experiences such as falling, walking, feeling a rough surface, or our reaction to light, are common experiences which we feel through exposure to forces of nature and the workings of our bodily systems. Therefore, feeling a gust of wind and walking on rocks, a feeling commonly experienced outside, invokes an association to the outside. While the use of artificial lights to highly illuminate a space, similar to that of being inside, will create a perceptual association with being inside.

The advantages of knowing about experiences that are shared across all people is that it will allow me to explore ways in which to create the perception of being inside or outside that does not only rely on our visual



perception.

So,

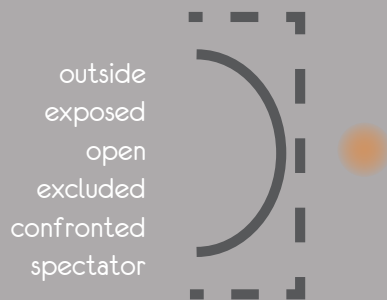
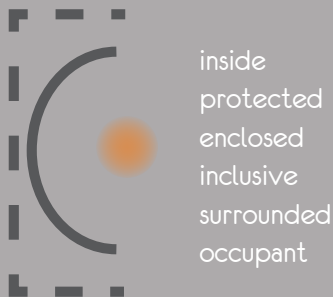
What defines inside and outside experientially?

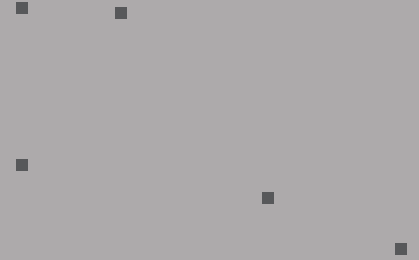
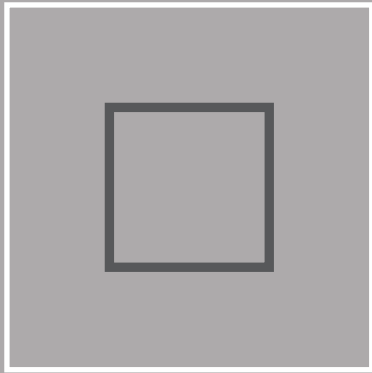
As was mentioned earlier, the basic feeling of being inside is that of being protected, enclosed, safe and inclusive. It is also the feeling of a private realm, with reference to the concept of our personal space. Therefore, when outside, we feel exposed, open, excluded and public.

Evident in most shelters are the presence of a roof and walls to enclose and secure. Examining a primitive structure such as a teepee, the inside and outside is defined by a membrane that extends to the ground, delineating the two environments (Silverstein 80). The structure, seen as a roof form, creates an inside that contains and an outside that excludes (Silverstein 83). As the roof creates the sense of insideness when one is covered, the shape of the roof also determines and enhances the sense of being inside. If a roof is concave, a greater sense of insideness is created (Jacobson, Silverstein, and Winslow 12).

This can be said to be true with walls that surround us. A concave wall creates a feeling of enclosure, protection and inclusion—a similar feeling of being embraced with open arms. A convex wall, however, creates a feeling of outsideness as being excluded—as though people have their backs on you.

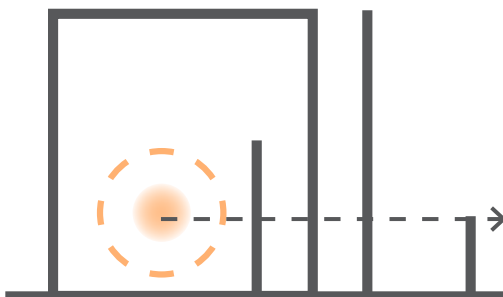
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The definition of a boundary also affects the feeling of inside or outside. When a boundary is more defined, one feels more enclosed--a feeling of insideness. Once the boundary definition becomes less clear, the sense of being enclosed dissipates. This creates a sense of being outside as the less defined boundary appears more open. In creating the feeling of insideness, a defined wall boundary could occur with a solid opaque wall such as the case of the Parthenon. A less defined boundary presents a feeling of outsideness with the use of translucent materials or when the wall boundary has multiple openings whereby a continuous boundary is not achieved, creating less of an enclosure. The concept of creating the sense of being inside through opaque surfaces not only creates a defined boundary, it also encloses and isolates the stimulation that identifies the space within the space (Loidl and Bernard 51 and 56; Jacobson, Silverstein, and Winslow 13). For instance, I know that I have entered a library when the audible volume of a large crowd outside decreases as I move towards the interior of the library.

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Relating back to the feeling of being inside within our personal space, the sense of outside is greater when the scale of the space in relation to our personal space is greater. Thus, one would feel more inside in a smaller and more confined space than a large and expansive space. Through transitions and/or thresholds delineating the interior space with the exterior space, the feeling of being outside is heightened as we move from inside to outside through the layers of transitions/thresholds (Jacobson, Silverstein, and Winslow 14).

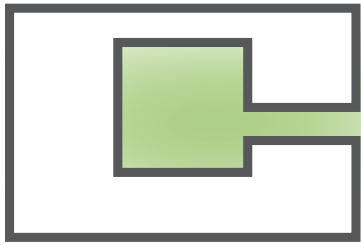


The perception of being inside or outside could also be heightened through the presence of environmental conditions or natural elements. Interpreted literally, our sense of being outside has a notion of nature and wilderness. Along the lines of having a sense of inside as being enclosed and protected, the sensation of environmental conditions such as rain or the wind is commonly excluded from the inside. Similarly, natural elements such as vegetation are commonly associated with the outside. Therefore, the interchange of inside/outside elements has the potential of creating a different sense of the environment (Mugerauer 105-108).

Having established a sense of inside/outside and ways in defining inside and outside--by understanding the In Between through its components as separate entities--the next chapter will look at how to connect the inside and outside. It will look at inside/outside as a whole by conceptualizing In Between as a space of connection through continuity and transition.

In Between

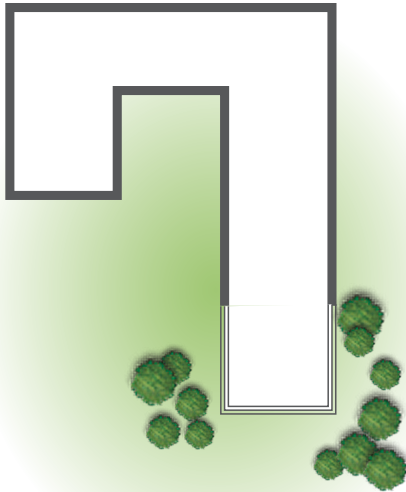
Connection



This chapter begins its investigation on the concept of the In Between as a space of connection by examining approaches in establishing a connection between inside and outside, while the latter half of the chapter will look at connectivity at a larger scale whereby the continuity of spatial design from interior space to the design of a city is achieved.

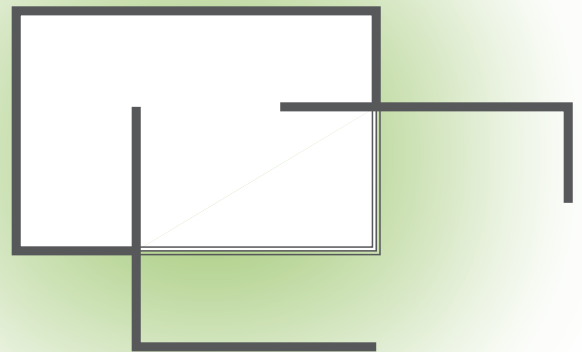
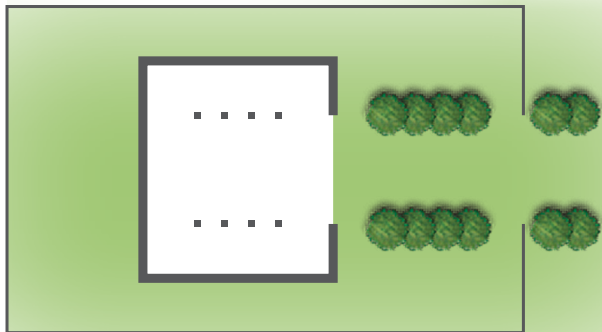
Interior - Landscape Connectivity

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Connectivity between the inside and outside within the immediate locale can be achieved in many ways. An example would be the concept of “captured space” such as a courtyard, where the interior environment encloses an exterior environment, creating a space where it feels more inside than outside. This perceptual association of being inside when we are outside creates a link between inside and outside (Jacobson, Silverstein, and Winslow 16).

Another way of creating a connection between inside and outside is through weaving the interior to the exterior and vice versa. This concept is parallel to the previous chapters’ explanation of our perception of being inside and outside through boundaries and the ways in which a wall is concave/convex. When the outside is weaved into the inside creating a niche, the sense of In Between is present, as the perception of being inside when outside is created through a concaved boundary that is partially enclosing (Jacobson, Silverstein, and Winslow 16). Additionally, the perceptual association to the outside is established when an interior space enclosed by translucent walls penetrates



Connectivity through geometrical relationships and the interpenetration of spaces.

into a landscape, creating a prominent connection to the outside.

Similarly, “geometrical relationships” whereby the geometry of the inside is reflected outside and vice versa also creates a connection between the two environments. Through this, the façade of the building is then thought of as a wall that defines the outside with which the outside space is then designed with related inside spatial organization and volumetric proportions. This relationship could also be extended by establishing a connection via “axis of symmetry”. The axis of symmetry that is projected from the inside creates a perception of inside when in an exterior environment through this connection. For example, when one is outside the said axis, they will feel outside a space that is not connected the inside. Parallel to that, when one is inside the structure looking out towards the landscape that is governed by the axis, s/he will feel the connection to the exterior through the geometrical association (Jacobson, Silverstein, and Winslow 17-18).

While the previous example establishes a connection between inside and outside through geometrical inferences, a connection between inside and outside could also be brought about through the extension of architectural components. As noted by Max Jacobson, the ‘interpenetration’ of spaces allows a relationship between the inside and outside to manifest (Jacobson, Silverstein, and Winslow 19). The extension of the inside to the outside and vice versa, allows for a gradual transition from one to the other. As an example, an interior wall that extends out to define the outside environment creates the notion that the outside is part of the building, thus inside (Jacobson, Silverstein, and Winslow 19). And if the outside is extended inside, for example through materiality, it creates a sense that the

outside is brought inside.

In addition to that, the intermix of elements can create a connection between inside and outside, whereby exterior elements appear inside and vice versa (Jacobson, Silverstein, and Winslow 20). This concept refers back to the earlier analysis of our perception of being outside whereby the presence of environmental conditions and natural elements heightens that perception.

This latter half of the In Between chapter through connectivity is greatly influenced by the writings of Katherine Benzel’s The Room in Context – Design Beyond Boundaries whereby it reminds us of how to rethink the way I visualize spatial design and how I consider continuity from the design of an interior room to the design of a city. Though vastly different in its scale and scope of design, the most common denomination is in seeing that the various spatial designs encompass a space where we live, be it the interior room, building, landscape or the city.

Interior - Building - Landscape - City Connectivity

Katherine Benzel approaches the idea of relationship and connection between environments through the use of the “room” analogy to dissolve the general perception of any spatial design as its own entity. When the term “room” is used, it is not uncommon to think of it as a single unit, contained in itself by four walls and separate from others. If this is how designers perceive a room/building/landscape/city, then they lose the opportunity of creating connections with others. This is where we find environments that seem out of place, foreign, and/or generic. An example of an environment that may seem out of place or foreign is Disneyland, where the

design of the complex is mainly to produce a sense of escape from reality. The compound in which Disneyland is contained, is an isolated and enclosed room in itself: disconnected from what is adjacent to and surrounding its compounds. Another example of an environment that is conceptualized as its own entity are the typical big-box stores, such as Wal-Mart, where the generic design of the building is apparent regardless of where you are in North America.

As asserted by Benzel, although the concept of “room” may be thought of at a smaller scale compared to other spatial design disciplines (architecture, landscape architecture, urban design), it has quite an impact on those disciplines in that “it has the potential, through its associated meanings, ideas, relationships, and physical form, to configure people’s active and passive activities and to connect to increasingly larger scales in buildings, landscapes, and sites where nothing stands separately and everything relates to something else” (15). Therefore, to view the In Between as a space of connection is to also see everything as connected – physically, socially and psychologically.

Within the chapter “Spatial Relationships” in The Room in Context – Design Beyond Boundaries, Benzel explains the ways in which spatial relationships could be formed through context, spatial design, common ground, spatial relationship, integrated design, scale linking and using relationships (15-21). This chapter is relevant in pursuing a different approach in the concept of In Between, as it outlines various ways to realize connections beyond the physical aspects of connectivity that I was dwelling on. The following paragraphs are summaries of the aforementioned chapter:

Context

Simply put, when something is taken out of its context, its meaning would be lost. As an example, if the Sydney Opera House, an icon of Sydney, Australia, were to be placed somewhere else, it would be out of context and lose its meaning, and association with its immediate surrounding, as well as its accrued sense of belonging to Sydney, Australia.

Spatial Design

Through spatial design, we generate associations outside of that which we are designing to create a “connotation of distance, direction, movement, [and] connection [. . .]” (Benzel 17) Along the lines of inside and outside, when

one is inside, it allows him/her to judge his/her spatial relationship to the outside.

Common Ground

If looked at critically, all spatial environments share something in common, be it historically, socially or physically. We live in an environment that is not isolated despite efforts in creating a barrier. A general common ground that we all share is air. Despite efforts in separating inside from outside, as soon as a window is opened or when someone enters the inside environment, a gush of air from the outside is brought in. If this were to occur during winter, one could feel the cold environment outside within the confines of the inside environment.

Spatial Relationship

In all spatial design disciplines – interior design, architecture, landscape architecture and urban design – there exists a relationship between the designed environment and the social aspect in which the environment is designed for. As described by Benzel, it is the modification of space to accommodate human use, with considerations to context, culture, community and basic human needs (Benzel 18).

Integrated Design

The integration and coming together of all spatial design disciplines allows for all aspects of a design to be incorporated and taken into consideration generating spatial relationships between one another.

Scale Linking

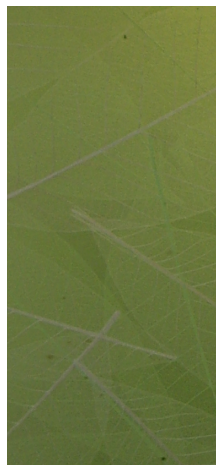
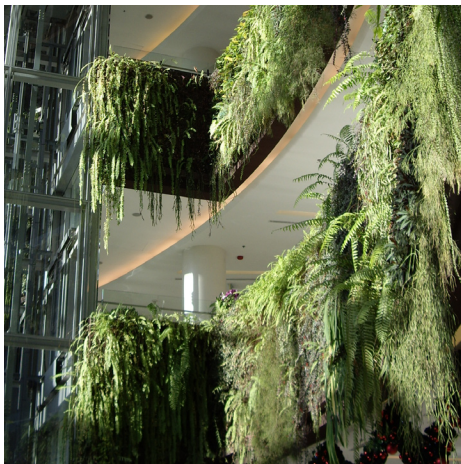
Disregarding the differences in scales, scale linking suggests “that spatial environments are interwoven living networks and that people and their rooms, buildings, landscapes and cities are a dynamic part of those networks” (Benzel 19). Just as Frank Lloyd Wright

conceptualizes the environment that he designs to the object that will inhabit the space; the object, room, building and landscape have an inherent affect on one another.

Using Relationships

“Opposites fall on their opposing sides, yet they can be brought into a mutual accord, producing balance or harmony between their extremes” (Benzel 20). In creating spatial relationships, the understanding of opposites will reinforce and enhance the acknowledgement of the other. For an example, we are made aware of noise in a quiet environment. Likewise, we are aware of the soft grass on our feet after stepping off the hard paved surface.

These methods in which to establish a connection from the interior of a room to the design of a city reinforces and enhances the acknowledgment of one another. Through these established connections, the blurring of the definition of each space is created. As more commonalities, connections and associations between inside and outside spaces are created, the greater the continuity and transition.



Materiality

As was previously indicated in the examination of the boundary definition, the choice in materials will have a significant impact in which the sense of In Between is perceived. It is evident that our built environment--interior, building and landscape--is made up of varying materials. Some are traditional materials that we are accustomed to, such as "brick, stone, concrete, and timber" or newer materials such as "glass, aluminum, plastics, plywood, [and] latex paints" (Fernandez 44). Some of these materials may embody historical and/or cultural significance, such as adobe, while some provide functional solutions in creating an environment, such as insulation to create a more livable condition in cold climate zones. With this in mind, I decided to examine new and emerging technological material as a way to explore options to strengthen the notion of In Between that was realized in the previous chapter.

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This chapter on materiality begins by looking into how the change in use of materials in architectural history has affected space, aesthetics, and characteristics of our built environment. With this knowledge, I looked into a number of technological materials that has the potential of engendering the In Between spatial experience - the transition, perception and connection between inside and outside.

Prior to the use of metals in creating our built environment, materials were chosen based on the understanding of their natural characteristics and their availability (Addington 2). These traditional materials were previously mentioned to be brick, stone, concrete and timber. The use of these materials can be traced back to Ancient Greece. Structures such as temples and

Fig. 1. A compilation of materials that are found in our surroundings.

theaters during the time of the ancient Greeks were built out of marble, stone and timber.

The Parthenon, built in 436 BC, is a temple located in the Acropolis, Athens, with numerous large columns made of marble, creating an enclosure in the interior (Glancey 26). Another example, made out of stone, the Greek theater in Epidaurus showcased similar grandeur in its sheer size and method of construction. Structures began to slowly evolve as witnessed in Gothic Architecture, when a greater knowledge of masonry pushed the limits of cathedral construction. Ceiling heights were pushed higher and higher with the assistance of technological understandings, like the flying buttress. Though still using the same materials as before, it was the knowledge of material properties and performance that enabled master builders of the time to create the cathedrals that evolved the spatial characteristics of a structure (Addington 2).

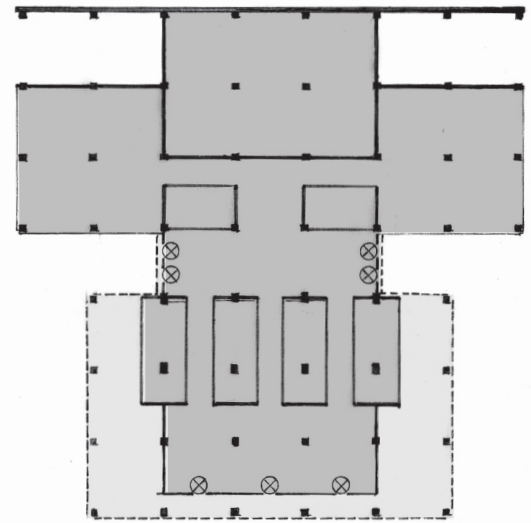
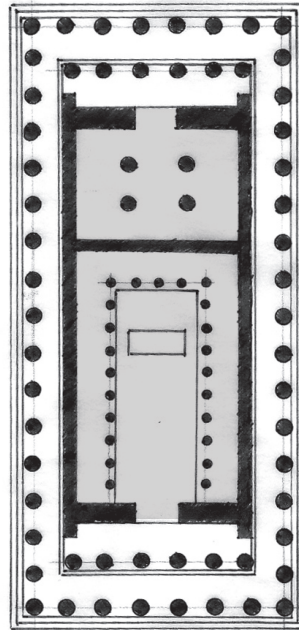
A common trait that was evident throughout the various architectural movements up to the Industrial Revolution, was the critical mass that makes the structure. However, when wrought iron was produced at a relatively low cost during the Industrial Revolution in late 18th century, it allowed for its extensive use, which progressed into multiple productions of wrought iron bridges and buildings (Cowan et al. 15). The Crystal Palace, designed by Joseph Paxton for the Great Exhibition in 1851, was the first building structure that used wrought iron and glass extensively. The Crystal Palace not only changed the way materials are incorporated into architecture, but also the style and spatial characteristics of buildings. The building was 564m long, which was unprecedented at that time, without heavy and thick supports such as those of its predecessors (Glancey 140). The structure reached the height of 124m, creating a feeling of openness

especially with an enclosure of glass that allowed immense natural light into the structure. The sheer size gave the opportunity for large plants to be placed inside the structure, forming an unprecedented spatial characteristic and cognition ("The Great"). Being within the space of such expanse and grandeur enclosed with large trees would most likely give an impression to those unfamiliar with such spatial experience a sense of doubt of whether they are inside a building or outdoors.

Similar in tone, was the rise of International Style. New building materials such as steel-reinforced concrete, steel frames and glass curtain walls were widely employed in the construction of buildings, which revolutionized architecture all over the world. This innovation resulted in skyscrapers that reached heights that were not previously possible. A very familiar style of skyscraper would be the Seagram Building by Ludwig Mies van der Rohe and Philip Johnson in New York City. The rectilinear, minimal and clean office structure of curtain-wall construction not only soared to heights that were not formerly possible, but it also allowed for "open, free-flowing [interior] plans providing maximum flexibility in the use of space" (Stokstad 1094).

When compared to structures such as the Parthenon, it is evident that there was a dramatic change in the conception of space. Fernandez categorized this change as a result of "dematerialization", whereby the use of a stronger, better, more efficient material would result in the overall reduction of materials used, compared to traditional materials used in a structure (50). This in turn, resulted in the change in volume of 'usable' space, in which the massing and spacing of structural supports are diminished. With comparatively smaller structural components, buildings such as the Seagram Building were able to create larger unobstructed spaces that provided

Fig. 2. Drawn at a similar scales, the interior space of the Seagram Building when compared to the Parthenon, has a greater sense of openness that is not surrounded by large support columns and thick enclosing walls.



opportunities to be utilized for many purposes.

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Using history as a guide to move us alongside the progress of available new technological materials, it is contended that there are no boundaries to the limit of what a designer can ultimately achieve. Already apparent in contemporary architecture are architects who have taken advantage of new developments in the material world to achieve designs beyond comparison to their predecessors. This change in material technology resulted in the change in which we view the role of materiality in design.

New materials that have been developed break away from our conventional thinking of what materials should or could be used. A group called the Rural Studio was founded by Samuel Mockbee, who, driven by his commitment to provide "shelter for the soul" was able to use reclaimed and recycled materials in the groups' projects ([Mockbee](#)). In order for the group to achieve their goal in providing affordable and environmentally sustainable shelters, the group ventured into reusing materials that have been discarded. From unconventional materials such as "bales of waste wax-impregnated corrugated clippings", recycled tires to "1980s GMC sedan car windows",

the group always seemed to push the boundaries in reconceptualizing material and the built environment (Projects). Mason's Bend Community Center/Glass Chapel is among the many projects by Rural Studio that demonstrates how architecture made primarily of scrap materials can be as astounding as any great architectural design. This outdoor sheltered space comprised of low rammed earth walls and a roof made of aluminium sheets and car windows (Projects). The interior space, with partial high ceiling, is provided with natural lighting illuminating through the car windows. Such projects exhibit ingenuity in the use of uncommon materials to create admirable spatial qualities that defies common misconceptions of 'cheap' design.

Frank Gehry's design of the Guggenheim Museum in Bilbao is another example of unprecedented use of new material. The steel frame structure mainly clad with titanium sheaths achieve a very sculptural characteristic in a scale of its own (Glancey 225). The aesthetic that was achieved is more reminiscent of an art piece rather than a building. The ability to archive such curvaceous form, both interior and exterior, would not have been attainable were it not for material technology. Another, is the Olympic Stadium in Munich, Germany; which evolved dramatically when compared to the outdoor theater in Epidaurus that was mentioned earlier. Designed by Frei Otto, the stadium is sheltered by a tensile structure "made of PVC-coated polyester fabric" (Glancey 209). In contrast to the outdoor theater in Epidaurus, the tensile structure over the stadium allows for more flexibility in using the stadium. With a roof, the stadium now provides an opportunity to accommodate events within the space regardless of weather conditions. The shelter also improves the experience and comfort in terms of providing shade and some level of climate control during long and enduring events. The

stadium, although with a roof, still allowed a vast amount of sunshine to illuminate the space below, therefore not rendering the stadium in darkness.

After looking into the past for precedents in how the choice of materials affects the overall design of the built environment, I want to search for current materials that has the potential of engendering the In Between spatial experience. Similar to Joseph Paxton's concept with the Crystal Palace, I want to explore possibilities in creating a sense of place that is unconventional whereby the conception of inside and outside space is blurred.

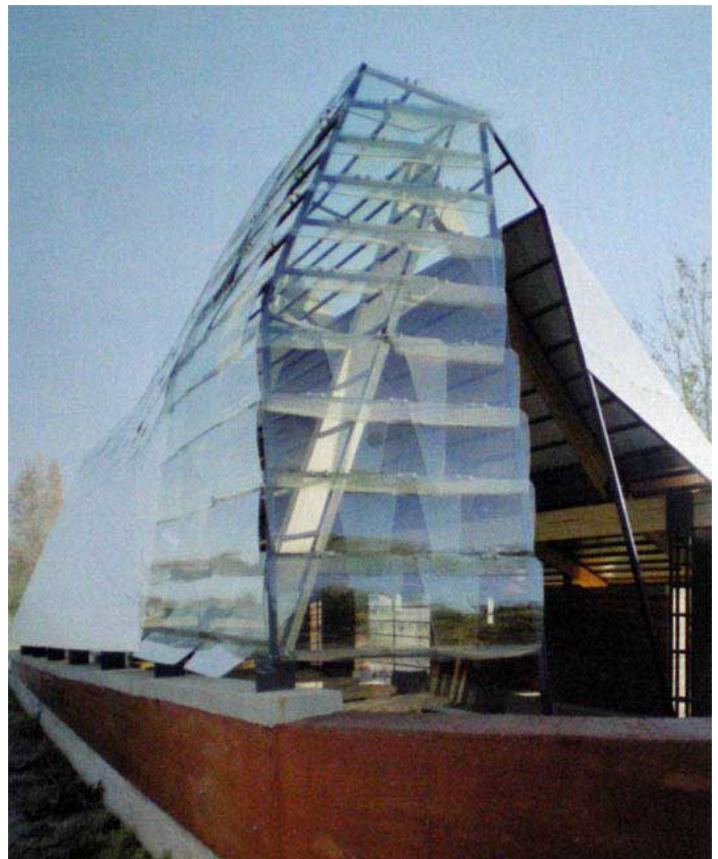


Fig. 3. Rural Studio's Mason's Bend Community Center/Glass Chapel.
[Photograph courtesy of Timothy Hursley]

The following examination of materials are those that generate responses of connectivity between the inside and outside, the reevaluation of the boundary condition, as well as those eliciting the allusion of an environment.

Reminded of the earlier study on *In Between*--specifically the boundary condition and Benzel's notion of "spatial design"--and the precedent set by Crystal Palace, it is apparent that the translucency of a material diminishes the sense of a boundary as well as allowing one to judge their spatial relationship between two environments through visual connection. The translucency of a material also brings about the awareness of the other environment, through our visual senses. To follow along Benzel's notion of "using relationships", the darkness outside is made more apparent if one were to be in a well lit interior that has a clear view outside whereby a translucent material such as glass is the mediating surface between the two environments.

Such connection is unattainable if the treatment of this 'mediating' surface is made up of traditional opaque materials such as concrete or timber, as the translucency, even if it is enclosed, does not feel as enclosing. The ability to see beyond the enclosure creates a visually less defined boundary. Referring back to the Crystal Palace, the enclosed structure of mainly glass revolutionized the way surface treatment was applied in buildings. The skin of the building was not physically and visually enclosing, cutting off all ties with the exterior environment. Instead, it created a feeling of openness. In addition to that, the enclosure of what is normally an exterior environment partakes in the concept of the blurring of boundaries.

Conventional thinking will normally steer us to think of glass or plastic when the topic of translucency is brought up. However, there are a few concrete-based materials that have been developed recently that allow for translucency. These are called Pixel Panels, Translucent Panel, and LiTraCon. They are all developed with similar concepts but with different components integrated in the material. The degree of translucency achieved by these concrete-based materials is a mixture of translucency providing visual interaction and visual distortion. Pixel panels were developed by Bill Price, using a mixture of polymer, crushed glass and concrete to create the translucency in concrete (Hart 4; Brownell 24). The material will be produced in the form of panels, bricks and blocks with a thickness that measures as



Fig. 4. A diminishing sense of boundary through translucency.



Fig. 5. Application of LiTraCon as a main entrance door of Museum Cella Septichora in Hungary. [Photograph courtesy of Áron Losonczi]

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little as a quarter of an inch thick. Regardless of the thickness of the panels, it does not determine the transmission of light through the material. Its translucency is determined by the ratio of concrete to polymer, therefore the more polymers in the mix, the greater the translucency (Hart 4-5). Similarly, Will Wittig, who developed the Translucent Panels, strives to produce thinner panels. His panels are a mix of white silica sand, white Portland cement and strands of fiberglass as reinforcement, measuring at a total thickness of one fifth of an inch. The panels were initially developed as a skin for a garden house that was previously designed by Wittig. Although with good intentions, the panels were not able to be used for the intended purpose as it was structurally unsound due to its fragility (Goho 7). The last of translucent concrete is LiTraCon, short for Light Transmitting Concrete, which was developed by Aron Lozonczi (Goho 7). Unlike the panels, LiTraCon focused

on creating building blocks that allows for the blocks to be used as walls and floors that do not compromise its structural ability ("Concrete"). LiTraCon is comprised of a combination of concrete and fiber optic strands from Schott. These fiber optic strands run parallel to each other, transmitting light from one end to the other without affecting the colours of light that it transmits (Hart 3). Another advantage of LiTraCon is that the concrete blocks could be as thick as 60 feet and still allow for light and colours of light to be transmitted from one end to the other (Hart 3; "Concrete").

The translucency achieved through these concrete-based materials differs from that of translucent glass or plastic. As these materials require some amount of light to create the sense of translucency, the translucent effect is only apparent if the viewer remains in the space that has a poorer lighting condition. For instance, if an occupant is

inside a structure clad with one of these concrete-based materials, they would be able to witness conditions and activities outside the structure during the daytime. However, during nightfall when the light is predominant inside the structure, people outside would be able to see inside. Adding to that, the fact that these materials are concrete-based gives an ethereal impression; an impression that defies the common perception of concrete: a material that is perceived as dense and rough to be lightweight and delicate.

Along the lines of achieving visual connectivity through translucency, Panelite IGU allows light to penetrate through the material but limits visual interaction between the spaces that it separates. Measuring at one inch overall thickness, this unit is composed of a Panelite tubular polycarbonate honeycomb core sandwiched by two layers of clear tempered glass (Brownell 155). The lights

that penetrate through the unit are distorted in colour, depending on the colours used for the polycarbonate honeycomb core. Shapes of objects that pass by in the distance are also affected, creating mosaic-like visions. Only when one stands directly in front of the unit does it allow for the user to see what is going on the other side of the surface. Although it provides more visual privacy than clear glass walls, it is the effect of the mosaic-like vision and shadow that correlates very well in creating curiosity and indirect connection to both spaces. This effect was personally experienced during a visit to the IIT McCormick Tribute Campus Centre in Chicago, Illinois. Some exterior walls of the IIT McCormick Tribute Campus Centre were made of Panelite IGU with an orange core. Not only was the mosaic-like affect intriguing, but the space within was orange-filled due to the colour of the polycarbonate honeycomb that was used. Transitioning through the orange-filled space to a space that was



'normal' was an experience unlike any other. It was as though I had temporarily lost my ability to recognize colour as everything turned orange.

As exemplified earlier, translucency allows for the connection between inside and outside to occur. However, our view of the boundary is still of one that is static and enclosing. According to Addington, "one major constraint that limits our current thinking about materials is the accepted belief that the spatial envelope behaves like a boundary. [. . .]; we consider the building envelope to demarcate and separate the exterior environment from the interior environment" (6). Thus, if we view boundaries as skins that respond to the environment that are non-static as well as "zone[s] in which change occurs", a different interpretation of the boundary condition is achieved (Addington 8). Taking Addington's mind-set of the potential of this boundary condition, we could start questioning our current conception of physical boundaries between the two spaces. No longer shall we see boundaries as static and as thresholds between two environments, but as transitional spaces that could potentially respond to its immediate surrounding.

Such is as the case of the Movements Exhibition in 2000,

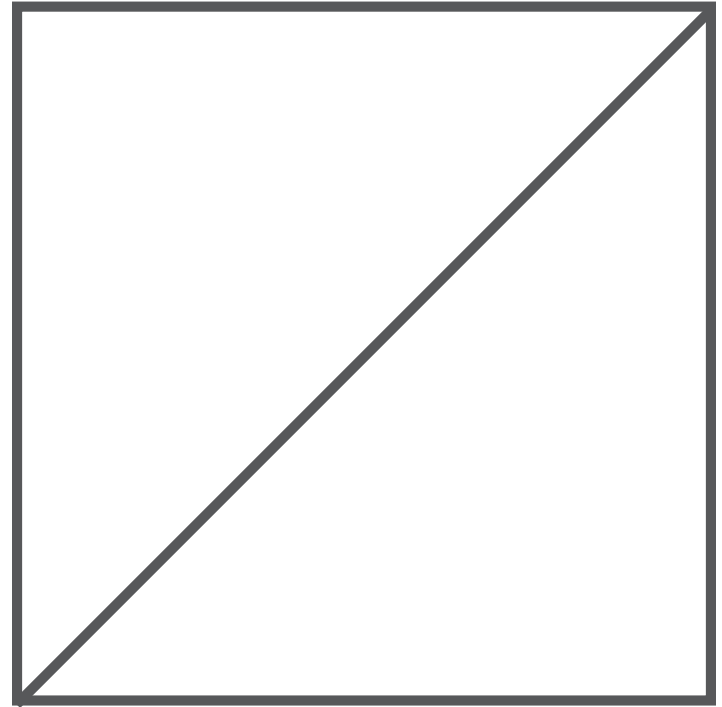


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Fig. 6. Application of Panelite IGU at IIT McCormick Tribute Campus Centre in Chicago.

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Fig. 7. Ned Khan's facade for the Pittsburgh Children's Museum in Pennsylvania.



by Petra Blaisse. For the exhibition, Blaisse hung large strips of curtain as the façade for the Storefront of Art and Architecture in Soho, New York City (Movement). Although not a conventional material to be used for a façade treatment, this projected a different way of seeing a boundary. The flowing of the fabric with the wind gestures a break away from the traditional boundary of a solid and constant mass. The free-flowing movement created an uncertainty in the actual boundary surface that delineates one space with the other.

Another project that also approaches the reconceptualization of the boundary is Ned Khan's façade for the Pittsburgh Children's Museum located in Pennsylvania also offers a different approach in realizing the connection between the interior and exterior environments through façade. In collaboration with Koning Eizenberg Architecture, the skin of the building-

-made of thousands of plastic squares--is supported by aluminium space frame to create an illusion of a floating façade (Wind). These translucent squares move in the presence of wind creating an interesting visual effect on either side of the façade. Looking at the façade from outside the building, it is reminiscent of viewing waves and ripples on water when the wind brushes through it. Inside the building, the shadow effect created by the movements of the plastic squares and the audible sounds of the wind creates an experience of a connection to the exterior environment.

The development of a façade that does not remain static is a step towards redefining the boundary as something more than just enclosing and delineating environments. A few materials and technologies have been found that could allow for such thinking of the boundary condition to occur. The most relevant are Aegis Hyposurface,

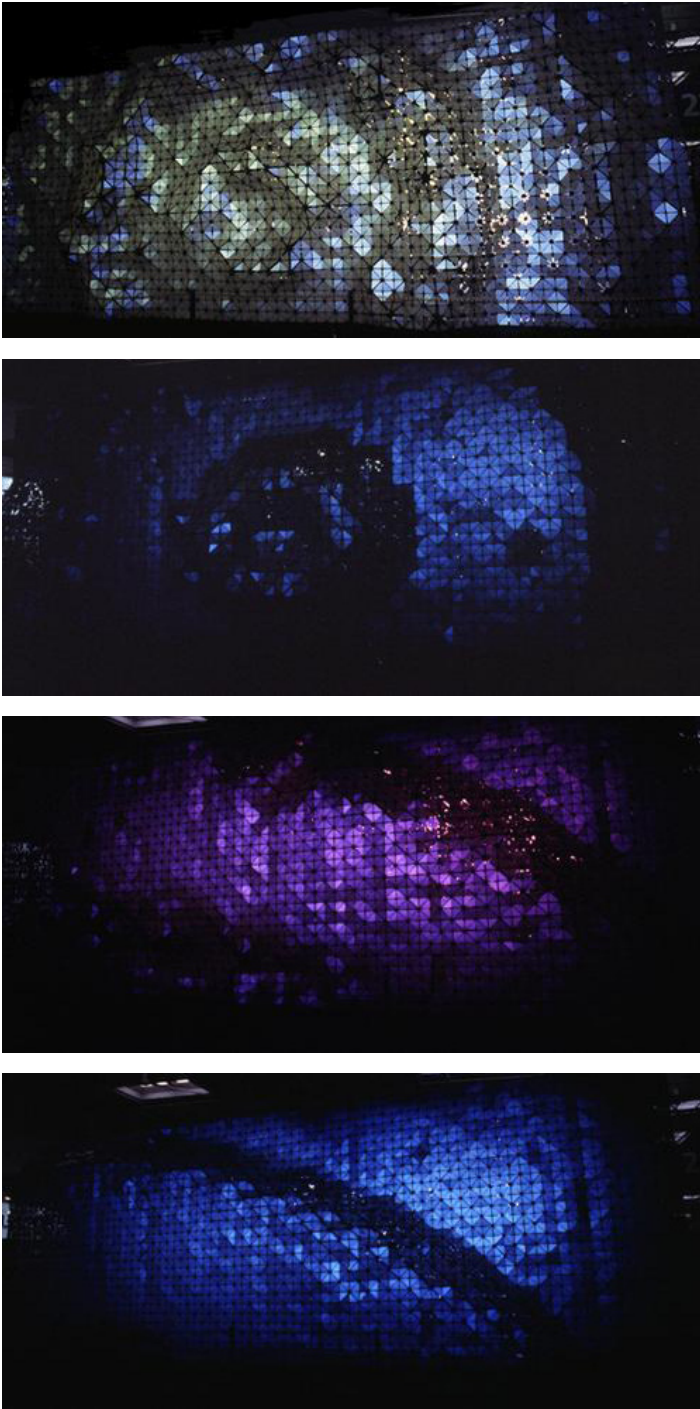


Fig. 8. Aegis Hyposurface [Photographs courtesy of Professor Mark Burry]

Kinetic Glass, Gore Tenara Architectural Fabric and Algues which will be examined and discussed.

Developed for the Birmingham Hippodrome Theater as an interactive artwork, Aegis Hyposurface was a submission for a competition offering a new light in which we view our boundary ([Aegis](#)). Developed by Mark Gulthrope and his team in dECOi Architects, the Aegis Hyposurface “consists of an interactive mechanical surface that deforms in real-time based on various environmental stimuli, including the sounds and movements of people, weather, and electronic information” (Brownell 50). The large metallic surface, moved by pneumatic pistons, responds to aforementioned stimuli creating wave and ripple-like effect akin to Khan’s design for the Pittsburgh Children’s Museum ([Aegis](#)). If further developed as the envelope of an environment, it would dismiss our traditional sense of a static 2-dimensional boundary. This opens up an opportunity to conceive of a façade as 3-dimensional, thus rendering it as an ‘In Between’ space. The 3-dimensional façade that is responsive to environmental stimuli would be irregular and continuous, creating a boundary that will always be ever changing and unpredictable. This coincides with Addington’s idea of a boundary as “active zones of mediation [. . .]. We can’t [. . .] draw them as known objects fixed to a location” (7).

Kinetic Glass also offers a similar concept to Aegis Hyposurface in which it too, responds to environmental stimuli. Developed by Soo-in Yang and David Benjamin this transparent surface embedded with sensors was developed to act in response to high levels of carbon dioxide in a room (Brownell 139; [Living](#)). This planar surface with incisions similar to fish gills would move as though “breathing” when a high level of carbon dioxide is detected. The action of opening the gills allows for proper air ventilation when needed ([Living](#)). Kinetic Glass

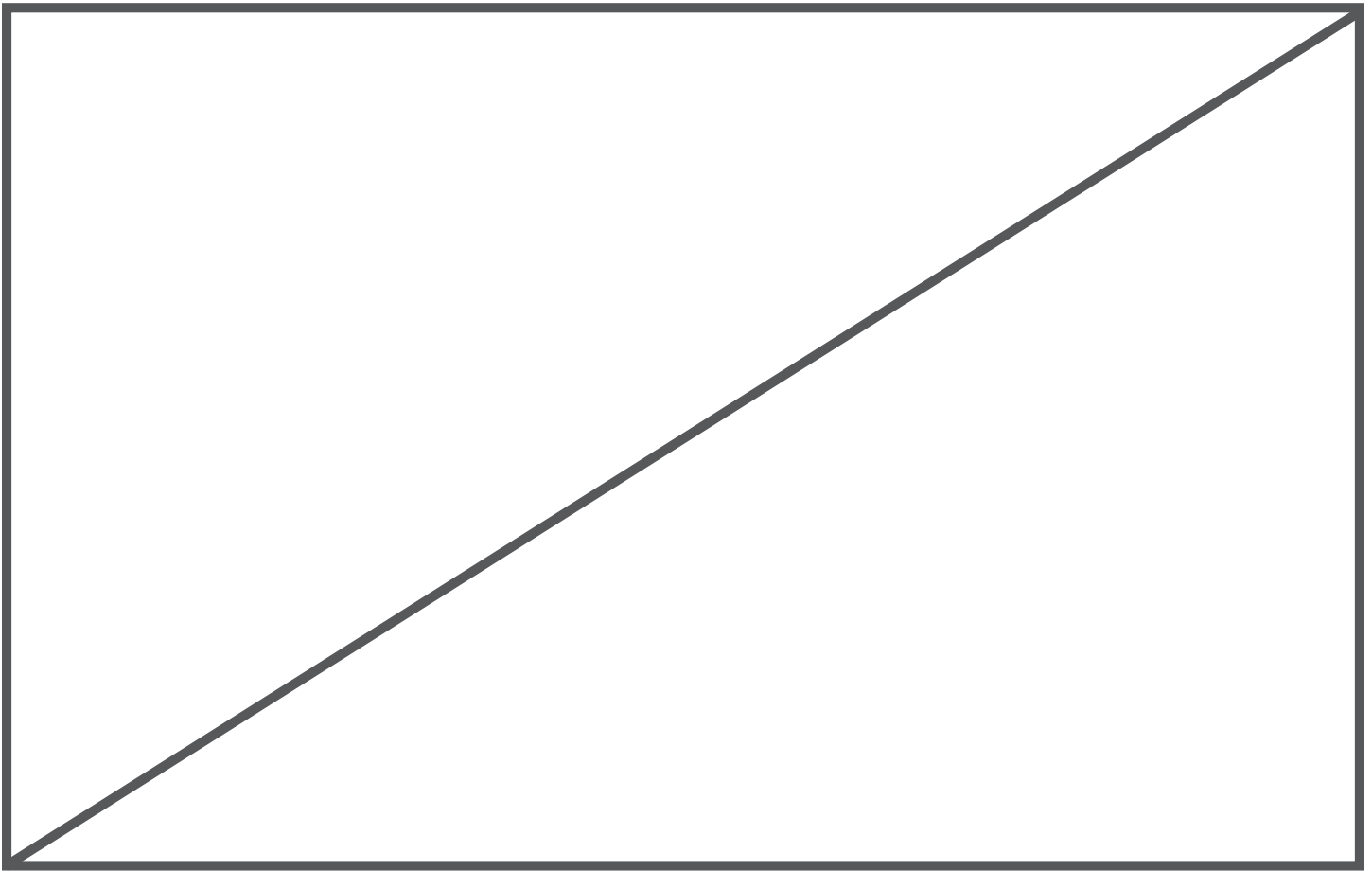


Fig. 9. An installation by Jens J. Meyer entitled 'Tornado' utilizing Gore Tenara/Jelara.

offers an insight to use it as an intelligent skin of a structure that could open or close the envelope when necessary determined through environmental cues such as weather conditions. This so-called intelligent skin can sculpt itself accordingly, similar in idea to water reconfiguring itself to be in the shape of its container. The fluidity and uncertainty of a boundary is then achieved.

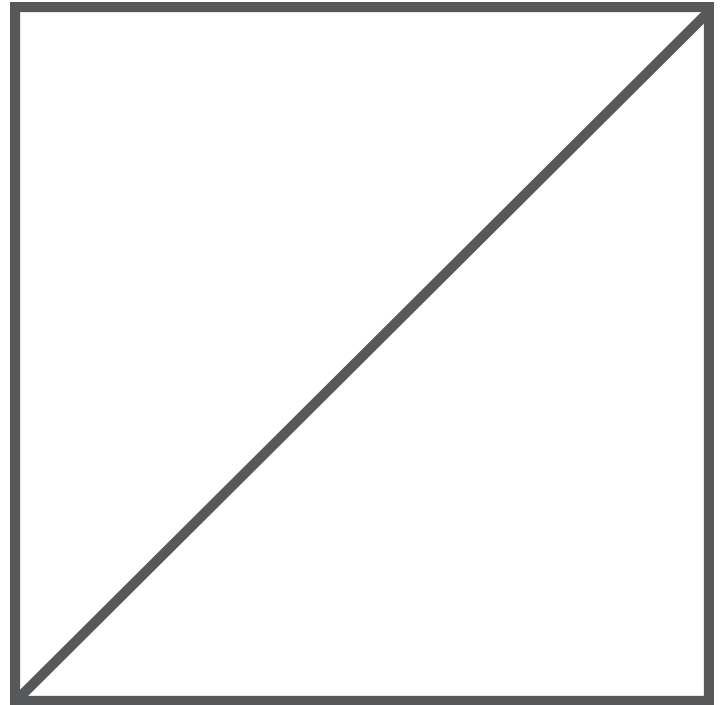
In reflecting upon Blaisse's approach to surface treatment and Calatrava's conception of space in L'Hemisferic and Liege-Guillemins TGV Station, the use of Gore Tenara Architectural Fabric creates a merge between

the two concepts. Gore Tenara, "a three-dimensional moldable fabric made from 100 percent knitted polytetrafluoroethylene (PTFE)" was developed in collaboration with Jens J. Meyer, a freelance artist who also developed a similar product called Jelara (Brownell, Transmaterial 194; Brownell, Transmaterial 2 178). This architectural fabric which was mainly used by Meyer for his work with fabric sculptures can be incorporated in the conceptualizing of the boundary as the place of transition. With its elastic durability, Gore Tenara and Jelara can be stretched and used to form spaces and create a sense of enclosure without the harsh delineation. As exhibited

in some of these installations, the fabric created the aforementioned spatial effect in addition to the aesthetics of 'flight' and movement. Although physically static, the installations appeared dynamic.

Similarly, Algues offers a parallel approach in dealing with surface treatment. Algues is an injection-moulded plastic that mimics the appearance of algae. Sold as a commercial product in multiple colours, it is a module that allows the individual 10 in. x 12.5 in. algae-like plastic to be attached to one another to create a flexible screen. With nineteen ringlets at each end of its 'branch', they could be used to make light screens or thick room partitions (Brownell, 100; Algue). Though advertised as an interior design component, there seems to be an opportunity for its use in as an exterior surface treatment reminiscent of Blaisse's exhibition that was mentioned earlier. Unlike the exhibition, this material would foster a different experience when transitioning through it. The experience of walking through a screen of Algues can be compared to trekking through a forest with thick vines hanging down from large trees then approach an opening that unfolds an open space. To create an allusion to a "natural environment" in an urban setting, would offer a different perspective in reconceptualizing the experience of a transition through a boundary in addition to its unconventional use of material in realizing the boundary.

The allusion to another environment provides an option in which the perception of inside and outside is simultaneous within a space. Such as the case of Crystal Palace, not only did the expansive scale of the structure contribute to the blurring of the spatial perception, the enclosure of vegetation indoors created a sense of being outdoors, making people wonder if they are inside or outside. New technological material that have been



developed that creates the sense of being outside inside are Imagine Tile, Live Within Skin, and Green Screen. The first material is perceptive to our visual sense while the other two are perceived visually and tactilely.

Imagine Tile is a decorative ceramic tile that "can take any two-dimensional image and incorporate it into the glaze of an incredibly vivid, commercially rated ceramic tile" (Brownell, Transmaterial 37). Included in their line of collection are ceramic tiles that mimic the look of grass, asphalt, manholes, river rocks and more. Where the application of actual landscape elements such as grass or asphalt is not feasible, then the use of this material can act as a substitute in achieving a similar perception.

Live Within Skin, developed by Freya Bardell of Greenmeme, "is a wall system composed of engineered layers of lightweight plant-growth medium" allowing

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Fig. 10. The application of Imagine Tile's Crosswalk Center theme in an unexpected location.

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Fig. 11. Live Within Skin, a customizable planting surface for indoor and outdoor application.

[Photography courtesy of Greenmeme]



for a vertical garden to be possible both indoors and outdoors (Brownell, Transmaterial 2 51). The system and its surface are customizable according to the local growing condition and plant material. The incorporation of vegetation indoors adds to the duality of perception of space as we correlate vegetation as something that appears only outdoors.

Lastly, Green Screen, “a landscape trellis system for fencing, wall-mounted applications, or freestanding enclosures”—similar in concept to Live Within Skin—is a support for vines to grow either vertically or horizontally, creating a green living surface (Brownell, Transmaterial 64). Both Live Within Skin and Green Screen not only offers a visual perception of being outside in nature but also the opportunity to feel the texture of the vegetation reminiscent of the outdoors as well as smelling the scent of the planted vegetation.

More new materials and technologies are being developed as I write this practicum, creating greater possibilities in establishing the In Between. However, the ability of new materials and technologies in establishing the In Between does not discredit conventional materials’ ability to do the same. The combination of my investigation in establishing the sense of In Between by understanding inside|outside, connection between the environments and materiality has informed me of options in which to approach my design of the In Between space. Therefore, the use of materiality alone will not establish the full potential of the In Between concept.

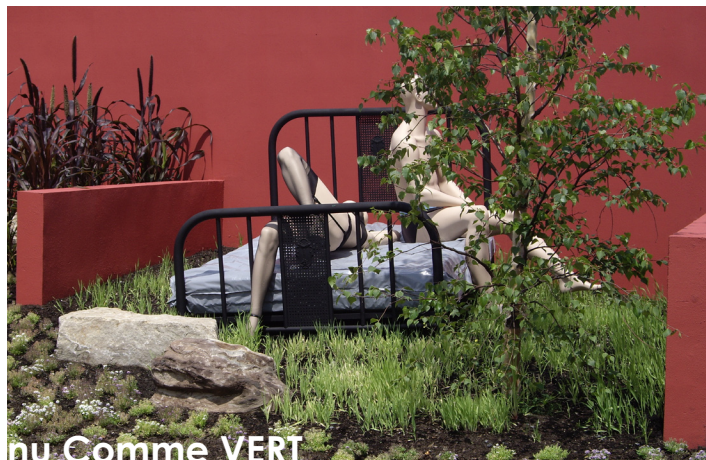
Precedents

During my investigation on materiality and its potential in engendering the In Between spatial experience, I wondered if there were other ways in which the In Between spatial condition could be created through conventional materials. This inquiry made me pursue an investigation on projects that exhibits the sense of In Between. The following investigation of precedents also allows me to create a visual analysis of the concepts that were discussed in the chapter 'In Between'.

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The first look into precedents were through some of my travel experiences, mainly based on my visit to the International Flora Montreal event in 2006- the year where I was approaching my second year in my Masters degree in Landscape Architecture while attending to commissions in designing the interiors of restaurants. I attribute much of the beginning of my thoughts of the In Between to my life situation at that time and was further encouraged by exhibits that were seen at International Flora Montreal.

Further investigations of precedents beyond my experience in the International Flora Montreal event, such as L'Hemisferic, Digital Water Pavilion, Stadtlounge, etc. are discussed, drawing references to my initial analysis of the In Between.



nu Comme VERT



Cocoon Garden



SoGo Garden

Three exhibits from the International Flora Montreal event were chosen to exemplify the concept of In Between that brings about the awareness of the relationship between spatial design and programming. Referring back to my initial perception of a room as inside and a soccer field as outside, these three exhibits exemplify the notion of our re-evaluation of what is inside and outside, and reminds us to think outside the norm, through which certain activities need not be confined to the spaces that we associate the activity.

Nu Comme VERT, Cocoon Garden and the SoGo (Small Office Garden Office) Garden all share a common ground in which activities that normally occur behind closed doors inside a building, are exposed outside. Although it may be more common to observe spatial designs that embraces activities along the lines of Cocoon Garden and SoGo Garden, the conception of exposing oneself in compromising situations such as in nu Comme VERT not only alters the way we act within the space but also changes those that observe the space.

Additionally, the boundary definition in all three exhibits creates a sense of being inside without fully enclosing the space while still maintaining a sense of being outside through environmental conditions and planting..

The SoGo Garden embody a sense of being inside that reflects on the notion of our personal space. The SoGo Garden, although outside, presents a greater sense of insideness through the scale of the space and the concavity of the wall that encloses and protects.

Fig. 12. Exhibits in International Flora Montreal 2006:
(from top to bottom) Nu Comme VERT, Cocoon
Garden, and the SoGo Garden.



Fig. 13. The interior of the L'Hemisfèric is exposed as the brise-soleils roof is raised. [Photograph courtesy of Agnes Hon]

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L'Hemisfèric, City of Arts and Science, Valencia By Santiago Calatrava

L'Hemisfèric is one of five structures within the large complex development of the "City of Arts and Sciences" in Valencia, Spain. The large 350,000 square meters complex share a common ground through its use in materiality, creating a coherent set of structures. The material used, "pure white concrete and Gaudiesque fragments of shattered tiles", not only creates a link between structures, but to the city of Valencia, as the tiles embody a significance to the city's industry as well as its historical and cultural identity ([Santiago Calatrava-L'Hemisfèric](#)). L'Hemisfèric (a planetarium) was built around the concept of "Eye of Knowledge", whereby the structure was constructed in a shape of an eye. Not

only does it resemble an eye - enclosing the theater that reflects the pupil - the transformative ability of the enclosure to open up, mimics the action of a blinking eye. As the brise-soleils roof--a roof that is moved hydraulically raised to expose the interior to the exterior environment, the definition of a boundary that separates the two environment is blurred ([Santiago Calatrava-City](#)). As well, the walkway adjacent to the brise-soleils roof feels closer to the reflecting pool, where it was only seen and not perceived when the roof was closed.



Fig. 14. The blurring of inside and outside as the 14 metre high door is open. [Photograph courtesy of Florian Holzherr]

Church of the Sacred Heart, Munich, Germany By Allmann Sattler Wappner Architekten

The Church of Sacred Heart is like a box within a box. The innermost interior space--the apse and sanctuary--is protected and enclosed by a larger enclosure made primarily of glass and stainless steel (Bell 18). The larger enclosure creates two interior spaces, in which the outer interior space has a greater connection with the exterior environment due to its translucent and transformative nature. The main component of the front façade of the church are two large, 14 metre high doors, which take up almost the entire façade (Herwig 11). The sense of In Between is presented when these large doors is open. The large doors, also the façade of the building, exposes the interior to the exterior environment, blurring the

boundary of interior and exterior. When the large doors are open and visitors are standing in the outer interior space, they would wonder if they are actually inside the building, as the breeze from outside is felt. Additionally, if one were to stand in the outer interior space looking towards the opaque surface that encloses the innermost interior space while the translucent surface is to their backs, the feeling of being outside is established, creating a sense of being excluded: as though they are standing facing an exterior wall.



Fig. 15. The sense of In Between is presented through the scale of the enclosure as well as its imperceptible boundary. [Photograph courtesy of Mieke Tacken]

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Liege-Guillemins TGV Station in Liege, Belgium By Santiago Calatrava.

A signature architectural style of Calatrava, the station offers five covered foot bridges, a high vaulted canopy and awnings made of steel and glass. A structure with ten thousand tons of steel, this station with its large awnings marks the entrances into the building. The large canopy structure is not like any other building as it does not appear to have a traditional sense of façade and an enclosure that we are accustomed to (Euro). The space inside this station presents a sense of being In Between the interior and exterior environment. This is as such because it is simultaneously sheltered and exposed to the natural elements. Therefore, occupants are not quite indoors nor outdoors. This approach in realizing the

spatial environment diminishes the sense of boundary as the enclosing structure does not enclose and demarcate spaces in a traditional sense.

The scale in which the 'roof' is presented also allowed for the sense of In Between to present itself. Relating back to the concept of how one would generate a sense of inside or outside in relation to their personal space, the scale in which this structure 'encloses' is large and expansive, creating a sense that is 'outside', while maintaining a feeling of being inside through shelter.

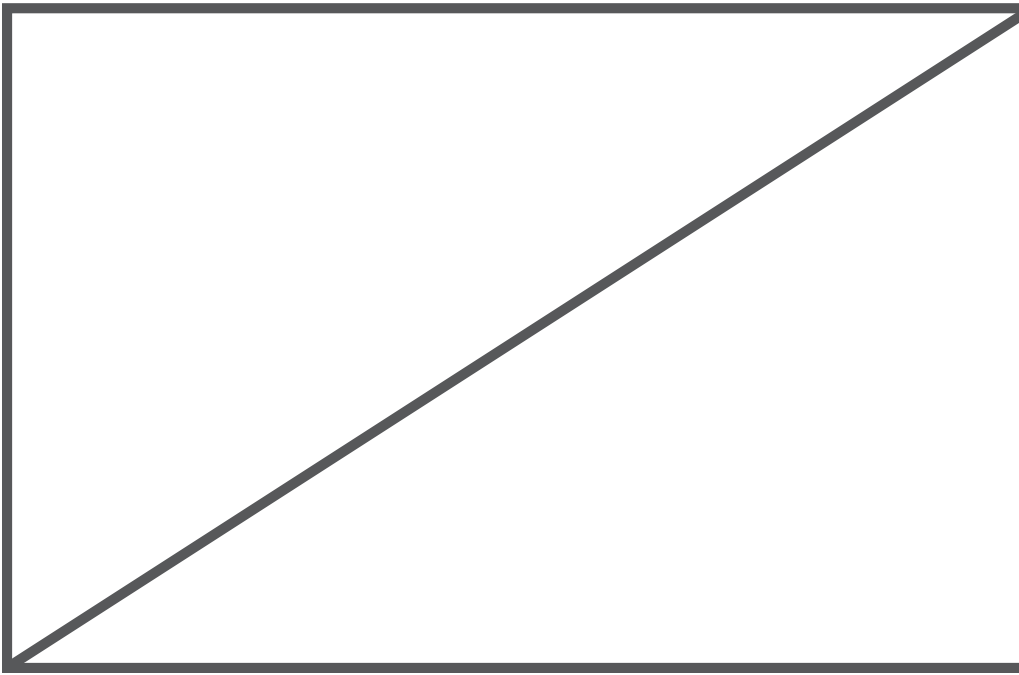


Fig. 16. The absence of a conventional facade allows for the perception the In Between as one stands at the foyer.

Yamaguchi Prefecture Pavilion, Ajisu-cho, Japan By Katsufumi Kubota

The minimalist Yamaguchi Prefecture Pavilion was a temporary pavilion that housed a gallery, theater, and a lobby (Bell 99). Similar in idea as the Church of Sacred Heart that was examined earlier, this pavilion has the sense of a box within a box whereby the gallery, theater and lobby appear to be wrapped by an additional layer of 'skin' creating an exterior 'enclosure'. This exterior 'enclosure'--in a form of a slender and minimalist flat roof projection--provides shelter for the foyer.

The absence of a conventional facade allows the foyer space to embody the sense of In Between, because the spaces with defined boundaries such as the gallery,

theater and the lobby, are like rooms within a house but with no exterior walls that encloses everything to make an 'interior' space. This project reminds me of the Farnsworth House by Mies van der Rohe, whereby it is one step ahead in creating a connection between the inside and outside. While the glass that encloses the Farnsworth House allows for one to see inside, the Yamaguchi Pavilion not only allows you to see inside, it is physically connected to the outside through the absence of a facade.

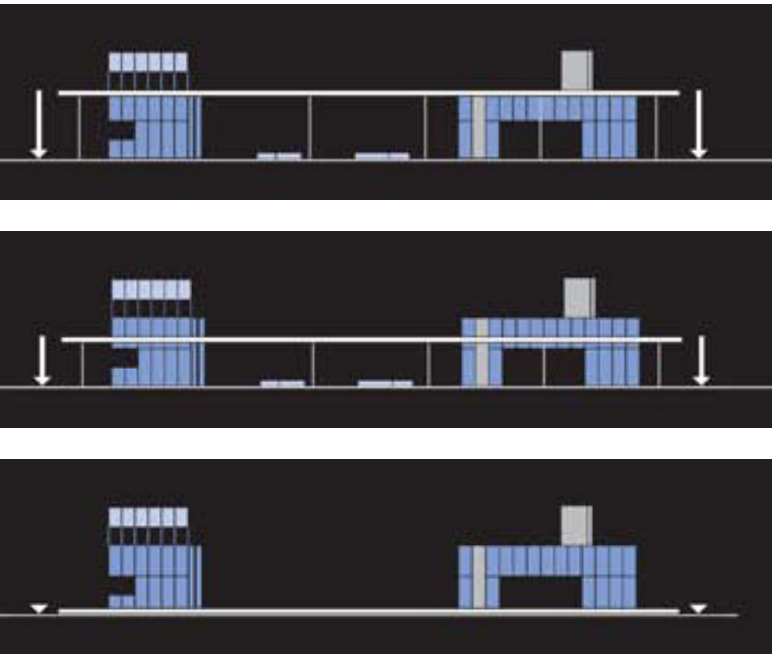


Fig. 17. The above image illustrates the progression of the Digital Water Pavilion as a space that encloses to one that is exposed. When the condition is right, the water wall is activated. [Photograph and illustrations courtesy of Carlo Ratti]



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Digital Water Pavilion By Carlo Ratti Associati

There are two components of the Digital Water Pavilion that makes it interesting as a precedent for the idea of In Between. Firstly, the pavilion consists of two rooms that are connected through a 400mm flat roof that is covered by water and rests on moveable pistons. The movable roof with its transformative nature creates a space that is either sheltered by a roof or an open space when the roof is absent. Secondly, when the roof is 'up' creating an enclosure, the walls of the pavilion are entirely made up of water. Digitally controlled, the water wall can produce "patterns of pixels" through the opening and closing of valves. Sensors are also used to create openings to allow people to walk into the pavilion (Richards).

The sense of a boundary is significantly diminished physically, as one can easily walk into the pavilion at any location without a clear sense of entrance such as a door. The permeable nature of the wall allows for a visual connection as well as the sharing of sounds and scents between inside and outside.



Fig. 18. An interior space within the exterior environment. [Photograph by Marc Wetli, courtesy of Carlos Martinez; Illustration courtesy of Carlos Martinez]

Stadtlounge

by Carlos Martinez and Pipilotti Rist

Located within the financial district of St. Gallen in Northeastern Switzerland, Stadtlounge (city lounge) was the outcome of a design competition to create a “public living room” to curb its not-so “people-friendly” image (Imboden). The area seem as though a red carpet was rolled out creating interior hallways and rooms with buildings as walls. As described by Carlos Martinez, “The relation between interior and exterior seems to be inverted since the external fronts of the buildings may at the same time be understood as internal façades or wallpapers of the lounge.” (1)

The experience of moving from outside in--passing through a roadway to enter a building--has been altered to create a perception that one is already inside the common area of building, thus viewing the building as a room, and the streets as hallways.

To add to that, the resemblance of the site elements to interior furnishings enhances the notion of being inside--even if the lounge is physically outside--allowing for activities that would normally occur inside to be brought outside.

The study site is located in Edmonton, Alberta, within the University of Alberta campus. The study site is part of an overall vision for the development of Edmonton Clinic, the product of a partnership between the University of Alberta and Capital Health to develop four facilities: Edmonton Clinic North Sequence A, Edmonton Clinic North Sequence B, Edmonton Clinic South Sequence A and Edmonton Clinic South Sequence B. The Edmonton Clinic complex is proposed to take up approximately 6 blocks, west of 114th Street, between 87 Avenue and University Avenue. Phased into two parts, Edmonton Clinic North, both Sequence A and B will focus on health care education and research while Edmonton Clinic South will take upon clinical aspects of health care (HOK 1).

Between the three facilities, I decided to focus on the Edmonton Clinic North Sequence B scheme which is currently the site of the Research Transition Facility (RTF). It was my intention to expand on the Sequence B scheme, as the report by HOK Architects Corporation--the prime consultant for the Edmonton Clinic North project-- was more focused on the development of Edmonton Clinic Sequence A with very little resolution to Sequence B. Following the report by HOK Architects Corporation, the main focus of the site design for this practicum is the proposed landscape that was to be a student garden to which I will apply my knowledge of the In Between (HOK 49).

This chapter will introduce the site in its present state along with an analysis of the site's opportunities and constraints followed by my design proposal.



87 AVENUE

Katz Group-Rexall
Centre for Pharmacy &
Health Research

Medical Sciences

86 AVENUE

112 STREET

Walter C. Mackenzie
Health Sciences Centre

85 AVENUE

115 STREET

114 STREET

Jubilee
Auditorium

Materials
Management

Research Transition
Facility

Stollery Childrens'
Hospital

84 AVENUE

Heating
Plant

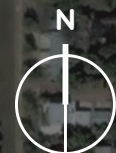
83 AVENUE

83 AVENUE

Aberhart
Services
Building

Aberhart
Centre

82 AVENUE



Site

Site Analysis

As mentioned earlier, the Edmonton Clinic North Sequence B is to be located where the Research Transition Facility currently exists. The site is located within close proximity to the Health Sciences district of the University of Alberta. Directly east of Edmonton Clinic North Sequence A is a 'mall' of medical buildings that includes the Katz Group-Rexall Centre for Pharmacy Research, Medical Sciences, Walter C. MacKenzie Health Sciences Centre and Stollery Childrens' Hospital, to name a few. West of the site are Materials Management and the Heating Plant.

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A large surface parking lot sits immediately North of the site, although parts of the surface parking lot are now under construction in preparation for Edmonton Clinic North Sequence A. South of the site is the Aberhart Services Building and the Aberhart Centre.

Separating RTF from the medical 'mall' is the Health Sciences LRT Station and 114 Street that runs North-South. The Health Sciences LRT Station was a new extension to the LRT line in 2005.

Access throughout the University of Alberta Campus, as a pedestrian, seems more inviting North of 87 Avenue, towards the Main Quad, as pedestrian paths take precedent over surface parking lots and wide vehicle-oriented roads. In an around the site, vehicular circulation is more dominant. Major thoroughfares within the site are 114 Street and 87 Avenue. Those two streets are the main connectors to residential neighbourhoods East, West and South of the university campus. Despite heavy vehicular traffic along these streets,



Research Transition Facility

Health Sciences LRT Station

114 Street

Fig. 22. View of the existing condition on 114 Street





Fig. 23. View North on 114 Street towards the only pedestrian push-button crossing between 87 Avenue and 83 Avenue.



Fig. 24. View South on 114 Street.



Fig. 25. Large obtrusive walls to contain the LRT tracks.

64 pedestrian traffic are also evident, especially pedestrian traffic crossing 114 Street at the Health Sciences LRT Station. A pedestrian crossing is placed on the North entrance/exit of the Health Sciences LRT Station to accommodate the pedestrian flow between the Health Sciences LRT Station and the 'mall' of medical buildings east of 114 Street. Sidewalks are provided all along 114 Street, however, the proximity of the sidewalk to vehicular traffic, and lack of shade and shelter along the sidewalks prove to be an uninviting environment that feels unsafe for pedestrians.

Site Opportunities and Constraints

With the Health Sciences LRT Station within such close proximity to the site and surrounding facilities, the convenience it provides encourages the use of public transportation. However, the location of the station is a

constraint, whereby it impedes the visual and perceptual connection between the Research Transition Facility (RTF), 114 Street and the 'mall' of medical buildings east of it. The said connection was once provided through a large open lawn in front of the building as the facade fronts on to the street. The once gentle transition from building to landscape to street is now lost to the LRT Station wall. Physical barriers are put up to contain the LRT tracks, defining the LRT station as its own entity. These barriers separates the RTF from buildings across the street from it, allowing only a confined space for east-west pedestrian movement.

The LRT Station directly in front of the Research Transition Facility not only cut off its frontage onto 114 Street and limiting east-west connection, the space between the west LRT wall and the building face was reduced dramatically creating a confined, wasted space.



Fig. 26. Sandwiched between the Health Sciences LRT Station and the front 'face' of the Research Transition Facility (RTF).



Fig. 27 Physical and visual separation between the LRT platform and its surrounding.

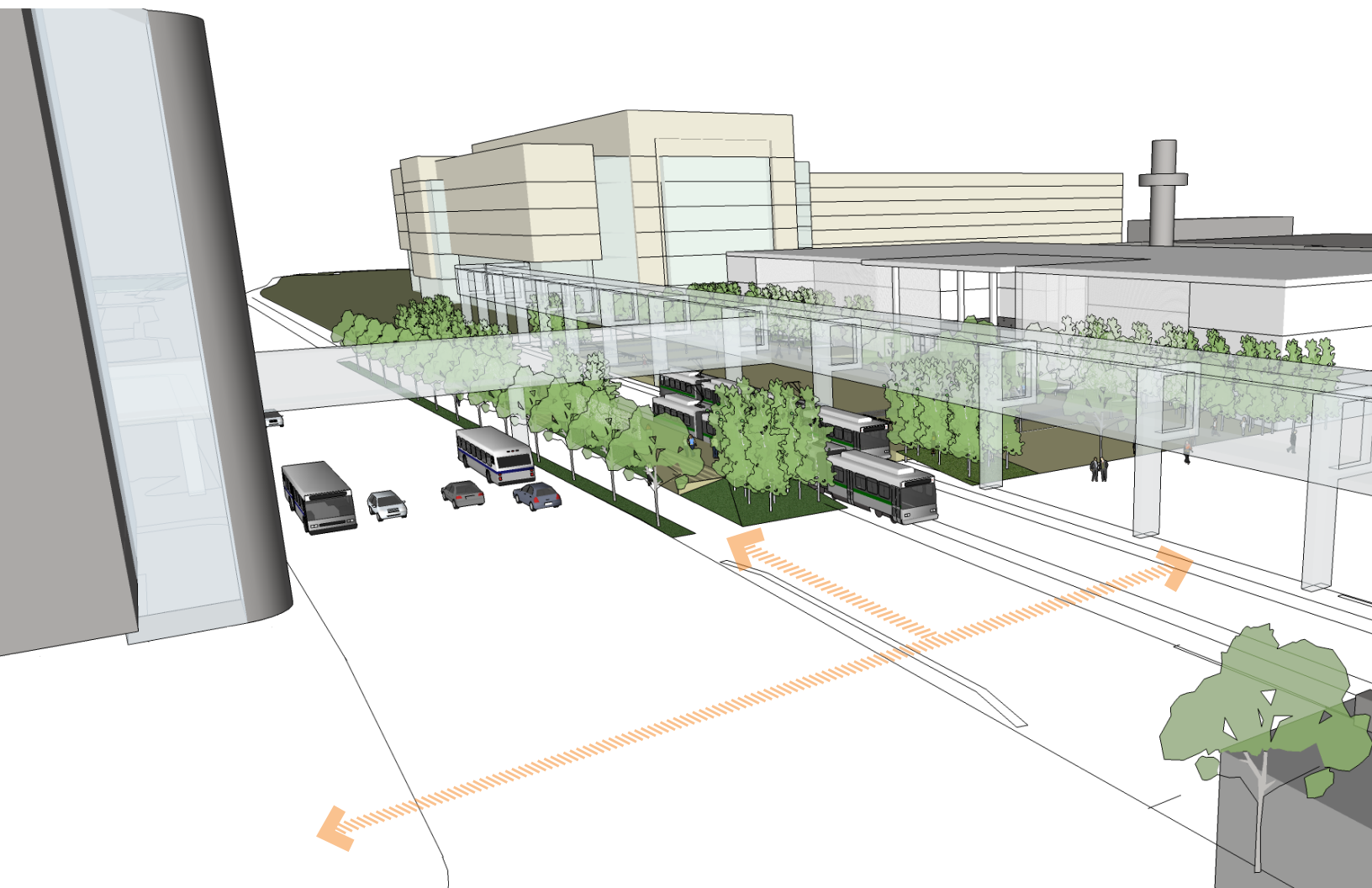
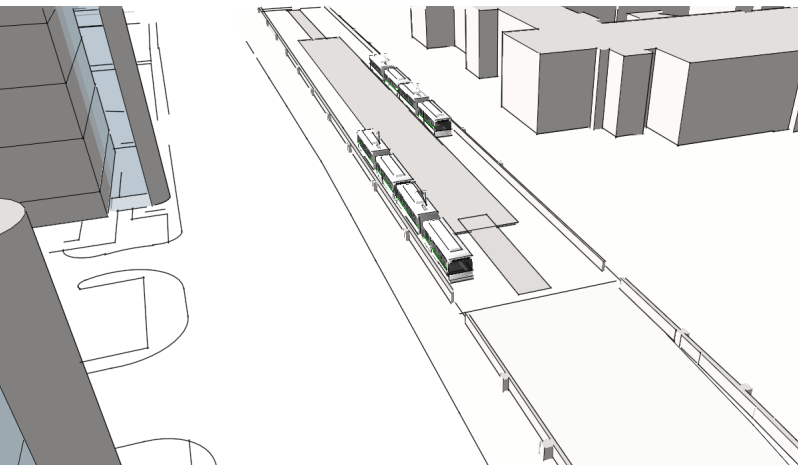


Fig. 28. The narrow and confined east-west passage.

An existing pedestrian path in front of the Research Transition Facility, a 'better' alternative to the adjacent sidewalk on 114 Street, that leads South to 83 Avenue is a narrow, worn down concrete path. A purely functional path, it does not encourage 'stop/pause' traffic where an individual would pause to converse with a classmate that he/she ran into. The space that used to be the 'front door' to the Research Transition Facility now seem like the 'back door'. This is a space where one passes through and as it is not conducive to any positive social experiences.

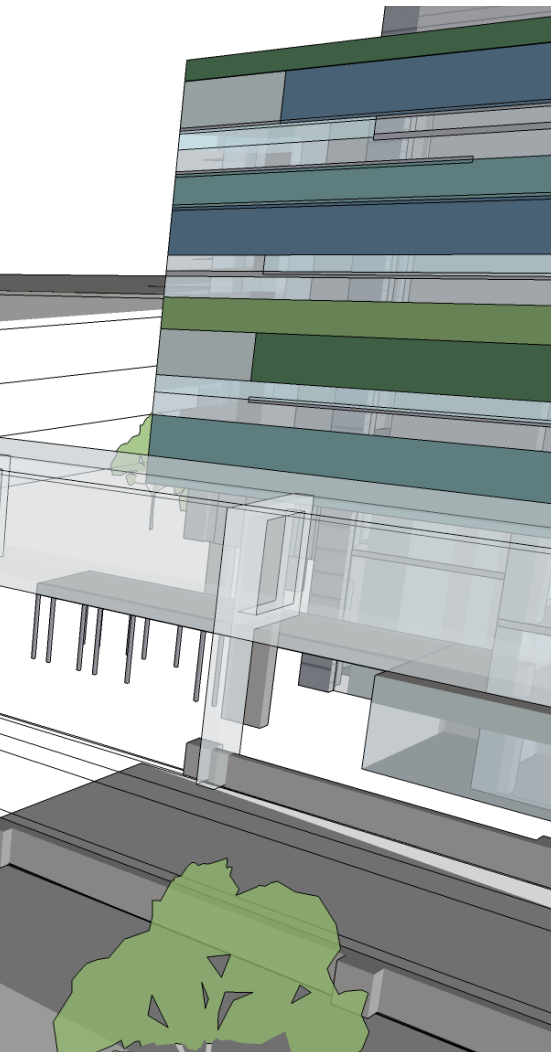
As previously mentioned, pedestrian accesses North-South along 114 Street is confined to the sidewalks that are less than inviting. The heavy vehicular traffic that dominates 114 Street, a major artery within the University of Alberta, makes crossing the street from the Health Sciences LRT Station to any of the medical buildings east of it dangerous and awkward, even with the presence of the pedestrian crossing.

Despite the setback of 114 Street as an unfriendly pedestrian corridor, its prominence as a major artery within the University of Alberta presents itself as a 'natural' multi-modal thoroughfare as was intended in university's long term vision for the campus (Gibbs 9).



Design

Site Context

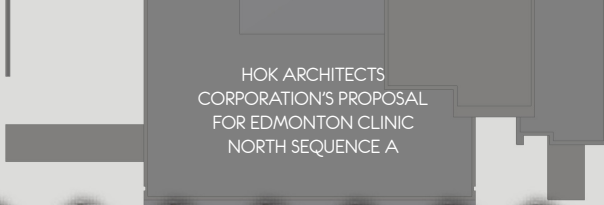


Reminded of Katherine Benzel's notion of connectivity between design disciplines, I started to look beyond my project scope. Although my primary design focus is the landscape for the Edmonton Clinic North Sequence B, it is difficult to ignore the site context, especially when it profoundly affects the design of the landscape.

The first step I took in designing the site was to address the issue of pedestrian access in and around the site, establishing a continuity of pedestrian flow towards medical buildings east of it. In doing so, the LRT tracks were shifted. Instead of the existing single LRT platform, where the LRT tracks are on either side of the platform, the design proposes two platforms: a Northbound and Southbound platform. This approach allows for the removal of the large obtrusive wall that contained the LRT tracks, creating a visually less obtrusive boundary.

In addressing the crossing of 114 Street, a wider pedestrian crossing aligned to the North LRT station entrance/exit is proposed. This new alignment for the proposed crossing will result in the reconfiguration of curb cuts east of 114 Street to better welcome pedestrians crossing the street. Rather than crossing 114 Street only to be met by a curb cut, a pedestrian refuge/island is created, allowing for a more fluid and uninterrupted east-west pedestrian flow.

In addition to that, street plantings are introduced along 114 Street to create a landscaped buffer between vehicular and pedestrian traffic providing a safer and more inviting environment.



HOK ARCHITECTS
CORPORATION'S PROPOSAL
FOR EDMONTON CLINIC
NORTH SEQUENCE A

STOLLERY
CHILDRENS'
HOSPITAL

115 STREET



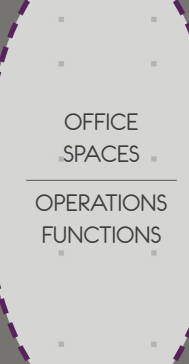
OFFICE
SPACES

OPERATIONS
FUNCTIONS

CONNECTIVE FUNCTIONS

STUDENT
LOUNGE

CAFE SEATING



OFFICE
SPACES

OPERATIONS
FUNCTIONS

CONNECTIVE FUNCTIONS

83 AVENUE

NEW PROPOSED HEALTH SCIENCES LRT STATION ALIGNMENT

114 STREET

Design

Student Garden

Further along in my process of conceptualizing a design for the Edmonton Clinic North Sequence B student garden, I began to realize that it was insufficient to merely conceptualize the landscape that the building faced. During the process, it seemed as though the design of the landscape was a separate entity from the building. This thought altered my design process approach and I began to re-examine the design of the building proposed by HOK Architects Corporation. I started to think about the functions of the interior space, which in turn informed the design of the landscape outside. There was not a significant change in the design of the building, but the exercise of re-examining the building functions allowed me to think of the design of the interior, building and landscape as a whole, without limiting myself to the processes of the landscape. In HOK Architects Corporation's proposal, the functions of Edmonton Clinic North Sequence B were categorized as open office, enclosed office, connective and operations with a planning module of 3.0m x 3.0m allowing easy conversion of space and for structural organization. The programs for connective functions are food/retail services, public lobby and student workrooms, while operations functions deal

with general support and material management. The exercise of re-examining the building resulted in the reconfiguration of the various functions, as well as the sharing of programming between the interior and the landscape. As illustrated on the opposite page, connective functions were kept along the East side of the building, as it deals with a more public scenario. Entrances into the building are located off the east-west axis in the middle of the building, where the 'front door' to the Research Transition Facility (RTF) once stood. The concentration of activity and emphasis of an entrance at the middle of the building is a gesture to re-establish the prominence of that location as a main entrance.

The interior, building and landscape, or what I will refer to as the building complex, is envisioned as one entity where the beginning of experiencing the project begins at the sidewalk. Multiple sense of entrance into the project site is presented -- at the sidewalk, north and south of the plaza connection -- where one would either be waiting for the train or proceed into the building. The project site will have a student lounge and cafe seating area within close proximity to connective functions.



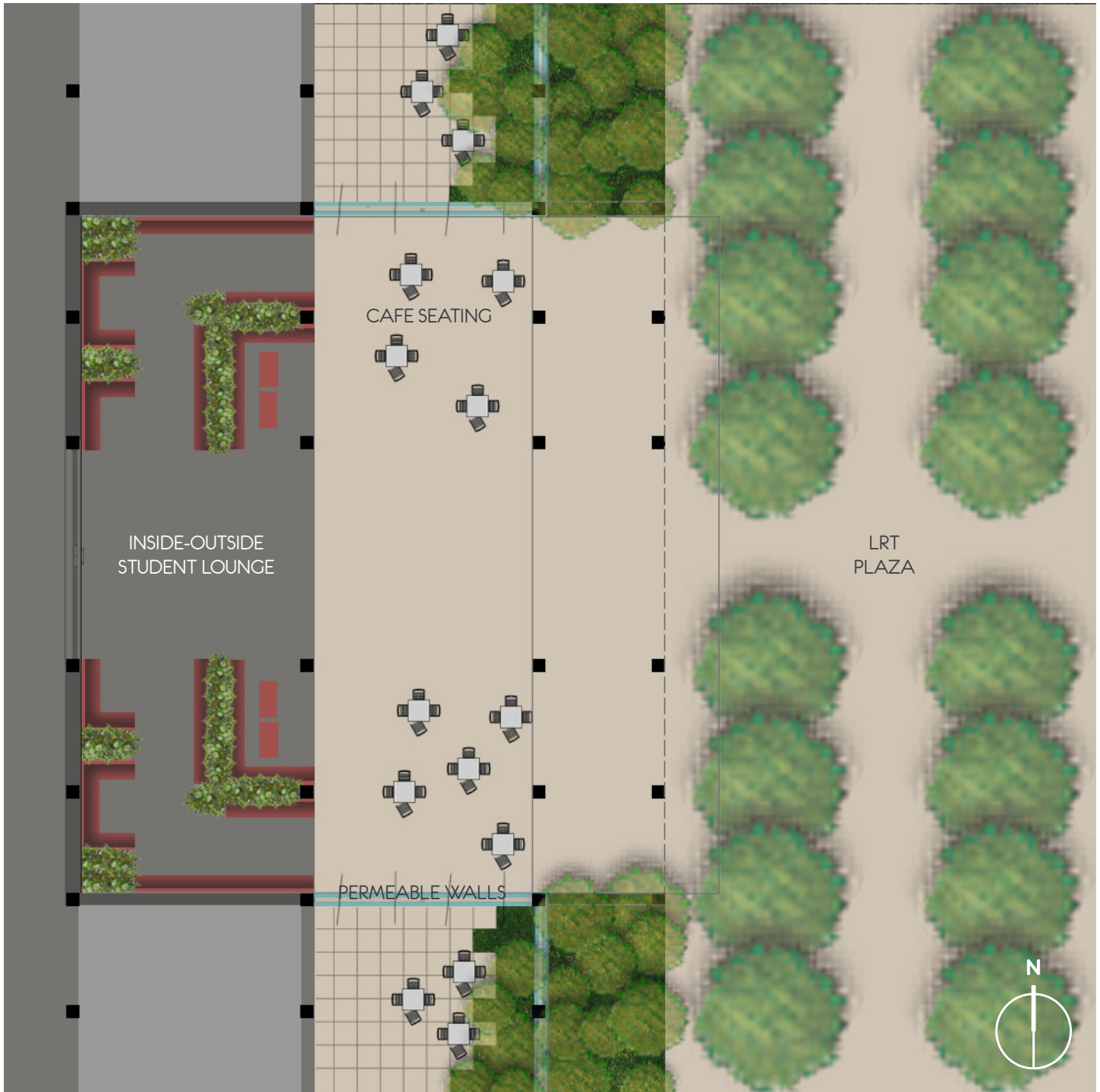
- 1 Street front facade
- 2 Inside-outside student lounge
- 3 Cafe seating
- 4 Permeable walls



View North towards LRT platform from sidewalk along 114 Street.

The idea of conceptualizing the building complex as a whole is made apparent through incorporating a **street front facade** adjacent to the sidewalk with multiple entrances that lead into the east LRT platform. The intention of the street front facade boundary is to create a sense of entry into the complex, giving the impression that the building complex begins from the sidewalk and as one moves westward from the sidewalk, the greater the feeling of being inside. It will also make people wonder where the building actually starts or stops, while hinting at the design integration of the interior, building and landscape. The stairs, ramps, Panelite IGU walls and plantings work together to create a defined boundary between the sidewalk and the LRT platform but still allow for a gradual transition and visual connection between the two spaces. This approach of creating a sense of entrance into the building complex is also apparent on the north and south ends of the complex through a sloped ground surface that brings one to the level of the west LRT platform, where the building and LRT platform are integrated as one.





Through weaving the outside inwards, a niche suitable for an **inside-outside student lounge** is created. This lounge is integrated into the design of the building, allowing the space to have the duality of perceptual experience of being inside and outside simultaneously. Within this In Between space, one would feel more inside due to the scale of the space in relation to oneself, as the space is confined vertically. The vertical scale of the space is achieved through the weaving of the ground floor outside space inwards while keeping the floors above flush to the facade of the entire building. Therefore, the second floor of the building creates a ceiling for this lounge. While one feels inside, the feeling of environmental conditions inside the lounge presents a perception of being outside. As the lounge does not have boundaries all around it to fully enclose it, a gust of wind from the passing of the train will

be felt inside the lounge. The lounge will be equipped with heated flooring for extended seasonal uses while artificial ceiling lights allow for the lounge to be used day and night. The lounge is organized to encourage social conversation with the provision of sofa-like seating and tables, that contribute to the sense of being inside as the furnishings are associated with interior elements.

Additionally, a geometrical relationship between the building and the landscape is formed as the trees are planted at similar intervals to the building columns. Therefore, as one lingers in the inside-outside student lounge, the visual connection between the building and landscape is made apparent as the trees are planted to follow the linear axes of the columns with similar spatial spacing between each of them.

View South from inside-outside student lounge as the space is lit in the evening.





As illustrated in the earlier plan that indicate the programming of the site, **cafe seating** is supplementary to the connective functions where food services are provided inside. Cafe seating is available both inside and outside, although that distinction of inside/outside cafe seating would be diminished when the large 2.8m high permeable walls are open. The **permeable walls** enclose and separate the cafe seating area that is adjacent to connective functions to the one that is adjacent to the student lounge. The sense of boundary is diminished as these large operable doors allow people to wander seamlessly between inside and outside. As the permeable wall remains open, the entire north-south axis is connected and perceived as a continuous outside space. The cafe seating area adjacent to connective functions embody a

perception of being outside more than being inside. This is achieved through the expansive space, the translucency of boundaries, the presence of vegetative elements and the transition of outside materials towards the inside. As one enters this In Between space from outside, the familiarity of the vegetation prior to entering and the presence of similar vegetated conditions inside establishes a connection between the two environments, while creating the sense of being outside through the use of vegetation inside. This association through elements is also applied to the paving, where it is extended from the outside to the inside. To add to the perception of being outside in this In Between space when the permeable walls are open, the isolation and feeling of being inside is further diminished as exterior sounds and environmental conditions are felt.



View North towards cafe seating area adjacent to connective functions.

This is not the end. It is just the beginning.

This practicum has shown me that, this is just the beginning of my exploration of the In Between. My facination with inside and outside will only grow with time, as I continously learn and add to my knowledge of the thought of the harmony, coexistence, merge and play between inside and outside.

Closing

It took me a while to resolve a design for my site. At one point, I did not even want to design because I was so intrigued with the ideas of the In Between that I wanted to continue on with my research.

Reflecting back on the whole process of getting to where I am at with this study, I realized that my initial thinking of the potential of the In Between space prior to research was primarily focused on the visual connection between the interior and landscape. It was a very narrow view of the In Between, by not acknowledging other sensorial perceptions in the creation of space. The realization that other senses partake in the perception of fully appreciating a space--whether it be through architectural form, the feeling of the ground underneath one's feet, the smell of the air or the feeling of temperature change as one moves from hot to cold--steered the direction of my research, instigating the curiosity of how these perceptions could be achieved to create the duality of perception of space to capture the sense of In Between.

I was also reminded through my research, specifically Katherine Benzel's notion of establishing relationships and connections between environments that this sense of In Between can occur in a myriad of forms and scales. By looking at the In Between as a series of connections and transitions between spaces, I allowed myself to think beyond the immediate surroundings and other ways of achieving connectivity-not just a physical connection. Further research in precedents allowed me to think broadly in how to create spaces that allowed for gradual transitions without the abrupt threshold that architecture presents--whether it be the use of non-conventional elements such as water to create a wall while achieving fluidity in movement between spaces, such as the Digital Water Pavilion, or the re-evaluation of what makes a wall or ceiling, such as the Church of the Sacred Heart and Liege-Guillemins TGV Station.

The concept of the larger context of the site focused on connectivity of the site to its surroundings, creating a less abrupt pedestrian flow, as people traverse east-west through the new LRT alignment. That along with the design of the street front facade created the notion that the site/building begins from the street, and that the space west of the street front facade is the inside of the building.

The intention of providing cafe seating all along the east side of the building both inside and outside the building enclosure was to create a connection between the two spaces through the functionality of space triggering the perception that they are one entity. This perception is intensified when the large operable walls are open, allowing the blending of sound, air and movement both inside and outside, thus blurring the boundary, especially when similar activities are engaged on both sides.

The extension of the paving material from the LRT plaza to the inside of the cafe seating, and the use of similar plant species adjacent to one another creates a perception of the connectivity between the two spaces even though it is separated physically by a transparent wall.

Although I did not use a material such as Imagine Tile on the inside to emulate the outside environment, the concept of applying a material that is used outside on the inside is still inherent in the design. Similarly, while materials such as Live Within Skin and Green Screen was not used inside, the concept of the presence of environmental conditions and natural elements to heighten the sense of being outside inside, was provided through the planting inside and reinforced as similar planting was also used beyond the building facade boundary. The concept of heightening the sense of being outside through environmental conditions was the primary focus in achieving the sense of In Between in the student lounge in addition to providing interior-like conditions alongside the notion of interchanging elements to create the duality of perception.

Additionally, the student lounge was designed as a concaved and captured space, to emulate the sense of being protected, enclosed, and surrounded. Also, the sense of being inside was further enhanced by playing with the scale of the space by creating a lower ceiling, to bring awareness of the relationship between the scale of the space to that of the adjacent space. The sense of transitioning towards the outside is presented as one moves from the confined and enclosed student lounge towards the expansive and open LRT plaza.

Reflecting on the whole design process, I am glad that I took the time to examine how the interior and the building are designed in relation to the landscape. The process made me realize the importance of the integration of design disciplines and allowed me to think critically of how the interior, building and landscape work together to achieve an objective. I realized that I can achieve the In Between in the landscape, but in order to create an integrated sense of In Between, the integration of shaping the interior, building and landscape is critical. Without the process of conceptualizing the site as a whole, the design would only involve the landscape, where the outside is created to feel more inside, with no reciprocity in experience, such as the feeling of being outside in the interior.

The design that I have presented in this practicum is one of many design solutions, as there are many possibilities and opportunities in creating the sense of In Between for the Edmonton Clinic North Student Garden. Looking back at the first few chapters of this practicum, it dawned on me that there are many approaches in creating the sense of In Between, and these will only multiply as I continue searching and creating new approaches in achieving the sense of In Between.

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