Design with Sharing in Mind: An Exploration of Shared Space and its Application to Downtown Yonge Street in Toronto

by

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ABSTRACT

DESIGN WITH SHARING IN MIND: AN EXPLORATION OF SHARED SPACE AND ITS APPLICATION TO DOWNTOWN YONGE STREET IN TORONTO

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Conventional street design has given drivers priority over the street. This has resulted in overall declination of the public realm. This study explored the topic of shared space, defined as an approach in which the street is designed in a way that pedestrians, drivers and other street users have equal entitlement and priority throughout the entire space. The research draws upon the literature on shared space; and case studies comprised of secondary source descriptions, key-informant interviews and on-site observation. Ensuing findings suggested that vehicles were more willing to share the streetscape with pedestrians when vehicular speeds were reduced and there was integration between sidewalk and roadway. These findings led to development of a set of principles that informed recommendations for the conceptual redesign of Toronto’s Downtown Yonge Street as a shared space.
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To the Downtown Yonge Business Improvement Area, thank you for providing me with the necessary information needed to complete this thesis, as well as giving me the time off to actually finish the thing. To my amazing classmates… it sure has been a journey. Thank you for all the good times, the fun times and easing the stressful times. I am sure you will all be very successful in your own right in the near future. Finally, to my parents… I cannot thank you enough for supporting me throughout my education – especially financially. You can finally retire now!
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CHAPTER 1  |  Introduction

Designers, engineers and planners have spent the past century experimenting with how to reconcile the movement of people and traffic (Hamilton-Baillie, 2008a). For most of this time, streets have been designed in favour of the car and vehicular traffic (CABE Space, 2008). According to conventional traffic engineering and street design, a well-designed street is one that makes driving easier and travel times shorter (CABE Space, 2008; Shared Space, 2008c). Recent thinking suggests other street user activities – such as walking, cycling, sitting or using wheelchairs to name a few – have not been given enough consideration in the planning and design process (CABE Space, 2008). Preference over improved vehicular traffic has also determined the way in which we design public spaces, resulting in a decline in quality of the public realm (Shared Space, 2005; Shared Space, 2008c). As stated by Hamilton-Baillie (2008b), “as streets become less attractive, people are less inclined to spend time on them for social activities” (p. 130).

In the case of Downtown Yonge Street – a major north-south arterial thoroughfare, key tourist destination and often considered as Toronto’s ‘main street’ (Downtown Yonge Business Improvement Area [DYBIA], 2010a; KPMB Architects & Greenberg Consultants Inc., 2011) – the amount of infrastructure dedicated to vehicular traffic reflects a classic emphasis on the car, even though pedestrian volumes far exceed the amount of vehicles passing through the area (Larsen, 2012; Springboard [as cited in DYBIA], 2013). As a result, the road has become a dominant visual feature that negatively affects the visual aesthetics of the streetscape. Moreover, there is not enough space to accommodate the influx of pedestrians moving and traveling through the street.
The *Yonge Street Planning – Final Report*, developed by KPMB Architects and Greenberg Consultants Inc. (2011), provides recommendations for an alternate vision for Downtown Yonge Street in response to adjacent future development projects, increased pedestrian traffic and other new ventures and opportunities. Through stakeholder and public feedback, the recommendations endorsed a ‘flexible street’ with mountable curbs that give pedestrians more space and a reduction to two wide lanes for vehicular traffic. Though the recommendations seem reasonable and cater to the issues previously stated, the overall visual aesthetic still maintains a similar look to other adjacent streets and therefore diminishes the claim of Yonge Street as Toronto’s ‘main street’. As a key component to the downtown public realm, being recognized as Toronto’s ‘main street’ and a key tourist destination, is there a bold approach that can radically transform Downtown Yonge Street to a unique streetscape while maintaining and encouraging equal priority of the street space between pedestrians, vehicles and other street users?

Within the European context, more notably the Netherlands and United Kingdom, there are a growing number of examples that have used a philosophy known as ‘shared space’ to aid in resolving or mitigating the issues previously stated. Shared space is an approach in which the street is designed so that pedestrians, drivers and other street users have equal entitlement and priority throughout the entire space (CABE Space, 2008). This is a shift from the conventional traffic design practice of segregating street users and their respective spaces to integrating it within the public realm, thus minimizing traffic control features and blending the distinction between road and sidewalk (Department for Transport [DFT], 2011; Hamilton-Baillie, 2008a; Shared Space, 2008c). Not only does this approach provide for a unique visual experience, it also increases safety and
heightens awareness among all users (DFT, 2011). Could the implementation of a shared space scheme be a viable option in transforming Downtown Yonge Street to what it should be: the main street for Toronto that is unique from all the other adjacent streets?

**Goals and Objectives**

The goal of this thesis is to explore the topic of shared space and develop a set of principles that will inform and provide recommendations for Downtown Yonge Street to be conceptual redesigned as a shared space. Subsequently, the feasibility of the redesign will be assessed. In order to achieve this goal, the following objectives must be met:

- Explore the existing theory, research and findings on shared space through a literature review
- Examine case studies that have been designed around the shared space approach or have incorporated shared space characteristics
- Develop a set of shared space principles reflecting the research compiled and based on the existing trends of Downtown Yonge Street
- Provide recommendations and a conceptual redesign for the redesigned portions of Downtown Yonge Street into a shared space
- Critically evaluate the developed principles and conceptual redesign

**Research Questions**

In conducting research on shared space, several questions needed to be addressed and examined:

- What are the dominant features or characteristics of a shared space?
• What lessons can be learned from existing shared space schemes?
• What ideas and practices are relevant to transform a portion of Downtown Yonge Street into a shared space?

To address the following research questions, a combination of primary and secondary research was conducted. This included examining existing literature and prior research on the topic of shared space, conducting interviews and undertaking on-site observations.

Relevance to Landscape Architecture

As designers of outdoor landscapes, it is important for landscape architects to discover new ways in which to design in order to enhance their ability to create stimulating spaces that can be enjoyed by all user groups. With projects becoming more complex, a variety of professionals are now incorporated within the design process and are constantly working with each other throughout the project. The study and research into a topic like shared space contributes to landscape architects attaining a larger awareness and knowledge of other disciplines involved such as engineering, planning and urban design (Hamilton-Baillie, 2008a). Furthermore, with this topic not yet widely known, this thesis serves as an introductory discussion into shared space within the landscape architecture profession in North America.

Thesis Outline

This thesis consists of eight chapters, as shown in Figure 1-1. The first chapter introduces the topic describing the goals, objectives and questions related to the research and its relevance to the profession of landscape architecture. Chapter 2 provides a contextual background of Downtown Yonge Street. It focuses on physical characteristics,
trends and significant events that have occurred in order to explain why shared space would be a viable approach. Chapter 3 introduces the research design. This chapter discusses the type of research conducted and its importance to the study. Chapter 4 reviews relevant literature on the topic of shared space. Chapter 5 presents an analysis of the two case studies. The next chapter, Chapter 6, consists of the development of a set of shared space principles based on the research, and recommendations for a conceptual redesign of a portion of Downtown Yonge Street. Chapter 7 discusses the critique and evaluation of the Downtown Yonge Street conceptual redesign through professional feedback. The final chapter, Chapter 8, presents the overall conclusion of the thesis.
CHAPTER 2 | Downtown Yonge Street: Contextual Background

Yonge Street commences at Lake Ontario, runs through Toronto, turns into Highway 11 and continues another 1,886 kilometers, terminating at Rainy River, Ontario (Smith, 1996). It is lauded as the longest road in Canada and considered, as stated previously, to be Toronto’s ‘main street’ (KPMB Architects & Greenberg Consultants Inc., 2011; Smith, 1996). This chapter explores the initial context to Downtown Yonge Street. First, a general overview of Yonge Street as a whole, from its conception to the early 1990s is discussed. The next section focuses on the characteristics of the downtown portion of Yonge Street and the recently implemented Celebrate Yonge project. The final section reviews the Yonge Street Planning – Final Report developed by KPMB Architects and Greenberg Consultants Inc. (2011) and their vision and recommendations for Yonge Street. The chapter ends with a summary and reference to the thesis objectives.

A History of Yonge Street

The name ‘Yonge’ was given to the street by the first lieutenant governor of Upper Canada Sir John Graves Simcoe, and named after British Secretary at War Sir George Yonge – a friend and patron of Simcoe (Smith, 1996). As mentioned by Smith (1996), Yonge Street’s purpose was to provide a ‘backdoor’ access from the York naval base along Lake Ontario and the Niagara Peninsula to Georgian Bay in the event of an American attack. Soldiers surveyed and clear-cut ‘a chain width’ – about 20 meters – thoroughfare, and encouraged settlements on adjacent sides. After the departure of Simcoe back to England, German settlers took over from Simcoe’s soldiers and began working on transforming Yonge Street into a functional thoroughfare. The following years saw Yonge Street expand progressively towards the lakefront from Bloor, and in
1837 Yonge Street began focusing on its future as a commercial thoroughfare (Smith, 1996).

Yonge Street has experienced a number of events that has shaped what it has become today. One event was the open and cut construction and installation of Canada’s first subway, the Yonge Line, from 1949 to 1953 (KPMB Architects & Greenberg Consultants Inc., 2011; Smith, 1996). Another was the addition of the Eaton Centre mall, which encompasses three blocks and is placed above two subway stops (Greenberg, 1987). In the late 1960’s, Yonge Street experienced a shift of incoming massage parlours, strip clubs, trinket shops and movie houses that replaced traditional retail along the street (Greenberg, 1987; Smith, 1996). This accumulated into another event in 1977, which saw the death of “a young shoeshine boy in the back room of a massage parlour” (Greenberg, 1987, p. 196). A more recent event saw the officially opening of a public open space – Yonge-Dundas Square – in 2003 (Downtown Yonge Business Improvement Area [DYBIA], 2010b).

Over its tenure, Yonge Street has “established itself as the place to which the city came out in numbers” (Smith, 1996, p. 30). Citizens have celebrated the end of the Boer War in 1902; the start of the Santa Clause Parade in 1906; Orangemen gathering to parade in the 1920s and 1930s; and World Series wins from the Toronto Blue Jays (Smith, 1996). Today, portions of Yonge Street are often used as parade routes and for event spaces. Some of these included the Annual Pride parade, Santa Clause parade, Brazil Day, Winter Magic and recently implemented Celebrate Yonge.
Pedestrian Mall

During the summers between 1971 and 1974, portions of Yonge Street were converted into temporary pedestrian malls (KPMB Architects & Greenberg Consultants Inc., 2011). The purpose was to provide pedestrians a space during the summer months and test the possibility of a permanent mall on Yonge Street (The City People: Community Planning & Research Inc. [The City People], 1974). From Wellington Street to Gerrard Street, sections along Yonge Street were closed off to vehicular traffic and temporary fixtures such as trees, tables, flowers and benches were incorporated (The City People, 1974).

Surveys conducted for a feasibility study developed by The City People (1974) reported that people who used the mall enjoyed the outdoor amenities. Those who visited during the evening hours appreciated having an area to drink and to enjoy the entertainment and the crowds. Moreover, the elderly appreciated having an area to sit and
watch people. For those people who disapproved of the pedestrian mall, they disliked being pestered by panhandlers and people pamphleting as a result of the social atmosphere (The City People, 1974).

With respect to comments made by proprietors along Yonge Street, 78% rated the temporary mall positive for business (KPMB Architects & Greenberg Consultants Inc., 2011). Initially, 98% of merchants supported keeping the pedestrian mall year round. However, as perceived criminalized activity increased, endorsement for the mall dropped (KPMB Architects & Greenberg Consultants Inc., 2011).

Overall, the feasibility study recommended that a permanent mall along Yonge Street should be created from Wellington Street to Dundas Street; and a partial pedestrian mall from Dundas Street to College Street should be implemented (The City People, 1974). However, the permanent implementation of a pedestrian mall along Yonge Street was eventually scrapped as Mayor Crombie could not get provincial approval for two exemptions regarding liability and limiting leafleting due to the interests of “well-moneyed objectors (such as the Simpsons’ and Eaton’s families)” (Idlewild & Taylor, 2011, para. 9). As a result, pedestrian activity shifted into the Eaton Centre and the PATH underground walkway system (Idlewild & Taylor, 2011).

Downtown Yonge

As shown in Figure 2-2, the Downtown Yonge area is centrally located within the downtown core of Toronto. Downtown Yonge is bordered by Grosvenor Street and Alexander Street to the north; Church Street and Victoria Street to the east; Richmond Street to the south; and Bay Street to the west (Downtown Yonge Business Improvement Area [DYBIA], 2010c). For the purpose of this thesis, Downtown Yonge Street is defined
as the portion of Yonge Street that runs through the outlined boundary of the Downtown Yonge area as set by the DYBIA.

![Figure 2-2 | Downtown Yonge Street Context](image)

Regarded as one of the best places for shopping, business and entertainment in Toronto, Downtown Yonge is home to “over 600 retail stores, 150 bars and restaurants, 8 hotels, 4 theatres, and the outdoor entertainment hub of Yonge –Dundas Square” (DTYBIA, 2010a, para. 2). Intersecting Downtown Yonge Street are several major arterial roads – College/Carlton Street, Gerrard Street, Dundas Street, Queen Street and Richmond Street – with three streetcar tracks located along College/Carlton Street, Dundas Street and Queen Street. In addition, there are subway stations situated near the intersections of Yonge and Queen, Dundas and College Street.
Figure 2-3 | Downtown Yonge Area as Defined by the Downtown Yonge Business Improvement Area
(Image from <www.downtownyonge.com/about/index.html>)
Figure 2-4 | Downtown Yonge Major Arterial Roads, Streetcar Track Locations and Subway Entrances
As described by KPMB Architects and Greenberg Consultants Inc. (2011), the typical right-of-way of Yonge Street generally is 20 meters – as shown in Figure 2-5. The roadway accommodates four lanes of traffic – the two center lanes 3.5 meters wide, and the outer lanes 3 meters in width. The sidewalk is 3.5 meters wide, but only 3 meters is used for pedestrians as the remaining 0.5 meters of space is needed for the street and pedestrian lighting. Furthermore, there are turning restrictions in place on Yonge Street that have resulted in a reduction vehicular traffic (KPMB Architects & Greenberg Consultants Inc., 2011). There are left turn restrictions at Richmond Street, Shuter Street and Gerrard Street; left and right turn restrictions at Queen Street and Dundas Street; and a limited left turn restriction (7:30 AM to 6:30 PM from Monday to Saturday) on College/Carlton Street.

![Figure 2-5 Typical Street Section of Yonge Street](Image from "Yonge Street Planning – Final Report" by KPMB Architects and Greenberg Consultants Inc. [2011])

KPMB Architects and Greenberg Consultants Inc. (2011) stated that “there is a high volume of pedestrians due to the variety of businesses, institutions, entertainment venues and residences located on, or around the street” (p. 18). As shown in Figure 2-6,
Springboard [as cited in DYBIA] (2013) displayed pedestrian counts that almost double vehicular counts on a weekly basis from January 2012 to January 2013. Springboard [as cited in DYBIA] (2013) also reported a ratio of 67% pedestrian to 33% vehicle traffic within the Downtown Yonge area during the month of January 2013 – refer to Figure 2-6.

![Weekly average pedestrian and vehicle counts per counter in Downtown Yonge](Images from <www.downtownyonge.com/retail>)

As mentioned earlier, Yonge Street has a “variety of businesses, institutions, entertainment venues and residences located on, or around the street” (KPMB Architects and Greenberg Consultants Inc., 2011, p. 18) – with the most notable retail and commercial establishment being the Eaton Centre Shopping Mall. Yonge Street also connects to several open spaces and ‘urban villages’ (KPMB Architects and Greenberg...
Consultants Inc., 2011). These villages include College Park, McGill-Granby, Edward-Elm and Ryerson University (KPMB Architects and Greenberg Consultants Inc., 2011). Closely adjacent to the Downtown Yonge area are St. Michael’s Hospital, Old City Hall, Toronto City Hall and Nathan Phillips Square.
Figure 2-8 | Downtown Yonge Adjacent Open Spaces


**Celebrate Yonge**

During the weeks of August 17 to September 16 in 2012, Yonge Street was reduced from four lanes of traffic to two lanes from Gerrard Street in the north to Queen Street in the south. With this reduction in traffic lanes, new public spaces were extended onto the roadway (DYBIA, 2012b). Known as Celebrate Yonge, as shown in Figure 2-9 and Figure 2-10, the event offered pedestrians a unique way of experiencing Yonge Street by incorporating public seating, restaurant patios, art installations, gaming spaces and a pocket. The layout design saw Yonge Street reduced to one northbound and one southbound lane at a wider road width of 4.5 meters (original road width was at 3.5 meters). Furthermore, the extended public spaces on the roadway alternated in locations: from Queen Street to Dundas Street the ‘bump out’ space was on the east side of Yonge Street, and from Dundas to Gerrard Street it was on the west side. These public space extensions were approximately 3.75 meters in width (DYBIA, 2012b).

Based on a draft summary report on Celebrate Yonge produced by the DYBIA (2012a), several...
conclusions about the event were revealed with respect to public acceptance, pedestrian and vehicle counts and the effect on other traffic corridors. Cision Canada (as cited in DYBIA, 2012a) reported a 99% positive or neutral tone regarding the Celebrate Yonge event. This figure was based on 551 monitored news items that consisted of social media platforms, printed media and broadcasted media (DYBIA, 2012a).

Reported pedestrian flow counts from Springboard (as cited in DYBIA, 2012a) – in comparison to numbers from the previous year when the event was not in effect – showed an increase of 22.6% year-on-year during the first week of the event. This translates to approximately 1.6 million pedestrians per week. Subsequent weeks reported increases of 7.4%, 10.5% and 5.3% year-on-year respectively – approximately 1.5 million pedestrians per each respective week. The concluding weekend witnessed a minimal increase of 1.6% year-on-year or approximately 26,500 pedestrians daily (DYBIA, 2012a).

With respect to vehicular flow counts, Springboard (as cited in DYBIA, 2012a) reported a decrease of vehicles across all four weeks: 4%, 5.3%, 6.8% and 0.5% year-on-year respectively. The concluding weekend experienced the highest deduction in
vehicular flow with over 21% year-on-year. It is important to note that pedestrian and vehicular counts did not take into account several factors that may have affected the data such as other occurring events; the weather and holidays; recorded counts only represent north-south flows and not east-west; and pedestrian counts within the extended public space ‘bump outs’ were not recorded as there was no comparative data present (DYBIA, 2012a).

In terms of impact on other thoroughfares adjacent to Yonge Street, URS Canada (as cited in DYBIA, 2012a) observed that some of the southern bound traffic from Yonge Street transferred over to Jarvis Street to the east, as there was an increase in vehicles per hour per lane (vphpl). Furthermore, it was also assumed that Yonge Street traffic deterred onto Bay Street due to the increase in vphpl observed and its proximity – as Bay Street is located one street over to the west. Overall, URS Canada (as cited in DYBIA, 2012a) concluded that with the designated event space Celebrate Yonge experienced a reduction of traffic volumes and furthermore the lane closures were not significant. This insignificance is partially due to the fact that Yonge Street “has the lowest corridor and per-lane volumes in comparison to all other observed major arterials (i.e. University Avenue, Bay Street, Church Street, and Jarvis Street) in the study area” (URS, 2013, p. 15), which was based on a prior Celebrate Yonge traffic volume survey. Moreover, it is viewed that capacity issues faced along Yonge Street are a result of signalized intersections – most notably at the intersection of Yonge and Dundas Street (DYBIA, 2012a). The need to allow “east-west movement long Dundas Street, plus the signal timing needs for pedestrians and notably the all-movements pedestrian phase at the intersection limit the north-south capacity of the corridor” (URS, 2013, p. 15).
Yonge Street Planning – Final Report

The Yonge Street Planning – Final Report, developed by KPMB Architects and Greenberg Consultants Inc. (2011), provided a vision and recommendations that will help guide future development along Yonge Street. Based on consultation work with “local residents, institutions, land owners, businesses, the City and the general public” (p. 3), four themes were identified: (1) Public Realm and Transportation; (2) Built Form; (3) Program and Land-use; and (4) Implementation. As this thesis is focused on providing recommendations for the conceptual redesign of the physical right-of-way for sections of Downtown Yonge Street, the main focus of this section will be on the public realm and transportation theme (KPMB Architects & Greenberg Consultants Inc., 2011). Table 2-1 provides a sample of comments made by local residents, Ryerson University administrators, landowners, City of Toronto staff and the general public.

Table 2-1 | Sample Comments from Local Residents, Ryerson University, landowners, City of Toronto and the General Public on Public Realm and Transportation – from “Yonge Street Planning – Final Report” (KPMB Architects & Greenberg Consultants Inc., 2011)

<table>
<thead>
<tr>
<th>Local Residents</th>
<th>Ryerson University</th>
<th>Landowners</th>
<th>City of Toronto</th>
<th>General Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Enhance pedestrian experience on Yonge (wider sidewalks)”</td>
<td>“Quality of retail and upkeep of properties is an issue”</td>
<td>“Make Yonge a destination and not a throughway”</td>
<td>“Curbless streets are great, flexible opportunity, but consider Yonge Street’s role within a major arterial network before developing plans”</td>
<td>“Support for closing off Yonge on weekends”</td>
</tr>
<tr>
<td>“Retain vibrancy for tourists, students &amp; residents”</td>
<td>“Enhance pedestrian experience on Yonge with bold moves”</td>
<td>“Introduce seating areas and small pockets of space”</td>
<td>“Address priorities between modes – particularly during peak periods of traffic”</td>
<td>“Reduced vehicle traffic will hurt businesses”</td>
</tr>
<tr>
<td>“Develop gateways”</td>
<td>“Lighting and landscaping are important – generate village fell”</td>
<td>“Maintain vibrancy throughout days and seasons”</td>
<td></td>
<td>“Additional trees and light poles clutter the streets and render sidewalks unnavigable [sic] by people with disabilities”</td>
</tr>
<tr>
<td>“Enhance environment for pedestrians and cyclists”</td>
<td>“Bike access”</td>
<td>“Support for the introduction of wider sidewalks and curbless street”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recommendations provided by KPMB Architects and Greenberg Consultants Inc. (2011) stated that a “flexible street design with rolled curbs” (p. 5), wider sidewalks and the preservation of two wide lanes for traffic would help in accommodating servicing to buildings without disrupting traffic, enhance local retail and support temporary street closures. Other recommendations, with respect to the public realm and transportation theme, include:

- transform the Yonge Street public realm with pilot projects;
- introduce second TTC subway entrance for Dundas Station;
- extend and enhance pedestrian routes from Yonge Street to adjacent open spaces; and
- develop interactive and unique street lighting (KPMB Architects & Greenberg Consultants Inc., 2011)

Figure 2-12 | Recommended Concept and Vision for Yonge Street
(Image from “Yonge Street Planning – Final Report” by KPMB Architects and Greenberg Consultants Inc. [2011])
Conclusion

With its rich history and ability to attract new merchants, local residents and tourists for shopping, business and entertainment, Yonge Street justifiably makes the claim of being Toronto’s ‘main street’. Two factors, however, detract from Yonge Street being perceived as Toronto’s main street. First, the existing design character – with respect to the road, sidewalk and light fixtures – does not provide the necessary visual quality or uniqueness expected of the main street for a major city. Second, the emphasis on roads over the pedestrian space undermines the perception of Yonge Street as a great urban place.

The recommendations provide by KPMB Architects and Greenberg Consultants Inc. in Yonge Street Planning – Final Report are a good first step in guiding what Yonge Street can be in the near future. The studies done by URS Canada for the DYBIA have shown that Yonge Street is capable of changes without significantly affecting its current state and other adjacent streets. The feedback from Celebrate Yonge and comments from the Yonge Street report have shown that there is a dire need for a new, bolder Yonge Street design that places an emphasis on creating a more pedestrian-friendly environment.

Furthermore, the recommended “flexible street design with rolled curbs” (KPMB Architects & Greenberg Consultants Inc., 2011, p. 5), wider sidewalks and the preservation of two wide lanes for traffic, provides a subtle approach that arguably does not make the street unique. The design for such an iconic corridor as Yonge Street should be something bold – distinct in its own right – while providing more freedom of movement and space for pedestrians, at the same time acknowledging its role as a major arterial thoroughfare.
CHAPTER 3 | Research Methodology

The methodological approach behind this research design primarily consisted of qualitative data. Qualitative data, as defined by Richards (2009), are “records of observation or interaction that are complex and contexted, and they are not easily reduced immediately (or, sometimes, ever) to numbers” (p. 34). They also provide for much more detailed information, which can lead to a better understanding or explanations about a specific problem or phenomena (Babbie & Benaquiat, 2002). Collecting qualitative data is appropriate for this type of research as there is a need to understand in greater depth the existing theory, themes and research findings of shared space through mostly non-quantitative measures.

Literature Review

The first step to collecting data consisted of conducting a literature review. This process involved reading and evaluating what other people have written (McNeill & Chapman, 2005). It also acted as a starting point in knowing the available information on the topic (Deming & Swaffield, 2011). By analyzing related literature, McNeill and Chapman (2005) state that the overall expectation of this process is to build on the current body of knowledge of the research. Moreover, a “literature review can be a useful strategy for initializing new inquires or theory (Deming & Swaffield, 2011, p. 146).

For this literature review, an examination and summarization of the existing knowledge and theory of shared space was conducted. Sources consisted of academic works, journal articles, public documents and online references from varying websites. This review explored what research has been previously done on the topic and determined any consistent findings and flaws within the body of research (Babbie &
Benaquiato, 2002). It also determined the significance of the study being conducted, as suggested by Creswell (2009).

**Case Studies**

Francis (2001) provides a case study definition for landscape architecture: “A case study is a well-documented and systematic examination of the process, decision-making and outcomes of a project, which is undertaken for the purpose of informing future practice, policy, theory, and/ or education” (p. 2). In addition Yin (1994) states that it “is a way of investigating an empirical topic by following a set of prespecified procedures” (p. 15). The purpose for conducting a case study is to provide an extensive range of comprehensive data from multiple sources and focus on the specifics of the interested case (Babbie & Benaquiato, 2002; Creswell, 2007). It also provides for a number of benefits such as a source of information on a potential remedy to an issue, an explanation or prediction towards a theory and describing or assessing a particular procedure or project (Francis, 2001).

The purpose of exploring the selected case studies for this research was to explore the reasoning behind the redesign project, the intended design and post evaluation comments. To supplement the post evaluation comments, on-site observations of each project site were conducted. The exploration of the case studies assisted in answering the missing gaps within the knowledge of shared space – as set out for the purpose of this thesis – from the literature review.

The selection process for each case study site was based on how relevant they were to the shared space approach – based on the theory and characteristics derived from the literature – and how similar they were to Downtown Yonge Street. Data for each case
study was derived from secondary source descriptions, key-informant interviews and on-site observations. The selection process and compilation of data for the case studies will be discussed in Chapter 5.

Secondary Source Descriptions

The first research strategy used in collecting data for each case study was secondary source descriptions. This process involved gathering and summarizing the information and observations reported by other investigators (Deming & Swaffield, 2011). These sources came from public documents, published articles and related websites. Using secondary descriptive data is beneficial in that it acts as an initial introduction into the study site and provides general information about the project. It can also help in formulating questions for key-informant interviews that touch on material not present within the public information on each case.

Key-Informant Interviews

The next research strategy consisted of conducting a series of key-informant interviews. This form of qualitative research method incorporates the use of prepared questions, but still allows respondents the opportunity to provide their own explanations and answers (Denzin & Lincoln, 2005). Key-informant interviews involve questioning “people who are well informed on the topic” (Deming & Swaffield, 2011, p. 154). By selecting respondents who are familiar with each particular site, Deming and Swaffield (2011) indicate that it increases the probability that the interview will result in gathering relevant data for this research. Respondents chosen for each case study consisted of – but may not include all – the following:
• Professionals who directly worked on designing the selected project site
• The clients or stakeholders of the project
• Any other professionals or employees from an organization who are directly connected to the project site

The interviews consisted of a set of open-ended questions in order to facilitate and guide the discussion with the respondent. The University of Guelph Research Ethics Board (REB) approved the created questions prior to conducting the interview. Open-ended questions allow respondents to provide their own response to each question (Babbie & Benaquisto, 2002). Moreover, the interview in itself was designed to be more of an open-ended discussion as the expectation is that each open-ended question will evolve into other questions not included with the initial predetermined set questions.

Several of the predetermined questions that may have been asked during the interviews included:

• What was the reason for/ or the initial response to converting the street into what it is today?
• What was the existing state of the street?
• Can you describe the pedestrian and vehicular activity prior to the conversion? Do you know the counts for each respective user passing through the space?
• What was your organizations approach to the particular project?
• How have pedestrians and vehicles responded to the change?
• With respect to pedestrian and vehicular counts, have they increased?
  Decreased?
• Were there any limitations to the project?
• Now that it has been completed, what changes would you make now?

Certain questions were skipped during the interview if they had already been thoroughly answered by a previous respondent, and if the respondent provided the interviewer with another key-informant who would know the requested answer thoroughly.

**On-site Observation**

On-site observation was the final research strategy used in collecting data for each case study. This approach consisted of being at the actual project site and observing how pedestrians, vehicles and other street users interact with each other and their surroundings. Using on-site observation is fitting with this type of research as it provides the opportunity to view “social life in its natural habitat” (Babbie & Benaquisto, 2002, p.307). Furthermore, it allows for the observation of other potential events that may have not been foreseen.

On-site observations consisted of three separate visits during the day over a span of four days. One day consisted of an informal site visit in order to determine where the most amount of traffic movement occurred within the site. An emphasis was placed on using mid-block locations within the street as it was assumed that they represent the activity of the street overall. Each visit lasted for one hour, and was conducted between the times of 8:00 AM to 9:00 AM, 12:00 PM to 1:00 PM and 4:00 PM to 5:00 PM. These
time periods were chosen as it was assumed that they reflect peak times in traffic movement of street users from home to work, lunch break and work to home.

Observations at the mid-block locations were made by repeatedly observing all directions of the street to the farthest point of sight of the observer. The trends, events and activities that were of interest for the observations were based on the gaps in knowledge of shared space based on the scope of the thesis. The type of observations that were made will be discussed in the conclusion of Chapter 4.

**Professional Critique and Evaluation**

Following the development of the shared space principles and its application to Downtown Yonge Street, several professional critiques and evaluations were done in order to assess their feasibility. Though closely related, Deming and Swaffield (2011) claim the two are different with respect to their relationship with theory. Design critique is based on garnering a better understanding of the project through theoretical ideas. On the contrary, design evaluation consists of applying both “a theory embedded in measureable criteria or standards (i.e., a rubric) and generating new knowledge about a situation or phenomenon” (Deming & Swaffield, 2011, p. 180).

The critique and evaluation process involved inviting several professionals to comment and provide their professional opinion on the developed principles, conceptual redesign and the feasibility of a shared space scheme. The professionals who were invited had to be familiar with the Downtown Yonge Street context, and not be involved in the development of the principles and conceptual redesign. Professionals were e-mailed an evaluation form and asked to review a summary of the theory and knowledge of shared space, the Downtown Yonge Street context and fill out a series of open-ended questions.
related to the developed principles, conceptual redesign and the feasibility of a shared space scheme. Refer to Appendix G for the evaluation form.

In order to minimize bias, those interviewed during the case study phase were also asked to participate in the critique and evaluation. The purpose behind this was that professionals with some relation to Downtown Yonge Street might provide comments or recommendations based on their own personal wants and vision for the space. Therefore, having critics who have no relation to the street per se helped minimize bias, as they only provided their professional input. Overall, the critique and evaluation was necessary, serving as a basis of revealing new understandings of the shared space approach, its feasibility and informing future applications of this idea to other potential streets.
CHAPTER 4  |  Literature Review

The literature review provides both a summary and exploration of the current state of knowledge on the topic of shared space. This chapter is divided into three main sections with subsequent themes within each. The introduction reviews various definitions, characteristics, philosophy, background and historical context on the idea of shared space. A look at the type of work that has been done and any controversies within the research that has questioned earlier statements on the subject are reviewed. Furthermore, this section provides a brief exploration of several other streetscape enhancements and traffic improvement approaches that are similar to that of shared space, serving to clarify confusion in terminology and approaches found in the literature and professional practice.

The subsequent section reviews the current state of knowledge on shared space and notes the major themes that have arisen from the topic. It also highlights findings and contradictions within the literature. Finally, the summary synthesizes all the presented research and determines the gaps in knowledge that need to be addressed.

Introduction to Shared Space

Origin

The shared space approach originated and was pioneered by late Dutch traffic engineer Hans Monderman (Methrost et al., 2007). As reported by Vanderbilt (2008), Monderman claimed that the best way of changing the behaviour of people was to change their environment. He thought the government’s approach to street safety had made some roads more hazardous (Toth, 2009). Particularly, separation and allocation of space – by means of roads, sidewalks, traffic lights, and signs – created a sense of entitlement for
street users, thus leading them to perceive that the space was their’s alone and that they could behave as they chose within it.

As a result, Monderman experimented with basic landscape development and design approaches such as removing or reducing the amount of traffic control devices and emphasizing the context of the site (Hamilton-Baillie, 2008a). He also created an alternative way of regulating traffic and bringing focus and attention to human activities (Methrost et al., 2007). Monderman believed that this approach would make street users negotiate the traffic movement among themselves instead of through signs, signals and crosswalks (Toth, 2009).

The first experiment in which Monderman applied the shared space approach was the village of Oudehaske, The Netherlands (Hamilton-Baillie, 2008a). The village recorded a decrease in traffic speeds by over 40 percent – in comparison to conventional traffic calming devices, which achieved closer to a 10 percent decline (Hamilton-Baillie, 2008a). Other subsequent village designs that followed documented remarkable reductions in speeds and accidents (Hamilton-Baillie, 2008a).

Definitions

There seems to be no clear definition for the term ‘shared space’ (Moody & Melia, 2012). Several authors and organizations have provided their own explanations through published articles and reports. An institution known as Shared Space (2005) – an organization no longer in existence (G. Toth, personal communication, November 27, 2012) – describes this concept as a way of improving public space and the surrounding environment, without having to remove or restrict vehicular traffic. MVA Consultancy (2009) offers their interpretation in their report on shared space as “an approach … aimed
at changing the impact of motor traffic in places used by pedestrians” (p. 3). The street or space is accessible to all users as it allows pedestrians to move freely and encourages drivers to assume priority (MVA Consultancy, 2009). In a later document, Shared Space (2008a) adds that it is “a new way of designing public space where traffic no longer dominates but is balanced with that of other functions” (p. 5).

Similar to the previous definition, CABE Space (2008) defines shared space as “a space in which different street users have equal entitlement and priority to the space” (p. 7). They continue by adding that this approach attempts to combine all the functions of the street rather than separating them. Hamilton-Baillie (2008a) reiterates the notion of combining functions by defining it as a way of integrating traffic into the “social and cultural fabric of the built environment” (p. 169).

The Department for Transport [DFT] (2011) describe the approach as “a street or place designed to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enabling all users to share the space rather than follow the clearly defined rules implied by more conventional designs” (p. 6). They add that the reduction in vehicle dominance should be done through reducing traffic control features and urging drivers to be more cooperative towards pedestrians and lowering their traffic speeds (DFT, 2011). Furthermore, Olcayto (2012) simplified the meaning of the approach: “one road surface for pedestrians and road users with a low speed limit and no road markings.

Finally, after an examination of sources on shared space, Moody and Melia (2012) offer a different definition of shared space in their paper: “streets designed to minimise [sic] demarcations between vehicles and pedestrians…” (p. 3).
Philosophy and Premise

In the literature, shared space is regarded as a philosophy or approach, rather than a type of design (CABE Space, 2008; Methorst, Gerlach, Boenke & Leven, 2007; Moody & Melia, 2012; MVA Consultancy, 2010). The philosophy behind shared space is that by removing or minimizing traffic control features – such as traffic lights, signs, curbs, bollards, road markings – awareness among street users (pedestrians, drivers and cyclists) is increased and prompts them to pay more attention to one another and act in a cooperative way (CABE Space, 2008; DFT, 2011; The Economist, 2012; Toth, 2009). Moreover, “as the level of demarcation between pedestrians and drivers is reduced, the amount of sharing increases” (DFT, 2011, p. 10).

With respect to drivers, it is anticipated that driving at lower speeds will prompt them to navigate the space through behavioural and social actions (Dumbaugh & Li, 2011). Furthermore, drivers are more inclined to give pedestrians the right-of-way when vehicle speeds are decreased (DFT, 2011). Hamilton-Baillie (2008b) reiterates this notion by claiming that “in the absence of rules, predictability and certainty, drivers have to rely on cultural signals and informal social protocols” (p. 133). Shared space schemes therefore make drivers more hesitant, influence them to reduce their speed and move through the space by making eye contact with other street users rather then following conventional traffic rules and signs (CABE Space, 2008; Hamilton-Baillie 2008b; Hamilton-Baillie & Jones, 2005). In essence, “the driver becomes a citizen” (Hamilton-Baillie & Jones, 2005, p. 43) – or a pedestrian on the street.

Toth (2009) states that traditional conventional streets assign distinct spaces for different modes of movement – roads for vehicles and sidewalks for pedestrians. This
separation has created an entitlement for each respective user, which therefore leads them to behave and think that they do not have to take responsibility to watch out for other users within their ‘entitled space’. This premise works in favour of drivers as they are protected by the confine of their vehicle (Toth, 2009). Although both drivers and pedestrians are equally permitted to occupy the right of way of the conventional street, pedestrians generally exercise “little control over the vehicular traffic, other than at controlled crossings” (DFT, 2011, p. 5).

**Purpose and Characteristics**

The shared space approach aims at improving “the quality of public spaces and the living environment for people, without needing to restrict or banish motorised [sic] traffic” (Shared Space, 2005, p. 4). According to the DFT (2011), the shared space approach allows pedestrians to move freely, make the flow of traffic more efficient and reduce delays at crossing intersections. Shared spaces also enhance “the street’s sense of place while maintaining its ability to accommodate vehicular movement” (DFT, 2011, p. 6). As emphasized by MVA Consultancy (2009), shared spaces offer several purposes:

- “improving the urban environment;
- giving people freedom of movement rather than instruction and control;
- improving the ambience of places;
- enhancing social capital; and
- enhancing the economic vitality of places” (p. 3)

The DFT (2011) stated that there is no conclusive type of shared space street design, but rather it is more of a set of approaches intended to encourage sharing as a mean to
improve the overall function of the street. Furthermore, the implementation of a shared space scheme in a site “is different and the way each street performs will depend on its individual characteristics, the features included and how these features work in combination” (DFT, 2011, p. 11).

Shared spaces are often recognized by the omission, or reduction, of traffic control devices such as signs, signals, road markings and crosswalks (MVA Consultancy, 2009; Toth, 2009). The scheme is viewed as being an ‘uncluttered environment’ (DFT, 2011). As stated by Hamilton-Baillie (2008a), “the accumulation of ‘street clutter’ is the most evident visual manifestation of measures aimed to regulate and control movement, and remains a source of growing concern about the decline in visual and spatial quality in the public realm”. The removal of traffic control devices “modify the way the street operates by creating an environment that encourages drivers, pedestrians and cyclists to behave in a more co-operative manner” (DFT, 2011, p. 11).

Some shared space schemes feature a shared – or single – surface; which is defined as the combination of both pedestrians and vehicles on a level surface within the thoroughfare (CABE Space, 2008; MVA Consultancy, 2009). By removing ‘edge-of-pavement barriers’ – such as curbs – and creating a single surface that is level, the lines between the sidewalk and the road are distorted (Toth, 2009). The open environment provides pedestrians more space for movement; allowing them the freedom to move wherever they please as the distinction between vehicular rights on the road and pedestrian rights of the sidewalk are skewed (CABE Space, 2008; DFT, 2011; Toth, 2009). A benefit to a shared, or single, surface is that street is more flexible and can be used in a variety of ways such as for events, street cafes and other activities (DFT, 2011).
Additionally, shared spaces consist of a desirable traffic speed of 20 miles per hour (mph), or 32 kilometers per hour [kph] (DFT, 2011). Based on research presented by Pilkington (2000), DFT (1999) and Hamilton-Baillie (2008b), a speed limit of 20 mph has shown a reduction in traffic incidences and accidents. It was suggested that journey times also improve on a street with lower speeds due to intersections being more efficient (Hamilton-Baillie, 2008b; Hamilton-Baillie & Jones, 2005). Furthermore, Hamilton-Baillie and Jones (2005) reiterate that “research into driving behaviour suggests eye contact between drivers, and between drivers and pedestrians, decreases rapidly beyond the 32 km/h threshold” (p. 44).

**Applications**

With a number of shared space examples emerging in the United Kingdom, there are already several prominent schemes in The Netherlands that are deemed ‘showcases’ of the approach (Methrost et al., 2007; MVA Consultancy, 2009). Notable examples from The Netherlands include Laweiplein in Drachten and a part of the Rijksstraatweg in Haren, near Groningen (Methrost et al., 2007). As reported by Methrost et al. (2007), there have been few to no accidents accounted for after the renovation. However, responses on the achieved redesigns were mixed as drivers, cyclists and pedestrians feel they are not safe and are critical of the approach.

Laweiplein is often recognized as the “leading example of shared space” (Moody & Melia, 2012, p. 4). A roundabout within the city square, it handles around 22,000 vehicles daily (Shared Space, 2008c). The premise was based on transforming the roundabout into a public square (Hamilton-Baillie, 2008a). Removed to a minimum were the pedestrian crossings, traffic signs and separated bus and bike lanes (Shared Space, 2008c).
Hamilton-Baillie (2008a) notes that a consistent colour palette was added to the ground and subtle curbs were introduced. In addition, informal ‘courtesy crossings’ where both pedestrians and cyclists could cross were included.

Since its reconstruction, Laweiplein saw vehicle delays fall to 26 and 35 seconds from 53 seconds (Shared Space, 2008c). Injury rates, as reported by Hamilton-Baillie (2008a), fell from 8.3 to 1 within the three years. Additionally, the slower speeds and interaction between road users seemed to minimize the interruption and delay in movement associated with conventional traffic (Shared Space, 2008c). However, Methrost et al. (2007) disputes that the redesign of Laweiplein is still a ‘classic roundabout’ scheme where the right-of-way for drivers is still separated from pedestrians and bicyclists. In a study by the Noordelijke Hogeschool Leeuwarden (2007), it was concluded that while the area improved in terms of accidents, delays and user behaviour, pedestrians still preferred using the courtesy crossings and their opinion on the safety of the scheme stayed unchanged.

The Rijksstraatweg is a street in the shopping centre of Haren; 800 meter in length and 6 meter wide. The roadway connects two main civic spaces and transports 8,500 to 12,000 vehicles daily (Hamilton-Baillie, 2008a). It is one of the very first municipalities to convert their centre into a shared space (Shared Space, 2008b). Details from Hamilton-Baillie (2008a) mentions that the street has seen traffic speeds fall to 5 km/h, more reliable journey times for buses and more pedestrian movement among ongoing traffic. Moreover, the shared space scheme produced new ‘economic initiatives’ such as cafes on the street (Shared Space, 2008b).
Methrost et al. (2007) reported that 90% of people insisted that bicyclists should be either put on the roadway or on its own lane. The public favoured a separated lane for bicycles while experts sought to have them on the road. Another criticism discussed was that the intersection areas within Rijksstraatweg are the only areas that had mixing of different users; pedestrians and bicyclists have their own separated space (Methrost et al., 2007).

Similar Streetscape Enhancement and Traffic Improvement Scheme: ‘Shared Street’ or ‘Woonerf’

The Shared space approach is regularly misinterpreted with other concepts as there are descriptive elements within the definition of shared space that are similar to those found in other streetscape enhancements and traffic management approaches (Hamilton-Baillie, 2006; MVA Consultancy, 2009). The term ‘shared street’, also referred as the ‘woonerf’, is a concept that integrates and sees “pedestrians, children at play, bicyclists, parked cars, and moving cars… share the same street space” (Southworth & Ben-Joseph, 1997, p. 109). Southworth and Ben-Joseph (1997) state that the shared street concept reclaims the physical and social pedestrian realm through redesigning the streets physical attributes. Moreover, it places “an emphasis on the community and the residential user” (p. 109) and places drivers in a lesser role on the street (Southworth & Ben-Joseph, 1997).

Like the notion of shared space, shared streets integrate both “pedestrian activity and vehicular movement on one shared surface” (Ben-Joseph, 1995, p. 507). However, while pedestrians in a shared street concept have priority throughout the street (Ben-Joseph, 1995), both pedestrians and vehicles have equal entitlement and priority throughout the entire space in a shared space scheme (CABE Space, 2008). Furthermore, where shared
spaces are more appropriate for streets that experience high volumes of traffic (Hamilton-Baillie, 2008a), shared streets are geared towards a residential environment where it functions primarily as a “residence, a playground, and a meeting area” (Southworth & Ben-Joseph, 1997, p. 114). Overall, as the notion of shared space is considered more as a philosophy or approach (MVA Consultancy, 2010), the shared street concept is more of a formalized set of regulations and standards (Hamilton-Baillie, 2008a).

**Current State of Knowledge**

*Segregation Principle*

The physical appearance and notion of shared space comprises two different design components. The first component is the street. Streets are defined as “linear three-dimensional spaces enclosed on opposite sides by buildings” (Carmona, Heath, Oc & Tiesdell, 2003, p. 146) that are “used for circulation and, sometimes, other activities” (Rapoport, 1987, p. 81). Though streets are generally defined as thoroughfares for vehicular traffic, they also serve – and are relied upon – as spaces for shopping, travel, and social communication and interactions (Francis, 1987; Moughtin & Mertens, 2003).

Francis (1987) describes streets as being “an important part of the landscape of everyday life” (p. 23). In theory, as explained by Moudon (1987), streets are intended for public use and the public exercises control, improves and maintains the overall space. However in actuality, streets are “dominated by only one ‘branch’ of public, the automobile” (Moudon, 1987, p. 23). As a result, increases in traffic pose a threat to the efficiency of streets and quality of space (Buchanan, Crowther & Great Britain Ministry of Transport, 1963; Hamilton-Baillie, 2004). The resulting conclusion stated that
vehicular traffic and the public were incompatible and that they be segregated from each other (Hamilton-Baillie & Jones, 2005).

The term “segregation implies a separation of functions and groups that differ from one another” (Gehl, 1987, p. 103). The notion of segregation remains a model for contemporary planning and modern traffic engineering where it looks to decrease pedestrian and vehicle encounters (Hamilton-Baillie, 2004). It is based on the idea that the mixing of pedestrians and traffic is fundamentally unsafe and too ‘risky’, and that both should be entirely separate from one another in order to achieve a safer environment (CABE Space, 2008; Hamilton-Baillie, 2008b). In essence, the idea is that separation of different traffic flows increases the perception of safety (Shared Space, 2005).

The philosophy of shared space refutes the segregation principle and “challenges the assumption that segregating pedestrians and vehicles by high levels of demarcation improves safety” (DFT, 2011, p. 11). Hamilton-Baillie (2008a) stated, “the segregation of cars and pedestrians decreases safety and community vitality” (p. 162). Separating traffic actually increases traffic speeds, and since each street user has their own respective lane, each user will disregard the other users within the street space, therefore leading to more accidents and increased injuries (Shared Space, 2005). The shared space approach asserts that potential for risk through the mixing of different street users provides for a safer environment, as everyone is more aware of one another (Hamilton-Baillie, 2008b).

Risk

Introducing risk into design practice can positively affect an individual’s public space experience (CABE Space, 2007). Adams (1995) points out that this feeling of risk is critical to human activity, and consequently to the creation of a successful space. Shared
Space (2005) states that the shared space approach “is successful because the perception of risk may be a means or even a prerequisite for increasing objective safety. Because when a situation feels unsafe, people are more alert and there are fewer accidents” (p. 45).

When assessing potential risks, people rely on prior individual experiences such as accidents, social interactions, particular circumstances and knowledge on the situation in order to determine the severity of the risk or if it can be ignored (CABE Space, 2007). As space is allocated separately for drivers and pedestrians, it creates a false sense of security and the perception of risk is decreased (Toth, 2009). Furthermore, it leads both types of users to behave as if they do not have to worry or take responsibility for other users within the space.

The presence of risk through the interaction of drivers and pedestrians in a shared space provides for a safer environment due to the uncertainty of how each user will respond within the space (Hamilton-Baillie, 2008b). An explanation by Dumbaugh (2005) on safety performance and street sections establishes that as drivers come in contact with a potential road hazard, they adjust their behaviour in order to adapt to the perceived risk. Introducing more pedestrian activity within the street creates more risk amongst drivers as it develops a perception that the space is no longer their own area (Engwicht, 1999). Therefore, Engwicht (1999) claims that it leads to a slow down in traffic.

However, the introduction of risk can also be incompatible with the needs of the physically challenged and disabled in the design of public spaces (CABE Space, 2007). MVA Consultancy (2009) reports that individuals who are blind, partially sighted or experience restricted mobility may find that there is an increased risk in using shared
spaces. “This poses a major challenge for public space designers in designing for a variety rather than the norm or lowest common denominator in terms of risk perception” (CABE Space, 2007, p. 17).

Criticism

The philosophy of shared space is subject to criticism as well as praise. As suggested in the previous section, organizations representing the blind and partially sighted (CABE Space, 2008) are especially critical. The Guide Dogs for the Blind Association [Guide Dogs] (2006) have expressed concern that the omission of the curb placed the partially sighted and the blind at risk, as the curb edge being is indication of positioning within the street. Research through focus groups conducted by Guide Dogs (2006) expressed that shared spaces that incorporated a shared surface carried varying safety concerns. These concerns included not being able to cross the thoroughfare safely, being apprehensive of close moving traffic, and crossing paths with incoming traffic such as a bus. Those who participated in the Guide Dogs sponsored focus group stated that these concerns resulted from the exclusion of controlled crossing points, absence of demarcations and unsuitable street design materials (Guide Dogs, 2006). Participants also expressed their reduced confidence in navigating a shared surface within a shared space scheme and their lack of participation within the consultation process (Guide Dogs, 2006).

Methrost et al. (2007) suggested “the introduction of danger to incite safe behaviour, is disputable and brings along unacceptable risks for those that have limited traffic abilities or make wrong risk assessments” (p. 15). Furthermore, the assumption that street users in a shared space scheme can understand the informal communication amongst each other is arguable (Methrost et al., 2007). They mention that this is the case for those with
a visual or mental handicap, children and possibly the elderly. It may take this particular group longer to react when they need to communicate – especially in a crowded situation or when things are occurring in a brief period of time (Methrost et al., 2007).

In an article by Vanderbilt (2008), it was stated that an approach such as shared space would not work in a country like the United States – where drivers are unwilling to share the roadway with other drivers and the slightest traffic mediation could result in legal issues. Furthermore, Vanderbilt (2008) expressed that more separation and rules are needed because people behave like ‘idiots’. Finally, as shared spaces may create uncertainty and anxiety among drivers, Moody and Melia (2012) discussed the possibility of anxious and uncertain feelings diminishing if the particular shared space scheme becomes the norm.

**Conclusion**

Overall, the “lack of precise common vocabulary may be contributing to a lack of clarity in discussion on the topic” (MVA Consultancy, 2009, p. 5) of shared space. For the purpose of this thesis, shared space will be defined as a method of improving the public realm by encouraging equal entitlement of the space among pedestrians, drivers, cyclists and other users through the removal of conventional traffic control features. Incorporating research from the literature review, shared space presents several benefits that could help improve the existing landscape currently being experienced on Downtown Yonge Street such as improving the attractiveness of the street due to the removal of unnecessary street clutter (DFT, 2011), allowing freedom of movement for all pedestrians while still maintaining through traffic (Hamilton-Baillie, 2008a) and creating a safer environment due to increased awareness of surroundings (CABE Space, 2008; DFT,
Furthermore, findings from existing shared space schemes have shown reduction in vehicle delays; decrease in injury rates; emergent ‘economic initiatives’ such as cafes along the street; and improved journey times for buses and pedestrians (Hamilton-Baillie, 2008a; Shared Space, 2008b; Shared Space, 2008c). As most of the literature focused on the ‘sharing’ between pedestrians and vehicles, and these are the primary users of the Downtown Yonge Street study area, interactions with other street users such as bicyclists was not considered within the scope of this thesis.

In order to consider the shared space approach a viable option to redesigning Downtown Yonge Street, several gaps in knowledge presented in the literature need to be addressed. MVA Consultancy (2009) presented several gaps in knowledge with respect to the research they conducted on shared space which also tailors to this literature review. Some of these gaps in knowledge that were discussed by MVA Consultancy (2009) with respect to this literature review – and will be the focus of this thesis – include the following:

- “little evidence … that drivers report travelling more slowly and being more prepared to stop for pedestrians” (p. 35) in a shared space scheme
- “speeds and flows … which drivers are likely to concede priority have not been established” (p. 35)
- “The mechanism by which sharing of space by pedestrians and vehicles actually take place” (p. 35)
- “no convincing data that eye contact is used predominantly as a means of communication between drivers and pedestrians” (p. 36)
• “How do pedestrians move within Shared Space? How might their behaviour be related to factors such as traffic flow, traffic speed, pedestrian type and pedestrian footfall?” (p. 36)

• “Under what conditions are pedestrians willing to cross the space in the expectation that drivers and cyclists will give way?” (p. 37)

The next step to this research was to use specific case studies that are representative, or incorporate certain characteristics, of shared space in order to address some of the missing gaps in knowledge. Based on the knowledge gaps that were defined by MVA Consultancy (2009), required on-site observations were identified, as shown in Table 4-1.

<table>
<thead>
<tr>
<th>Knowledge Gaps [As Defined by MVA Consultancy, (2009)]</th>
<th>On-site Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “The mechanism by which sharing of space by pedestrians and vehicles actually take place” (p. 35)</td>
<td>How pedestrians, drivers and other street users interact with each other when they cross paths within the street</td>
</tr>
<tr>
<td>• “no convincing data that eye contact is used predominantly as a means of communication between drivers and pedestrians” (p. 36)</td>
<td>The amount of ‘sharing’ going on between pedestrians, drivers and other street users within the street</td>
</tr>
<tr>
<td>• “little evidence … that drivers report travelling more slowly and being more prepared to stop for pedestrians” (p. 35) in a shared space scheme</td>
<td>How the perceived speeds of incoming vehicles affect the yielding of drivers towards pedestrians (and vice versa)</td>
</tr>
<tr>
<td>• “speeds and flows … which drivers are likely to concede priority have not been established” (p. 35)</td>
<td>Whether pedestrians freely move within the street (follow their desire lines)</td>
</tr>
<tr>
<td>• “How do pedestrians move within Shared Space? How might their behaviour be related to factors such as traffic flow, traffic speed, pedestrian type and pedestrian footfall?” (p. 36)</td>
<td>Where and when do pedestrians cross the road</td>
</tr>
<tr>
<td>• “Under what conditions are pedestrians willing to cross the space in the expectation that drivers and cyclists will give way?” (p. 37)</td>
<td></td>
</tr>
</tbody>
</table>

Explorations of the specific case studies are presented in the subsequent chapter.
CHAPTER 5  |  Case Studies

This chapter focuses on the two selected cases that informed the development of shared space principles. The first section details the criteria for choosing a particular case suitable for comparison to the characteristics of Downtown Yonge Street and a shared space approach. Each case study includes a description of the overall intent of the design, characteristics and on-site observational results. To conclude the chapter, a summary of the key findings from both case studies is presented.

Site Selection

For this case study research, two specific case sites were used. The first is a site from Europe that is highly representative of most of the qualities of shared space as defined in the literature review. The reason behind selecting a shared space from Europe is that there are already several examples – particularly in The Netherlands and the United Kingdom – that have been implemented within existing streets, villages and urban centres (MVA Consultancy, 2009).

The second case is a site located within North America. The reason behind the selection of a North American site was that it reflects the climatic conditions, built form, layout and other contextual conditions found in the Downtown Yonge Street site, in comparison to European examples where there are noticeable differences. Since there are very few shared space examples in North America (G. Toth, personal communication, November 27, 2012), the chosen site was one that exhibited some but not all characteristics of the shared space approach and is thus partially representative. This case also served as an opportunity to study the North American interpretation of reconciling pedestrian movement and vehicular traffic in comparison to that of Europe.
Based on background literature, it was determined that both case studies should reflect the following shared space qualities and characteristics:

- A streetscape designed around the notion that all street users (pedestrians, drivers, cyclists, etc.) have equal entitlement and priority throughout the entire space (CABE Space, 2008)
- Emphasis on free movement of pedestrians – while not restricting vehicular traffic (MVA Consultancy, 2009; Shared Space, 2005)
- Reduction of traffic control features such as traffic lights, curbs and road markings (MVA Consultancy, 2009)
- Pedestrian and vehicle thoroughfares consolidated on shared – or single – surface through a curbless street or subtle curbs (CABE Space, 2008; MVA Consultancy, 2009)

In addition, it was determined that the site for each case study must have similar technical characteristics comparable to that of Downtown Yonge Street:

- A street right-of-way of precisely 20 meters (KPMB Architects & Greenberg Consultants Inc., 2011)
- Pedestrian counts that supersede vehicular counts
- A streetscape that is predominantly influenced by a variety of uses, but still heavily dominated by retail and commercial uses
Selected Sites

The selected sites that were deemed suitable for this research were the redesigns of Exhibition Road in London England and a block of Granville Street in Vancouver British Columbia, Canada. The redesign of Exhibition Road was an appropriate case study as it was a fairly recently completed project that incorporated several characteristics of shared space and reflected the qualities of the approach that were stated in the literature. Exhibition Road is a large generator of pedestrian volumes and has a right-of-way that is slightly larger than Downtown Yonge Street – about 24 meters (Director for Transport and Highways, personal communication, January 28, 2013) to 20 meters respectively.

The redesign of Granville Street in Vancouver was an important case to use for this research as it provided a Canadian example comparable in context to that of Downtown Yonge Street. Similar to Downtown Yonge Street, Granville Street is influenced by adjacent retail and commercial amenities and serves as an important corridor through Downtown Vancouver. Moreover, both streets house a large shopping mall at their perceived major intersections. As with Exhibition Road, Granville Street also has a slightly larger right-of-way than Downtown Yonge Street – around 24 meters (Professional Engineer, personal communication, February 12, 2013).

Although the redesigned portion of Granville Street is not a true shared space scheme based on knowledge presented within the literature review, it does incorporate several of the qualities, such as encouraging free movement of pedestrians and a uniform surface pattern (only between West Georgia Street and Robson Street).
Case Study 1: Exhibition Road – London, England United Kingdom

Context

Exhibition Road is an 800 meter long stretch of road that runs between Hyde Park to the north and South Kensington Underground to the south (Olcayto, 2012; The Royal Borough of Kensington and Chelsea, n.d.). It runs through two boroughs: the Royal Borough of Kensington and Chelsea and the City of Westminster – with the boundary line separating the two near the Science Museum (The Royal Borough of Kensington and Chelsea, 2013d). Considered a main visitor destination and attracting over 11 million visitors yearly, Exhibition Road is home to several attractions and institutions that are deemed historically, culturally and educationally significant (MVA Consultancy, 2012; The Royal Borough of Kensington and Chelsea, n.d.). These establishments include: the Natural History Museum, Victoria and Albert Museum (V&A), Science Museum, Royal Albert Hall, Imperial College and the Royal College of Music – just to name a few (Olcayto, 2012; The Royal Borough of Kensington and Chelsea, n.d.). In addition, several residential units are located to the northern portion of Exhibition Road (Director for Transport and Highways, personal communication, January 28, 2013). Overall, Exhibition Road experiences roughly 20 million pedestrians a year within its vicinity (Director for Transport and Highways, personal communication, January 28, 2013).

Before its conversion, the previous layout for Exhibition Road was deemed inefficient, as the narrow pavements could not handle the volume of local pedestrians and those visiting the area (The Royal Borough of Kensington and Chelsea, 2009). This was particularly true for the area between South Kensington and Prince Consort Road as this space experienced the most visitor traffic due to surrounding museums (The Royal
Borough of Kensington and Chelsea, 2013c). The thoroughfare itself was vehicle
dominated and parked coaches, which blocked the roadway and crowded pavements,
made navigating the space difficult (Director for Transport and Highways, personal
communication, January 28, 2013; The Royal Borough of Kensington and Chelsea, 2009).
Furthermore, the vehicular traffic and cluttered street made the public realm unclear for
visitors and unfavourable towards pedestrians (The Royal Borough of Kensington and
Chelsea, 2013a). As a result, “there was a need for something to be done – instigate
change” (Director for Transport and Highways, personal communication, January 28,
2013).

Figure 5-1 | Exhibition Road Before Redesign (2010)
(Image courtesy of © Olivia Woodhouse, with care of the Royal Borough
of Kensington and Chelsea)
Design

In partnership between the Royal Borough of Kensington and Chelsea, Mayor of London and City of Westminster, a design competition was created with Dixon Jones Architects winning the contract and becoming the lead designer for the project (Director for Transport and Highways, personal communication, January 28, 2013; professional architect, personal communication, January 29, 2013). The concept for the design was to keep the axis near Royal Albert Hall and shift it over onto Exhibition Road (professional architect, personal communication, January 29, 2013). The overall design scheme called for a minimalist street design that incorporated a curb-free

Figure 5-2 | Exhibition Road Layout Drawing (North of Imperial College Road) (Image courtesy of © Dixon Jones, with care of the Royal Borough of Kensington and Chelsea)
single surface, minimal barriers and street furniture, a speed limit of 20 miles per hour (mph) and pedestrian safe areas (The Royal Borough of Kensington and Chelsea, 2013b). The removal of the curb and other forms of street clutter and barriers was to provide an opportunity for pedestrians – especially those who require assistance with some form of aid like a wheelchair – to move freely throughout the space (The Royal Borough of Kensington and Chelsea, 2013c). In addition, the curb free surface also encourages motorists to carefully drive slowly and become more aware and considerate towards pedestrians (The Royal Borough of Kensington and Chelsea, 2013a).

As shown in Figure 5-4 and Figure 5-5, Exhibition Road is arranged in two different ways.
Figure 5-4 | Exhibition Road Section – South of Prince Consort Road
(Image courtesy of © Dixon Jones, with care of the Royal Borough of Kensington and Chelsea)

Figure 5-5 | Exhibition Road Section – North of Prince Consort Road
(Image courtesy of © Dixon Jones, with care of the Royal Borough of Kensington and Chelsea)
From South Kensington in the south to Prince Consort Road in the north, the design incorporated a 4 meter wide pedestrian safe area along both building edges; an 8 meter ‘transition zone’ which included parking bays, bicycle racks and street furniture; and two lanes for traffic. North of Prince Consort Road towards Hyde Park the layout of the street transforms into four lanes of traffic (The Royal Borough of Kensington and Chelsea, 2013c).

Figure 5-6 | Exhibition Road Perspective Rendering  
(Image courtesy of © Dixon Jones)
There were a number of restrictions implemented with respect to traffic and parking on Exhibition Road. With the exception of an eastbound left turn from Cromwell Road onto Exhibition Road, turning onto both respective roads is prohibited (The Royal Borough of Kensington and Chelsea, n.d.). Furthermore, the southern portion of Exhibition Road – south of Cromwell Road/Cromwell Gardens – was to become typically traffic free with the main vehicular activity being for serving and access (The Royal Borough of Kensington and Chelsea, n.d.). Parking along Exhibition Road is prohibited except for the marked parking bays within the transition zone (The Royal Borough of Kensington and Chelsea, 2013d). The marked parking bays are permitted only for local residents and those with a mobility issues (The Royal Borough of Kensington and Chelsea, 2013d).

A hatched pattern, developed by Dixon Jones, covers the full width of Exhibition Road from building face to building face (The Royal Borough of Kensington and Chelsea, 2013c). It was designed to mimic the non-linear movement of pedestrians (professional architect, personal communication, January 29, 2013). Located 4 meters from each building line are drainage channels with 800 millimeter tactile corduroy strips that span the entire road length – as shown in Figure 5-7 on the following page (professional architect, personal communication, January 29, 2013; The Royal Borough of Kensington and Chelsea, 2013c). The corduroy strips assist the partially sighted and the blind in determining whether they have entered or exited the vehicular free areas (The Royal Borough of Kensington and Chelsea, 2013c). Twenty meter high lighting columns – spaced at 25 meters – on circular bases were used to create a unique feature running through the center of the road, connect with the paving pattern and complement the
adjacent buildings (Olcayto, 2012; The Royal Borough of Kensington and Chelsea, 2013c).

![Figure 5-7 | 800 Millimeter Tactile Corduroy Strips](image)

In total, the project cost was 25 million pounds and was completed on December 8, 2011 (Olcayto, 2012; The Royal Borough of Kensington and Chelsea, 2013a). The project has already received a number of awards: Civic Trust Award, RIBA Award, ‘Excellence in walking and the public realm’ award, Community Award and a Special Mention for the European Prize for Urban Public Space (The Royal Borough of Kensington and Chelsea, 2013a).

**Post Evaluation and Monitoring**

Based on an interview with a key-informant who was part of the project, the Director for Transport and Highways stated that the design of Exhibition Road was not a true shared space scheme (personal communication, January 28, 2013). It was explained that a shared space approach entails full use of the entire right-of-way for all users. For higher
traffic streets, such as Exhibition Road, the full use of the space by all users would be inappropriate. Furthermore, it was commented that the full use of the street by all users would be desirable only for junctions (intersections) and smaller streets within villages or towns (Director for Transport and Highways, personal communication, January 28, 2013).

Figure 5-8 | View Looking South in the Transition Zone

In addition, the Director for Transport and Highways reported that there has been a reduction in traffic by about 30% overall – from almost 900 vehicles per hour to 600 vehicles per hour (personal communication, January 28, 2013). It was also indicated that the scheme seemed to be working due to the excellent visibility and site lines, vehicle restriction to two lanes and pedestrians use of the entire space (Director for Transport and Highways, personal communication, January 28, 2013). Having had the time to evaluate the design since its completion, the Director for Transport and Highways noted that they should have ‘future proofed’ the design by incorporating Wi-Fi built into the lighting.
columns rather than in bolted boxes and provide electrical outlets for events and activities (Director for Transport and Highways, personal communication, January 28, 2013).

Additionally, a professional architect who was involved in the project would have liked to seen all the benches removed in keeping with that minimalist design; and accommodate pedestrian sitting on the bases of the lighting columns (personal communication, January 29, 2013).

When asked about why the hatching pattern spanning Exhibition Road was not used through Cromwell Road/Cromwell Gardens to the south, the Director for Transport and Highways stated that Cromwell was a major traffic corridor and that a two stage crossing system was a safer and more desirable approach in dealing with that intersection (personal communication, January 28, 2013). Furthermore, it was also asked whether an informal roundabout pattern such as the one located at Prince Consort Road and Exhibition Road could replace the conventional intersection design as per the philosophy of shared space and continue the hatching pattern fully through the entire stretch of road. The Director for Transport and Highways believed such a scheme would not work due to, again being a main traffic route and that a roundabout only works if traffic is balanced at all sides (personal communication, January 28, 2013).

There were also several monitoring reports completed after the redesign of Exhibition Road. MVA Consultancy (2012) was commissioned to assess “user interaction and movement within Exhibition Road” (p. 1.1). This was done through “video data, speed radar and manual observations” (MVA Consultancy, 2012, p. 1.2). Table 5-1 summarizes the questions of interest and the resulting qualitative data from the report.
Table 5-1  |  Summary of Results from 11 Summary and Conclusions from “Evaluating Performance – Exhibition Road Monitoring Report for Royal Borough of Kensington and Chelsea August 2012” (MVA Consultancy, 2012)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the road safe?</td>
<td>• No accidents observed and few incidents of street users suddenly stopping during a three-day survey period</td>
</tr>
<tr>
<td></td>
<td>• Further monitoring needed over a longer period of time to fully assess the situation</td>
</tr>
<tr>
<td>Are the safe zones safe?</td>
<td>• Several forms of intrusion into the safe zones</td>
</tr>
<tr>
<td></td>
<td>• Include: vehicles/cyclists cutting corners at junctions; vehicles making banned turns or u-turns; vehicles encompassing the tactile corduroy paving for short periods of time; cyclists avoiding traffic cues; cyclists not dismounting bicycle when approaching bike parking area</td>
</tr>
<tr>
<td></td>
<td>• Though some forms of intrusion are minimal, should look into some design changes to prevent banned turns</td>
</tr>
<tr>
<td>Do the bus stops present a trip hazard?</td>
<td>• Two people were observed stumbling over the raised curb during a six-hour survey period</td>
</tr>
<tr>
<td></td>
<td>• Further monitoring needed over a longer period of time to fully assess the situation</td>
</tr>
<tr>
<td>Are speeds within the 20 mph limit?</td>
<td>• Vehicular speeds were found to be in excess of the 20 mph speed limit at the 85th percentile speed</td>
</tr>
<tr>
<td>Do pedestrians cross freely throughout Exhibition Road?</td>
<td>• Pedestrians appear to use full extent of road from general observation</td>
</tr>
<tr>
<td></td>
<td>• Crossing movements influenced by proximity of formal/informal crossing points (i.e. lighting columns bases), parking bays and street furniture</td>
</tr>
<tr>
<td>Do parking and loading facilities satisfy the demand?</td>
<td>• Residential parking bays north of Imperial College Road seems to exceed demand based on occupancy levels over a three-day survey</td>
</tr>
<tr>
<td></td>
<td>• Residential parking south of Imperial College Road were occupied 75% of the time, while disabled bays occupied 4% through a three-day survey</td>
</tr>
<tr>
<td></td>
<td>• Parking bays south of Cromwell Gardens were full approximately a third of the time during the week, but rarely used on weekends</td>
</tr>
<tr>
<td>Is driver behaviour influenced by street design?</td>
<td>• Higher vehicular speeds present north of Imperial College Road possibly due to less pedestrian activity and more traditional looking street layout (i.e. less transition zones, wider thoroughfare)</td>
</tr>
<tr>
<td></td>
<td>• Low incidence of vehicles giving way to pedestrians, and pedestrians have freedom of choice to cross due to frequent gaps in traffic</td>
</tr>
<tr>
<td></td>
<td>• Pedestrians appear to utilize environment due to uncluttered, single-surface environment</td>
</tr>
<tr>
<td></td>
<td>• Concluded that pedestrians can read and adapt to changes within Exhibition Road and driver behaviour influenced by street design</td>
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</table>

Another report by MVA Consultancy (2011) studied and tested whether the implemented 800 millimeter tactile corduroy delineator paving along the stretch of Exhibition Road could be detected by the blind and partially sighted, and whether the mobile impaired could cross over it. The resulting conclusion was that the partially
sighted or blind participants consistently detected the corduroy paving when it was approached at an angle between 1 and 35 degrees (MVA Consultancy, 2011). Moreover, participants with some form of mobile impairment were able to cross over the corduroy paving (MVA Consultancy, 2011).

**Observation Results**

The location for conducting the on-site observation was at a mid-block location on the eastern side of Exhibition Road. Therefore, the intended observations were made looking north, west and south. The location was desirable as it provided a clear view to Cromwell Road/Cromwell Gardens to the south, and the informal roundabout at Prince Consort Road; this section contained the most amount of vehicular and pedestrian activity. Furthermore, directly across on the west side from this desired observation location was a mid-block underground passageway that provided access to the museums, but as well to South Kensington Underground at the end of Exhibition Road to the south. This provided an opportunity to observe how pedestrians followed their desire lines when entering the space for the first time – assuming they had come from South Kensington tube station.
Figure 5-11  |  Weekend Observation at 8 AM to 9 AM (Saturday & Sunday)

Figure 5-12  |  Weekday Observation at 8 AM to 9 AM (Tuesday & Wednesday)
Figure 5-13  |  Weekend Observation at 12 PM to 1 PM (Saturday & Sunday)

Figure 5-14  |  Weekday Observation at 12 PM to 1 PM (Tuesday & Wednesday)
Figure 5-15  |  Weekend Observation at 4 PM to 5 PM (Saturday & Sunday)

Figure 5-16  |  Weekday Observation at 4 PM to 5 PM (Tuesday & Wednesday)
The observations were conducted on Saturday, January 26, 2013; Sunday, January 27, 2013; Tuesday, January 29, 2013; and Wednesday, January 30, 2013. The weather conditions experienced within the case site were typically mild, with a few instances of rain through the afternoon observation periods. During the weekends, there were very minimal pedestrians and vehicles present within the street during the morning observations (8:00 AM – 9:00AM). With that, vehicles passing through the space seemed like they were moving faster than the posted speed limit of 20 mph. In addition, there were not any interactions between pedestrians and vehicles, as the minimal volumes did not provide that opportunity. The noon hour observation (12:00 PM – 1:00 PM) saw greater pedestrian and vehicle traffic flows. Vehicular traffic started queuing on the south-going lane towards Cromwell Gardens. This provided the opportunity for vehicular and pedestrian interactions, where in some cases vehicles were yielding to pedestrians through hand gestures, who were waiting at the edge of the transition or pedestrian zone to cross. In addition, vehicles waiting in the traffic queue, or who were approaching the traffic queue in the southbound lane, began to make u-turns in the transition zone to avoid the traffic and travelled north. The same observations were present during the first half of the afternoon/evening observation time (4:00 PM – 5:00 PM), but had heavier vehicular traffic and queues. Pedestrian volumes were also in greater numbers on the west side of the street. The traffic eventually died down to what was observed during the noon hour observation near the end of the late afternoon observation.

The morning observations during the weekdays saw more pedestrian, vehicular and bicycle presence in comparison to the weekend. There were small vehicular traffic queues at Cromwell Gardens in the south, and Kensington Gore/Kensington Road in the
north. Near the end of the observation, pedestrian volumes greatly increased with an influx coming from the south end of the street – with movement mostly occurring on the west side. The noon hour saw minimal vehicular traffic at the early stages of the observation. Pedestrian volumes were at greater numbers – predominantly at the northern section of Exhibition Road in front of Imperial College. There were some instances of vehicular-pedestrian interaction; mostly when pedestrians had already committed to crossing the vehicular lanes and incoming vehicles had to stop to let them finish. In one case, one vehicle honked a couple meters away when a pedestrian in front was crossing the vehicular lanes. The afternoon/evening observations saw lighter pedestrian and vehicular traffic at the early stages of the observation. Three quarters through the observation, pedestrian and vehicular activity started to pick up and traffic queuing began to pick up at the intersections. As a result, vehicles began u-turning in the transition zones again, and instances of pedestrians and vehicles interacting transpired. For instance, a car backing out of the parking bay yielded to an adjacent pedestrian who waiting to cross.

In most instances, pedestrians were crossing the vehicular lanes in a diagonal direction – the direction in which they were travelling. Pedestrian crossing points seemed to occur near the lighting columns – more specifically pedestrians would wait on or near the bases to cross – and areas of the transition zone that had parking bays or street furniture. Furthermore, the norm for when pedestrians would cross was to look both ways beforehand and either walk casually across when there were no vehicles present, or at a quick pace when there were oncoming vehicles. In general, pedestrian movement seemed random in nature.
Case Study 2: Granville Street – Vancouver, British Columbia Canada

Context

The intended redesigned portion of Granville Street runs from Granville Bridge in the south to West Cordova Street in the north (City of Vancouver, 2010a). Granville Street can be divided into several precincts, as shown in Figure 5-11, in each with different characteristics (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a). North of West Georgia Street towards West Cordova Street is considered the Downtown Central Business District (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a; professional urban designer, personal communication, February 12, 2013). This precinct consists of a segment of Pacific Centre Mall, department stores, medium to high-end retailers and upper floor office use (City of Vancouver and

Figure 5-17 | Character Precinct Map
(Image from <http://former.vancouver.ca/commsvcs/currentplanning/Granville_redesign/08jan23display/display05.pdf>)
PWL Partnership Landscape Architects Inc., 2008a). In general, pedestrian traffic is correlated to the hours of the businesses, as street activity is mostly present during the daytime hours (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a). The next precinct, between West Georgia Street and Helmken Street, is the Entertainment and Shopping Precinct, consists of a variety of entertain venues such as theatres and concert halls, and includes other shops, cafes and restaurants (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a). Street activity is present during all times of the day, and particularly in the evenings, due to night venues (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a). The street space between West Georgia Street and Robson Street is considered the ‘heart’ of Granville Street – a civic space (professional urban designer, personal communication, February 12, 2013). Finally, the precinct between Helmken Street and Drake Street in the south is labeled as an entertainment and shopping precinct (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a). The uses along the street are low to medium level retail, bar, club, eating establishments and tourist hotels (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008a; professional landscape architect, personal communication, February 13, 2013).

According to the City of Vancouver (2010b), a portion of Nelson Street to West Hastings Street along Granville Street was converted into a transit and pedestrian mall in 1974, which included the removal of general traffic from accessing the street. The “idea behind the creation of the transit-pedestrian mall was to apply the City’s new transportation priorities and restore economic pre-eminence of Granville Street” (City of Vancouver, 2010b, para. 1). The Downtown Study Team at the time deemed that the
downtown streets had limited capacity therefore it was critical to reduce the future use of automobiles within the downtown area. Thus, rapid transit access was incorporated into the Granville Mall allowing for more bus service and wider sidewalk space for pedestrians (City of Vancouver (2010b).

Restrictions of the automobile onto the Granville Mall continued to be an issue with downtown businesses and this constraint was blamed for slow economic revival along the street – according to City of Vancouver (2010c). However, it was later considered by observers that the development of Pacific Centre Shopping Mall along three blocks adjacent to Granville Street was the more likely reason. Furthermore, the following five years saw a continuation of the discussion and advocacy for opening the Granville Mall to general traffic. A trial for the reopening of three blocks from Nelson Street to West Georgia Street occurred in 1987, but was deemed unsuccessful and cancelled a year later. Nevertheless, city council voted to have the mall opened from Nelson Street to Smithe Street to general traffic and widen the road to incorporate four lanes due to local support (City of Vancouver, 2010c).

The idea in opening the mall to general traffic continued, with the issue being taken into consideration for the Downtown Transportation Plan in the year 2000 (City of Vancouver, 2010c). However, the two options being evaluated and considered – a four lane option and a more limited three lane option with only north moving traffic – were deemed unfavourable and Vancouver City Council recommended not to reopen Granville for general traffic (City of Vancouver, 2010c). Instead, with the pressure of the incoming Canada Line SkyTrain, existing damaged sidewalk conditions, diseased trees and the need to refresh the look of the street, it was recommended that the entire Granville street
be redesigned and rebuilt with the transit and pedestrian mall continuing from Smithe Street to West Hastings Street (City of Vancouver, 2010c; Executive Director, personal communication, February 8, 2013; professional urban designer, personal communication, February 12, 2013).

Figure 5-18 | View Looking North Towards Robson Street – Before Redesign
(Image courtesy of City of Vancouver)
Figure 5-19 | Organization of Proposed Design Elements on Granville Street
(Image from <http://former.vancouver.ca/commsvcs/currentplanning/granvilleredesign/08jan23display/display11.pdf>)
PWL Partnership Landscape Architects Inc., with Pechet Studio serving as a design consultant, worked with the City of Vancouver in “re-establishing the status of Granville Street as one of Vancouver’s Great Streets” (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008b, para. 2). Using a publication by Allan B. Jacobs, *Great Streets*, as the basis for the conceptual design, several responses to the design were formulated (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008c).

The first response, as defined by the City of Vancouver and PWL Partnership Landscape Architects Inc. (2008d), was the incorporation of a tree-line street. Beech trees were planted through the length of the street in order to complement the existing trees that were located in the historic blocks in the south end (Parker, 2012). The next response was to unify the entire street through what was coined as the “One Street Concept” (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008d, para. 3). That involved applying consistent “paving materials, lighting, tree plantings and furnishings” (Parker, 2012, p. 31) with some minor variations at different sections (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008d).

Custom-designed LED lighting tubes were introduced along the entire stretch on Granville Street in order to make reference to the ‘Great White Way’ – a term provided due to the abundance of neon signs during the 1930’s and 1940’s (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008d; Parker, 2012). Finally, a ‘ribbon’ element was used through segments of granite bands along the sidewalk in order to mimic the “movement of light and sound up and down Granville Street” (City of Vancouver and PWL Partnership Landscape Architects Inc., 2008d, para. 8).
Figure 5-20  |  Granville Street Concept Rendering  
(Image courtesy of City of Vancouver, compliments of PWL Partnership Landscape Architects Inc.)

Other elements that were part of the redesign included: straightening the curved bus mall north of Smithe Street; wider sidewalks for pedestrians; ‘flex’ sidewalks that could be used for parking during the day and more walking room for pedestrians at night; custom furniture; and a civic space between West Georgia Street and Robson Street (Downtown Vancouver Business Improvement Association, 2010). The material used along the sidewalks is a exposed aggregate with pieces of recycled glass particles (professional engineer, personal communication, February 12, 2013). Exposed aggregate was also used on the road between West Georgia Street and Robson Street in order to highlight it as a ‘civic space’ (professional engineer, personal communication, February 12, 2013). The rest of the dedicated transit and authorized vehicle roadway from Smithe Street to West Hastings Street – excluding West Georgia Street to Robson Street – incorporated a broom finished concrete roadway (professional engineer, personal
communication, February 12, 2013). The project was completed in 2010 (Executive Director, personal communication, February 8, 2013).

![Redesigned Granville Street – Between Georgia and Robson Street](Image courtesy of City of Vancouver, compliments of PWL Partnership Landscape Architects Inc.)

*Figure 5-21*  
Redesigned Granville Street – Between Georgia and Robson Street
*Image courtesy of City of Vancouver, compliments of PWL Partnership Landscape Architects Inc.*

*Post Evaluation and Monitoring*

Overall, the redesign of Granville Street garnered a positive increase in perception of the environment from the Metro Vancouver residents and that the redesign is performing as planned (Executive Director, personal communication, February 8, 2013). It was also mentioned by the executive director that pedestrian counts have dramatically gone up and that employment within the area has increased as well (personal communication, 2013). A professional urban designer reiterated this positive assessment as it was stated that the quality of the design has improved and the street feels much safer (personal communication, 2013).
One concern with the scheme that was brought to light was the issue of maintenance (professional engineer, personal communication, February 12, 2013). A lot of money was spent on the exposed aggregate with recycled glass material on the sidewalk, but it ended up being covered with gum (professional engineer, personal communication, February 12, 2013). Another concern was the excessive use of bollards on the ‘flex’ parking areas on the sidewalks south of Smithe Street (professional landscape architect, personal communication, February 13, 2013). The bollards were added in order to protect the trees from being hit by vehicles attempting to park within the flex space. However, they have negatively affected the sidewalk visually and physically as they take up too much space (professional landscape architect, personal communication, February 13, 2013).

Finally, it was asked whether the notion of introducing a curb-free single surface street was discussed. The professional engineer stated that this was initially discussed, but was not important due to liability and the effect it would have on transit (personal communication, February 12, 2013). A curb was needed in order for the entrance of the bus to be flush with the sidewalk (professional engineer, personal communication, February 12, 2013).

Observation Results

The location for conducting the on-site observation was mid-block between West Georgia Street and Robson Street. Therefore, the intended observations were made looking north, east and south. This location was chosen due to it being considered the ‘heart’ or main ‘civic space’ of Granville Street (professional urban designer, personal communication, February 12, 2013) and was deemed the most ‘representative’ of the shared space characteristics.
The observations were conducted on Saturday, February 9, 2013; Sunday, February 10, 2013; Tuesday, February 12, 2013; and Wednesday, February 14, 2013. The weather conditions experienced within the case site were below mild, with instances of rain during several of the noon observation periods. During the weekends, the morning observations (8:00 AM – 9:00 AM) saw very little traffic and pedestrian activity. There was a line-up in front of the Royal Canadian Mint on the east side of the street – possibly due to the sale of a special edition coin for Chinese New Year. The noon hour observation (12:00 PM – 1:00 PM) saw pedestrian and transit activity increase. Queuing of buses at the intersections occurred during the observations. Pedestrians who were crossing the road slowly, or crossed when an immediate transit bus was incoming were honked at. There were also instances of servicing vehicles, such as garbage pick up and sign maintenance, parked on a portion of the sidewalk ‘flex’ space. The afternoon/evening observation (4:00 PM – 5:00 PM) were similar to the noon hour observation, but with higher volumes of pedestrians on the eastern portion of the street.
The weekday observations were fairly consistent with the weekend observations. The morning observations however indicated higher volumes of pedestrian and transit activity than those on the weekend. Moreover, the afternoon/evening observation saw heavy pedestrian traffic – specifically on the eastern portion of Granville Street – and in some instances the queued bus traffic blocked the view of the street.

Generally, as with the case in Exhibition Road, pedestrians crossed the vehicular lanes in a diagonal direction – the direction in which they were travelling. Pedestrian crossing points and overall movement seemed random in nature. However, it seemed as though when pedestrians were getting off the bus at either appointed bus stop, they did not immediately cross the road at that point, but walked a couple of meters first in their desired direction before crossing the road. Moreover, there was barely any interaction between pedestrians and vehicles on the roadway in terms of yielding to one another when they come contact. This may have been due to the fact that transit vehicles (such as buses and taxis) were given priority through regulations and posted signs. As a result, buses often honked at pedestrians who impeded their travel on the road.

Additionally, vehicular traffic predominantly consisted of buses and taxicabs. There were instances of stray automobiles travelling through the space, but this was minimal. The stray automobiles were attributed to those visiting the area and not knowing the restrictions to vehicular access (professional engineer, personal communication, February 12, 2013). Furthermore, bicyclists were not prevalent, in comparison to the transit buses, within the space.
Figure 5-24  |  Weekend Observation at 8 AM to 9 AM (Saturday & Sunday)

Figure 5-25  |  Weekday Observation at 8 AM to 9 AM (Tuesday & Wednesday)
Figure 5-26  |  Weekend Observation at 12 PM to 1 PM (Saturday & Sunday)

Figure 5-27  |  Weekday Observation at 12 PM to 1 PM (Tuesday & Wednesday)
Figure 5-28  |  Weekend Observation at 4 PM to 5 PM (Saturday & Sunday)

Figure 5-29  |  Weekday Observation at 4 PM to 5 PM (Tuesday & Wednesday)
Conclusion

The intent of exploring the two cases studies were to resolve the missing gaps in knowledge of shared space from the literature review – as set out by this thesis. This was done through gathering and exploring information from secondary source descriptions, key-informant interviews and on-site observations from each respective case. The subsequent chapter will analyze and form generalized conclusions of the results attained from the case studies in order to develop a set of shared space principles.
CHAPTER 6 | Proposed Principles and Conceptual Design

This chapter focuses on the creation of the shared space principles and their application through a conceptual design of Downtown Yonge Street. The first section provides an analysis and discussion of the research compiled from the case studies. Information from this analysis, in conjunction with the key findings from the literature review, was used to formulate a set of shared space principles that help inform and provide recommendations for Downtown Yonge Street. The latter section provides recommendations and a conceptual design of sections of Downtown Yonge Street as a shared space. For the purpose of this thesis, the presented vision of Downtown Yonge Street is not a detailed design, but rather a conceptualization of how Downtown Yonge Street could be redesigned based on the developed shared space principles and recommendations.

Analysis and Discussion of Case Studies

Freedom of Pedestrian Movement

For both Exhibition Road and Granville Street, free pedestrian movement did occur throughout the entire streetscape at all times; that is, pedestrians were crossing the thoroughfare wherever they pleased. During key-informant interviews, the interviewees stated that freedom of movement was encouraged within each respective streetscape. Within each street, there seemed to be no visible signs that stated freedom of movement was encouraged. Therefore, the partial removal of conventional road markings and implementation of a uniform surface pattern – that spanned from building face to building face – for both respective schemes may have served as an informal visual cue.
that gave pedestrians the perception that the sidewalk space continued onto the thoroughfare. The distortion between the distinction between road and pedestrian sidewalk appeared to encourage movement of pedestrians freely within the streetscape.

Further adding to the notion of freedom of movement was where and under what conditions did pedestrians cross the vehicular thoroughfare. As mentioned in the Granville Street case study, though the areas in which pedestrians chose to cross were random, they did not immediately cross the road when getting off at a transit stop. Pedestrians walked a couple of meters in their desired direction before crossing the road. On the other hand, it was observed within Exhibition Road that pedestrians seemed to gravitate towards crossing near stagnant objects or defined spaces within the streetscape – in particular the lighting columns, street furniture and parking bays. This observation was also supported by observations presented in the MVA Consultancy (2012) monitoring report. This type of behaviour may be attributed to pedestrians perceiving these objects and spaces as formal crossing points that provide some feeling of safety (such as cross walks found within a road intersection). Therefore, if a scheme such as the one represented on Exhibition Road were to be replicated, it may be of importance to highlight these areas in some way so that drivers are aware that they may come in frequent contact with pedestrians at these desired points, and may have to stop or yield to them.

*Pedestrian Vehicle Interaction*

The nature of ‘sharing’ of the vehicular thoroughfare and interaction between pedestrians and drivers when they cross paths was more prevalent within Exhibition Road than Granville Street. In both cases, vehicles travelling through the thoroughfare at a
constant speed were not willing to stop and yield to pedestrians. However, as mentioned in the observation of Granville Street, buses often honked at pedestrians who impeded their travel on the road as they have priority over the roadway. Within the context of Exhibition Road, vehicles were more inclined to give way and yield to pedestrians with some form of social cue (in most cases a hand gesture) when they were required to slow down due to an obstacle. The obstacles observed during the on-site observations mostly consisted of traffic queues, most notably from the southern intersection at Cromwell Gardens, and vehicles backing out of a parking bay located within the transition zone.

Observed findings from Exhibition Road suggest that vehicles that are forced to move at a slower speed may yield to pedestrians more often within the thoroughfare. Thus, lowering the speed limit may be an obvious means of contributing to shared use of the street. Although the observations and monitoring results of MVA Consultancy (2012) have shown that at most times vehicles do not follow the posted speed limit, other methods for reducing traffic speeds should be considered.

From a design standpoint, reducing vehicular speeds could be done through visually narrowing the street with features such as trees and lighting fixtures in order to reduce the forward range of vision; or physically narrowing the entrances into a street by creating ‘pinch-points’ (Department for Transport [DFT], 2011). However, based on the on-site observations of the case studies, the freedom of movement of pedestrians in itself may incline drivers to move more slowly within the space.
Sharing the Space

The sharing of space outside the thoroughfare was more defined in both redesign schemes. The ‘flex’ space scheme on the extended pedestrian sidewalks through mountable curbs on Granville Street provided opportunities for more walking room and parking. Although the portion of the site observed (through West Georgia Street and Robson Street) restricted parking on the flexible space, service vehicles used them to park when conducting garbage pick-up and maintenance. Exhibition Road on the other hand incorporated a ‘transition space’ between the roadway and pedestrian clearance on the western half of the street. The transition space acted as an extension to the pedestrian clearance while providing seating and vehicular and bike parking.

As mentioned, the Granville Street case study was not considered a shared space, but rather incorporated some of the ideals that were discussed in the literature review. On the contrary, the design for Exhibition Road was thoroughly referenced as a shared space scheme – notably as described by Olcayto (2012). However, during an interview with the Director for Transport and Highway, it was stated that in actuality the design for Exhibition Road was not a full shared space scheme (personal communication, January 28, 2013). Site observations confirmed this as the sharing of the space only occurs subtly in the transition zone and roadway – pedestrians have their own informally delineated zones. In essence, it may be referred to as a quasi-shared space.

The notion of shared space, as stated in the literature review, promotes equal entitlement of the space for all users. However, as discussed by the Director for Transport and Highways, the idea of sharing the entire space and mixing pedestrian and vehicles on one surface would not be appropriate, especially for high traffic corridors – there still
needs to be some order for the space to function (personal communication, January 28, 2013). The incorporation of a flexible space or transition zone between the delineated pedestrian and vehicle zones offers the opportunity to distort the lines between both spaces, hence encouraging freedom of movement. Furthermore, it also provides a space that can be equally used by both pedestrians and drivers during varying circumstances such as parking or more room for walking. This flexibility appears to be most desirable for narrow rights-of-way that experience high volumes of pedestrian and vehicular traffic with little space for expanding the sidewalk or adding street parking.

**Conclusion**

The analytical results from the case studies have shown that slower moving vehicles encourage sharing between pedestrians and vehicles on the roadway. Moreover, the freedom of movement for pedestrians can be achieved by distorting the distinction between pedestrian-only space and vehicular roadway. For faster moving traffic corridors, a full shared-space scheme that promotes the mixing of vehicles and pedestrians is not appropriate; shared transitional spaces are more suitable – especially when relating it to Downtown Yonge Street.

This analysis and discussion leads to several shared space principles deemed to be suitable for Downtown Yonge Street.

**Shared Space Principles**

From the analytical results of the case studies and key findings from the literature review, the following principles were developed. They are used to provide recommendations and inform the redesign of Downtown Yonge Street as a shared space.
For the purpose of this thesis, the developed principles focus only on the space between street intersections, recognizing that the researcher did not have adequate access to traffic data or traffic engineering expertise.

**Convert to a Curbless Single Surface Street with a Uniform Street Pattern**

Based on the literature and research findings, distorting the distinction between sidewalk and road encourages pedestrians to utilize and move throughout the space wherever they please. This can be done through incorporating a uniform street pattern that spans from building edge to building edge through the entire street right-of-way. Though arguments have been made by Guide Dogs (2006) that the curb helps in a form of way-finding for the blind, the addition of tactile corduroy as a supplement to the removed curb proved just as effective based on findings by MVA Consultancy (2011) in their report for Exhibition Road. A curbless single surface street also provides for a more flexible space which can be used for varying activities.

**Incorporate Safe Zones and Shared Transition Spaces**

The incorporation of safe zones for pedestrians by the building edge provides the necessary pedestrian-only space for those who do not feel comfortable interacting with vehicles directly. The transition zones between the subtly defined safe zones and vehicular thoroughfare provides a space that can be equally used by both pedestrians and drivers during varying circumstances such as extra space for pedestrian and temporary parking for servicing and vehicles needing access to the adjacent businesses and establishments. The transition zone also acts a mechanism to merge the distinction between pedestrian space and roadway.
Clearly Define the Entrance

The literature – specifically DFT (2011) – states that providing some form of mechanism at the main intersection that clearly identifies the entrance into a shared scheme is important as it formally notifies vehicles and pedestrians that they are entering a space that requires an increase in awareness of their surroundings. It also subtly informs pedestrians that they are encouraged to utilize the full extent of the space.

Mechanisms that could be used include a gateway feature or a contrasting surface pattern. As observed in both case studies, gateway features were not dominant at the entrances of each case study; rather, the introduction of a contrasting surface pattern sufficed to serve as an entry. One key-informant noted the use of a gateway feature to pronounce the entrance as a shared space also served as a creative way of closing off the street during events.

Minimalist Streetscape

Minimizing the use of traffic control features – such as traffic signs, road demarcations, overdoing – provides for a streetscape that is uncluttered and visually appealing. A key-informant interviewee noted the minimalist approach will help in achieving clearer sight lines so that drivers will be able to see pedestrians when they cross the vehicular thoroughfare (Director for Transport and Highways, personal communication, January 28, 2013). As mentioned in the literature review, with minimal demarcation, more sharing between street users would ensue (Toth, 2009).
Slowing Vehicular Traffic Through Reduced Speed Limits, Narrow Lanes and Freedom of Movement

As stated in the literature review, a desirable vehicular speed for a shared space scheme is 20 mph or 32 km/h (DFT, 2011). Hamilton-Baillie (2008a) expressed that an ideal speed for pedestrians as the slow moving vehicles provide the opportunity to fully interact with each other through informal social cues. However, the case study observations from Exhibition Road and MVA Consultancy (2012) monitoring results have shown that most vehicles do not follow the posted speed limit of 20 mph.

Personal observations from the case studies showed that sharing of space among street users is more present when vehicular speeds are reduced. In the case studies, vehicular speeds were reduced due to some form of obstruction, such as traffic queuing or congestion at a nearby intersection. However, since introducing a deliberate obstruction seems inappropriate, the encouragement of random freedom of movement among pedestrians could serve as a subtle deterrence to vehicular movement within the thoroughfare. Moreover, DFT (2011) stated that some form of narrowing (whether visual or physical) of the thoroughfare could also be considered.

Application and Conceptual Vision for Downtown Yonge Street

From these shared space principles, the following section provides a conceptual vision for the redesign of Downtown Yonge Street as a shared space. The specific area in which the shared space transformation is proposed extends from College/Carlton Street in the North to Queen Street in the South. Having the key entrances located at two major intersections provides drivers the opportunity to avoid the shared space scheme should they wish to. Furthermore, this section of Downtown Yonge Street provides links to
several open spaces and neighbourhoods, and contains existing significant retail and commercial amenities.

The physical shared space scheme itself should be applied within the rights-of-way of all blocks between the designated entrance points. Similar to Exhibition Road and Cromwell Road/Cromwell Gardens where they could not integrate the design due to the high volume of traffic, Yonge/Dundas Street and Yonge/Gerrard Street should be left alone due to traffic experienced at these intersections. Further research into the conversion of intersections into a shared space should be explored at a later time in order to achieve one integrated design.

As this portion of Downtown Yonge Street currently experiences a heavy influence of street clutter (i.e. excessive traffic signs, pedestrian poles, street lights, postal boxes, waste receptacles, etc.), the application of a minimalist streetscape should help visually improve the look of the space and accentuate the sense of place of Downtown Yonge Street. That means all unnecessary objects like postal boxes should be removed, traffic signs minimized and pedestrian poles and streetlights should be consolidated. The new consolidated poles should complement the surrounding context and unify the entire
shared space scheme, while providing a sufficient amount of lighting on both pedestrian and vehicular spaces at night.

Figure 6-3 | Conceptual Redesign of Downtown Yonge Street as a Shared Space Looking South

The surface within the right-of-way at all blocks should incorporate the curbless single surface street in order to make movement throughout the space accessible to all abled and non-abled pedestrians. The curbless street would also provide for more flexibility within the streetscape should the street be used for events. Moreover, some form of tactile paving should be incorporated in order to help the blind and partially sighted navigate the space. A transition space between the vehicular thoroughfare and pedestrian zones provides more room to accommodate pedestrian traffic and opportunities for temporary street parking. Figure 6-2 details an example on how the space could be utilized based on the existing conditions of Downtown Yonge Street.
In order to encourage freedom of movement for pedestrians, a uniform surface pattern that spans the entire length of the shared space scheme (except for the major intersections of Yonge/Dundas Street and Yonge/Gerrard Street) should be applied. The surface pattern should reflect the Downtown Yonge Street context while mimicking the diagonal movement patterns of pedestrians – as witnessed in the case study observations. For example, the conceptual surface pattern design in Figure 6-3 relates to the new branding strategy of the Downtown Yonge Business Improvement Area.
Finally, there should be a combination of some form of gateway feature (i.e. public art) and contrasting paving treatment at the entrances into the share space scheme at College/Carlton Street in the north and Queen Street in the south. This will help in notifying incoming vehicles and pedestrians that they are entering a unique type of space that requires an increased awareness of their surroundings. The gateway feature should also be multi-functional: able to be used as an attractive mechanism to block vehicles from entering the space during full street closure activities. Figure 6-6 and 6-7 provide visualizations on how the entrance may look at the intersection of Queen Street and Yonge Street.

**Conclusion**

In this chapter a set of shared space principles were developed based on findings and analysis of the two case studies. These principles were used to inform the conceptual redesign of Downtown Yonge Street into a shared space. The subsequent chapter will view and discuss the comments made by several professionals who provided feedback on the feasibility of the proposed principles, the shared space scheme for Downtown Yonge Street and the approach as a whole.
Figure 6-6 | Conceptual Rendering of the Queen Street Entrance

Figure 6-7 | Conceptual Rendering of the Queen Street Entrance When Closed for Events
CHAPTER 7 | Discussion

This chapter presents a discussion on several topics related to the research conducted and implementation. The first section provides the evaluative comments made by several professionals on the developed principles and conceptual redesign of Downtown Yonge Street. The following sections present discussions on two different topics. One discussion is based on the evaluative comments made by professionals and the other is on the research methodology. Finally, this chapter ends with a discussion on the limitations of the research.

Professional Critique and Evaluation

The professional critique and evaluation portion of this research was used to evaluate the developed principles and recommendations for the conceptual redesign of Downtown Yonge Street into a shared space. An evaluation form consisting of open-ended questions was sent out to three professionals in the field of urban planning and architecture who know the Downtown Yonge Street context very well. Evaluation forms were also sent out to key-informants who were interviewed for the case studies and an architect who led an informal tour of the Granville Street case study in order to garner feedback from interviewees who did not have prior knowledge of Downtown Yonge Street.

For the evaluations that were sent to professionals who knew Downtown Yonge Street, two out of the three evaluations were completed and returned. For the evaluations that were sent to the key-informant interviews from the case studies, one out of the four evaluations sent was completed and returned. The architect who led the informal tour sent his evaluation back. In terms of the different types of professionals who were in involved
in the critique and evaluation, the resulting group included one professional planner, two professional architects and one professional urban designer.

The following sections will provide an overview and summary of the comments made from the professional critics and evaluators – highlighting the feedback for each of the developed principles, the recommendations for the conceptual redesign and the overall feasibility of a shared space approach. Refer to Appendix G and H on page 149 and 162 respectively for a copy of the evaluation form that was sent and the corresponding professional comments.

**Convert to a Curbless Single Surface Street with a Uniform Street Pattern**

Most of the respondents agreed that a curbless single surface street would improve the quality of the streetscape. However, there were concerns over how the operations of the street would work on a curbless street. Operation issues that were raised included storm water collection, deliveries and transit. Pedestrian safety was also mentioned, particularly with respect to those who experience vision or other perceptual problems and those pedestrians who move freely within the space at all times.

**Incorporate Safe Zones and Shared Transition Spaces**

The incorporation of transitional spaces garnered support from all the respondents. It was seen an opportunity to create ‘islands’ within the streetscape and more ‘elbow room’ for pedestrians in order to reduce conflict. Nevertheless, it was noted that there would still be a need for some form of demarcation, additional attention would be needed to improve the perceived sense of safety and actual safety barriers may be required.
Clearly Define the Entrance

All respondents agreed that a clear defined entrance was an important factor. Respondents reiterated the use of materiality, textures, special lighting, public art and other fixed armatures would serve to create a sense of arrival or announce a streets termination for pedestrians and vehicles.

Minimalist Streetscape

From an aesthetic standpoint, the minimalist streetscape principle was deemed positive. One of the professional architects indicated that they made the mistake of ‘overdoing it’ and should have relied on street life to animate the space. Other respondents commented on the uncertain functionality of intersections that require east-west movement or incorporate streetcar movement, should the traffic control systems be minimized. With a minimalized streetscape, reviewers suggested an emphasis on materiality of the surfaces in order to provide better communication and way finding measures for pedestrians, drivers and bicyclists. The professional planner mentioned that there would probably need to be a period for all users to become comfortable with the space as this principle acts as a shift away from how a conventional street functions.

Slowing Vehicular Traffic Through Reduced Speed Limits, Narrow Lanes and Freedom of Movement

The notion of slowing of vehicular traffic was considered positive by several respondents, but varying factors need to be taken into deliberation. One of the professional architects mentioned that the idea needed to be applied more broadly in order for it to be effective. The professional planner comment indicated that the model
would work, but the speed limits would have to be reduced. Furthermore, another professional architect added that the car should be removed altogether. Finally, a professional urban designer stated that comments on this principle should be requested from traffic engineering professionals.

**Recommendations for Conceptual Redesign**

The professional urban designer stated that the conceptual design was strong due to its identity and simplicity. A comment made by the professional planner indicated that the streamlined lighting fixture was desirable, but looked ‘heavy’ in the image and that the design of the street should also highlight the surrounding architecture. There were positive and negative comments made on the surface pattern itself. The professional planner was in favour of the design reflecting pedestrian movement, but felt the idea would not be perceived by the average pedestrian. One of the professional architects stated that a more subtle design, one that surpasses the ‘fashion of the moment’, should be explored.

**Feasibility of the Shared Space Approach**

In terms of the feasibility of a shared space scheme on Downtown Yonge Street, all respondents felt that the approach could work. The professional urban designer proclaimed that the increase in pedestrian flow and cycle traffic within Yonge Street makes for a strong case for a shared space design as it communicates a safe, pleasant and more visible connection for both pedestrians and bicyclists. However there are a number of variables that still need to be considered. The professional urban designer continued by adding that the streetcar tracks that intersect three of the major streets (College/Carlton...
Street, Dundas Street and Queen Street) are a challenge as the track presents a disruption in a relatively flush roadway surface.

With respect to its general application on any street, the professional urban designer felt that the approach would not necessarily work on any street. It was stated that major arterials where public transit services are less than adequate, or have an absence of infrastructure related to the movement of freight would not be desirable share space applications. On the contrary, the professional planner stated that the scheme could work on any street in theory, as long as the priority of the street is to create a pedestrian environment for strolling while still slowing vehicles. Likewise, one of the professional architects also believed that the element of sharing could permeate into most street environments, however each street would need further research as they all have their own needs and requirements. Finally, another professional architect stated that in principle, it could be feasible, but the solution would have to be flexible and tailored to local conditions.

**Discussion Related to the Professional Critique and Evaluation**

The comments made by the professional critics in evaluating the feasibility of the developed principles and the recommendations for the conceptual redesign of downtown Yonge Street into a shared space were positive in nature. It was agreed that the approach could work not only within Downtown Yonge Street, but also on other streets as well, assuming the street is pedestrian oriented with available vehicular access.

Other comments made in the evaluation, but outside the scope of this thesis, related to operational aspects and review at an urban design level. The professional planner commented on how it would have been beneficial to see more on the seasonality of the
street – that is, how the space would look and feel during the winter months and how to maintain the energy of the street year-round. Moreover, the professional urban designer offered comments beyond conceptual design to those as the site scale of design. Several of these comments surrounded the ideas of relationship to adjacent buildings and public spaces, and taking into consideration weather protection and storefront design. Though the comments were brief, it did introduce another layer into the research of shared space outside of just the physical layout of the scheme itself.

**Discussion Related to the Research Methodology**

The observational research conducted from the case studies were able to determine some of the gaps within the literature as defined by the concluding remarks in the literature review. However, the qualitative conclusions made about the behaviours of pedestrians and drivers were determined by the researcher’s interpretation of the results. They are not truly representative of the actual rationale made by either the pedestrians or drivers. Going back to the Exhibition Road observations, it was consistently observed that drivers yielded to pedestrians who were waiting to cross when they were faced with an obstacle that required them to slow down. Though the findings from the observations were consistent, the research would have benefitted from also interviewing the driver in order to determine the reasoning – if it were different – behind yielding to the pedestrian.

There were several other gaps in knowledge in the study of shared space, which were beyond the scope of this thesis. MVA Consultancy (2009) stated that there was a lack of knowledge in “changes in pedestrian and vehicle flow over time” (p. 35), “whether, and how, pedestrian reactions to Shared Space may vary between segments” (p. 37) and in what way “do pedestrians evaluate risk when interacting with vehicles” (p. 37).
Furthermore, referring back to the literature review, Moody and Melia (2012) discussed the idea that as a shared space becomes the norm, it could be possible that the feeling of risk associated with the scheme could be diminished. As a result, “it is not clear how initial patterns of behaviour based on cognitive load and risk assessment change as motorists become familiar with (a shared space scheme)” (MVA Consultancy, 2009, p. 36).

**Limitations**

There may have been some bias present as the researcher was an employee of the Downtown Yonge Business Improvement Area during the completion of this thesis. This bias could have affected the redesign portion of the study as the researcher was familiar with ideas that were being considered for this project site. However, no preliminary design has yet been proposed and the recommendations were based on existing literature and research findings. The researcher’s bias towards Downtown Yonge Street should not have affected the outcome.

The limited availability of funds and time for this research restricted the number of cases that could be studied and the time allocated for conducting on-site observation. As most of the prominent shared space examples are located in Europe, the ability to collect data through key-informant interviews and on-site observation in order to compile a valid case study was difficult due to the cost of travel and accommodations. For that reason, only one shared space scheme from Europe was used for the research.

Furthermore, the use of only one case study that is thoroughly representative of a shared space might not have provided enough information to form a proper generalization of the approach as a whole. The data gathered represented information particular to that
case in itself. In order to formulate a larger generalization on the topic of shared space, information from the literature review was used as data as well – in combination with that from the case studies. This was sufficient for the scope of this thesis as the developed principles and recommendations towards the redesign of Downtown Yonge Street into a shared space was only conceptual. Furthermore, proper representation of street user behaviour – conducting face-to-face interviews – was limited due to the time allocated for on-site observations of each case study.

The period in which on-site observations were conducted may have not represented the highest volume of pedestrian movement within each case study site. For instance, the Director for Transport and Highways suggested that the high season for tourists visiting Exhibition Road is in October (personal communication, January 28, 2013). Additionally, all the key-informants from the Granville Street case suggested the summer months as the peak season for pedestrian volume. As previously stated, observations were done in January and February. Due to the timing for completing this thesis, conducting observations on Exhibition Road and Granville Street during those suggested time periods by the key-informants were not feasible.

Finally, there was not a sufficient amount of time to obtain a professional transportation engineer or planner – with background of Downtown Yonge Street – to provide their professional opinion and remarks on the developed principles and conceptual redesign. The comments generated would have been invaluable in further assessing the feasibility of the shared space approach within Downtown Yonge Street from a transportation perspective.
CHAPTER 8 | Conclusion

The notion of shared space provides for a unique and different approach to designing and transforming our streetscapes outside of the conventional street design scheme. For the purpose of this thesis, shared space was defined as a method of improving the public realm by encouraging equal entitlement of the space between pedestrians, drivers, cyclists and other users through the removal of conventional traffic control features. Shared spaces benefit from being an attractive street due to unnecessary street clutter (Department for Transport [DFT], 2011), freedom of movement for all pedestrians while maintaining vehicular traffic (Hamilton-Baillie, 2008a) and a safer environment due to heightened awareness between street users and their surroundings (CABE Space, 2008; DFT, 2011; Toth, 2009).

Findings from the literature review reported that shared space schemes experienced a reduction in traffic delay, decrease in vehicular speeds and injury rates fall (Hamilton-Baillie, 2008a; Shared Space, 2008c). Key results from observing Exhibition Road in London, England and Granville Street in Vancouver, Canada showed that a slower moving environment encourages sharing between pedestrians and vehicles on the roadway, and that freedom of movement for pedestrians can be achieved by distorting the lines between pedestrian space and the vehicular roadway.

After developing several shared space principles from the research, and providing recommendations for a conceptual redesign of Downtown Yonge Street into a shared space, professional planners and designers were asked to comment on its feasibility. Overall, the comments made were positive in nature and indicated the approach could
work only if the street was pedestrian oriented, there was available vehicular through-access and that detailed site-specific studies were conducted.

**Future Research**

As stated in the limitations, further research into other examples of shared spaces would be beneficial in order to form a more complete understanding of the scope of shared space. This would help in verifying the shared space principles developed for this thesis, but add to them so that they could be used as guidance in formulating shared space principles for other streetscapes. Furthermore, more research would be needed in determining the gaps in knowledge that were not considered within the scope of this thesis. Other knowledge gaps that may still need addressing include: determining whether drivers’ behaviours change when they become accustomed to a shared space scheme; and do shared spaces contribute to safer streets, increased social activity and improved economic vitality? Furthermore, research into the effects of curbless streets and transit loading for pedestrians, and pedestrian/vehicle interactions with bicyclists are issues that need to be explored.

While the on-site observation for the case studies were focused more on the right-of-way between the buildings, it would be beneficially if observations were done on intersections that have adopted the shared space scheme. The resulting research and findings would help formulate design principles for the intersections that were omitted from this research. This knowledge would contribute to creating one uniform shared space scheme.

Other future research topics that would be of interest and improve the current research on the topic of shared space would be to look at the socio-cultural dynamics of sharing
between different cultures. For example, are European pedestrians and drivers more willing to each yield to each other than North American pedestrians and drivers? As well, research into the social psychological behaviour of sharing between both pedestrians and drivers would provide a different insight into the topic that could be valuable to future proposals for a shared space scheme.

**Final Remarks**

This study of shared space offers an alternative approach to how we view our streets, the way that they function and how to make for a more liveable environment. As cities become more crowded, there is a greater demand for public space and quality streetscapes that are not dominated by motorized vehicles. The implementation of shared space schemes on our existing streets can act as extensions of the public realm and connect to other adjacent public spaces while still maintaining equal opportunity for all street users. Not only will these streets continue to serve as thoroughfares for vehicular traffic, but they also potentially lead to a more complex network of connected public spaces that will improve the overall liveability and attractiveness of our cities.
REFERENCES


Smith, S. (1996). Yonge at heart – For 200 years this teeming thoroughfare has been the soul of Toronto. *Canadian Geographic*, 116 (5), 24-34.


Appendix A  |  Exhibition Road: On-site Observation Maps

Saturday, January 26, 2013 (8:00 AM – 9:00 AM)
Saturday, January 26, 2013 (12:00 PM – 1:00 PM)
Sunday, January 27, 2013 (8:00 AM – 9:00 AM)
Sunday, January 27, 2013 (12:00 PM – 1:00 PM)
Sunday, January 27, 2013 (4:00 PM – 5:00 PM)
Wednesday, January 30, 2013 (8:00 AM – 9:00 AM)
Wednesday, January 30, 2013 (4:00 PM – 5:00 PM)
### Appendix B  |  Exhibition Road: On-site Observation Comments

<table>
<thead>
<tr>
<th>Saturday, January 26, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8:00 AM – 9:00 AM</strong></td>
</tr>
<tr>
<td>• Minimal pedestrians</td>
</tr>
<tr>
<td>• Traffic moving efficiently</td>
</tr>
<tr>
<td>• Normal pedestrian behaviour (walking on sidewalk)</td>
</tr>
<tr>
<td>• When more cars driving behind, moving slower</td>
</tr>
<tr>
<td>• Fewer cars, clear path, drive faster</td>
</tr>
<tr>
<td>• Truck pulling out, incoming car from north communicate through high beam</td>
</tr>
<tr>
<td>• Large group of pedestrians walking, interacts with car, car slowing creeping trying to get in, pedestrians let car through</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>12:00 PM – 1:00 PM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• More vehicles present</td>
</tr>
<tr>
<td>• More traffic congestion</td>
</tr>
<tr>
<td>• More pedestrians in pedestrian zones</td>
</tr>
<tr>
<td>• Car exiting from pedestrian zone parks in there</td>
</tr>
<tr>
<td>• Most cases pedestrians wait for clearing than quickly walks across road</td>
</tr>
<tr>
<td>• Cars making u-turn in pedestrian zones with traffic is queued at intersection</td>
</tr>
<tr>
<td>• Pedestrians beside observer wanted to cross but moved on as traffic was busy</td>
</tr>
<tr>
<td>• Traffic queue picked up quickly to observer location from south intersection</td>
</tr>
<tr>
<td>• Cases where cars pull into east walkway and parks; pedestrians avoid by walking onto the road</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>4:00 PM – 5:00 PM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Heavy traffic congestion</td>
</tr>
<tr>
<td>• Traffic eventually dies down to “lunch” hour traffic during middle of observation</td>
</tr>
<tr>
<td>• Dwindles near end of observation</td>
</tr>
<tr>
<td>• Heavy volume of pedestrians on west side</td>
</tr>
<tr>
<td>• Car stop for pedestrian to cross (makes waving signal)</td>
</tr>
<tr>
<td>• Another car stops and lets pedestrian cross</td>
</tr>
<tr>
<td>• Car turning into pedestrian zone to make u-turn</td>
</tr>
</tbody>
</table>
### Sunday, January 27, 2013

#### 8:00 AM – 9:00 AM
- Little to no pedestrians and vehicles
- Pedestrian movement typical (walk near buildings)
- Pedestrians walk on large pedestrian area (did not walk on side currently walking on), didn’t enter any of the museums of school, just continued walking down the street until out of view
- Area on west side near subway entrance closed off to construction (or maybe drainage trench cleaning)

#### 12:00 PM – 1:00 PM
- Traffic congestion levels return, about to where observer is standing
- Cars tend to yield to pedestrians when traffic queued or moving slowly
- People walking along edge of carriageway
- Pedestrian cuts in front of car to cross, stops and lets second pedestrian cross
- Pedestrian looking to cross, tries to make eye contact with car, car not looking at pedestrian, pedestrian walks around car as car drives by

#### 4:00 PM – 5:00 PM
- Taxi drives through pedestrian zone; parks in pedestrian space for a bit
- Van stops for a pedestrian
- Traffic queue goes beyond observer (almost near traffic circle) on south side, traffic queue begins on north side
- Pedestrian waiting to cross (north lane moving well, south end at stand still)
- Pedestrian walking across, no signs of car slowing down
**Tuesday, January 29, 2013**

**8:00 AM – 9:00 AM**
- Influx of pedestrian traffic on west side
- Even more pedestrians present as 9 am closes in
- More traffic present than on weekend (traffic queue at south)
- More pedestrian activity (students)
- Way more bicyclists present
- Flow of pedestrian traffic more present on west side of street
- Traffic queues on north and south bound roads near intersections (more on south end)
- Van stops due to car in front with 4-way signals on; pedestrians cross in front
- As car moves, van starts to move but more pedestrians still crossing, van lets them go and pedestrians wave

**12:00 PM – 1:00 PM**
- Non-existent traffic
- Moving smoothly
- Not a lot of vehicles (similar to weekend morning)
- Present pedestrian and vehicular traffic predominant on north side
- Minimal traffic on south end
- North end starting to get queued after turning circle at 12:23 pm
- Pedestrian crossing not looking at traffic, incoming car honks from a couple meters away
- Vehicle stops for walking pedestrian, but no contact between the two, met when pedestrian was in the middle of their walk

**4:00 PM – 5:00 PM**
- Light traffic (consistent with lunch time)
- Pedestrian flows light
- Both north and southbound lanes near the intersection begin to queue middle of observation
- Congestion building at south intersection by 4:16 pm
- At 4:31 pm, traffic remains queued (but at a small levels – smaller than weekend)
- Car turning out of parking bay lets girl run across road
<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 8:00 AM – 9:00 AM | Traffic at minimum  
No traffic congestion or queues  
Pedestrian counts small  
Existing traffic mostly moving north bound  
At 8:55 am influx begins and huge pedestrian movement starts  
Cars waiting for pedestrians to cross, pedestrian eventually yields to car with hand signal  
Large group of pedestrians crossing incoming taxi doesn’t seem to be stopping, mass group of pedestrians run across road quickly |
| 12:00 PM – 1:00 PM | Traffic still moving smoothly  
Minor congestion/queue to the south but not significant  
A little congestion to the north after the turning circle  
Numerous incidents’ where pedestrians commit to walk across road but incoming car does not seem to be stopping so turns back onto pedestrian clearance  
At 12:13 pm, traffic being to queue at south end and traffic begins to build up  
Car stops as pedestrian is midway through the road crossing  
Several incidents’ where pedestrians waiting to cross but vehicles don’t seem to be stopping |
| 4:00 PM – 5:00 PM | Traffic queued after turning circle on north going lane  
When first arrived, traffic queued on south end (similar to lunch period when it started getting queued)  
Decent pedestrian activity  
Traffic has calmed minutes later (4:13 pm)  
U-turn within transition zones  
If pedestrian unable to cross, continues walking up the walkway until clear |
### Director of Transport and Highways (January 28, 2013)

- 2001 felt need to do something
- Instigation (car dominated)
- Parking bays middle
- World class destination
- 3 museums
- French school
- Imperial college
- Academic authorities
- Royal college of music
- 15 million pedestrians
- Hyde park north
- 20 or so million pedestrians a year to visit visitors
- Something needed to be done instigate change
- Lies between 2 Boroughs
- Lies also within Westminster (another authority)
- Ideals may not be the same
- 24 meters about
- No designation between cars/pedestrians
- 28 million pounds
- Incorporation with transport with London
- Showcase for London and UK
- 3000 hour peak
- 9 to 10 when museums opens
- 12 to 2 lunchtime
- 6ish when museum closes
- Busiest in October
- 30% vehicle reduction
- 900 vehicles/hour to 600 vehicles/hour
- Left turn only at south end Cromwell
- All turns bound at intersection not allowed
- Initial reservations
  - Horribly wrong
  - Main concern removing curbs
- Not shared space
- Quasi shard space
- Still need order
- 4 m strip both sides only pedestrian
- 2 way traffic in-between
- 8 m strip from center line (mixed zone)
  - Parking space
  - Bike
  - Trees
- Shared space mainly used by pedestrians
- 3 zones car, pedestrians, mixed
- Why it’s working: excellent visibility
  - No guards, objects, etc.
  - Excellent site lines
- Black drainage
- Lights
- Obvious where they should be (cars) based on objects
- Pedestrians not so much because want them to move where ever they want
- Want the pedestrians to use the entire space
- Cars restrict
- Working as planned
- Guidelines for ROW widths
- Manual for streets 2010
- Fill in gap design roads in public realm
- Stakeholder board
- Museums want promote
- Blind want curbs
- 4/8 m came from decision to give more space for pedestrians
- 800 mm corduroy
- Remove visitor parking
- Same resident parking
- Cromwell turning restriction
- Kept the same
- Remove pattern
- Don’t want same security
- Treat at still as a busy road for safety
- Absolute minimum (looks like roundabout) but not

- Would not work at Cromwell (roundabout)
- Because main traffic
- Roundabout works only if traffic works at all sides (balance)
- Two stage crossing at Cromwell
- Turn onto Thurloe Place
- Recall eliminate curb
- Cost
- Budgets being cut
- Convince money well spent
- Meeting everyone’s demands
- Mostly residential in the north
- Different districts/areas
- Important to keep consistent
- Future proofing scheme
- Wi-Fi boxes bolted to columns
- Should have built it in
- Provide electrical power outlets to ground (sockets)
- Explored (navigation aids for blind) RFID tags
- Gives clues to where they are
- Innovative schemes
- Do away with crossings because drivers will pay more attention
- Key is to have high pedestrian flow to take on vehicular movement
- Come from politicians
<table>
<thead>
<tr>
<th>Professional Architect (January 29, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Design competition</td>
</tr>
<tr>
<td>• One uniform design</td>
</tr>
<tr>
<td>• Linked with park and history</td>
</tr>
<tr>
<td>• Natural history one end, albert hall, college middle</td>
</tr>
<tr>
<td>• Keep axis and shift over</td>
</tr>
<tr>
<td>• Jungle of fencing stuff with narrow street</td>
</tr>
<tr>
<td>• Form cultural group</td>
</tr>
<tr>
<td>• Take stuff out</td>
</tr>
<tr>
<td>• Simple, simple, simple</td>
</tr>
<tr>
<td>• Single surface</td>
</tr>
<tr>
<td>• Transfer axis over</td>
</tr>
<tr>
<td>• Cross hatch breaking up lane</td>
</tr>
<tr>
<td>• Don’t move in straight lines</td>
</tr>
<tr>
<td>• Long road difficult</td>
</tr>
<tr>
<td>• 800 meters</td>
</tr>
<tr>
<td>• Hated the benches</td>
</tr>
<tr>
<td>• Things change: benches</td>
</tr>
<tr>
<td>• Sitting on curbs of lanterns</td>
</tr>
<tr>
<td>• Simple no clutter</td>
</tr>
<tr>
<td>• Limitations: expand slightly right</td>
</tr>
<tr>
<td>• Due to refurbishment of tunnel</td>
</tr>
<tr>
<td>• Take into park and serpentine</td>
</tr>
<tr>
<td>• Crossing at north</td>
</tr>
<tr>
<td>• Just couldn’t resolve it (intersection at Cromwell)</td>
</tr>
<tr>
<td>• Bollards to stop parking near basements</td>
</tr>
</tbody>
</table>
Appendix D  |  Granville Street: On-site Observation Maps

Saturday, February 9, 2013  (8:00 AM – 9:00 AM)
Saturday, February 9, 2013 (12:00 PM – 1:00 PM)
Saturday, February 9, 2013 (4:00 PM – 5:00 PM)
Sunday, February 10, 2013 (8:00 AM – 9:00 AM)
Sunday, February 10, 2013 (12:00 PM – 1:00 PM)
Tuesday, February 12, 2013 (12:00 PM – 1:00 PM)
Wednesday, February 13, 2013 (8:00 AM – 9:00 AM)
Wednesday, February 13, 2013 (12:00 PM – 1:00 PM)
Wednesday, February 13, 2013 (4:00 PM – 5:00 PM)
# Appendix E  | Granville Street: On-site Observation Comments

## Saturday, February 9, 2013

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 9:00 AM</td>
<td>- Very little traffic&lt;br&gt;- Barely any pedestrians walking&lt;br&gt;- Transit moving through space rather than cars&lt;br&gt;- Long line up of people at Royal Canadian Mint&lt;br&gt;- Pedestrian levels picking up at 8:35 am&lt;br&gt;- No vehicle-pedestrian interaction&lt;br&gt;- Only saw one vehicle come through, the rest was transit and taxi</td>
</tr>
<tr>
<td></td>
<td><strong>12:00 PM – 1:00 PM</strong>&lt;br&gt;- Pedestrian levels increasing&lt;br&gt;- Mainly transit again&lt;br&gt;- Weather is cloudy (drizzle)&lt;br&gt;- Several vehicles drive through space&lt;br&gt;- More vehicles driving through&lt;br&gt;- Still predominantly transit&lt;br&gt;- When obstruction on road, huge congestion and queuing and honking occurs (mostly traffic)&lt;br&gt;- Vehicle parks on curb (semi on road), buses honk (car moves)&lt;br&gt;- Same vehicle is back, stops in middle of road, driver gets out and goes into a store, bus comes and continually honks, driver runs out and moves&lt;br&gt;- Pedestrian walking across street, incoming bus, runs across as comes close, bus doesn’t slow down&lt;br&gt;- Transit slowing down from a distance when pedestrian crossing&lt;br&gt;- Man walking down north bound lane of road, goes back on sidewalk past Robson&lt;br&gt;- Car turns onto road starts driving in middle (no oncoming)&lt;br&gt;- Service truck parks on curb, garbage truck parks on curb&lt;br&gt;- Girl crossing, taxi stops and leaves space, but its at a red light</td>
</tr>
<tr>
<td>4:00 PM – 5:00 PM</td>
<td>- Small amount non-transit vehicles&lt;br&gt;- Mostly buses and taxes passing through&lt;br&gt;- Typical pedestrian behaviour, looks both ways if incoming vehicle coming, walking/jog fast across&lt;br&gt;- Women waking across road, comes in contact with bus but keeps walking, bus honks&lt;br&gt;- Lots of pedestrians walking&lt;br&gt;- Cloudy no drizzle&lt;br&gt;- Heavy transit as usual&lt;br&gt;- Lots of buses (very frequent), when queued block entire view of street</td>
</tr>
</tbody>
</table>
### Sunday, February 10, 2013

**8:00 AM – 9:00 AM**
- Very little people walking
- Except for long line-ups at the mint
- Very little car and buses
- Even transit very minimal compared to Saturday
- Girl walking on edge of road
- Transit starting to pick up near 9 AM
- Barely nay pedestrians on the south end of the street intersection (Robson)

**12:00 PM – 1:00 PM**
- Pedestrian activity increased
- Not as much as Saturday
- Still line up at the mint
- At 12:36 PM heavy transit
- Pedestrians weave through stopped vehicles to cross street
- Pedestrian crosses street really quickly
- Definitely not as pedestrian heavy as Saturday
- Pedestrians crossing when bus stops, crosses behind car, behind stops, but no communication, stopped because of bus and not pedestrian
- Sunny conditions

**4:00 PM – 5:00 PM**
- Sunny conditions
- Good weather
- Way more pedestrians, mostly on east side
- Pedestrians in middle of road crossing, taxi doesn’t stop
- High volume of pedestrians walking
- Pedestrians cross in front of taxi
- Taxi gives room no sign of informal cue
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuesday, February 12, 2013</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **8:00 AM – 9:00 AM**  | • Medium to high levels of traffic  
• Cloudy day, majority transit  
• No vehicular interaction  
• When pedestrians cross and vehicles stop (because of light) no gesture towards car for stopping (expected that they stop) |
| **12:00 PM – 1:00 PM** | • Rainy conditions  
• Not as much pedestrian volume than in the morning  
• Sign truck parked on curb  
• Again, very little vehicular traffic except for traffic  
• At a queue, Purolator truck seems to give space for waiting pedestrian to cross, no indication if informal queue was given  
• Man walking on road joins sidewalk at where observer is doing observation |
| **4:00 PM – 5:00 PM**  | • Most pedestrian traffic to today  
• Predominantly transit  
• Pedestrian walks in front of taxi, as green light turns on, taxi waits until pedestrian fully walks across |
<table>
<thead>
<tr>
<th>Time</th>
<th>Events</th>
</tr>
</thead>
</table>
| 8:00 AM – 9:00 AM | • Mid low to medium pedestrian volumes  
• Just transit  
• Maybe just low traffic  
• Cloudy day  
• Pedestrian crossing on a red light, incoming bus, walking leisurely, bus keeps honking but pedestrian keeps walking at a steady pace |
| 12:00 PM – 1:00 PM | • Medium volume of pedestrians  
• Heavy queue of transit buses  
• Taxi parked on curb  
• Now sunny with cloudy periods  
• Pedestrian looking to see if car is coming |
| 4:00 PM – 5:00 PM  | • Pedestrian volume funnelling on east side  
• Construction scaffolding blocking west sidewalk or pedestrian clearance to mid block  
• At certain points traffic gets so jammed view of road is blocked  
• Stop light, taxi left space for already crossing pedestrians  
• Traffic volumes increase at 4:13  
• Lots of buses  
• High volume of traffic at 4 PM |
### Executive Director (February 8, 2013)

- Motivation to make changes
- Early 70’s pedestrian mall; nothing has changed since
- Dated
- Damaged sidewalk and diseased trees
- Need for wider sidewalks
- Refreshed look
- Lots of existing patchwork done
- Pedestrians counts have significantly increased
- Employment has gone up
- Single occupancy housing/rental have gone down due to increased transit
- Survey on the general public revealed increase in perception of the environment
- Finding balance between needs of all stakeholders
- Use of bollards to keep cars from hitting trees (had to put a lot of them in)
- Transit efficiency
- Too high price (cost) – higher level of materials
- Do not skip out on lighting (liked the lighting)
- Need for vehicles to park – regarding mounted curb parking (no lot surface parking in the area)
- Spur private investment
- Granville given bad reputation (party street)

Survey Results of Metro Vancouver Residents (500 people):

- **2008 Before conversion, But After Band-Aid Repairs**
  - 21% though it had improved
  - 33% thought it had worsen

- **2012 Year ½ After Project Completed**
  - 41% thought it improved
  - 14% thought it had worsen

### Shopping on Granville

- 29% shopped on Granville (2008)
- 45% shopped on Granville (2012 after conversion)

**Probable reasons:**

- Better mix of shops
- Events to promote
- Easier to get to
- Accommodation

- “Whole Package”
- Symbiotic relationship
- Hadn’t been done in 30 years, time to make a change
- Solidify shopping/entertainment district
### Professional Urban Designer (February 12, 2013)

<table>
<thead>
<tr>
<th>Metro core Granville</th>
<th>Pressure of Canada Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burrard - Clark - Broadway</td>
<td>Limitations budget</td>
</tr>
<tr>
<td>Branded certain sections of Granville</td>
<td>Only afford exposed concrete</td>
</tr>
<tr>
<td>Georgia highpoint</td>
<td>Spend money on lighting</td>
</tr>
<tr>
<td>Important ceremonial point</td>
<td>More than subtle, but potential to be bold</td>
</tr>
<tr>
<td>Slopes down to waterfront</td>
<td>Programming</td>
</tr>
<tr>
<td>VIVA Vancouver</td>
<td>Bollards</td>
</tr>
<tr>
<td>Activate Granville Space</td>
<td>Visual clutter</td>
</tr>
<tr>
<td>Georgia to Robson closed for special closure</td>
<td>Reflective shield</td>
</tr>
<tr>
<td>Heart of Granville South Robson:</td>
<td>Smith to Georgia 3 blocks as predominantly pedestrian space</td>
</tr>
<tr>
<td>Derelict, sex trade shops, theatres, clubs</td>
<td>Three blocks introduce shared space</td>
</tr>
<tr>
<td>Retail coming back</td>
<td>Like Granville Street flush environment mixing of pedestrians/vehicles pay attention</td>
</tr>
<tr>
<td>Entertainment, venues, bar Davie to Drake:</td>
<td>VIVA Vancouver</td>
</tr>
<tr>
<td>Non-market housing rental</td>
<td>Thumbs up</td>
</tr>
<tr>
<td>Near loops new development</td>
<td>South end start to come on</td>
</tr>
<tr>
<td>New development south-end</td>
<td>Big move at terminus point</td>
</tr>
<tr>
<td>Rental housing</td>
<td>Shared space</td>
</tr>
<tr>
<td>Transitional blocks, new retail, entertainment</td>
<td>Limited yes in North America</td>
</tr>
<tr>
<td>New established blocks</td>
<td>Canadian Landscape Award</td>
</tr>
<tr>
<td>Heart</td>
<td></td>
</tr>
<tr>
<td>Business high-end retail</td>
<td></td>
</tr>
<tr>
<td>Terminus</td>
<td></td>
</tr>
<tr>
<td>Challenged</td>
<td></td>
</tr>
<tr>
<td>Question of making it pedestrian only</td>
<td></td>
</tr>
<tr>
<td>Decay in retail</td>
<td></td>
</tr>
<tr>
<td>Inability to park</td>
<td></td>
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<tr>
<td>Unsafe street in the 1980’s</td>
<td></td>
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<tr>
<td>Poor lighting</td>
<td></td>
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<tr>
<td>Not inviting street</td>
<td></td>
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<tr>
<td>Canada Line announced</td>
<td></td>
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<tr>
<td>Starts conversion cause of Olympics</td>
<td></td>
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<tr>
<td>Really harsh environment</td>
<td></td>
</tr>
<tr>
<td>But holds up well</td>
<td></td>
</tr>
<tr>
<td>Lights historical reference of “great white way”</td>
<td></td>
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<tr>
<td>Quality of design</td>
<td></td>
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<tr>
<td>Feels much safer</td>
<td></td>
</tr>
<tr>
<td>Liability translink for uniform surface</td>
<td></td>
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<tr>
<td>North American ideal of mountable</td>
<td></td>
</tr>
<tr>
<td>Granville street decision too fast</td>
<td></td>
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</tbody>
</table>
### Professional Engineer (February 12, 2013)

<table>
<thead>
<tr>
<th>Set objectives design goal</th>
<th>As much flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit efficiency can’t be affected</td>
<td>4 lanes from end to end 60’s</td>
</tr>
<tr>
<td>3 rapid transit stations</td>
<td>Social problems occurred moved north</td>
</tr>
<tr>
<td>Street “no single mode had priority over others except transit”</td>
<td>Because mall talking people from street business</td>
</tr>
<tr>
<td>Used term <em>shared space</em></td>
<td>CBD to north (high)</td>
</tr>
<tr>
<td>Stakeholder consultation</td>
<td>Entertainment (middle)</td>
</tr>
<tr>
<td>Pedestrian wise increase</td>
<td>Single occupancy hotels – sex shops (south)</td>
</tr>
<tr>
<td>New rapid stations 30 + thousand pedestrians per day</td>
<td>Unify street through lighting and material</td>
</tr>
<tr>
<td>Existing 60 000</td>
<td>3rd redesign</td>
</tr>
<tr>
<td>Now 90 000 +</td>
<td>2nd time was clean up and shortening of bus mall</td>
</tr>
<tr>
<td>High end retail spreading out from Robson Street</td>
<td>Single surface initial idea yes, but nixed because effect on transit</td>
</tr>
<tr>
<td>Very positive response</td>
<td>80 ft. right-of-way</td>
</tr>
<tr>
<td>Granville pedestrian – VIVA Vancouver</td>
<td>Compromise</td>
</tr>
<tr>
<td>North of Smithe unauthorized vehicles have to turn left on Smithe; anyone else with permit</td>
<td>Serve pedestrians well</td>
</tr>
<tr>
<td>Risk management</td>
<td>Intersections are problems</td>
</tr>
<tr>
<td>Access to buses</td>
<td>Don’t walk sign people pick up speed to beat it</td>
</tr>
<tr>
<td>Linear bus loop</td>
<td>Concept great</td>
</tr>
<tr>
<td>Merging ideas with others</td>
<td>Transit only works well</td>
</tr>
<tr>
<td>Reason for different change</td>
<td>So compromise</td>
</tr>
<tr>
<td>Robson-Georgia</td>
<td>Encourages jay-walking</td>
</tr>
<tr>
<td>“Civic space”</td>
<td>Way more value to spending on lights</td>
</tr>
<tr>
<td>No trees</td>
<td>Spent money on ground but just got covered in gum</td>
</tr>
<tr>
<td>Higher lights</td>
<td>Way to maintain street (model)</td>
</tr>
<tr>
<td>Canopies</td>
<td>Management maintenance</td>
</tr>
<tr>
<td>Build-up</td>
<td></td>
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<tr>
<td>Broom finish concrete for bus traffic</td>
<td></td>
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<tr>
<td>Premium</td>
<td></td>
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<tr>
<td>Designate as transit mall</td>
<td></td>
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<tr>
<td>South Smithe regular</td>
<td></td>
</tr>
<tr>
<td>Southern portion</td>
<td></td>
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<tr>
<td>Bollards</td>
<td></td>
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<tr>
<td>Link commercial activity to car access</td>
<td></td>
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<tr>
<td>More businesses want parking gone for pedestrians pace</td>
<td></td>
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<tr>
<td>Elegant way to close street</td>
<td></td>
</tr>
<tr>
<td>Integrate with design</td>
<td></td>
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</tbody>
</table>
**Professional Landscape Architect (February 13, 2013)**

- Key stakeholder DVBA
- Hired planning consultant
- Project lead by engineering department
- Lead consultant
- Pedestrian section kept as bus mall
- Main area new Westminster
- Built Granville Street (waterfront station)
- Reflects the development of Granville
- Center for shopping and entertainment
- “Great white way”
- Georgia Street to north slopes down CBD (mentioned LM area east or west of Granville)
- Georgia to Helmken
- Main theatre and shopping district (entertainment)
- South of Helmken
- Down market
- Low grade retail
- Single occupancy
- Use great streets as a set of rules for successful street
- Strong sense of identity
- Robson/Georgian on the cusp of hill
- Robson main shopping east/west
- Georgia main east west vehicular road
- Exposed concrete
- Plaza like treatment
- Enhanced at each intersection (wanted it but couldn’t because interfered with traffic) than grandeur at civic plaza
- Parking on sidewalk
- Exposed concrete mixed with recycled glass
- Safety
- Vulnerable users (less able)
- Delineating safety area
- Cleaning the surface
- Maintenance and cost
- Special street
- Just curbs at buses

- Access for buses
- More maintenance
- Series of events programming
- All furnishings customs and integrated
- On-street parking bollards smaller (visual dominant)
- Tree plantings huge
- More leeway road surface
- Pedestrian priority
- Maintenance
Appendix G  |  Professional Critique and Evaluation Form

Designing With Sharing In Mind: An Exploration of the Shared Space and Its Application to Downtown Yonge Street in Toronto (Working Title)

Professional Evaluation

The purpose of my thesis is to explore the notion of shared space and develop a set of shared space principles and recommendations that will inform the conceptual redesign of a portion of Downtown Yonge Street in Toronto, Canada. These shared space principles and recommendations were developed through a literature review and case studies; which consisted of key-informant interviews, secondary data analysis and on-site observations.

A professional evaluation of these developed shared space principles and recommendations is important in assessing the feasibility of the design within the Downtown Yonge Street context.

I truly appreciate you taking the time in completing and providing your professional input for the evaluation stage of my thesis. Your knowledge and expertise in your field is invaluable to my research and the completion of my thesis.

Instructions:

(1) Read through pages 2 to 7 in order to familiarize yourself with the definition of ‘shared space’, the Downtown Yonge area and the resulting shared space principles/recommendations and conceptual design.
(2) Please insert comments in the designated text box on pages 8 and 9. Double-click the text box labelled with (text) under each corresponding question and type in your comments.
(3) If you need more typing space, feel free to create another page within the document and add the corresponding question number.
(4) Do not forget to save your work.
(5) When finished, please e-mail back this saved document to rvalenzo@uoguelph.ca either in the same word doc. file or PDF the document.

NOTE (1): The information provided in this Professional Evaluation is a condensed summary of several chapters that generated the resulting shared space principles and recommendations. If you are unclear, or have any questions regarding the presented information please do not hesitate to contact me at rvalenzo@uoguelph.ca or by phone at 1-647-967-3084.

NOTE (2): Your comments should focus on the feasibility of implementing these shared space principles and recommendations based on the context of the site and your professional opinion and expertise.

Again, thank you for your participation and your time!

Richard Valenzona
Shared Space Context

Definition

• “a street or place designed to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enabling all users to share the space rather than follow the clearly defined rules implied by more conventional designs” (Department for Transport, 2011, p. 6)

Philosophy

• The philosophy behind shared space is that by removing or minimizing traffic control features – such as traffic lights, signs, curbs, bollards, road markings – awareness among street users like pedestrians, drivers and cyclists is increased and prompts them to pay more attention to one another and act in a cooperative way (CABE Space, 2008; DFT, 2011; The Economist, 2012; Toth, 2009).

Characteristics

• A streetscape designed around the notion that all street users (pedestrians, drivers, cyclists, etc.) have equal entitlement and priority throughout the entire space (CABE Space, 2008)
• Improved pedestrian movement – allowing them to move freely throughout the space – while not restricting vehicular traffic (MVA Consultancy, 2009; Shared Space, 2005)
• Reduction of traffic control features such as traffic lights, curbs and road markings (MVA Consultancy, 2009)
• Pedestrian and vehicle thoroughfares consolidated on a uniform surface – or curbless street (CABE Space, 2008; MVA Consultancy, 2009)
Downtown Yonge Area Context

- Downtown Yonge area is centrally located within the downtown core of Toronto and is bordered by Grosvenor Street and Alexander Street to the north; Church Street and Victoria Street to the east; Richmond Street to the south; and Bay Street to the west. For the purpose of this thesis, Downtown Yonge Street is defined as the portion of Yonge Street that runs through the outlined boundary of the Downtown Yonge area as set by the DYBIA

- Downtown Yonge is home to “over 600 retail stores, 150 bars and restaurants, 8 hotels, 4 theatres, and the outdoor entertainment hub of Yonge-Dundas Square” (DTYBIA, 2010a, para. 2)

- Three subway stations are located along Yonge Street. They are situated near the intersections of Yonge and Queen, Dundas and College Street

- Closely adjacent to the area resides Ryerson University, St. Michael’s Hospital, Toronto City Hall and Nathan Phillips Square.

Downtown Yonge Business Improvement Area, 2013
<http://www.downtownyonge.com/finding_us>
‘Weekly average’ and ‘Split of’ (Provided by Downtown Yonge Business Improvement Area, 2013)

Typical Street Section [From Yonge Street Planning – Final Report by KPMB Architects and Greenberg Consultants Inc. (2011)]
Images From Google Maps - Street View (2013)
Shared Space Principles and Recommendations

(1) Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern
- Unifying the distinction between sidewalk and road encourages pedestrians to move throughout the space wherever they please
- Provides the opportunity to have a flexible space that can accommodate varying activities and events
- A Curbless street provides better accessibility for pedestrians who experience a physical disability – such as individuals in wheelchairs. Tactile paving between pedestrian/shared transition zones and roadway will provide a form of way finding for the partially sighted

(2) Incorporate Safe Zones and Shared Transition Spaces
- Shared space transition zones between pedestrian clearance and roadway shall provide extra room for pedestrian volumes and movement, and temporary servicing parking for vehicles needing access to adjacent businesses and establishments
- Safe zones – Pedestrian Clearances – provides pedestrians the option to keep away from vehicles, and room for patios and cafes

(3) Clear, Defined Entrance
- A defined entrance – either by contrasting paving pattern, public art piece, different lighting feature – warns incoming vehicles to slow down and that they are entering a space dissimilar from other adjacent streets
- It also informs pedestrians that they have the opportunity to move freely throughout the space

(4) Minimalist Streetscape
- The ‘de-cluttering’ of most traffic control devices – such as traffic lights, street signs, road markings, etc. – provides for a more aesthetically pleasing environment
- Minimalist design improves sight lines for all street users allowing them to move freely and safely throughout the space

(6) Slowing Vehicular Traffic Through Reduced Speed Limits, Narrow Lanes and Freedom of Movement
- A speed limit of 32 kilometers per hour or lower should be implemented
- Narrowing the road lane width will help in decreasing vehicular speeds and improve traffic at intersections*
- Slower vehicular movement allows for more communication – or ‘sharing’ – amongst street users

* Research Findings (i.e. Dumbaugh & Li, 2011) suggest that that overcompensation of roadway width leads to higher speed
Conceptual Design

• The extent to which the developed shared space principles and recommendations will be applied are from Carlton/College Street to the north, to Queen Street to the south
• Having it run between these two main arterial roads provides this portion of Downtown Yonge Street to act as a main corridor – or central spine – to important adjacent open spaces, neighbourhoods and retail/commercial endeavours
• Carlton/College Street and Queen Street provides vehicles an opportunity to avoid entering the shared space and use another thoroughfare

• The pattern of the street is influenced by the new branding style of the Downtown Yonge Business Improvement Area
• It also mimics the diagonal movement of pedestrians across the thoroughfare; which is often the case in shared space schemes
• One northbound and southbound lane should be implemented – specifically using the existing center lane width of 3.5 meters respectively as the narrow width will help in reducing (or keeping) traffic speeds to a minimum desired speed of 32 kilometers per hour or less
• The 3.0 meter shared transition zone provides more space for pedestrian movement – as the existing pedestrian clearance width does not accommodate the existing volumes
• As it provides more room to accommodate for pedestrian movement, the certain sections of the pedestrian clearance can be used for patio and café spaces
• It also provides space for temporary service parking and space for vehicles to move onto when incoming emergency vehicles need to get through
• The use of public art and a contrasting paving pattern separate from the entire shared space scheme at the entering intersections will help notify vehicles and pedestrians that they are entering a unique space.
• The use of public art as a gateway feature may also serve as a form of street closing device during large scaled events.
Professional Evaluation and Comments

(1) Please provide your comments, opinion and expertise on shared space principle/recommendation “Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern”

(TEXT)

(2) Please provide your comments, opinion and expertise on shared space principle/recommendation “Incorporate Safe Zones and Shared transition Spaces”

(TEXT)

(3) Please provide your comments, opinion and expertise on shared space principle/recommendation “Clear, Defined Entrance”

(TEXT)
(4) Please provide your comments, opinion and expertise on shared space principle/recommendation “Minimalist Streetscape”

(TEXT)

(5) Please provide your comments, opinion and expertise on shared space principle/recommendation “Slowing Vehicular Traffic through Reduced Speed Limits, Narrow Lanes and Freedom of Movement”

(TEXT)

(6) Please provide your comments, opinion and expertise on the Conceptual Design

(TEXT)
(7) Do you think a scheme such as shared space (or something similar) could work in the Downtown Yonge Area? Can it work in general on any street?

(TEXT)

(8) Are there any recommendations you would add based on your expertise and professional experience?

(TEXT)

(9) General Comments

(TEXT)
Appendix H | Professional Critique and Evaluation Comments

Professional Architect (1)

(1) Please provide your comments, opinion and expertise on shared space principle/recommendation “Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern”

This sends a strong signal to all users, drivers, pedestrians and cyclists, that this is a different kind of street, one which has a more leisurely pace and feel, and where they have to slow down, pay more attention to each other and ideally enjoy the scene in a new way. This is the kind of street we need more of in downtown Toronto as the volumes of pedestrians (and cyclists) increase.

(2) Please provide your comments, opinion and expertise on shared space principle/recommendation “Incorporate Safe Zones and Shared transition Spaces”

An appropriate response to reallocating space within the right-of-way. Acknowledges the different users and functions of the street and the need for elbow room to reduce friction and conflict.

(3) Please provide your comments, opinion and expertise on shared space principle/recommendation “Clear, Defined Entrance”

Important to have these signals. Drivers in particular are often on automatic pilot and barely conscious of their surroundings. They are transitioning into an area where different behavior is required (above) so these clear signals are important.
(4) Please provide your comments, opinion and expertise on shared space principle/recommendation “Minimalist Streetscape”

In the early days of doing these kinds of improvements we often made the mistake of overdoing it – too much “design”, too fussy and intricate. I myself was guilty of this on occasion not relying enough on the actual life of the street to provide interest and animation. Not only did this create maintenance and replacement problems down the road it was unnecessary. So I like this approach.

(5) Please provide your comments, opinion and expertise on shared space principle/recommendation “Slowing Vehicular Traffic through Reduced Speed Limits, Narrow Lanes and Freedom of Movement”

Strongly agree but this needs to be applied much more broadly to be effective to become part of the new DNA of the city.

(6) Please provide your comments, opinion and expertise on the Conceptual Design

Not a lot of detail provided but as far as it goes it looks like a promising direction.
(7) Do you think a scheme such as shared space (or something similar) could work in the Downtown Yonge Area? Can it work in general on any street?

In principle yes but these solutions need to be tailored to local circumstances and malleable. One thing to consider as a street like Yonge evolves is different uses by time – time of day, seasons etc. e.g. requiring servicing and garbage pickup to only occur within certain hours, full pedestrian use at others.

(8) Are there any recommendations you would add based on your expertise and professional experience?

You should share this with Councillor Wong-Tam and the BIA and get their feedback.

(9) General Comments

Good job.
Professional Urban Planner

(1) Please provide your comments, opinion and expertise on shared space principle/recommendation “Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern”

I think the concept would work really well from the perspective of improving the quality of experience for pedestrians, but how does this format work from an operational perspective? Such as Taxis, Brinks Trucks (who need to deliver right at the front door of establishment), FedEx, TTC Buses (Blue Line), Curb Side Waste Collection? I would also like to see more about the seasonality of the street (what does it look like in the winter and how could one ensure that the energy of the street is maintained).

What are measures that can be incorporated to keep maintenance concerns down (certain materials that work better than others?) I think there is value in showing how the street interacts with Dundas Square. While I like the overall concept I do have concerns over people meandering through the street at all hours of the day, and feel that there needs to be some more detail into the use of the street at different times of days and days of the weeks from a vehicular standpoint.

(2) Please provide your comments, opinion and expertise on shared space principle/recommendation “Incorporate Safe Zones and Shared transition Spaces”

The idea of the transition space is brilliant but needs more thought on how to improve the perceived sense of safety and actual safety barriers. More thought should go into materials used to create a sense of safety between vehicles and pedestrians, how would one ensure that a vehicle doesn’t go beyond the transition space. Should be a section on night time visibility.

(3) Please provide your comments, opinion and expertise on shared space principle/recommendation “Clear, Defined Entrance”

I like the idea of this as it creates a sense of arrival for all transit users, and even more so of using it as a form of public art.
(4) Please provide your comments, opinion and expertise on shared space principle/recommendation “Minimalist Streetscape”

Aesthetically I like it but worry how this would work at intersections that require Streetcars and vehicles to travel east and west? There is also going to be a paradigm shift in how the street functions and users will need a learning period – Montreal actually has signs on how to use the street on poles throughout the area.

(5) Please provide your comments, opinion and expertise on shared space principle/recommendation “Slowing Vehicular Traffic through Reduced Speed Limits, Narrow Lanes and Freedom of Movement”

It seems that for this model to work the speed limit would have to be reduced.

(6) Please provide your comments, opinion and expertise on the Conceptual Design

I think there would be some merit to looking at a solution that combines the pedestrian scale and traffic light into one unit so to reduce the number of poles on the street (while maintaining adequate lighting). Although I do like how streamlined it looks without the overhanging fixtures. The image shown makes the poles seem very heavy, I think the design should be more about highlighting the surrounding built form.

Like the concept of using the pavement treatment to represent pedestrian flows but I feel it would get lost to the average pedestrian because of the scale and view one would need to see it to appreciate the design.
(7) Do you think a scheme such as shared space (or something similar) could work in the Downtown Yonge Area? Can it work in general on any street?

I think it could work on Yonge Street. In theory it could work on any street but the question has to be what the intent of that street is. I think it could work on any street where the priority is creating an environment for pedestrians to stroll and spend time, while still allowing access to vehicles.

(8) Are there any recommendations you would add based on your expertise and professional experience?

If you can find a design that is both aesthetically pleasing and addresses the operational, safety and maintenance concerns you will have a really strong report.

Bicycles?

(9) General Comments

Great job!
Professional Urban Designer

(1) Please provide your comments, opinion and expertise on shared space principle/recommendation “Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern”

Alternatives in storm water collection must be addressed when considering curbless street design. I am not sure what the exact elevation change between College and Richmond is but it is clear that water run off travels down toward Lake Ontario and Yonge is a North/southbound Street.

A Curbless street with uniformity will help slow down regular vehicular traffic. St. Michael’s Hospital is a major trauma centre. It is critical that the design and materiality of surfaces communicates to all users that emergency vehicles will at times travel through the area at higher speeds.

(2) Please provide your comments, opinion and expertise on shared space principle/recommendation “Incorporate Safe Zones and Shared transition Spaces”

Be sure to emphasize the “Incorporation Safe Zones and Shared transition Spaces” on the western street edge of Yonge between Dundas and Queen Street. This street wall is rather blank, has limited character and does not engage pedestrians. It is also important that it acts as transition space with a “Clear, Defined Entrance” as a great deal of its pedestrian flow is associated with providing entry and exit points to Eaton Centre and the Dundas or Queen Subway Stations. Uninhibited pedestrian flow is essential in the area. Especially during major public events as this area holds several major public events on an annual basis. The east street edge in this area has a quite a few heritage buildings and is already quite engaging to pedestrians. A simplistic and clean design will enhance and embrace this established character. Be careful to protect street trees while minimizing the # of bollards or other “protective elements”. Truly flush ground plane detailing, while demarcating zones and shared spaces, is required to avoid tripping. Proper detailing of the ground plane for “vulnerable road users”, including those with sight and hearing disabilities, should be integrated. A good reference is Salt Street at Vancouver’s Olympic Village which is a flush streetfronting a London Drugs on the east side of the central village plaza.

(3) Please provide your comments, opinion and expertise on shared space principle/recommendation “Clear, Defined Entrance”

Changes in materiality, colour and texture are appropriate visual cues to delineate the street entries/ends. Additional/special can also assist in announcing street ends. Consider special lighting, and other fixed armature, that spans the street.
(4) Please provide your comments, opinion and expertise on shared space principle/recommendation “Minimalist Streetscape”

A “Minimalist Streetscape” is more aesthetically pleasing. However, sensitivity and creativity in the redesign of traffic control systems for streetcars may have to be considered for the three major streetcar lines that intersect this space. Clear markings in the materiality of surfaces in this area should be considered to provide visual or sensory queues to pedestrians, cyclist and drivers. This will allow for the ease of communication and provide clearer way finding for each user of this space. This will be absolutely critical in this area do to the exceptionally high volumes of pedestrian traffic. Without city enforced, or local business improvement district guidelines, the street may become cluttered with sandwich boards or similar. Further, proper weather protection and storefront design should be included/referenced to ensure pedestrian vitality and CRU individuality without causing visual clutter or encumbering pedestrian movement. Lateral signage suspended from canopies should also be considered.

(5) Please provide your comments, opinion and expertise on shared space principle/recommendation “Slowing Vehicular Traffic through Reduced Speed Limits, Narrow Lanes and Freedom of Movement”

I can only comment on urban design aspects. You should engage with traffic engineering on technical, speed, safety considerations. Your design approach/interventions have merit and generally are consistent with best practices for pedestrian focused streets and commercially focused woonersfs. The street alignment should remain straight towards a simpler, obvious demarcation between ped and vehicular movement while not aspiring to a more thematic identity.

(6) Please provide your comments, opinion and expertise on the Conceptual Design

Conceptually strong in its simplicity and identity. Well considered as “background” public realm context (or urban stage) towards storefronts and ped activity as the generators of vitality and visual interest. More attention to human comfort via continuous weather protection while emphasizing individual lot/storefront identity is necessary. The first vertical 35’ of adjoining streetwall should be well designed using high quality materials. Lighting and signage should also be addressed in the conceptual images.
(7) Do you think a scheme such as shared space (or something similar) could work in the Downtown Yonge Area? Can it work in general on any street?

Note that there are three major streetcar lines that intersect Yonge street at College/Carlton, Dundas and Queen. Each track set is imbedded in central lane of traffic in both the east and west direction. This provides a challenge to shared space design along Yonge Street in this area as this conventional track design presents a break in the flush surface area provided by shared space design. Emphasize that this can also be seen as an asset as it makes a case for an innovative design that improves safety, as these tracks can be dangerous to pedestrians with physical disabilities and cyclists.

Note that ridership on the Yonge/University/Spadina subway lines and streetcar lines are at record high. In fact, the Yonge Line is operating over capacity during peak morning and evening hours. The steadily increasing pedestrian flow in the area also makes a case for innovated shared space design. Dundas Square is a major multi-programmable public space in the area. The current design acts as a barrier to pedestrian free flow to and from the space via subway stations, streetcar and other public spaces in the area.

Note that the College Street bike lane intersects the top end of the study area. College Street bike lane has a very high volume of cycle traffic throughout the day and acts as the City’s major east/west commuter route for cyclists. The new Sherbourne Street Cycle track is a dedicated bicycle lane that also bounds the area and connects north and southbound bike traffic with east and west bound traffic. Both lanes provide connectivity to major public spaces that bound this section of Yonge Street. This increase in cycle traffic makes a strong case for a shared space design that communicates a pleasant, safe and more visible connection for pedestrians and cyclists to this area and its surrounding public spaces.

The design in practice does not necessarily work on any street. For logistical purposes streets that have major arterial classifications would not be a good choice for shared space design. I.e. where public transit services are less than adequate or where they are is an absence of freeway or rail infrastructure for smooth and safe movement of freight.

(8) Are there any recommendations you would add based on your expertise and professional experience?

Included in responses above.

(9) General Comments

Nothing to add.
Professional Architect (2)

(1) Please provide your comments, opinion and expertise on shared space principle/recommendation “Convert to a Shared Surface – Curbless Street – with Uniform Street Pattern”

(TEXT)
this idea could work, however there would be concern about pedestrian safety for those with vision or other perceptual problems... we looked... and were advocates for this to occur along Granville street in select blocks (a street zone with buses and taxis only) and the city insisted that if we were so do so, we'd need bollards to deliniate the boundary.

therefore, we elected to not pursue this direction.

can the street be closed periodically so that shared is a temporal condition rather than an always condition?

(2) Please provide your comments, opinion and expertise on shared space principle/recommendation “Incorporate Safe Zones and Shared transition Spaces”

(TEXT) this is a supportable idea... offers lots of opportunities to create a street which is not ‘straight’ but angles to and fro to create these islands.

(3) Please provide your comments, opinion and expertise on shared space principle/recommendation “Clear, Defined Entrance”

(TEXT)
great idea... gateways, lighting shifts, art pieces... can all be devices to do so.
(4) Please provide your comments, opinion and expertise on shared space principle/recommendation “Minimalist Streetscape”

(TEXT)
Yes! Granville is a disaster of too many bollards, trees, signs and such… it creates a minefield of elements… in spite of this it somehow works.

Might I propose that you look for infrastructural implants to allow the street to act in diverse ways…ie plugs for temporary festival use, water access, … these can be hidden, no visual elements which broaden the use possibilities of the street.

(5) Please provide your comments, opinion and expertise on shared space principle/recommendation “Slowing Vehicular Traffic through Reduced Speed Limits, Narrow Lanes and Freedom of Movement”

(TEXT)
Yes, good idea… or how about getting rid of cars altogether?

(6) Please provide your comments, opinion and expertise on the Conceptual Design

(TEXT)
I think that the repeated vertical elements are the beginnings of a strategy to make the street section more intimate, but then, you know I am partial to those devices.

Not sure about the wild diagonals… I would search for a design language which is subtle and can transcend fashion of the moment, if possible… more material specificity is necessary to really comment.
(7) Do you think a scheme such as shared space (or something similar) could work in the Downtown Yonge Area? Can it work in general on any street?

Yonge is ideal for this kind of study due to its complexity and centrality in Toronto...it is ... strolling street, a passeggiata street, which is ideal for your research

Elements of share-ability can be inbued into most street environments but each one has specific needs and requirements

streets are like ecosystems and so need lots of careful analysis when suggesting change

(8) Are there any recommendations you would add based on your expertise and professional experience?

a list of precedents would be great to see...perhaps you did this as research already

also, I suggest trying many different patterns of materials and experiment more radically with a variety of sidewalk widths...perhaps the street can 'wiggle' ...as one experiment

(9) General Comments

more discussion of night and day would be useful and seasonal change