

The Impact of the City on Human Perception

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Statement of Purpose

Question/Theory:

The practicum examines the impact of the physical layout of cities on the way we perceive them. In particular it examines the influence of natural, social, and built elements in perception of the downtown core of Winnipeg. It goes on to propose an urban design strategy for the downtown core, supported by supplementary urban design guidelines.

Goal:

The goal for this practicum is, first, to establish a design strategy for the downtown core of Winnipeg and then to review the urban design guidelines which are currently used to direct the development of Winnipeg's downtown. Recommendations will be made as to how the guidelines might be amended, revised or supplemented to assist the growth of a successful, and diverse core projecting to Winnipeg's unique urban identity.

Objectives:

Objectives of this practicum are to compare and contrast the characteristics of organic European street layouts with the orthogonal North American layouts as a means of evincing transferable qualities between the layout types. Analysis of the structure of the downtown core will then be done with the objective of identifying unrealized opportunities and creating a set of supplementary urban design guidelines as a means to enhance the character of the city.

Rationale

One of the principal issues to be addressed is the understanding and the development of Winnipeg's unique character. Norberg-Schulz (1980) states that "our everyday life-world consists of concrete 'phenomena'... But it also consists of feelings. This is what is 'given', this is the 'content' of our existence." Norberg-Schulz's point is a driving force for the research,

since dwellers are interconnected with their city, the research conducted for this practicum is intended to develop proposals that would enhance the character of Winnipeg, and strengthen the relationship between Winnipeg and its dwellers. The practicum will demonstrate the application of these guidelines to a selection of sites in the city, illustrating resultant changes of character, and the vision of a diverse environment in the downtown core. And it will be argued that the potential exists for creation of more robust guidelines that recognise and promote Winnipeg's specific urban character.

Methodology

The research for this practicum will be conducted through an interpretive approach. The data will be gathered by researching conceptual design methods in established European cities, utilizing journals, readings, photography, site visits and drawings. Case studies of a European city, like Porto, Portugal, will be done as a means to research urban design practices of an already robust and diversified urban environment. This will then be compared and contrasted to Winnipeg in order to reveal urban design practices between a "typical" European, and a "typical" North American city. A final study will be done on Winnipeg's current urban design guidelines to further understand the methods of development in the respective cities. This will then develop the theoretical guidelines which will be amended to strengthen the development of the urban environment. Following the completion of the urban guidelines, a demonstration of how these guidelines operate in practice will be tested on sites located in the core of Winnipeg.

People should feel that some part of the environment belongs to them, individually and collectively, some part for which they care and are responsible, whether they own it or not. (Jacobs & Appleyard 1987, p. 441)

The Impact of the City on Human Perception

*A Landscape Architecture Design Practicum
by Evan Gomes*



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00

Introduction

PREFACE

The research is based on the question whether urban design can (and should) respond to the known dimensions of human perception. In particular, it examines the influence of natural, social, and built elements in relation to street patterns. This study applies this examination to downtown Winnipeg.

It is argued that the most critical issue for modern day urban design, especially in younger cities, is the lack of understanding of the relationship between the street patterns and human perception, particularly emotions and behavior. The practicum examines older, diversified cities for lessons that might be applied to younger cities, in this case, Winnipeg.

Our current methods on urban development stem from the movement of New Urbanism. The movement aims to develop cities that are user friendly, walkable, and functional. It is argued that the understanding of New Urbanism is more in the direction of the physical components of the urban environment, or the *hardware* of the city, such as building elements, relationships between built form and townscape, proportion and scale, or programming of new developments. However, the urban environment is much more than the hardware. It also involves human emotion, thoughts and behaviors. In other terms, the *software* of the city. This is the “landscape” of the urban environment. It is argued, that the relationship between the hardware and the software of the city is where perception is formed.

New Urbanism has yet to address the key component which directly impacts human perception in relation to the urban environment. The understanding of what influences thoughts, behavior, movement, and culture, is unconvincing, as human perception and emotion is not shaped solely by the physicality of the city. The current understanding of New Urbanism is to “wrap itself around a concept of the physical form of the city that had little to do with the rapidly changing urban landscapes it was meant to address” (Soja 2009, p. 256).

Human perception is in a constant interrelationship with

the urban environment, which materializes both on a conscious and subconscious level. Lynch (1960) explains that the images we create in our mind are a two-way process which occurs within the observer and its environment. He further states that the environment suggests patterns and relations, “while the observer organizes and endows with meaning what he/she sees” (1960, p. 6). With these key suppositions as the foundation on how cities function, the practicum addresses possible approaches to urban design that aid the evolution and further development of cities. More specifically it will examine ways to strengthen and diversify the perception of downtown Winnipeg both at the level of individual consciousness, and the collective consciousness.

TERMS

Before continuing, this section will outline the five key terms applied in Kevin Lynch’s *The Image of the City*. According to Lynch, these five elements are major contributors to the image, character and perception of the city.

Districts: These are defined as medium to large-scale sections of the urban environment. They are also characterized as two-dimensional sectors where the observer mentally enters “inside of”.

Paths: These are the channels along which the observer commonly or potentially moves. These can be labeled as streets, walkways, transit lines, canals, and railroads. Paths are considered to be the principal element of the environment which the observer uses to frame his/her image. Paths organize the environmental elements by providing hierarchy and legibility.

Edges: Linear elements which are not utilized as paths by the observer. They are considered the boundaries between two areas which break up continuity in the environment. Edges can be labeled as shores, railroad cuts, edges of developments, and walls.

Landmarks: A type of a point-reference in the urban fabric. The difference in this point-reference is that the observer does not “enter” the landmark, rather, the landmark is an external reference point. Some landmarks are distant, seen from many angles and distances, creating reference points in different parts of the urban fabric. They can enforce the navigability of an urban environment, by providing visual cues and facilitating the movement of the observer within that environment.

Nodes: Considered as points in the city, strategic spots which an observer can enter, which are the main foci to and from which he/she is travelling. Nodes can be classified as junctions, places of a break in transportation, or crossing or convergence of paths. They may also be concentrations of environments which gain their significance from the same use of physical character.

It is argued that the city consists of two components, the hardware, and software. The hardware of the city is a much easier component to address, as it comprises the physical elements of the city. The software, is less tangible, and reliant on a phenomenological outcome derived from the processing between the hardware and the software. In other words, it is created by the observer. How do we identify with cities? Kevin Lynch (1960) concludes that humans perceive five primary types of physical element. Each element plays a role in creating a set of collective experiences, while the relationship between all five elements creates an overall urban image. Using these five elements as the basic components (hardware) of urban environments, the practicum will examine the hardware and software of the city, and specifically, it will examine nodes and landmarks.

01

Principles

EUROPEAN TOWNSCAPES LESSONS

Organic Street Layouts

History

“Porto is a collective work, not accomplished at a particular moment but the result of successive contributions” (UNESCO 2004)

As cities progress through time, their history takes physical form and becomes embedded in the urban fabric. As a result, street patterns express evolving methods of transporting goods and people. Porto is an excellent example of a city that has undergone a thousand years of growth, and change. The result of this, is a robust, rich, and diversified city filled with stories of natural, social, and built elements which give the city a unique character and form.

Porto, contains evidence of urban development from the Roman, Medieval, and even the Neolithic periods. Furthermore, the rich and varied civil architecture of the historic centre expresses the cultural values of succeeding “periods such as the Romanesque, Gothic, Renaissance, Baroque, neoclassical and modern” (UNESCO 2014).



Figure 1.1: Downtown Porto in context with surrounding urban fabric.



Vastly different methods of construction, transport technologies and design styles in each era, give Porto a rich and diversified urban environment. The unique characteristics of the city are formed by time, by its intricate landform, complex grid, and its relationship to the Douro River. All of this results in a representation of “a successful interaction between the social and geographical environments” (2004).

Porto’s economic strength arose from the surrounding vineyards. According to UNESCO (2004), “English entrepreneurs invested in the vineyards of the Douro valley, to supply the huge English market, and Porto, as the port for the export of these wines, benefited greatly, as the wealth of Baroque buildings in the town attest.” Due to this exportation, the economic viability of the city allowed it to grow and develop over many different periods. Because the city maintained growth during these periods, the urban fabric is filled with history and diversification. Tate (2010) argues that one of the meta-criteria for a developing city is its economic viability (p. 35). Porto is an exemplary city which supports Tate’s argument. The many layers within the urban fabric, reflect a city which was economically stable and grew steadily over a long period.

European Street Patterns (Porto)

“The pedestrian network links the town together in a variable pattern: it links place to place by steps, bridge and distinctive floor pattern, or by any means possible so long as continuity and access are maintained.” (Cullen 1971, p. 54)

The street patterns of a city are a direct result of the movement and the transportation methods used within a given time period, as well as influences of landform and water bodies. European cities, being much older than North American cities, generally manifested an organic street pattern, in part due to transportation being by foot, horse, or horse and carriage. The outcome of these transportation modes was a street pattern reflective of human scale. By contrast the North American standard model is highly gridded, which is a direct response

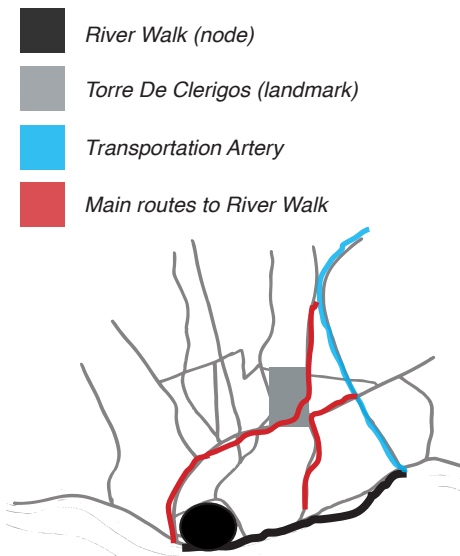


Figure 1.2: Porto cognitive map showing main routes, landmarks and nodes



Figure 1.3: The irregular street patterns of Porto

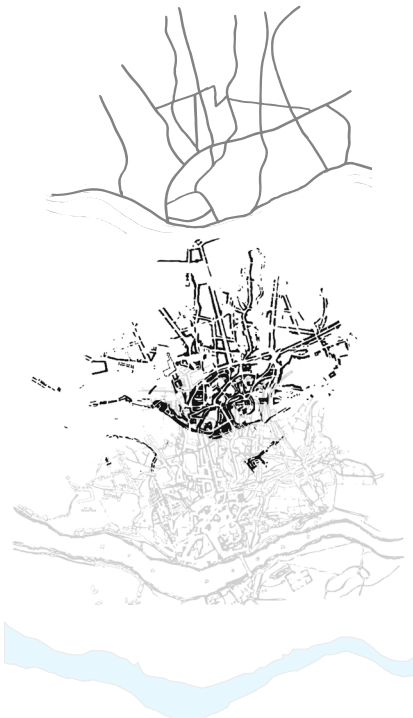


Figure 1.4: Axonometric drawing showing main arterial roads, urban form pattern, and river.

to modern methods of transportation, predominantly the motor vehicle. This results in a street pattern, and in turn an urban environment, that is a direct response to the movement of vehicles rather than humans. The European street pattern is strongly evident in Porto, and is an excellent example of what Tate (2010) labels the “Old World” structure of Europe (p. 17). The Porto street pattern consists of irregular city street layouts (see Figure 1.2).

The irregular street pattern is not only derived from the transportation methods used, but is also a product of geomorphology. Jacobs and Appleyard (1987) emphasize the need to develop environments which are more self-reliant in their use of land and scarce resources (p. 443). Porto’s street pattern shows this level of understanding of the landscape by adjusting to its geomorphological constraints, resulting in streets that are, again, irregular, and less rigid. Krieger (2009) explains that “metropolitan growth requires dealing with needs - like land conservation... And transportation” (p. 123). Porto’s development highlights the understanding of these elements resulting in its organic street pattern.

This level of understanding in a city’s development demonstrates humans working with nature, as opposed to a domination of nature. Lynch states that the urban environment should be “fitted” for its people. That is to say, “the degree to which the form and capacity of spaces, channels, and equipment in a settlement match the pattern and quantity of actions that people customarily engage in” (Lynch 1981, p. 113). This means the overall street pattern of Porto is an outcome of the actions and engagement of the people in the environment, throughout the years of growth and development.

A Polycentric Environment

“Looking at cities can give special pleasure, however commonplace the sight may be. Like a piece of architecture, the city is a construction in space, but one of vast scale, a thing perceived only in the course of long spans of time. (Lynch 1960, p. 1)

As previously stated, the development of cities is reflected by their movement patterns as they progress through time. Cities develop from pedestrian movement by foot, to movement by horse, then canals, inter-city railways, trams and eventually motor vehicles and rapid transit systems (Clark, 1958), and Porto's street pattern is a reflection of such a progression. However, there are other factors which contribute to the overall formation of the city's street pattern. This includes, but is not limited to, political, cultural, and financial forces. These factors shape the way a city is developed, as well as the way one perceives the environment. In the case of Porto, because the city had strong economic growth, it was able to grow in many time periods, resulting in different political forces, aiding the growth of a specific

Figure 1.5: Overall urban fabric of Porto, expressing the irregular street patterns



design style. The result is a polycentric environment, where the overall physical structure of the streets, especially the main arterial roads, reflects movement patterns over time. According to the European Metropolitan Network Institute, “the current state of metropolitan integration is largely steered by the suburbanization patterns that have developed it” (Meijers, Hollander and Hoogerbrugge 2012, p. 9). The main arteries of Porto connect the urban fabric to the Douro River (see Figure 1.3). The river was the main port for import and export services. Thus, the main street pattern of the city was generated by movement to and from the river. This is emphasized by the point that the movement of business, people, and the economy of Porto, has led to a highly integrated criss-cross street pattern (Ibid, p. 9). The result is a polycentric street pattern, where the city allows dwelling in various spaces.

Landmark & Nodes

“A workable image requires first the identification of an object, which implies its distinction from other things, its recognition as a separable entity. This is called identity...” (Lynch 1960, p. 8)

Porto’s environmental diversification is much more than the result of economic, cultural, and social factors. The city’s diversity is also a result of the relationships between the physical components within the urban environment, especially the strong, symbiotic relationship between the landmarks and nodes of the city.

The city’s skyline has two main landmarks which stand out, along with two major nodes which are in close proximity to each other. These four elements provide two different functions in the urban fabric, but together they create one seamless experience. The major landmarks are situated such that the observer has a visual constant almost anywhere within the urban environment. The landmarks not only provide a grounding mechanism to the observer, but also function as a guidance element to aid viewers through the city. While the nodes complement the landmarks by providing focal and resting points situated near these



Figure 1.6: Torre De Clerigos, a landmark which is easily visible in the urban fabric of Porto

landmarks, creating a sense of connection to these physical elements. According to Norberg-Schulz (1980) “our everyday life-world consists of concrete phenomena” (p. 6). These concrete phenomena include the landmarks of any given environment. Norberg-Schulz further states that our everyday life “also consists of feelings”, these feelings are a product of the composition of the physical structures in the urban fabric in concert with the nodal spaces, which are dominant phenomena in Porto. Jacobs and Appleyard (1987) talk about how “a city should present itself as a readable story, in an engaging and, if necessary, provocative way, for people are indifferent to the obvious, overwhelmed by complexity” (p. 442). In Porto, these nodes allow you to slow down and experience the physical landmarks in the urban environment, which evoke emotions and allow one to create relationships with what is given.

Figure 1.7: Ponte de D. Luis, a well defined and relatable physical feature of Porto's urban environment.



Principles

Nodes & Edges

*“In general we have to emphasize that all places have character, and that character is the basic mode in which the world is “given”. To some extent the character of a place is a function of time.”
(Norberg-Schulz 1980, p. 14)*



Figure 1.8: Porto edge conditions showing use of different levels

The edge conditions of Porto are vibrant and seamless, allowing for a cohesive urban fabric. This is achieved by the consistent use of materials throughout the city. Porto is known for its use of colors on their physical structures, resulting in a rich, visually stimulating environment. What makes these edges so robust is the addition of elements for the observers to interact with. The edge conditions of the public spaces, much like the functionality of the nodes, are primarily structured for the observer to slow down and experience the environment. These edge conditions are designed to change the observer’s perspective of the environment by utilizing levels, colors, and emotions to engage the dweller within the city. Cullen (1971) explains that “any accounts of one’s emotional reactions to positions must include the subject of levels” (p. 38). Different levels within the edges of a space, will result in different possible interpretations of



the space. Cullen expresses that “below levels produce intimacy, inferiority, enclosure and claustrophobia, while the above levels give exhilaration, command, superiority, exposure, and vertigo” (p. 38). Porto’s approach to its edge conditions adds to the robustness of the environment. With the use of levels it allows the edges to function in a multi-faceted manner, providing multi-human interaction. This kind of strategy is what complements the organic street structure of Porto, furthering the diversification and robustness of the urban environment.

As a result, these edges create a sense of curiosity and engagement within the dweller’s subconscious, captivating, and strengthening the perception between the observer and the urban environment. This kind of engagement is a vital principle for human perception. Edmund Burke (1757) explains that “curiosity from its Nature is a very active principle; it quickly runs over the greatest part of its objects, and soon exhausts the variety which is commonly to be met within nature” (p. 162). This validates the argument that if an environment allows for the mind to be curious, the observer will have a chance to discern further meaning in a given place. This results in a stronger connection between the observer and his/her environment.

ORTHOGONAL STUDY

History

“Where urban tradition is weaker and car culture has had more time to develop without major constraints from urban planning, a new type of city develops. This city has no historical model, because for the first time in history pedestrian traffic has been made impossible or superfluous, and many of the other activities traditionally tied to foot traffic in public spaces have disappeared completely.” (Gehl and Gemzøe 2000, p. 16)

The young and modern city utilizes a completely different approach to its development which directly affects the physical street pattern. These cities are predominately found in North America where they are mainly, but not exclusively, designed for the use by motor vehicles. The consequence of this approach tends to be a sprawled-out, gridded city, where the only way to function inside this environment is with the use of a motor vehicle. Winnipeg, is an example of this.

The city is located at the junction of the Red River and the Assiniboine River. Geographically, Winnipeg, is positioned more-or-less centrally between the Atlantic and Pacific Oceans. It is frequently referred to as the “Gateway to the West” (Artbise 2001). Due to its geographic location, Winnipeg is a primary focal point for the extension and development of the transcontinental railways. The city’s fastest economic growth came in the late 19th and early 20th centuries when the Canadian Pacific Railway was commenced as a main import and export network. “The completion of the Canadian Pacific Railway in 1885 brought the city a period of growth and prosperity unequalled in Canadian urban development” (Artbise 2001). This was Winnipeg’s main “boom” cycle, where the core of the city developed due to the economic viability brought from the Exchange District and the railroad. Furthermore, because Winnipeg’s main development phase came from the 19th century, the architecture and design principles within the downtown core, more specifically, the

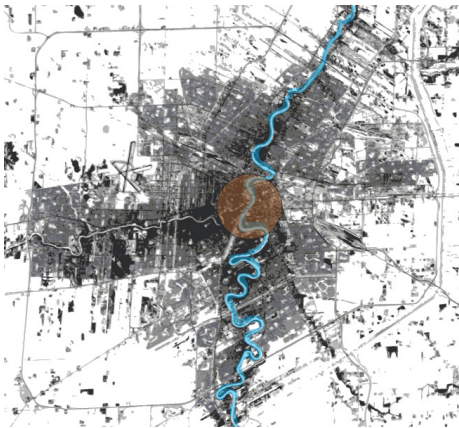


Figure 1.9: Downtown Winnipeg in relation to the rest of urban fabric.

Exchange District, reflect this boom period

Today, Winnipeg is still an important city primarily due to its location and function as a main connection for the distribution of goods. Artbise (2001) emphasizes this by stating that Winnipeg “is still a transportation centre, with extensive rail and air links, the head offices of several major Canadian trucking firms and a Canadian Forces Base”. Due to its various networks and infrastructure, Winnipeg maintains a stable, and diverse economy which secures it from a “boom-or-bust” cycle.

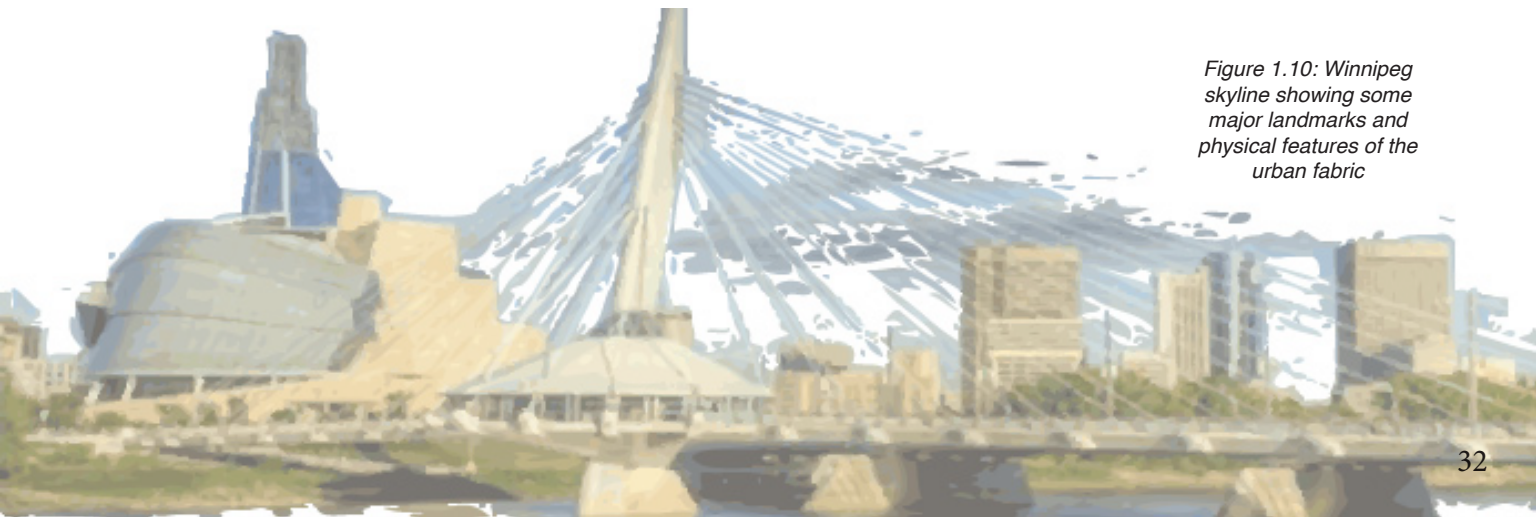


Figure 1.10: Winnipeg skyline showing some major landmarks and physical features of the urban fabric



Figure 1.11: The orthogonal street pattern of Winnipeg



Figure 1.12: Axonometric drawing showing major arterial roads, urban form, and the river

North American Street Patterns (Winnipeg)

“City centers are a sea of asphalt with parking places marking off the space between buildings. Walking is impossible and would also be unreasonable. Distances are too great and the environments an intrepid pedestrian might encounter on his way would be ugly, dirty and possibly dangerous. Such cities are not intended for walking. Sidewalks have disappeared in the city centers as well as residential areas, and all the uses of the city have gradually been adapted to serve the motorist.” (Gehl and Gemzøe, p. 16)

Winnipeg’s downtown street layout includes a few anomalies created by a clash of two grid alignments. The anomalies exist where the two differently adjusted grids meet. Winnipeg has a typical “New World” street layout, where gridded patterns dominate (Tate 2010, p. 17). The beginning of the economic boom in Winnipeg was a result of the trading of goods via the Red River and Assiniboine River. During this period, “the street pattern in Winnipeg was determined by the allocation of land in the early nineteenth-century by the first European settlers on the basis of the French ‘river lot’ system” (Tate 2010, p. 35). The development of the city and its street structure continued to develop throughout the city’s evolution in transporting people and goods. This transition was primarily effected by the introduction of the rail lines. “Commerce centred at Portage Avenue and Main Street, and after the coming of the CPR, industry moved from the riverbanks to the rail lines” (Artbise 2001). This further emphasizes the two types of street patterns, the river lot street pattern, and the orthogonal street pattern. These anomalies result from the city’s different reactions to transportation methods, and movement of goods, which correlates with the growth of economic demands within the city’s growth and development. Clark (1958) emphasizes this theory by stating that “city form is primarily a response to the physical and financial constraints and opportunities created by successive developments in the movement of people and goods.”



Figure 1.13: Overall urban form of downtown Winnipeg, illustrating the downtown grid based on the Union Station and Broadway (A), and, to the north, the river lot system grid perpendicular to the Red River (B).

Major Landmarks

“Dwellers who know the city better thought more in terms of specific paths and their interrelationships. A tendency also appeared for the people who knew the city best of all to rely more upon small landmarks and less upon either regions or paths”
(Lynch 1960, p. 49)

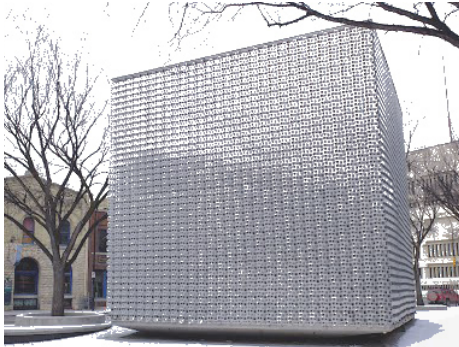


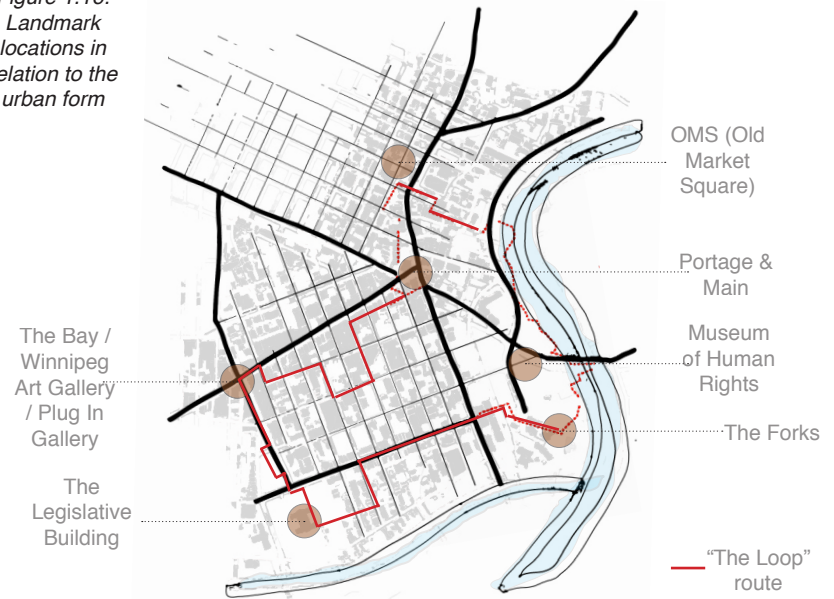
Figure 1.14: The Cube, a landmark and node programmed for music festivals

Winnipeg has developed various landmarks which reflect the growth and evolution it has undergone. A modern example of this can be seen by the construction of The Museum of Human Rights (see Figure 1.15). It is argued that these landmarks are very much segregated by the physical layout of the city. Furthermore, they also lack the ability to create nodal spaces that connect back into the grid to enrich and diversify the urban environment within the downtown core.

There are, of course, a few exceptions which currently function well as nodes and which attain a sense of relationship to their landmarks and to their surroundings. One of them, and arguably one of the most robust spaces in Winnipeg, is The Forks, a post-industrial park with various amenities, functioning as a successful node. However, as previously stated, Winnipeg's physical layout does not integrate these spaces into its urban fabric, simply due to the sheer size of the city. This results in these

Figure 1.15: The Museum of Human Rights, a major landmark and physical feature in the urban fabric of Winnipeg

Figure 1.16:
Landmark
locations in
relation to the
urban form



spaces being relatively spaced out. The second landmark which is also functioning as a robust node is Old Market Square (OMS) which, in the summer, functions as a major gathering space for festivals, music and events. There remains, however, a lack of connectivity back into the urban fabric of Winnipeg.

Jacobs and Appleyard (1987) state that “the scale of capitalism has continued to increase, as has the scale of bureaucracy, and the automobile has virtually destroyed cities as they once were” (p. 440). This is what has essentially destroyed the integration of public spaces, which directly affects these landmarks and potential nodes. Winnipeg’s street pattern is a response to the demands of motorized vehicles, and the city has developed in a way to accommodate this particular machine, with complete disregard to the integration of landmarks and public spaces as an opportunity to further develop the character of the urban fabric. “The Loop” however, is a walking trail program in Winnipeg that highlights the history, culture, and architecture of the city. This walk takes people into major landmarks and nodes of the city, while highlighting the history behind each space.

Edges & Districts: Relationships

Our preliminary discussion of the phenomena of place led to the conclusion that the structure of place ought to be described in terms of “landscape” and “settlement”, and analyzed by means of the categories “space” and “character”. (Norberg-Schulz 1980, p. 12)

The segregation of spaces not only affects landmarks, but also affects the way the urban landscape of downtown Winnipeg is divided. The core is currently subdivided into four major districts labeled as, “character”, “downtown living”, “multi-use”, and “riverbank”. Each district is dominated by a certain type of function which affects the overall character and function of the district. For example, the multi-use district is predominantly utilized for pleasure and entertainment, where the fabric of the environment is mainly mixed-use buildings, alongside commercialized units for both business and entertainment. Other districts, such as the downtown living district, designate the use of housing units to provide the possibility for urban dwellers to reside and live within the core of the city. To further “diversify” the core, the urban fabric also maintains a district strictly for the conservation of the Red River’s edge condition, along with utilizing this district as a means to provide green infrastructure, parks, and open spaces within the downtown.

By segregating each district into different functions, it is ultimately dividing downtown into different uses. This, along with the grid pattern, results in barriers in the urban fabric instead of unifying the core. The lack of symbiosis between the environment and its physical elements makes it difficult for the observers to situate themselves within the city’s core, thus also making it increasingly difficult to create a sense of relationship with the

Figure 1.17: Drawing showing the delineation of districts in the downtown Winnipeg



environment. The irony of this disconnection arises from the idea that the modern grid is formed in order to maximize function and efficiency. However, this does not mean it is efficient for pedestrians. Lynch (1960) says that modern cities are “becoming meaningless places beyond their citizens’ grasp” (p. 441), and the street pattern of Winnipeg, along with its relationship with its physical elements, can be seen to support this argument.

Landmarks & Nodes: Relationships

“Environmental images are the result of a two-way process between the observer and its environment. The environment suggests distinctions and relations, and the observer selects, organizes, and endows with meaning what he sees.” (Lynch 1960, p. 6)

The weak relationships between Winnipeg’s landmarks and nodes creates a lack of connectivity in the urban fabric. With the exception of The Forks, the remaining landmarks are scattered throughout the downtown without any visual guidance, hierarchy, and relationship with their environment. The distribution of these elements makes it difficult for people to create a connection, and visual understanding with the urban environment. This lack of connection manifests itself in streets which are less inviting, reducing the number of pedestrians and observers. There are, according to Lynch, three elements that create an environmental image - “identity”, “structure”, and “meaning” (1960, p. 8). While Winnipeg’s core embraces some level of these components, the relationship between them and the physical layout of the city is not sufficiently reinforced. Without this kind of interrelationship, the observer cannot experience a sense of engagement with the city, and this contrasts with Lynch’s theory that “the city should be in the best sense: made by art, shaped for human purposes” (1960, p. 95). The understanding of how these landmarks can also serve as potential key nodes, derived from the European model, can begin to strengthen the subconscious image of the downtown. Furthermore, understanding the physical layout of a city, in this case the orthogonal grid, and how it can guide the observer into spaces with strong relationships between the physical components, allows observers to create meaning and purpose, which consequently fortifies human perception of that environment.



- A - Old Market Square (OMS)
- B - Portage & Main
- C - The Bay / Buhler Center
- D - Provencher Bridge
- E - Legislative Building
- F - The Forks

Figure 1.18: Drawing showing the location of major landmarks and potential nodes in relation to districts

iii Grid Juxtaposition

Juxtaposing Organic and Orthogonal Street Patterns

“Spatial configurations of cities generally outlive the generations who occupy and adopt them. All of which suggests that the best and worst that urban designers can do is to try and ensure opportunities for physical diversity and functional flexibility, including connectivity.” (Tate 2010, p. 273)

It can be difficult to compare opposing grid structures, as each grid system is a representation of a unique set of circumstances which materialized during a city's development. There are, however, lessons which can be learnt from each type of street pattern. The European or organic street pattern allows for a more dynamic dwelling environment. This means that organic patterns seem to aid the development of robust spaces. The organic layout affects the perception of the observer in a much more dynamic manner, mostly as an outcome of the irregular form of the streets, allowing for the mind to be curious and to develop a level of enquiry before the space is experienced. This kind of layout is derived from layers of transportation routes which were created during the era of foot traffic and mainly human-scaled transport. These patterns are not highly efficient routes for motorized vehicles. Orthogonal grid patterns are derived from the development of urban environments during the era of much faster surface transportation systems. As noted, these grids are a response to the motorized vehicle, and are seen as a more efficient method for the development and growth of a city. The orthogonal grid also allows the urban dweller to understand and create a stronger relationship when moving through their environment. This is achieved by the forced perspective created by the long continuous streets providing long views through the urban environment, also facilitating the movement of people through different edges and districts in the urban fabric.

In summary, the difference between the two is that organic street patterns are more effective for humans to relate to and create meaning, while the orthogonal grid lacks this type of

Principles

connection, but provides a more efficient method for motorized transportation.

There are a number of questions that arise from trying to understand the different types of grid. The first, and foremost is: Are humans more attracted to organic street patterns than orthogonal grids? An organic street pattern, allows for the observer to engage, dwell, and experience multiple spaces while creating meaning. The symbiotic relationship between the street patterns and the physical elements of the city, also creates a stronger connection between the observer and its environment. So it would seem arguable that humans are indeed more attracted to an organic grid. However, to assume that all orthogonal grids restrict human experience, it is suggested, an overstatement.

In a city like Winnipeg, there are still robust and highly active spaces, however, the interesting phenomenon is that these spaces tend to occur when two different grid structures converge. So the question can then be formulated: Why does the convergence of two opposing grids seem to create interesting spaces? And more specific to this practicum: Why does the convergence of two opposing grids seem to create nodes in space? Hillier (2007) explains that space functions as a type of machine and that this machine “sets up the built environment as no more than an inert physical background to the behavior and experiences of people” (p. 300). Therefore, if space acts as a background to the human experience, we can attest that if the physical layout of a city creates a stronger connection to human consciousness, then this connection is present in the subconscious, as Hillier explains, which in turn creates a space with stronger meaning.

Hillier argues further that “function can use configurational differences to give a picture of itself in the spatial form” (2007, p. 303). It can be argued that street layouts alone do not dictate the character of a space, because it is not the street layout that influences human perception. However, the relationship between the street layout and the physical components of the environment begin to create a stronger connection for the urban dweller. On the basis of this understanding, along with Hillier’s concept that space shapes our thoughts and actions, the practicum seeks to

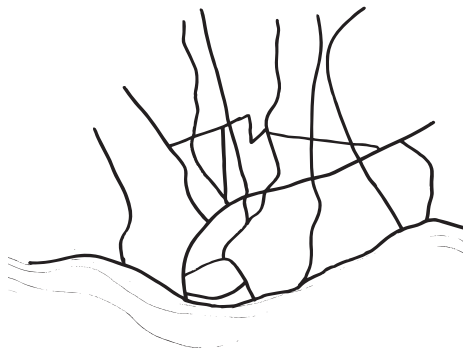


Figure 1.19: Main street pattern of Porto, showing organic street pattern

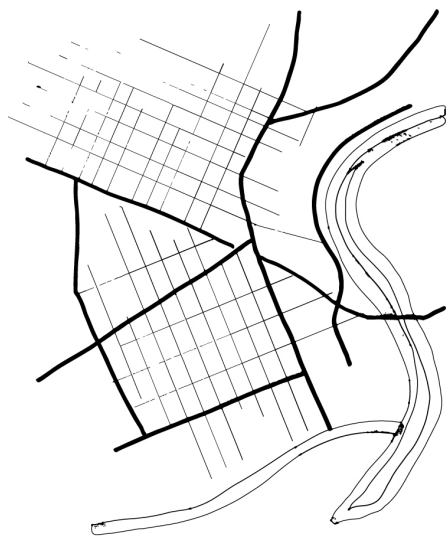


Figure 1.20: Main street pattern of Winnipeg, showing orthogonal street pattern

identify new nodes. This is based on the idea of creating symbiotic relationships between the nodes and landmarks resulting in more diverse spaces. By understanding how the grid can aid in the creation of nodes (i.e. a clash in the street pattern), the proposed urban strategies will provide a framework for observers to create their own reaction in space, and in turn, a stronger connection with their environment and a stronger cultural identity.

The chart below (See figure 1.21) shows the difference in both the composition and configuration of the two cities being studied. They are categorized by Marshall’s street type (Marshall 2005, p. 85), showing the general location in which these street types are found, and which transportation era these street types originate.

Figure 1.21: Marshall’s street pattern table contrasting two opposing street patterns



PORTO			WINNIPEG		
TYPE	TYPICAL LOCATION	TRANSPORT ERA	TYPE	TYPICAL LOCATION	TRANSPORT ERA
A-TYPE <i>Altstadt</i>	Historic Core	Era of pedestrian and horseback	B-TYPE <i>Bilateral</i>	Gridiron (central, or extension, or citywide)	Era of horse and carriage
<p>COMPOSITION Irregular, fine scale angular, streets mostly short or crooked, varying in width, going in all directions.</p> <p>CONFIGURATION Mixture of configurational properties (T- and X- junctions, some culs-de-sac; moderate connectivity)</p>			<p>COMPOSITION Regular, orthogonal, rectilinear, streets of consistent width, going in two directions.</p> <p>CONFIGURATION Mainly grid with crossroads (high connectivity). Continuity of cross routes.</p>		

i. Current Grid Clashes

“Every neighborhood should include a plaza, green, or square as its social center. In addition, each neighborhood should provide its residents with convenient access to a range of more explicitly programmed open spaces”. (Duany, Speck, 2010)

Old Market Square: Configuration & Programing

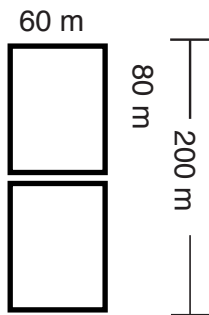


Figure 2.0: Average block size of Old Market Square

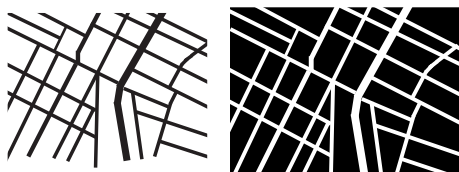


Figure 2.1: Street pattern and urban form of Old Market Square and adjacent blocks



(Google Earth, 2016)

Figure 2.2: Location of Old Market Square in relation to surround urban form

Within the urban environment, there are two major scales which this practicum looks at. Firstly, the macro city scale, which is the overall urban environment as a whole. And secondly, the micro scale, which is referring to a smaller space, such as Old Market Square. Before implementing strategies for the macro grid, it is important to understand how the micro grid is functioning. In the previous chapter, it was noted that Old Market Square is one of the most robust nodes in Winnipeg’s downtown. When looking at the configuration of the street layout, it is apparent that there are two grid patterns intersecting on this site.

One grid pattern is derived from Union Station/Broadway, and the other is formed by Main Street, which gets its shape from river lots perpendicular to the Red River. These two grid patterns meet at this location and have a direct impact on the overall sense of the space. There are, of course, other factors that make this node so diverse besides the clashing of two opposing grid patterns. For example, the grids create an intersection with one another creating a focal point and a node in the urban fabric. This begins to emphasize the importance of how the street pattern influences the development and perception of more robust spaces. In the case of Old Market Square, the space is inviting and diverse due to the relationship between the grid patterns, and the physical elements of that space.

The block proportions in this area are a lot smaller, and the sense of this space is generally a lot more intimate due to the buildings being somewhat lower. The diversity of this space is an example of what the previous chapter’s principle addressed at a micro scale. That is to say, street patterns greatly influence the overall structure of space, and in this case, the clash of the grid

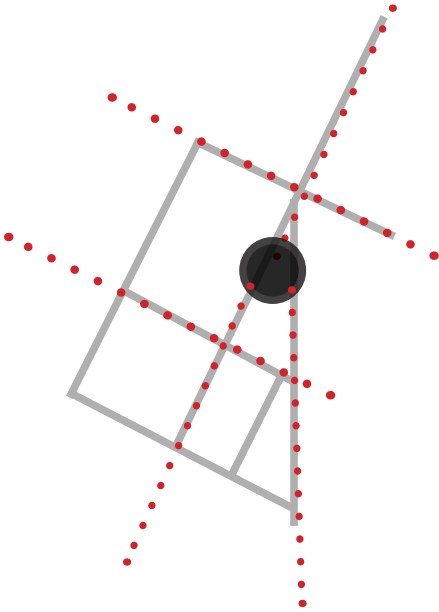


Figure 2.3: Street pattern of Old Market Square showing the clash of the grid creating a node

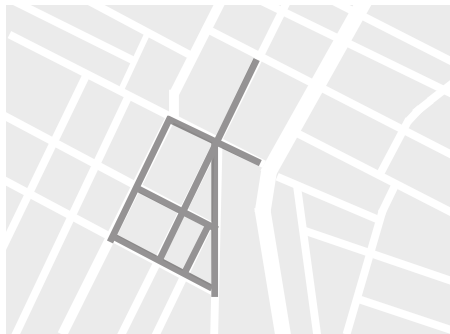


Figure 2.4: Street pattern of Old Market Square in relation to surrounding street form

adds a level of diversity to the overall perception of the space. The diverse qualities of Old Market Square (OMS) are also due to the programming of this space and the adjacent urban blocks. OMS is generally programmed for festivals and entertainment, along with commercial and mixed-use buildings located in this space. However, OMS is also an amenity for nearby residents. OMS therefore functions both as a micro node for residents, and a node at the macro scale for the city of Winnipeg as a whole.

By understanding the function of the physical components of the urban environment, and by implementing a level of programming which allows the space to thrive, Old Market Square demonstrates a symbiotic relationship between street patterns, adjacent structures, and programming, resulting in a highly robust node at both the micro and macro scales. OMS is one of the closest streets to what Duany and Speck (2010) call a must for the “24 hour city” where the programming of the streets allows for the use for work, shop, socializing, and living.

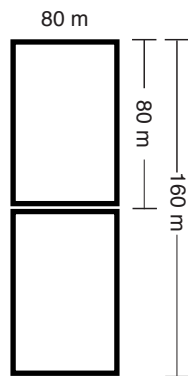


Figure 2.5: Average block size of adjacent blocks to The Forks

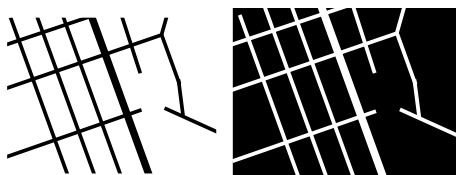


Figure 2.6: Street pattern and urban form of surrounding spaces to The Forks



(Google Earth, 2016)

Figure 2.7: Location of The Forks in relation to surrounding urban fabric

The Forks: Programing

In contrast with Old Market Square, The Forks functions both as a space and a node. Firstly, The Forks' is a post-industrial urban park which, like OMS, serves as both a local node, and for the wider city. The difference lies mostly in the fact that The Forks relies on its programming as a means to activate the space and less on the street pattern. In contrast, OMS has achieved more of an equilibrium between the street pattern and physical structures, relying heavily on programming for its vitality. The Forks has many different types of programing which provide various functions and amenities for the citizens of Winnipeg.

The Forks serves as a market place and an entertainment space. This is what makes the space so significant for the diversification of the downtown core. It acts as an excellent example of how the programming of spaces can increase the use of a space both throughout the seasons, and in the level of diversification which it brings to the adjacent urban environment. The Forks also has a direct relation to the culture of Winnipeg, in that it is used to celebrate the long winters with the skating trail, while the farmers' market celebrates the use of locally grown food. The Forks brings Winnipeggers together serving as a space which strengthens the identity of the city. Duany and Speck (2010) talk about how "every neighborhood should include a plaza, green,

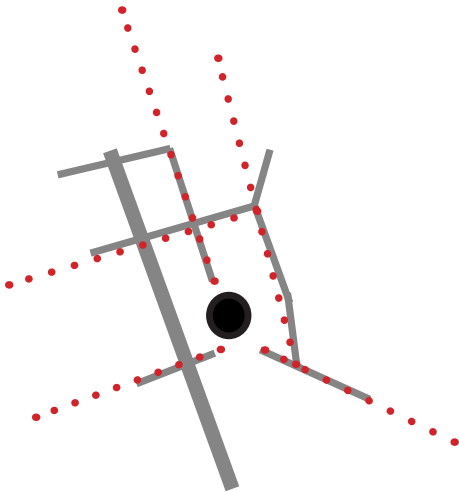


Figure 2.8: Grid clashing creating a Node at Union Station and The Forks

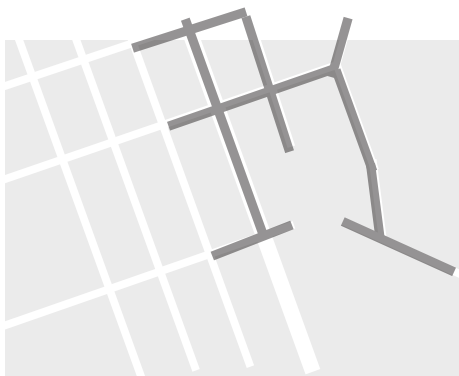


Figure 2.9: Street pattern of surrounding fabric to The Forks showing grid clashes

or square as its social center” and The Forks is an example of a space which serves as that type of social center. The lessons which The Forks imparts at a micro scale can be brought to the macro environment in that programming can strengthen the intentions for that environment. The next step would be to implement similar programming to the downtown core in order to increase its diversity. Duany and Speck (2010) further express the need for programmed open spaces for each neighborhood.

One of the key lessons from these spaces is that the clash of the grids disrupts the purely straight line views along regular gridded streets. In short, observers see something other than a disappearing point in space.

A STRATEGY TO UNIFY & STRENGTHEN DOWNTOWN WINNIPEG



Step 1: Identify major spaces with landmark and/or node potential

Figure 2.10: Using Winnipeg's current urban form, physical features, and street patterns to strengthen the hardware and software of the city



Step 2: Define main grid axes

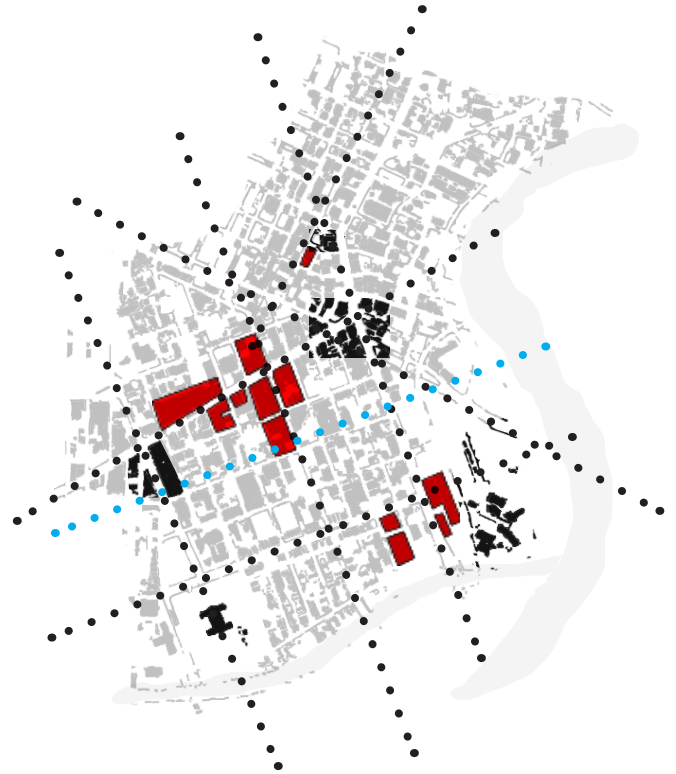


Step 3: Define secondary axes to connect major grid axes

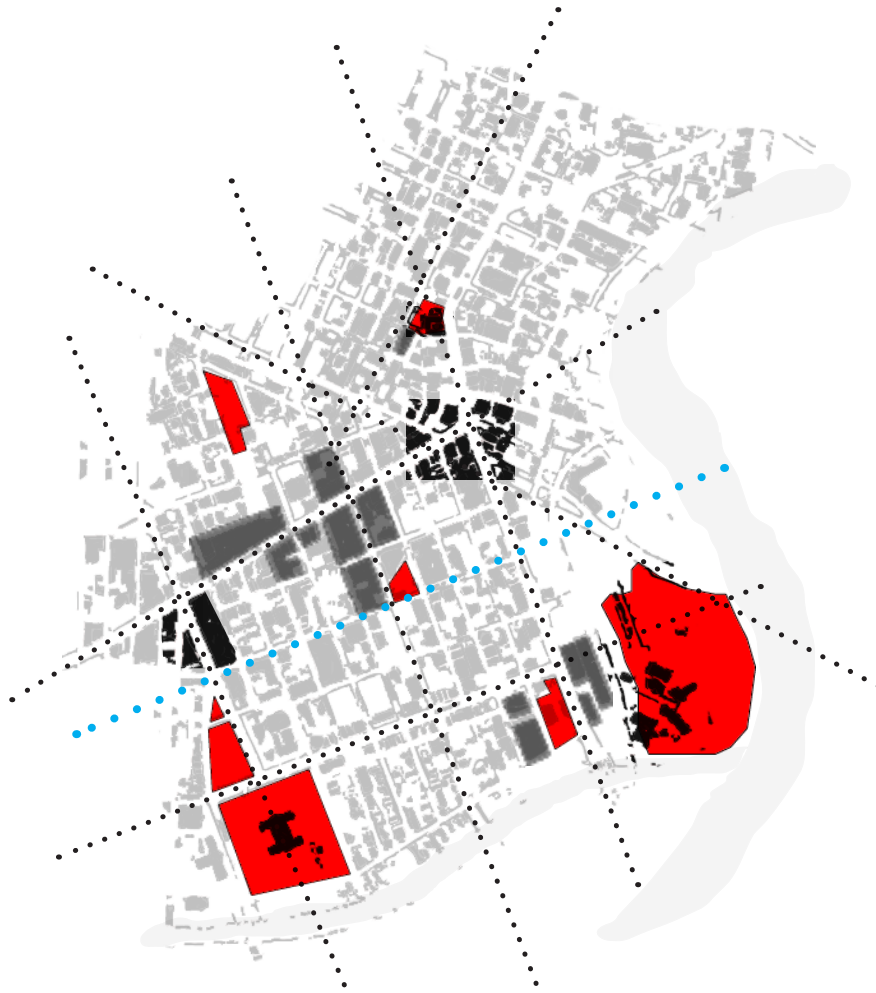
A STRATEGY TO UNIFY & STRENGTHEN DOWNTOWN WINNIPEG (cont.)



Step 4: Identify current public transit line



Step 5: Connect with existing physical structures to create visual cues



Step 6: Locate current public spaces to connect with main axes

Overall Strategy: Nodes & Landmarks

“It is suggested that arteriability is the ‘active ingredient’ of hierarchy that contributes to legibility. One can clearly determine one’s way about a layout if it possesses arteriability (strategic contiguity), since as long as one heads towards the higher status route, one knows where one is with respect to the whole.” (Marshall 2005, p. 175)

In developing an overall spatial strategy for downtown Winnipeg, the principal elements to be examined are: Street patterns, nodes, landmarks, and programming. This is essentially derived from the idea that “growth is inevitable, therefore it must be shaped into the most intelligent possible form through regional plans that are based upon the model of the mixed-use neighborhood and organized around logic” (Duany, Speck, 2010) By strategically analyzing the current conditions of the urban fabric of the downtown, the creation of a robust urban environment requires a number of steps. On the basis of the Porto case study, landmarks and nodes generally work symbiotically in the environment in order to achieve a stronger impact for the observer.

To achieve this kind of relationship within Winnipeg’s urban fabric, first, major landmarks must be identified together with supporting nodes. These landmarks/nodes include, Portage and Main, The Forks and Union Station, Old Market Square, Buhler Center and The Hudson’s Bay store, and the Legislative Building. Once the landmarks and potential nodes are identified in the urban fabric, the next step is to locate the main grid axes. These include Main Street and Portage Avenue, which already function as major arteries in the downtown, as well as Broadway and Memorial Boulevard which have been highlighted as major axes for the downtown. Along with these major axes, potential secondary arterial roads have been identified in order to, as Marshall (2005) states, create “hierarchy that contributes to legibility.” These roads will act as secondary axes which will facilitate movement of motorized vehicles within the urban environment and connect the highlighted potential nodes. The

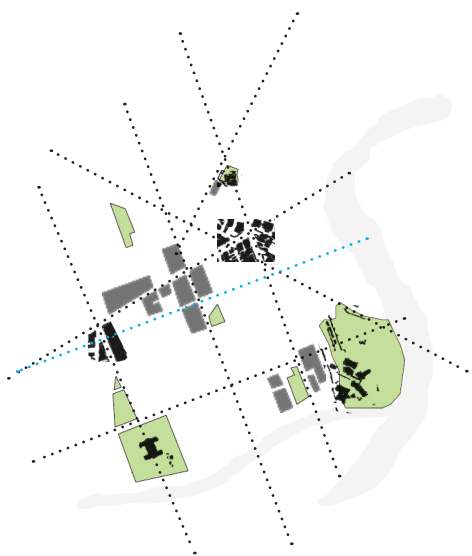


Figure 2.11: Resulting strategies expressed in a cognitive map

strengthening of the connectivity between the downtown and the outlying neighborhoods must also take the public transportation hub into consideration. The rapid transit system already has an artery in the urban fabric, Graham Avenue, conveniently located at the center of the core. This transportation line has the capacity to bring people from the outer edges of the city into the core. Duany and Speck (2010) emphasize that “whether service is available or planned, centers should be designed to be transit-ready.”

The next step is to locate existing physical structures with the purpose of creating micro-nodes. Some of the structures which have been identified are the MTS Center where, during the winter months, hockey is a key element for the culture of the city, and Portage Place which is a shopping center located at the center of downtown. These secondary destinations have been highlighted for their potential in creating spaces which give people a reason to inhabit the core during the winter months. They also create rest stops during the navigation of the urban environment.

The final step in unifying and strengthening the core of downtown Winnipeg is to highlight the existing green and public spaces as a means to strengthen their integration into the urban fabric. The overall strategy is to unify the core with its existing elements by utilizing the grid as the fundamental element which connects these components. The connecting of landmarks, open spaces and other physical elements along with the grid, creates a cohesive urban environment



Figure 2.12: Strategy map in context with existing urban form of Winnipeg

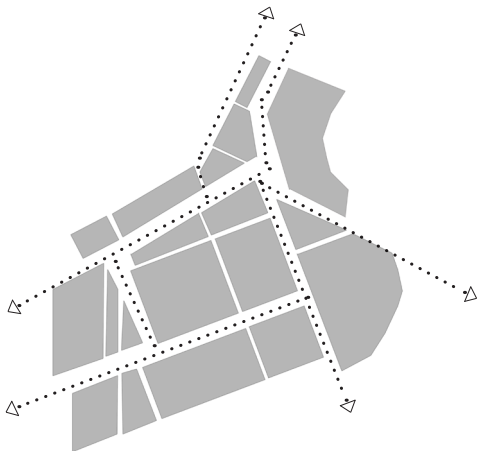


Figure 2.13: Main movement arteries for pedestrian flow through downtown core

“The key to active street life is to create a 24-hour city, which implies an area so diverse in use that it is inhabited around the clock. Living, working, shopping, schooling, and socializing must coexist in close proximity.” (Duany, Speck 2010)

Zoning:

Using the grid as a foundational element in the development of the city allows zoning and programming that can provide various amenities for citizens. Duany and Speck (2004) emphasize this as a necessity as they believe that “a neighborhood should endeavor to include a balanced mix of housing, working, shopping, recreation and civic uses.” The practicum acknowledges the current zoning structure of downtown, with the intention to either use the current program to emphasize the amenities which Duany and Speck mention, or to create alternative zoning districts in order to provide a more complete program for the core of the city. This will be achieved by first using the overall strategy proposed in the previous section of this chapter, based on the current street pattern.

The function of each node will depend on programming to provide variation and diversity. Portage and Main, for example, will serve as a working and financial node, while the node revolving around the Legislative Building will serve as a civic node. Furthermore, the nodes at OMS and The Forks will function as recreational nodes, while the Winnipeg Art Gallery and The Bay function as both a shopping and culture node. Thus, the goal becomes to utilize the current grid structure in a symbiotic manner with landmarks and physical structures as a means to connect nodes. These nodes, are now being planned to provide different types of amenity in order to attract visitors, as well as providing a means to attract people to remain in these spaces. This level of

Figure 2.14: Drawing showing main zoning districts of downtown Winnipeg



programming will aim to ensure a robust urban environment which balances these goals while maintaining public engagement, and encouraging pleasure while maintaining responsibility (Jacobs, Appleyard 1987, p. 443). These zoning strategies are central in relation to the urban living sector, which allows the core to be revitalized.

The Emotional Grid

“Our everyday life-world consists of concrete ‘phenomena’... But it also consists of feelings. This is what is “given”, this is the “content” of our existence.” (Norberg-Schulz 1980, p. 6)

In the introduction to this practicum, it is argued that the urban environment is comprised of two parts. One part of the environment is the physical components of the city - the “hardware”. The other part is comprised of human emotions and memories the “software”. While the practicum examines and proposes a set of zoning strategies, it is also implicitly providing a framework for the different types of experience and emotional reaction based on the various programs. The programming proposed in the previous section allows for three major emotional responses.

The first underlying emotion is the feeling of comfort, mainly provided by the downtown living districts. This emotion is primarily focused on those who choose to live downtown. This type of programming allows for the urban dweller to be aware subconsciously that the core is a safe area. This is one of Jacobs and Appleyard’s goals for urban life, that “a city should be a place where everyone can live in comfort” (1987, p. 441).

The second type of emotion is pleasure, which can be manifested through recreation and shopping. The recreational zone of the city is intended to provide pleasure particularly through restaurants or shopping. Jacobs and Appleyard call this “access to opportunity, imagination, and joy”, where the purpose of the recreational zone is to provide “a break from traditional molds, extend their experience, meet new people, and have fun” (1987, p. 442).

The final emotion is a sense of community and belonging. With the implementation of the recreation zone, The Forks and Old Market Square, allow for the gathering of citizens, to interact and create a sense of community within downtown. This type of programming is considered as “community and public life” (Jacobs, Appleyard 1987, p. 442) which encourages participation

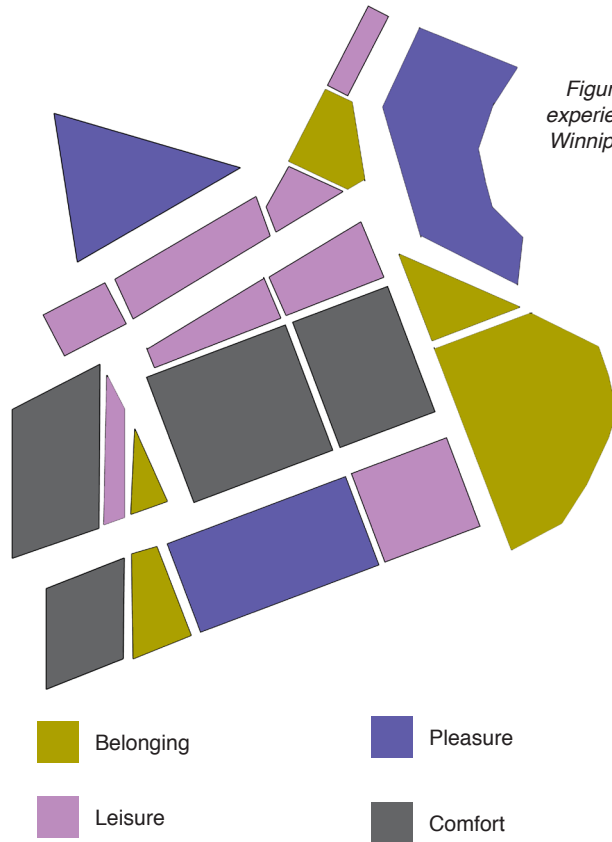


Figure 2.15: The experiential zones of Winnipeg (software)

of citizens as a community. Furthermore, “the public environment, unlike neighborhoods, by definition should be open to all members of the community” (Jacobs, Appleyard 1987, p. 442). These public space zones are a fundamental part of the urban environment, strengthening the connection between observers and their environment. These emotional connections are an integral part of the overall strengthening and unification of the downtown environment. By understanding the relationship between the physical zones and the resulting emotional outcomes, the programming not only organizes the core, but is also intended to create a set of emotional connections between citizens and their city.

Winnipeg Urban Design Code

The practicum is subdivided into three main sections: Principles, Strategies, and Proposals. This section of the document demonstrates the suggested approach to strengthening the relationship between the “hardware” of the city and the “software” or emotions of its users. These proposals are structured as codes to illustrate an approach to urban design in downtown Winnipeg.

Grid Code

This section illustrates the thought process outlined in the previous chapter, in particular how the grid pattern can aid in the connection of the urban fabric. Following these guidelines should ensure that the downtown is developed with the intention of creating a legible, hierarchal, and connected environment. This also aids in the development of a stronger foundation for the future of the area. By prioritizing streets as a method to create connections, and implementing the strategies outlined below, the perception of these street will begin to change from a vehicle-dominated environment.



*Figure 3.0: Arterial Streets of Winnipeg,
Code 100(1)*

Section 1: Grid Function

Arterial Streets

- 100(1) To improve legibility and hierarchy in downtown Winnipeg, the following roads are classified as arterial streets:
- (a) Main Street
 - (b) Portage Avenue
 - (c) Memorial Boulevard
 - (d) Broadway
- 100(2) Arterial streets are to be developed such that landmarks in the urban fabric are either used as navigation elements, or as resting point that become potential nodes;
- 100(3) Any development on arterial streets must, on some level, include public space elements as a means to create micro-nodes. This can include, but is not limited to:
- (a) canopies and/or awnings
 - (b) plants or planters
 - (c) benches, tables, chairs
 - (d) bike racks
- 100(4) The purpose of the arterial streets is to influence connectivity throughout the downtown. Any development on these streets must not disrupt this function;
- 100(5) Development on these streets should improve the legibility of the urban environment;
- 100(6) Pathways on these streets must prioritize pedestrian movement, and facilitate movement from one node to the next;



Figure 3.1: Secondary streets to improve hierarchy in the urban environment. Code 110(1)

100(8) Development on these streets must comply with the zoning proposed in this chapter;

100(9) Arterial streets are to influence public life, therefore, any proposed development must benefit the public realm.

Secondary/Minor Arteries

110(1) To improve legibility and hierarchy in the downtown, the following roads are classified as secondary or minor arteries:

- a. Donald Street
- b. Smith Street
- c. Pioneer Avenue

- 110(2) The purpose of these minor arteries is to facilitate movement of vehicular traffic throughout the downtown;
- 110(3) These street are to be developed such that connectivity between nodes and main arteries is not disrupted;
- 110(4) Secondary arteries are to facilitate the movement of vehicular traffic throughout the downtown;
- 110(5) Minor arteries must facilitate pedestrian movement from one major artery to another.

Opposing Grid Clashes

- 120(1) Wherever two opposing grid structures meet, the potential for creating either a major node or a micro node must be considered;
- 120(2) Opposing grid structures must include public realm elements which allow citizens or visitors to slow down and rest;
- 120(3) Any development on opposing grid structures, should somehow emphasize the street pattern in which it is being developed;
- 120(4) Current grid clashes, specifically the clash at Old Market Square, are not to be disrupted such that the physicality of the grid is compromised.

New Street Development

- 130(1) In any front, if development compromises the current grid structure in any way, the overall character of the developed street must not change;

- 130(2) If natural disaster compromises the functionality of the grid, the newly renovated street must not obstruct views to landmarks, and must not compromise the connectivity plan in this section;
- 130(3) The design of any streets must take into consideration the fixity which they generate, and must demonstrate the benefits they bring to the urban fabric;
- 130(4) Street development must prioritize and facilitate the movement of pedestrians, and then consider motor vehicles;
- 130(5) Any new street development must comply with sections 100 and 110 if the development falls on any of the named streets.

Connectivity

- 140(1) The functionality of the street layouts is to facilitate movement throughout the downtown;
- 140(2) Developments on streets should address landmarks, nodes, and districts as elements that connect the “hardware” of the city;
- 140(3) Creating connections in the urban environment must consider the following;
- a. Paths
 - b. Landmarks
 - c. Nodes
 - d. Districts
 - e. Programming
 - f. Public Transportation

Section 2: Landmarks

Landmarks Code

In this practicum, landmarks are seen both as physical elements which influence the perception of space, and as elements which can create visual connection between multiple spaces. Kevin Lynch (1960) explains that landmarks are a type of a point-reference in the urban fabric. Furthermore, he explains that the observer does not “enter” a landmark but that they enforce the navigability of an urban environment, by providing visual cues and strengthening navigation. In the case of Winnipeg, both major and minor landmarks are identified as tools to create relationships with current street patterns and to further emphasize physical, visual, and emotional connections. Additionally, landmarks are seen as potential nodal spaces, allowing the observer to rest and relate to within the environment and its physical elements. Landmarks should be recognized as powerful elements which can aid the development of character and perception of an urban environment, while creating physical connections within it.

Figure 3.2:
Major landmark
identification.
Code 200(1)



Major Landmarks

- 200(1) Development in the urban core must take into consideration the following major landmarks:
- a. Provencher Bridge
 - b. Museum of Human Rights
 - c. Legislative Building
 - d. Hydro Building
 - e. 201 Portage
- 200(2) Development in the core should consider these landmarks as a means to create potential nodes;
- 200(3) Landmarks should, in some way, relate to their arterial road counterparts highlighted in Section 100;
- 200(4) These landmarks must continue to act as a point-reference system in the urban fabric. Visual cues are to be considered when developing near these elements.



Figure 3.3: Minor landmark location. Code 210(1)

Minor Landmarks

- 210(1) Minor landmarks are those which lack a point-reference in a larger context. These include;
- a. The Cube (Old Market Square)
 - b. MTS Centre
 - c. Union Station
 - d. Buhler Centre
 - e. Winnipeg Art Gallery
- 210(2) Downtown development should take these minor landmarks into consideration as potential micro and/or macro nodes;
- 210(3) Minor landmarks should function as navigation points throughout the urban fabric;
- 210(4) Minor landmarks are to be incorporated as connecting points in the urban fabric, connecting one space to another by providing rest stops, or points of reference.

Landmark Character

- 220(1) Landmarks are to be incorporated in any development as a way to strengthen the character of the downtown environment;
- 220(2) Arterial roads should connect major landmarks as a way to create stronger connectivity both in respect to perception and navigability;
- 220(3) Landmarks should be incorporated as physical elements which add to the overall character of the urban environment;
- 220(4) Major landmarks should be considered as elements

which can provide visual cues to legibility, connection, and hierarchy;

Section 3: Nodes

Nodes are to serve as the link between the physical component (“hardware”) and the emotional element (“software”) of the urban environment. For downtown Winnipeg, these spaces are to be located at the junction of two grid meeting points, whether intersections or grid clashes. These nodes are to serve as centers where activity, money, community, traffic, and other flows of energy meet. For these nodes to create a sense of identity to the city, they are situated in relation to the landmarks of the city, as well as grid junctions, creating a meeting place where the hardware of the city (physical form) provides experiences that stimulate the (human) software.

Potential & Existing Nodes



Figure 3.4: Potential and existing node locations. Code 300(1)

- 300(1) Potential nodes have been identified based on their relationship with the grid and landmarks, these nodes are located as follows:
- a. Portage Avenue and Main Street
 - b. Broadway and Main Street (Union Station)
 - c. Broadway and Memorial Avenue (Legislative Building)
 - d. Old Market Square
 - e. Portage Avenue and Memorial Avenue (Buhler Centre and The Bay)
 - f. The Forks
- 300(2) Nodes are to serve as resting points in the urban environment;
- 300(3) Nodes are to function as communal spaces;
- 300(4) Junctions, places of a break in transportation,

crossing or convergence of paths are to first be considered as potential nodes;

- 300(5) Clusters of the same land use and physical character are also to be classified as nodes.

Micro Nodes



Figure 3.5: Micro Node locations. Code 310(1)

- 310(1) The following are to be considered as micro nodes:
- a. MTS Centre
 - b. Portage Place
 - c. Millennium Library & Park
 - d. Manitoba Hydro Building

310(2) The purpose of micro nodes is to create a more intimate public realm;

310(3) New development in downtown, if providing any type of amenities, should be considered as a potential micro node;

310(4) Micro nodes should be considered both as physical elements which create legibility in the urban fabric, as well as, spaces for pleasure.

Relationships

320(1) Whenever a node is directly situated on a major arterial street, it should function as a resting point, and should relate to any landmarks in its vicinity;

320(2) Development of nodes shall relate to their adjacent landmarks;

320(3) Nodes are in some way to relate or connect with adjacent landmarks as a means to strengthen the overall character of the space;

320(4) Nodes and landmarks are to maintain a symbiotic relationship within the urban environment.

Public Emphasis

330(1) Programming in any node should be first to serve public life;

330(2) All nodes, whether major or micro, must on some level include public space elements. This may include but is not limited to:

- a. canopies and/or awnings
- b. plants or planters
- c. benches, tables, chairs
- d. bike racks

330(3) Development in major nodes should in some way, aid the process of creating round-the-clock space;

330(4) Nodes are to function as communal spaces for urban dwellers;

330(5) Support public related activity;

330(6) Support public art and architecture that is related to district character;

330(7) Apply uses at grade level to promote pedestrian interest.

Section 4: Programming

The zoning codes in this practicum are designed to provide a balance between dwelling, multi-use, and work. They take into consideration existing zoning laws, but incorporate changes in order to strengthen the relationship between landmarks and nodes.

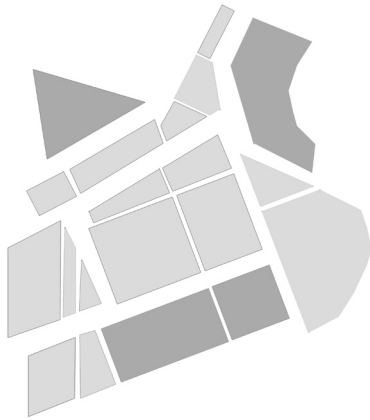


Figure 3.6: Dwelling sectors of Winnipeg.
Codes 400(1) - 400(4)

Dwelling

- 400(1) Downtown living is to be focused in the following districts:
- a. Waterfront Dive
 - b. Central Park
 - c. South Broadway
- 400(2) The Waterfront Drive zone is defined by within Galt Avenue, Waterfront Drive, McDermot Avenue and Main Street;
- 400(3) The Central Park zone is defined by Balmoral Street, Ellice Avenue, and Cumberland Avenue;
- 400(4) The South Broadway living sector is defined by Broadway, Kennedy Street, Assiniboine Avenue, and Main Street;



Figure 3.7: Multi-Use sectors of Winnipeg.
Codes 410(1) - 410(5)

Mutli-Use

- 410(1) The multi-use sector is to be focused along the North sector of downtown, Winnipeg;
- 410(2) The North sector is defined by Princess Street, Logan Street, Higgins Avenue, and Waterfront Drive;
- 410(3) The Central sector of downtown is identified by Ellice Avenue, Broadway, and Main Street;
- 410(4) The programming for multi-use is to be predominantly alongside Portage Avenue;
- 410(5) Development along Portage Avenue should promote public life by following the grid function section.

Conclusion

Outcome: An Organic Environment In A Orthogonal Grid

“The theory and practice of urban design need not explore the full complexity of this evolving multiscalar spatial configuration, but at the very least it should not close itself off from it.” (Soja 2009, p. 259)

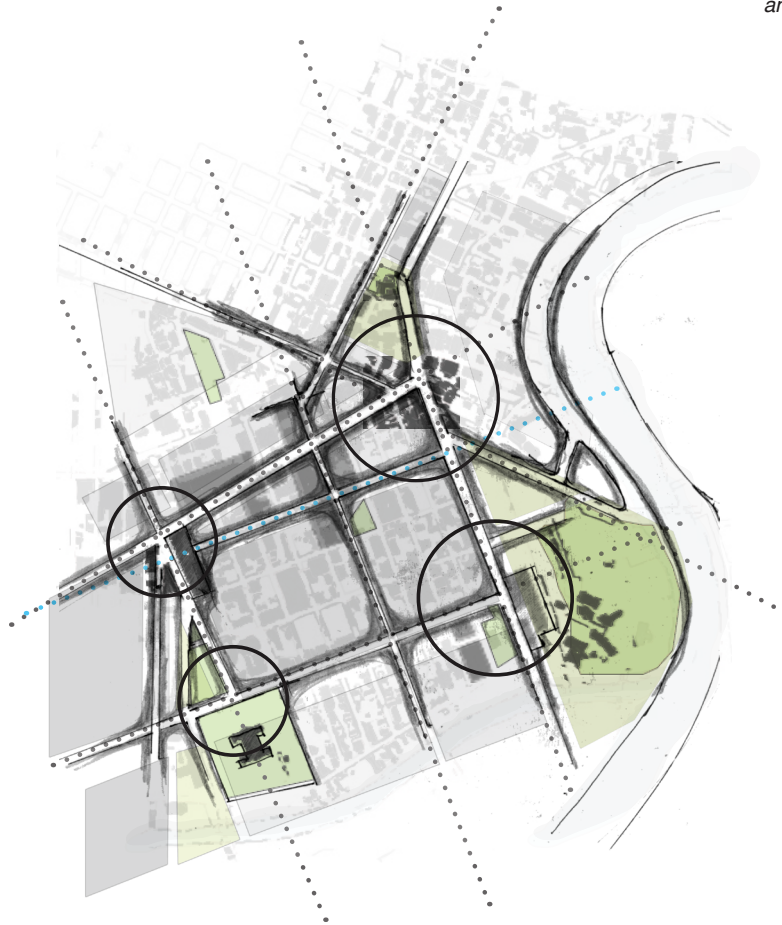
The plan outlined in this practicum will create an organic pattern. The street patterns are not necessarily physically changed, however, the implementation of the proposed strategies changes the overall perception of the physical layout of the city. This phenomenon allows designers to understand and manipulate human perception. This kind of strategy contributes to in the creation of an environmental image.

Kevin Lynch (1960) explains that “as manipulators of the physical environment, planners are primarily interested in the external agent in the interaction which produces the environmental image” (p. 7). The strategies highlighted in this document achieve Lynch’s idea by manipulating existing elements of the urban fabric in order to change the overall image and perception of downtown Winnipeg. The city is predominantly gridded, but with the manipulation of its existing elements, the perception of the urban fabric begins to resemble “chaotic” street patterns as defined by Marshall (2005, p. 139). Marshall classifies these chaotic patterns as A-Type pattern, which have predominantly organic layouts, in contrast to the classification of Winnipeg as an orthogonal street type. The overall outcome of these strategies support the conclusion that street patterns can be perceived differently depending on the type of relationships they have with existing elements.

In the case of Winnipeg, depending where emphasis is placed in the fabric, it will begin to shape the perception of the street layout. Tate (2010) argues that “spatial configurations of cities generally outlive the generations who occupy and adopt them. All of which suggests that the best and worst that urban designers can do is to try and ensure opportunities for physical diversity and functional flexibility, including connectivity” (p. 273). In other words, the configuration of a street pattern is generally permanent in comparison with its architectural elements. This emphasizes that street layouts cannot physically change form, but rather that manipulating their connectivity can create new relationships between its physical elements. Furthermore, programming the environment can inherently change the perception of the street type. One must remember however that the actual physical street type will always dictate the general character of a space. The manipulation of elements only changes the perception of the fabric and not its literal physicality.

The other outcome is a stronger relationship between the urban fabric and its landmarks, a lesson derived from the Porto case study European model. Using this model as a way to increase legibility and navigability, the overall grid begins to shape itself as a response to human relationships, which, is argued, will be a stronger feature in the organic grid. The conclusion is that the intentions of urban development greatly impact the functionality and perception of the urban environment. Therefore,

Figure 4.1: Final outcome concept drawing, showing connecting strategies with the grid and potential nodes.



in order to change the perception of an environment, designers should consider their intentions carefully. If designers create spaces with which they seek to promote symbiotic relationships between existing elements, over time, the environment will begin to take form and the perception of these environments will reflect the designer's intentions. In contrast, if the intention is to develop the city for the functionality of the motor vehicle, this will be reflected in the form and character of the city.

In this practicum, the intention has been to propose a means of creating a vibrant and attractive downtown based on street patterns that connect existing elements, specifically landmarks, in order to create nodes. These nodes in turn create spaces to which their users can relate, promoting place attachment and building a stronger relationship with the city.

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