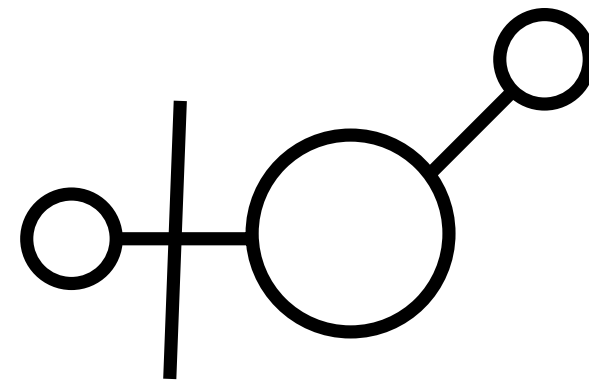


Manchester South:
30-40-30 Partition Design
A Meaningful, Eclectic and
Sustainable Community



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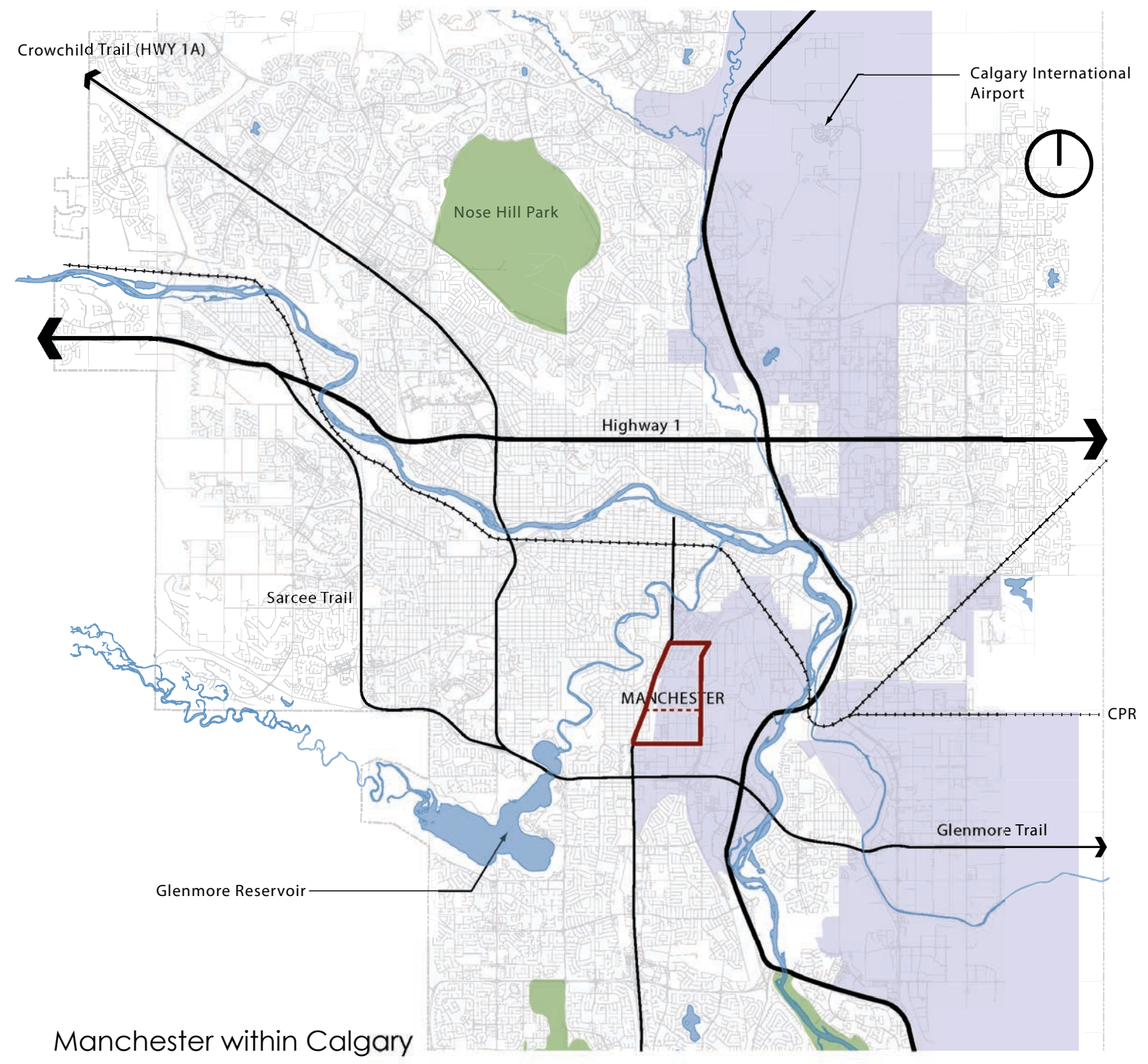


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ACKNOWLEDGEMENTS

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We'd also like to thank our professors (Noel Keough, Brian Sinclair, Denis Gadbois and Brad Braun) for their support and critical guidance.



Manchester within Calgary

BACKGROUND

The Tsuu T'ina (Sarcee) First Nations people of the 19th century, referred to the area of present day Calgary as Kootisaw, or the "meeting of the waters". As such, the area of present day Manchester was undoubtedly important hunting grounds for various First Nations peoples of the past. European settlers moved into the area in the late 19th century and the community of Manchester was first established in the 1910's to house families for the nearby industrial companies. Over the decades, Manchester has continued to keep its low-density industrial character as the city of Calgary and adjacent residential communities have grown up around it.

The community of Manchester is a proportionally small residential community in the Southeast quadrant of Calgary. From its most northern border, it is approximately 2.5 km from the confluence of the Elbow and Bow Rivers and 3 km from downtown. The southern portion of the community is delineated by 50th Avenue to the North, 58th Avenue to the South, Blackfoot Trail to the East and MacLeod Trail to the West, encompassing approximately 1.3 km².

The City of Calgary's population and land size have increased considerably over recent decades to approximately 1.1 million people encompassing approximately 750 km², respectively. It is projected that over the next 30 years, Calgary's population will grow to approximately 1.6 million people. To minimize the footprint of human development across



Present Day Manchester South

the landscape, city employees continue to craft plans that promote increased urban infilling, minimizing transportation problems through sponsored public transportation, and beautifying city areas that make it an attractive, economic and safe opportunity for potential residents of all ages and from varied nationalities to live in. In light of continual city expansion, city planners have written and updated Area Redevelopment Plans (ARP) for most existing Calgary communities. For example, the community of Manchester has had multiple ARP's written, the most recent edition being completed in 2008. City planners have many variables to consider when describing how new communities may develop and how established communities may change in the future.

OBJECTIVES

The City of Calgary has requested University of Calgary Faculty of Environmental Design students to boldly consider and design a community that would satisfy two major intentions: Support present initiatives in decreasing the human footprint across the landscape by utilizing previously developed areas and, do so in such a manner to stimulate the culture, attentiveness and character of an area. The EVDS 702: Advanced Environmental Design in Practice course brings together students from diverse backgrounds to complete such a task. As a group

of students with varied foci in urban design, environmental science, architecture, and industrial design, we have addressed these needs for the southern portion of the community of Manchester. We anticipate that our gestures will impact the entire community of Manchester and in so doing, continue to support intelligent overall planning efforts in the City of Calgary.

It is our objective to create a community design which guides development in Manchester over the next 30 years. As such, we found it imperative to follow our terms of reference for the community of Manchester by considering mixed housing and transportation opportunities, especially for two demographic segments: families with children and immigrants to Calgary. In addition, we felt it necessary to resolve and design four major areas to accommodate Manchester for 30 years into the future. These include a gateway leading into Manchester; a multi-use and all-season plaza; a multi-modal transportation hub and; connective greenways on former transportation right-of-ways. In completing both our overall master planning and site specific initiatives, we followed three central concepts to inspire Manchester 2039: 1) Manchester is a destination 2) Manchester embraces its industrial character and 3) Manchester becomes a model for post-carbon communities. To realize the Manchester 2039 we envision, a 30-40-30 proportion of mix uses in the community will be utilized, coinciding with commercial-residential-light industrial partitioning.



Present Day Manchester South

VISION

To transform the Manchester District from a low-intensity, energy intensive, auto-dependent commercial areas into a responsive and resilient mixed-use district focused on localized production in the wake of a post-carbon economy. Instead of moving towards de-industrialization, we are questioning the merits of a shift to professional services and instead creatively thinking about how production can co-exist with the city.

Specifically for Manchester South:
Design a meaningful, eclectic and sustainable community, by enhancing Manchester as a destination in a manner that does not diminish its integrity and benefits its residents.

FOUR GESTURES

1. Transportation Hub

Serves as major transportation node for neighbourhood connecting different types of movement, and acts as an entrance to the area.

2. Greenways

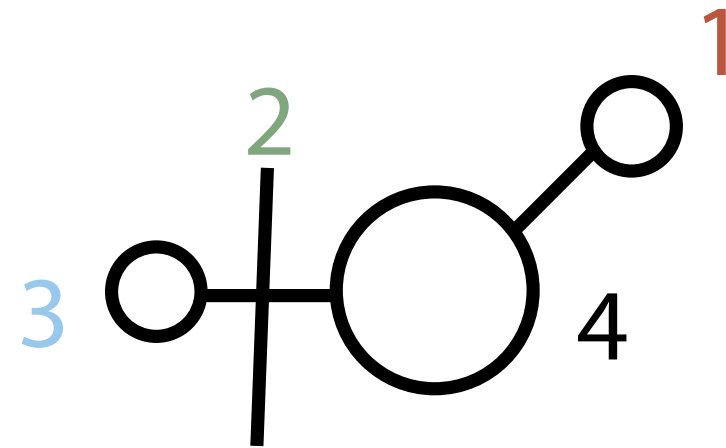
These provide ecological and recreational connectivity within the area.

3. Manchester Gateway

Connects the neighbourhood with adjacent western areas and serves to draw people into Manchester South.

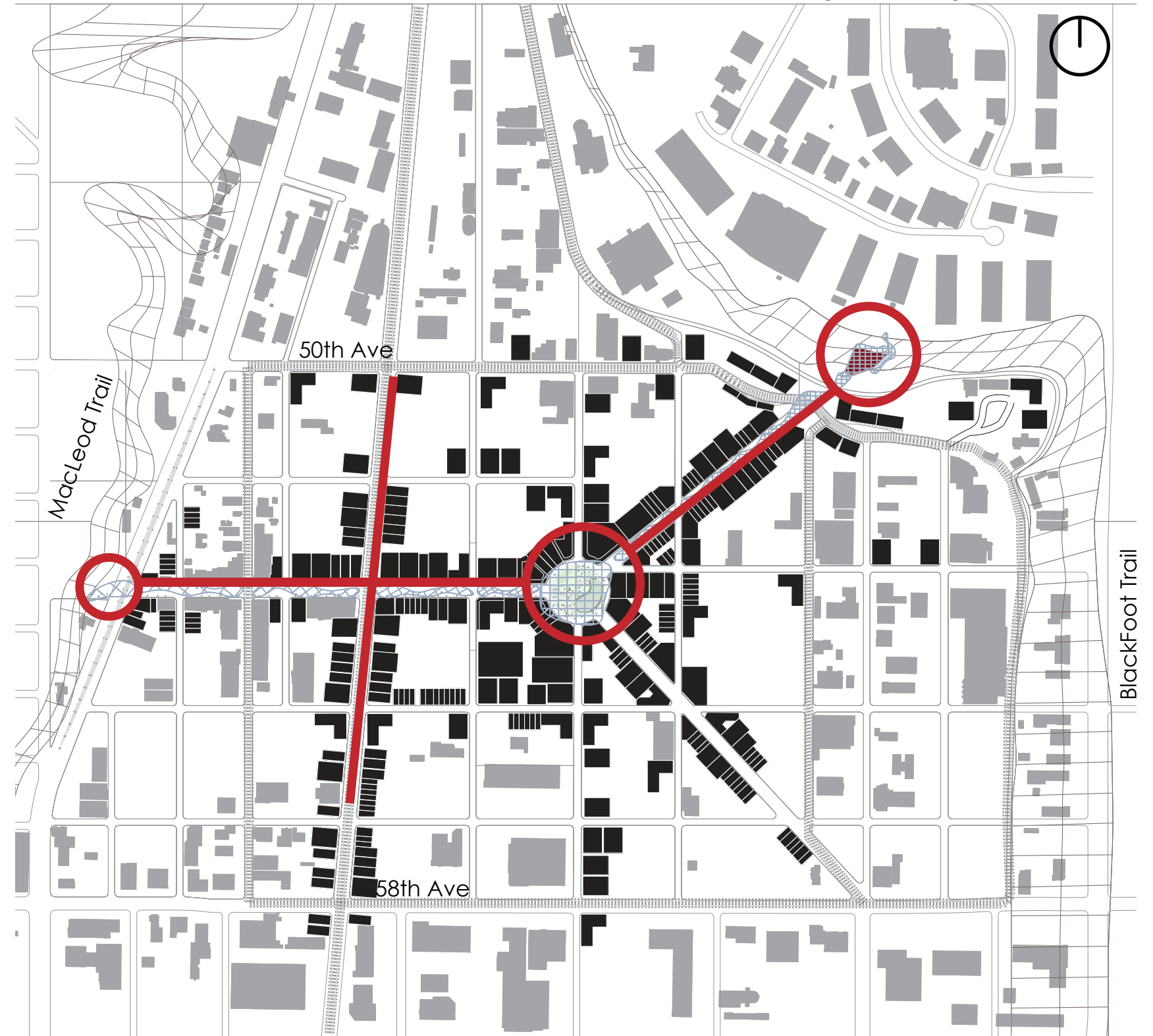
4. Promenades & Plaza

These walking public spaces are a key to commercial activity and post-carbon use in southeast Calgary.



Manchester South Logo

Proposed Master Planning and Design Interventions



PRECEDENTS

Several precedents were examined to help inspire our designs, as well as to showcase working examples of elements within our designs. The most relevant and interesting precedents are examined here.

The main goal of our design interventions is to provide the seeds that will change the nature of the neighborhood from one of low-density industrial activity into a vibrant, post-carbon, multi-use area. Conversion of industrial areas into residential and commercial areas is a common modern phenomenon – in Malmo, Sweden, old dockyards (the ‘Western Harbor’) have been converted into a residential community, one that has very low environmental impacts. This area is 25 ha in size with a population of 10,000 residents and further provides opportunities for an additional 20,000 employees and students. Access to the development is geared completely towards pedestrian and public transport. Buildings and green spaces are themselves designed to be environmentally conscious, showcasing permeable surfaces and efficient energy use. Our neighborhood will have many similar elements to Malmo, but will incorporate small-scale light industrial activity as well.

We expect our transportation hub to be busy - a gateway into our vibrant neighborhood of Manchester South. Inspiration for such a design was found in the Shibuya station in Tokyo, Japan. Shibuya is one of the busiest stations in Japan, and yet the architecture is open and spacious, giving the rider a sense of the streets above (also among the busiest in Japan). The station has many energy saving features, such as a natural ventilation system, and water cooling instead of air-conditioning. While our hub won't be as busy, we hope to engender a sense of place with the architecture, whilst remaining as green as possible.

Our main promenades will be important social spaces for the community, and we hope to keep them, along with our plaza (into which they feed), active and enjoyable year round. We propose to use a canopy system similar to that devised by Deborah Moffat in Milan, to help control sun and to keep the spaces sheltered. Our design goal is to make these avenues, plaza and gateway as vibrant as the tree-lined Las Ramblas, in Barcelona, Spain.

The greenways that connect our neighborhood will be one of the key elements to keeping the community vibrant, attractive, and environmentally conscious. Urban greenways in many European cities incorporate trams, pedestrian and bicycle access in one area, creating an interesting, clean, low-carbon impact space, which we hope to emulate in Manchester. We also draw upon precedents in the City of Portland, Oregon, such as including greenways as a vital component in any vibrant urban atmosphere.

Malmo, Sweden



Milan, Italy



Tokyo, Japan



Barcelona, Spain



Grenoble, France

BUILDING STRUCTURE

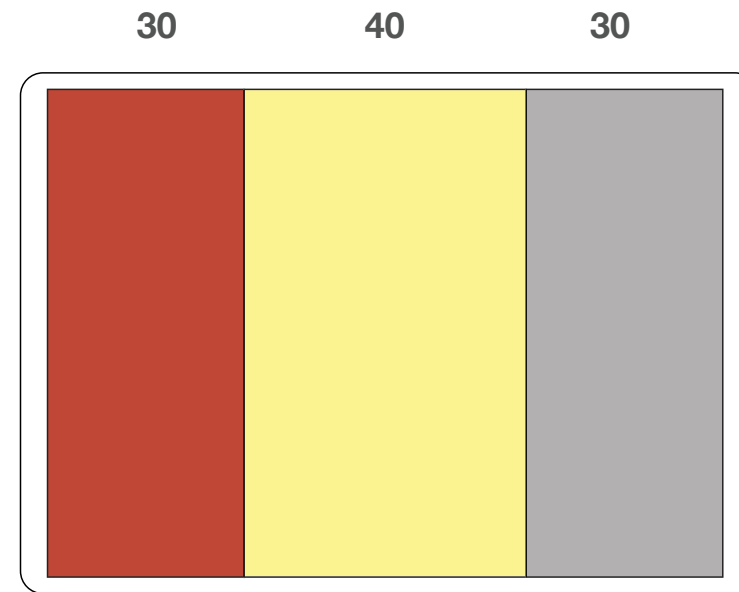
Presently, Manchester South is dominated by both commercial and industrial buildings, corresponding to a low UPHA (Livable Units/ Hectare) of 1.72. Our intention is to design housing opportunities that accommodate an average of 300 UPHA across the community. This proposal would increase the current residential population of 611 individuals to approximately 34,320 individuals. To accomplish this goal and keeping in mind that 40% of building surface area are for residential use, we propose that future building requirements should follow mixed-use practices. Individual buildings will not be single use (such as industrial or residential only), and instead allow for multiple uses on different levels within the building.

Instead of zoning in planview, Manchester South proposes a 30-40-30 proportion partitioning mixed use concept across an elevation view. To achieve this goal, Manchester's industrial sector should be encouraged to create and renovate buildings to interface with the public realm as a means to promote both their products and their role within the community. No new building should be over four stories tall, which increases natural light in the community, which when combined with an increase in UPHA will also ensure a consistently dense fabric to the neighborhood.

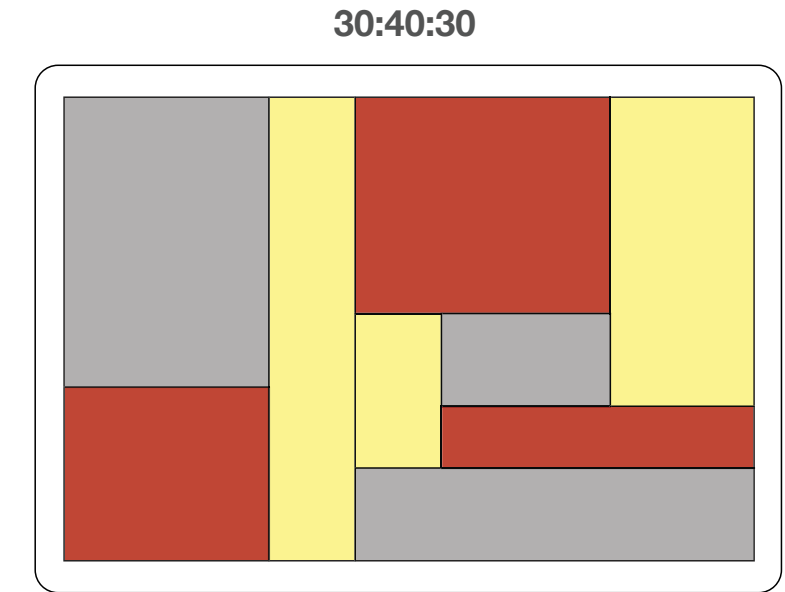
In lieu of these concepts, affordable and unique housing opportunities will arise, allowing for new families and immigrants to move into the area.

To embellish the existing industrial attitude of Manchester, specific materials should be used to design building interiors and exteriors. These could include brick, gritty concrete, metal siding, glass panes, and open beams.

Environmental considerations should include that all new and retrofitted buildings follow LEED platinum standards. For example, "green" rooftops where trees, grass & shrubs, or fruits and vegetables are planted; rain barrels that collect rain water to reuse on roofs; energy efficient heating and lighting from solar panels; energy efficient insulation procedures. Manchester 2039 will be a community with light industrial as a main component.

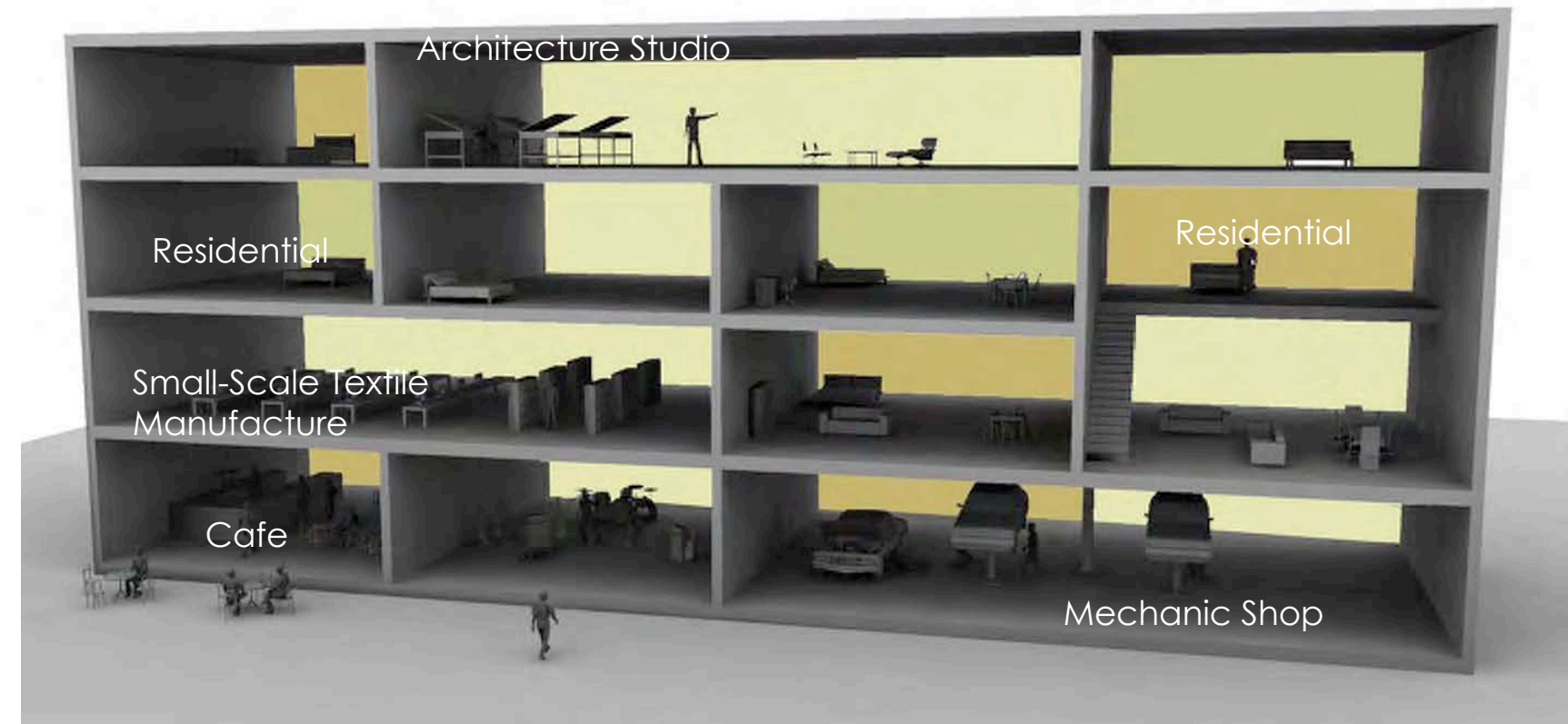


Normal Zoning - Commercial, Residential, Industrial - Plan View



Proposed mixed-use Zoning Commercial, Residential, Industrial Section View

Sample Building Showing Manifestation of Mixed-Use in Elevation View



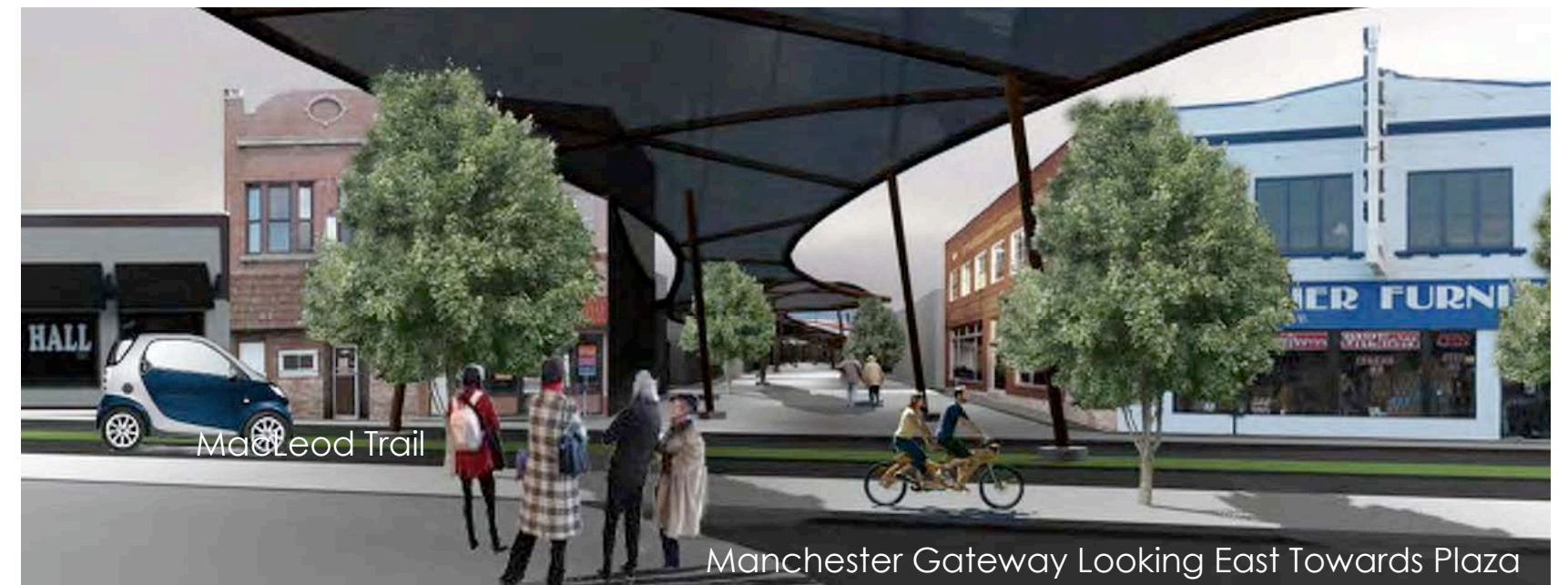
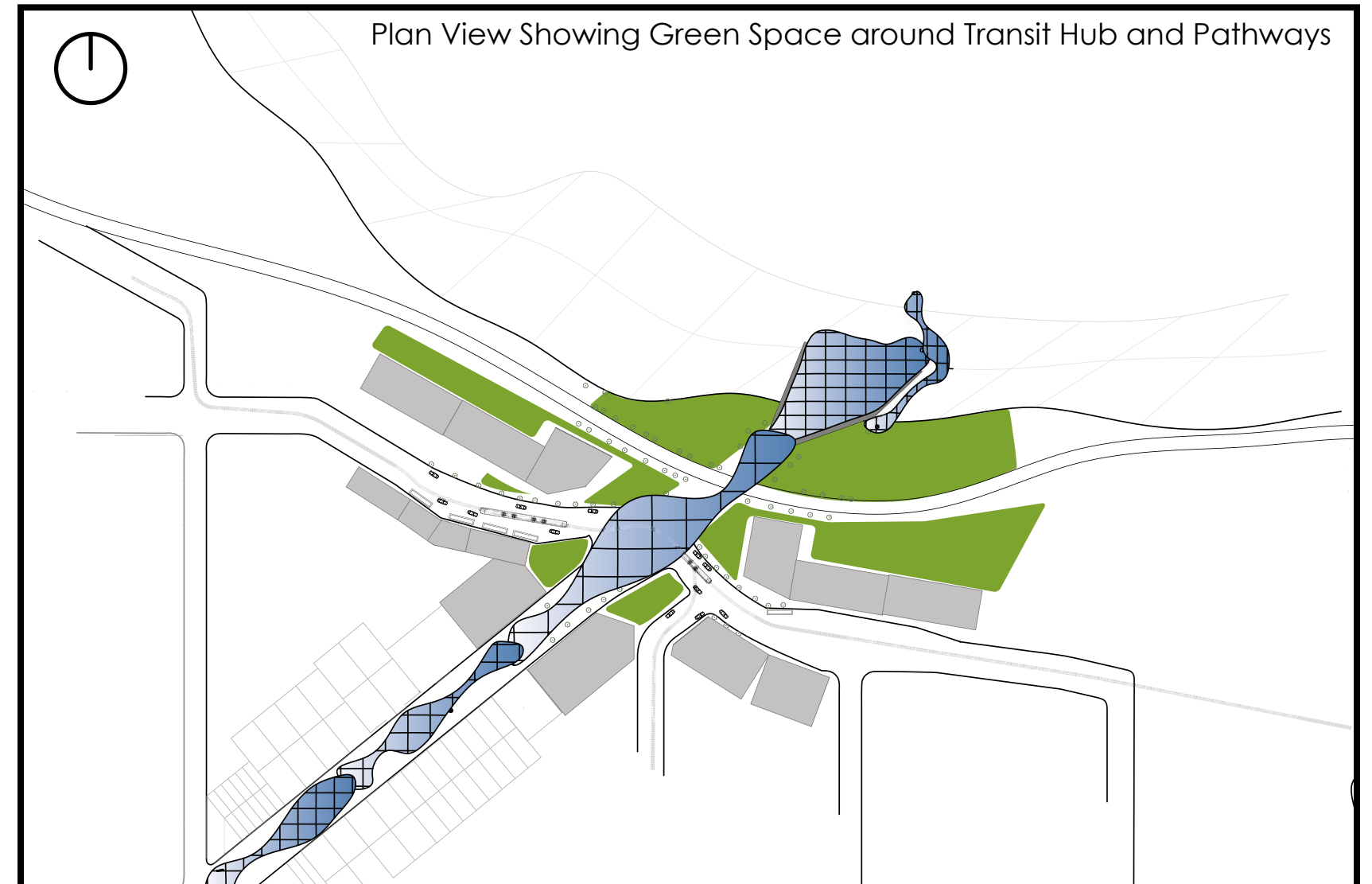
INTERSTITIAL SPACE

Public spaces in our neighborhood are essential to achieving our master planning goals. Three major interstitial space types will be discussed that include streets, greenways, and parks. To support our main design goals, these spaces will address environmental considerations, preserve the industrial character of Manchester and inspire a sense of destination for residents and visitors alike to the community.

First, streets should encourage multiple modes of transportation. Along major car thoroughfares, sidewalks should be widened to allow for pedestrian movement. Along streets, commercial businesses and community amenities should be established to nurture services and facilities that are appropriate and needed to serve the community and adjacent neighborhoods. This can be done, for example, by attracting day care facilities in support of residents and employees and by sighting schools to accommodate growing families. The main promenades, which are only open to non-motorized traffic, will promote a rich, diverse, active pedestrian life by encouraging smaller retail spaces on the ground floor of buildings and establishing retail corridors along the walkway. The industrial character of Manchester can be communicated along streets by the design of particular public amenities such as benches, transit stops, light posts, mailboxes and bike racks. To satisfy post-carbon goals, street surfaces should be reasonably permeable, allowing for water to filter back into the water table. Native trees and plants should be used to outline streets.

Second, greenways should again be a place for multi-modal of transportation with intensive advertising as pedestrian walkways and bikeways. Streetcars will run along greenways and major roads, serving as another option for residential commuters, sightseers and recreationalists to get around town. Greenways will not only connect areas within the community, but more importantly, in the larger context of the City of Calgary. Connectivity of "green" or natural areas promotes recreational opportunities and ecological resilience, both of which are important within an urban setting. Certainly, the need to monitor and enforce safe and convenient pedestrian/cyclist access should be provided through ample signage and lighting. We foresee these interstitial spaces as not only providing access from one location to another, but as places where community members spend time to relax and appreciate life. Some examples include, pick-up games with others, family picnics, sun-bathing or reading a book. Industrial public amenity accents would help bind these greenways with the overall allure of Manchester while providing noise reduced, open spaces.

Finally, public parks can provide many of the amenities of greenways and create additional open spaces in the community. Open spaces suggests a more safe and relaxed community that allow for recreational opportunities for all ages. Similar industrial accents found in greenways would provide connections to the overall community character. By introducing community gardens, playgrounds, and public restrooms, these areas could serve community members well. In addition, they could serve as safe-havens for native vertebrate and invertebrate taxa (insects, birds, mammals) in an otherwise urban landscape.



CIRCULATION

As Manchester transforms into a post-carbon, mixed-use area by 2039, multi-modal transportation must be considered and offered to accommodate resident and worker needs. Example questions regarding circulation through Manchester could include: "How do I move my products across town?" or "How can my family go somewhere nearby to enjoy time together?" or "How can I get to work without adding to carbon outputs?" or finally, "How do I get across town the fastest and cheapest?" All of these questions can be met by providing safe, efficient and economical modes of transportation. We took people's needs, an overall post-carbon strategy and, the industrial character of Manchester into consideration to design effective movement of people and products through the community.

Five modes of transportation will occur across Manchester South that we anticipate will compel behavior change from carbon-dependant systems to green, sustainable practices. These modes will include the automobile, light-rail transit system (LRT), streetcars, bicycles, and walking. All modes of movement were considered when designing our new transportation hub. Using the hub as an initial point, we have designed streets, walking promenades, greenways, and depot centers to facilitate multi-modal circulation.

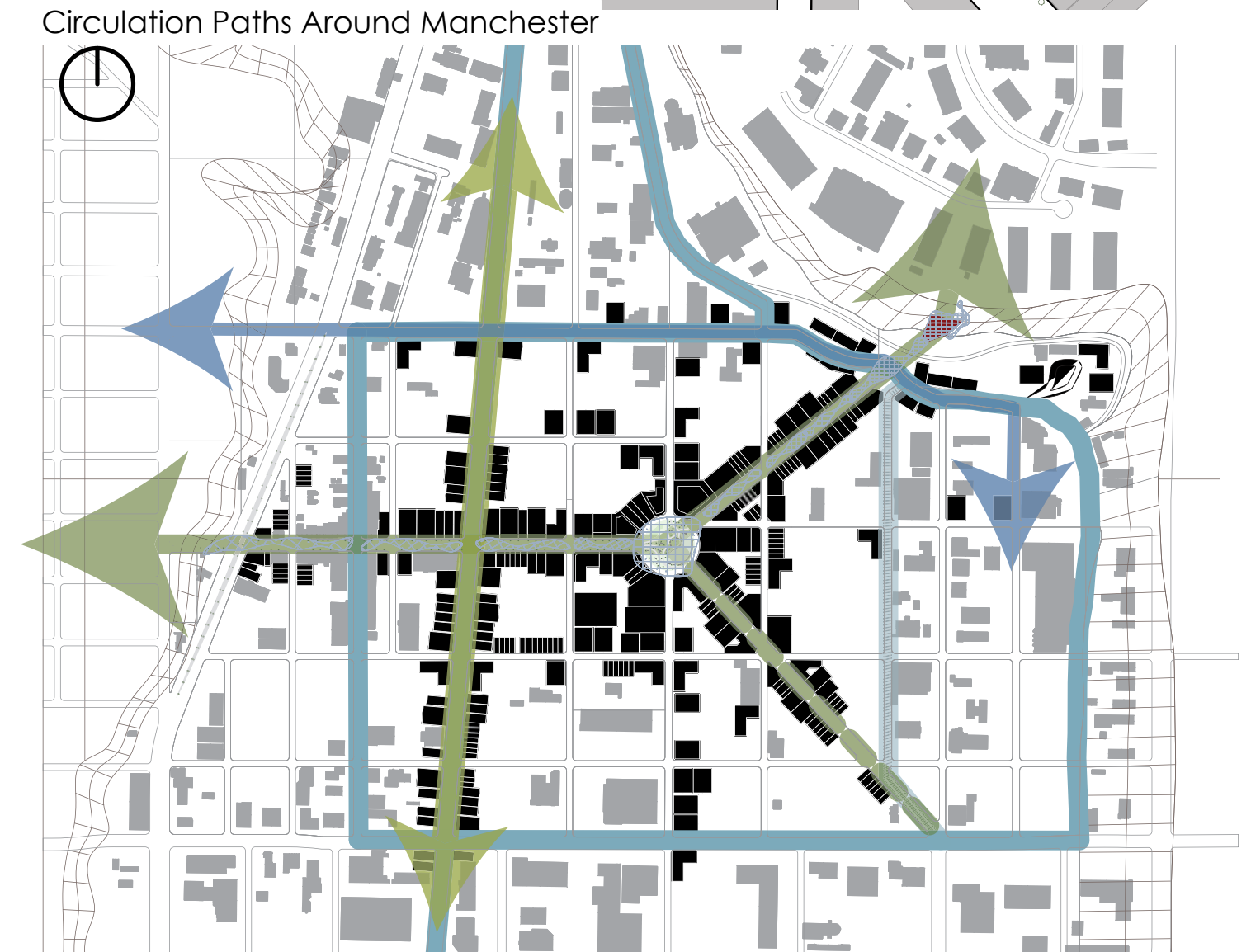
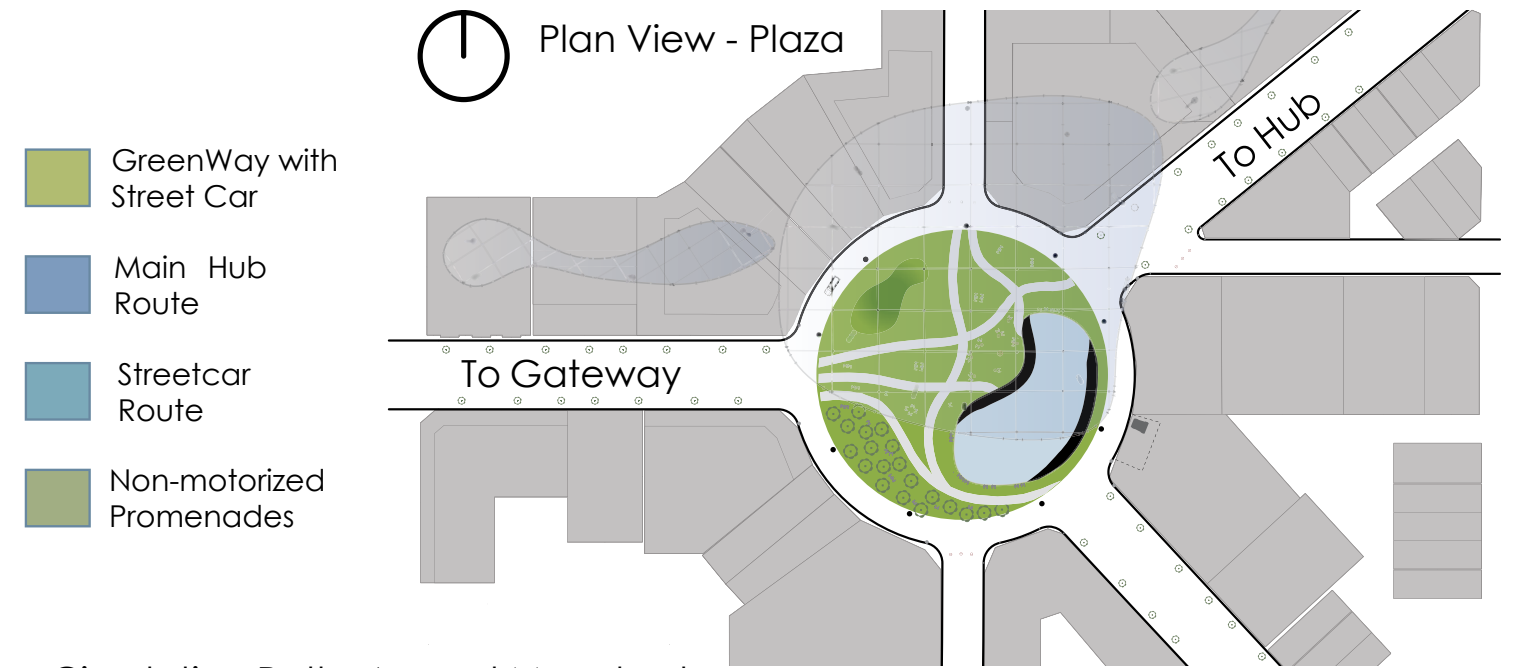
Automobiles certainly will still play a role in post-carbon community development, albeit at a reduced amount. Our design offers both community members and the general public options in using automobiles for everyday use and transport of goods. A car-sharing program will allow for individuals to pick up a car at a depot and drop it off at another depot, in another part of town, thus saving the individual money while reducing carbon output. Major thoroughfares, such as 50th and 58th avenue allow cars and goods transportation. In addition, promenades allow access to emergency vehicles. However it is our goal to reduce the number of cars on the road at any one time by providing the public with more viable, fast and affordable options.

A major transportation opportunity in Manchester South 2039 will be the creation of new stop on the light-rail transit system at a key location in the community. This station will also be a nexus of other transportation methods and we foresee it being used as a jumping off point for future development of a southeast LRT line. The transportation hub will be discussed in further detail in ensuing sections of this document.

Streetcars will be the preferred motorized mode of transportation through Manchester South. Multiple stops along roads and greenways are designed to allow movement around, throughout and to adjacent communities. Streetcars are powered by electricity and are a much more environmentally sensitive mode of transportation than automobiles.

Bicycles are a healthy, affordable activity which adds a recreational component to transportation. Great lengths have been taken to transform Manchester into a bicycle friendly community. Depots at the transportation hub, plaza, gateway, and along greenways allow for a bike-sharing program, providing service to anyone who chooses this transportation mode. Both bike routes and lanes on greenways and roads respectively, connect cyclists to other parts of Calgary and allow users to relax and take in scenery while commuting to and from work. Bike depots and industrial-character designed bike racks will ornament public and interstitial spaces in the community.

Finally, walking is heavily promoted in the design of Manchester 2039. We anticipate that many of the residents will work in close proximity to their homes. In fact, we intend for many of the residents to be able to work out of the same building that they live in. Those that do walk to commute to work can expect a three to four meter wide, well lit sidewalk to feel comfortable when traveling on foot. The walking promenades that connect the transportation hub to Manchester gateway on Macleod Trail, via the plaza, will serve only on-foot, cycling or emergency vehicle modes of transportation. This should allow for a strong and pleasant community atmosphere with many commercial boutiques, restaurants, pubs and specialty manufacturing along the promenades.

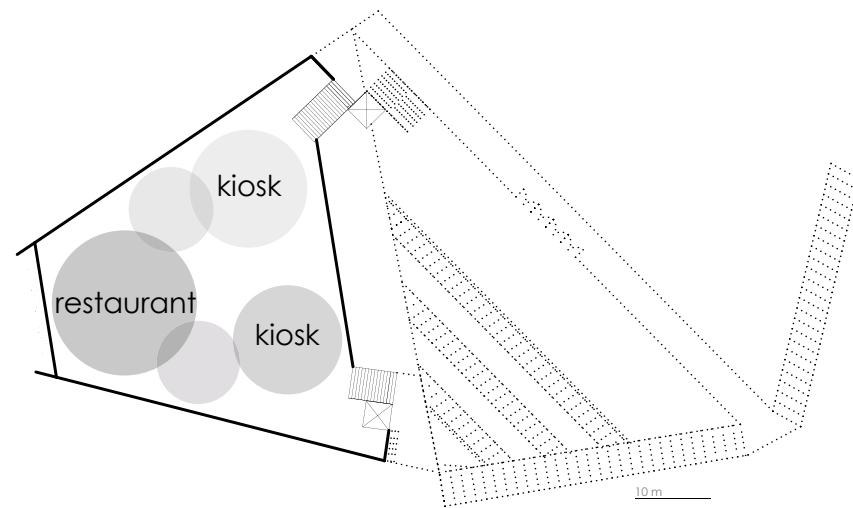


TRANSPORTATION HUB

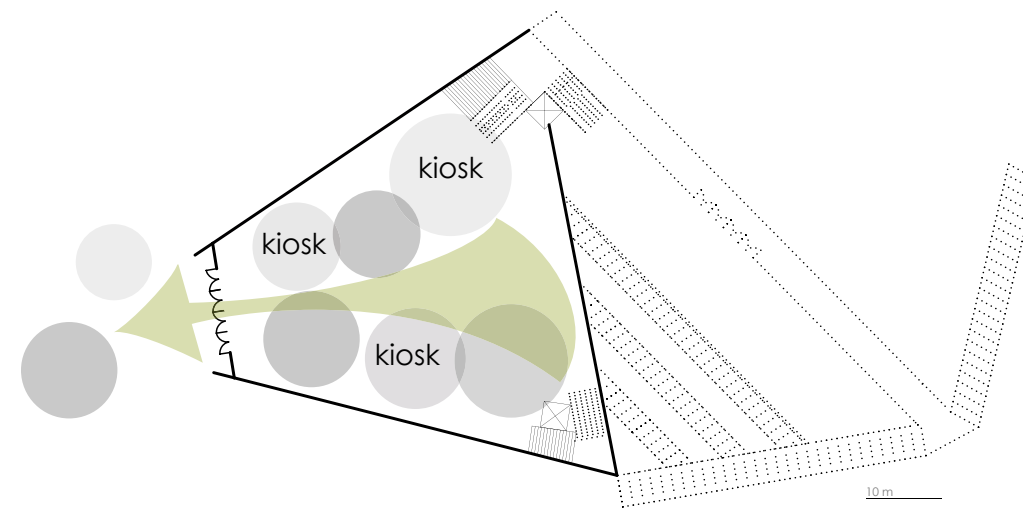
The transportation hub has been designed to introduce tourists, workers, and new residents to the community of Manchester. In its architectural design and structure, it honors the spirit of Manchester and constitutes a central point for all transportation types. It acts as a magnet for movement in and out of Manchester while connecting the community to adjacent areas.

The transportation hub sits on a small bluff in a key location that overlooks Blackfoot Trail and Manchester North to the northeast and looks down into the plaza in the heart of Manchester. This transportation hub acts as the new LRT station, servicing residents and workers citywide. The location of the hub is opportunistic in that it provides the chance to be a significant confluence of LRT lines in the future. In addition, its position connects hikers and bikers to the hub by being located on a major greenway running throughout southeastern Calgary. Furthermore, a newly designed major road running directly to the hub will connect 50th Street with Blackfoot Trail and act as a major artery and drop-off point for vehicle (both automobile and bus) movement.

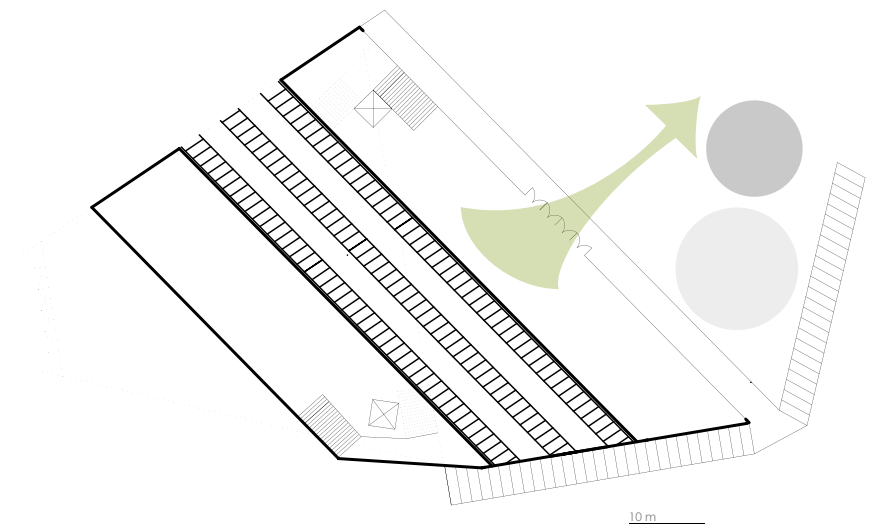
The circulation and movement of people and vehicles uses both above and underground design at the transportation hub. Buses, automobiles, streetcars, cyclists and pedestrians all converge at the front door of the hub. In addition, cyclists and pedestrians can commute using both the greenway and back stairwells that connect the adjoining northern communities. Once people make their way through the entrance of the hub, they travel downstairs where the underground LRT waits. We designed the LRT to run underground as rails can often act as fragmenting features across an urban setting. Passengers coming off the LRT walk upstairs where they are greeted by immense window paneling allowing natural light into the hub. A decorative, window and metal beam supported canopy leading to and away from of the hub allows semi-climate controlled, natural settings. These gestures create an atmosphere not found at other LRT stations. As passengers head outside, walkways, benches, light fixtures, and adjacent park areas highlight the industrial personality and environmental efficiency of Manchester.



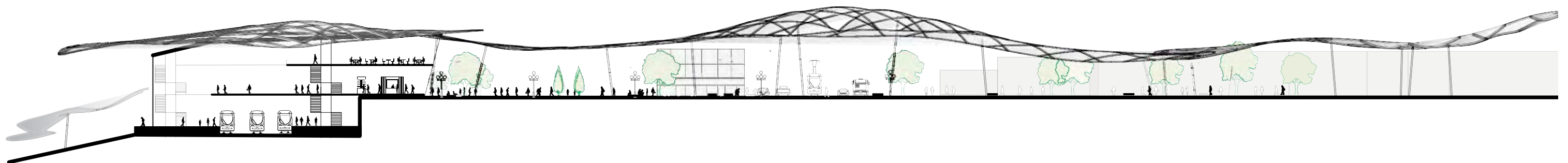
Plan: Mezzanine Level



Plan: Main Level



Plan: Subterranean



PROMENADES AND PLAZA

The walking promenades and plaza are the epicenter of Manchester South. Higher proportions of local, commercial businesses are located on the walkways leading to the plaza. The design details of these areas encapsulate the central themes for Manchester 2039 and underline the areas as the main destination in Manchester.

These areas are where people and personalities unite by either biking or strolling through this rich and textured urban setting. People work, live, entertain, conglomerate and communicate here. People are naturally drawn to other people, and the promenades and plaza allow for citizens to engage in activities during all times of the year.

As an example, the promenades are covered with a glass and metal beam supported canopy extending from the transportation hub, through the plaza and out to Macleod Trail. As such, the canopy covers the plaza completely. Located in the plaza itself are several public amenities including a large ice skating rink that could serve as an amphitheater in the summer. Theatre, games, recreational activities, movies and concerts can be held at this central venue. Public buildings such as a library and art center could surround the plaza. Restaurants, pubs, local manufactured goods, and light industrial products add opportunities for people to frequent. To create a vibrant atmosphere at all times, eclectic residential housing allows for young urbanites, immigrants, elderly and new families to enjoy the atmosphere.

Post-carbon development in this area takes into consideration water quantity and quality issues. Permeable surfaces in urban settings allow for water to more closely mimic natural flow regimes and allow for water to seep back into the water table. In so doing, less pollution accumulates to be carried into the nearby Bow River.

Building heights allow for more natural lighting in the district, an important consideration for mental health of citizens and stimuli during winter months. Native trees and shrubs will line the streets to promote ecological functionality. The personality of Manchester will be personified by the many light-industrial facilities on the promenade and the industrial accents throughout including building materials, benches, light fixtures, bike racks, etc.



GREENWAYS

Greenways are the major connections of Manchester to the adjoining communities of Southeastern Calgary and are designed on presently located transportation rail lines. The main greenway running through Manchester is the present-day LRT right-of-way. Secondary greenways occur on present day Canadian Pacific Railway (CPR) spurs, heading south through the eastern portion of the community. These former right-of-ways will be transformed from linear fragmentations into multi-modal, highly used, environmentally connecting spaces.

Greenways will allow three modes of movement: Streetcars, cyclists and pedestrians. All three modes engage each person with the outdoor surroundings. Two streetcar rails along each greenway will allow for frequent stops for continuous flow of workers, residents and recreationalists. Bike paths and sidewalks will be a major feature on each greenway that can be utilized by cyclists and pedestrians alike. Along the greenways, commercial businesses (perhaps those marketing towards outdoor-like individuals) and residents create an eclectic mix in a sustainable environment. We anticipate young families, the elderly and active people to use these areas extensively.

Our design also allows for a wide-open swath of area for semi-private activities. For example, we expect book readers, picnickers, sun-bathers, gardeners and team oriented games to occur here. The native tree and shrub plantings outlining the open area act as semi-porous barriers to sight and sound, allowing personal space. As throughout the rest of the community, public amenities will tie the industrial character into the greenways as well, by designing light fixtures, bike racks, mail boxes, benches, horse shoe pits with the industrial grit and integrity of Manchester.



Street Furniture - Bike Rack



Street Furniture - Bench



Greenway Appearance



Greenway Appearance



Greenway Appearance

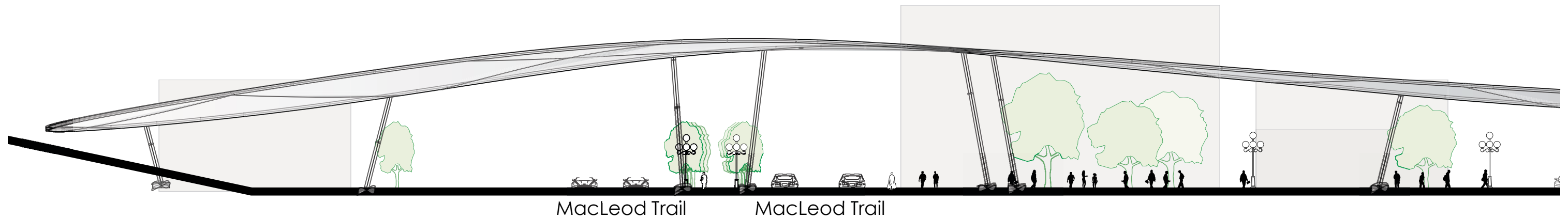
MANCHESTER GATEWAY

To engage Manchester with the communities to the west, a gateway on Macleod Trail leading into the community will encourage movement into the heart of Manchester. Presently, Macleod trail is a major vehicle thoroughfare for the entire City of Calgary. The vehicle-based quality of the street will evolve into a less harsh environment by facilitating pedestrian use.

We promote this goal by expanding sidewalks and develop cycling paths down the middle of the road. This will make MacLeod Trail more amenable to the character of the new Manchester neighborhood.

We project that the myriad of commercial shops, restaurants, etc. will relocate inside the gateway along the pedestrian walkway, leading to the plaza. We foresee the transportation hub and plaza becoming more lucrative for businesses, since they would situate themselves closer to areas of high human use.

The glass and metal beam support canopy will cover the walkway and extend over Macleod Trail. We envision that this gesture will act as a beacon into the heart of the community, especially as pedestrian use will increase across the overall area. In this manner, a clear, concise and warm extension occurs from the western portion of Manchester, through the plaza, to a central point of human movement and connection in Calgary, the transportation hub.



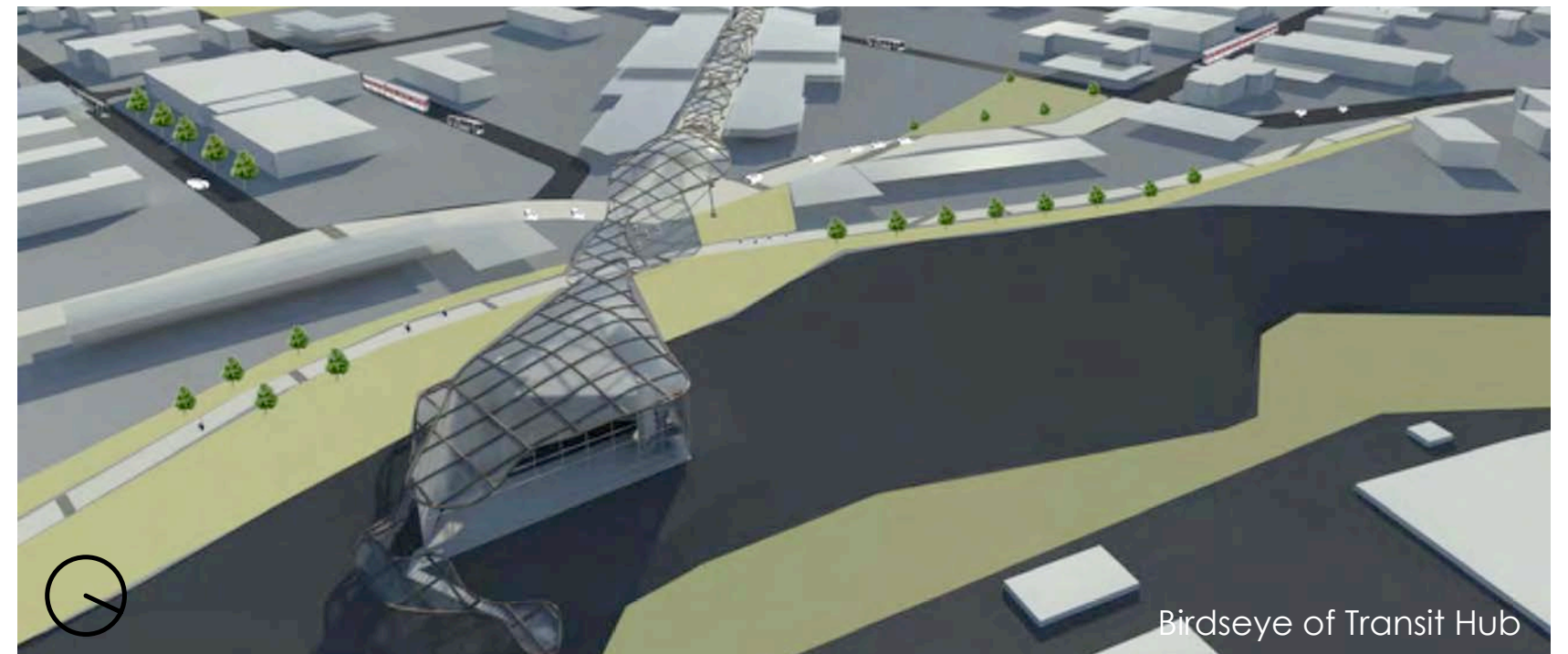
CONCLUSIONS

Presently, Manchester South is a fragmented, commercial and light-industrial portion of Calgary. Its history and industrial flavor exude the determination of a fledgling city in a harsh and beautiful environment. Since then, Calgary has grown up and it's estimated the population will continue to grow past the presently estimated 1.1 million individuals. Over the next 30 years, it is expected that 500,000 more people will arrive who will need to find housing and jobs. Many newcomers will either be immigrants from other countries or young couples starting new families. It is the intention of both City of Calgary officials and this project to guide planning efforts so these groups decide to plant their roots in already created communities that offer multiple opportunities.

Presently, Calgary struggles to create distinct community niches that offer multiple transportation methods through both the city and each neighborhood. Calgarians realize that change and growth are inevitable and as such, strive to find options to this process. They realize that growth can develop directionally, either inward or outward. Inward growth and density build-up can create opportunities to find a greater social network and community atmosphere. Outward development likely will impact many of the beautiful natural systems that first brought them and keep them here.

Many entities including the City of Calgary, the Province of Alberta and non-profit organizations have spearheaded the commitment to plan for a vibrant, economically profitable, and environmentally conscious Calgary in the future. As citizens of Calgary, our EVDS 702: Advanced Environmental Design in Practice group also has a stake in the future of the City. In addition, we have been afforded this unique opportunity to make bold designing gestures that could help future planning efforts. We see the changes that are taking place; we note the challenges and issues that are faced as the population expands and diversifies, and we embrace them as inevitable. In the wake of this, we find it crucial to infill portions of the Southeastern portion of Calgary, namely Manchester South, by creating high density, mix-land use development which offers multiple options for transportation.

To undertake such an effort, we believe that master planning is important to provide guidelines and regulations in influencing future growth. Our overall planning effort calls for a 30-40-30 partition of mixed -use (divided as commercial, residential, light-industrial) development. Our group focused on the design and resolution of four major areas that would serve as catalysts for expected growth. These areas would provide opportunities for citizens from various backgrounds and ages to enjoy a meaningful, eclectic and sustainable community. Using our 30-40-30 concept and major resolved efforts, we feel that the community of Manchester South will grow organically. We feel that connecting the community from Macleod Trail to Blackfoot Trail would stimulate community members to get out and become a part of their community. We did not attempt to direct where actual commercial, residential or industrial sites were located, but rather want to provoke community support by keeping the industrial character of the neighborhood. Citizens of present day Manchester enjoy the flavor of the area and we felt that it's a character that should be celebrated. By resolving some major design opportunities, utilizing environmentally conscious techniques and celebrating the industrial character, we feel that Manchester South will transform naturally into a vibrant place that will serve as a beacon for future planning efforts in Calgary.



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