An Interior for Active Transportation:

Place, Mobility and the Social Life of the City

by

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ABSTRACT

The practicum project addresses the ongoing relationship between interior space and the urban environment. Despite a common perception of the interior and the exterior as being distinct and separate, a study of these spaces reflects a similar spatial continuum to the one that exists between public and private space. These realms are linked to each other spatially and socially. Through the development of an active transportation hub in Winnipeg, the project seeks to explore the potential of interior design to influence the wider urban environment. Placemaking and scale linking will be used to create places of meaning and identity in a mobile environment. The hub will create a place for sustainable transportation, community connection and improved quality of life for the people of Winnipeg. In this way, interiors can have a direct impact on the dynamics of the city.

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1.0 PROJECT OVERVIEW

1.1 Introductory Background

Section 1 serves as an outline for the practicum document, providing functional

information related to the background and objectives, the site analysis and the

programmatic needs of the project. It also poses key research questions and describes the

research methodologies used in the practicum. Brief summaries of the four major sections

of the practicum document are also included.

1.1.1 Topic Overview

The practicum project addresses the relationship between interior space and the urban

environment through the design of an active transportation hub. By considering the

importance of placemaking in transit facilities, the project illustrates the potential of

interior design to influence the wider urban design issue of finding places of meaning and

identity in our mobile society. The hub creates a place for sustainable transportation,

community connection and an improvement in the quality of life for the people of

Winnipeg. In this way, interiors can contribute to the creation of a more livable city.

Architect and urban planner, Jan Gehl (2011) underlines the importance of planning for

people.

> It is my very firm point of view that if we take a more systematic approach and
> take these "cities for people" more seriously we will find that the cities would be
> considerably more friendly, livable, and lively because people will be in these
> cities more….They [cities] would be more sustainable because suddenly it'd be
> much easier to make cities where we can have a good quality public

transportation system, where we can walk in style and dignity to and from the station day and night in safety and have a good time doing it. (para 8)

1.1.2 Project Description

The design project involves the creation of an active transportation hub in Winnipeg. The term active transportation (AT) refers to any form of human-powered transportation such as walking, running, cycling, inline skating, skateboarding, ice-skating, cross-country skiing, snowshoeing or the use of a wheelchair. People who participate in active transportation are often referred to as vulnerable road users (Transport Canada, 2010) due to their lack of external physical protection when travelling on the roadway.

The hub would be part of a planned network of active transportation facilities dispersed throughout the city (Figure 3). Located in strategic areas adjacent to existing pathways, intersections and transit routes, the active transportation hubs would provide both commuters and recreational users with resources, refueling and respite services.

1.1.3 Programmatic Functions

Hubs are generally designed to be one of two types: a transitional hub or a destination hub. A transitional facility provides enroute resources such as urgent equipment repair, first aid supplies, respite areas and informational assistance. A destination hub provides a range of additional end-use resources including shower and change facilities, personal storage lockers, food and beverage amenities, concierge services, maintenance and repair outlets, parts and accessory sales, equipment rentals, indoor and outdoor deposit (parking), and access to existing public transit systems.

The practicum project explores the design of a destination hub that will serve the local community, who will have access to its amenities and use it as a central meeting place. Individuals will meet for social reasons while community groups can gather to discuss local political issues such as civic improvements, crime prevention, traffic concerns, school support or community events. Workshops can be organized by interested groups to address local interests in a wide range of advocacy and networking projects.

1.1.4 Clients

In order to maintain the truly public component of the active transportation hub, the primary client would be either a governmental institution or a non-profit organization such as Bike to the Future. The City of Winnipeg and their Active Transportation Advisory Committee currently handle the creation and maintenance of pathways and cycling-related infrastructure. The city could take the opportunity to expand their role and take over the ownership and operation of the transport hub. The network of hubs would become an extension of the existing public transportation system in the city, making Winnipeg Transit a likely client. By integrating the active transportation hubs with the Bus Rapid Transit (BRT) and current public transportation, more people may be encouraged to adopt an AT lifestyle.

Partnerships with various not-for-profit sustainability organizations would strengthen the overall intent and general use of the active transport hub. Local groups such as the Centre for Sustainable Transportation, the Manitoba Eco-Network, the Green Action Centre or the Climate Change Connection could extend their operations to own and manage the

hub. Other support organizations could include the Manitoba Cycling Association, the Winnipeg Trails Association and the Active Transportation Network division of the Physical Activity Coalition of Manitoba. Another partnership could develop between the City of Winnipeg and not for profit groups like the Forks North Portage Partnership and CentreVenture. For example, the Forks would have an interest in supporting the hub because both organizations are interested in the bike share program, the skating trail and the river walk. Paul Jordan, chief operating officer of The Forks is also a contributor of the Winnipeg Trails Association and a strong supporter of AT in the city. CentreVenture could also be an important source of support, business connections and investment collaborations between the hub and Winnipeg entrepreneurs.

Local business owners, who may wish to extend their services and include an active transportation hub as part of their existing marketing, could be another group of clients. Their involvement could generate reciprocal agreements in which capital costs are shared, local business revenues are strengthened and the relationship between private owners and city government improved. Business participation could include retail stores such as fitness centres, bike shops, and bike-taxi services, whose target markets are active transport clients. In this way, the relationship between public services and private enterprise could be mutually beneficial.

Finally, the active transportation hub could also function as a co-operative, where users jointly own and democratically control the enterprise, acting as one collective client.

1.1.5 User Groups

The primary user group would consist of Winnipeg's vulnerable road users such as pedestrians, runners and cyclists who participate in active transportation on a commuter and recreational level. This group includes those people who are participating in the Bike Share program. Secondary users include public transit customers who rely on the hub to access transportation service and residents of the local neighbourhood who will use the space for a variety of communal activities. Visitors and tourists comprise the tertiary user group.

1.2 Significance of the Research

1.2.1 Health and Environment

Environmental degradation has become a central concern for people all over the world. The increasing consumption of non-renewable resources has led to problems of climate change and the depletion of conventional energy reserves (J.H. Crawford, 2002). Since mechanized transportation accounts for a significant portion of energy usage in North American cities, many urban centres are looking for ways to reduce fossil fuel consumption by implementing alternative modes of transportation. (Elkin, McLaren, and Hillman, 1991). Focus is shifting to human-powered transport, which is more sustainable but will require changes in planning, building and operating the network of circulation in a city.

Research by Bike to the Future (Commuter Cycling Trends in Winnipeg, 2007 – 2011), indicates that Winnipeg has 11,000 daily bicycle commuters. (2011, p.2). The same

report concludes that since 2007, commuter cycling has increased by 20% (2011, p.1). This means that Winnipeg's cycling commuters account for about 2% of the total population. More than half of those who commute to work every day, travel into the downtown area. Designing an active transportation facility in the central core will help the goal of promoting sustainable transportation so beneficial to the creation of livable cities. Planning for cities that engage people in physical activity on a daily basis is integral to the encouragement of a healthy population (Girardet, 2004).

1.2.2 Climate

The climate of Winnipeg presents a challenge to many forms of active transportation in the city. Known for its temperature extremes, Winnipeg has an average high of 25°C in the summer and an average low of -21°C in the winter. The cold winter weather is accompanied by an average snowfall of 110 cm (Canty and Associates, 2011). However, authors Kevin Behan and Nancy Smith Lea (2010) have recently conducted an extensive survey of the important indicators of successful AT activity entitled Benchmarking Active Transportation in Canadian Cities. They chose 8 cities in similar latitudes in the northern hemisphere: 4 Canadian cities, 2 American cities and 2 European cities and compared them on a wide range of AT criteria. When it came to the effects of inclement weather on AT participation, they found no correlation.

> In the Canadian context, Vancouver is the warmest city through the winter months, and has the highest [AT] mode share. However, Montreal, which is markedly colder than Toronto, has an AT mode share that is significantly higher than that of Toronto…. Combining summer and winter temperatures and examining the mean annual temperature proved similarly inconclusive for all study cities…. All of our analyses around meteorology and AT proved our expectation that the effect is, at best, minimal (Behan and Smith Lea, 2010, p. 50).

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Rather than weather, Behan and Smith Lea concluded that cities with

more kilometers of bicycle facilities, greater transit –bicycle integration, shorter

commuting distances, higher fuel taxation levels, and more people using active

transportation were the cities that had consistently higher rates of AT user participation.

The design of an active transportation hub at the city centre will serve as a resource for

active transportation users in need of equipment repair or shelter from the elements. By

providing users with indoor bicycle parking and access to public transportation, the hub

can mitigate the challenges of year round active transportation, bringing comfort and

security to AT users and encouraging more people to pursue an AT lifestyle.

1.2.3 Active Transportation Initiatives in Winnipeg

In December 2009, the City of Winnipeg approved the spending of $20.4 million on

active transportation initiatives. All three levels of government, civic, provincial and

federal, contributed $6.8 million each to support the completion of 35 different projects,

including a new bus rapid transit system (BRT). Currently, Winnipeg has 274 km of

active transportation routes made up of 149 km of multi-use pathways, 61 km of

neighborhood pathways, 13 km of bike lanes, 35 km of sharrows and 16 km of bike

boulevards (City of Winnipeg, 2011). In addition, by October 2011, 71 km of new

cycling routes and 30 km of new bike and pedestrian paths will be added, bringing the

total of AT routes to 375 km (Kives, 2011). The city currently has another 30 km of

reserved Diamond Lanes covering 114 intersections (Winnipeg Transit, 2011), and

approximately 5 miles of cycle track. Furthermore, in 2008 Winnipeg city council

enacted a policy which ensures that whenever any major repair of a street occurs, an AT consideration must be added. The result is that as the city continues to maintain the streets, the AT network will grow. These initiatives need to be supported to improve the convenience, connectivity and costs of transportation in the city and to encourage the growth of AT as a lifestyle choice.

1.2.4 Public Space, Democracy and Sociability

Over past decades, there has been ongoing change regarding the nature of public and private space in urban centres. Due to the proliferation of communication technology, the privatization of public space and horizontal urbanization, there has been a growing concern about a decline in the quantity and quality of urban public space and a resulting increase in the role of private space (Erlhoff, Heidkamp, and Utikal, 2008). An increasing number of public areas including civic squares and parks are being controlled by private enterprises. In these pseudo-public spaces, constitutional rights are often subject to private rules that regulate behavior and usage (Zukin, 2010). In addition, the gradual movement of people to suburban areas results in a fragmentation and subsequent decline in the use of urban public space (Mandanipour, 2003) With these changes in public space comes a corresponding loss of the conditions that promote environments of sociability and democracy. Participation in active transportation can promote vibrant interaction in city spaces that encourage public engagement and social encounter. Because pedestrians and cyclists travel closer to the ground and at slower speeds, they contribute to urban spaces that are lively and dense and they are better able to engage with such spaces.

A common characteristic of life in city space is the versatility and complexity of the activities, with much overlapping and frequent shifts between purposeful walking, stopping, resting staying and conversing. Unpredictably and unplanned, spontaneous actions are very much part of what makes moving and staying in city space such a special attraction. (Gehl, 2010, p. 20)

Active transport can help to connect and densify areas of the city as often users live where they work, and stop to shop, have coffee and interact with others. As a result, active transportation has the potential to contribute to the growth of more complex urban environments that balance the activities of public and private space.

1.2.5 Place

In the twentieth century, due to the effects of industrialization, capitalism, technology and globalization, many urban spaces have become increasingly interchangeable and anonymous. Standardization in urban planning and interior design has led to an increase of similar environments around the world. As places have become more generic, there has been an accompanying decline in their authenticity and in their connection to the human beings who live in them. Marc Augé (2000) identifies place as " a space where relationships are self evident and inter-recognition is at a maximum, and where each person knows where they and others belong" (p. 10). For Augé, "A non-place comes into existence, …when human beings don't recognize themselves in it" (2000, p. 9). This is especially apparent in transportation facilities like airports and bus stations, whose function is simply to move people from one place to the next. They don't act as meeting

places, and the communication that occurs in such places is often done through the use of a host of screens rather than through the spoken word (Augé, 2000). These spaces sometimes lack relationship between people, ties to their history and connection to their surrounding environment. Without these qualities they have become non-places.

In order to encourage people to participate in civic affairs, to commit to common goals and to take pleasure and pride in their communities, they need a strong sense of place. Jane Jacobs refers to Boston's North End, considered in 1961 to be the city's worst slum, as a centre of vivacity, health, activity and density with people in the streets, and low rates of crime, disease, and delinquency. Over a twenty-year period, the residents have renovated their community themselves (Jacobs, 1961/1992, p. 8-10). To achieve this kind of commitment and authenticity of place, design professionals must cultivate environments of meaning, identity and authenticity based on the behavioral patterns of the people who live there.

1.3 Objectives of the Project

While considering this project, I attended the Livable, Sustainable Cities Symposium in Saskatoon, which featured Danish architect and urban design consultant, Jan Gehl. Gehl has long been known as a strong proponent of developing cycling cultures in urban areas as part of achieving the four goals of great cities: liveliness, safety, sustainability and health. Because the city of Copenhagen has privileged cycling in their urban planning for many years, more than 50% of all residents currently use a bike every day (Gehl, 2010, p. 10). Gehl concludes that a city that supports cycling and walking can meet all the four goals of great cities. (Gehl, 2010, p. 7).

The major objective of the project is to develop an active transportation hub as part of a citywide network of similar facilities that would encourage participation in active living on a daily basis. The design of an active transportation hub supports the goals of individual health and safety, social engagement, sustainable modes of travel, links between interior and exterior environments and a sense of place.

1.3.1 Improve Health, Wellness and Safety

Active transport contributes to an overall improvement in the physical and mental health of participants who engage in daily exercise and reduces the use of public health care (McClintock, 2002, p.2-3). With regards to safety issues, the current size and composition of motorized vehicles, as well as their capacity for high speeds contributes to the number and severity of accidents in the street (J.H.Crawford, 2002, p.70). With fewer cars and more eyes on the streets, cities become safer (Jacobs, 1961/1992). People engaged in active transportation have more awareness and immediate connection with events on the street and as such they will contribute to the safety that comes with more people in the public sphere. (Gehl, 2010, p. 99)

1.3.2 Promote Civic and Social Engagement

Traveling in motorized vehicles creates a private experience for users who are separated from life on the street. However, those who take part in active transportation are exposed and engaged with the public environment and are more likely to interface with community businesses and organizations, improving the local economy. The public

nature of active transportation creates more opportunities for social connection and interaction between people. The urban environment typically consists of diverse populations who differ in their ethnicity, culture, age, social class, and economic means (Statistics Canada, 2006). Increased engagement with others strengthens understanding and tolerance and promotes the involvement and communication of citizens in the social, economic and political arenas of public life (Jacobs, 1961/1992).

> Many hubs become strategic elements in the processes of urban development. They generate their own pieces of urban fabric, linked to the intermodal infrastructure, where the objective is to reinforce or create a lively public space around a network of streets. (Rebois, 2007, p. 181)

1.3.3 Encourage Active Transportation

A general review of the research on active transportation in Canadian and American cities indicates a similar lack of infrastructure, planning, and investment by governments at all levels. A 2004 Canadian report by Richard Campbell and Margaret Wittgen entitled The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling, states that currently 6.6% of Canadians walk to work while 1.2% bicycle. Most Canadians (82%) state that they are willing to walk more while 66% would cycle more, if the infrastructure existed and if it was safe for them to do so. A large majority of Canadians (82%) support government spending to create dedicated bicycle lanes and paths (Campbell and Wittgen, 2004).

A major U.S. report, Active Transportation for America, (Gotschi and Mills, 2008) is equally detailed in its assessment of the state of active transportation in the U.S. Its

findings support the same responses by residents about their desire to be more engaged in walking and cycling and their support of increased financial spending for AT infrastructure. Both reports outline several economic benefits of active transportation including estimates of their monetary value both at the current level of active transportation use and at a realistic target level. The U.S. report estimates a saving of 5 billion dollars annually if governments responded appropriately (Gotschi and Mills, 2008). Canadian sources estimate a national savings of 2-3 billion dollars (Campbell and Wittgen, 2004).

As for current progress, the U.S. already has several cities that are engaged in aggressive AT programs including New Orleans, Portland, Chicago, New York, Camden, Minneapolis and Eugene-Springfield. In Canada, the city of Victoria leads the major metropolitan areas in the number of people who commute all year by cycling and walking. "In 2001, 10.4% of residents walked and 4.8% cycled to work for a total of 15.2% using active transportation. This is almost twice the national average of 7.9%." (Campbell and Wittgen, 2004 p. 8)

The creation of an intermodal transport hub with roadside resources and services is designed to encourage more people to participate in human-powered transportation by making active transportation more convenient and connected. Increasingly, people will see it as an affordable alternative to using motorized vehicles in the city (Gehl, 2010). Fewer vehicles on the streets will result in a reduction of energy consumption, air and noise pollution, parking space and the financial costs of single-user transportation (J.H.

Crawford, 2002). As these benefits increase, city government may be encouraged to plan for additional active transport initiatives.

1.3.4 Link Interior Space to the Exterior Realm

Intermodality refers to the use of more than one form of transportation while traveling to a destination. For example, for the convenience of travellers and to promote the use of public transport, airports are frequently linked to subways, and train stations. The practicum project links an active transportation facility with Winnipeg's existing public transit system and the future Bus Rapid Transit (BRT). In creating an interior space that supports intermodality, the inside of the transport hub is linked to the dynamic of the exterior realm. The public sphere, considered to be the collective space of appropriation, negotiation, freedom, is a place where people meet, converse and engage in unplanned ways (Mitchell, 2010, pp. 83-88). By linking the private and public, the project will demonstrate the role of interior space in creating opportunities for social connection, and its subsequent effect in generating more lively and cohesive urban environments. Interiors that connect with exterior urban life create unique conditions that can contribute to new typology development, expanding the conventional scope and vibrancy of interior design.

1.3.5 Create a Sense of Place

The establishment of an active transportation hub is designed to link both travellers and neighbourhoods to place. By making connections to the physical environment, local people and past and present cultures, the hub design seeks to create a sense of place for

people in transit. For residents of the surrounding community, the hubs will contribute to their sense of identity and belonging, acting as a neighbourhood centre for daily meetings, interactions and exchanges. In this way, diverse groups of Winnipeggers can come together and share the spaces and services of the hub, reinforcing the values of placemaking.

1.4 Key Research Questions

What impact is active transportation currently having on mobility and livability in North American cities?

How can the design of interior space contribute to the creation of place in a mobile society?

How can the profession of interior design contribute to the wider issues of urban design?

1.5 Limitations of the Project

The creation of placemaking typically includes the contributions of local residents to the process, however community participation was not included in the nature and scope of this project.

1.6 Research Methods

1.6.1 Precedents

The evaluation of precedents is a method for designers to gain awareness of prior projects that share similar characteristics with their own conceptual designs. The study of precedents gives designers the opportunity to access and apply architectural knowledge

from the past to inform their own work. On a practical level, precedents help designers to make judgments on the functional aspects of their projects. Aesthetically, precedents help to inspire designers, often influencing their own design decisions. Combining precedents with new ideas is often a source of learning and innovation.

1.6.2 Photography

Photography provides the designer with visual records of environments. It serves as a technical reference point for the site and the design. Photography reveals the existing relationship of the physical elements of the space. A photograph helps to construct understandings of space and discover new ways of considering space. Finally, it reveals individual points of view and specific perspectives of the photographer.

1.6.3 Mapping

Mapping techniques help to give a broader understanding of the project's surrounding area. Both quantitative and qualitative mapping can make important connections and reveal existing and potential relationships. Mapping looks at circulation: vehicular, pedestrian, public transit, and rail. It displays the patterns of use, movement and flow, which is central to the design considerations of the project. In this way, maps can be a source of information and generate a range of perspectives.

1.6.4 Literature Review

The literature review is a secondary research tool, which contributes to the theoretical basis of the design project. Gathering knowledge and insight from other disciplines and

fields of study provides multiple perspectives to inform thought processes and design decisions. Referencing other sources of literature establishes benchmarks to test your own ideas and theories, enriching your understanding of the project. Because interior design is such an interdisciplinary study, combining as it does a knowledge of spatial, technical, aesthetic and social dimensions, it seems especially appropriate for it to tap into a multitude of sources.

1.6.5 Winnipeg Active Transportation Research

Attending monthly meetings of Bike to the Future contributed to an understanding of the issues and culture of cycling in Winnipeg. Discussion with specific members of the local cycling community including Gareth Simons, Anders Swanson, and Kevin Nixon, provided an overview of the current state of active transportation in the city.

1.7 Section Summaries

The Practicum Project is composed of five major sections: Project Overview, Literature Review, Precedents Review, Design Applications and Conclusions. The following summaries briefly outline the major ideas, issues and explorations, which are addressed in three of the sections: the Literature Review, Precedent Review and Design Application.

1.7.1 Literature Review

The four parts of the literature review examine the research and theory of public space, the relationship between interior and urban space, the history and development of urban

transportation and the relationship between mobility and place.

Section 2.2 Public Space defines the concept of public space from geographical, conceptual and virtual viewpoints and its function as a site of social interaction, democracy and contestation. The role of public space in the creation of identity, social responsibility and diversity are explored through the urban theories of Jane Jacobs and the third places of Ray Oldenburg. The relationship of public space to private space is discussed through the theory of Henri Lefebvre's Shin-gyo-sho, which proposes the existence of a spatial continuum where public and private space is intertwined and layered (Lefebvre, 1991). The concepts of porous spatial boundaries and shifting thresholds are investigated in conjunction with the ideas of Ali Madanipour (2003) and Quentin Stevens (2007).

Section 2.3 addresses the relationship between interior space and urban space, referencing the studies of Karen Franck and Bianca Lepori (2007). Although conventionally regarded as separate realms, this section examines the interconnectivity of interior space and urban space from spatial, social and humanistic perspectives. It extrapolates these connections and extends them to the practice of interior design and urban planning. The theories of Katherine Benzel (1998) regarding spatial continuity and scale linking are explored to provide alternatives for the understanding of space and the importance of cross-disciplinary work in the design professions.

Section 2.4 discusses mobility, the impact of the automobile and the re-emergence of

active transportation in urban society. This section traces the influence of car use on

urban lifestyles, land use patterns, the natural environment and the quality of social life in

the city. The growing movement toward active transportation, its role in supporting

quality of life for urban inhabitants, as well as the public policy issues surrounding its

implementation is detailed in this section as well. It concludes with a discussion on the

ethics of contemporary urban transportation and the right of mobility for all citizens.

Section 2.5 explores the concept of place and its relationship to urban mobility. The

emphasis is on the role of active transportation in reconnecting mobility to place. This

section continues with an investigation of the ways in which active transportation can

restore placemaking to the street, the city and the interior. It considers the placemaking

theories of Project for Public Spaces and includes an analysis of their "Place Diagram," a

framework that outlines the key qualities necessary for the creation of meaningful places.

Figure 1   Theoretical Framework
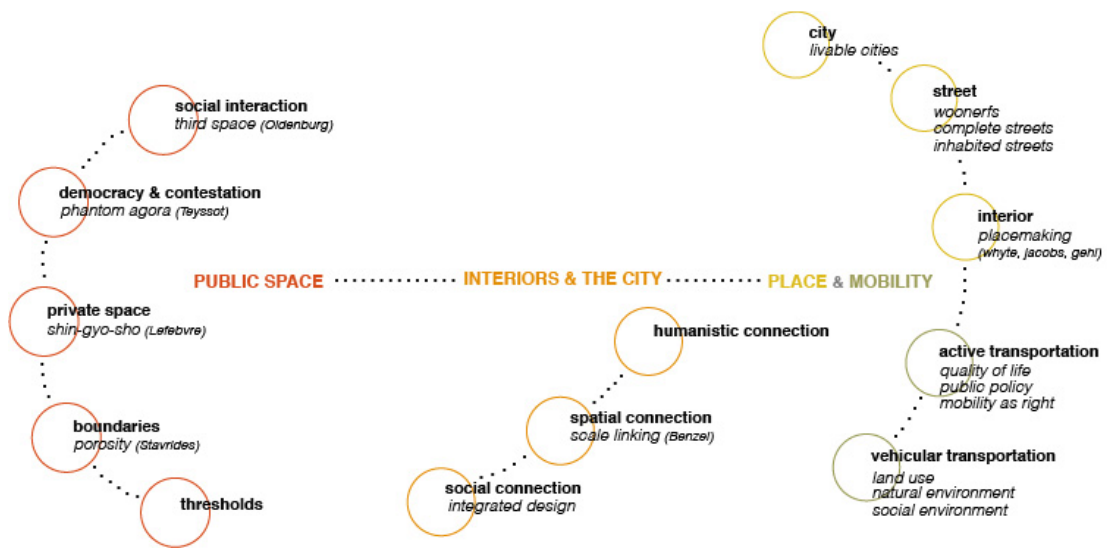
1.7.2 Precedent Review

Four precedents are used to inform the practicum project.

The Bike Transit Center at Union Station in Washington, D.C. is noted for its aesthetic form, and its sustainable design. Situated beside the historic Union Station, which is a hub for the city's rail and subway system; the Bike Transit Center is a symbol of the importance of active transportation to the residents of Washington.

McDonald's Cycle Center in Chicago's Millennium Park has created an extensive program for users of active transportation. Cyclists can access showers, bike repair, rentals and food services. Bike tours and a bike share program complete the amenities offered at this location. These services support the growth of active transportation for residents and visitors to the city.

Pioneer Courthouse Square in Portland is a large public space, which serves as a transportation centre for rail, buses and bikes and has become the location of Portland's civic life. Placemaking is an integral part of the plaza design, and its outdoor setting connects people to features of the natural world. By designing for people, the transportation hub draws people, sustaining the values of public life and supporting the existence of active transportation.

The city of Groningen in the Netherlands has the one of the highest cycling rates of any city in the world (Hembrow, 2008). The Stadsbalkon, Groningen is a new bike park located in front of Groningen Central Rail Station. It provides secure parking for over

4,000 bicycles in a subterranean parkade, built beneath the Central Station plaza. The design focuses on placemaking by supporting the connection between Groningen's past and the present. There is a further effort to link the exterior plaza and the bike station through openings in the plaza which allow for the passage of trees and light between the two spaces.

1.7.3 Design Application

The design application outlines the ways in which the theoretical research has influenced the design intention for the site, the building and the interior design development. It considers each area in terms of its space planning, relationships and adjacencies, design features, and material and finish selections.

1.8 Site Analysis

The site determines many aspects of the design including decisions regarding its structure and orientation. The topography, climate and natural features of the site influence the creation of a sustainable building. The site can also be a source of aesthetic inspiration for the project. To achieve contextually sensitive solutions, the design must consider the connections to the site, its infrastructure, its existing buildings and the culture of place.

1.8.1 Location

This site is located just south of Winnipeg's downtown district at the intersection of Queen Elizabeth Way and the Norwood Bridge on the east and Stradbrook Avenue on the north (Figure 4). It is bounded on the west by both the CN Rail line and the Bus Rapid

Transit (BRT) route and on the south by the Red River. The site is at the center of Winnipeg's AT network, connecting to the Assiniboine Bikeway, the BRT AT system, and the North-East Pioneers Greenway, which extends beyond the city to Birds Hill Park. It is close to important civic institutions such as Union Station, which is the Winnipeg's inter-city rail center and home of the Railroad Museum. The Forks and St. Boniface are nearby centers of local culture and tourism. Finally, the close proximity to BRT will provide fast and easy access to and from downtown for all multi-modal commuters.

1.8.2 Existing Function

The site currently acts as a transportation confluence for vehicles, trains, pedestrians, and cyclists. Because of its central location, it acts as a busy intersection for people to access downtown, cross over to South Point Park, connect with St. Boniface, and use the river trail. In addition, it is the site for the stanchions that support the elevated CN Rail line.

1.8.3 History

The site's position has been the determining factor in its historical development. Its proximity to the convergence of the Assiniboine and Red Rivers has meant that it has close ties to the origin and history of the city. Tribal groups from the Nakoda (Assiniboins), Cree, Anishinaabe (Ojibwa) and Dakota were the original inhabitants of the area. The earliest Europeans arrived as early as1738, when La Vérendrye constructed Fort Rouge at the present site of the Forks. The site became a hub of the fur trade until the 1880's when the grain trade replaced furs as the major industry of Winnipeg. Beginning in 1886, the Forks emerged as a key site for the location of numerous rail

companies whose rail lines and buildings covered the area. At the same time, the

Canadian government was promoting immigration and all westbound immigrants came

through Winnipeg, which became known as the "Gateway to the West" (Forks North

Portage Corporation, 2011). Eventually, this historic movement of people changed the

economy and culture of the city. The Forks has now become a major touchstone of

Winnipeg history, culture and connection. It is the location of celebrations, events and

tourism. An active transportation hub near the Forks will benefit the circulation needs of

the area and reflect the symbolic and cultural roots of Winnipeg's historic past.

1.8.4 Neighbourhood

The site is situated within the broader community of River Osborne. Two rivers, the Red

and Assiniboine bound the immediate neighbourhood on the north and south. To the east

and west lie two major traffic routes: Main Street/Queen Elizabeth Way/Norwood Bridge

and Donald Street. These rigid boundaries have physically separated the area and created

a distinct community within River Osborne. In addition to these perimeter boundaries,

two major traffic corridors run through the center of the area: the westbound

Stradbrook/River route and the northbound Harkness/Mayfair route. In contrast, the

remaining few streets provide access and quiet, pedestrian-friendly movement for the

local residents. St. Boniface is a populous area just across the Norwood Bridge, which

should benefit the site as well.

1.8.5 Population / Demographics

An examination of the 2006 Statistics Canada Census Data for the River Osborne

neighbourhood reveals that the population is almost 5000, with a density of 5500 per

square kilometer. Adults between the ages of 20-35 make up 46% of the population,

which is significantly higher than the rest of the city where adults in the same age range

make up only 21% of the population. Women between the ages of 15 and 24 experience

an unemployment rate of 9%, while the unemployment rate for men in the same age

bracket is less than 1%. Children under the age of 19 form 15% of the population, which

is half of the average number in the remaining areas of the city. People of aboriginal

descent make up 15% of the population, while visible minorities account for 20%. The

great majority (90%) of residents are Canadian citizens and most of them are English

speaking. The educational and income levels of River Osborne residents are in line with

the general statistics for the city of Winnipeg. A survey of the current modes of transport

in River Osborne follows.

Table 1
Comparative Percentages of Transportation Modes Used by Residents of
River Osborne and of the City of Winnipeg in General

S o u r c e : C o m m u	Mode of Transport	River Osborne Residents	City of Winnipeg Residents
	Vehicular	37%	68%
	Public Transportation	32%	14%
	Walking	21%	6%
	Cycling	3%	1%

Community Social Data Strategy, Custom Tabulation, Statistics Canada, Census of Population.
(2006). *City of Winnipeg neighbourhood profiles 2006.* Retrieved July 23,2011 from
http://winnipeg.ca/census/2006/

A review of the statistics for the River Osborne neighbourhood suggests that it is a largely adult community that already walks and uses public transportation. Its location is within 2 km of downtown, making active transportation a reasonable mode of transport. The average resident is young enough to participate in walking or cycling on a daily basis. Since the area has significantly more women than men and many of the younger women are unemployed, low cost transportation choices should be an attractive option to them.

1.8.6 Surrounding Buildings

Most of buildings in the neighbourhood are residential including apartments, multi-family housing units and a public housing cooperative (Figure 5). Fort Rouge Elementary School and Fort Rouge Co-op Day Nursery provide educational services for the community. There are two social service centres, Anishinabek Consultants Inc, an aboriginal employment agency and MacDonald Youth Services. The rest of the buildings are commercial enterprises and include a convenience store, an employment recruiting service, a newspaper circulation service, two fitness facilities and two dental clinics. Beyond the immediate neighbourhood lie two significant resources, the Forks Market and St. Boniface Hospital. The River Osborne community is surrounded by three busy urban areas: Osborne Street, Winnipeg's downtown district and the suburb of St. Boniface.

1.8.7 Natural Features

The site lies along the bank of the Red River and is fairly level. Trees, shrubs and grasses grow in abundance near the water. Looking south, the views are pastoral in nature and include the river, its sloping banks, the architecture of the Norwood Bridge and the Winnipeg Rowing Club. In contrast, the north views depict a typical urban landscape.

Four parks surround the neighbourhood. Mayfair Park East is a small pocket park with a children's playground tucked close to the Donald Street Bridge. Bonnycastle Park is a linear park directly across the Assiniboine River, which stretches from Main Street to Donald Street. Lyndale Recreational Park lies across the Red River to the south and offers a variety of outdoor sports facilities. South Point Park is an undeveloped green space, located across Queen Elizabeth Way, at the junction of the Red and Assiniboine Rivers. From the street, it rises up a steep hill and is connected to the Forks by a railway bridge and a pedestrian bridge.

1.8.8 Circulation

The main vehicular circulation runs north and south along Main Street and Queen Elizabeth Way/Norwood Bridge as well as northeast and southwest along Stradbrook Avenue (Figure 7). The circulation of the BRT will begin at the intersection of Queen Elizabeth Way and Stradbrook and will run along the CN Rail line in a southwest direction out to Pembina Highway (Figure 7). The railway circulation connects from the Via Rail Station at Broadway Avenue and Main Street and continues on to the southwest corridor of the city, which hugs Pembina Highway. Its elevated track runs directly above

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the site (Figure 6). Pedestrian circulation takes place on sidewalks that line all major roads surrounding the site, including both sides of the Norwood Bridge and Stradbrook Avenue (Figure 8). In addition, a river walkway allows pedestrians to cross under the Norwood Bridge (Figure 8). Cyclist circulation exists on the dedicated and separated bicycle lane that runs along the western side of the Norwood Bridge, ending at Stradbrook. Another dedicated bike lane begins on Queen Elizabeth Way, continuing on to downtown (Figure 8). The BRT proposal includes dedicated bike lanes running along its route. Recreational circulation occurs on a trail that runs along the bank of the Red, continuing through the site, and over to the Forks (Figure 6). This trial links the North East Pioneers Greenway to the Forks and the BRT route system which ultimately connects to the University of Manitoba. As for the waterways, in the summer the Red River serves as a route for the city's water taxis, tour boats and personal watercraft. In the winter months, it becomes an ice skating trail that is often used by pedestrians and winter cyclists.

1.8.9 Site Opportunities

The site is beside a busy intersection for automobiles, trains, public transport vehicles, pedestrians and cyclists. Because it is already a heavily frequented circulation space, it has a web of connections to both existing and proposed transportation routes. Its proximity to the downtown area, the Forks and St. Boniface means it can access a wide variety of users and makes it a logical space to bring a multitude of people together.

In addition, the noise from the steady flow of traffic and the frequency of trains passing overhead, add to the dynamic nature of the site as a busy circulation hub. From an

aesthetic perspective, the site offers a diversity of views: natural, historic and urban. Its

position on the river and the availability of green spaces provides a strong connection to

the natural environment.

1.8.10 Site Constraints

Its location as a busy intersection presents several challenges to the design project. Its

existing primary function is as a thoroughfare for pedestrians, cyclists, vehicles, buses

and trains. Any design intervention must accommodate the different speeds of travel from

both an experiential and safety perspective. In addition to providing seamless and safe

access to and from the site, the design must facilitate interactive experiences for the

travellers who walk, cycle or drive.

Although the site is in close proximity to all southbound bus stops, the nearest

northbound stop is located Mayfair Street (Bus Stop # 10158) over 500 feet away from

the hub site (Google Maps Scale 7/8 in = 500 ft.). Even with the implementation of the

new BRT routes, the northbound stop is a problem for public transit users (Figure 9).

Due to the site's position parallel to the Red River, the risk of flooding must be

considered. Presently, a concrete wall and a grassed berm on the site serve as the city's

primary line of defense against possible flooding. The concrete wall runs along the

riverbank and the grassed berm runs parallel along the northwest side of the CN rail line.

Any intervention would require alternate means of flood protection and the consent of the

city's Department of Water and Waste. In addition, the groundwater level within the

Upper Carbonate Aquifer that lies beneath the site is typically found in the bedrock,

which is generally covered by 40 feet of clay in this area. This would present difficulties if deep foundations were installed more than 19 feet below the surface of the site.

1.9 Project Overview Summary

The practicum project explores the relationship between interior space and the urban environment through the design of an active transportation hub in Winnipeg. This section serves as an introduction to the objectives, key questions, site analysis, and research methodologies for the practicum project. Brief abstracts of sections in the document, are included to provide an introduction to the theoretical framing of the project and functional information related to the design.

1.10 Mapping

Figure 2 ORK inspired Winnipeg Neighbourhoods

mcphillips
kildonan park
gateway
red river college
disraeli
kildonan place
u of w
provencher
stradbrook
assiniboine park
polo park
corydon osborne
south osborne
st anne's
st vital centre
jubilee
fort rouge yards
u of m

Project Hub
Less than 5 km from downtown
More than 5 km from downtown
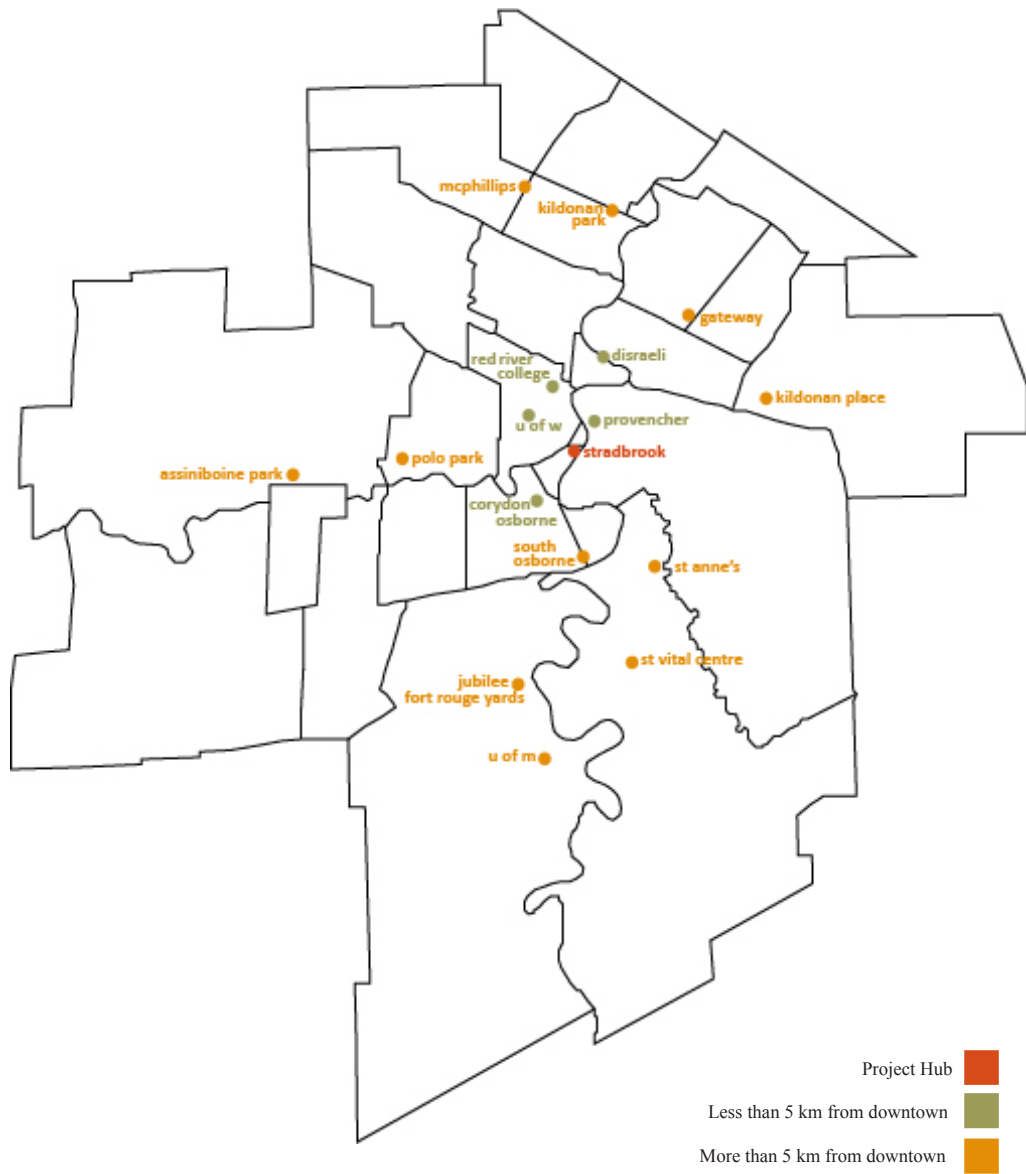
Figure 3 Proposed Active Transportation Hub Network

Figure 4 Site

Residential
Social Service
Commercial
Schools
Public Works

Figure 5 Surrounding Buildings

Figure 6 Neighbourhood Pathways
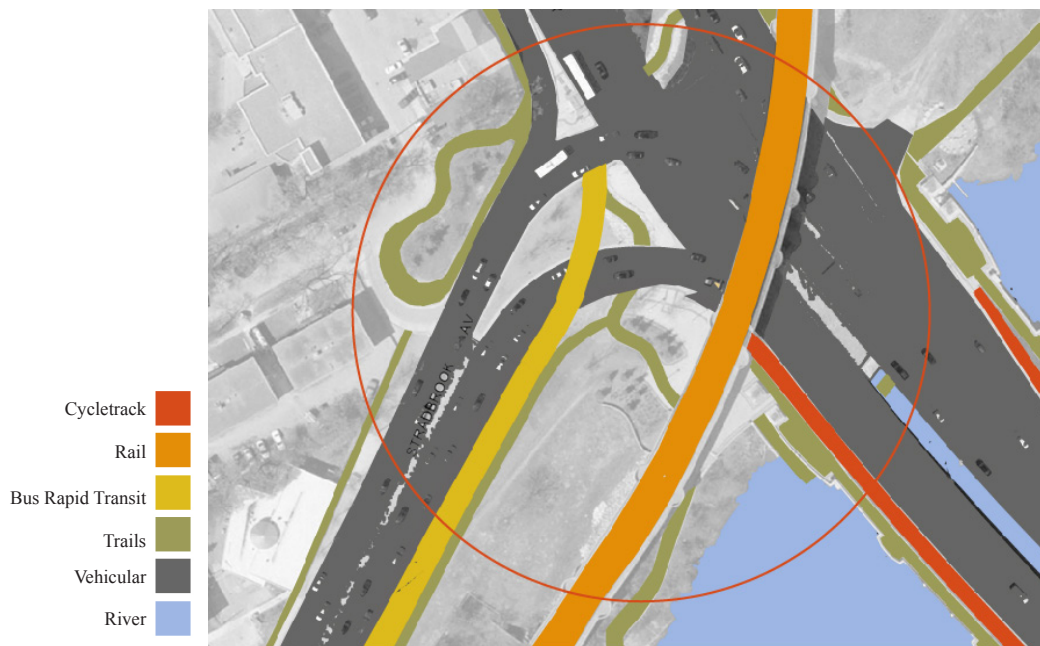
Figure 7 Site Pathways

Figure 8 Active Transportation Pathways
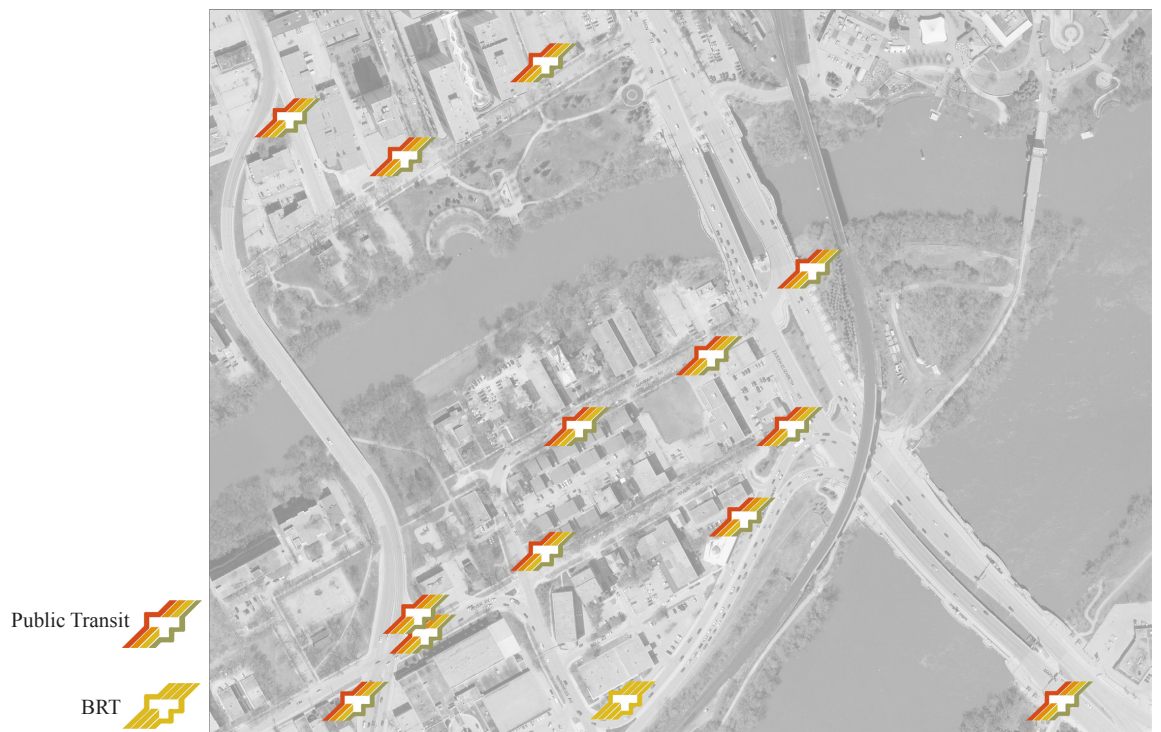
Figure 9 Public Transportation Stops

1.11 Site Photography

Figure 10 View southwest, from site

Figure 11 View southwest, from site

Figure 12 View southwest, from site

Figure 13 View southwest, from site

Figure 14 View southwest, from site

Figure 15 View northeast, toward site

Figure 16 View east, toward site

Figure 17 View southeast, toward site

Figure 18 View southwest, toward BRT

Figure 19 View southwest, from site, toward river trail
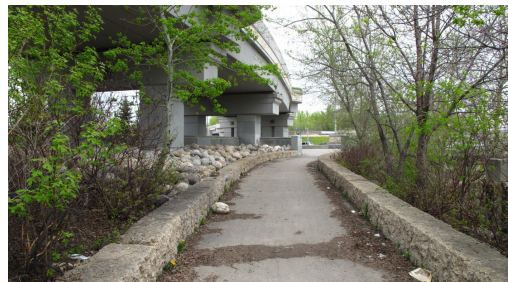
Figure 20 View northeast, from river trail, toward site

Figure 21 View south, from site

Figure 22 CN rail bridge, looking southeast

Figure 23 View west, from site

Figure 24 View southwest, from site

Figure 25 View northeast, from site

Figure 26 View east, from site

Figure 27 View southeast, toward site

Figure 28 View north, toward site

Figure 29 View north, toward site

Figure 30 View of norwood bridge, from site
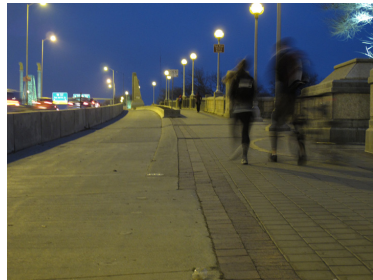
Figure 31 View of norwood bridge, from site

Figure 32 View of Norwood Bridge, from site

Figure 33 View of norwood bridge, from site
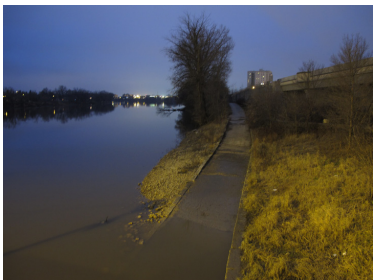
Figure 34 View west, the River walk

Figure 35 Norwood Bridge

Figure 36 View southwest, from site

Figure 37 View northeast, from site

Figure 38 View west

Figure 39 View north

Figure 40 View northeast

Figure 41 View south

Figure 42 View southeast, toward site

Figure 43 View southeast, toward site

Figure 44 View southeast, from site
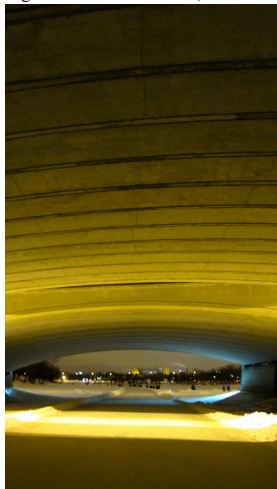
Figure 47 Skating trail

Figure 45 Skating trail, under Norwood Bridge

Figure 46 Norwood Bridge

Figure 48 Skating trail, under Norwood Bridge

Figure 49 Under Norwood Bridge

2.0 LITERATURE REVIEW

2.1 Introduction

Designing an interior that supports the widespread activities of an urban transportation hub requires a multidisciplinary theoretical investigation. The juxtaposition of scale between these two environments necessitates an examination of the relationship between public and private space, as well as the interior and the urban realm. The review also explores theories of mobility and transportation and their role in the creation of place.

2.2 Public Space

2.2.1 Geographic

Although the discourse regarding the nature of public space is multiple and diverse, most definitions reveal several commonalities. Conventionally, public space is defined by its physical location; either as an exterior area such as a park, plaza, vacant lot, and street, or as an interior space such as a library, arena, transit terminal or community centre. Public space is typically owned and operated by governments as opposed to individuals and used collectively by all members of the community for a multitude of diverse functions. Inherently, public space is expected to be accessible to all. Sociology Professor Zachary Neal expands on this statement, "This means that the use of public space should not be limited by barriers of language, physical or mental ability, or geographic mobility" (2010, p. 2). All individuals must have the opportunity to freely enter the space, observe their surroundings, participate in activities and interact with one another. Neal believes that political or religious association cannot limit this freedom and no one should be excluded because of their income, education, age or sex (2010).

2.2.2 Conceptual

Philosophers such as Jürgen Habermas have long regarded public space as conceptual; a complex theoretical sphere not defined as a physical location but by the nature of activities that occur. For Habermas, it is an abstract sphere of human exchange: a place of discourse, discussion and debate about issues of public importance. As such, public space is defined not by where it occurs, but by what happens there (Habermas, 1962/1989).

2.2.3 Virtual

In the past few decades, the location of public space has been revolutionized, transcending the physical sphere to exist in the virtual realm of digital communication. With recent advancements in computer technology, the communication and social networks no longer require face-to-face encounters but often occur digitally through various electronic media. Personal communication happens through email correspondence, commercial exchange takes place in the form of e-commerce and social interaction via networking websites. The immediacy of virtual communication has demonstrated its power to support personal relationships, influence economic activity, affect political action and increase democratic engagement. However, while technology increasingly plays an important role in connecting people to issues, events and places, the existence of physical public space remains essential as the site of social, political and economic change.

Although public space currently exists in many forums: as a place where people engage face to face with each other, a space of conceptual discourse and debate and a space of

virtuality, the boundaries between them are becoming blurred. The implementation of technology into physical public space creates a more complex layering of information, exchange and interaction, which enhances the experience of being in public space.

2.2.4 Historical Development

Traditionally in western civilization, the location of public space has been rooted in the Greek Agora, a central open place for political and commercial activity where citizens met daily to converse and exchange goods and ideas. Communication professor John Hartley describes the Greek Agora as "the place of citizenship, an open space where public affairs and legal disputes were conducted…where citizens' bodies, words, actions and produce were all literally on mutual display, and where judgments, decisions, and bargains were made" (Hartley, 1992, pp. 29-30). Throughout European history, public space continued to appear as a central part of urban life: the commons in the medieval era, the plaza during the Italian Renaissance, and the coffeehouse in the Enlightenment (Neal, 2010, pp. 5-9). However in the nineteenth century, the decline of centralized public space began with industrialization when a separation in places of work and of living occurred and the streets became the avenues of community and commerce. This specialization of space eventually combined with the new mobility of the twentieth century automobile and led to the emergence of the suburb.

Later as deindustrialization spread and the core of many North American cities emptied, central public spaces were no longer used for everyday exchanges of public life. Today, political, economic and social events take place in many different locations throughout

the city, increasing the number of venues and the range of activity. In this way, centralized public space has become a multiplicity of spaces, frequently referred to as micro cities. French philosopher, Jacques Derrida states that current public space is founded in plurality, "a public space that is not conceived as a single space, a single place, but within a multiplicity, as a kind of drifting or fanning out" (Derrida as cited in Teyssot, 2000, p.73). For author and urban design Professor Ali Madanipour (2010), this physical dispersion has resulted in a fragmentation of the social and functional roles that he feels characterizes the current nature of urban public space today. Madanipour suggests that urban designers need to respond to this challenge by creating a series of well-defined urban spatial nodes, designed for a mix of users and activities, which will promote communities of tolerance and social cohesion (2003, p. 228). While the nature of urban public space continues to change and evolve, its role in the cultural, political and economic life of the city continues to be an important subject of debate.

2.2.5 The Site of Social Interaction

The public realm is a primary space for the social interaction of people, whether it is material, conceptual or cultural (Dobbins, 2009). Such interactions are the result of multiple exchanges in the shared spaces of everyday life: at marketplaces, meeting spaces, and on the streets. For writer and urban planning activist Jane Jacobs (1961/1992), social interaction is composed of daily greetings and acknowledgements as people pass on the corner, and of casual discussions as people meet at the bus stop. This informal social interaction occurs between friends and neighbours as well as acquaintances and strangers as they unconsciously rely on one another, sharing

information and ideas or seeking assistance and direction. Often social interchanges are

non-verbal in nature, as people use eye contact, body language and gestures to negotiate

position and communicate intention as they travel through public space. By its very

nature, social interaction is frequently spontaneous, unplanned and unrehearsed (Jacobs,

1962/1992, pp. 8-10, 35, 55-72).

Urban sociologist Ray Oldenburg (1999) has examined spaces of social interaction,

which he calls "third places". These are the spaces outside of our homes and our

workplaces that provide opportunities to meet and converse with others. For Oldenburg,

public gathering places such as bars, cafes, laundromats and community centres generate

experiences and relationships among participants that are unique. Because these interior

spaces are open and accessible, they provide a neutral and inclusive space for casual

association and companionship. Oldenburg describes the informal dynamics of social

interaction in public space, "The timing is loose, days are missed, some visits are

brief…there is a fluidity in arrivals and departures and an inconsistency of membership at

any given hour or day" (1999, pp. 32-33). German sociologist Georg Simmel describes

the human need for social interaction as "pure sociability" which provides people with

"joy, vivacity and relief" (as cited in Oldenburg, 1999, pp. 24-25). Without an emphasis

on economic status and social roles, Oldenburg's third places act as a "leveler", that

allows participants to be themselves as they interact with a diversity of people,

perspectives and problems (1999, p. 24). In this way, third places create a sense of

equality and common ground that contribute to the tolerance, strength and unity of a

community. Third places reveal the importance of interior public space as the site for significant and sustainable social interaction.

In such settings, people interact with others forming social networks that change and evolve over time. Out of these associations, individuals develop loose social connections that bind them to each other and to their neighbourhoods in a variety of ways. These relationships foster an understanding of self, the public identity of others and the expectations of the wider world. This process occurs over time from many interactions and exchanges and results in a sense of belonging to place and commitment to others. Jane Jacobs believes that the existence of public trust and security is a product of these conditions, and that the safety of public streets is a direct result of the trust that exists between people. She states, "the sum of such casual, public contact at a local level –most of it fortuitous, most of it associated with errands, all of it metered by the person concerned and not thrust upon him by anyone – is a feeling for the public identity of people, a web of public respect and trust, and a resource in time of personal or neighbourhood need" (Jacobs, 1961/1992, p. 56). For Jacobs, social interaction is the key to creating safe, vital and dynamic urban streets where people take responsibility for one another, without which neighbourhoods become impersonal, disconnected and residents become anonymous and unaccountable. Through active engagement and social discourse, citizens interact on a daily basis, and whether planned or spontaneous, play a part in each other's lives. This sporadic, informal but continual interaction introduces strangers to one another and reveals a multitude of lifestyles, struggles and challenges. People gain awareness and understanding of their fellow citizens and learn to tolerate, accept, respect

and even value the diversity that exists in public space. Social divides such as segregation and discrimination can be diminished in this process. Ultimately, the importance of social interaction in public space lies in its capacity to create social responsibility in its citizens, civil order in its streets and a sense of community in its urban centres (Jacobs, 1961/ 1992). Madanipour agrees, "The role of public space then becomes, simultaneously, a medium of promoting pedestrian movement, a location for social interaction, a tool for urban management…" (2003, pp. 238-239). In this way, public space and social interaction develop a reciprocal and interdependent relationship.

2.2.6 The Site of Democracy and Contestation

Public space has long been considered the location of democracy where citizens can freely participate in matters of civic importance. Although the concept of democratic public space has been idealized throughout the history of western civilization, in reality it has been an essential site of struggle, resistance and contestation as individuals and groups attempt to negotiate for their rights. Architect and scholar Georges Teyssot (2000) disputes the existence of democratic public spaces in early Greece, describing instead a "phantom agora" composed of Greek male landowners who created an exclusionary government that denied democracy to the women, slaves and foreigners who lived in the city state. Currently, such inequality and lack of democratic representation continue to fuel contestation, violence and instability in many of the world's political systems. Like Teyssot, Margaret Crawford points to the "lack of a clear link between public space and democracy" (2000, p. 23). She references many groups who have been historically unrepresented in the realm of public space and who have only achieved democratic rights

through constant contestation. Certainly in North America, issues of women's suffrage, racial segregation, immigration and unionization went beyond debate, and required public marches, protests, barricades, riots and imprisonment before agreements were reached. What becomes clear is that contestation is an essential process in the achievement of democratic goals and that public space needs to exist for this process to work.

2.2.7 Defining Private Space

The concept of private space encompasses the space of one's mind and body and extends beyond the individual to include the ownership of assets and possessions. For Ali Madanipour (2003), private space begins with the inner consciousness of the mind, which is composed of the psychological realm of internal thoughts and emotions and goes on to include the physical space inside the body. The concept of private space also includes the idea of personal space; areas directly surrounding the body that are understood by custom and law to be controlled exclusively by one person. Beyond the individual, private space is most often associated with interior space and encompasses the ownership of objects and property by people, corporations or institutions. Possession and control of space is enforced by usage, boundaries and laws (Madanipour, 2003, pp. 6-70). It would appear that while public space is identified by inclusion, private space is most often defined by exclusivity.

2.2.8 The Continuum of Public and Private Space

In general, public space and private space are regarded as separate entities with distinct boundaries. Town squares and plazas are considered to be public spaces characterized by

unexpected experiences and spontaneous encounters. Henri Lefebvre refers to public

areas as "the spaces of social relationships and actions" (Lefebvre, 1991, p. 153). On the

other hand, the home is considered to be a private space characterized by familiarity and

intimacy: for Lefebvre, "spaces for contemplation, isolation and retreat" (1991, p.153).

He concludes that a study of both spaces reveals that they are interdependent realms with

ambiguous and fluctuating borders that influence and shape one another (Lefebvre, 1991

p. 153).

Within any space, depending on location, function and time, there is a layering of public

and private designations. It is possible that a building may simultaneously contain a

combination of areas: public, semi-public, semi-private and private. Lefebvre refers to the

Japanese spatial principle of "shin-gyo-sho" (1991, p.153), in which a public building

such as a temple or palace will also have functions for private and mixed areas.

Conversely, a private house or dwelling will contain public reception rooms and places

for mixed functions. It becomes clear that these two spheres are not autonomous but

coexist on a spatial continuum.

A similar example of layered functions can be found in Chicago's Hull House, a private

residence for single women established in the1889s by Jane Addams and Ellen Gates

Starr (Addams, 1910/1990). The house opened its doors to the immigrants of the

surrounding neighbourhood to provide a wide range of learning opportunities. By using a

domestic sphere as a setting for public activity, Hull House transcended the traditional

dichotomy of public and private space and served as an early example of their interconnected relationship.

2.2.9 Boundaries

The shifting relationship of public and private spheres rests upon the existence of flexible boundaries that continually move along a spatial continuum. The nature of these boundaries is influenced by the built environment, the activities of the population and the impact of time. Architectural Professor Stavros Stavrides uses the term *porosity* to describe the fluctuating boundary between private and public spaces (2007). He suggests there is a duality in the character of the porous border, which simultaneously separates and connects the two spheres, the activities of people within them and the events that occur there. When urban boundaries, whether physical, social, cultural or legal are permeable, citizens can individually and collectively adjust and negotiate their surroundings and relationships (Stavrides, 2007). Ali Madanipour stresses the impact of porosity when he states that, "a porous and highly elaborate boundary which acknowledges and protects individual and collective interests and rights is what distinguishes a sophisticated urban environment from a harsh one" (Madanipour, 2003, p. 241).

2.2.10 Thresholds

The significance of porous boundaries lies in their capacity to create room for the emergence of threshold spaces, which are essential to the social vibrancy of the city. Professor of urban design Quentin Stevens references the ideas of architectural historian Norberg-Schulz (1971) when he states that:

…most thresholds form an interface between two quite different spatial, perceptual and social realms: public space outside, where people are exposed to diverse stimuli and to unstructured encounters with strangers, and more private spaces inside where ambiance is regulated and social behavior and encounters are more carefully structured (Stevens, 2007, p. 81).

Conventionally understood in spatial terms as the entrance to a house or building, thresholds are also frequently symbolic of important psychological and social transitions. Spatial thresholds can include architectural elements such as doorways, staircases, balconies and verandas, which provide the in-between space that connects and mediates the private and public spheres. Psychological and social thresholds include transitional experiences, which range from important rites of passage like marriage and graduation to ubiquitous shifts in social expectations like labour strikes and street festivals. These common yet diverse events provide people with the chance to temporarily suspend their personal and societal conventions, exposing them to new experiences. In this way, thresholds share a similar social function with Oldenburg's third space. Stevens defines a threshold as "a point where the boundary between inside and outside can be opened; space loosens up, and a wide range of perceptions, movements and social encounters become possible" (2007, p. 73). This blurring of boundaries creates new spaces that are undefined, unassigned and free from convention. Those who occupy thresholds are able to experiment with the space, their behaviour and their activities. Thresholds provide a transitional pause, a chance to take one's time, to enjoy each casual social encounter. By experiencing freedom from the structure of roles and status, people have the chance to step out of their daily routine, engage in spontaneous activity and be themselves (Stevens, 2007).

With the opportunity to meet in a multitude of urban thresholds, people have numerous opportunities to uncover a variety of unfamiliar behaviours and unexpected associations. Such unplanned encounters allow people to gain alternative understandings and perspectives of urban space. In this way, there can be a reinterpretation of the use of space, patterns of living and established social concepts. Out of these experiences can come new relationships, free and open dialogue, and the possibility for change. By enhancing the connection between public and private space, thresholds are organic elements that contribute to the dynamism of the city.

Although the concept of public space has become more complex with the impact of technology and changes in the urban environment, its importance lies in its accessibility as a physical space. The democratic quality of public space rests on its capacity for social interaction, negotiation and contestation. Its multifaceted nature consists of layers, edges, boundaries and thresholds, which contribute to its dynamic character.

2.3 INTERIORS AND THE CITY

2.3.1 Conventional Perceptions of Interior and Exterior Space

Just as private and public spaces are conventionally viewed as independent spheres with distinct boundaries and functions, the same perceptions exist regarding the nature of interior and exterior space. Environmental psychologist Karen Franck and architect, R. Bianca Lepori acknowledge this perception when they state, "inside refers to a physical location that is somehow separated, physically or symbolically, from another physical location that is exterior to it" (Franck and Lepori, 2007, p.19). The interior is typically

associated with private space, a place of intimacy and exclusivity that is distinct from the outside world and designed to meet the basic human needs of habitation: comfort, safety and protection. Conversely, the exterior is generally considered public space, a place of anonymity and exposure that is open and accessible to all. The exterior is the urban space of the city that borders the built environment, providing for the socio-economic needs of citizens: exchange, encounter and mobility. However, design theorists such as Katherine Benzel, Graeme Brooker and Sally Stone argue that the same interconnectivity that has been shown to exist between private and public realms is also present between the interior of the room and the exterior of the city.

2.3.2 The Relationship Between the Interior and the City

Brooker and Stone (2008) suggest that within the interior itself, multiple relationships exist. Adjacencies, pathways and openings combine to form connections between the rooms and floors within a building. They assert that although interiors and urban spaces exist as individual entities, they are inextricably tied to each other. "An interior occupies a specific place. It has its own identity and a distinct relationship with its surroundings, involving not just the building it occupies, but also its immediate neighbours and things more remote" (Brooker & Stone, 2008, p. 35). In her book, *The Room in Context: Design Beyond Boundaries,* Katherine Benzel continues this discussion by investigating the interconnected relationship between room, building, landscape and city. Benzel states that the room is "a creation of continuity, an outgrowth from one space to another, and part of a larger whole" (1997, p. 15), which connects to the city through an association of physical form, meanings, relationships and activities. As such, all inhabited spaces, from

the smallest interior to the largest exterior, are linked to one another spatially and socially.

2.3.3 The Spatial Connection Between the Interior and the City

It is the design of interiors, the built form and civic infrastructure that combine to shape the space of the urban environment. While seemingly separated from each other by walls and boundaries, in actuality, interior and exterior spaces are physically related. Locality, proximities and thresholds arise from the architecture of the city. Their position and porosity provide the space for the interior and the city to shape and influence each other. For Franck and Lepori, an interior interacts with its surroundings and forms an interdependent spatial relationship with the exterior; a room, typically associated with an interior space, can also be experienced as part of an exterior space (2007, p. 18). For example, outdoor spaces such as pocket parks can exhibit the similar characteristics of enclosure, familiarity, and intimacy that are integral to an interior room. Katherine Benzel expands this idea: "If a room is understood only in terms of the space created inside its designated parameters or four walls, the cumulative energy from external relationships and connections is ignored, and even severed" (1997, 14). Instead, the physical relationship between the inside and the outside defines, connects and stimulates both spaces.

2.3.4 The Social Connection Between the Interior and the City

Beyond the bonds of physical space, interiors and urban space also have significant social ties. Individuals bring their own subjective understandings and societal preconceptions to

the different types of spaces that they use. Relationship with location, personal history, cultural influences and everyday experience shape their perspectives of both interiors and exteriors. In turn, spaces generate their own meanings through both past and present designs and functions. As people travel from their homes into the city, spaces become embedded with social, cultural and historical meanings that are transferred, shared and transformed (Benzel, 1997). The movement and engagement of people in this process ensures its ongoing dynamic and flexible character. In this way, both the interior and the city forge significant social connections that influence and energize spatial relationships at all scales. Consequently, both the city and the interior have an equal influence informing, mediating and uniting the social fabric of urban life.

2.3.5 The Humanistic Connection Between the Interior and the City

Another important connection between the interior and the city is the shared value for people in both realms. The users of the spaces connect interior space with urban environments through the anatomy of their bodies. Basic measurements in design: scale, proportion, and balance have been drawn from the anatomy of the human body. These inform standard design practices; examples include ergonomic interiors and pedestrian spatial standards for urban sidewalks. Environmental Design Professor Galen Cranz, believes that working "from the body outward" provides organic guidelines for assessing the quality of design. It is a method that rests on personal experience and integrates both the psychological and physical aspects of the human condition (Cranz, 1998, 216). For Franck and Lepori (2007), beyond the implications of scale, the structure of the human

body frequently mirrors the interior/exterior relationship. Both have porous and permeable boundaries that are connected with and shaped by their surroundings.

In addition to human anatomy, the creation of interiors and exteriors is equally concerned with the values that enhance human life. A humanistic study is "concerned with people's thoughts, ordinary activities, relations, ethical conduct, dignity, self-fulfillment, well-being, and harmony" (Benzel, 1997, 51). Interior design as a discipline focuses on the psychological, social and behavioural needs of people. The functional and sensory perception of a room can influence a range of societal experiences from interpersonal relationships to cultural struggles. Although cities encompass larger environments, human values continue to influence design initiatives that address the civic issues of sustainability, livability and mobility. Urban environments strive to improve the quality of life for their inhabitants who share the need for social and political engagement, work, recreational activity, and access to transportation and infrastructure. It is the goal of both interiors and urban environments "to make each space a special place where people understand who they are, why they are together, and what they share as individuals and societies" (Benzel, 1997, p. 76).

2.3.6 The Relationship Between Interior Design and Urban Planning

The formal design of cities and interiors has traditionally been divided and assigned to the architectural disciplines of urban planning and interior design. These professions have been frequently separated both in their practice and as fields of study (Benzel, 1998). Typically, interior design is concerned with the application of creative and technical

solutions to improve the function and aesthetics of interior spaces, thus enhancing the quality of life and culture of inhabitants (National Council for Interior Design Qualification, 2004). This involves the consideration of the site and social factors of the project, as well as life safety issues such as code requirements and universal accessibility. According to the Canadian Institute of Planners, "Planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities" (2011). At first glance, the differences in scope and scale of these two disciplines place them at opposite ends of the architectural design spectrum. Yet a closer partnership will reveal new perspectives and create potential for alternative design solutions.

2.3.7 Scale Linking

Katherine Benzel uses the term "scale linking" to describe a holistic concept of spatial interconnectedness, or "how the larger acts on the smaller and how small scale comes into harmony with large scale" (1997, p. 20). Examples of scale linking include envisioning the house as a city or the urban street as an interior corridor. Working across scales can provide interior design with a broader vision of civic concerns and a greater understanding of the dynamics of urban processes. For urban planning, scale linking offers a more detailed understanding of sensory-based processes and socio-psychological factors in their projects. Benzel states that relationships between disciplines and designers are crucial because they advance critical judgment through comparison, insight and experience, ultimately leading to "well-designed, responsive human environments"

(1997, p. 21). The intent of this process is to access the professional knowledge, skills and capabilities of both occupations in order to support collaboration between the design disciplines.

2.4 MOBILITY

2.4.1 Introduction

Even in the earliest urban settlements, human activity, the built environment and transportation networks were inevitably linked. The ordinary, everyday human actions of eating, sleeping, working and trading led to the development of spaces of support like the home, the workplace and the marketplace. The evolution of education, medicine and recreation led to the emergence of buildings for learning, health care, and leisure. As people performed their required tasks, it became necessary for inhabitants to travel the distances between places of living, working and exchange. This need expanded human activity to include the daily experience of mobility. As urban centres grew, the distances between activities also grew and with continual technological advancements, people went from walking and cycling to riding buses and driving cars. Today, urbanites use a wide variety of transportation ranging from the more common modes: streetcars, subways and motorcycles, to the less common modes: skateboards, water taxis and pedi-cabs. This growth of mobility has led to the creation of supportive infrastructure such as streets, sidewalks, transit stations and parking lots. It is the patterns of mobility in the city that are now the most influential factor in determining the form, shape and character of the built environment (Dobbins, 2009, p. 14). To ensure public access to places, products and services, the design of urban transportation networks is crucial, influencing not only the

construction of the streets; lane widths, turning radii, approaches and driveways, but also the shape and size of city lots and the subsequent design of buildings and interiors.

2.4.2 The Influence and Consequence of the Automobile

Although many forms of transportation have been in use over the last two hundred years, the private automobile has dominated urban mobility in the second half of 20th century North America. The production of the automobile was primarily due to the invention of the internal combustion engine and the assembly line. The car became popular because of its affordability and personal convenience. From its modest beginnings in 1908 with the Ford Model T, car ownership has grown enormously over the last hundred years. Author J.H. Crawford states that as of 2002, with a world population of six billion people, there were five hundred million cars in use (2002, p. 80). He predicts that if the car ownership habits of affluent nations continue to grow (one car for every two people), the global automobile number will rise to an incredible 3 billion (Crawford, 2002, p. 80). Today, the car continues to be a major influence on patterns of urban mobility around the globe.

2.4.3 Access, Proximity and Mobility

Prior to the widespread use of the car, it was essential for inhabitants to be close to civic resources; access depended upon physical proximity. Once the automobile came into general use, its speed made proximity unnecessary for people, because mobility increased their access to distant places. With the ability to travel long distances in a short period of time, mobility replaced proximity as the means to access. This meant that people could cover a much larger radius of the city on a daily basis to live, work and shop.

Increasingly city governments provided the infrastructure necessary for the automobile, and the subsequent construction of streets, freeways and parking facilities encouraged the expansion of cities, suburban sprawl and horizontal urbanization.

2.4.4 Land Use

The design of physical space in the city is now strongly influence by the requirements of the automobile. The widespread use of vehicles places costly demands on urban space; the land required to build, sell, drive, maintain, park and demolish cars is significant. Experts estimate that twenty-five to fifty percent of urban land is used for streets and parking lots (Dobbins, 2009 and Burwell, *Way to Go, n.d.*). Furthermore, the size of the car and the high speed of its operation have impacts on the form, shape, arrangement and function of roads, buildings and green space. Lanes are widened, sidewalks narrowed, loading docks installed and parking enlarged. In addition, to facilitate speed and ensure pedestrian safety, the physical environment must accommodate the inclusion of crosswalks, overpasses, street lighting and massive signage.

2.4.5 The Natural Environment

According to Jan Gehl (2010), the consequences of car dependency are multiple and directly affect the nature and quality of the environment. With the creation of freeways and the resulting urban sprawl, comes the alteration and destruction of the wildlife habitat that surrounds urban areas. Within the city, natural features such as plantings and trees are removed to make way for infrastructure projects and attempts to reintegrate them later are costly and problematic. The construction and operation of vehicles consumes vast

amounts of non-renewable resources including carbon-based fuels such as oil, natural gas and coal (J.H. Crawford, 2002, p. 69-84). These energy sources emit CO_2 gases, which are the primary cause of air pollution in cities and are thought to be the chief contributors to the problems of global warming and climate change. Furthermore, carbon based fuels are finite resources which are being depleted (Gehl, 2010, p. 105). In addition, accidental oil spillage from tankers and rigs contribute to serious water contamination. Crawford (2002 p. 80) states that the world has already consumed one third of its existing recoverable oil, while consumption doubles every 35 years. He goes on to report that experts estimate world oil production will peak between the years of 1995 and 2020. In the foreseeable future, as oil reserve shrink, energy costs will continue to rise and the automobile will cease to be a sustainable mode of transportation for most people in North American cities.

2.4.6 The Social Environment

Of equal concern are the consequences of automobile use on the social life of the city. The construction of high-speed transportation networks through dense and human scaled neighbourhoods has divided, damaged or demolished communities, often displacing their residents. In North America, this has frequently caused the abandonment and collapse of inner city neighbourhoods. As people leave the area, the sense of downtown safety and security also disappears. Left in place are empty areas of unassigned space, void of human interaction, exchange or engagement. Dobbins notes, "the advent of the car has dominated the design and functionality of the street over the last century, radically affecting the quality of the civic environment" (2009, 95). The centre of a city is vital to

the quality of urban life, and needs to be a place where people have social and economic encounters at a local level. Their daily activities create a sense of connection, commitment and responsibility to one another and to the wider city. However, as drivers speed through the city in private automobiles, isolated and disconnected from their surroundings, they make no contribution to the culture and condition of local place. Instead, the air and noise pollutants of the car diminish the attractiveness and character of neighbourhoods. This process has had a detrimental effect on the physical environment, civic realm and social systems of cities. In his introduction to J. H. Crawford's *Carfree Cities*, critic James H. Kunstler concludes that our use of the car has "created an everyday environment that is ecologically catastrophic, economically futureless, socially poisonous and spiritually degrading" (Kunstler in Crawford, 2002, p. 7).

Another social consequence of the automobile is the inequality of mobility. Today, a large portion of human activity must be spent in the confines of the car, travelling around urban centres to gain access to goods and services. Because of increased costs, congestion and stress, people are either not able to travel or decide not to travel. This barrier is known as a "mobility gap" and refers to the difference between the number of trips that people would like to make and the number of trips they can afford to make. This social limitation often reduces access to "…cultural, educational and employment opportunities…" (Crawford, 2002, p. 77). As a result, many people are denied access to necessary urban services and resources.

Over the last few decades, it has become clear that auto-centric cities are failing. "In many cases people have abandoned cities and it is largely impossible to get to the various facilities in the city without a car. Pedestrianism, city life and the city as meeting place have all been cancelled" (Gehl, 2010, p. 26). From a functional point of view, with the development of a mobility gap, even the car is no longer meeting the transportation requirements of people in the city. Not only is it damaging to the quality of urban life and harmful to the health of inhabitants, it is also an unsustainable mode of transport. Increasingly, urbanites are rethinking the relationship between human activity, transportation and the nature of place.

2.4.7 Active Transportation

Over the last half century, the private automobile was hailed as the travel mode of choice and transportation policies encouraged functional specialization, separating the car from most other forms of mobility. Public transportation was assigned specific spaces on existing roads and active transportation users were forced to travel informally on a variety of lane shoulders, sidewalks and trails. As government spending favoured the creation of automobile infrastructure, car density steadily increased and there was less economic support and space for alternative types of mobility. Over time, the singular mobility of the car diminished the options and usage for public and active transport in the city. Today, there is a growing shift in attitude as people try to reduce their reliance on the car and reconfigure their patterns of living. According to a USA TODAY/ Gallup Poll of 1010 adults which was taken on May4-6, 2011, 70% of all American drivers have consolidated errands or taken other steps to reduce driving (Carey, Fruitrich and Pompa,

2011). The accompanying news article explains that the reduction in driving is due to high gas prices, expanded public transportation networks and a shift in demographics. "Many Americans, particularly young, upwardly mobile singles, are moving downtown and revitalizing cities" (McMahon as cited in Overberg and Copeland, 2011). By relocating their homes to areas of activity, density and accessibility, people are relocating their spaces of living and working. As people turn to alternative types of mobility such as walking, bicycling and the use of public transit, to reduce the cost of mobility, they incorporate active transport into their daily lives. Active transportation (AT) refers to the movement of people and goods through the use of human power and includes pedestrians, runners, cyclists and all others who participate actively on both a commuter and recreational level. By participating in active transport, urban inhabitants are making practical and philosophical choices that support personal health, environmental sustainability, social consciousness and the local economy.

2.4.8 Health and Environment

According to the 2010 statistical report of the Canadian Childhood Obesity Foundation, children in Canada are now weighing on average considerably more than they have in the past. "Obesity rates in children have almost tripled in the last 25 years. Approximately 26% of Canadian children ages 2-17 years old are currently overweight or obese" (Canadian Childhood Obesity Foundation 2011). The sedentary lifestyle of adults and children in industrialized nations is often a result of time spent commuting in cars, working at computers and watching television. Such inactivity is contributing to the rise in coronary heart disease, stroke, diabetes and obesity (McClintock, 2002). Whether for

recreation or as an integral part of daily life, active transportation helps to prevent these

illnesses, enhancing the strength and coordination of the body as well as the

psychological health of the mind. From an ecological perspective, active transportation

reduces the consumption of non-renewable fossil fuels, CO_2 emissions, associated air

pollutants, nitrogen oxides and hydrocarbons. Table 2 (see below), reveals the

comparative environmental impact of a variety of transportation modes.

Table 2 Environmental Impact of Transportation Modes.

Table 1.1

Comparison of various transport modes from the ecological viewpoint with a private car for an identical journey with the same number of people/km.

Base — 100 (private car without catalytic converter)

	🚗	🚗⁺	🚌	🚲	✈	🚆
Space consumption	100	100	10	8	1	6
Primary energy consumption	100	100	30	0	405	34
CO_2	100	100	29	0	420	30
Nitrogen oxides	100	15	9	0	290	4
Hydrocarbons	100	15	8	0	140	2
CO	100	15	2	0	93	1
Total atmospheric pollution	100	15	9	0	250	3
Risk of accidents	100	100	9	2	12	3

🚗⁺ — **Car plus catalytic converter** It should be remembered that the catalytic converter is only effective when the engine has warmed up. For short distances undertaken in towns, there is no real anti-pollution benefit.
Source: UPI Report, Heidelberg, 1989, quoted by the German Ministry for Transport.

Reproduced from permission of the European Commission (1999).
http://europa.eu/geninfo/query
Search for UPI Report, Heidelberg, 1989.
Access 0.6173 Cycling: the way ahead for towns and cities

The study tested a car without a catalytic converter to establish its energy and space consumption and its emissions. The results were used to create the baseline of 100 units for each category. When tested against the baseline, the bicycle had the smallest environmental footprint (McClintock, 2002, p. 4).

2.4.9 Quality of Life Issues

Beyond health and environmental benefits, active transport positively impacts the quality of life for most urban inhabitants. In contrast to the car, AT is more affordable, more reliable, and less regulated. For those without the use of a motorized vehicle, especially children, seniors and people of low income, AT increases their access to a variety of places, experiences and resources. A community that supports AT benefits from increased road safety, with less vehicular fatalities. The presence of pedestrians in the streets ensures greater personal security. Active transportation also contributes to the social and economic life of the city. Without the sensory separation that a motor vehicle causes, urban AT travellers have direct contact with their surroundings and a greater awareness of each other. Due to these relationships, they are encouraged to support local businesses more often. For activist and architect Jan Gehl, active travel ensures that the quality of life in urban places becomes more lively, attractive, safe, sustainable and healthy. "The potential for a lively city is strengthened when more people are invited to walk, bike and stay in city space" (Gehl, 2010, p. 6)

2.4.10 Public Policy

In many of the world's auto-centric cities, inhabitants are rediscovering the benefits of walking and biking, and civic governments are reevaluating their transportation networks to include infrastructure for these vulnerable road users. As a result, the operation of streets in many cities such as Copenhagen, Paris, Portland and Montreal is changing from the traditional transport model of functional separation to one of integrated diversification. Instead of providing infrastructure strictly for automobiles and some public transit, these cities are trying to rebalance the function of the street. This is apparent in the many changes to existing road design such as mini traffic calming circles, dedicated bike lanes, extended pedestrian sidewalks and elevated crosswalks. In 2010, the City of Winnipeg used a $20.4 million federal infrastructure stimulus package to create 35 bike and pathway projects. Most cities now incorporate universal design by ensuring that there is space on buses and subways for the transport of AT equipment. Similarly, architects and designers are including space for the temporary storage of AT equipment in urban buildings. According to Dobbins, many American cities, "are gradually moving toward a more integrated approach, viewing transportation as a system that provides choices for how to get there, recognizing a wider range of trip types and travel modes, and more interactive links between land use and transportation" (Dobbins, 2009, p. 149). These initiatives reflect the changing nature of urban transportation policy and the growing public participation in the active transportation movement.

2.4.11 Mobility as Right

The car is a private and exclusionary mode of transportation, and often inaccessible to the
wider population on the basis of income, age and ability. In the last one hundred years,
the cost of transportation for families has risen from virtually nothing to 22% of their
household budget (Burwell, 2005). Drivers must be able to afford a vehicle, obtain a
license and be physically able to drive. As a consequence, there has been a growing
understanding among urban inhabitants that, not only is mobility an essential part of
everyday life, but it should be considered a fundamental right of all citizens. The growth
of active transportation has expanded the ability of inhabitants to move about the city to
access housing, employment, education, health and recreation. This type of accessible
mobility allows people to participate in the local economy, accessing information and
distributing goods more easily. The adoption of diversified transport networks that
provide the choice of active and public transportation democratizes mobility by ensuring
a universal right to access.

2.5 Place

2.5.1 Placemaking

Philosophically, placemaking is an urban design approach based upon the ways in which
people find meaning, authenticity and identity in public space. It develops from the
interactive experiences between people and their relationships to place. It is influenced by
the context and cultural patterns of the historical past, while reflecting the contemporary
lifestyles and social needs of current inhabitants. As such, placemaking is an elaborate
and evolving concept. According to Project for Public Spaces, a nonprofit design and

educational organization, placemaking is "both a process and a philosophy" ("What is Placemaking?" n.d.). Not only does it serve as a general guiding principle for the understanding of place, it also provides designers with specific tools to facilitate the creation of place. Fundamental among these many tools are the inclusion of mixed-use development, human scale construction, varied transportation options and multiple green spaces as well as providing for sensory experience, diverse activities and individual choice.

2.5.2 Historical Development

The concept of placemaking developed in response to the advent of 19th century industrialization, as well as 20th century technology and globalization. A growing standardization in the design and planning of buildings and communities resulted from the emergence of mass production, the rapid flow of capital and information, and the access to new world markets. As places became increasingly generic, interchangeable and anonymous, the design of urban spaces no longer reflected the everyday lives of its inhabitants. Communities began to lose meaning and authenticity because their environments did not reflect the values, culture and lifestyles of their citizens. As French theorist Marc Augé notes, locations become inauthentic when "people begin to occupy places in which they do not recognize themselves" (Augé, 2000, p. 9).

Beginning in the 1960's, the work of influential urbanists such as William H. Whyte, Jane Jacobs, and Jan Gehl significantly contributed to the practice of placemaking. With a shared love for the city, these innovators advocated for humanistic principles in city

planning, people oriented architecture, and the value of public space to social and economic life. They also established the importance of collecting observational data on urban activity to inform public space decision-making.

2.5.3 Access and Linkage

The Place Diagram (Figure 2) is used as a tool by Project for Public Spaces for the assessment and design of urban public space ("What Makes a Successful Place?" n.d.). The image outlines four essential categories that ensure successful placemaking: Uses & Activities, Comfort & Image, Sociability, and Access & Linkages. Each category represents several qualitative and quantitative conditions of the urban environment that are key to the existence and success of place.

The Access & Linkages quadrant reveals the importance of transportation to placemaking. A diversified transport system, that includes active transportation, provides the connectivity, accessibility and mobility so necessary to the quality of urban life and the creation of place. The remaining three quadrants further support the relationship between active transportation and place with their overlapping values for walkability, activity and vibrant street life.

Table 3   The Place Diagram: Four Essential Categories
                            for Successful Placemaking

number of women, children & elderly   local business ownership
social networks   land-use patterns
volunteerism   diverse   property values
                      stewardship
evening use   cooperative   rent levels
                      neighborly
street life   pride   retail sales
                      friendly
                      interactive
                      welcoming

Sociability   Uses & Activities   fun active vital special real useful indigenous celebratory sustainable

Place

continuity   safe clean "green"
proximity   Access & Linkages Comfort & Image walkable
traffic data   connected   sittable
mode splits   readable   spiritual   crime statistics
                     walkable   charming   sanitation rating
transit usage   attractive   building conditions
pedestrian activity convenient   historic   environmental data
parking usage patterns   accessible

MEASUREMENTS   INTANGIBLES   KEY ATTRIBUTES

What Makes a Great Place?

PPS
PROJECT FOR
PUBLIC
SPACES

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2.5.4 Placemaking and Mobility

In the last hundred years, it has become possible to travel further, more frequently and in less time. Michael Dobbins notes that "The world has become successively more connected, or 'smaller,' at each stage of transportation improvement" (Dobbins, 2009, p. 148). While this statement is true from a geographic perspective, it is less true from a social perspective. With the growth and dominance of the automobile in North American cities and many other parts of the world, urban transportation has shifted from a

communal to individual experience, from a public to private mode. Modern transportation modes have led to a disconnect between people and place for many reasons.

The automobile forms a physical barrier that isolates passengers. The speed of travel and the confines of the vehicle prevent any direct interaction with the surrounding environment. Passengers further separate themselves from the reality of the journey; listening to music, watching movies, and working with personal electronic devices. The result is that while we endure travelling a great distance to reach our destination, we do not often connect with people and places along the way. A journey that fails to build connection and experience has no relationship to the practice of placemaking. Conversely, for those who choose active transportation, the journey becomes as significant as the destination. Their senses are engaged, they are exposed to the elements, and they experience their surroundings. They have an immediate relationship with the people and the places they encounter. In this way, placemaking is restored to the act of being mobile.

2.5.5 Placemaking and the Street

Historically, streets have always fulfilled a variety of functional roles in the city: the circulation of people, goods and services, the access to and from buildings, the provision for public utility networks, and the exposure to light and air. While they continue to serve these essential functions, many of the streets we use today have lost their sense of place and have instead been designed for vehicle speed and efficiency. For those who use the

automobile, the urban street has become a transitory passage whose primary function is to take people from one place to another. As such, the contemporary street is not a destination, but instead has been reduced to the space between destinations. The car is an insular mode of transport that limits the perspective and potential of streets to be meaningful places of human activity. Indeed, modern freeway construction has created barren concrete environments that are dehumanized and disconnected, "As a result, many communities end up with transportation networks that simply pass through them, without responding to community needs, relating to their surroundings, or reflecting local character" (National Research Board, 1997, p. 6).

In reaction to the degradation of city streets, there is a growing interest in re-conceptualizing their form, functionality and purpose. Project for Public Spaces President Fred Kent states, "To have a successful pedestrian street… we have to begin thinking of streets as places in themselves, not just as a corridor for traffic, shopping, or any other single use. That means there must be many different things for people to do while walking the streets" (as cited in Walljasper, 2009, para 29).

Currently, urban professionals are implementing placemaking initiatives aimed at revitalizing the role of transportation and restoring place as a central component of the quality of urban streets. Green Mobility Streets, Complete Streets, Woonerfs, Inhabited Streets and Great Streets are movements that examine the potential for change in the street.

Some of these initiatives examine the role of transportation in street renewal. Green

Mobility Streets promote public policies that focus on active and public transportation as

well as environmental sustainability. By employing user payment strategies, such as

polluter fees and congestion charges as well as the establishment of low emission zones,

this movement strives to improve the quality of place by giving people options to adopt

healthier, safer and more sustainable transportation habits. Complete Streets has a focus

on inclusion, equity and convenience for urban transportation users. Planners and

engineers must ensure that they "routinely design and operate the entire right of way to

enable safe access for all users, regardless of age, ability, or mode of transportation."

(National Complete Streets Coalition, n.d.). Universal access to multiple modes of

transportation ensures the equality that is necessary to achieve placemaking for all.

In Europe, the Dutch Woonerf and the German Wohnstrasse give pedestrians rights to the

use of the street. Streets are designed without physical boundaries such as curbs, parking

is restricted to intermittent areas, and vehicles must reduce their speed to a walking pace.

The street becomes a place of equality that is shared among children, drivers and

pedestrians. By providing space for multiple users who participate in a variety of

activities, the street functions as a center of vitality, communication and connection.

Other street renewal initiatives are focused on addressing the built environment in

relationship to placemaking in the streets. Inhabited Streets propose the revitalization of

low-density residential areas by linking them to more populated centres of urban amenity

and activity. The goal is to connect suburban sprawl to areas of mixed-use, increasing the

liveliness and social functions of neighbourhood streets. The Great Streets movement

seeks to identify the many contextual qualities that together create a sense of place in the

urban street. They include the environmental factors of climate and landscape, the

architectural elements of scale, perspective, boundary, cohesion and detail as well as the

social aspects of safety, comfort, density and diversity. These qualities unite to contribute

to the complexity and identity of the street. It becomes not just a place to traverse, but

also a place of belonging.

2.5.6 Placemaking and the City

The Livable Cities movement is an overarching concept aimed at improving the quality

of life for people in urban environments. It is a primary focus of contemporary urban

practice and the subject of extensive research. A review of its literature reveals six

guiding principles for the creation of livable cities: access, equity, participation,

sustainability, conviviality and aesthetics. Access to the essentials of air, food, housing

and employment is fundamental to livability, as well as access to the infrastructure

services of transportation, communication, water and sanitation. Equity encompasses the

presence of democratic rights and equal opportunities for all citizens. It rests on the

values of tolerance and acceptance of others. Participation empowers inhabitants to assert

their identity in the decision making process of their city, engaging with the community

and expressing their opinions. Sustainability is the preservation of the quality of life for

people today and in the future. Salzano (1997) maintains the livable city as a link between

the past and the future: the livable city upholds the imprint of history, of heritage, and

respects those who are not born yet. A livable city preserves the signs: the sites, the

buildings, and the layouts of history and it conserves the natural resources for future

generations. "A livable city is also a city that fights against any waste of the natural

resources and that we must leave intact for the humankind, that is, for our posterity….

Therefore a livable city is also a 'sustainable city': a city that satisfies the needs of the

present inhabitants without reducing the capacity of the future generation to satisfy their

needs" (Salzano as cited in Timmer and Seymoar, 2005, p. 3). Conviviality reflects the

social and cultural activity of the city, its diversity and dynamic character. It arises from

the interaction of people in public space through conversation, celebration and

connection. Aesthetics involves the creation and appreciation for beauty in both the

natural and built environments. Aesthetics has the potential to preserve the contributions

of the historical past while respecting the context of the present through a continuity of

quality design. These principles lie at the centre of placemaking and support the creation

of livable cities as places of meaning, identity and authenticity.

A primary tool in the achievement of livable cities is the implementation of active

transportation systems. Access to urban resources and services is augmented by active

transport. As users travel the city to access their jobs, run errands or meet their friends,

they have the flexibility for spontaneous decision-making. Pedestrians and cyclists have

the chance to stop and take note of a new shop, a neighbourhood event, or a photographic

moment. These unexpected interactions foster urban awareness, enrich place and provide

greater access to local resources and exchanges. Equity is achieved through the lower

cost and wider availability of active transportation. A broader range of people, especially

children, seniors and low-income earners, are able to participate in the economic and

social life of their neighbourhoods and share in the wider opportunities available in the city. Conviviality is a direct benefit of the ways in which AT engages the user with the life in the street. Pedestrians experience daily face-to-face encounters with a variety of strangers and acquaintances that expand their social lives and the liveliness of the community. Aesthetics are of great importance to active transportation users who have a more immediate relationship with their surroundings. Aesthetics add to user comfort, protection, safety and pleasure. Not only does active transportation reduce noise, congestion and pollution, the presence of its users supports aesthetic initiatives such as greenery, boulevards and public art. Sustainability is a fundamental advantage of active transportation. As a self-propelled mode of travel, it is renewable and non-polluting. It contributes to the ongoing social life of a city and the health of its inhabitants. In all of these ways, it becomes evident that active transportation is integral to the creation of livable cities and the fundamental principles that sustain them.

2.5.7 Placemaking and the Interior

In today's urban environments, the choice of transportation is multiple and varied. It is a common experience for inhabitants to employ more than one type of transport, often in a single journey. This intermodality occurs when commuters use park and ride facilities to get to work or when they simply walk to the corner and ride the bus to reach their destination. To facilitate the transition between these modalities, transit hubs have been built to link them. These hubs can range from a basic bus shelter, to a subway station, to an international transport center that connects planes, trains, buses and cars. Their major function has been to address the technical complexities of intermodal travel: access,

efficiency, circulation, and wayfinding (Rebois, 2007, p. 168). As such, hub interiors are frequently designed as generic and standardized spaces. While the basic transportation functions have been met, many transport interiors have failed to incorporate a sense of place or connection to the character of the wider urban landscape. As an example, for the millions of people who use the subway, the city is often presented as a collection of isolated, underground stations that have little spatial relationship to their exterior environment. It is difficult for people to develop an understanding of and relationship to the city as a whole when it is experienced as a series of segregated stops. This disconnection is heightened by the speed of travel and the sensory separation that characterize vehicular transport.

As a consequence, there is a growing demand for the interior spaces of transportation to humanize the experience of travel. Incorporating the principles of placemaking into the design of hubs will connect the journey to people and place. To accomplish this, transit station and hub interiors need to be integrated into the community as public centres of daily activity and amenity. Currently, organizations such as Project for Public Spaces suggest that the design for transit facilities needs to meet three objectives in order to achieve placemaking: to provide the public with effective and comfortable transportation, to become the impetus for neighbourhood revitalization and to serve as centres of urban communities ("A community vision," n.d.).

Interior design has the ability to meet these placemaking objectives by providing orientation, amenity, security and integrated mobility. Orientation is the experience of

locating the self in relationship to the environment with reference to time, place and people (Webster's College Dictionary, 1996). By offering a temporary pause in their journey, transit hubs slow the pace of travel and act as a marker of time and place, contributing to individual understanding of distance, progress and position. Similarly, interior design elements that offer place-based sensory cues expose people within their surroundings and orient them in a specific location. These contextual links situate both travellers and local residents within the wider urban environment and connect the character of neighbourhoods with transit interiors. Amenities located in transit interiors enrich place by providing comfort and convenience to both commuters and the community. Service amenities such as newsstands, coffee shops, health clinics, banks, and libraries and physical amenities like seating, rest areas and signage, together attract more pedestrians and activity to hub interiors. These amenities create economic centres that expand into the surrounding community, connecting with local people and place, revitalizing services and resources in and around the hub. Personal safety and security, so essential to the viability of place, results in part from the constant presence of people who frequent transport facilities. Because transit interiors are typically open for extended hours, their constant use increases the perception of safety in the hub and its surrounding streets. This sense of security has a direct impact on the vitality of place. Integrated mobility is the primary function of hubs, providing individuals with options for travel such as riding, cycling, and walking. Transit interiors facilitate the transition between these modes, making urban mobility both convenient and possible. As people travel through the transportation network of the city, they make daily connections with the people and places along the way. Hubs illustrate the important role interiors play in

incorporating placemaking into transit facilities as well as the potential of interior design to address the wider subject of urban mobility.

3.0 PRECEDENT REVIEW

3.1 Bike Transit Center At Union Station

Location: 50 Massachusetts Avenue NE
               Washington, DC
Architect: KGP Design Studio
Client: District of Columbia Department of Transportation
Project Area: 1750 sq. feet

The D.C. Bike Transit Center is the latest addition to Washington's transportation network. It occupies a narrow space between two historic buildings: the National Postal Museum and the Union Station. Travellers and tourists are now able to access the interstate railway, the city subway system and the bike transit center from the same central location.

The new facility provides secure interior parking space for 150 bicycles as well as the use of personal lockers and change rooms. Frequent users can purchase an annual membership, which costs $100.00 for 24-hour access while casual bikers pay $1.00 a day. Staffed for 66 hours a week, the bike transit center operates a rental program for bikes, strollers, and wheelchairs and employs two mechanics in the repair shop. The retail outlet also sells a variety of refreshments and bike gear.

The design of the DC bike station is impressive because of its aesthetic form, its efficient use of space and its environmental use of the sun and the rain. It sits like a glass capsule

on the sidewalk just outside of the western entrance to Union Station. Measuring 110 feet in length and 27 feet in width, it has an oval form composed of 133 overlapping panes of glass attached to an underlying steel structure. The effect of glass over the tubular steel skeleton is to create a light and airy place whose curves echo shape of bicycle wheels and their motion. The western windows have shades enclosed in the glass panels to control the sun's heat and these windows can also be opened for ventilation. A rainwater catchment system is used to water local shrubs and flowers. Such attention to incorporating environmental sustainability into public facilities is an important aspect of the philosophy of active transportation.

By situating the Bike station in close proximity to other forms of transportation, the DOT has enhanced the opportunities for many people to engage in active transportation, improve their health, contribute to sustainability and interact with each other and the city. At the grand opening, Washington's Mayor Fently remarked, "It's not just a glass structure. It's setting a national trend and national standard for intermodal transportation, for getting people out of their cars, for getting fit, and for getting people together" (Pazuchanics, 2009).

Critic Noah Kazis suggests that the new Bike station is significant, not because of the few new riders it will create but because "It is a major symbolic statement that bikes are an important part of the transportation infrastructure" (Kazis, 2009). By situating bike stations in high profile locations, citizens become more aware of the possibilities for

active transportation and are encouraged to change their habits and their mobility. In this

way, a bike station becomes a transformative entity.

Table 4   Theoretical Considerations of the Bike Transit Center, Washington, DC

Theoretical Consideration	Importance	Design Implication
Connection between interior and exterior space (Benzel, 1998)	Creates an association of physical form, meanings, relationships, activities.	Use of glass provides visibility from the exterior and exposure of the interior. The transparent structure heightens awareness and encourages participation.
Sustainability in Design	Conservation of energy; occupant comfort, health and wellness.	Use of glass panels provides access to natural light, movable louvers control temperature through natural ventilation and greenhouse effects.
Access to Mobility (Crawford, 2002)	Lowers the cost of transportation; democratizes transportation by providing choice.	Proximity to other forms of transportation offers opportunities for intermodality.

Figure 50 Exterior view Copyright KPG Design Studio

Figure 51 Exterior view at night Copyright KPG Design Studio

ROOF PLAN

GROUND FLOOR PLAN

WEST ELEVATION
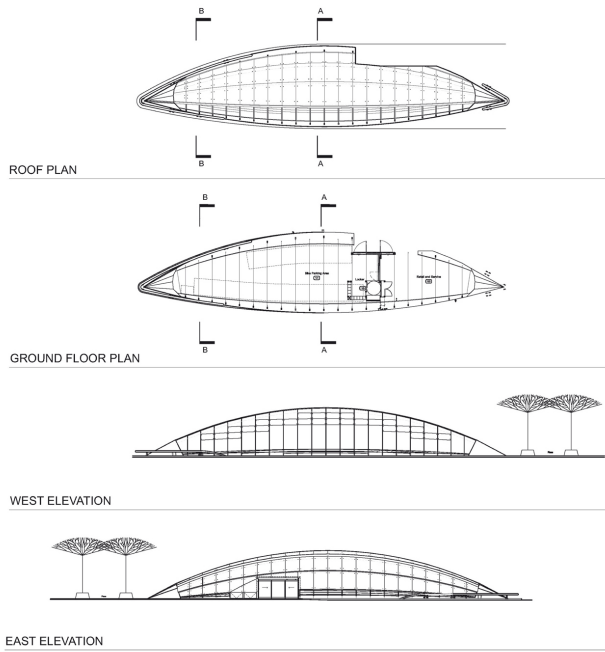
EAST ELEVATION

Figure 52 Plans and elevations Copyright KPG Design Studio
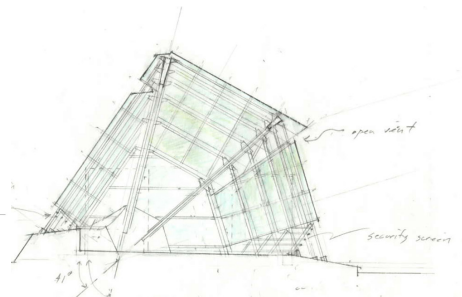
Figure 53 Sketch Copyright KPG Design Studio
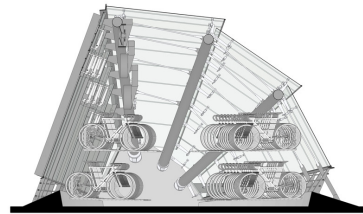
Figure 54 Section 1 Copyright KPG Design Studio
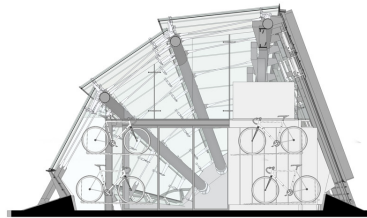
Figure 55 Section 2 Copyright KPG Design Studio
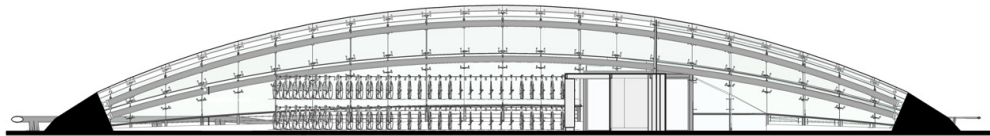
Figure 56 Longitudinal section Copyright KPG Design Studio
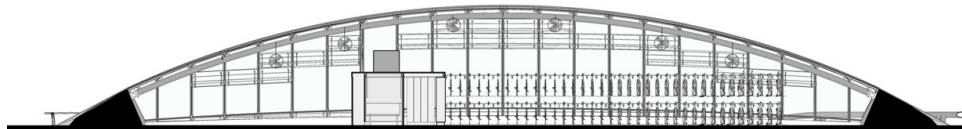
Figure 57 Longitudinal section Copyright KPG Design Studio

Figure 58 Exterior view Copyright KPG Design Studio
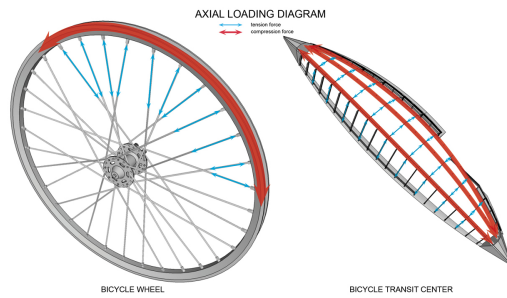
Figure 59 Axial loading diagram Copyright KPG Design Studio
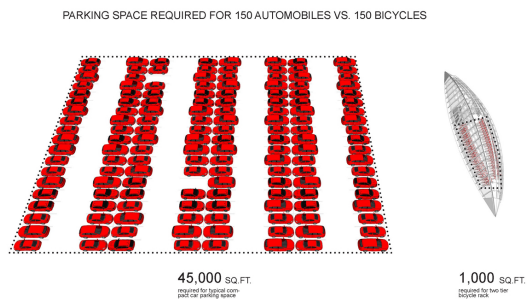
Figure 60 Parking space: bike vs. automobile
Copyright KPG Design Studio
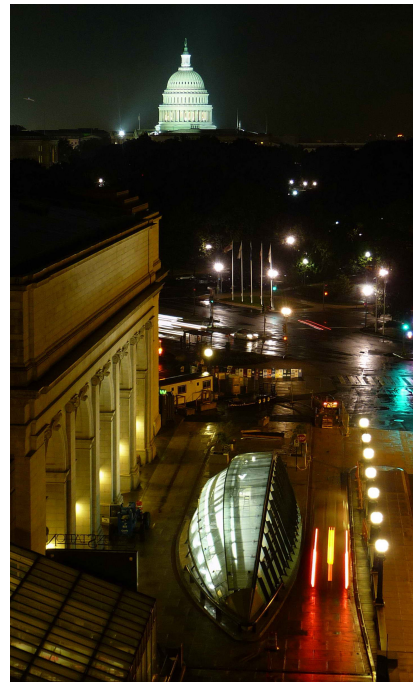
Figure 61 Aerial View at night
Copyright KPG Design Studio

Figure 62 Interior View Copyright KPG Design Studio

Figure 63 Interior Detail Copyright KPG Design Studio

Figure 64 Interior View Copyright KPG Design Studio

Figure 65 Interior View Copyright KPG Design Studio

3.2 McDonald's Cycle Center

Location: Chicago, IL, USA
Architect: Mueller & Mueller, Ltd.
Client: City of Chicago, Department of Transportation
Project Area: 15,995 sq. ft.
Date: 2004

McDonald's Cycle Center is located in the northwest corner of Chicago's Millennium

Park at the intersection of East Randolph Street and Columbus Drive. It's central location

near the downtown business district and in the midst of the major tourist area makes it

ideal for active transport users and visitors. In addition, the Cycle Center offers easy

access to a variety of mass transit systems. The Chicago Transit Authority Hub, which

provides access to the city's subway and bus system, is located at the south end of

Millennium/Grant Park while a Metra rail station is nearby on East Randolph. A busway

connects McCormick Place Convention Center to Millennium Park using a BRT (Bus

Rapid Transit) corridor.

The center operates as a full service bike station with secure storage for 300 bicycles.

Open and staffed seven days a week, the station reserves free outdoor spaces for the first

100 cyclists, but after hours, only members can use the facility. There are 500 members

who pay $30 per month or $169 a year for a bike space, showers and locker space. There

are 240 day-use lockers and a daily towel service for a $1.00. The café has an internet

station, serves a continental breakfast and snacks, and has outdoor seating in the summer.

The repair shop has professional mechanics that service bikes, sell parts and gear, and

provide tools to the do-it-yourselfer. The rental department has helmets, locks, inline

skates, tandem bikes, and wagons. Their bike programs include tours, a sharing plan and

day camp programs for students. The Chicago Police Bicycle Patrol is also stationed in the center.

The facility has three levels and has been built into a section of the Millennium underground parkade; two levels of the complex are below ground and the third is above ground. The majority of the bike parking is assigned to the lowest underground floor. The showers, lockers and change rooms are on the middle floor. Above ground, the cycle center is covered with a double storied glass atrium and contains the café and additional bike storage. There are 120 solar roof panels that produce 6.5% of the power required in the building. Atrium windows regulate the ventilation and provide natural light. Other sustainable elements include an energy efficient building shell and blue awnings, which help with temperature control. To maintain the transparency of the building, stainless steel and light colored wood are used for the window frames and structural elements. With only one floor above ground, the center stands in juxtaposition with the surrounding skyscrapers but reflective of the more human scale of the park and its users.

Well known for its temperature extremes (Summer highs of 28^0C, winter lows of -10^0C) and winter snowstorms (average winter snowfall 97cm), Chicago's climate presents challenges to those engaged in active transportation. The McDonald's Cycle Center was designed to stimulate year round bike use by commuters and to make a positive impact on traffic congestion, air pollution and physical fitness. Accessed by a diverse population who share a value for active transportation, the center has become a place where information and ideas are shared and where directions and assistance are sought.

Table 5 Theoretical Considerations of the McDonald's Cycle Center

Theoretical Considerations	Importance	Design Implications
Third Space (Oldenburg in Orum & Neal, 2010)	Creates a space for social equality, common ground, tolerance and unity.	Neutral spaces of common interest that bring together a diversity of people and perspectives.
The Plurality of Public Space (Derrida in Teyssot, 2000)	A multiplicity of public space allows for more accessibility and participation	Active transportation hubs which act as inclusive centers for the community are more effective as part of a city wide network

Figure 66 Northside street entrance Copyright Muller & Muller

Figure 67 Southside outdoor parking Copyright Muller & Muller

Figure 68 Aerial view Copyright Robert Murphy

Figure 69 Interior bike storage Copyright Nathan Kirkman

Figure 70 Locker facilities
Copyright Robert Murphy

Figure 71 Washroom facilities Copyright Robert Murphy

Figure 72 Plan - Street level Copyright Muller & Muller
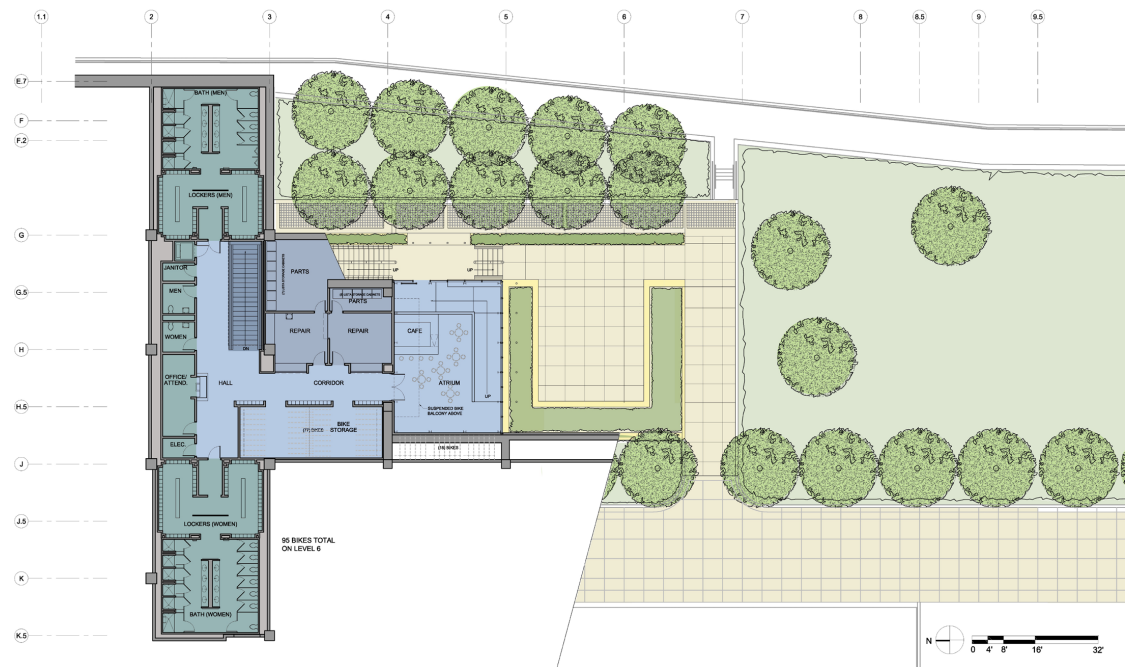
Figure 73 Plan - Lower levels Copyright Muller & Muller
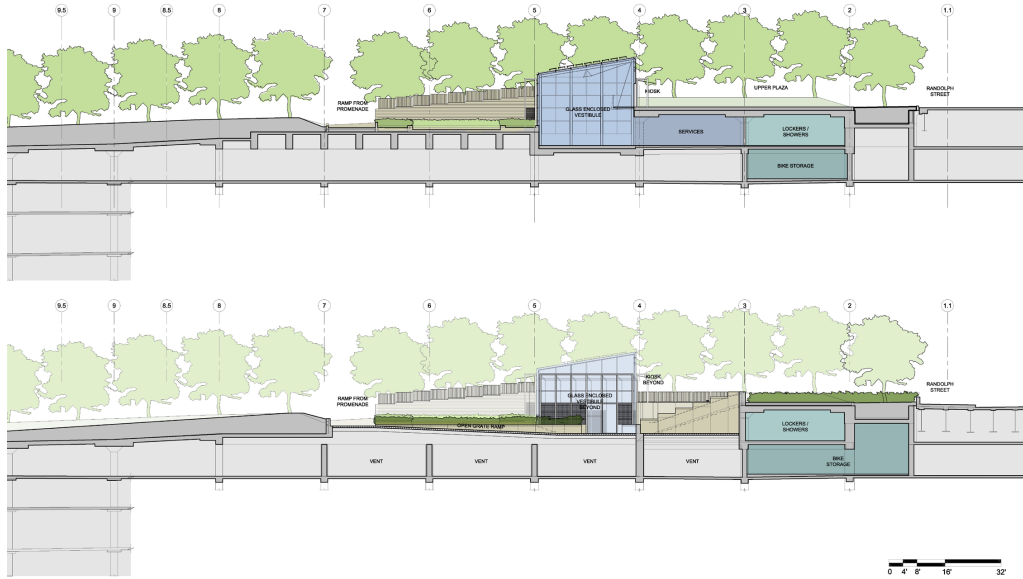
Figure 74 Building sections Copyright Muller & Muller
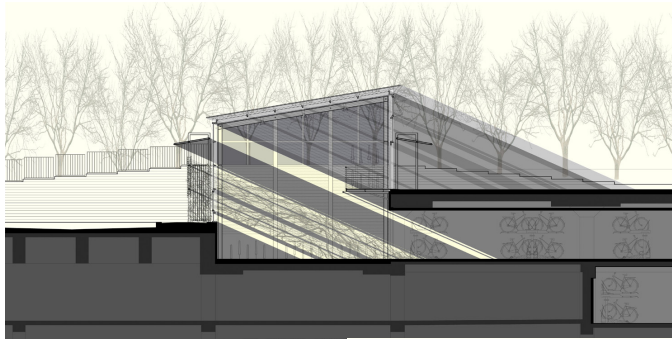
Figure 75 Winter section
Copyright Muller & Muller
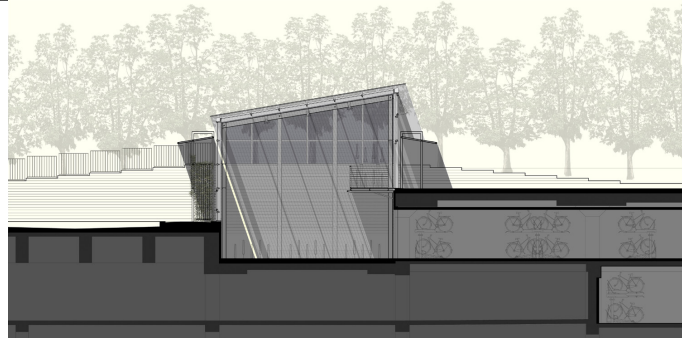
Figure 76 Summer section
Copyright Muller & Muller

3.3 Stadsbalkon at Groningen Station

Location: Groningen Central Station, the Netherlands
Architect: KCAP Architects & Planners
Client: City of Groningen
Project Area: 66 736 sq. ft.
Date: 2007

The Stadsbalkon was conceived as part of a comprehensive restoration of the Groningen Central Station, which was originally built in 1896. For years, the location has provided both rail and bus service to the surrounding residents. Today, Groningen has the highest cycling rate of any city in the world; 55% of all journeys are by bicycle (Hembrow, 2008). In developing a design for the bike station, it was important to consider the historic nature of the existing railway station and the current needs of its cyclists.

In response to these concerns, the architects created an elevated central plaza in front of the rail station, which matches the height of the station's main floor and adjacent train platforms. The plaza surface resembles a pair of wings gently sloping down to the middle from the east and west and acts as the roof for the underground bicycle park. It also provides space for gathering and performances, opportunities for social and cultural activities, and gives the station a new sense of grandeur.

The subterranean space has room for 4150 bikes on two tiers of racks. A red bike lane swoops down the ramps from either end creating a distinctive right of way through the bike park. The pathways throughout the underground facility are wide and spacious. The ramps and four sets of stairways leading down from the plaza surface, allow for an abundance of natural light. The soaring roofline and the large, round ceiling perforations open the park to the pedestrian plaza above. Circular benches surround these openings.

In two of the openings, mature trees are planted with their roots in the underground bike park and their branches reaching above the plaza. Overhead lights and illuminated wall panels ensure a well-lit facility at all times.

A piece of artwork entitled "Second Thought," hangs in a central spot from the ceiling of the underground park. It features a miniature replica of the Groningen Central Station in a transparent globe. Every few minutes, the globe fills with lightly falling snowflakes that obscure the view of the miniature station. When the flakes settle, the station is once again visible. The artwork reflects the tension between the historic presence of the rail station and the more abstract position of the bike park, and draws on the concept of memory and meaning of place. Because cyclists in the underground facility temporarily lose visual connection with the central rail station above, the public art installation serves to remind travellers of their relationship to the surrounding place.

Table 6   Theoretical Considerations of the Stadsbalkon at Groningen Station, NL

Theoretical Considerations	Importance	Design Implications
Place and mobility	To provide meaning, authenticity, identity in places of transition.	Public art connects travellers to the facility, the community and its history.
Connection between interior and exterior space (Benzel, 1998)	Creates an association of physical form, meanings, relationships, and activities.	Use of structural openings links users to their outer surroundings (access views, light, air).
Social life of public space (Dobbins, 2009) (Gehl, 2008)	Foster social interaction (material, conceptual and cultural).	Provision for open gathering space, public seating, urban amenities allows for spontaneous encounter.
Access to Mobility (Crawford, 2002)	Lowers the cost of transportation; democratizes transportation by providing choice.	Proximity to other forms of transportation offers opportunities for intermodality.

Figure 77 Groningen Central Station
Copyright KCAP Architects & Planners

Figure 78 Underground bike parking
Copyright KCAP Architects & Planners

Figure 79 Entry to underground bike parking Copyright KCAP Architects & Planners

Figure 80 Circular bench seating
Copyright KCAP Architects & Planners

Figure 81 Bike parking at night
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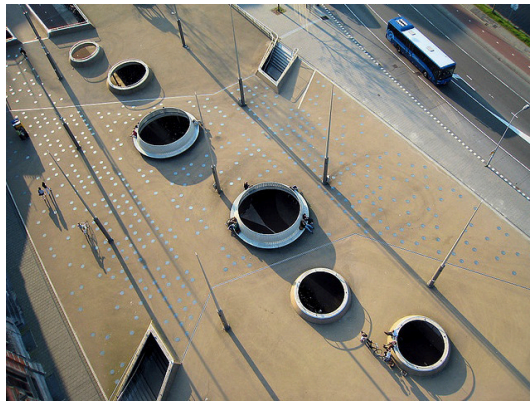
Figure 82 Aerial kite photo Copyright Eric Kieboom

Figure 83 Night lighting Copyright Wout Mager

Figure 84 Aerial kite photo Copyright Eric Kieboom

Figure 85 Plaza in the rain Copyright Hetty Oostergetel

Figure 86 Aerial kite photo Copyright Eric Kieboom

Figure 87 Groningen Central Station at night
Copyright Mark Sekuur

Figure 88 Second Thought Copyright Henk Landkroon

Figure 89 Intermodal travellers Copyright Alex Denekamp

3.4 Pioneer Courthouse Square

Location: Portland, Oregon
Architect: Willard K. Martin
Client: City of Portland
Project Area: 1.56 acres
Date: 1984

The city of Portland's long history of community action and political engagement influenced the creation of Pioneer Courthouse Square. It was built on the historic site of the famous Portland Hotel, which had been reduced a parking lot by the 1950's. The square was a collaborative project involving TriMet, the city's transit authority, the Metropolitan Area Express (MAX), the city's light rail system, the Federal and State governments and the citizens of Portland. During the 1980's, these organizations formed a partnership to ensure the financial viability and the aesthetic quality of the project. Today, Pioneer Courthouse Square has become a busy transportation hub for buses, light rail and active transport, a force for the revitalization of the downtown and the social and cultural center of Portland.

The Square was designed by Willard K. Martin who believed that residents of Portland valued their city, enjoyed open, outdoor vistas, sought opportunities for public interaction, and would not be kept home by rain. The result of his vision is a large, open, treed plaza with all of the built functions located around the edge. As part of a massive fundraising effort, every surface in the square is paved with red bricks and each one of them is engraved with the name of a donor. Tall columns line opposite sides of the square, giving it definition. Steps rise from the plaza to the higher terraces, and sweep halfway around the square, creating a sense of height while providing fixed seating

surfaces for speeches, concerts, and performances. The food kiosk, flower stall and coffee shop are located on top of the terraces while the Visitor's Center is accessed at the bottom. To reach it, visitors pass over a bridge, which spans a pool beside a cascading water wall. The entrance to a lower, interior level, which is occupied by offices and a bookstore, is nearby. At the base of the coffee shop is a smaller, sunken amphitheater called "The Bowl". The square contains several other features, which add a sense of place and connection to the plaza. On one corner, a Mile Post points out the distances to Portland's nine sister cities. The Weather Machine engages every noon hour, opening up like a cuckoo clock and announcing the next day's forecast; a symbol for rain, sun or snow is revealed along with music, mist and flashing lights. Chessboards are built into stone blocks around the square, which also features pieces of public art, a life-sized bronze statue of a polite Portlander offering his umbrella to a stranger and the wrought iron gate from the old Portland Hotel.

There are over 300 events scheduled for this plaza every year beginning with the spring flower show, which transforms the square into a multi-colored garden. In the summer, sand fills the plaza as huge numbers of children and adults vie to build the best sand castles. December festivities include the tree lighting and a New Year's Eve party. At other times, hundreds of people come for vigils, protests and political rallies. But for many, the best part of the square is that it is a place to go everyday for coffee on the steps, for casual discussions, to meet friends, spend time with people, and enjoy the outdoors. Surprisingly, the light rail system now carries more people downtown on Saturdays than it does on weekdays, which is a testament to both the square and to the

transportation network. Named in the top ten best parks in America twice in the last

decade, "Pioneer Courthouse Square illustrates the beneficial and synergistic relationship

that is possible between a public space and public transit system" (*Public Space, Public*

Transport Gel In Portland's Pioneer Square, n.d.).

Table 7   Theoretical Consideration of Pioneer Courthouse Square, Portland, Oregon

Theoretical Considerations	Importance	Design Considerations
Placemaking	Connection to place through the creation of meaning, identity, authenticity, belonging.	Public art tied to locality, connection to historical buildings and artifacts, opportunity for individual contributions to the space
Mobility & Place	Connecting the act of travel with the concept of place ensures economic and social viability.	Linking intermodal transportation with places of sociability*, activity, use, comfort and convenience links travellers with their city and fellow inhabitants. *(cafes, bookstore, food kiosks, flowers stalls, events, performances)
Public Space as Site for Social Interaction (Jacobs in Orum & Neal, 2010)	Create safe, vital and dynamic urban streets, public trust, and security.	Informal gathering space, physical affordances (surfaces, walls, steps) provide space that adapts to user need. Multiple access points encourage use and encounter. Essential services and functions ensure use on a daily basis.

Figure 90 The Mile Post Copyright Melissa Baker

Figure 91 Gathering space Copyright AntyDiluvian
(Andy Dolan)

Figure 92 Aerial view
Copyright Soderstrom Architects

Figure 93 Flower Show
Copyright Soderstrom Architects

Figure 94 Sitting surfaces Copyright Soderstrom Architects

Figure 95 Bricks in Pioneer Courthouse Square
Copyright uniquely-portland-oregon.com

4.0 DESIGN APPLICATION

4.1 Programme

The active transportation hub acts as a resource for all active transportation users. It is a year round facility for respite, repair and refueling. The hub will also serve as a meeting place for many groups: the surrounding community, BRT riders, and visitors to the Forks. Providing both exterior and interior gathering spaces, the hub will be a public space that is open to all. The majority of its functions and services will be open from 6 am to 10 pm, 7 days a week. Equipment deposit (parking) and equipment rental will be accessible 24 hours a day. The hub will provide users with a variety of equipment services, personal amenities, membership facilities and support services.

4.1.1 Equipment Services

Equipment services are primarily designed for cyclists and their bikes. They include bike deposit, rentals, maintenance, repair, as well as the sale of new bike parts and accessories. There is also a self-serve tune up station for bikes.

Equipment Deposit

Both short-term and long-term bicycle parking will be available to users. Short-term parking for 60 bikes must be provided, while indoor long-term parking is needed for 100 bikes. The short-term deposit is open 24 hours a day and is free of charge. The long-term deposit is available to paying members on a 24-hour basis, however it is accessible to casual users from 6am to 10pm and requires the payment of a small daily fee. Storage

space for additional equipment such as bike trailers, strollers, skates, or skis will be necessary.

Equipment Rental

Rental services primarily consist of a public bike share system, similar to Bixi in Montreal or Paris' Vélib'. The bike share will operate as a self-serve system with 12 bikes, a bike dock and a pay station. Helmet rental will also be available at the parts and accessory sales.

Equipment Maintenance and Repair

The hub will offer bike maintenance and repair services including a bike shop, parts and accessory sales and a self-serve tune-up station. The bike shop provides repair and maintenance services on a scheduled and emergency basis and will consist of 2 repair stations, tool storage and a service desk. One or two repair specialists who will also look after the parts and accessory sales will staff it. The sales area will stock basic necessities for cyclists and pedestrians. Parts will include various types of inner tubes and tires, brake pads, chains, brake and gear cables, seats and seat posts. Accessories include mirrors, helmets, locks, lights, reflectors, pedometers, clothing and water bottles. The tune-up station is located near the short-term parking and is available on a 24-hour basis to the public. It consists of a bike repair stand, an air pump and a variety of tools tethered by aircraft cables. Tools will include a multipurpose Allen key, flat-headed and star-headed screwdrivers, and a spanner. The station will also have a vending machine that will stock single-use items such as inner tubes, patch kits, tire boots, hand warmers, first aid supplies, sunscreen, drinks and snacks for after hours convenience.

4.1.2 Amenities

Hub amenities include a café, an information centre, meeting spaces, respite areas, day lockers and public washroom facilities that offer personal comfort and convenience for AT users.

Café

The café will offer food and beverage counter service and will be staffed by 2 or more people. Apart from tea, coffee and cold drinks, the café will stock fruits, vegetables and prepared food items from various local suppliers such as Tall Grass Prairie, the Dandelion Eatery or Baked Expectations. These items will be available in cooler cases for quick and portable pickup.

Information Centre

The info centre will employ one or two staff members and will offer a multitude of services for all users including visitors, tourists, facility members and community residents. Its major function is as an information resource for people about the operation of the hub as well as the larger network of AT hubs in the city. Personnel will address questions and concerns regarding equipment deposit and rental, repair services, washrooms, lockers, first aid, the lost and found and security. They will also make bookings for the meeting room. The staff will also oversee membership services, including membership purchases and renewals. A bike valet program will be available during the normal operating hours of the hub. A concierge program at the information centre will act as an intermediary between transit users and local businesses. This is

mainly designed as a drop-off service for dry cleaning, shoe repair and courier arrangements. Users can leave items or tasks with the concierge service in the morning for pick up/completion later in the day. The information centre will also provide public transportation services such as the purchase of transit passes, and information regarding bus, rail and water taxi routes and schedules. It will also provide information and maps about surrounding trails, pathways, skating and cycling routes for recreational users and tourists. Finally, the centre will provide information, support and awareness of local community events, meetings, workshops and fundraisers.

Meeting Space

The hub will provide multipurpose meeting space for community based gatherings, which can be reserved anytime during the hours of hub operation. When not in use, this space will function as a more secluded area for communal seating and casual use.

Day Lockers

Day lockers (30 will be available to the public on a pay-per-use basis during normal hours of hub operation.

Public Washrooms

The hub is a transitional facility with the peak volume of users spread out over a two-hour period during rush hours. As a result, the building occupant load for washroom numbers has been set at three. Three unisex washrooms will be provided including one

universally accessible washroom. Each washroom will be large enough to double as an individual changing room, increasing its functionality.

4.1.3 Membership Services

Membership to the hub qualifies the member to an indoor parking spot, shower, change and washroom facilities, a daily towel service, locker use and 24-hour access to these services via an electronic fob system. The fee for membership will be $20.00/month or $160.00/year. Non-members can also purchase these services for $5.00 a day. The membership area will require four unisex shower/change rooms (one universally accessible) and four unisex washroom stalls (one universally accessible).

4.1.4 Building Services

Laundry

The hub will require basic laundry facilities including a washer and dryer as well as clean and soiled towel storage.

Custodial

The custodial rooms will provide storage for cleaning supplies and equipment, and building maintenance tools. It will also contain a sink and water source.

Mechanical and Electrical

This room will provide space for the equipment and machinery necessary for the heating, cooling, lighting and electrical power of the hub.

4.2 Functional Requirements

4.2.1 Spatial Adjacencies

Table 8   Spatial Adjacencies Matrix

SPATIAL ADJACENCIES MATRIX

- 🔵 Essential Relationship
- 🟢 Desirable Relationship
- 🟡 Unessential Relationship

	Equipment Deposit Indoor	Equipment Deposit Outdoor	Equipment Rental	Equipment Repair	Parts & Accessory Sales	Café & Respite Indoor	Café & Respite Outdoor	Information Centre	Meeting Space	Public Washrooms	Shower Facilities	Change Facilities	Day Lockers	Member Lockers	Member Washrooms	Laundry Storage	Custodial Room
Equipment Deposit Indoor		🔵	🔵	🟢	🟡	🟡	🟡	🟢	🔵	🟡	🟢	🔵	🟡	🔵	🟢	🔵	🔵
Equipment Deposit Outdoor			🔵	🟢	🟡	🟡	🔵	🟢	🔵	🟡	🔵	🔵	🟡	🔵	🔵	🔵	🔵
Equipment Rental				🟡	🟡	🔵	🔵	🟢	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵
Equipment Repair					🟢	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵	🔵
Parts & Accessory Sales						🔵	🔵	🔵	🔵	🔵	🔵	🔵	🟡	🔵	🔵	🔵	🔵
Café & Respite Indoor							🟢	🟡	🟢	🟢	🔵	🔵	🟡	🔵	🔵	🔵	🔵
Café & Respite Outdoor								🔵	🟢	🟢	🔵	🔵	🔵	🔵	🔵	🔵	🔵
Information Centre									🟡	🟢	🔵	🔵	🟡	🔵	🔵	🔵	🔵
Meeting Space										🟢	🔵	🔵	🔵	🔵	🔵	🔵	🔵
Public Washrooms											🔵	🔵	🔵	🔵	🔵	🔵	🔵
Shower Facilities												🟢	🔵	🟢	🟢	🟢	🔵
Change Facilities													🔵	🟢	🟢	🟢	🔵
Day Lockers														🔵	🔵	🔵	🔵
Member Lockers															🟢	🟢	🔵
Member Washrooms																🟢	🔵
Laundry Storage																	🔵
Custodial Room																	

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Figure 96   Spatial Relationships: Public and Private Spaces
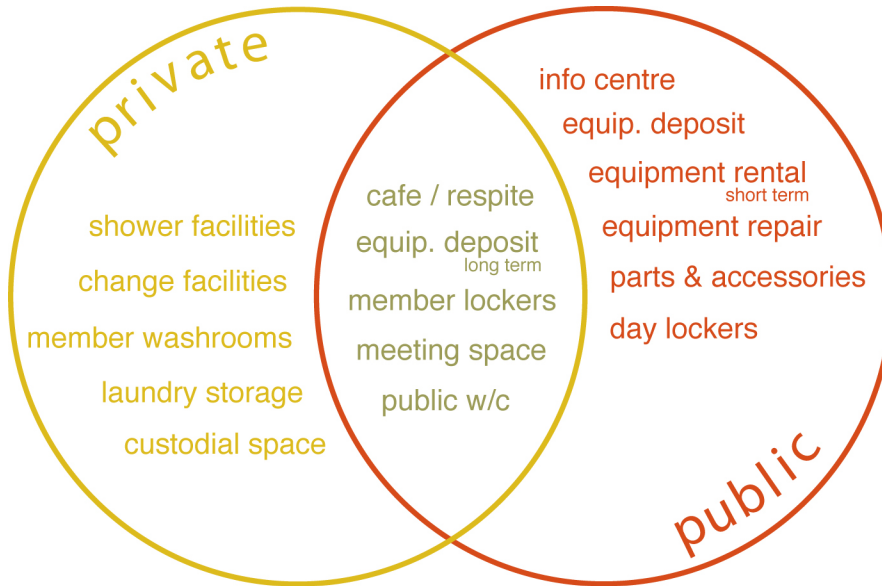
4.2.2 Table 9: Square Footage Requirements

Square Footage Requirements			
Space	**Quantity**	**Approx. Size (sq. ft.)**	**Total (sq. ft.)**
Equipment Deposit (long term)	1	500 (100 bicycles double stacked)	500
Equipment Deposit (short term)	1	250 (50 bicycles double stacked)	250
Equipment Rental	1	100 (20 bikes double stacked)	100
Equipment Repair	1	100	100
Parts & Accessory Sales	1	40	40
Cafe & Respite (indoor)	1	300	300
Cafe & Respite (outdoor)	1	200	200
Information Centre	1	60	60
Meeting Space	1	100	100
Public Washrooms	3	100	300
Shower Facilities	4	150	600
Change Facilities	6	40	240
Day Lockers	30	160	160
Member Lockers	10	55	55
Member Washrooms	3	100	300
Laundry Storage	1	12	12
Custodial Space	2	24	48
Mechanical	1	100	100
Electrical	1	10	10
SUBTOTAL			**3475.00**
Circulation (35% of total area)			1216.25
TOTAL			**4691.25**

4.2.3 Table 10 Furniture, Fixtures and Equipment Requirements

Area	Activities	Item and Quantity	Approx. Dimensions
Equipment Deposit (long term)	Storing bikes	100 bicycles	6'L x 2'W x 4'H
Equipment Deposit (short term)	Parking bikes, bike trailers and strollers	50 bicycles	6'L x 2'W x 4'H
		4 trailers	4'L x 2'W x 3'H
		4 strollers	3'L x 2'W x 36"H
Tune-Up Station	DIY repair and maintenance	2 repair stands	18"D x 18"W x 5'H
		1 tool stand	4"D x 8"W x 2'H
		1 vending machine	3'D x 3'6"W x 6'H
Equipment Rental	Bike and Helmet storage	12 bicycles	6'L x 2'W x 4'H
		16 helmets	12"D x 12"W x 8"H
Equipment Maintenance & Repair	Repairing and serving bicycles, Storing bicycles, Transactions with customers, Consultations, Tool Storage	6 bicycles	6'L x 2'W x 4'H
		1 tool cabinet	2'D x 3'W x 4'H
		2 stools	18"D x 18"W x 30"H
		2 repair stands	18"D x 18"W x 5'H
		1 service desk	24"D x 6'W x 36"H
		1 computer	12"D x 15"W x 15"H
		1 telephone	9"L x 8"W
		1 waste receptacle	2'L x 2'W x 3'H
Parts & Accessories Sales	Shopping and purchasing	2 open shelving	2'D x 10'W x 6'H
		2 display cases	2'D x 5'W x 36"H
		1 computer	12"D x 15"W x 15"H
		1 waste receptacle	2'L x 2'W x 3'H
		1 storage space	2'D x 4'W x 36"H
Café	Eat, drink, sit, socialize	2 countertops	30"D x 12'W x 36"H
		storage space	30"D x 12'W x 36"H
		1 double sink	20"L x 40"W x 10"D
		1 refrigerator	20"D x 20"L x 34"H
		1 display cooler	2'D x 5'W x 30"H
		1 microwave	20"D x 24"W x 20"H
		1 toaster oven	20"D x 24"W x 20"H
		1 dishwasher	24"D x 24"W x 34"H

		2 coffee machines	20"D x 12"W x 24"H
		1 computer	12"D x 15"W x 15"H
		1 telephone	9"L x 8"W
		10 tables	20" dia x 30"H
		20 chairs	18"D x 18"W x 34"H
		4 waste receptacles	2'L x 2'W x 3'H
Respite	Resting, relaxing, sitting, reading	20 chairs	18"D x 18"W x 34"H
		10 tables	20" dia x 30"H
Information Centre	Inquiries, Concierge drop-off, Purchases, Bookings, Directions	1 counter	24"D x 8'W x 36"H
		1 concierge storage	24"D x 10'W x 6'H
		information displays	10"D x 3'W x 5'H
		3 stools	18"D x 18"W x 30"H
		2 computers	12"D x 15"W x 15"H
		1 phone	9"L x 8"W
		1 waste receptacle	2'L x 2'W x 3'H
Meeting Space	Formal or informal meetings, casual discussions, planning sessions, workshops	20 chairs	18"D x 18"W x 34"H
		5 tables	36"L x 5'W x 30"H
Public Washrooms	Relief, sanitation and changing	3 toilets	36"W x 18"H
		3 sinks	18"D x 16"W x 30"H
		3 counters	18"D x 24"W x 30"H
		2 benches	18"D x 24"W x 18"H
		2 coat hooks (per unit)	0.5"D x 1"H
		1 waste receptacle	2'L x 2'W x 3'H
		1 mirror	2'W x 3'H
Shower & Change Facilities	Personal hygiene, grooming, changing	4 showers	5'4"L x 2'9"W x 8'H
		4 benches	18"D x 2'W x 18"
		2 coat hooks (per unit)	1"D x 1"H
		1 waste receptacle	2'L x 2'W x 3'H

Day Lockers	Personal storage	30 keyed lockers	varies
Member Lockers	Personal storage	30 keyed lockers	varies
Member Water Closets	Relief, sanitation	3 toilets	36"W x 18"H
		1 bench	18"D x 24"W x 18"H
		2 coat hooks (per stall)	0.5"D x 1"H
Member Lavatories	Sanitation, grooming	6 sinks	18"D x 16"W x 30"H
		2 counters	24"D x 5'5"W x 30"H
		2 mirrors	5'L x 3'H
		2 waste receptacles	2'L x 2'W x 3'H
		towel storage & disposal	42"D x 48"W x 36"H
Laundry Storage	Washing, Drying towels	1 washing machine	24"D x 28"W x 36"H
		1 dryer	24"D x 28"W x 36"H
		supply storage	12"D x 12"W
		1 waste receptacle	2'L x 2'W x 3'H
Custodial Space	Equipment & supply storage	1 floor sink	22"L x 18"W
		shelving storage	24"W x 36"L x 5'H
		1 waste receptacle	2'L x 2'W x 3'H
		5 hooks	1"D x 1"H
Mechanical & Electrical	Access to Equipment, Machinery	1 electrical panel	24"W x 24"H
		1 high efficiency boiler	30" W x 30"L x 5'H

4.3 Access and Life Safety Requirements

4.3.1 Building Code Analysis

Major Occupancy Classification (3.1.2): Group A, Division 2
Assembly Occupancies not elsewhere classified in Group A
Total Building Area: 6402 sq. ft.
Building Area Floor 1:   3792 sq. ft.
Building Area Floor 2:   1774 sq. ft.
Building Height: 30 ft.
Building Facing: 2 streets
Building is sprinklered: Yes
Design Occupant Load (3.1.17.):
      Per table 3.1.17.1
      Floor 1   75   50 sq. ft. per person
      Floor 2   35   50 sq. ft. per person

The 2010 National Building Code of Canada has determined the proposed building design must meet the following regulations:

Section 3.1. General

3.1.8.10. Twenty-Minute Closures
    1) A door assembly having a fire-protection rating not less than 20 min is permitted to be used as a closure in
    a) a fire separation not required to have a fire-resistance rating more than 1 h, located between
        iii) a corridor and adjacent spaces in Group A, Division 2 major occupancies
    b) a fire separation not required to have a fire-resistance rating more than 45 min, located in a building not more than 3 storeys in building height
3.1.8.12. Hold-Open Devices
    3) A hold-open device shall be designated to release upon a signal from a smoke detector located as described in CAN/ULC-S524, "Installation of Fire Alarm Systems," if used on
    a) an exit door
    d) a door serving
        i) an assembly occupancy

Section 3.2. Building Fire Safety

3.2.2. Building Size and Construction Relative to Occupancy
3.2.2.27. Group A, Division 2, up to 2 Storeys, Sprinklered
    Construction: combustible or non-combustible construction, used singly or in combination, provided

a) the building is sprinklered throughout,
b) it is not more than 2 storeys in building height, and
c) it has a building area not more than 6458 sq. ft. if 2 storeys in building height

3.2.3. Spatial Separation and Exposure Protection
3.2.3.2.(2). If a building is divided by fire separations into fire compartments, the area of exposing building face is permitted to be calculated for each fire compartment provided the fire separations have a fire-resistance rating not less than 45 min.

Per Table 3.2.3.7.
Minimum Construction Requirements for Exposing Building Faces
Minimum Required Fire Resistance Rating 45 min., Combustible or Non-combustible construction, Combustible or Non-combustible cladding
Maximum Area of Unprotected Openings Permitted, more than 50% to less than 100%
The building is situated on a spacious lot, bounded by no other buildings and surrounded by 2 streets and the river.

North Wall: Limiting Distance (LD)   50 ft.
              Exposing Building Face (EBF) (37 ft x 30 ft)   1110 sq. ft.
              Percent of Unprotected Openings allowed   100%

South Wall: Limiting Distance (LD)   76 ft.
              Exposing Building Face (EBF) (39ft x 30 ft)   1170 sq. ft.
              Percent of Unprotected Openings allowed   100%

East Wall: Limiting Distance (LD)   30 ft.
              Exposing Building Face (EBF) (78ft x 30 ft)   2340 sq. ft.
              Percent of Unprotected Openings allowed   100%

West Wall: Limiting Distance (LD)   90 ft.
              Exposing Building Face (EBF) (93ft x 30 ft.)   2790 sq. ft.
              Percent of Unprotected Openings allowed   100%

3.2.4. Fire Alarm and Detection Systems
        Fire Alarm and Detection Systems in place: Yes
3.2.7. Lighting and Emergency Power Systems
        Emergency lighting required: Yes
        Exit signage required: Yes

Section 3.3. Safety Within Floor Areas

3.3.1.5. Egress Doorways
    Floor 1: 2 exit doors required
            The occupant load is greater than 60 and area is greater than 1614 sq. ft.
    Floor 2: 1 exit door required
            In a floor area that is sprinklered throughout, the travel distance to the
            egress doorway must be less than 82 ft., proposed maximum travel
            distance is 55 ft.

Section 3.4. Exits

3.4.2.1. Minimum Number of Exits
    1) Every floor area intended for occupancy shall be served by at least 2 exits.
    2) A floor area in a building not more than 2 storeys in building height, is
        permitted to be served by one exit provided the total occupant load served by
        the exit is not more than 60, and
    b) in a floor area that is sprinklered throughout
            i) the travel distance is not more than 82 ft., and
            ii) the floor area is not more than 2152 sq. ft.
3.4.2.5. Location of Exits
    1) If more than one exit is required from a floor area, the exits shall be located so
    that the travel distance to at least one exit shall be not more than
    c) 148 ft. in a floor area that contains an occupancy other than a high-hazard
    industrial occupancy, provided it is sprinklered throughout.
    Maximum travel distance provided: 38 ft.
3.4.3.2. Exit Width Capacity
    The minimum required width of exists serving floor areas intended for assembly
    occupancies, shall be determined by multiplying the occupant load of the area
    served (98) by 0.36 inches. Provided exit widths equal 3 ft. or more.
3.4.4.1. Fire-Resistance Rating of Exit Separations
    1) Every exit shall be separated from the remainder of the building by a fire
    separation having a fire-resistance rating not less than 45 min for the floor
    assembly above the first storey.
    In the proposed design, the exit must function as an exit stair.
3.4.6.5. Handrails
    1) A stairway shall have a handrail on at least one side, but if it is 43 inches or
        more wide, it shall have handrails on both sides.
    5) Except where interrupted by doorways or newels at changes in direction, at
        least one handrail shall be continuous throughout the length of a stairway or
        ramp, including landings.
    7) At least one handrail at the side of a stairway or ramp shall extend
        horizontally not less than 11.8 inches beyond the top and bottom of the
        stairway or ramp.

Section 3.7 Health Requirements

3.7.2.2. Water Closets
    Floor 1
        Required: Female 3   Male 2
        Provided: Unisex 3
    Floor 2
        Required: Female 1   Male 1
        Provided: Unisex 3

3.7.2.3. Lavatories
    1) At least one lavatory shall be provided in a room containing one or two water closets or urinals, and at least one additional lavatory shall be provided for each additional two water closets or urinals.

     Both Floors
      Provided: 1 lavatory per 1 water closet

Section 3.8. Barrier-Free Design

3.8.1.3. Barrier-Free Path of Travel
    1) The unobstructed width of a barrier-free path of travel shall be not less than 36 inches.
     Barrier-free access provided to all patrons: Yes
3.8.2.3. Washrooms Required to be Barrier-Free
    3) In a building in which water closets are required, at least one barrier-free water closet shall be provided in the entrance storey
     Barrier-free washrooms are provided: Yes
3.8.3.12. Universal Toilet Rooms
    1) A universal toilet room shall
        a) be served by a barrier-free path of travel,
        b) have a door capable of being locked from the inside and released from the outside in case of emergency
        c) have one lavatory
        d) have one water closet that has a clearance to the walls of
            i) not less than 11 inches and not more than 12 inches on one side, and
            ii) not less than 34 inches on the other side,
        e) be equipped with grab bars that
            i) are mounted horizontally on the side wall closest to the water closet
            iii) are mounted not less than 33 inches and not more than 36 inches above the floor
        h) be designed to permit a wheelchair to back in alongside the water closet in the space referred to in the Subclause (d)(ii), and

i) be designed to permit a wheelchair to turn in an open space not less than 60 inches in diameter

3.8.3.13. Showers

    1) Where showers are provided in a building, at least one shower stall in each group of showers shall be barrier-free and shall

        a) be not less than 60 inches wide and 35 inches deep

        b) have a clear floor space at the entrance to the shower, not less than 35 inches deep and the same width of the shower, except that fixtures are permitted to project into that space provided they do not restrict access to the shower,

        c) have a slip-resistant floor surface,

        d) have a beveled threshold not more than 0.5 inch higher than the finished floor,

        e) have a hinged seat

            i) not less than 18 inches wide and 16 inches deep,

            ii) mounted approximately 18 inches above the floor

        f) have a horizontal grab bar that is

            i) not less than 12 inches long,

            ii) mounted between 27-31 inches above the floor, and

            iii) located on the wall opposite the entrance to the shower so that not less than 12 inches of its length is at one side of the seat

3.8.3.3. Doorways and Doors

    Public entrance doors equipped with power door operators: Yes

Section 9.9 Means of Egress

9.9.6.5. Direction of Door Swing

    1) Exit doors that are required to swing shall swing in the direction of exit travel

Section 9.10 Fire Protection

9.10.8. Fire Resistance and Combustibility in Relation to Occupancy, Height and Supported Elements

9.10.8.1. Fire-Resistance Ratings for Floors and Roofs

    Per Table 9.10.8.1 Fire-Resistance Ratings for Structural Members and Assemblies

    For all other occupancies with a Maximum Building Height of 2 storeys, the Minimum Fire-Resistance Rating for Floors is 45 min. Roofs require no rating.

9.10.8.2. Fire-Resistance Ratings in Sprinklered Buildings

    1) The requirements in Table 9.10.8.1. for roof assemblies to have a fire-resistance rating are permitted to be waived in sprinklered buildings where

    a) the sprinklered system is electrically supervised in conformance with Sentence 3.2.4.10.(3), and

    b) the operation of the sprinklered system will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.8.(4).

4.4 Design Considerations

4.4.1 Site Considerations
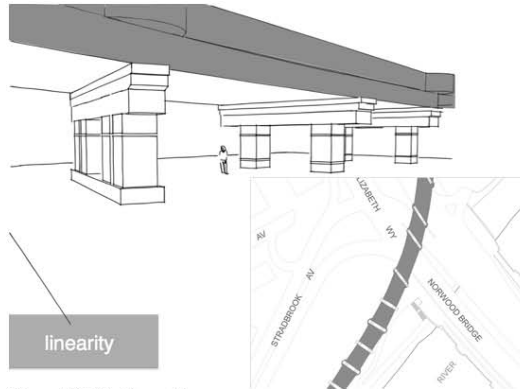
Figure 97 Site linearilty
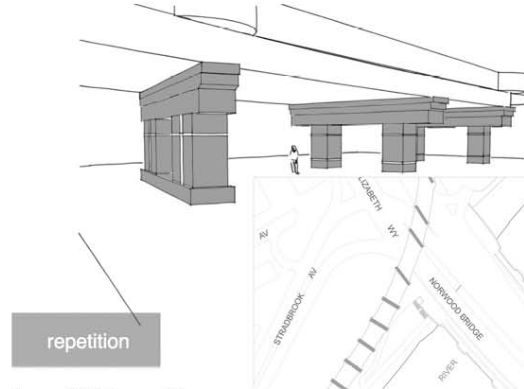
Figure 98 Site repetition
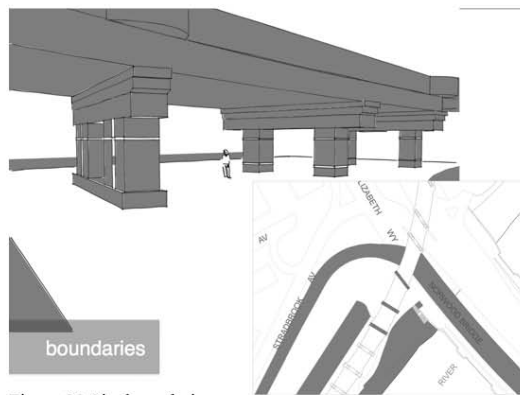
Figure 99 Site boundaries
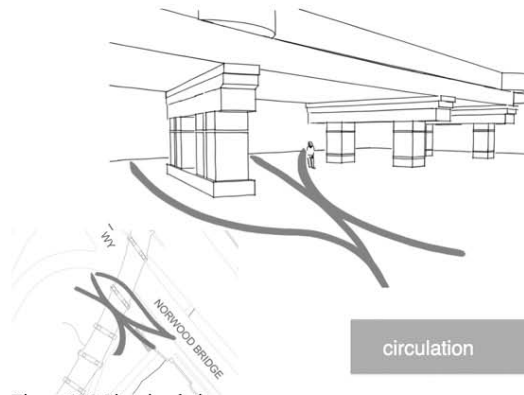
Figure 100 Site circulation
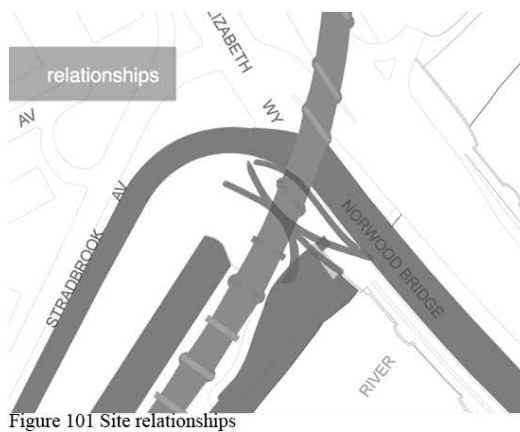
Figure 101 Site relationships
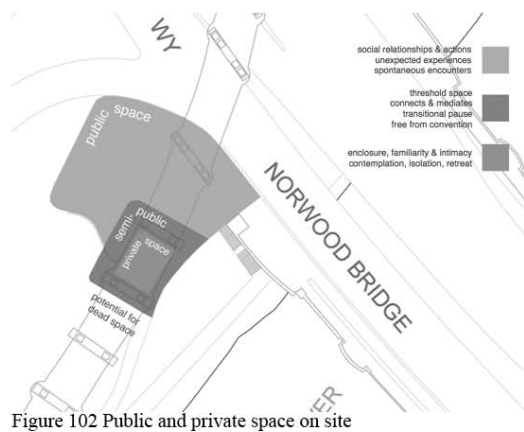
Figure 102 Public and private space on site

4.4.2 Theoretical Considerations

Table 11 Theoretical Considerations Chart

Theoretical Implications for Design				
Concept	**Authors**	**Topic**	**Description**	**Design Consideration**
Public space as the site of interaction	Zachary Neal	public space as democratic space	Historically, the concept of democracy is realized in physical public space. People continue to seek democracy in streets and squares around the world.	-gathering space that is open and accessible to all to discuss common issues
	Margaret Crawford	public space as contested space	The existence of physical public space is important as the recognized site where contestation over issues of injustice, and inequality occur.	-allow interior and exterior open space for people to express their opinions to the general public -space for protests, celebrations
	Jane Jacobs	public space as social space	Social interactions in public places develop loose connections that foster understandings of self and others, a sense of belonging to place and commitments to others. It contributes to the creation of social responsibility, civic order and a sense of community.	-provide resources that link users to the surrounding neighbourhood, community info and events
	Ray Oldenburg	public space as third place	As open and accessible gathering places outside of the home and the work place, third places provide neutral and inclusive space for casual association and companionship. People interact with a diversity of issues, ideas and perspectives and build the common ground.	-program space for community use on a daily basis seating that offers chances for interaction -informal space, neutral and inclusive to meet, pause, have casual discussions, and spontaneous interaction

Creating place in a mobile society	Marc Augé	authenticity and place	Place is constructed from the existence of meaning, authenticity and identity urban environments. Spaces of mobility especially need to provide for place, humanizing the experience of travel.	-integration of community into transit facilities by creating public centres of daily activity and amenity -design elements that link to local culture, history, lifestyle
	PPS	placemaking	Placemaking is an urban design approach derived from the interactive experiences between people and their relationships to place.	-space that provides orientation, amenity, security -opportunities for multiple activities
	Jan Gehl	livable cities	AT ensures that cities are more lively, attractive, safe, sustainable and healthy places.	-providing resources and amenities specific to AT users will encourage and support vibrant urban environments
	J.H. Crawford	mobility as right	Access to urban resources depends on access to mobility. AT offers more people the ability to be mobile.	-offering true public space where people can benefit from resources: seek temporary shelter, rest, and park free of charge -space that support choices in mobility practices (walking, cycling, skating).

4.5 Design Application

4.5.1 Influence of the Existing Site

Site of Confluence

As described in the Project Overview, the most notable aspect of the existing site is the

circulation of multiple transportation modes. Its position at the southwest corner of

Stradbrook Avenue and Queen Elizabeth Way makes it a confluence of modalities. The

surrounding streets are filled with automobiles, the BRT contains rapid transit buses, the

river carries boat traffic and water taxis, the sidewalks serve pedestrians and cyclists and

overhead, the rail bridge supports both passenger and freight trains. There is a layering of

movement in and around the area. However, it is the circulation of the pedestrians and

cyclists that form the most influential element of the site itself. A major objective of the

design is to preserve the primary function of the site by supporting the existing flow of

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people, facilitating their movement and ensuring the opportunity for choice in mobility

practices. To accomplish this, the active transportation hub was designed to maintain this

space of circulation.

4.5.2 Exterior Building Design

Building Concept

By acknowledging the importance of established circulation patterns on the site, the

building was conceived as a *pause point*: an informal, transitional space for active

transportation users on their journey through the city. It is designed as a true public space

where people can access resources, seek temporary shelter, respite and park free of

charge. To support this concept, the building forgoes the formal elements of front and

back, offering multiple access points and fluid movement through space.

Figure 103 Schematic Design Sketch – Exterior Building Shape

• circulation axis
• bridge axis
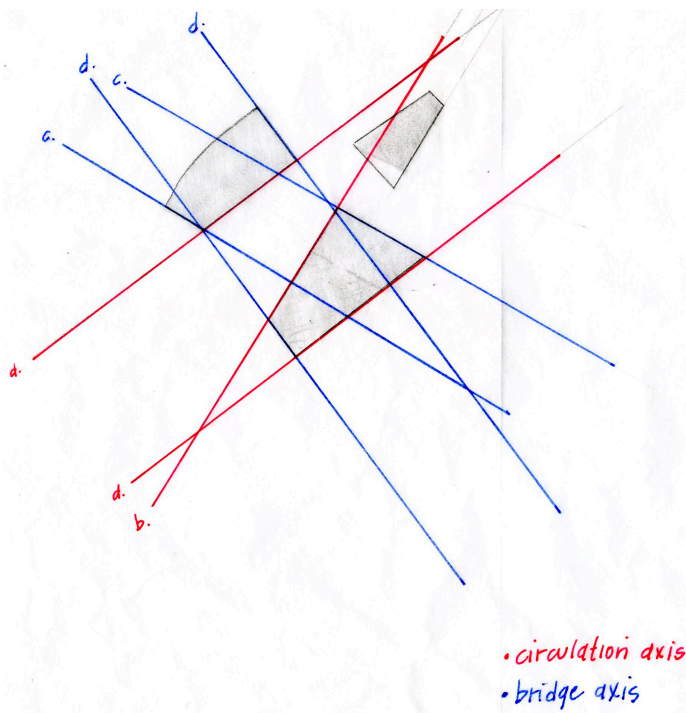
Building Shape

As the railway bridge curves along the site, the columns that support it create two distinct

axes. These axes give shape to the space where pedestrians and cyclists circulate through

the site. It is these axes that are used to create the physical form of the active

transportation hub.

Building Construction

The 2-storied building is designed to be glulam construction, with a glass curtain wall

façade. This transparency allows for an abundance of natural light and contributes to the

sense of connection between the indoors and outdoors. The curtain wall increases the

visibility of the building as a bike hub, welcoming and encouraging visitors and raising

the awareness of active transportation to passers-by. Its transparent nature also contributes to the safety of the facility for the users and the surrounding community.

The hub incorporates the overhead railway bridge into the structure of its design, both the concrete columns and the bridge deck. From a functional perspective, this design feature provides a pre-existing roof structure for the short-term bike deposit and the main building. Its underside is also exposed as the ceiling for the interior. From a conceptual perspective, it situates active transportation users within an historic transportation structure, increasing their awareness of other urban transport networks and their sense of place within the city.

Mechanical Systems

The hub will be heated and cooled geo-thermally using a ground source heat pump and a radiant floor system. High efficiency hot water tanks will provide hot water for the café, showers and washrooms. In addition to this system, an air intake will be installed on each floor to supply the hub with fresh air. The air exhausts will be equipped with a heat recovery ventilators that will conserve and reuse heat energy in incoming air. These systems will provide the hub with energy efficiency and sustainability and have a minimal spatial impact on the interior design of the facility.

Flood Retention Wall

The existing concrete retaining wall and berm have been pushed back to make room for the Active Transportation Hub. In response, the waterproof foundation wall of the hub has replaced the function of the former retaining wall. Another 20 feet must be added to

the remaining concrete retaining wall situated on the south side of the river trail. This restructuring has meant that areas that require sandbagging in case of major flooding have increased from one to two places.

4.5.3 Public and Private

The existing site exhibits a layering of public and private spaces that transition with movement from the street to the river. The streets form the outer circumference of the site and comprise its most public space, the space of vehicular circulation, noise and speed. Moving back from the street and under the rail bridge, the site becomes less noisy and more enclosed. Pedestrians and cyclists circulate, moving at slower speeds in this semi-public space. Towards the river, the site is most private with fewer people and reduced visibility. The design intervention reflects this continuum of spatial progression from public to private. The short term parking area is contained within a semi-interior space that acts as a threshold space between the street and the hub. It exhibits qualities of both openness and enclosure. The main building reiterates the overlapping presence of private and public spaces, becoming most private in the spaces on the riverside.

4.5.4 Design Speed

The speed of movement around the site corresponds to the spatial progression from public to private. The public street contains the fastest and heaviest traffic of the site. The semi-private area consists of cycling traffic that moves at a medium pace. The slowest movement occurs closest to bridge structure, as pedestrians make their way through the

site. The progression of speeds has influenced the design of circulation pathways for cyclists and pedestrians in and around the hub.

The pace of travel has a significant affect on the experience of place. Moving at faster speeds permits only the visual engagement of the senses while slower speeds allow for more dynamic sensory-based impressions. Through the use of brightly colored architectural "fins" that protrude from the exterior wall of the building, the design of the hub attempts to engage the people in cars and on the street. Viewed from a distance, the fins create the impression of a solid block of color that draws attention to the building. As people approach the hub, their perspective changes and the fins gradually reveal themselves as thin vertical strips of color adhered to the glass wall. Through the fins, the glazing opens up and views inside the building are temporarily exposed. This design feature plays on the movement of people through space and integrates spaces that have an impact on people's experience at various scales.

4.5.5 Linking to Urban Space

The two-storied part of the structure rises above the railway bridge, connecting it to the wider urban environment in many ways. As trains go by, light flickers through the clerestory windows, and along with the noise and vibration from the train, provide hub users with a subtle sense of the intermittent passage of the train. The height and transparency of the hub links it to people at various scales, including distant observers at street level, on the river, on the bike path as well as travellers on the passenger trains overhead

4.5.6 General Space Planning

The hub is planned around 2 major public spaces, one indoor and one outdoors that provide space for circulation and rest. These areas are open and accessible to the general public and provide neutral and inclusive space to pause, meet, and interact. The exterior public space is exposed to the elements but blends into the semi-enclosed space under the rail bridge, before it merges with the interior public space of the main building. Both public spaces act as funnels in their shape and function, channeling people through the hub at a slower pace, enforcing a pause in their journey.

4.5.7 Main Floor Spaces

The hub is conceived as a transitional space with a flexible floor plan that allows for gradual transitions and movements through most areas. The floor area measures 6402 sq. ft., which keeps the functions of the hub in close relationship to each other.

Short Term Equipment Deposit

Open to the air, the short term equipment deposit is partially sheltered by the rail bridge overhead and is connected to the main building via the exterior public space. This area houses bike parking, bike rental and a tune-up station with multiple access points for convenience and safety. A glass wall separates the bike storage from Queen Elizabeth Way and enhances its visibility, creating a porous border that raises the awareness of the hub's function to those who pass by.

Exterior Circulatory Space

Located between the Short Term Equipment Deposit and the Main Building, this area must balance a number of complex functions including intersecting bike and pedestrian routes, multiple speeds of travel and pause points to rest and gather. To preserve the pre-existing function of the site as a thoroughfare for active transportation, dedicated lanes separated by curbs, assist pedestrians and cyclists on their way past the hub. A crosswalk connects the Short Term Equipment Deposit to the Main Building and intersects with the dedicated lanes of circulation. To ensure the safety of all users, both visual and tactile traffic-calming measures provide cues to reduce speed and communicate right of way. The surface of the crosswalk features painted signage while the asphalt cycling lane is embedded with textured paving that heightens awareness of the need for caution. Another strategy for raising awareness of the approaching hub involves randomly embedding distinctively patterned paving stones into the surrounding concrete. This feature extends the presence of the hub into the surrounding city, providing visual and tactile cues of its location.

Exterior Gathering Space

The remaining Exterior Gathering Space is a space of sociability and contains both fixed and unfixed sitting surfaces as well as landscaping elements. The fixed benches promote a communal experience, offering opportunities to lean, perch and sit, with a choice of height and viewing direction. They also provide incremental levels of interaction as people can converse across from each other at close proximity or enjoy solitary moments

viewing the surrounding environment. The brightly colored, unfixed, café chairs and tables provide flexibility as people move them from place to place.

Entrances

The entries to the Main Building each consist of 3 sets of glass doors. In the colder months, only one set of doors would be used, but in the warmer months, all 6 doors can be opened. In exceptional weather, the whole bank of doors can be slid to one side and stacked together, opening up the entrances completely. When this occurs, the Interior Public Space extends into the area of the Exterior Public Space, creating a seamless passage from the inside to the outside.

The entry doors are anchored between angled archways that project through the façade of the building, connecting the interior to the exterior. The archways create a threshold, which augments the experience of transitioning between spaces. Instead of the immediate transition that an ordinary door provides, the archways lengthen the time required to move from one space to another and create new spaces to linger. In this way, the archways blur the boundaries between inside and outside.

Interior Public Space

The Interior Public Space occupies the central area of the Main Building, acting as both a circulatory space of transition and a destination space of amenity and activity. It is a space of intersecting pathways as movement occurs between various points of contact. Users move from the Information Centre across to the Café and back over to the

Equipment Repair area. The fixed seating is similar in form and function to the Exterior

Public Space and brings the outdoor aesthetic indoors. The unfixed seating is composed

of recycled bike parts and resembles lounge furniture with its lower profile and

polyurethane upholstering. Design features include a large scale map of the hub

transportation network, a map of Winnipeg neighbourhoods and a bike shaped typogram

which help to bring orientation and education to users and link them to place. This is the

space of sociability, where people seek amenity, respite, and community.

Information Centre

Due to the multiplicity of its functions, the Information Centre is visibly prominent and

easy to access. It is located in close proximity to the Membership Facility door, which

allows the staff to monitor that area. The Centre consists of a transaction counter, storage

cabinetry and brochure display. Typical of all millwork in the hub, the horizontal surface

of the counter is concrete and the vertical surfaces are brightly colored, graphic wall tiles.

The tile design resembles an abstract network of streets or a city grid and visually links

the interior with the patterns of the urban environment. The countertops contain built in,

below surface computer screens that allow full use of the horizontal surface and ensure

the security of the equipment. The storage cabinetry provides space to house concierge

items, lost and found items and first aid supplies.

Equipment Repair

The Equipment Repair area is composed of two bike repair stations, a tool stand and a

feature wall that are all visible to the Interior Public Space through a translucent partition.

The repair area also shares storage space and resources with the adjacent Parts and Accessories Sales. The feature wall uses the Cycloc Storage System to mount the bicycles undergoing repair at various heights onto the wall. To protect the wall from wear and tear, it will be clad in a durable, resilient flooring material such as sheet vinyl or linoleum. This system has the double advantage of saving floor space, contributing to the sense of place and creating a dynamic and constantly changing expression of the hub's function.

Parts and Accessories Sales

This area provides storage and display space for parts and accessories related to walking and cycling needs. Bike rims are suspended from the ceiling using aircraft cables. From the rims hang items for sale such as inner tubes, tires, chains and gear cables.

Café

The Café cabinetry is composed of brightly colored, high gloss acrylic panels that provide a modern, sleek and highly reflective surface. A community information wall positioned beside the Café counter, displays a similar aesthetic in its use of back-painted glass. This material is a magnetic marker board that can display all sorts of information: printed materials, photographs or hand written messages and acts as an interactive surface that engages users. The information wall helps to link the community to the hub and the city.

Meeting Space

Situated toward the river, the Meeting Space is a more private area of the hub. It functions as either a formal or an informal gathering space. It is separated from the washroom area by a translucent panel, which allows more light into the passage leading to those facilities. The Meeting Space contains unfixed café seating and tables that can be flexibly arranged into small groupings or large boardroom configurations. Additional lounge seating is available at one end of this area with views to the pastoral side of the hub. This is a multi-functional area of flexibility and connection.

4.5.8 Second Floor Spaces

Entrance

The membership services on the second floor are accessed via a staircase from the first floor, where an exterior sliding glass door, controlled by a fob system, permits entry.

Stairs

In order for the stairs to accommodate the many variables of moving people and their bicycles from one floor to another, many factors must be considered. The suggested ratio of incline for wheeling ramps (stairs with bicycle wheel channels) is 25%, making the ideal rise to run ratio 1:4. This gradual incline also has implications for headroom between landings. The width of the stairs needs to allow for two people and their bikes to pass each other. The flexibility of bike wheels means that the turning radii can be surprisingly tight provided the landing is large enough for two bikes to turn. The wheel channels coincide with the top of the stair nosing and are six inches in width in order to

accommodate a variety of tire sizes and handlebar widths. The stair must include two handrails, one of which is continuous.

Apart from the functional requirements, the staircase features a brightly colored, translucent resin panel between the flights of stairs. The panel has angled cut outs that function as built-in handrails. As people go up and down the stairs, they see the hands of people using the handrail slots. The translucent panel also reveals the shadows of bodies as they pass by on the other side. From the exterior of the hub, through the exterior glass wall, outsiders have a direct visual connection to the active transportation users who climb the outer flights of stairs with their bikes. With these design elements, the interior and exterior spaces are connected, layered and blurred as motion and visibility changes.

Stair Storage Space

The unused space under the first and second landings provides space for the staff to store outdoor furniture and unclaimed bicycles.

Long Term Equipment Deposit

The position of the bike storage along the glass perimeter walls of the second story acts in a similar way to the positioning of the Short Term Equipment Deposit along the street; one visibly connecting people in the street and the other connecting people in the trains to the function of the hub. At night, the interior lights make the bike parking even more visible.

Showers/Washrooms/Lavatories/Lockers

As on the main floor, the space planning allows for the free flow of circulation. The circulation through the lavatories, washrooms and showers reiterates the axis of the bridge columns, so influential in the formation of the main floor space. All membership facilities for disabled AT users are available on the main floor and accessed with a fob.

4.5.9 Materials and Finishes

The color palette is composed of monochromatic hues infused with bright feature colors reminiscent of the urban transportation aesthetic. Shades of concrete, pavement and asphalt mix with the vibrancy of road signs, traffic lights and billboards. The materials were selected for their high durability and ease of maintenance and are designed for public space application. The graphic floor and wall tiles meet standards for slip and frost resistance, are composed of 40% pre-consumer recycled material and have been manufactured for both interior and exterior use. The polyurethane lounge chair fabric is 100% biodegradable and exceeds 100 000 double rubs as tested against the Wyzenbeek standard for durability. The marmoleum flooring has anti-microbial and anti-static properties that repel dust and dirt, enhancing its clean-ability. It also contains 46.5% recycled content and 33% rapidly renewable material.

4.6 Color & Material Selections

Figure 104 Material Board
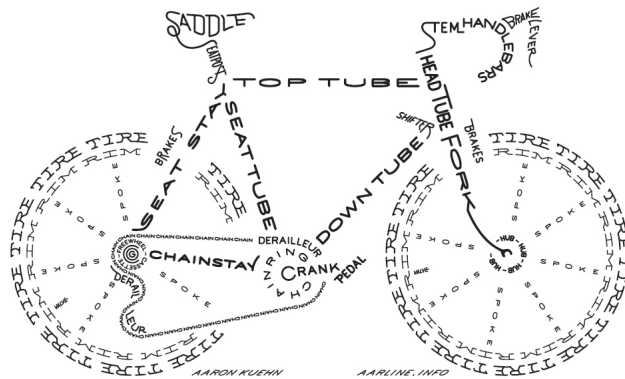
Figure 105 Bike Typogram by Aaron Kuehn http://aarline.info   Figure 106 Kuadra 1271 - Unfixed Cafe Seating

Figure 107 Kuadra Happy 491: Bike Repair Stools

Figure 108 Andy Gregg Recycled Bike Lounge Chair

Figure 109 Jessica Lee & Anthony Lau NYC CityRacks Design Competition
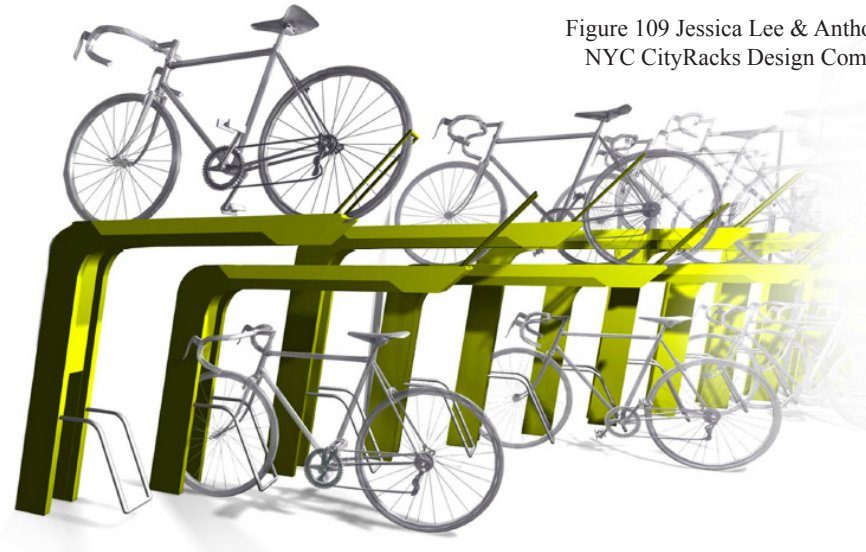
Figure 110 Cycloc Bike Storage System
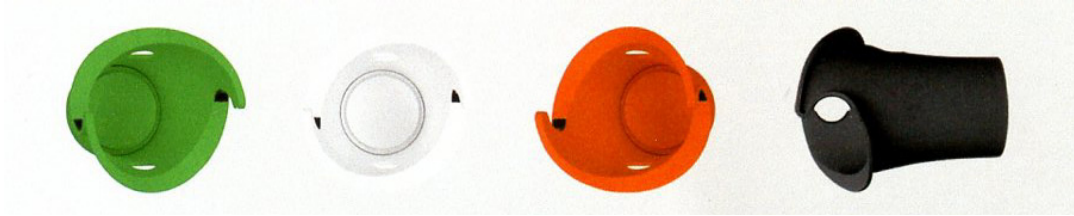
versatile

folder

electric

ladies

town - with spacer

track

mountain - with spacer

3 point fixing

optional spacer included

lock bike

store accessories

rubber pads

5.0 CONCLUSION

A key objective of the practicum was to create a project that would connect the practice of interior design to the urban environment in order to explore the relationships and links that would develop between the two realms. The design of an active transportation hub would support sustainable mobility, create public spaces of interaction and connect travellers and the local community to place.

The practicum seeks to examine Lefebvre's continuum of public and private spaces in which he states that all spaces co-exist on a spatial continuum of public, semi public, semi-private and private spaces (Lefebvre, 1991). These spaces are mediated by porous borders (Stavrides, 2007) that separate and connect them, creating room for new spaces called threshold spaces (Stevens, 2007). In the space between the Short Term Equipment Deposit and the Main Hub, there is a layering that occurs between the public space of the street and the more private space of the Main Hub. The overhead bridge brings a sense of enclosure to the Exterior Gathering space, blurring the boundary between the exterior and the hub interior. A similar layering of interior and exterior spaces occurs at the entrance that connects the Exterior Gathering Space and the Interior Gathering Space, creating an unbroken passage of movement and flow between the spaces. Another threshold space occurs as people move through the angled archway of the doorway where the increased length of the entrance creates a space to linger.

Scale linking helps designers to create spaces that connect to one another. The translucency and handrail cutouts on the stairwell panels and the visibility of cyclists

moving up the stairs with their bikes, links the hub to people at various scales including cyclists in the opposite stairwell, pedestrians directly below and vehicular traffic at a distance. Creating a transparent, two-storey building also provides for scale linking as people catch sight of the hub from a distance. In the Short Term Equipment Deposit, the architectural yellow fins create a porous border that plays with the movement of people through space at various speeds and scales. With these design elements, the interior and exterior spaces are connected, layered and blurred as motion and visibility change.

The exterior and interior spaces are further connected through material selections. The color aesthetic is derived from the urban environment and mixes the monochromatic shades of concrete, pavement and asphalt with the typical bright colors of traffic lights, road signage and billboards. Many of the materials, especially the flooring, are used in both the exterior and interior environments. The interior graphic wall tiles resemble an aerial view of an urban grid.

Public space is the primary space of discussion, discourse, sociability and negotiation. There are three main spaces of assembly in the hub design: the Exterior Gathering Space, the Interior Gathering Space and the Meeting Space. As people use these spaces, they can take time to visit, discuss, argue and debate. The Exterior and Interior Gathering Spaces contain fixed benches that offer opportunities for a variety of levels of interaction. Colourful, unfixed, café chairs and tables can be moved from place to place as needed. Because the Meeting Space can be booked by the community and then used by the general public when it is free, it becomes a multi-functional area of communal use. These

are Oldenburg's "third places" that create a sense of equality and common ground and that contribute to the tolerance, strength and unity of a community. In this way, the interior of AT centres can play a role in the activity of public space.

Because of the transient nature of transport facilities, bringing meaning, authenticity and identity to them is a challenge (Augé, 2000). Placemaking relies primarily on the interactive experiences between people and their relationships to place. For interior designers, many factors must be considered in the creation of place: the context and cultural patterns of the historical past, contemporary lifestyles, and the social needs of current inhabitants. Those social needs include access, equity, participation, conviviality and aesthetics. Spaces need to provide for orientation, amenity and security. They must also provide for sensory experience, diverse activities and individual choice. Finally, placemaking in the AT facility must actively seek to create relationship with its multiple users: the surrounding community, AT participants, public transportation users and tourists.

Factors such as historical reference, sensory experiences, and safety have been used to support the creation of place in the hub. Enclosing the hub within the overhead train bridge connects it to Winnipeg's historic past. The hub incorporates parts of the bridge structure into its interior spaces. These embedded structures are clearly visible to all users and create awareness of other transportation modalities. The second floor windows facing the bridge allow the lights, noise and vibration of passing trains to create sensory experiences for users. The use of glass walls in the hub contributes to the sense of safety

and security so necessary to the creation of place. Positioning the bicycles along the glass perimeter walls in the Short Term and Long Term Equipment Deposit connects the contemporary lifestyle of AT users with people on the street through various scales and raises the awareness of the hub's function and place in the city.

Design features such as the floor map of the hub transportation network and the feature wall of Winnipeg neighbourhoods help to orient users and give them a sense of place within the city. The bike typogram and bike wall underline the hub's function and support the identity of cyclists, situating them within the hub and the wider urban environment.

In addition, the hub's functions are also designed to support placemaking. Locating the hub at a confluence of modalities provides the varied travel options that increase equity, access and choice for commuters. The 24-hour membership services give AT individuals the support of amenity and security in their mobility. The Info Centre creates a sense of place through the multiplicity of its functions; the staff interacts with a broad range of people providing tourist, visitor, membership and community services to them all. The Centre is prominently located near an entrance, is easy to access and will help to increase the participation of people in the hub. The Café and surrounding seating provides amenity, choice and conviviality for users on their way to and from work, meetings and appointments. The community information wall and the Meeting Space help to link the community and travellers with each other, supporting diverse activity, social relationships, participation and conviviality in the neighbourhood and the hub.

Further research into the functions of the AT hub should include a consultation process with the surrounding community. Understanding the ongoing social and economic needs of the neighbourhood as well as their patterns of travel gives direction for the hub and raises the level of community commitment and integration into the facility.

The development of future hubs should consider exploring partnerships and spaces with other typologies and businesses. Smaller transitions hubs could benefit from the economic savings and new relationships this would bring.

Through this project, interior design has contributed to the urban design issues of sustainable mobility practices in the city and the creation of placemaking in the hub and surrounding community. Beyond influencing these two initiatives, the AT hub also contributes to the urban design goals of livability in Winnipeg through its role as a separate but supportive resource to urban infrastructure initiatives. While urban transportation infrastructure provides the more quantitative factors of safety, access, and convenience, the AT interior supplies the more qualitative factors of comfort, conviviality, security, and sociability. Finally, through the creation of AT hubs, interior design can contribute to the quality of cities, not strictly through the design of public space but also through design that supports people and their activities.

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QUEEN ELIZABETH WAY

NORWOOD BRIDGE

RED RIVER

STRADBROOK AVE

STRADBROOK AVE

BRT

BERM

RAIL LINE

- - - pedestrian only
— · — cyclist only
●●● pedestrian / cyclist
- - - vehicular
•••• bus rapid transit
••• train
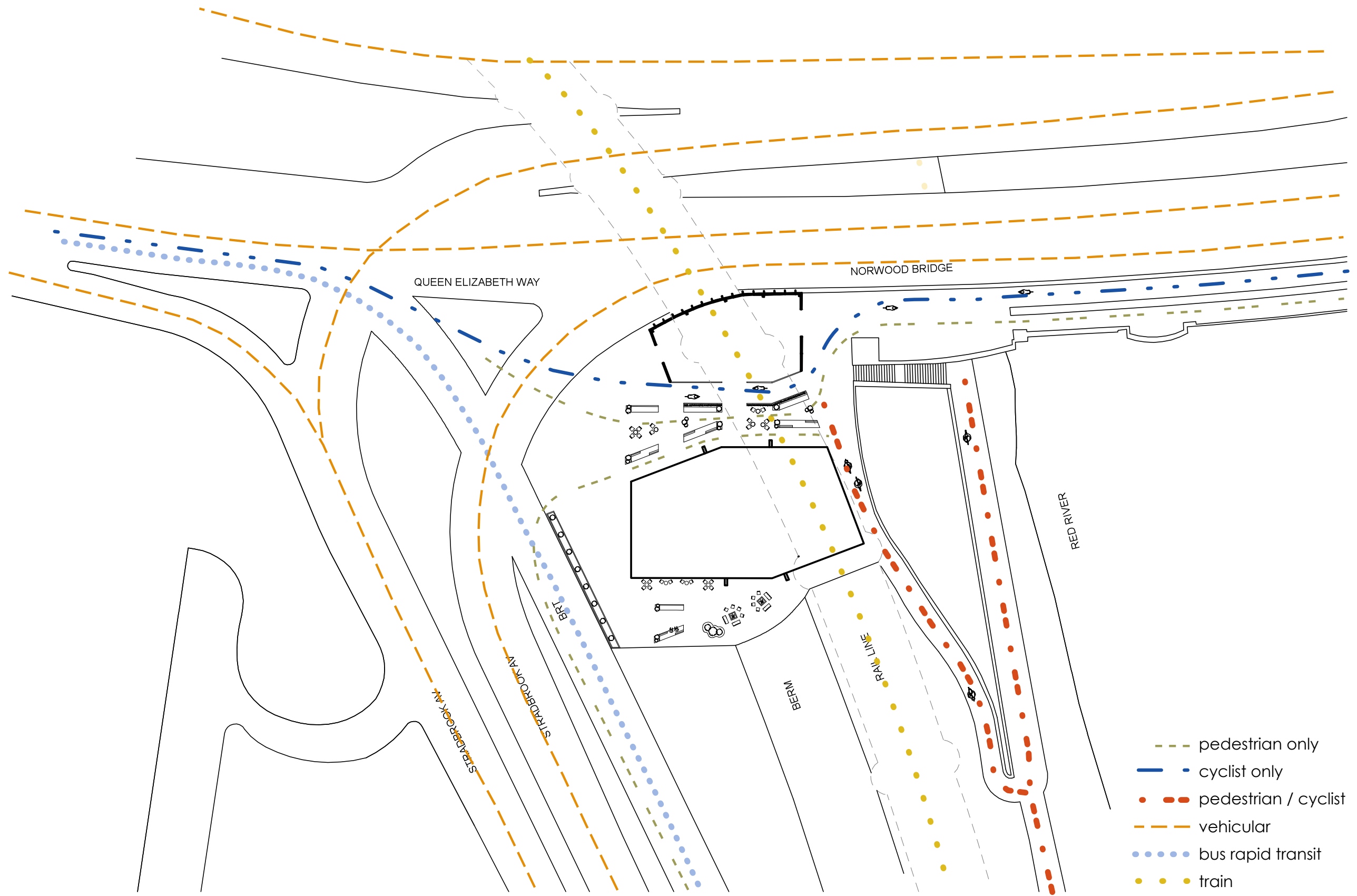
NTS

SITE PLAN
ACTIVE TRANSPORTATION HUB A1
an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

stradbrook avenue   BRT   berm   CN rail line   river trail

red river

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

Entrance
106

Stair
117

Info Centre
105

Storage
116

Mech.
Electrical
103

UP

display
cooler

Accessible
w/c
107

w/c
108

Meeting Space
110

translucent
acrylic resin
partition

Cafe
115

w/c
109

Equipment Repair
104

Respite / Gathering Space
114

Custodial
102

Accessible
Shower
111

Day Lockers
112

bench
seating

Parts & Accessories
101

translucent
acrylic resin
partition

Entrance
113

A

A

NTS
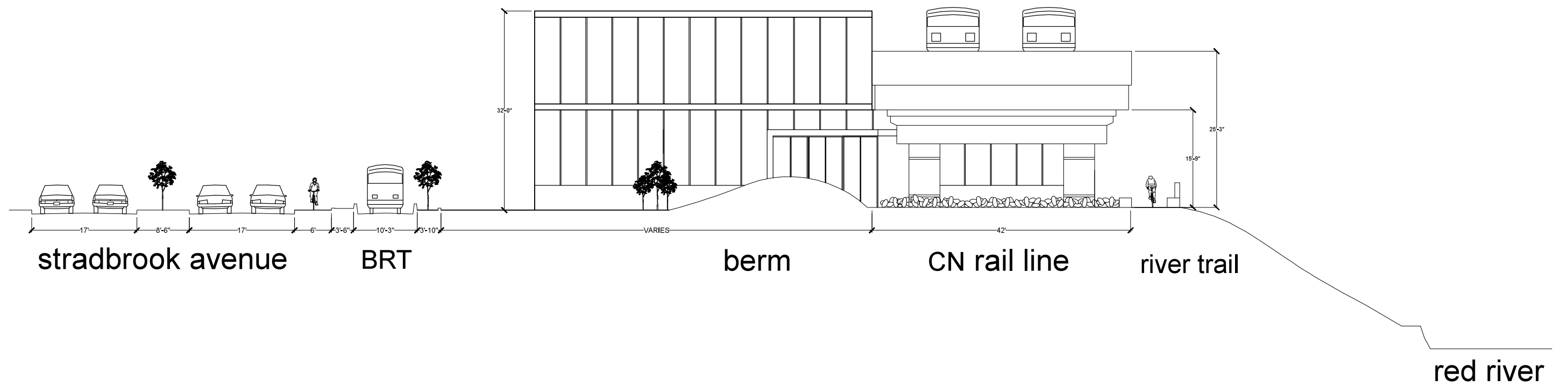
FLOOR PLAN - MAIN FLOOR
MAIN BUILDING

F1

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

Short Term Equipment Deposit
120

bike storage

vending
machine

air source
and tools

bike stand

pay
stations

Tune Up Station
119

Equipment Rental
121

curb

tall grasses

unfixed cafe
seating

fixed bench
seating

Exterior Gathering Space
118

planters

NTS

FLOOR PLAN - MAIN FLOOR F2
SHORT TERM EQUIPMENT DEPOSIT & EXTERIOR GATHERING SPACE

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

treed boulevard

unfixed cafe
seating

planters

Exterior Gathering Space
122

fire pit

tall grasses

stone wall

bush

small tree

fixed bench
seating

NTS

FLOOR PLAN - MAIN FLOOR
WEST ENTRY GATHERING SPACE F3

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

B

10'-7"

37'-8"

Long Term
Equip Deposit
202

Stair
201

sliding door

Custodial
203

Laundry
204

Long Term
Equip Deposit
208

w/c
205

w/c
206

w/c
207

Lavatory
209

Lockers
210

towel pickup

towel deposit

Lavatory
211

DN

37'-7"

Shower
212

Shower
213

Shower
214

bench

bike storage

Long Term
Equip Deposit
215

RAIL BRIDGE

55'-0"

12'-8"

B

NTS

FLOOR PLAN - SECOND FLOOR
MEMBER FACILITIES

F4

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

UP

RENDERED FLOORING PLAN - FIRST FLOOR
MAIN BUILDING P1

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

NTS

LEGEND

▢ polished concrete

▢ forbo striato petrified wood

▢ forbo striato sliding glacier

▢ forbo striato marsh delta

▢ forbo striato tulip fields

DN

⊕ NTS
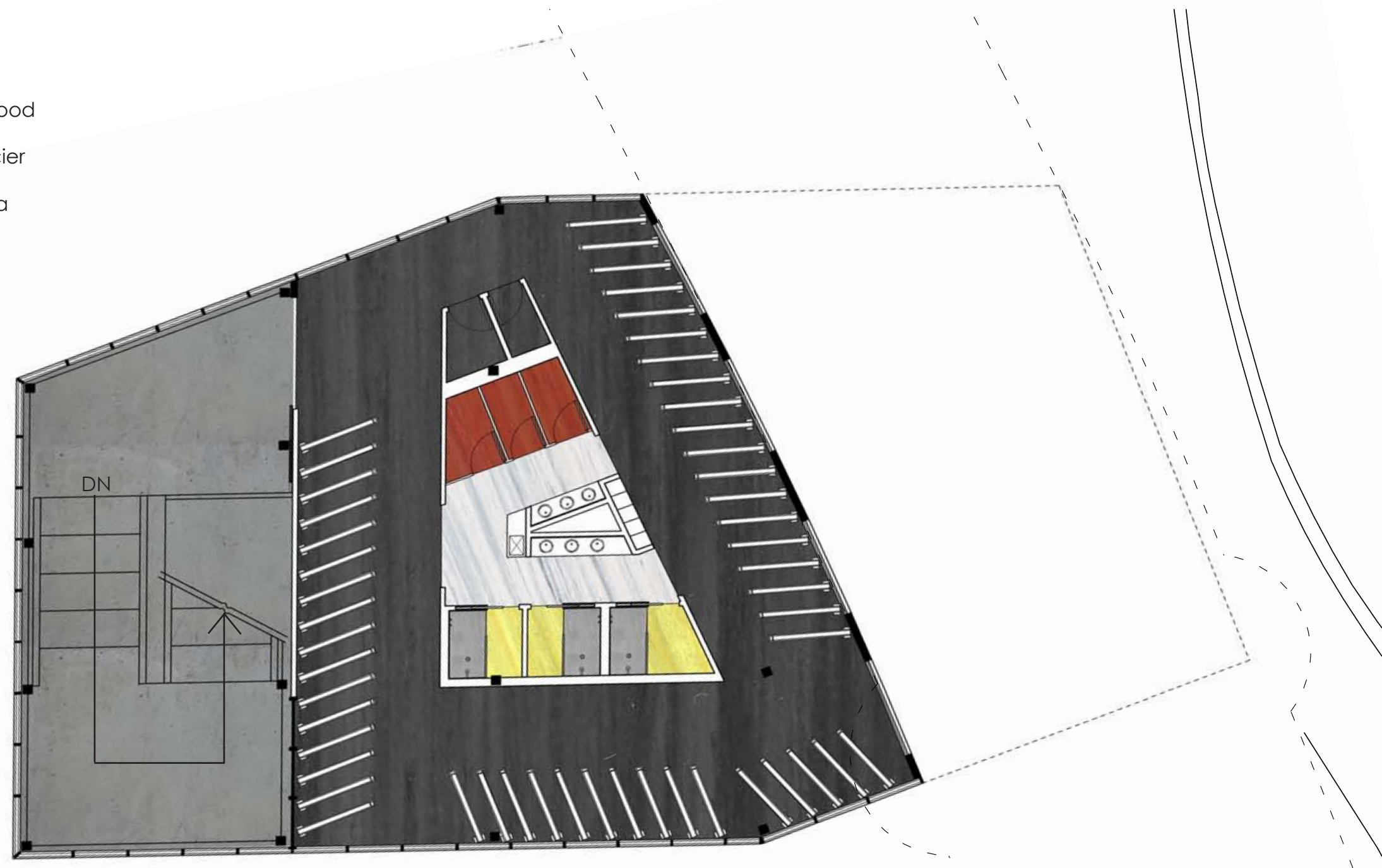
RENDERED FLOORING PLAN - SECOND FLOOR
MEMBER FACILITIES
P2

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

C   CONCRETE
LN   LINOLEUM
A   ASPHALT

Short Term Equipment Deposit
120

C - 1

Tune Up Station
119

Equipment Rental
121

A - 1

A - 1

A - 1

rumble strips

Exterior Gathering Space
118

C - 1

C - 1

C - 1

NTS

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

Legend

○ recessed direct downward

◎ suspended direct downward

◉ suspended pendant

○ suspended pendant

▬ recessed exterior fixture, horizontal mount

| LED light panel

▯ exterior LED panel, recessed in ground, diffuse upward

• wall mounted light fixture

Entrance
106

Info Centre
105
15'-0"

Stair
117
8'-4"

Accessible w/c
107
8'-0"

Meeting Space
110
15'-0"

12'-0"

Mech. Electrical
103
8'-0"

w/c
108
8'-0"

UP

15'-0"

Respite / Gathering Space
114
12'-0"

w/c
109
8'-0"

Cafe
115

Storage
116
VARIES

Equipment Repair
104
15'-0"

Custodial
102
8'-0"

Accessible Shower
111
8'-0"

Day Lockers
112
15'-0"

Parts & Accessories
101
15'-0"

Entrance
113

NTS

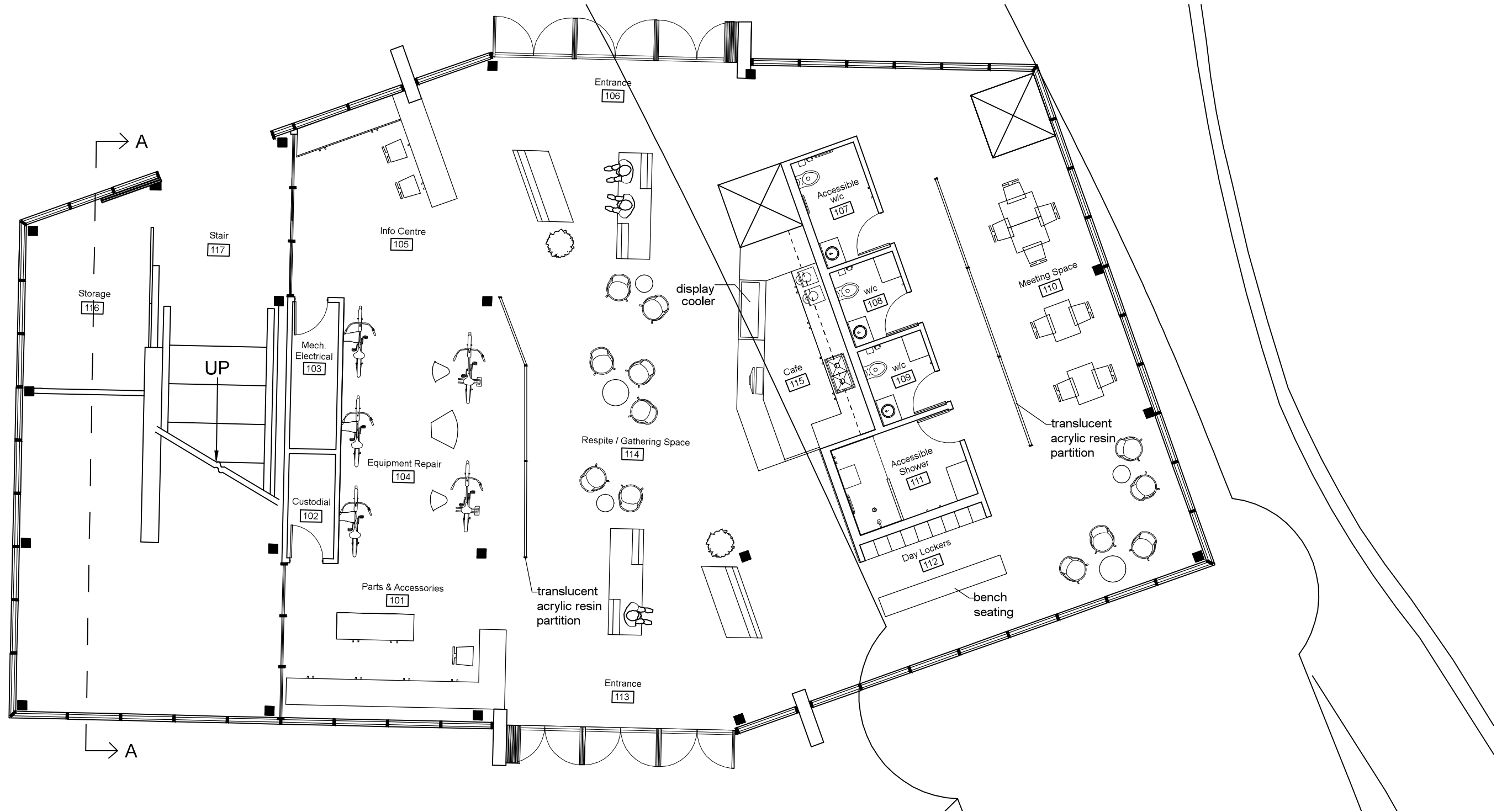REFLECTED CEILING PLAN - FIRST FLOOR
MAIN BUILDING P4

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project
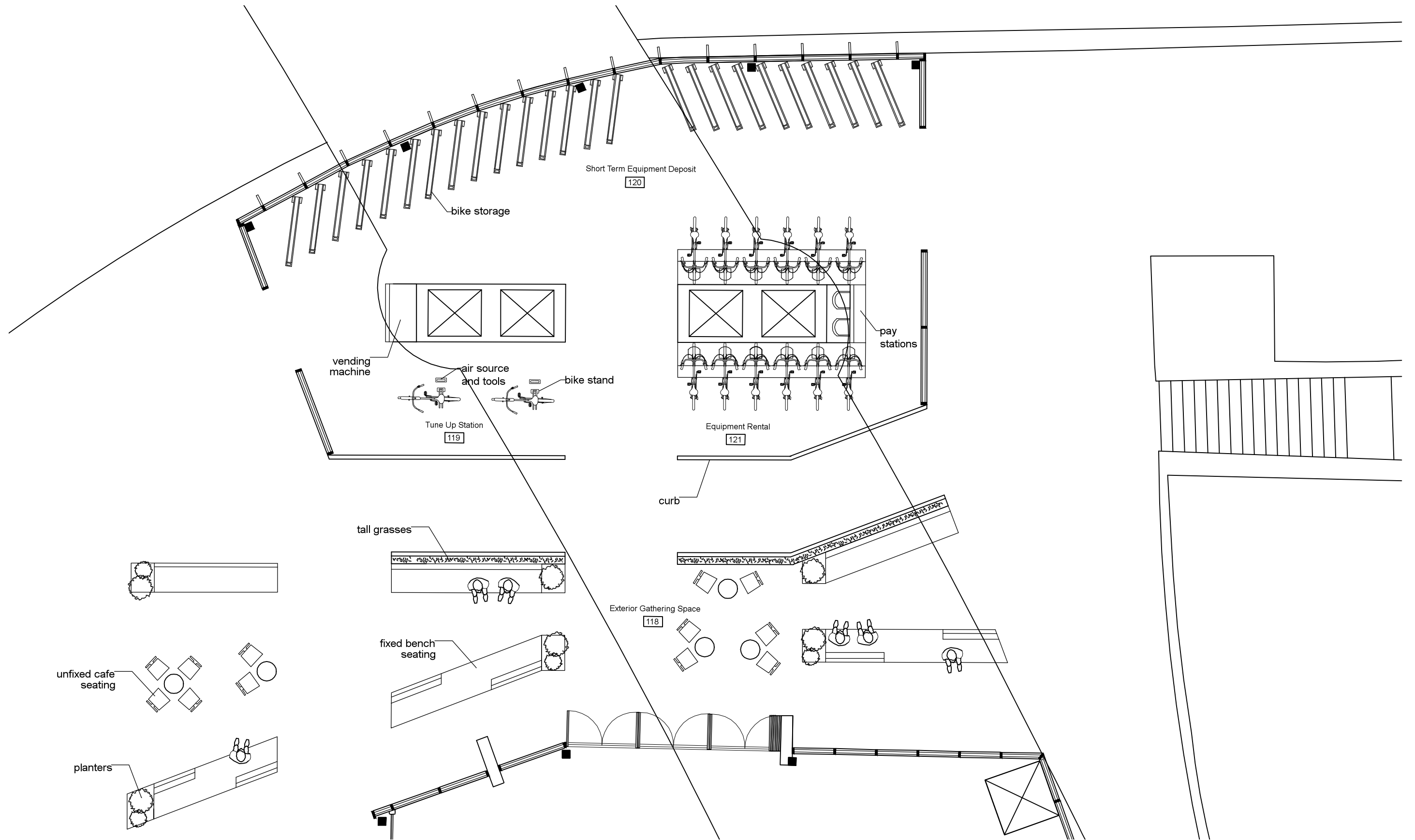
recessed direct downward
suspended direct downward
suspended pendant
suspended pendant
recessed exterior fixture, horizontal mount
LED light panel
exterior LED panel, recessed in ground, diffuse upward
wall mounted light fixture

Short Term Equipment Deposit
120
15'-0"

Tune Up Station
119

Equipment Rental
121

Exterior Gathering Space
118

NTS

REFLECTED CEILING PLAN - FIRST FLOOR
SHORT TERM EQUIPMENT DEPOSIT & EXTERIOR GATHERING SPACE
P5

recessed direct downward
suspended direct downward
suspended pendant
suspended pendant
recessed exterior fixture, horizontal mount
LED light panel
exterior LED panel, recessed in ground, diffuse upward
wall mounted light fixture

Custodial
203

Laundry
204

Long Term
Equip Deposit
208
15'-0"

Long Term
Equip Deposit
202
15'-0"

w/c
205
8'-0"

w/c
206
8'-0"

w/c
207
8'-0"

Stair
201
15'-0"

DN

Lavatory
209

Lockers
210
15'-0"

Lavatory
211
12'-0"

Shower
212
8'-0"

Shower
213
8'-0"

Shower
214
8'-0"

Long Term
Equip Deposit
215
15'-0"

NTS
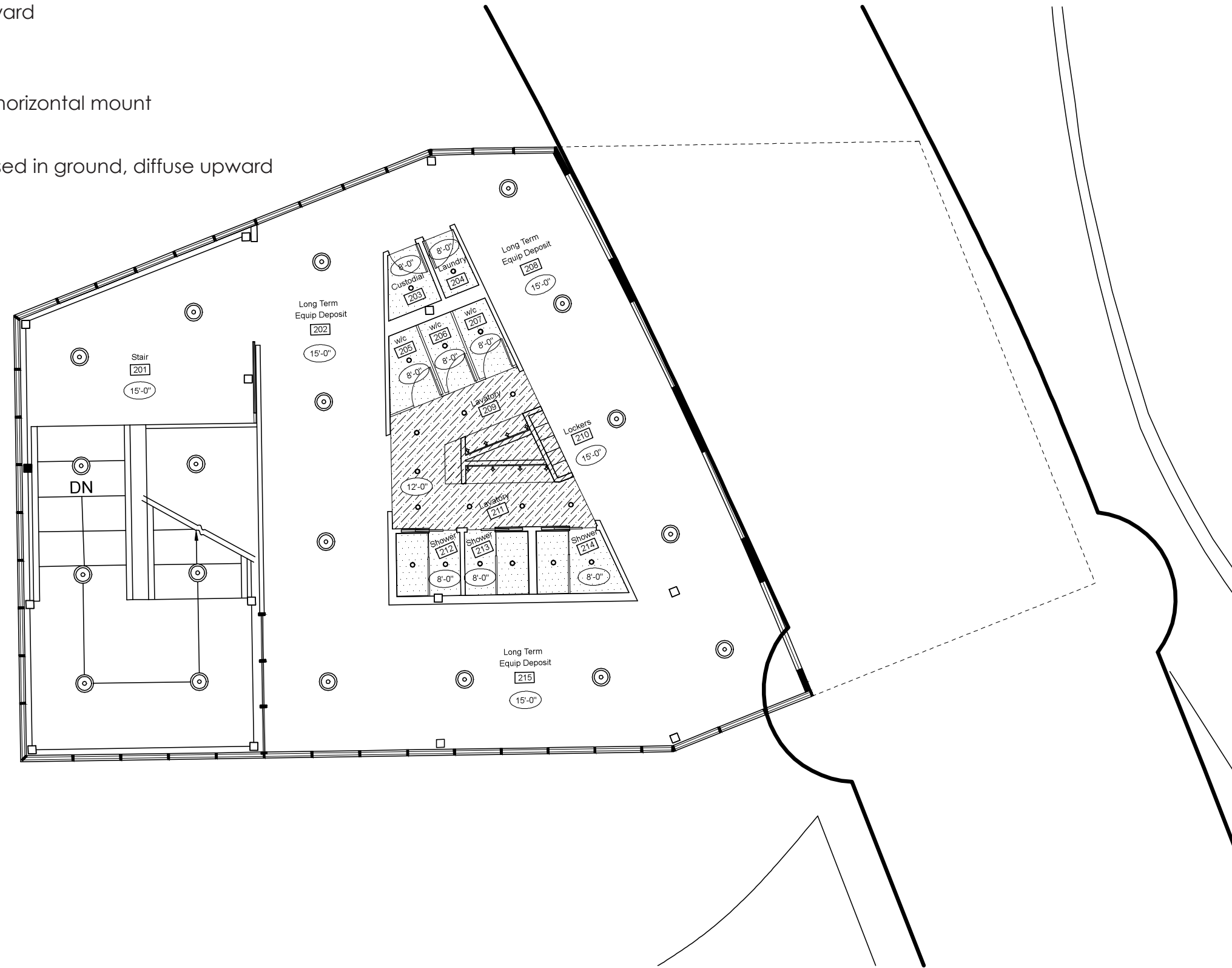
REFLECTED CEILING PLAN - SECOND FLOOR
MEMBER FACILITIES P6

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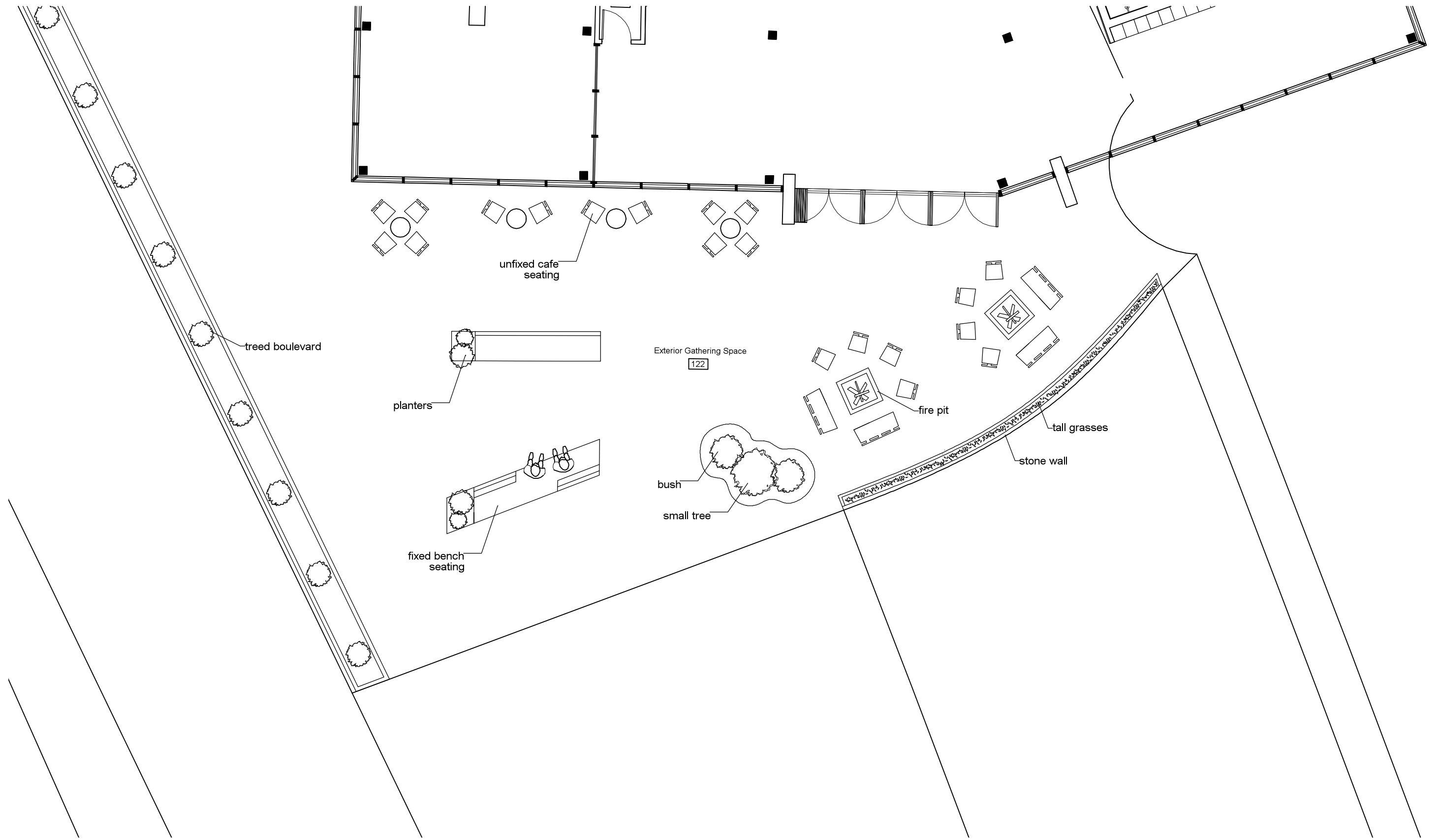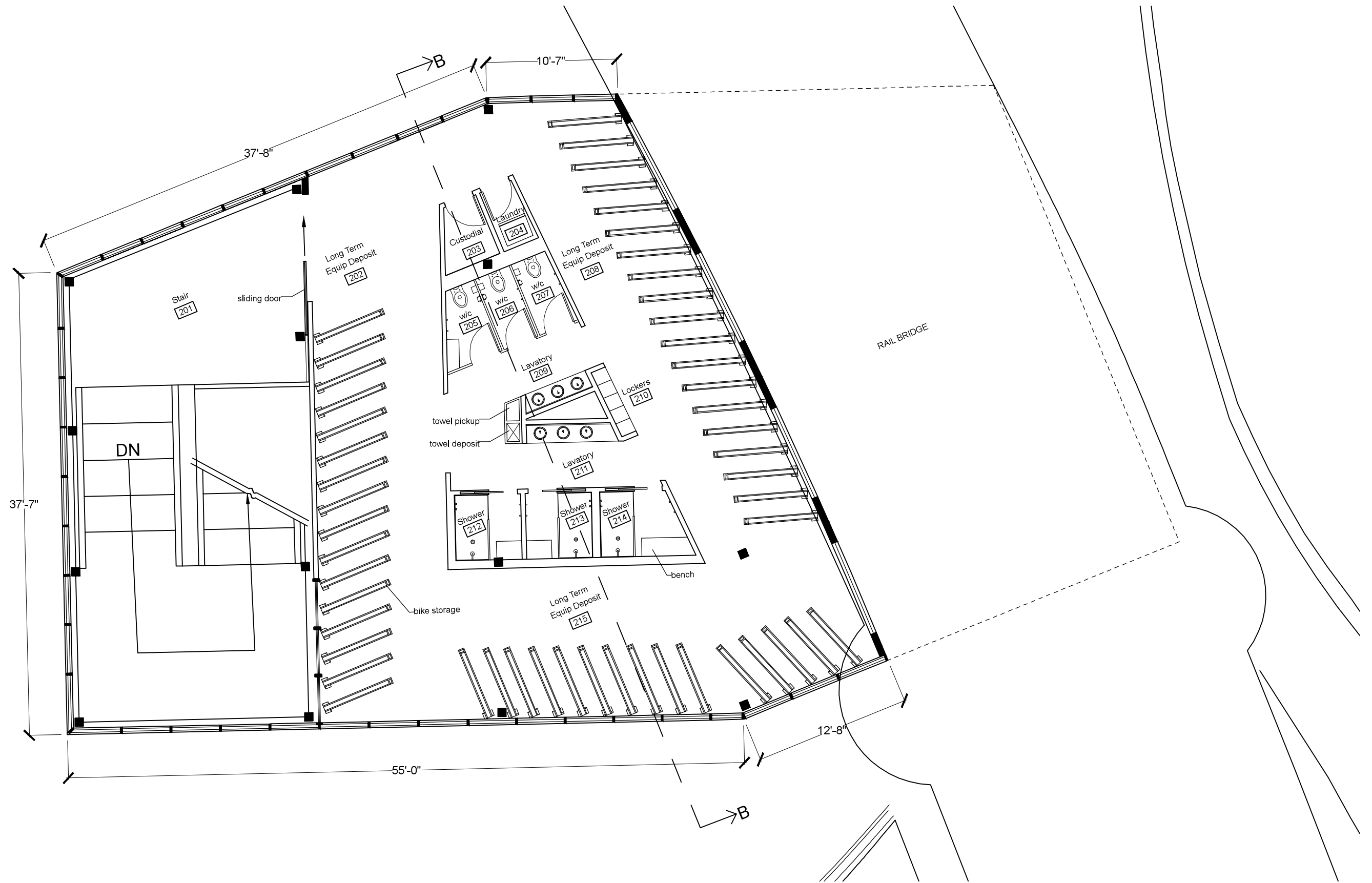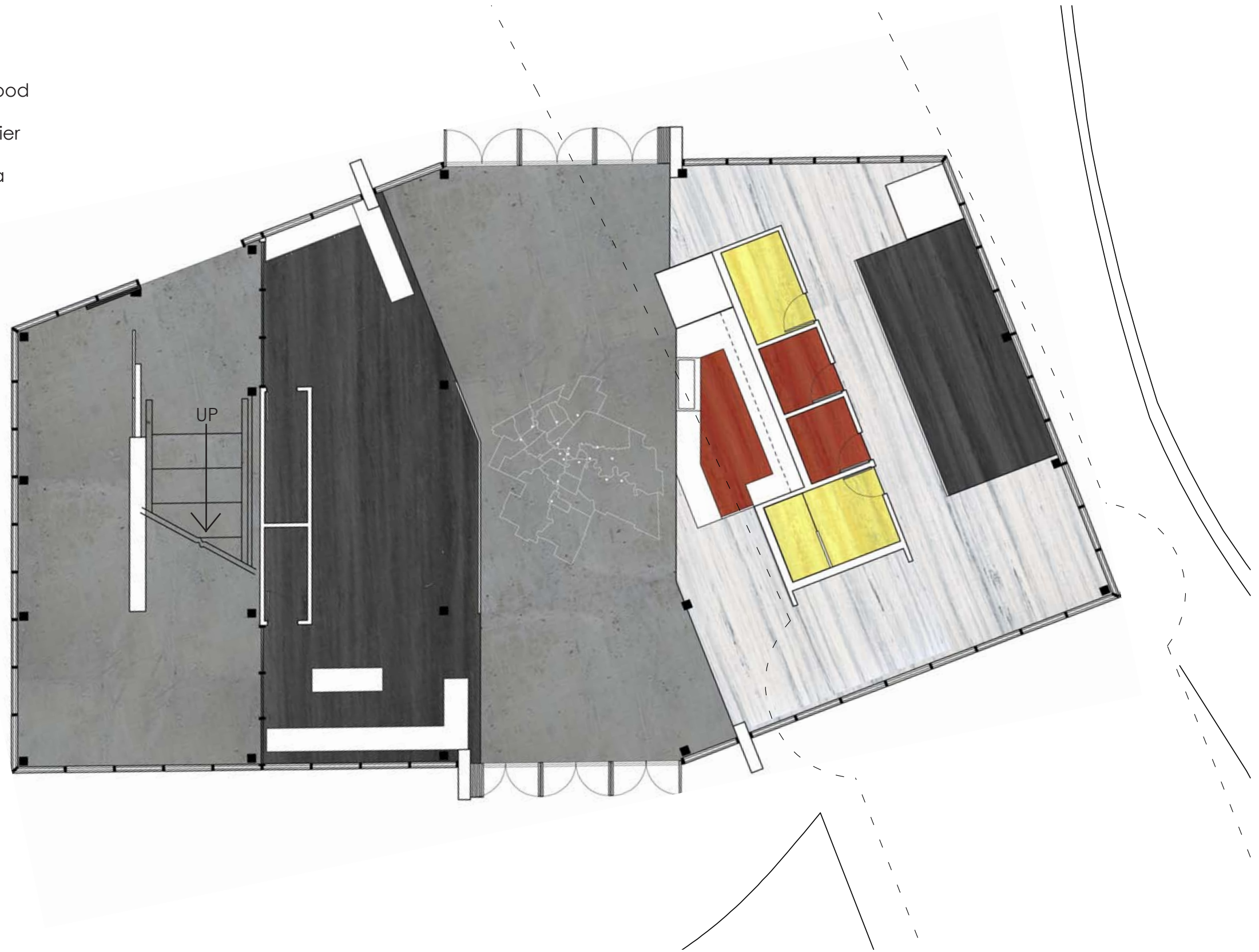
Information Desk Plan

concrete countertop

outside wall

painted steel archway

1 INFORMATION DESK PLAN
D1

Information Desk Side Elevation

concrete countertop

streets wall tile

rubber base

2'-4"

3'

2 INFORMATION DESK SIDE ELEVATION
D1

Information Desk Front Elevation

outside wall

concrete countertop

streets wall tile

rubber base

8'

1'

1' jog in millwork, portion tucked behind archway

3'

painted steel archway

3 INFORMATION DESK FRONT ELEVATION
D1

Information Desk Corner Detail

3/4" MDF

grout

streets tile

schluter edge band

INFORMATION DESK
CORNER DETAIL

1
D1

Information Desk Section

streets wall tile

2'-4"

concrete countertop

drawer on metal glides

p.lam door over 3/4" MDF
with brushed aluminum pulls

adjustable shelves
on recessed standards;
3/4" MDF w/ painted finish

blocking

rubber base

3'

4 INFORMATION DESK SECTION
D1

Information Desk Back Elevation

outside wall

painted steel archway

4
D1

9'

concrete countertop

3'

p.lam finish typ.

rubber base

5 INFORMATION DESK BACK ELEVATION
D1

NTS

MILLWORK DETAIL
INFORMATION CENTRE DESK

D1

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7'-10"

38'-6"

12'-6"

glazing

cutout handrail in
acrylic panel

16'-8"

2'-11"

continuous hand rail

10"

glulam structural columns

7'-6"

7'-6"

concrete support landings

8'-4"

5'-0"

sliding door
to under stair
storage area

gypsum wall
separating under
stair storage area

gypsum
wall

concrete stairs

wheeling ramp

AA
S2   STAIR SECTION

NTS

SECTION
STAIRS TO MEMBER FACILITIES

S2

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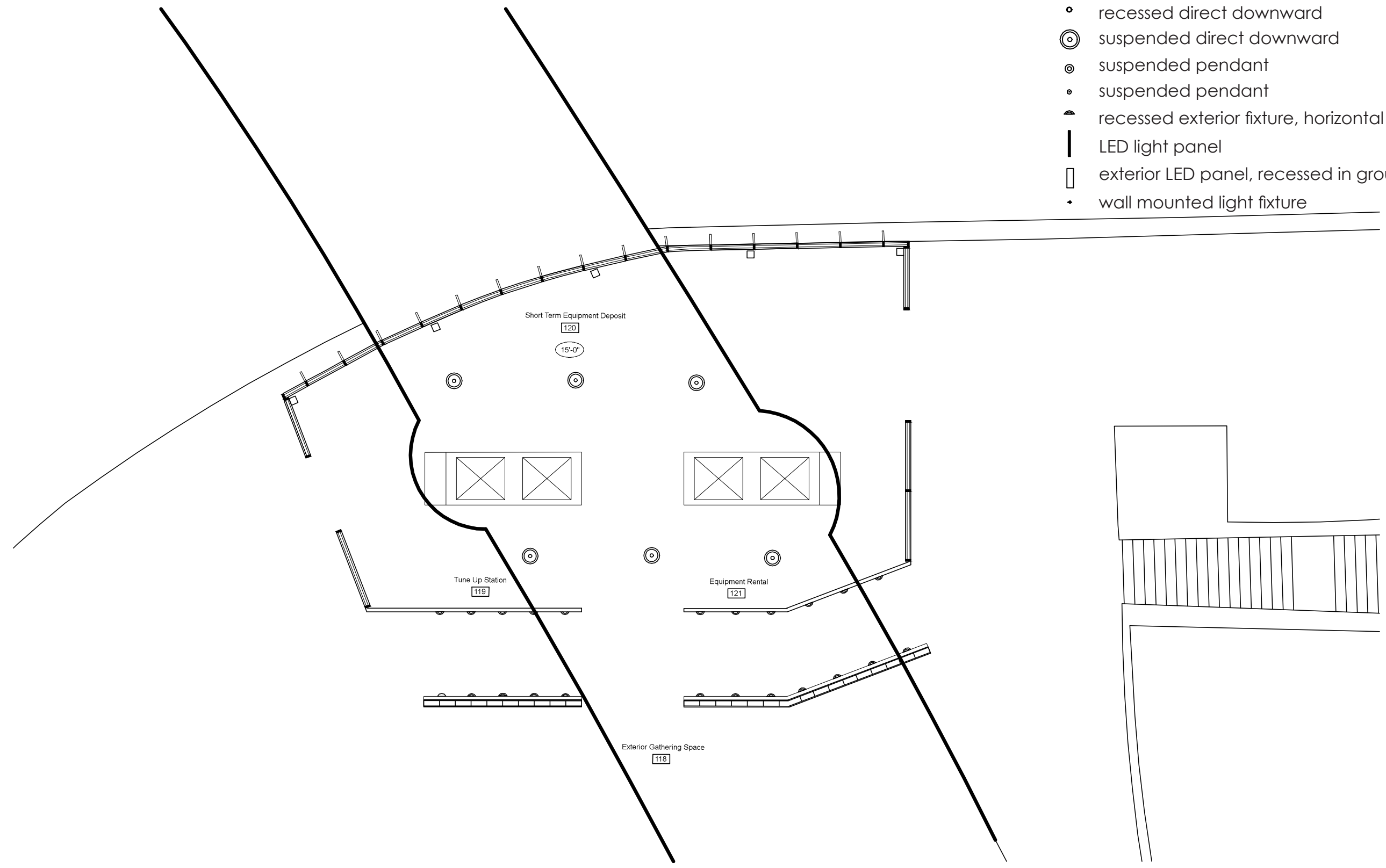
51'

1'
3'
4'
8'

bike storage   custodial room   washrooms   lavatories   shower room   bike storage

BB / S3   MEMBER FACILITIES SECTION

NTS

SECTION
MEMBER FACILITIES

S3

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architectural fins

overhead rail bridge

bridge support column

communication wall

stone wall with streets tile

unfixed bench seating

tall grasses

berm

bike storage

equipment rental

bridge support column

bike lane

fixed bench seating

archway entrance

fixed bench seating

display cooler

cafe counter with streets tile

fixed bench seating

fire pit

cafe

33'

9'-4'

52'

CC
S3 MAIN FLOOR SECTION

NTS

SECTION - MAIN FLOOR
LOOKING SOUTH

S4

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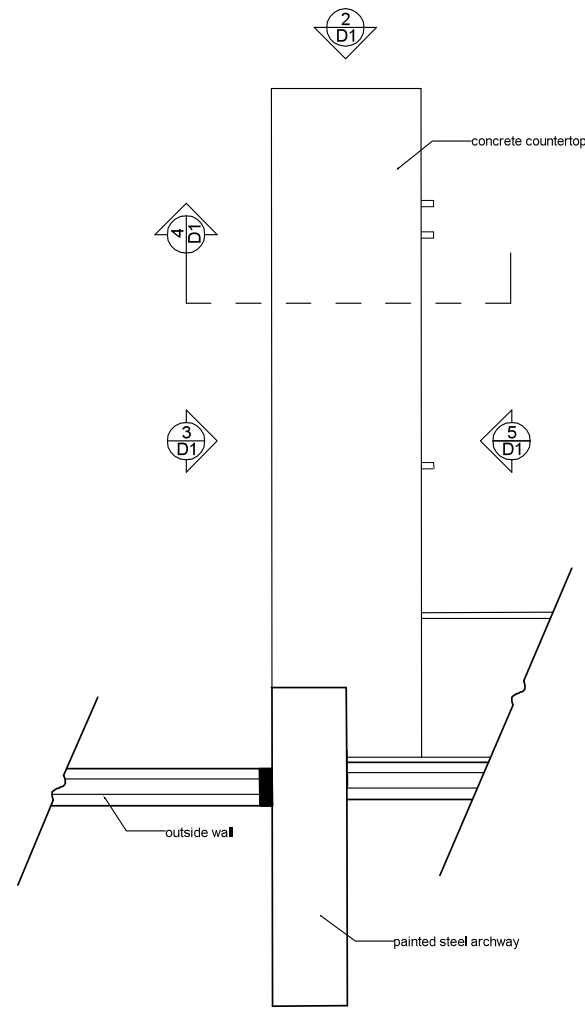
LOOKING NORTH TOWARD DOWNTOWN

LOOKING WEST TOWARD RIVER OSBORNE

LOOKING SOUTH TOWARD ST. BONIFACE

LOOKING EAST TOWARD THE FORKS

CONCEPTUAL MASSING PERSPECTIVES
RELATIONSHIP OF THE ACTIVE TRANSPORTATION HUB TO RAIL BRIDGE **PS1**
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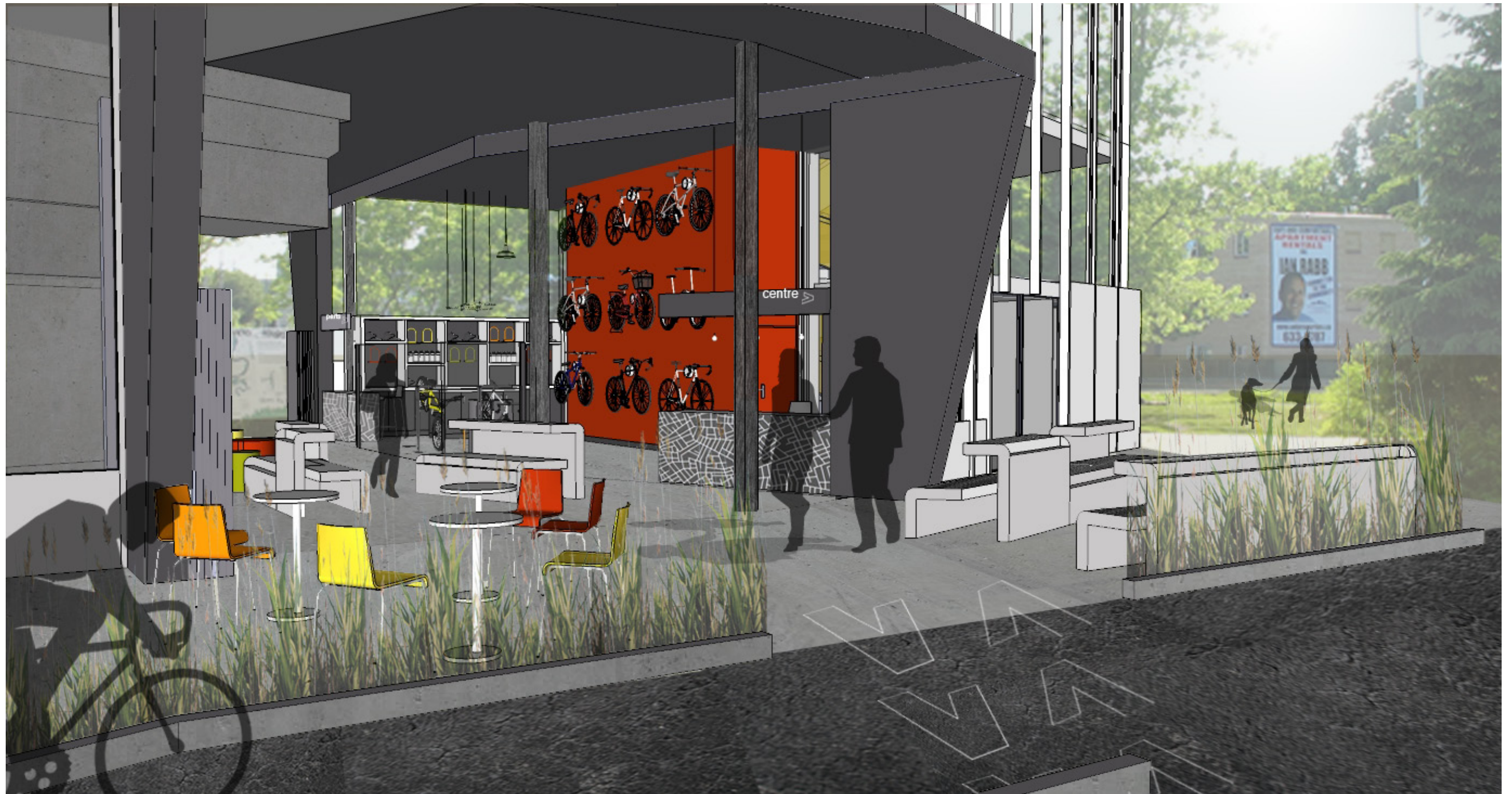
PERSPECTIVE PS3
SHORT TERM EQUIPMENT DEPOSIT & EQUIPMENT RENTAL
an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

info centre >

PERSPECTIVE
INFORMATION CENTRE PS4

an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

parts →

café ▷

PERSPECTIVE PS6
CAFE COUNTER

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an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

PERSPECTIVE PS8
STAIRS TO MEMBER FACILITIES
an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

EXTERIOR PERSPECTIVE
LOOKING NORTH TOWARD DOWNTOWN PS9
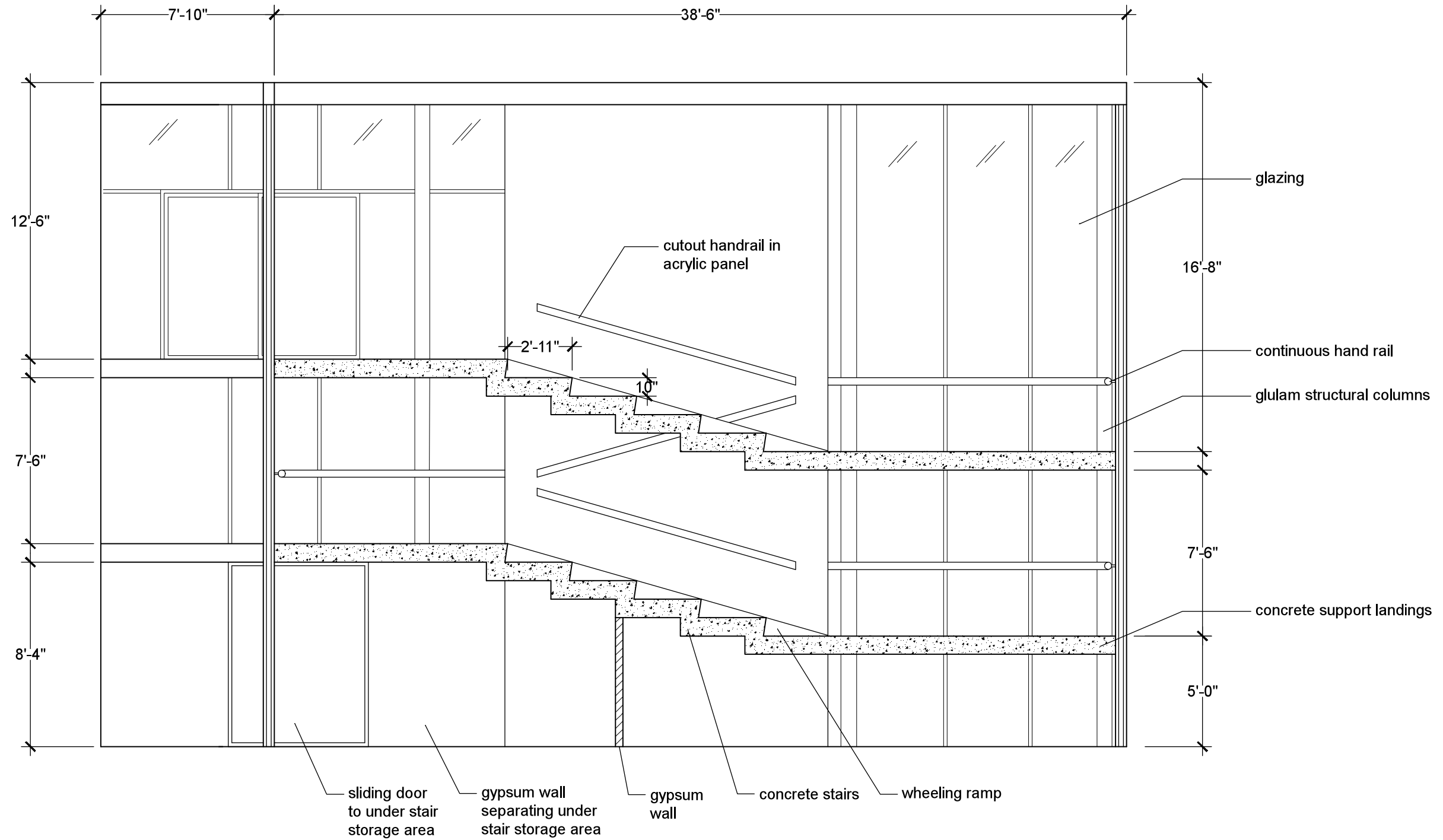
an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project

STRADBROOK AVE

EXTERIOR PERSPECTIVE
LOOKING SOUTH TOWARD ST. BONIFACE PS10

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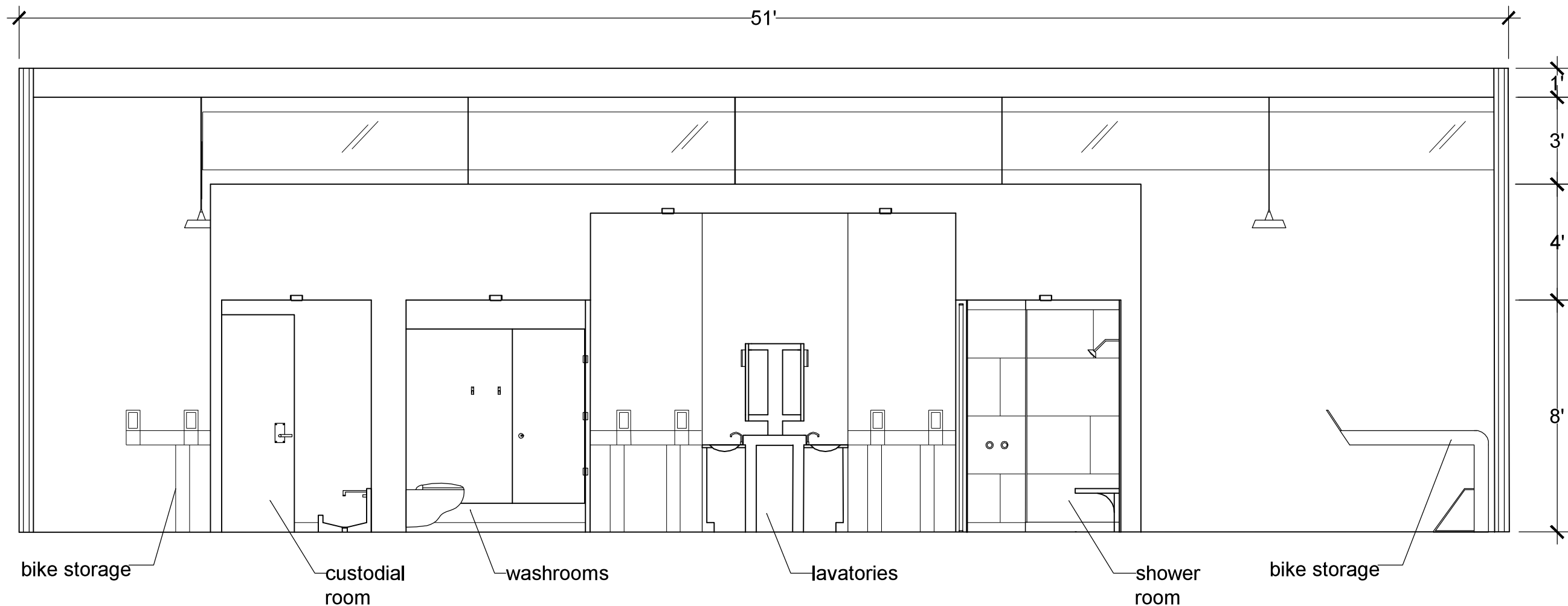
EXTERIOR PERSPECTIVE
LOOKING EAST TOWARD THE FORKS PS11
an interior for active transportation: place, mobility and the social life of the city . erika sammons . master of interior design practicum project
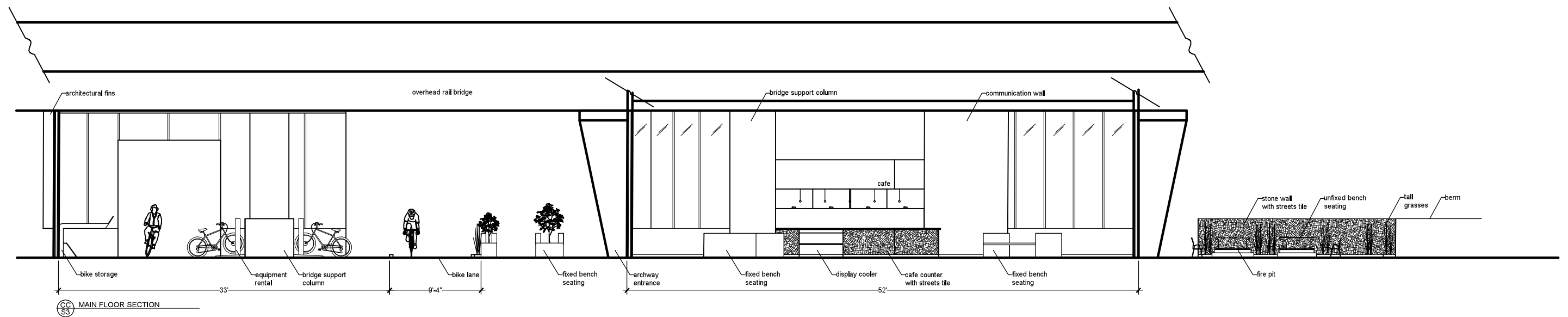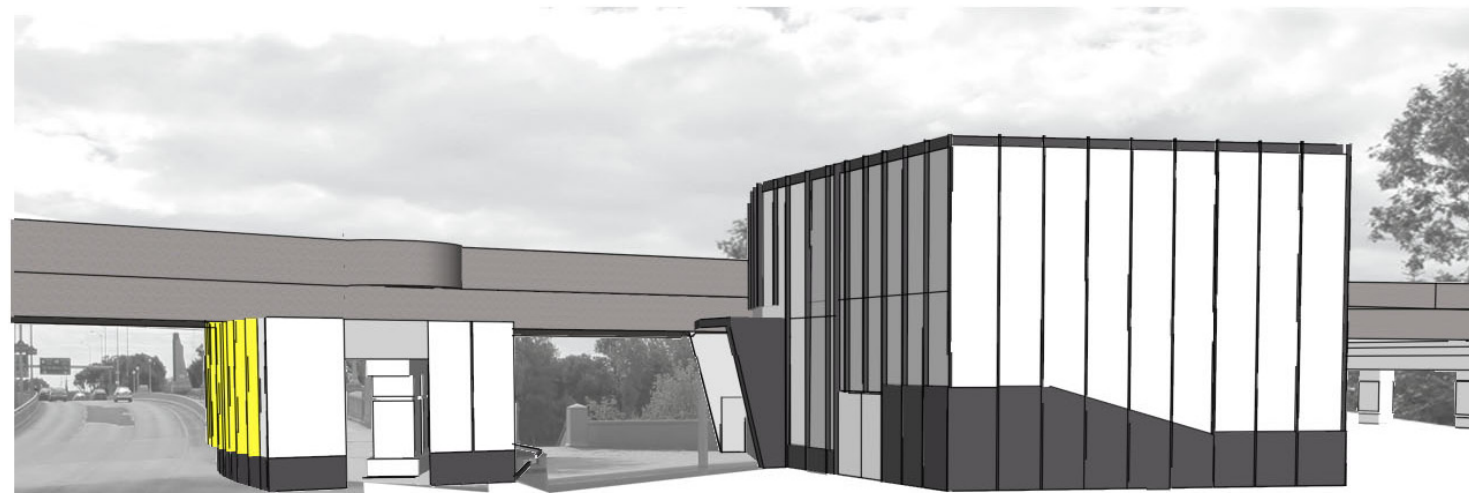
ACTIVE TRANSPORTATION HUB
WALL SCHEDULE

Room Number	Room Name	North Material	Finish	Colour	South Material	Finish	Colour	East Material	Finish	Colour	West Material	Finish	Colour	Notes
MAIN FLOOR														
101	Parts and Accessories	GL	-	-	-	-	-	GWB	PT	PT-3	GL	-	-	
102	Custodial	GWB	PT	PT1	GWB	PT	PT1	GWB	PT	PT-1	GWB	PT	PT-1	
103	Mechanical and Electrical	GWB	PT	PT1	GWB	PT	PT1	GWB	PT	PT-1	GWB	PT	PT-1	
104	Equipment Repair	GWB	SV	SV1	RP	-	RP-2	-	-	-	-	-	-	
105	Information Centre	GL	-	-	-	-	-	GL	-	-	-	-	-	
106	Entrance	-	-	-	-	-	-	GL	-	-	-	-	-	
107	Accessible Washroom	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	
108	Washroom	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT_1	
109	Washroom	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	
110	Meeting Space	RP	-	RP-3	GL	-	-	CN	-	-	-	-	-	
111	Accessible Shower	CT	-	CT-1	GWB	PT	PT-1	GWB/CT	PT/-	PT-1/CT-	GWB/CT	PT/-	PT-	
112	Day Lockers	-	-	-	-	-	-	GWB	PT	PT-1	GL	-	-	
113	Entrance	-	-	-	-	-	-	-	-	-	GL	-	-	
114	Respite / Gathering	RP	-	RP-2	GWB	PT	PT-1	-	-	-	-	-	-	
115	Café	-	-	-	GWB	PT	PT-1	CN	-	-	GWB	PT	PT-1	
116	Storage	GL/RP	- / -	- /RP-1	GL/RP	- / -	- /RP-	GL	-	-	GL	-	-	
117	Stair	GL/RP	- / -	- /RP-1	L/GWB/R	- /PT/ -	- /PT-	GL	-	-	GL	-	-	
118	Exterior Gathering Space	-	-	-	-	-	-	GL	-	-	GL	-	-	
119	Tune Up Station	GL	-	-	-	-	-	CN	-	-	-	-	-	
120	Short Term Equipment Deposit	GL	-	-	GL	-	-	GL	-	-	CN	-	-	
121	Equipment Rental	-	-	-	GL	-	-	GL	-	-	-	-	-	
SECOND FLOOR														
201	Stair	GL/RP	- / -	- /RP-1	L/GWB/R	- /PT/ -	- /PT-	GL	-	-	GL	-	-	
202	Long Term Equipment Deposit	GL	-	-	GWB	PT	PT-1	GL	-	-	GL	-	-	
203	Custodial	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	Pt-1	GWB	PT	PT-1	
204	Laundry	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	GWB	PT	PT-1	
205	Washroom	GWB	PT	PT-1	SS	BR	-	GWB	PT	PT-1	SS	BR	-	
206	Washroom	GWB	PT	PT-1	SS	BR	-	GWB	PT	PT-1	SS	BR	-	
207	Washroom	SS	BR	-	GWB	PT	PT-1	GWB	PT	PT-1	SS	BR	-	
208	Long Term Equipment Deposit	GWB	PT	PT-1	GWB/GL	PT/ -	PT12	GL	-	-	-	-	-	
209	Lavatory	GWB	PT	PT-1	GWB	PT	PT-1	SS	BR	-	GWB	PT	PT-1	
210	Lockers	GWB	PT	PT-1	GWB/GL	PT/ -		-	-	-	-	-	-	
211	Lavatory	GWB	PT	PT-1	-	-	-	GWB	PT	PT-1	GWB	PT	PT-1	
212	Shower	CT	-	CT-1	GWB	PT	PT-1	GWB/CT	PT/-	PT-1/CT-	GWB/CT	PT/-	PT_1/C	
213	Shower	GWB	PT	PT-1	CT	-	CT-1	GWB/CT	PT/-	PT-1/CT-	GWB/CT	PT/-	PT-	
214	Shower	CT	-	CT-1	GWB	PT	PT-1	GWB/CT	PT/-	PT-1/CT-	GWB/CT	PT/-	PT-	
215	Long Term Equipment Deposit	GL	-	-	GWB/GL	PT/ -	PT-1	GWB	PT	PT-1	GL	-	-	

Legend

GWB	Gypsum Wall Board
GL	Glazing
CT	Ceramic Tile
RP	Resin Panel
SS	Stainless Steel
CN	Concrete
PT	Paint
BR	Brushed
SV	Sheet Vinyl
PT-1	Benjamin Moore White
PT-2	Benjamin Moore Charcoal Grey
PT-3	Benjamin Moore Cherry Red
RP-1	3Form Chroma in Vitamin C
RP-2	3Form Chroma in Renew
RP-3	3Form Chroma in Mai Tai
CT-1	Olympia Maple Leaf Color Collection Ice White

WALL SCHEDULE
ACTIVE TRANSPORTATION HUB
SD1

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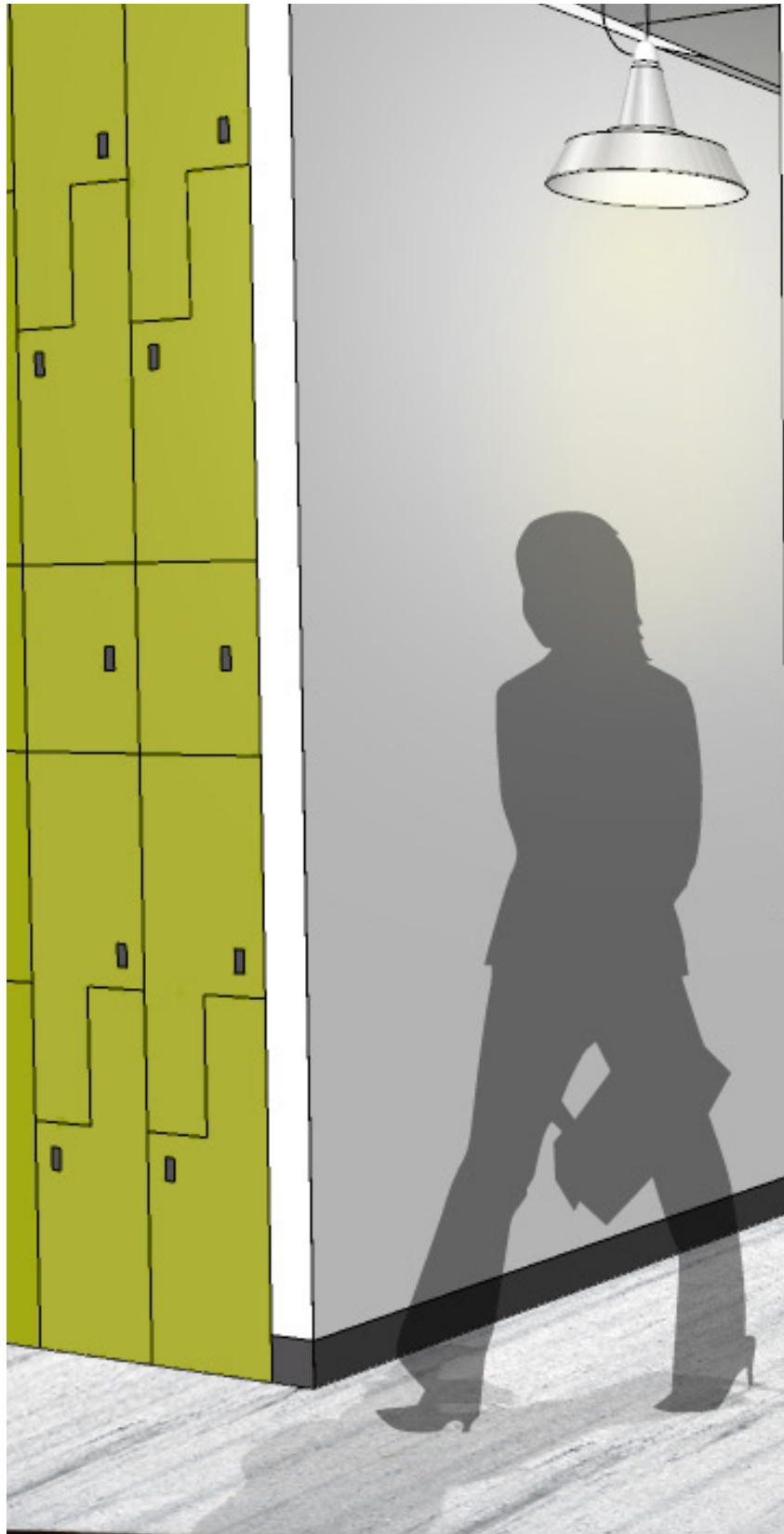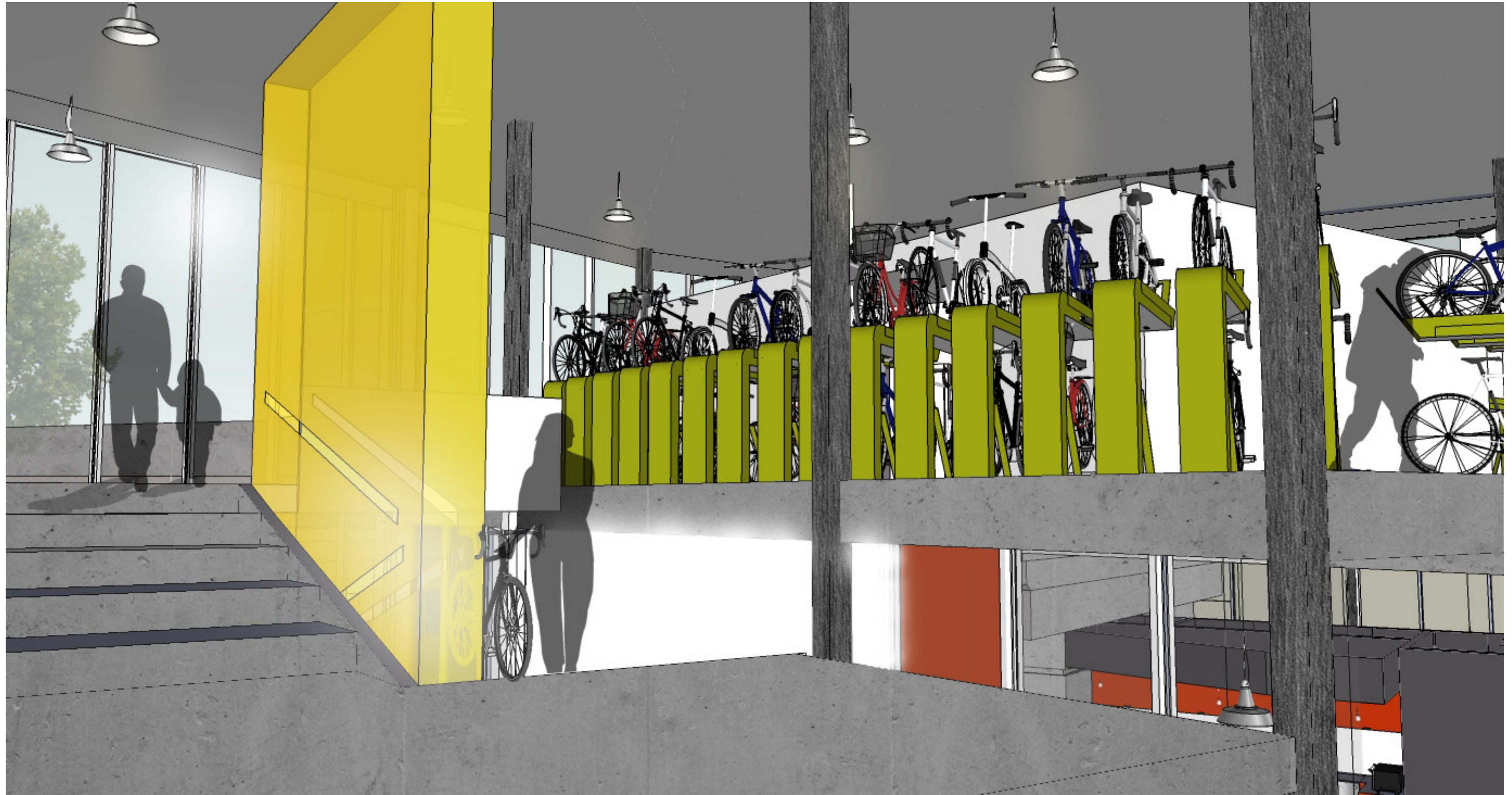
ACTIVE TRANSPORTATION HUB
FLOOR SCHEDULE

Room #	Room Name	Covering Type	Colour	Base Type	Colour	Notes	Legend	
MAIN FLOOR								
101	Parts and Accessories	LN	LN-1	RB	RB-1		LN	Linoleum
102	Custodial	LN	LN-1	RB	RB-1		PC	Polished Concrete
103	Mechanical and Electrical	LN	LN-1	RB	RB-1		CT	Ceramic Tile
104	Equipment Repair	LN	LN-1	RB	RB-1		A	Asphalt
105	Information Centre	LN	LN-1	RB	RB-1		RB	Rubber Base
106	Entrance	PC	PC-1	-	-			
107	Accessible Washroom	LN	LN-3	RB	RB-1		LN-1	Forbo Striato Petrified Wood
108	Washroom	LN	LN-4	RB	RB-1		LN-2	Forbo Striato Sliding Glacier
109	Washroom	LN	LN-4	RB	RB-1		LN-3	Forbo Striato Marsh Delta
110	Meeting Space	LN	LN-1	RB	RB-1		LN-4	Forbo Striato Tulip Fields
111	Accessible Shower	LN/CT	LN-3/CT-1	RB/CT	RB-1/CT-1	* See Plan for Extent of Flooring		
112	Day Lockers	LN	LN-2	RB	RB-1		RB-1	Johnsonite Rubber Base Grey
113	Entrance	PC	PC-1	-	-			
114	Respite / Gathering	PC	PC-1	-	-		CT-1	Ceratec Galeria Tile in Gray
115	Café	LN	LN-4	RB	RB-1			
116	Storage	PC	PC-1	-	-			
117	Stair	PC	PC-1	-	-			
118	Exterior Gathering Place	PC/A	PC-1/A-1	-	-	* See Plan for Extent of Flooring		
119	Tune Up Station	PC	PC-1	-	-			
120	Short Term Equipment Deposit	PC	PC-1	-	-			
121	Equipment Rental	PC	PC-1	-	-			
SECOND FLOOR								
201	Stair	PC	PC-1	-	-			
202	Long Term Equipment Deposit	LN	LN-1	RB	RB-1			
203	Custodial	LN	LN-1	RB	RB-1			
204	Laundry	LN	LN-1	RB	RB-1			
205	Washroom	LN	LN-4	RB	RB-1			
206	Washroom	LN	LN-4	RB	RB-1			
207	Washroom	LN	LN-4	RB	RB-1			
208	Long Term Equipment Deposit	LN	LN-1	RB	RB-1			
209	Lavatory	LN	LN-2	RB	RB-1			
210	Lockers	LN	LN-1	RB	RB-1			
211	Lavatory	LN	LN-2	RB	RB-1			
212	Shower	LN/CT	LN-3/CT-1	RB/CT	RB-1/CT-1			
213	Shower	LN/CT	LN-3/CT-1	RB/CT	RB-1/CT-1			
214	Shower	LN/CT	LN-3/CT-1	RB/CT	RB-1/CT-1			
215	Long Term Equipment Deposit	LN	LN-1	RB	RB-1			

FLOOR SCHEDULE
ACTIVE TRANSPORTATION HUB SD2

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ACTIVE TRANSPORTATION HUB
CEILING SCHEDULE

Room Number	Room Name	Material	Finish	Color	Height	Notes	Legend	
MAIN FLOOR							EX	Existing
101	Parts and Accessories	EXP	-	-	15'		EXP	Exposed
102	Custodial	GWB	PT	PT-1	8'		GWB	Gypsum Wall Board
103	Mechanical and Electrical	GWB	PT	PT-1	8'		PT	Paint
104	Equipment Repair	EXP	-	-	15'		CN	Concrete
105	Information Centre	EXP	-	-	15'			
106	Entrance	GWB	PT	PT-2	12'		PT-1	Benjamin Moore White
107	Accessible Washroom	GWB	PT	PT-1	8'		PT-2	Benjamin Moore Charcoal Grey
108	Washroom	GWB	PT	PT-1	8'			
109	Washroom	GWB	PT	PT-1	8'			
110	Meeting Space	EX	CN	-	15'			
111	Accessible Shower	GWB	PT	PT-1	8'			
112	Day Lockers	EX	CN	-	15'			
113	Entrance	GWB	PT	PT-2	12'			
114	Respite / Gathering	GWB	PT	PT-2	12'			
115	Café	EX	CN	-	15'			
116	Storage	EXP	-	-	32'			
117	Stair	EXP	-	-	32'			
118	Exterior Gathering Place	EX/ -	CN/ -	- / -	15' / *	*open air		
119	Tune Up Station	EX/ -	CN/ -	- / -	15' / *	*open air		
120	Short Term Equipment Deposit	EX/ -	CN/ -	- / -	15' / *	*open air		
121	Equipment Rental	EX/ -	CN/ -	- / -	15' / *	*open air		
SECOND FLOOR								
201	Stair	EXP	-	-	15'			
202	Long Term Equipment Deposit	EXP	-	-	15'			
203	Custodial	GWB	PT	PT-1	8'			
204	Laundry	GWB	PT	PT-1	8'			
205	Washroom	GWB	PT	PT-1	8'			
206	Washroom	GWB	PT	PT-1	8'			
207	Washroom	GWB	PT	PT-1	8'			
208	Long Term Equipment Deposit	EXP	-		15'			
209	Lavatory	GWB	PT	PT-1	12'			
210	Lockers	EXP	-	-	15'			
211	Lavatory	GWB	PT	PT-1	12'			
212	Shower	GWB	PT	PT-1	8'			
213	Shower	GWB	PT	PT-1	8'			
214	Shower	GWB	PT	PT-1	8'			
215	Long Term Equipment Deposit	EXP	-	-	15'			

CEILING SCHEDULE
ACTIVE TRANSPORTATION HUB SD3

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