

What's In Store:
Exploring design for community, mixed-use
and greening in the retail landscape

by

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Abstract

The project was a conceptual design development based on precedent exploring, in particular, the retail environment and its relationship to the development of urban sustainability. Three major areas of focus were researched and synthesized to inform design principles: the shopping center as community focus; the development of mixed, multi and adaptive uses to complement retail; and the need for greening of traditional retail landscapes. The principles developed from this research are intended for application to retail development and have been illustrated via conceptual redesign of a 30-acre shopping center in Kingston, Ontario. Through conceptual and detailed design, the project indicates how a retail-focused environment can contribute to a healthier and more vibrant urban landscape through enhanced community connections, range of uses on site and improved green infrastructure.

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INTRODUCTION.

INTRODUCTION.

Contemporary design of the shopping center leaves much to be desired. The economy of the retail environment makes it a challenging place to undertake sustainable design solutions. The concept of a sustainable shopping center may seem like an oxymoron to some, however, with ample room for improvement, the shopping center provides an interesting landscape to study.

The current form of the shopping center, in particular the power center, maximizes profit and significantly compromises both social and ecological function. Reorganization and redesign of the physical forms can combine consumer culture with future-oriented, sustainability objectives to bring people and landscape together and engage the consumer in a unique retail experience.

As a means of achieving this new typology and promoting more sustainable choices, this project examines the form, structure and operation of a shopping center as a place to promote sustainability. By exploring sustainability through physical form, the shopping center will capture customers' imaginations and provide them with a glimpse of what the future has 'in store'.

This new typology will reveal to and encourage consumers to buy into sustainability as a way of life, rather than simply identifying sustainability as an abstract concept. Ways in which the new retail landscape could improve how people live, work and recreate were developed. Consequently, the project explores social and environmental benefits in the development of a more inclusive, connected, and sustainable retail landscape.

CONCEPT.

1.1 RESEARCH QUESTIONS.

This project began as a reaction to something unpleasant: shopping at a big-box power center. A combination of training in landscape architecture and a love/hate relationship with shopping centers of this type (love to shop, hate the landscape) has prompted much thought and curiosity about this type of consumer-oriented development.

Two major questions about the consumer environment came to mind, namely: How does it link to the rest of our urban landscape and how might it fit into the concept of a sustainable urban future? These prompted others: Why is the shopping center so isolated? Why is there so much parking? Why are there no trees? Why are there no green roofs? Why is it single-use space? Why does it feel empty? Where is a place to relax? Where is the bus stop?

From this, other questions naturally led to consideration of the operation of a shopping center. Can the shopping center function as a connected community center? Is there a way to combine consumer oriented design and sustainability? People already work and play in retail; could they not also live in the retail environment? Can the shopping center act as a forum to market more sustainable alternatives? Can the concept of sustainability be sold to a consumer culture?

These questions lend themselves to a design solution – the design of a better, more sustainable shopping center. However, the question has been posed: Is the sustainable shopping center an oxymoron? In totality, perhaps. But, looking at the current retail landscape – typically a vast parking lot dotted with big boxes – one comes to the conclusion that any effort to push the shopping center in the direction of sustainability is warranted, however successful it might be.

1.2 PROJECT GOAL.

This project will use the redesign of an urban shopping center to demonstrate the benefits of employing sustainable design objectives in an urban retail environment and use the redesign as a way of promoting and delivering sustainable lifestyle choices to the consumer population.

1.3 HYPOTHESIS.

While the shopping center has long been a landmark in the urban landscape, recent years have seen it undergo a dramatic change. The 'main street' was replaced in the 1960's, '70's and '80's by the indoor pedestrian-oriented 'mall' and now the mall typology has been ousted by a big-box format that is driven by the personal vehicle. Both latter forms of shopping center have compromised the urban landscape in a number of ways. In the continued effort to incorporate sustainability into the public realm, re-examining the form, structure and operation of the shopping center provides the opportunity to design for and promote sustainable choices to consumers. The redesign of a retail environment as a community amenity that is multi-purpose and green will aid in demonstrating the benefits of incorporating sustainable design in the public realm. The resulting design will be considered both a progressive shopping center and an urban asset.

1.4 METHODOLOGY.

The project scope has been limited to an urban shopping center in a mid-sized city to allow for design solutions that are applicable at a wide range of scales. This project is based on the premise of design as an illustration of precedents. Precedent information is selected based on its appropriateness for implementation and ease of adaptability, focusing on five areas of design: current retail typologies; emergent retail trends; densification of the urban landscape; green design; mixed, multi and adaptive use. Precedent data has been acquired through text, photos, interviews and observations.

Characteristics that have been examined include: the sociability of mixed and multi-use public places;

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community benefits from a consumer environment that incorporates enhanced regional connectivity, community programming and natural landscape features; incorporation of green technology in retail landscapes; retail and green marketing strategies.

Following research and examination of relevant issues and characteristics, a suitable concept for the site will be developed, exploring spatial form, building typologies, mix of uses, options for integrating community amenities and open space and connections to the surrounding context.

From this conceptual plan, a detailed scheme will be designed focusing on the form, structure and operation of the retail landscape. This design solution will be a prototype for future modifications and development of consumer oriented environments.

1.5 OBJECTIVES.

The project has specific objectives, both in terms of conceptual project development and specific physical design. Each of these is geared towards an overall objective of promoting sustainability to the average consumer.

1. Illustrate best orientation and organization of buildings and site features to optimize sustainable community and environmental design strategies, make efficient use of financial and environmental resources and foster social interaction for the retail environment.
2. Identify the most suitable mode(s) of sustainable design opportunities for implementation in the public realm.
3. Illustrate opportunities of environmentally-conscious design in the public realm using the pedestrian-oriented retail environment.
4. Through physical design, present scenarios that encourage creative thinking about a sustainable future and respond to consumer behavior.

1.6 ASSUMPTIONS.

Assumptions have been made with regard to the design concept and to the physical site. These help to define the scope of the project, as well as aid in design development.

Concept-related assumptions:

1. The feasibility of this project is for illustrative purposes only and is not dependent on the design, ecologic or budgetary restrictions of the City of Kingston, Loblaws Inc. or any other current stakeholders.
2. Proposed structures and modifications to those structures will be based on precedent. All design proposals outlined in the project are indicative of possible design direction, not necessarily construction.
3. The shopping center will be designed with the understanding that traditional shopping centers have approximately a 50-year lifespan before requiring renovation, reconstruction or additions, and will aim to showcase ways to increase the longevity of the retail environment.
4. The project will be undertaken independently, and is not meant to reflect the position of the City of Kingston or Loblaws Inc, but solely the position of the author.

Physical site-related assumptions:

5. Kingston, Ontario is the location of the project site. The assumption has been made that that the city is representative of typical demographics and environment of a medium size city (population: 75,000 to 275,000).
6. Land use will be developed in accordance with the Official Plan for the City of Kingston. Projected land use of the surrounding area that supports this development will also be in accordance with projected changes to city structure as outlined in the Official Plan and the Kingston Community Strategic Plan.

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7. Following preliminary site survey and analysis, the assumption has been made that the site is suitable for commercial and/or mixed-use development, and that there are no major social, physical, environmental or economic restrictions preventing the pursuit of this project.

8. While the project is not dependent on the position of the City of Kingston or Loblaw's Inc, every attempt will be made to accommodate social, aesthetic, environmental and economic goals of the City and the Community as outlined in the Official Plan and the Strategic Plan.

1.7 THEORETICAL ORIENTATION.

At the outset there were two major concepts driving this project. One was the concept of the shopping center as a city cell, adopted from the position of Patrick Condon in the James Taylor Chair for Sustainable Communities at the University of British Columbia. Condon's research explores the idea that the cell relates to the body the way a site relates to the landscape – it could play a positive or negative role in the growth of urban areas (Condon, 2002). Instinct suggests that current shopping center typologies have most in common with the negative connotations of the cell – likened to a prison cell in that they were confining or insular, or to a cancer cell in their tendency to be prolific, tenacious, and possibly deadly to the health of the urban environment.

The second major piece of work that influenced the initial stages of the project was the *Harvard Design School Guide to Shopping* (2001). A compilation of work examining retail and its impact on the urban environment, it includes a piece by Tae-Wook Cha titled *Ecology*. In this, Cha asserts that the trading of resources that occurs between producers, retailers and consumers mirrors natural ecosystem processes, and that shopping as an activity is based on the physical patterns of ecology – the patch, the corridor and the matrix (Cha, 2001). This unique perspective highlighted the relationship between the natural environment and the retail environment, and prompted consideration of a wider array of conceptual models.

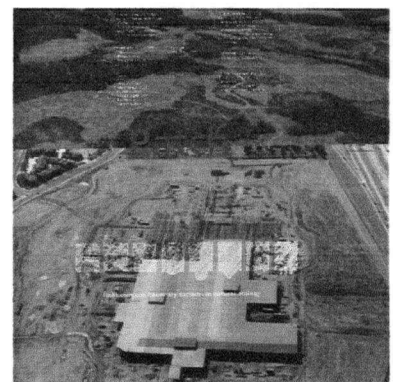


Figure 1.1: Mall as Landscape Patch. Tae-Wook Cha likens the shopping center to physical descriptors of ecology. Source: Cha, 2001.

As research progressed the focus of the project shifted slightly. While still respectful of the work of Condon and Cha, it now aims to explore a wider concept of sustainability and to focus on communicating sustainability to the consumer population. This project is largely based on the premise that for something to be sustainable, it must meet current needs without compromising future generations in the satisfaction of their needs. More than a city cell, and more than simply an imitation of ecology, the redesigned retail environment will reflect a range of sustainable objectives. Community, range of use, and greening will be the focus.

1.8 LITERATURE REVIEW.

The following is a review of current literature on the retail environment and sustainability, inclusive of but not limited to, the sources already cited. This is meant:

- to be a discussion about the current state of the retail landscape
- to form a foundation on which to explore change
- to examine concepts and illustrate these with precedents

The information illustrates the concept of a more sustainable retail environment and forms the basis for the physical design solution.

1.8.1 Retail Then.

Retail design was largely a reaction to a gap or shortcoming in the consumer market. When the traditional main street became too big, dirty and scary, designers of initial shopping centers "...sought to create a pedestrian-scaled urban community that would encourage face-to-face contact" (Upton, 1998: 230). They attempted this not in the urban fabric itself, but rather in the suburbs. In fact, the shopping mall has been an attempted to solve an urban problem with a suburban solution.

According to Daniel Herman, contributing writer to the *Harvard Design School Guide to Shopping* and author of the article *Mall*, there is a significant history of shopping center development in the United States.

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Beginning in 1939 with Country Club Plaza in Kansas City, shopping centers have become bigger, grander and more prolific in the urban setting. In 1945 there were a "few hundred" shopping malls, but by 1985, only 40 years later, there were 25,500 in the United States (Herman, 2001: 461).



*Figure 1.2: Mall of America
An overwhelming retail
experience. Source:
www.mallofamerica.com*

Notably, as the number of shopping centers increased, so did their size. The Mall of America, the largest indoor shopping center in North America, was opened in 1992, and signaled the beginning of the end of the mall environment. Designers wondered: "Is the biggest mall also the apotheosis of the mall; that is, the sign of its impending demise?" (Herman, 2001: 461). The increase in the number and scale of the big-box centers would seem to suggest that indeed, the 'mall' is becoming a thing of the past.

Big-box power centers are abundant and extensive, and are overtaking the traditional mall. However, despite their impressive presence, they cannot offer long-term and sustainable solutions to the retail dilemma because they, like their indoor-mall predecessors, contribute to the weakening of the urban fabric.

The relationship between the retail environment and the city network provides some clues as to why the retail landscape is changing, for better and for worse. A number of authors have tackled this topic, with

similar reviews and findings. Kowinski, in his book *The Mall of America* (1985: 146), notes that cities are organic entities that change in unpredictable ways, whereas malls are viewed as "prefab islands with separated functions". The shopping center will have to undergo changes to reflect the increasing consumer diversity and interconnectedness of the city.

1.8.2 Retail Now.

The retail landscape is constantly changing. "Twenty five years ago, [malls] weren't here. Today, they're everywhere" (Kowinski, 1985: 17). The advent of the big-box and car-oriented power centers is pushing the traditional indoor mall out of contention for consumers' attention. The initial goal of the mall – to provide what the city lacked – has been lost. Now, vehicle-scaled centers do little to foster personal interaction or provide a sense of safety and comfort, let alone, create a sense of community.

Designed and built around a concept that "consumption levels measure standard of living" and that material goods "should be complex mass produced, cheaply made, short-lived and as numerous as possible", the shopping mall has stagnated and become a shell for the products it holds (Fodor, 1999: 146). It allows for mass consumption, economic benefit on the part of the retailer and the consumer and an ever changing consumer demand. A re-examination of the motives behind retail design may highlight ways to enhance the sustainability of the retail environment and move from consumption-based to consumer based design.

Some designers still argue that "shopping centers have taken on the characteristics of urban organisms serving a multitude of human needs and activities...", (Leong, 2001: 384). However, this may be questionable particularly in the case of extensive single-use power centers which significantly work against the urban ideology of community-focused design.

1.8.3 Making Change: three facets of the retail landscape that require immediate attention

A preliminary review of the literature and personal observation of the shopping center landscape has identified three major areas in need of attention which, through redesign of the retail environment, may provide a boon to the sustainability of the urban environment. This literature review continues within these three categories: community, mixed-use and greening.

1.8.4 Community.

Making a case for sustainability in the retail environment begins by developing a strategy that encompasses a number of urban facets, in particular, connection to the community, or creation of a community setting. By definition, a sustainable community is "one that meets the needs of present without compromising the ability of future generations to meet their own needs" (Fodor, 1999: 19).

As cities have sprawled into suburbia, the focus of the urban realm has been lost. From an urban design standpoint, these suburban areas "lacked centers of informal social activity – places that didn't have rigidly defined purposes, like schools, and also weren't homes, which required another kind of formality" (Kowinski, 1985: 103). The shopping center as a pedestrian paradise was seen as an opportunity to provide this needed focus (Upton, 1998). However, to prevent it from being an island, it requires a local and diverse population to support it, and contribute to a number of uses. Recently, the trend of retail development located in suburbia is in opposition to this. Typically, shopping centers are designed with the city on the "outside" (Sarlo, 2001: 12).

In addition to the disconnection from existing city frameworks, the persistent growth of these suburban areas and big box retail landscapes place "...a net burden on local resources [by creating] a need for costly new infrastructure to serve the new development – roads, sewers, water treatment capacity, new schools, libraries, police stations, parks,



Figure 1.3: Walkable retail. Shopping centers can be a pedestrian paradise. Source: Author's photo.

etc." (Fodor, 1999: 42). Connection to the larger community is negligible.

Furthermore, with respect to fostering community identity, some would argue that "...malls strive for variety and completeness" by incorporating a range of retailers in their tenant mix (Kowinski, 1985: 76). However, in terms of contributing to the value of the city, having only retailers as tenants, the shopping center is a strikingly incomplete landscape.

In spite of its shortcomings, the traditional shopping mall does do well in catering to pedestrians. At its best, it could be argued that a good indoor retail center is "comfortable, intelligible, not overwhelmingly large but big enough to be a bit mysterious, to warrant walking around and exploring" (Kowinski, 1985:59). Through these activities, there is the potential to foster social interaction between generations, across cultures and between various social classes. As a place to bring people together, the shopping center provides excellent common ground for a range of consumer groups (Kowinski, 1985).

This is noteworthy. The more people that are attracted to a place, and the more diverse the population, the greater the need for attention to customer comfort. This is often easy to maintain in indoor pedestrian-focused malls (Kowinski, 1985). However, big-box power centers with acres of parking are difficult for pedestrians or cyclists and often have limited transit access, compromising social interaction. To promote a sense of community, pedestrian circulation should be considered a priority.

Pedestrian circulation may be paramount in community building, but the movement of products is key to shopping center success. People are attracted to traditional shopping centers because of the variety of merchandise available in a single location, or in other words, the "park-once" environment (Duany, 2000:166). Traditional malls achieved this by placing stores around one central pedestrian route.

Conflicts may arise, most notably when various modes of circulation and transportation contribute to

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a lack of community focus. Access becomes the cornerstone to fostering community focus. "In the public sector, the aim should be to encourage equitable access for all sections of society, for example by:

- Freeing space for pedestrians and cyclists
- Reducing auto-dependency, and, where possible, providing a choice of travel modes
- Integrating public transport at local, and wider scales" (Carmona, 2003: 258)

In addition to circulation, it would be wise to consider the following relevant points when trying to enhance community focus (Martin, 2004: 82):

- Understand the success of the original – articulate space and movement respectful of the designer's original intent
- Reinforce existing structure and materials – re-use and recycle, maintain form and organization as much as possible (if it works!)
- Use neutral and durable site objects and materials – minimize custom-made for long-term maintenance, removable outdoor furniture in winter climates
- Don't treat public art as decoration – commitment of all invested parties to maintenance

From a sustainability perspective, connection to community and inclusion of community amenities beyond simply retail would do well to enhance the appeal and function of the retail environment within the urban realm. "The importance of the mall as a community center is underscored" (Kowinski, 1985: 201), but it is only "...under certain conditions, shopping centers may be valuable assets to the community..." (Alexander, 1980: 74). Imagining that retail alone will provide for community needs is shortsighted. More diverse design solutions are required to make the shopping center a community focus.

1.8.5 Mixed, multi and adaptive use.

To date, the shopping center has emerged as a single- use entity; therefore one might question whether the shopping center is the best landscape in which to undertake mixed and multi-use

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development. Given the current sprawl and single-use nature of many North American urban sites, the effect is detrimental to the health of the landscape. Edward Abbey makes an eloquent analogy regarding the prolific spread of such detrimental landscapes: "Growth for the sake of growth is the ideology of the cancer cell" (Fodor, 1999: 38). This makes a strong case for mixed, multi and adaptive use facilities.

To maintain and enhance urban health, new solutions to accommodate growth will be needed. One suggestion is that in "channeling new growth to existing urban areas we reduce our footprint on the landscape and preserve open space, wildlife habitat and resource lands and save money on public facilities ..." (Fodor, 1999:26).

The case has already been made that the shopping center could be a community center. However, instead of acting as a focus for a peripheral community only, the shopping center could begin to take on the nature of a community unto itself through the infusion of a range of uses and program elements.

Kowinski argues that shopping centers have become more than simply economic hot spots, but are a "way of life" for many (Kowinski, 1985: 21). Developers seem to be catching on to this lifestyle trend, and are now including "hotels and condos" in retail center plans (Flavelle, 2004:2). In addition, recreation areas, entertainment venues and civic uses are also being incorporated to support the lifestyle trend.

In Kingston in particular, the case for mixed and multi-use is echoed by both recommendations in the Official Plan and the Urban Growth Strategy which assert that "the greatest potential for mixed-development occurs when secondary planning is undertaken for newly developing areas...[Mixed-use] should be a fundamental requirement for all secondary plans" (Richards, 2004:25). Under redevelopment, such mixed and multi-use needs can be met.

In addition, combining housing and retail in the same parcel or block opens the opportunity for multi and adaptive-use of these mixed environments.

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Historically, indoor shopping centers have been made multi-use as a recreation place for older generations. The "sheltered, comfortable, consistent mall is ideal for walking" and so many people take advantage of such an environment that "malls even open their doors a little early to accommodate morning constitutionals" (Kowinski, 1985: 32). With the infusion of residential and working environments on the mall site itself, the mall becomes an amenity for a wider range of people. Specifically, inclusion of other uses, including private, civic and institutional, creates a more dynamic atmosphere reflective of the larger urban context.

With specific reference to the shopping center, in order to be sustainable, it must be able to adapt quickly to changes in tastes and preferences, or alternatively, be so classic in their arrangement that they never go out of fashion. Retail is "unlike housing, which benefits from being located in a stable physical environment ...retail has a history of constant change that grows out of its competitive nature" (Duany, 2000: 165). To accommodate such change, retail space should be appealing to a range of types and scales of vendors. Classic main street layouts have accommodated this by stacking larger retail, maintaining smaller street frontages and maximizing visibility of all retailers.

Andres Duany also considers the use of open space as a good starting point for multi and adaptive-use spaces in community design. Typically, open space is considered the "green" element of a development, however, in traditional urban patterns, open space also has the opportunity to act as visual amenity, recreation space and serve as a buffer between non-compatible land use. The assumption is often made "that the residue left over after the roads and buildings are laid out can be satisfactory open space [and this] neglects the fact that people use open space in specific ways" (Duany, 2000:32). Designating usable, multi-function open space at the outset of a project will not only improve the health of the city, but encourage consideration of developing other multi-use spaces within the city.

Within the City of Kingston itself, there are already precedents of adaptive-use development. The

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Kingston Farmers' Market runs every Wednesday and Saturday behind Kingston City Hall in a public parking lot that is converted to market stalls. Similar uses would be applicable in a new mall setting, for use during street festivals, sidewalk sales and mall events. Lori Philp explored this topic through undergraduate research in the Landscape Architecture program at the University of Guelph. The thesis, *Vehicular Accommodation*, cited the need to make the parking lot a multi-use space, facilitated by using removable bollards and paving design to delineate space (Philp, 2003).



Figure 1.4: Kingston City Market.

The parking lot is behind City Hall is converted into a farmer's market twice a week.

Source: www.imperialoil.ca/CanadaEnglish/ThisIs/Publications/2001q3/pages/market_square.html

Multi and adaptive-uses should not be limited to the landscape, just as mixed-use should not be limited to buildings. The standard big-box building shell would lend itself to facilitating indoor market-like settings. With the incorporation of such retail display areas like Octanorms' Shop-in-Shop and Comme des Garçons' Pop-Up Store, a greater diversity and turnover of retailers can be achieved, with little change in building typology and infrastructure. Over time, the same space can serve a variety of uses – living, working and shopping.

1.8.6 Greening.

The sustainability of the urban environment is increasingly dependent on the amount of green infused in the urban fabric. Notably, the concept of a sustainable shopping center, let alone a green

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shopping center, in current terms, seems contradictory. Note the observation made by Kowinski in *The Mall of America*: "The mall, being everything, is nothing in particular. Still there is the sense in which the artificial dream world of the mall is like an artificial flower: it will never die because it was never alive" (Kowinski, 1985: 94). The aim of the greening aspect of the mall is to give it new life.

Those concerned with the prevalence of green architecture in the urban realm are hesitant to make absolute claims about sustainability. James Wines points out in his book *Green Architecture* emphasizes "...that virtually no form of shelter constructed today... can be credited as authentically green" (Wines, 2000: 226). With respect to the retail landscape and consumer-oriented design, he goes on to assert that in western culture "environmental commitments...represent neither a significant change of priorities in consumer culture, nor any new revelations about our connections to the earth" (Wines, 2000: 227). This is not to say that efforts should not be made; it is simply, that practically speaking, the greening of one shopping center is not going to dramatically alter the retail world. This is not to say that a more green approach is not warranted. In fact, when it comes to the shopping center, there is *substantial* room for greening.

The greening of the shopping center offers an opportunity to teach by example. The consumer is generally concerned with the product. In fact, "by incorporating ideas from both informational and ecological sources [landscape] architects provide an opportunity to develop an imagery that echoes the mutable and evolutionary changes found in nature ..." (Wines, 2000:236). This imagery would be well suited to use in a consumer-oriented setting.

In addition to promoting the image of green, other parallels can be drawn between the retail world and the world of green intentions. A notable perspective is that of Cha (2001) who described shopping as Ecology As a contributor to the *Harvard Design School Guide to Shopping*, Cha argues that "shopping needs ecology to unravel its commercial complexity" just as "ecology needs shopping for its basic survival. For ecology to remain relevant to

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society, ecology must keep itself visible and viable through the institution of shopping" (Cha, 2001: 322). Through shopping, ecology can promote the green virtues of environmental conservation and advocate conscientious buying.

It is clear that the product exchange is a key point to capture consumer attention. Looking at the larger relationship of consumer to retail to environment, there is a need for a more holistic approach. From the products, to the store layout, to the building orientation, construction materials and relationship to surroundings, communicating green to the consumer needs improvement.

It cannot be emphasized enough that applying sustainable objectives to the retail environment is undertaken to develop a more holistic dialogue about the future of the urban landscape. The way people live, work and move through the space will require the physical form of urban space "...to respond to the demands of limited resources and earth-centric imperatives" (Wines, 2000:19). The retail environment, if it aims to be "...a system with ecological integrity..." must be a manifestation of "four broad characteristics: productivity, biodiversity, soil and water. If we accept this premise, then ecological integrity should be the goal of any sustainable environment (Cook, 2000:136). Furthermore, the ultimate goal of any environmentally conscious green project should be "...to accommodate the greatest level of biodiversity and ecological processes while accommodating compatible uses" (Cook, 2000: 40). This echoes Wines' general checklist, and more specifically addresses ecological factors including: the incorporation of hydrologic processes; biological diversity; climate amelioration; recreation; aesthetics; education and human psychology; cultural and historical significance; and land use buffers and markers (Cook, 2000).

It is a challenge to try and incorporate all these considerations, as Wines points out. "Even the most advanced advocates of ecological design are still struggling with ways to integrate environmental technology, resource conservation and aesthetic content" (Wines, 2000:20). However, he goes on to

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highlight a "standard eco-friendly checklist" to aid aspiring green designers in the integration attempt (2000:65-66). Eco-friendly design considerations include:

- Smaller buildings
- Use of recycled and renewable materials
- Use of low-embodied-energy materials
- Use of harvested lumber
- Water catchment systems
- Low maintenance
- Recycling of buildings
- Reduction of ozone-depleting chemicals
- Preservation of natural environment
- Energy efficiency
- Solar orientation
- Access to public transportation

The list highlights certain aspects that might not be considered definitively green from a consumer standpoint, including smaller buildings and access to transit. But, in terms of developing physical design principles, these are tangible and measurable characteristics that may be influential.

Duany in the book *Suburban Nation* echoes these observations, and goes on to tackle more particular aspects, notably, the personal vehicle. The car is often a contentious issue from an environmental standpoint, but Duany asserts that the problem is not the car itself, but the way the car is handled that counteracts green intentions. He claims "...the solution is not the removal of cars from the city – far from it. The most vital American public spaces are full of cars. But these cars move slowly, due to the appropriate design of thoroughfares" (Duany, 2000:160). In terms of physical design, this means that "streets should be narrow, allow for one lane of traffic in either direction, lined with sidewalks that front 'friendly faced' buildings and be arranged to allow flow of pedestrian traffic easily amidst a car-oriented environment" (Duany, 2000:160).

1.8.7 Economy of means: the cost of the retail landscape

Economics is one aspect of shopping center design that has not yet been discussed, but in terms of

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discussing the feasibility of this project, must not be overlooked.

The economic success of the mall is dependent on achieving value through design. Research in the UK conducted to investigate the relationship between urban design and development value identified "ten key ways in which better quality design could add value to development" (Carmona, 2003: 236):

- In higher returns on investments (good rental returns and enhanced capital values)
- In establishing new markets that may not have previously existed (i.e. for city center living) and opening up new areas by differentiating products and raising their prestige
- By responding to a clear occupier demand that also helps to attract investment
- By helping to deliver more lettable area (higher densities) on site
- By reducing management, maintenance, energy and security costs
- In more productive and contented workforces
- By supporting the 'life-giving' mixed-use elements in developments
- By opening up new investment opportunities, raising confidence in development opportunities, and attracting public sector grant funding
- By creating an economic regeneration and place-marketing dividend
- By delivering viable planning gain and reducing the burden on the public purse of improving poor quality urban design

Here in Canada the traditional mall is becoming less and less popular, perhaps because many of these characteristics have not been incorporated or addressed. The average amount of time the individual shopper spends visiting an indoor shopping center has decreased in the last 15 years, from "110 minutes to 45 minutes" (Flavelle, 2004:1). This decrease, in context with the higher rental rates of indoor mall retail spaces as compared to open air centers (\$90CAD per square foot indoor, versus \$70 per square foot outdoor), indicates that in addition to the economic benefit of opening up the

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shopping center, providing community amenities, mixed-use space and open space as part of the mall, would be economically-wise decisions for retail developers to make (Flavelle, 2004:1). Duany echoes this observation in relation to the mixed-use, citing that the

"main-street far outperforms the suburban competition; it has even become a tourist destination....its desirability stems from the carefully shaped public space it provides, as well as its traditional mix of uses: shops downstairs, office and apartments above. Parking is neatly tucked away in garages to the rear. When well designed and well managed, this sort of mixed-use main-street retail is more profitable to own than the strip center or the shopping mall." (Duany, 2000: 28)

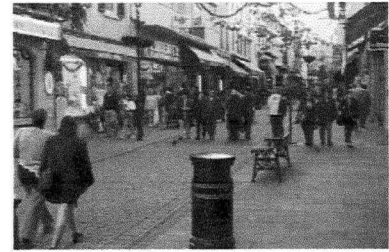


Figure 1.5: Main Street-style shopping.

This type tends to be more economically successful than indoor shopping malls. Source: http://www.gibnet.com/tourist/t_ms2.gif

Economics transcend profitability of the developer and the retailer, and extend to the larger community. Traditionally, economic integrity has long been viewed as synonymous with new development and urban growth. However, noting the shift in the economic value of the various retail centers, the appeal of mixed-use and community focused developments, is on the rise.

According to Fodor in the book *Better Not Bigger*, there are specific ways to "promote the economic and social welfare of the community without unduly fueling unwanted growth" (Fodor, 199:68). Most applicable to the Kingston Center scenario are (Fodor, 199:68):

- *Invest in local people:* Job training, job placement programs, good public schools, and adequately funded higher education
- *Invest in the community:* A strong livable community with good neighborhoods organizations and adequate parkland, recreational opportunities, community centers, and other public amenities will foster local business growth and generate a host of economic benefits.
- *Protect the quality of the local environment:* Clean air and water can be significant economic assets that benefit everyone.

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Profitability may inform, but should not be the ultimate purpose of retail design (Hawken, 1993). Economization of spatial and physical resources should also be addressed to encourage sustainable lifestyle design choices. It is not as simple as designing a mall to include only 'environmentally friendly' retailers and products. In *The Ecology of Commerce* (1993: xiii), Hawken observes that

If every company on the planet were to adopt the best environmental practices of the "leading" companies – say Ben & Jerry's, Patagonia, or 3M, – the world would still be moving towards sure degradation and collapse. So, if a tiny fraction of the world's most intelligent managers cannot model a sustainable world, then environmentalism as currently practiced by business today, laudable as it may be, is only a part of an overall solution...we have a design problem...

Furthermore, "...being 'economic' and being sustainable remain in conflict and at odds", and as a result there is a need to find retail business alternatives (Hawken, 1993: 68). Hawken goes so far as to suggest "de-shopping centers" where retailers of consumer products would be responsible for their products even after the customer leaves the store with them, and in these places, we, the consumers, "would drop off the products we no longer needed and obtain newer ones" (Hawken, 1993: 68). While this would require a dramatic shift in the concept of retailer, consumer and product, as a means to exploring sustainable shopping alternatives it provides an interesting perspective.

1.9 PRECEDENT REVIEW.

1.9.1 Precedents.

Literature review and conceptual information are components of the project that inform the scope and influence the development of design principles. However, this project also proposes physical changes to the built environment, which literature review alone cannot fully explore. For this reason, precedents relevant to the themes explored in the literature review have been documented to provide additional pertinent information, and facilitate the move from theory to application. The most relevant

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precedents have been cited in four categories: Mixed live/shop space, mixed live/work space, green building and adaptable spaces. This is not an exhaustive list of the precedents reviewed, but rather an exploration of those most innovative, successful and relevant to the project.

Market Square, Kingston, ON

Historically, this area behind Kingston City Hall has been used as the local marketplace. In recent years it has become a parking lot 5 days of the week, accommodating market vendors only on Wednesdays and Saturdays. For two weeks in the February, it is converted to a skating rink for the annual Feb Fest celebration.



Figure 1.6: Skating in Market Square. Source: www.cityofkingston.ca

Caper's Block, Vancouver, BC

The Caper's Block is a notable example of mixed use development. Residential is accommodated on the upper three floors, with office and retail space at street level. Not only does this accommodate a wider range of uses, but contributes to higher density, and due to the articulated architecture of the building, allows for green roofs and increased solar exposure for apartment residents.



Figure 1.7: Caper's Block. West 4th Avenue, Vancouver. Source: Author's photo.

Pier 1 Building, Vancouver, BC

The Pier 1 building is a similar typology to that of the Caper's block, but at a larger scale. It accommodates larger "box" retail on the ground stacks both office and residential above to maximize density.



Figure 1.8: Pier 1 Building. West Broadway, Vancouver. Source: Author's photo.

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Staples Business Depot, Burnaby, BC

Future Shop, West Broadway, Vancouver BC

In both of these examples, the large square footages typical of these retailers are accommodated in a smaller footprint by stacking the store either over itself or over local serving retail. This helps create a "friendly face" to the street, and saves displacement of local retailers. In addition, it provides the convenience of big-box shopping in a denser urban setting.



Figure 1.9: Staples. Burnaby, BC. Source: Author's photo.



Figure 1.10: Future Shop. West Broadway, Vancouver. Source: Author's photo.

Shop-in-Shop, Octanorm, Toronto, ON

These modular and flexible retail spaces allow for small and even local retailers to set up shop in spaces provided by larger department stores. These are also useful for trade show settings.



Figure 1.11: Octanorm's Shop-in-Shop. Source: Macinnis, 2003.

PopUp Store, Commes des Garçons, France

These modular and temporary units are minimal in their design, acting as a simple backdrop for the goods on display. Popular with fashion designers in Europe, these portable, functional units create unique display spaces.

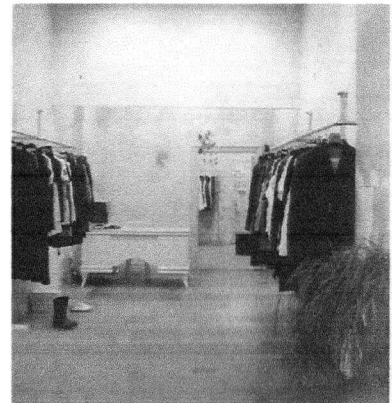


Figure 1.12: The Pop-Up Store. Source: Makovsky, 2005.

Mountain Equipment Co-op, Winnipeg, MB

This retailer not only encourages people to get out and enjoy the landscape, it also aims to preserve the urban environment through use of environmentally friendly products and techniques in the construction of its stores. The Winnipeg store uses solar panels, green roofs, rain catchment areas and recycled building materials to lessen its impact on the natural environment.



Figure 1.13: MEC Store. Winnipeg, Manitoba. Source: www.mec.ca

Wal-Mart, Langley, BC

Wal-Mart has helped to facilitate the rehabilitation of a salmon stream and wildlife habitat around their parking lot at their Langley Store. Vegetated swales throughout the parking lot itself help minimize and clean stormwater runoff.



Figure 1.14: Swale in Wal-Mart parking lot. Source: Author's photo

University of British Columbia (UBC), Vancouver BC

New development on campus has incorporated more "green" construction alternatives, from porous paving alternatives such as gravel parking strips, stormwater infiltration areas that double as park space, and grey and stormwater treatment as visual amenity, such as that at the C.K. Choi Building. These design details make positive contributions to the environmental integrity of the site.

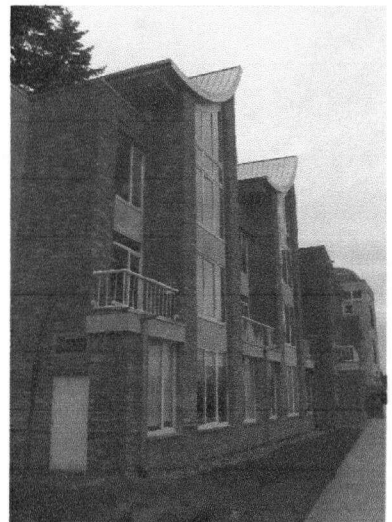


Figure 1.15 C.K. Choi Building. Source: Author's Photo.

Stacked Parking, Kingston, ON

In the last decade, parking in Kingston has grown up instead of out in order to maximize the use of downtown spaces. Parkades like this one on the Queen's University Campus near Kingston General Hospital provides adequate car storage, while accommodating outdoor recreation space on a green roof.

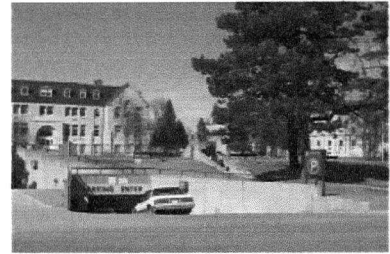


Figure 1.16: Stacked parking. Downtown Kingston. Source: Author's photo.

1.9.2 Architectural Typologies.

Spectrum, Irvine, CA

This pedestrian-oriented mall includes restaurants, performance space and entertainment facilities (children's rides, movie theatres, etc.). The site layout is similar to that of the traditional suburban mall, in that car storage is handled in surface lots surrounding a central pedestrian-oriented retail area. However, with its open-air layout, and "main street" appearance—including a variety of building façades and range of store sizes – it is a more inviting place to shop than the traditional suburban mall model.



Figure 1.17: Spectrum pedestrian mall. Source: Author's photo.

Greenwich townhouse, Abercrombie & Fitch, USA

The store fronts of this retailer are designed to look like Greenwich Village townhouses, in an attempt to appeal to the aspirations of a youth population. This indicates the opportunity to merge various architectural styles, and develop a style that suits a range of uses - from retail to living.

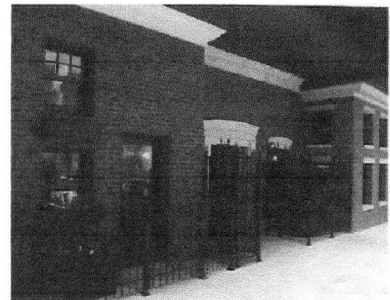


Figure 1.18: Greenwich Townhouse Store. Source: Makovsky, 2005.

University Village, UBC, Vancouver, BC

This retail and residential development incorporates site details such as shaded building entrances, and pedestrian-only passageways, while accommodating a range of uses in smaller building footprints by stacking residential above retail.

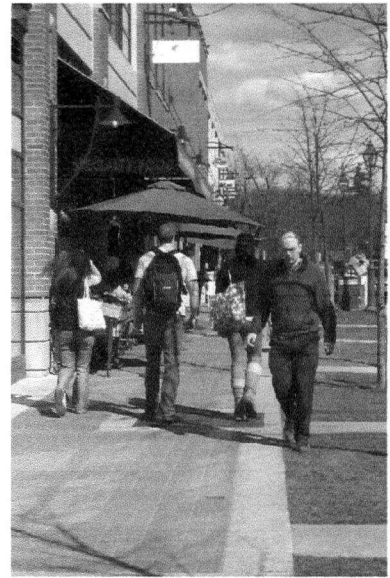


Figure 1.19: University Village. UBC, Vancouver, BC. Source: Author's photo.

Cornell Village, Markham, ON

This New Urbanism community provides a range of residential and live work architectural typologies suitable for development of higher density communities, especially in suburban areas. Front porches are a key architectural feature, which enhance the pedestrian-oriented, "friendly-faced" neighborhood.



Figure 1.20: Cornell Village town home. Source: www.audacity.org

1.10 Design Principles

Based on this literature review, precedent research and personal observation, design principles have been developed that reflect the need for change in the retail environment. The aim of these design principles is to encourage change in the development and redevelopment of retail focused landscapes to create more sustainable solutions.

1.10.1 Community focus.

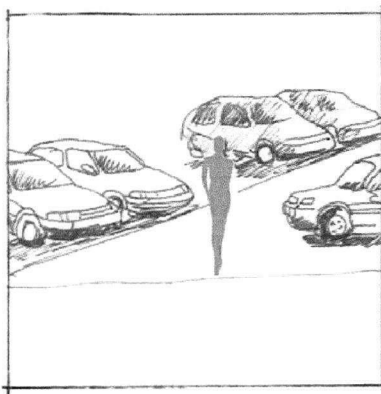
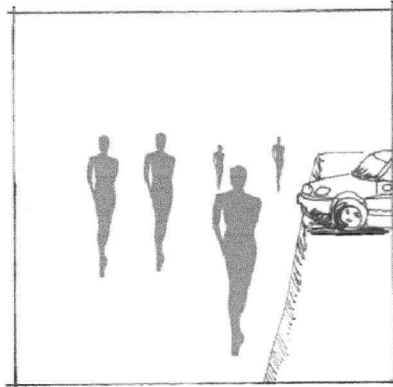


Figure 1.21: C#1 Not this...



...but this

Make the pedestrian a priority, both in connecting from off site and moving around on site

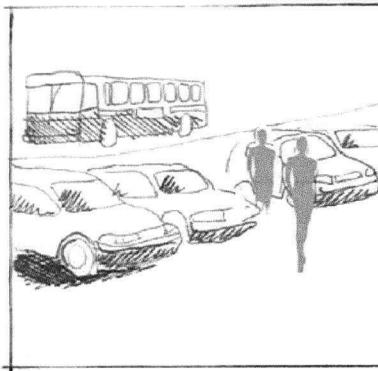
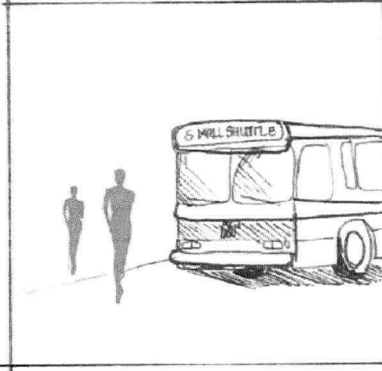


Figure 1.22: C#2 Not this...



...but this

2. Make transit service and connections a feature

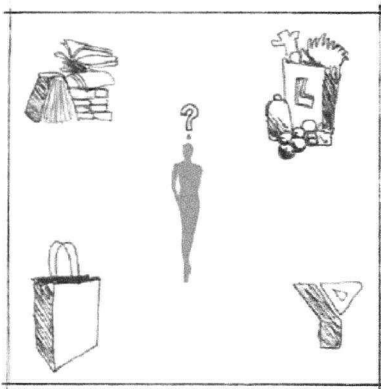
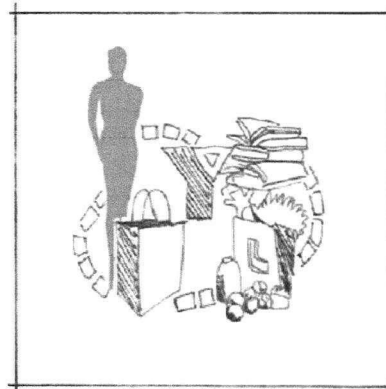


Figure 1.23: C#3 Not this...



...but this

3. Connection to existing and include new community amenities

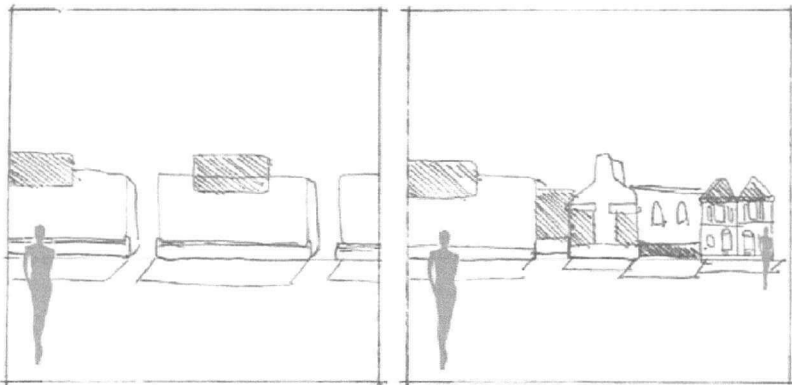


Figure 1.24: C#4 Not this... ...but this

4. Provide for both local and regional serving retail

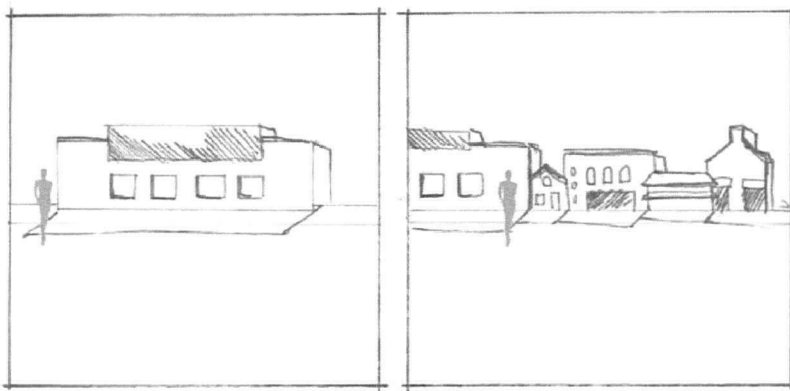


Figure 1.25: C#5 Not this... ...but this

5. Provide for a range of building types and uses

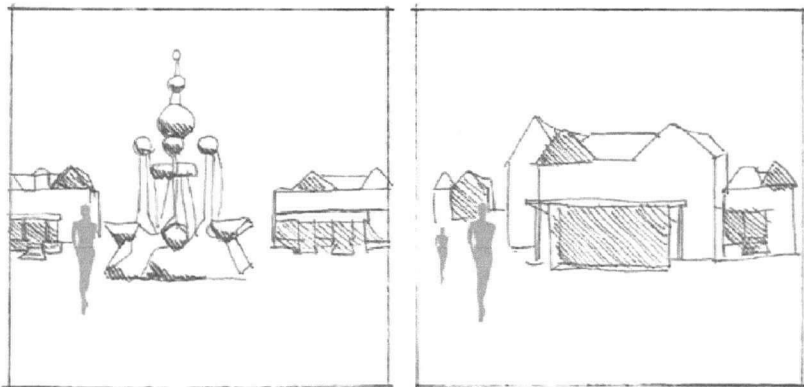


Figure 1.26: C#6 Not this... ...but this

6. Ensure the building façade complements the wider community character

1.10.2 Mixed, multi and adaptive use.

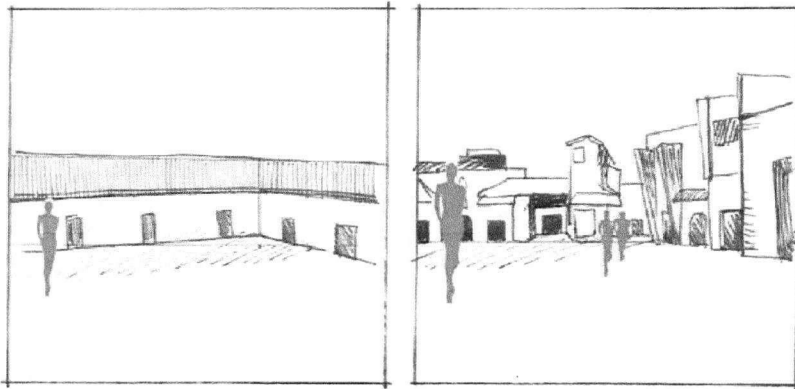


Figure 1.27: M#1 Not this...

...but this

1. Variety in building
façades at street level

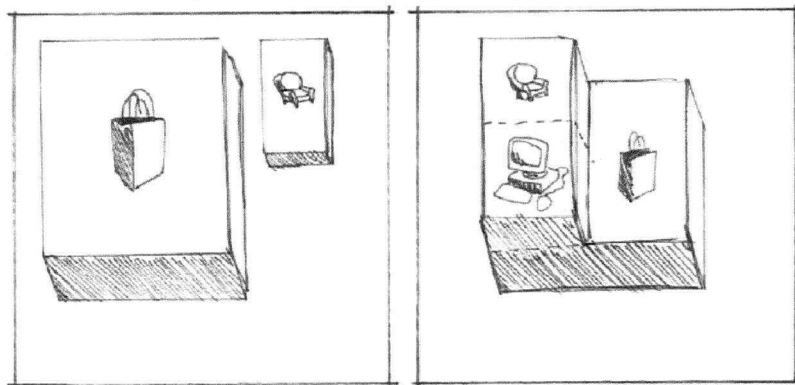


Figure 1.28: M#2 Not this...

...but this.

2. Variety of uses in one
building (live, work,
shop)

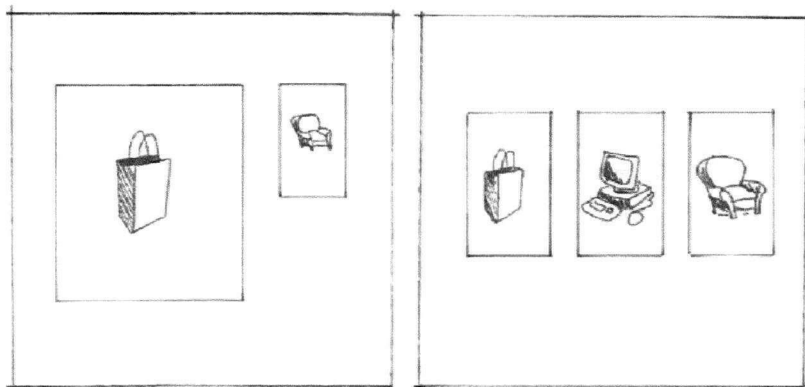


Figure 1.29: M#3 Not this...

...but this.

3. Employ a building
footprint that is
replicable for a range
of uses to make live,
work and shop spaces
interchangeable

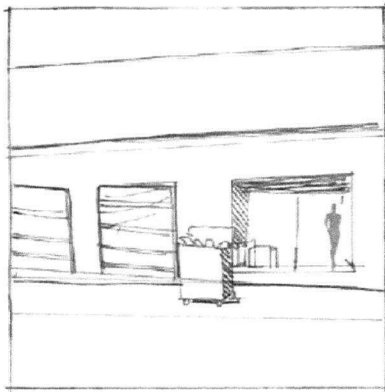


Figure 1.30: M#4 Not this...



...but this.

4. Ensure both retail and residential present a "friendly face" to the street

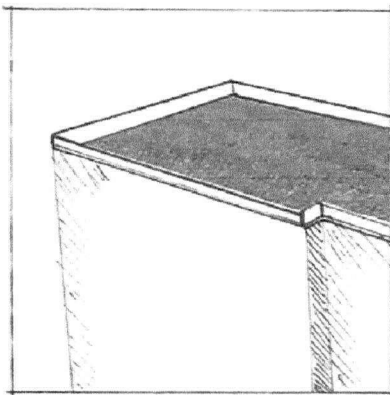
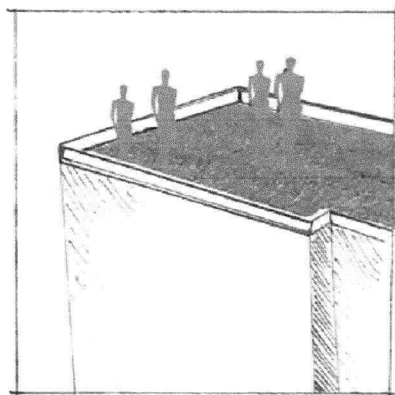


Figure 1.31: M#5 Not this...



...but this.

5. Use green roofs as recreation area

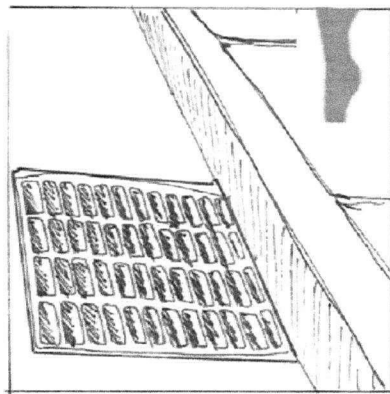
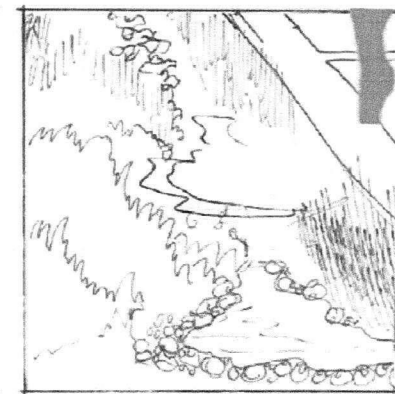


Figure 1.32: M#6 Not this...



...but this.

6. Design stormwater collection as a visual amenity

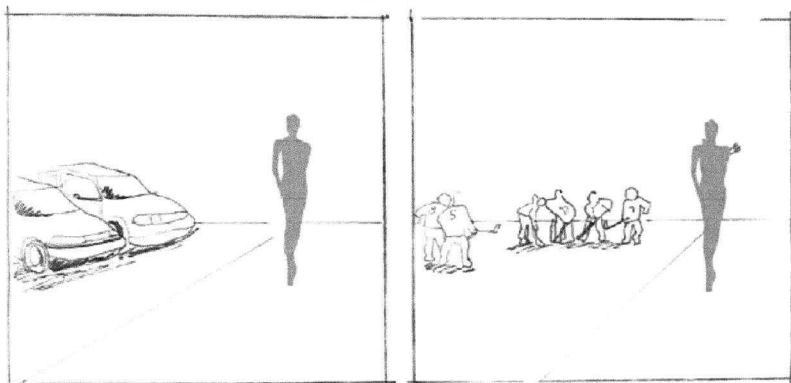


Figure 1.33: M#7 Not this...

...but this.

7. Allow for use of surface parking as civic space

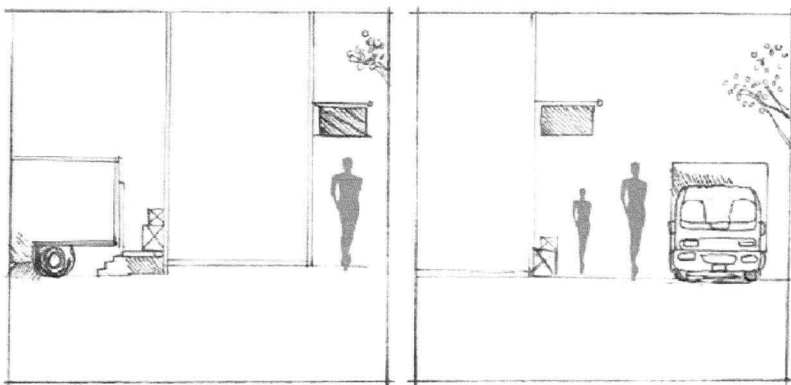


Figure 1.34: M#8 Not this...

...but this.

8. Allow for loading and customer entrances on all sides of the building

1.10.3 Greening.

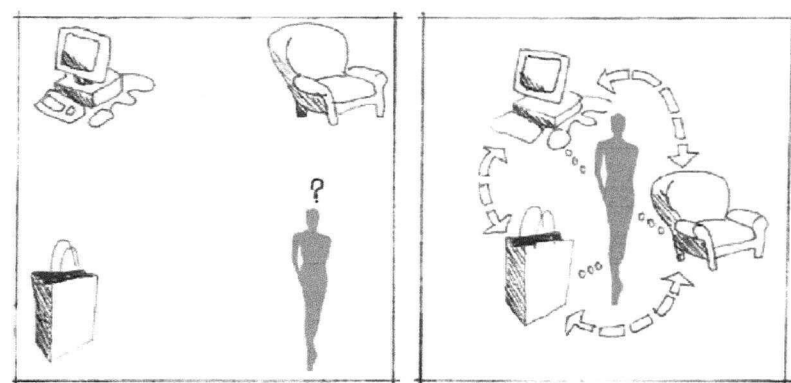


Figure 1.35: G#1 Not this...

...but this.

1. Maximize connections between live, work and shop

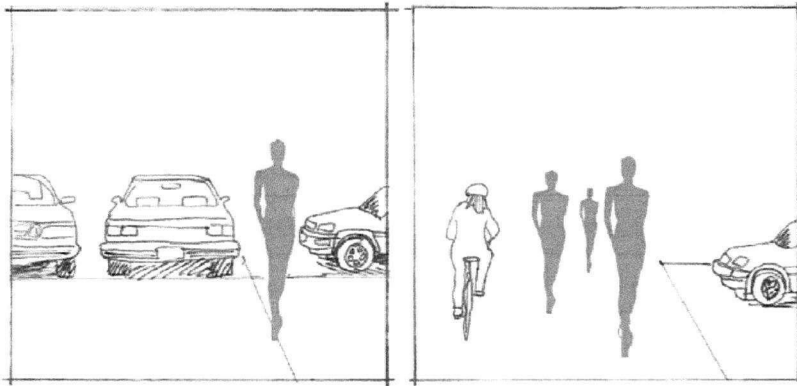


Figure 1.36: G#2 Not this...

...but this.

2. Minimize personal vehicle use on site

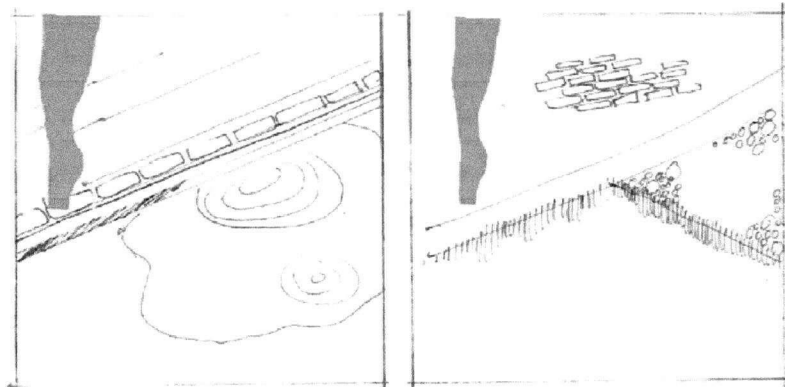


Figure 1.37: G#3 Not this...

...but this.

3. Minimize area of impervious cover

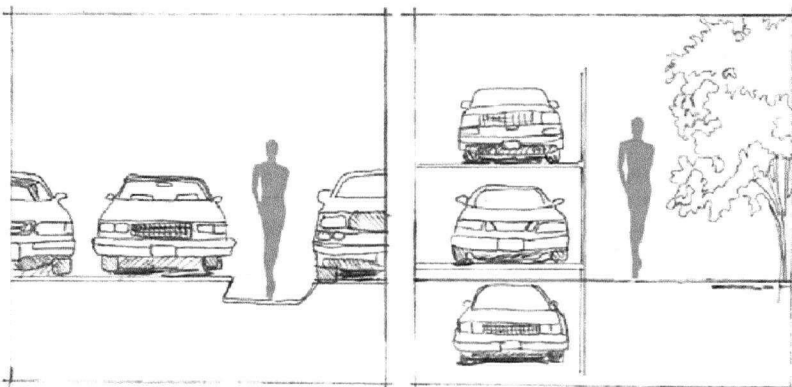


Figure 1.38: G#4 Not this...

...but this.

4. Stack parking

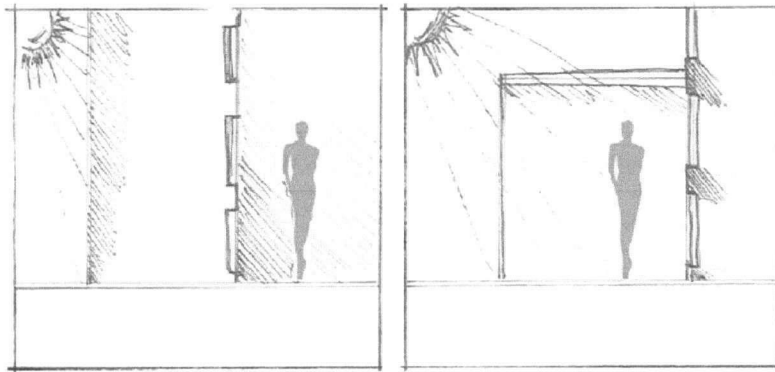


Figure 1.39: G#5 Not this...

...but this.

5. Orient buildings to maximize solar capture



Figure 1.40: G#6 Not this...

...but this.

6. Shade building entrances to reduce artificial cooling

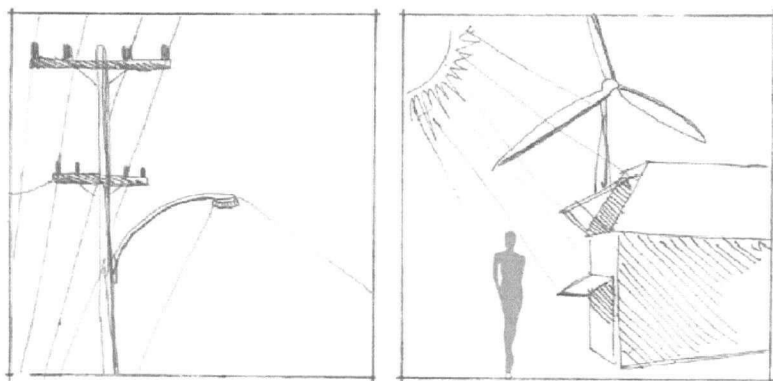


Figure 1.41: G#7 Not this...

...but this.

7. Use alternative power generation where appropriate

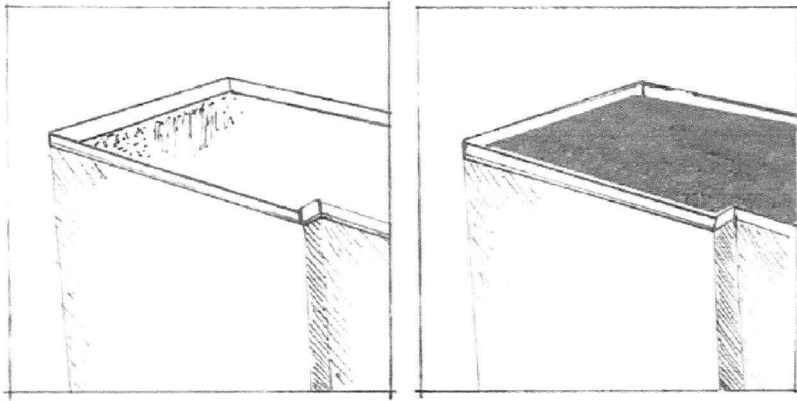


Figure 1.42: G#8 Not this...

...but this.

8. Provide both intensive and extensive green roofs on all new buildings.

9. Used recycled and repurposed building materials and site features (not illustrated).

PROBLEM.

2.1 SITE SELECTION.

This section deals with finding and analyzing a physical site on which to explore the theoretical problem. This portion of the research provides the context for the project, including, site selection criteria, site inventory and analysis and review of design opportunities and constraints.

2.2 CRITERIA.

The aim of the search for a suitable site was to find one that would allow for illustration of a variety of concepts in a relatively realistic setting. A range of site characteristics were required.

Scale: The site had to be moderate and workable for a project of this scope. Something as large as the Mall of America would not be suitable, rather, a setting more typical of the average North American city in the range of 20 and 40 acres seemed appropriate.

Community: The ideal site would be located in close proximity to a diverse and established community, but also be near new development. This would allow for exploration of a wider range of design options. Elements like community centers, libraries, transit nodes, workplace and even living space could be incorporated.

Infill: In keeping with the sustainability objectives of the project, a Greenfield site was out of the question. The challenge of a project such as this is to try and incorporate the new concepts into an existing urban fabric. For this reason, the project site had to be current.

Retail: While the search was not limited to sites that had existing retail, consideration of market feasibility were given. For the project to stay true to its sustainability objectives, design of a new shopping center within close proximity to an existing retail center would be counter-productive. In addition, given that the project was initiated as a reaction to big-box development, finding a site that had elements of this typology available for retrofit or redesign seemed desirable.

2.3 SITE SELECTED.

The chosen site is an existing central city indoor mall in Kingston, Ontario (about 300km east of Toronto on Lake Ontario) called the Kingston Center. The City of Kingston provides me with a personal connection to the project. Having grown up in the greater Kingston area, the Kingston Center has been a landmark retail outlet for all of my shopping years. Always fascinated and frustrated by the way the retail landscape changed in the City, I had observed the "power center" taking over much of the retail market in recent years. In 2004, after almost 50 years as a pedestrian friendly, community centered indoor shopping mall, the Kingston Center was to be demolished and redeveloped into the now prolific "power center" form.



Figure 2.1: Aerial view of existing Kingston Center. Source: Kingston Whig Standard, 2004

Loblaws Inc. is the site owner and principal tenant. It demolished the original anchor Sears (which relocated to an expanded mall in the west end of the city) and erected an 80,000 square foot grocery store "marketplace". The remaining mall, in a state of disrepair due to age and neglect, is now being deconstructed and replaced by a "power center" – including a large scale PharmaPlus drug store and Northern Reflections outlet. In total, the area available for redevelopment (including the aging adjacent Canadian Tire site to the east) is 30 acres.

From the outset, the site met three of the four criteria at first glance: infill and re-development of an existing retail environment on a moderately sized site. Further

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investigation into the community components revealed even more convincing characteristics.

- Ten city transit routes connect through the Kingston Center location.
- The immediate community includes seniors and students who require local serving retail and could also benefit from the economy and convenience of larger "box" retailers.
- Calvin Park Library (a branch of the Kingston Public Library) is slated for demolition, and a new 8000 square foot facility is needed.
- The City of Kingston has recently adopted an Urban Containment Boundary indicating that there is the opportunity to increase density.
- The geographic location is significant. It is centrally located in the city at the intersection of three major arterials. As well, it is well-positioned as a regional retail Center, equidistant from major routes to Toronto, Montréal and Ottawa, and some northern cities in the United States.

The Kingston Center site aptly meets the site selection criteria, and should provide an interesting study for the redesign of the retail environment.

2.4 SITE INVENTORY.

2.4.1 Global context.

Continent: North America
Country: Canada
Province: Ontario
Longitude: 76° 30' 00" W
Latitude: 44° 14' 00" N
Elevation above Sea Level: 93
Source: Environment Canada, 2004

2.4.2 Regional context.

The Kingston Center site is a 31.75 acre parcel (including adjacent Canadian Tire) centrally located in the city of Kingston, Ontario, 250 km east of Toronto on Lake Ontario. The site is bordered on three sides by three arterial roads; Sir John A. Macdonald Boulevard runs along the west side and meets with Highway 401 five minutes to the north linking to Montréal and Toronto 2.5 hours to the east and west respectively. In



★ Kingston Center
Figure 2.2: Regional context of Kingston Center. Note proximity to regional amenities. Source: Author's rendering.

addition, Sir John A. MacDonald Boulevard connects to the Kingston bus terminal, about 3 km to the northwest. Princess Street (Hwy 2) runs along the north side of the site and is the main connection from the VIA rail station to the northwest and to the Lake Ontario waterfront through the city's downtown. Bath Road to the south is a major link to the continually developing west-end suburbs, as well as the local airport. In addition to having excellent vehicular access, the current site is a major public transit interchange with bus service to all major points within the city.

2.4.3 Local context.

The shopping center is in close proximity to schools, public library, YMCA, churches, and a shopping center business district comprised mostly of single-storey, shopping plazas and a few multi-level office buildings. Residences in the area are largely multi-storey apartment buildings, with three other residential areas (principally single-family homes) within a two-kilometre radius. The area will continue to develop as the Alcan plant to the north will be phasing out production and the site will undergo redevelopment within the next ten years. In the foreseeable future, the Alcan site will likely be converted to residential and some types of industrial-related retail developments, making the Kingston Center site a more integral local retail location.

Figure 2.3: Local context and land uses.
Source: Author's rendering.



2.4.4 Consumer context.

From a consumer standpoint, shopping in Kingston provides adequate choice. In addition to the vibrant retail economy of the downtown core, there are two other indoor shopping centers in the greater Kingston area. One, the *Frontenac Mall* is pending redevelopment following the move of its anchor tenant Wal-Mart to a "big-box" super center in the northwest end of the city, and the other, more successful *Cataraqui Town Center*, offers customers 115 stores of indoor shopping. In addition to these indoor malls, there is the large car-oriented "big-box" *RioCan Center*. This development features *Home Depot*, *Staples*, *Future Shop*, *Winners*, *Sears Home*, *Michaels*, *Cineplex Odeon* and others warehouse style retail outlets. It may be assumed that the proposal for the Kingston Center will be in competition with this existing retail outlet center.



Figure 2.4: Cataraqui Town Center. Source: www.ellisdon.com/ed/markets/commercial/retail/cata/

As these other regional shopping centers exist within easy driving distance, the Kingston Center is, and will likely remain a focus for serving the local area. This assumption made, the emergent "lifestyle center" trend that is developing in other communities as a way to humanize the "big-box" may have some characteristics that would be applicable in this consumer environment. However, research indicates that wholesale adoption of this trend will likely not be considered at the Kingston Center as too few area residents "have the kind of income required to support these upscale centers" (Flavelle, 2004: 2). In the area, market studies have indicated that the average household income is \$56,702 and the disposable income per households is \$27,647 (RioCan, 2005). While the youth and senior populations are large, there is still a significant amount of wealth in the Kingston area. In this context, mixed-use development with a retail emphasis, like that of the lifestyle center without the upper scale clientele, seems realistic.



Figure 2.5: Rio Can Center Big-box shopping at the in Kingston's west end. Source: Author's photo.

2.4.5 Current use.

The site houses the Kingston Center – a single storey indoor shopping mall which has served customers since 1957 – and an adjacent Canadian Tire store. While renovations have taken place over the last 25 years, the shopping center has deteriorated in the last decade. Within the last five years, the site has been

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purchased by Loblaws Inc, and the existing shopping center is slated for demolition. In its place, Loblaws has proposed a single storey "power center" , anchored by the newly built 80,000 ft² grocery store on the west end of the site.

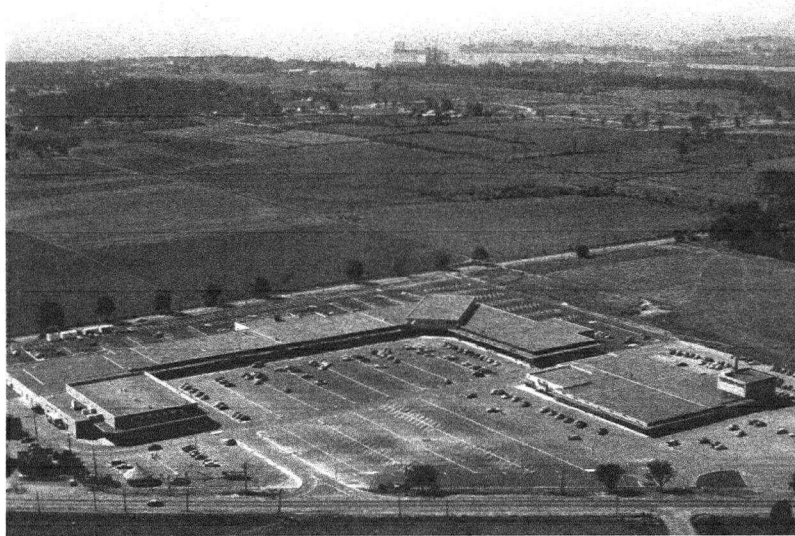


Figure 2.6: 1957 aerial view of Kingston Center. From the northeast. Courtesy : Kingston Construction Association, 2004.

2.4.6 Soils.

Within the Greater Kingston Area, soils are characterized by well/imperfectly drained, undulating landforms. Soils are classified within the "Gray-Brown Podzolic Great Group", and are comprised of "stone-free calcareous clay deposits" and silt-textured lacustrine (Gillespie, 1966: 10, 18). These till areas are also broken up by "numerous outcroppings of pre-cambrian rock" (Gillespie, 1966: 10). These overlying till soils are thin and of limited value for agriculture (Gillespie 1966). The bedrock geology is predominantly black river limestone.

This is somewhat irrelevant information, as the site has been paved over for most of the last 50 years. However, should the surface material be remediated, it appears that drainage characteristics would be consistent with the underlying soil qualities – well /imperfectly drained. For the purposes of the project, the assumption has been made that infiltration of precipitation into the soil will happen at a rate of one inch per hour.

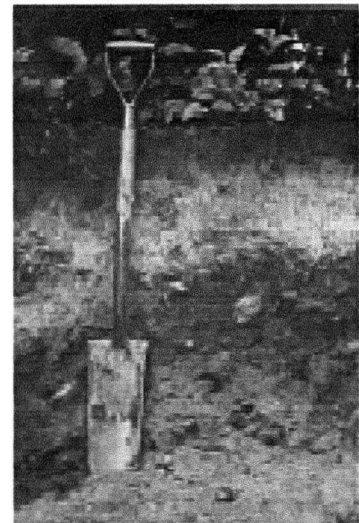


Figure 2.7: Soil sample. typical Kingston area till. Source: Gillespie, J. E., et al, 1966

2.4.7 Topography.

The site is generally flat, with a negligible change in elevation from the high point (103.08m) at the northeast corner of the site to the low point (101.10m) at the southwest corner (intersection of Sir John A. MacDonald Boulevard and Bath Road) (Terraplan, 2004)). The difference in elevation is 1.98m over 300m, showing an average 0.6% slope over the whole site.

2.4.8 Climate.

The climate in Kingston is typical of southern Ontario in that it experiences four relatively equal-length seasons. Winters tend to be cold with heavy precipitation while summers are characteristically hot and dry. The Kingston climate is moderated somewhat relative to other areas of the region by its location on Lake Ontario. Details of climatic conditions are as follows (Source: Environment Canada).

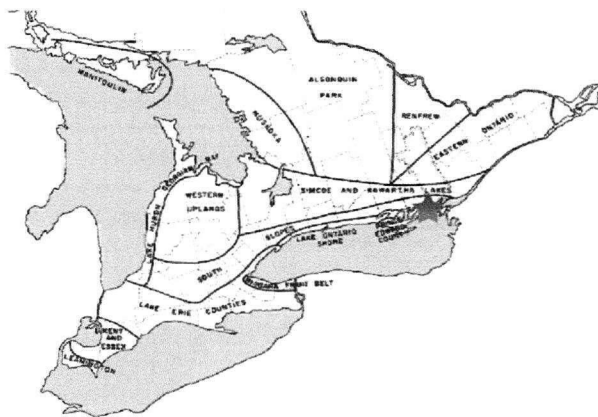


Figure 2.8: Map of the climatic regions of Southern Ontario. Located in the Lake Ontario Shore region, Kingston experiences relatively moderate and equal-length seasons. Source: Gillespie, J. E., et al, 1966.

Temperature(°C)

January	Min: -12.2 Max: -3.2
April	Min: 0.8 Max: 10.0
July	Min: 15.7 Max: 24.8
October	Min: 4.4 Max: 13.0

According to Gillespie (1966), the mean date of frost in spring is May 3rd and in autumn is October 11th.

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Precipitation (mm):

January	Rainfall: 31.5 Snowfall: 46.1 Total: 73.5
April	Rainfall: 74.8 Snowfall: 9.2 Total: 84.9
July	Rainfall: 58.8 Snowfall: 0 Total: 58.8
October	Rainfall: 86.4 Snowfall: 1.1 Total: 87.5
Annual	968.2mm

Prevailing Winds

January	Speed (km/hr): 18.7 Direction: West
April	Speed (km/hr): 16.5 Direction: South West
July	Speed (km/hr): 13.4 Direction: South
October	Speed (km/hr): 16.7 Direction: South
Average	Speed (km/hr): 16.0 Direction: South

Bright Sunshine

January	Total Hours: 95.3 Days measurable: 21.2 % of possible daylight hours: 33.1
April	Total Hours: 176.5 Days measurable: 24.8 % of possible daylight hours: 43.8
July	Total Hours: 280.4 Days measurable: 29.9 % of possible daylight hours: 59.7
October	Total Hours: 146.3 Days measurable: 26.1 % of possible daylight hours: 42.8
Annual	Total Hours: 1991.7 Days measurable: 298.9 % of possible daylight hours: 43



Figure 2.9: Path of prevailing wind. Source: Author's rendering.

At a site scale, the solar orientation is positive, as the entire south side of the site is bordered by Bath Road. There are no major shadows cast on the site.

2.4.9 Open space.

Vegetation is not prevalent on site, with the exception of a few existing street trees (Norway Maple, *Acer platanoides*) along Bath Road and container plantings along the west side of Loblaws. These provide a minimal level of aesthetic quality, but are extremely limited in their provision of habitat and do not contribute to usable open space in the area.

There are two visually accessible open spaces from the Kingston Center. One, to the northeast, is a soccer field that is on Alcan property. The second is the playfield adjacent to Loyalist Collegiate and Vocational Institute at the southwest corner of Sir John A. MacDonald Boulevard and Bath Road.

2.4.10 Site features.

The main visible features on the site are the existing buildings. One is the Loblaws Supermarket with a floor area of 81,192 ft². Another is a Canada Trust Bank with a floor area of 8000 ft². The third is the Canadian Tire store with an approximate floor area of 30,000 ft² (Terraplan, 2004). With the exception of the Canadian Tire which was built in the 1970's, the structures have been built in the last five years. All three are included in the Loblaws "big-box" proposal. For the purposes of this project, only the Loblaws building will be incorporated into the concept. Non-visible site features include all the necessary amenities for traditional hydro, sewer and storm sewer hook-ups.

2.4.11 Access.

Pedestrian: Pedestrian access is primarily from the southwest corner of the site where people cross Bath Road and/or Sir John A. MacDonald Boulevard from residential areas to enter the shopping center. There is an increase in pedestrian traffic at this intersection in the early morning, noon-time and late afternoon as high-school students from the adjacent Loyalist Collegiate and Vocational Institute go to the Kingston Center to shop, work, socialize and access public transit.



Figure 2.10: Condition of vegetation along Bath Road. Source: Author's photo.



Figure 2.11: Main east-facing Loblaws entrance. Source: Author's photo.



Figure 2.12: Signaled pedestrian crosswalk. Sir John A. Macdonald Boulevard and Bath Road. Source: Author's photo.

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There is minimal pedestrian traffic across Sir John A. MacDonald Boulevard from the apartment development to the west as people try to cross to the grocery store. Access from this side is notable as most pedestrians are "jaywalkers". There is a pedestrian crossing mid-block, but at present it accesses the back side of the Loblaws, and does not make a convenient crossing given the current mall layout.

On site, the pedestrian traffic is limited to the immediate perimeter of the building (entrances and exits) and by people going to their cars. Due to the current site formation, there is no through pedestrian traffic going north/south or east/west.

Vehicular: Access to the Kingston Center using a personal vehicle is convenient. There are seven separate access points for personal vehicles, but only three with left hand turning to or from the mall (one signaled intersection on Princess Street; two intersections on Bath Road – one signaled, one not). There is some difficulty for people turning left from Bath Road to access the site via Sir John A MacDonald Boulevard as they have to cross two lanes of traffic in a relatively short distance. This is complicated by pedestrian traffic and vehicles exiting the mall.

Within the site there is ample parking. As well, circulation routes allow for reasonable access to all major entrances/exits. Pick-up/drop-off areas for taxis and courtesy vehicles are currently in prominent locations near entrances and are well used at all times of day.

Transit: There are ten bus routes that connect at the Kingston Center – eight regular routes and two Sunday routes. Service is every half hour, with regular service between 6:30 am and 11:30 pm. All routes do not run at all hours, but connection to main city amenities is available via basic service. Transit access to the site occurs principally from both the signaled entrance off Princess Street and the signaled entrance off Bath Road. Transit leaves the site by these same routes, as well as the most northerly non-signaled entrance off Sir John A. MacDonald Boulevard.

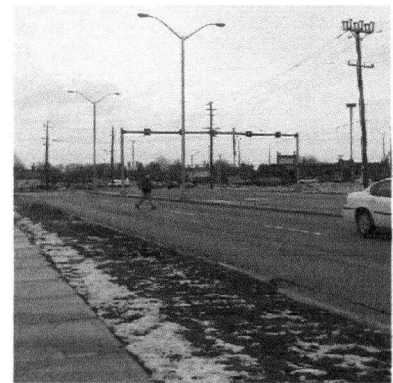


Figure 2.13: Jaywalker. Pedestrian jaywalks across Sir John A. Macdonald Boulevard. Source: Author's photo.

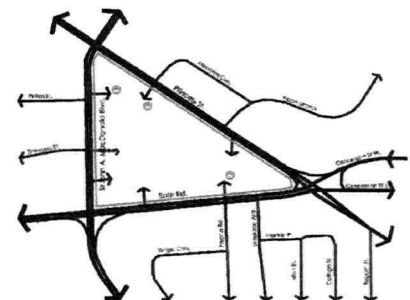


Figure 2.14: Vehicular access Source: Author's rendering.

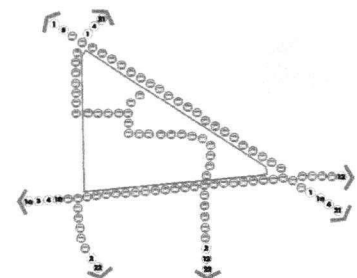


Figure 2.15: Transit routes. Source: Author's rendering.

2.4.12 Local demographics.

Kingston has an urban population of 112,785 residents with a further 13,532 "rural population" within the political boundaries. A great number of the people who work in the Kingston area live in smaller rural communities beyond the political boundary, and Kingston is their primary retail center. The demographics of the area are intriguing as there is a huge range in customer age and occupation. There is a large senior population, as well as a young student population – including high-school, college and university level students.

2.5 SITE ANALYSIS.

2.5.1 Sun.

Surrounding buildings cast no major shadows on the site, and the orientation of the Loblaws store keeps shadows to a minimum. The orientation of the site and the climate of the area are excellent for solar capture (both passive and active).

2.5.2 Wind.

While wind can be a restrictive factor right on the lakeshore, the Kingston Center site does not have any major development or design restrictions with respect to wind. The south winds can make the intersection of Sir John A. MacDonald Boulevard and Bath Road blustery in winter and it can be dusty and uncomfortable for the pedestrian in the summer, although not prohibitive to pedestrian access.

2.5.3 Soil.

The soil quality on site is slightly different than the surrounding area as it has been hard-topped for the last 50 years. As parts of the hard top are removed with redevelopment, there is opportunity to remediate some of the damage that has occurred and encourage more natural drainage. The granular sub soil that exists makes the area well drained, so the challenge will be in keeping enough water on the land especially during the long dry summer months.



Figure 2.16: Current soil condition. Some form of remediation will be required. Source: Author's photo.

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There are no restrictions in terms of bearing capacity for development since the parent material is limestone bedrock. Soil quality in the immediate area is good for planting; where necessary infill will facilitate remediation to accommodate greener infrastructure.

2.5.4 Views.

A number of adjacent high-rise and low-rise apartment buildings have views to the site. While the past view has been of rooftop and parking lot, the new one should aim to provide a higher aesthetic quality as this area stands to receive considerable attention from developers when the adjacent Alcan site is phased out and infill development begins in keeping with the City's Urban Growth Strategy.

In addition, views from the site to the surrounding community are worth considering. Close proximity to historic downtown Kingston and Lake Ontario make this a reasonable site for high-rise development, capitalizing on location and views to city amenities.

2.5.5 Access.

Access to the site is reasonably good from a vehicular and public transit standpoint. However, the circulation and access to key areas of the site are somewhat weak. Also, accessing the site from surrounding community nodes is not always easy. High traffic volumes and wide streets facilitate the flow of vehicular traffic, but cause conflicts between different transportation modes due to speed and volume of traffic.

Because transit is a key programming feature, there is opportunity to increase linkages from the shopping center to the surrounding community using transit.

Linking community to the site is important. Currently, existing community connections are weak—particularly pedestrian links to community facilities such as churches, schools, libraries and public parks. Presently, at least one of each of these borders the site directly, but the scale of the arterials and the layout of the shopping center are not conducive to pedestrian comfort. Both visually and physically, there is ample



Figure 2.17: Views onto site. Several prominent apartment buildings have clear views onto the site. Source: Author's photo



Figure 2.18: Kingston Transit. Several bus routes connect through the site. Maintaining efficient transit access to and from the site is key to linking to the surrounding communities. Source: Author's photo.

room to improve pedestrian connections to and through the site.

2.6 DESIGN CONSTRAINTS.

Given that the project site is currently an indoor shopping mall, there seem to be no prohibitive restrictions either from a suitability standpoint or with respect to the physical capability of the site to support the intended program. There are however a few constraints that impact design that have come to light during analysis.

1. Occupancy of the existing mall is at roughly 60% as most tenants allowed their lease agreements to lapse pending redevelopment of the site to a vehicle-oriented mall setting. With this in mind, the new structure must appeal to a range of retailers.
2. The City has a current backlog of needed work on infrastructure (water, sanitary sewers and roads).
3. Development fees per square foot of gross area for this type of use within the City of Kingston are \$4.23. From an economic standpoint, it will be prudent to keep the building footprints low.

2.7 DESIGN OPPORTUNITIES.

Based on analysis of the various physical, environmental and cultural factors, there are a number of design opportunities that stand out and will help inform the design of the shopping environment.

1. Given that the soil quality on site is good, non-polluted and well drained, and the City has a backlog of infrastructure work to be done, on-site treatment of stormwater, grey water and even black water would be appropriate if the aesthetic aspects and often negative public perception can be mitigated.
2. There are no major environmental restrictions on site. Soils are clean; topography and the climate are moderate. The site experiences four distinct, equal-length seasons. From a design standpoint this provides an opportunity to accommodate a range of ecological design objectives while enhancing the retail experience.

3. This is an urban infill site as outlined within the Urban Growth Strategy and as such should maximize opportunity for amendments over time; mixed-use development should be considered.
4. With both big-box and traditional malls already present in the immediate area that cater to the wider suburban population, the site seems suitable for developing a new, and perhaps, hybrid retail typology.
5. There appears to be more parking than necessary based on use and the number of retailers occupying the property. Furthermore, given that the central bus transfer location is on site and the City has adopted a strategic plan to encourage alternative forms of transportation, the parking area can be reduced.
6. The current shopping center is 47 years old and in a state of disrepair. The new structure ought to attempt to incorporate a longer structural lifespan or, alternatively, have a more flexible form and structure so that change can be accommodated more easily and major redevelopment will not be necessary.

2.8 SITE PROGRAM.

2.8.1 Existing.

The original Kingston Center was an indoor single-use, shopping mall with two major anchors (Loblaws and Sears) and 66 additional retail spaces. The total square footage of retail space in the original mall was 222 820 ft², plus 50 000 ft² for the adjacent, and still existing, Canadian Tire store. Parking was prevalent; there were reasonable transit connections through a bus loop, but there was virtually no green space. Following a decade of decay, the mall was recently demolished in favor of new, regionally-oriented box retail.

2.8.2 Proposed.

The following program was developed as a guideline to create a concept plan on which to apply the aforementioned design principles. The numbers are approximate, used to illustrate the average area of spaces and the relationship between retail, residential,

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work, civic and open spaces. Based on the proposed flexibility in use of spaces, these numbers are subject to change with time and allocation of uses, but will likely remain within range of these numbers.

Community.

Library	8000 ft ²	(743 m ²)
Market	10,000 ft ²	(929 m ²)
Flexible retail	6000 ft ²	(557 m ²)
Total Community Area:	24,000 ft²	(2,230 m²)

Mixed, multi and adaptive use.

Total regional serving:	140,000 ft ²	(13,006 m ²)
Loblaws (Existing)	80,000 ft ²	(7,432 m ²)
Green Home (Proposed)	60,000 ft ²	(5,574 m ²)

Total local serving:	172,000 ft ²	(15,979 m ²)
2 units @ 20,000 ft ²	40,000 ft ²	(3,716 m ²)
18 units @ 4,000 ft ²	72,000 ft ²	(6,689 m ²)
40 units @ 1,500 ft ²	60,000 ft ²	(5,574 m ²)
Total Retail:	312,000 ft²	(28,986 m²)

Work Office:		
15 units @ 1,500 ft ²	22,500 ft ²	(2,090 m ²)

Total Apartment:	187,500 ft ²	(17,419 m ²)
250 Units 1 Br 700 ft ²	87,500 ft ²	(8,129 m ²)
2 Br 800 ft ²	100,000 ft ²	(9,290 m ²)

Total Townhouse:	135,000 ft ²	(12,542 m ²)
100 Units 2 Br 1200 ft ²	60,000 ft ²	(5,574 m ²)
3 Br 1500 ft ²	75,000 ft ²	(6,968 m ²)
Total Housing:	322,500 ft²	(29,961 m²)

Parking: 4 spaces/1000 ft² retail
 1 space/ dwelling unit

Green.

Green space: aim for 25% increase of green space

Park space: aim for 10% increase in usable park

Stormwater: 1. aim for infiltration rate of one inch per hour

 2. keep all stormwater on site

SOLUTION.

3.1 DESIGN.

The proposal for the Kingston Center site highlights three areas of design for sustainability. Based on research, observation and development of design principles, the design solution examines the sustainability of the shopping center with respect to the key areas: fostering community; providing for mixed, multi and adaptive use; and greening the retail landscape.

3.2 DESIGN AS AN ILLUSTRATION OF PRINCIPLES.

The principles were derived from research and intended to help frame the design process of a suburban shopping center. These design principles are “a framework, within which consumers can define shape and form for themselves” (Blauvelt, 2003: 120). The following is a review of the of solution for the Kingston Center with reference to the principles in each design category – community focus, mixed, multi and adaptive use and greening.

3.3 SITE PLAN.

The master plan encompasses all principles and provides a viable alternative to the existing features including:

- The modified grid to link various areas of the site with the surroundings
- Inclusion of community amenities including park space, community gardens, market and public library
- Range of uses and building types, from large scale retail to local serving retail, apartments, offices and town homes
- A significant increase in the amount of park space, infiltration area and green building features
- Increased pedestrian priority and a reduction in the prominence of personal vehicle use

In addition to the site master plan, design details have been developed to illustrate how design principles would be realized on site, and how various design principles complement one another.

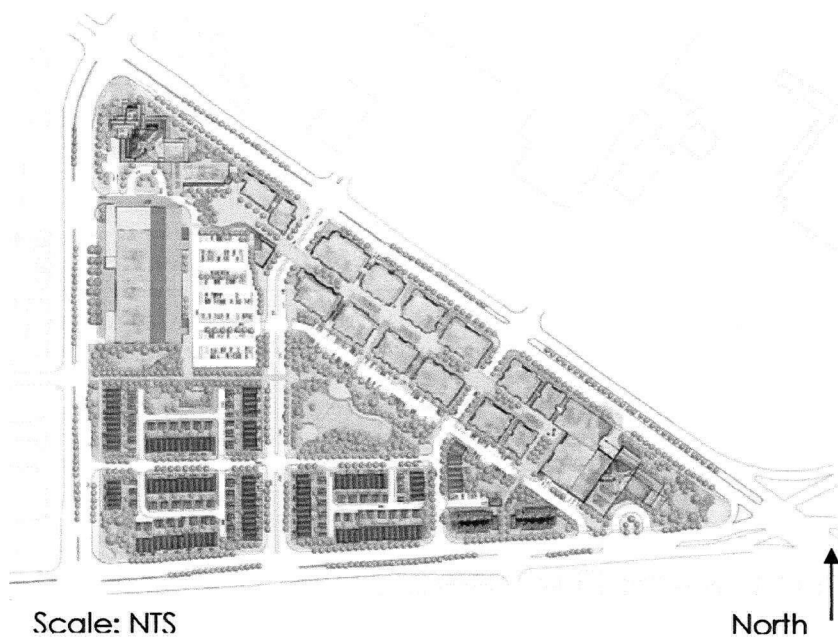


Figure 3.1: Kingston Centre Masterplan.

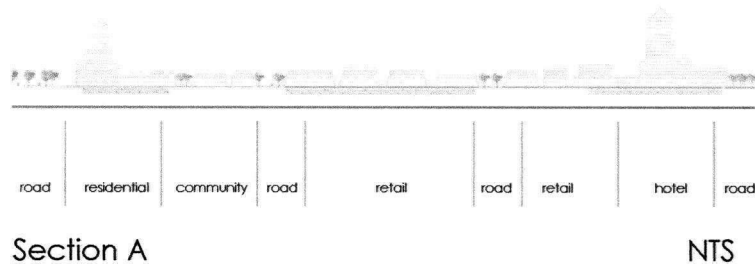


Figure 3.2: Full site section of north block. illustrating range of building heights.

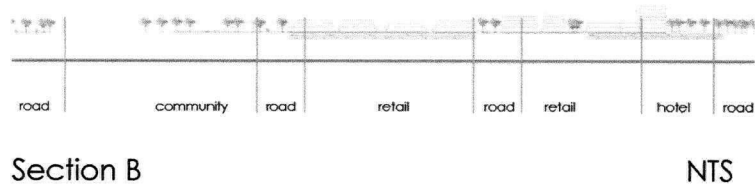


Figure 3.3: Full site section of south block. illustrating range of building heights.

3.4 DESIGN: COMMUNITY.

The goal of designing the shopping center as a community focus included addressing the following principles:

- Make the pedestrian a priority, both in connecting from off site and moving around on site
- Make transit service and connections a feature
- Connect to existing and include new community amenities
- Provide for both local and regional serving retail
- Provide for a range of building types and uses
- Ensure the building façade complements the wider community character

Application of these principles has led to a design that has a community focus. The following text and images explain how.

The first three of these principles are evidenced in the plan. The pedestrian, transit and vehicular circulation links key community amenities and neighborhoods. In particular, the main north/south route through the site allows for connection of the public market and community retail area with the library, transit stops, seasonal skating rink, housing and the neighboring YMCA. This is effective in defining the shopping center as a community focus.

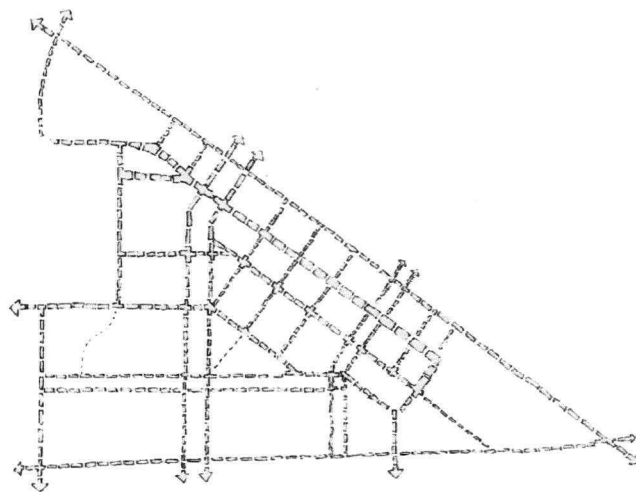


Figure 3.4: Pedestrian routes on site.

Chapter three: Solution

Pedestrian connections are paramount, as can be seen in the schematic above. A modified grid helped to achieve the increased connectivity, and plays well off the surrounding street patterns. There are numerous retail-focused and community-focused pedestrian routes, and excellent connections between key amenities – housing and local retail, shopping and community facilities, and home and shopping.

Transit has been made a feature by placing stops in central and prominent locations along the main vehicular pedestrian axis north/south. The stops are affiliated with customer and community oriented facilities including the YMCA to the south, the library and main mall entrance central to the site, and the main shopping center intersection off Princess Street. Not only will this facilitate easy access via transit, but it will also alert drivers to the convenience of available transit alternatives.

While the focus of the design is retail, in developing a community area, connection to current community facilities and incorporation of new ones into the design, was key. A new branch library was included near the existing grocery store to create a community node, and was also placed proximate to the current YMCA, with easy pedestrian and visual access. The community node was further enhanced by including a flexible outdoor public space, to be used as a public market, festival space and also for community oriented shopping activities. To complement this, and aid in integrating the community area with the shopping center itself, flexible indoor retail space was located adjacent to the public market. With doors that open to the south and an open-concept interior, this can be used for Kingston Centre events, flexible retail like the "Pop-Up Store", or as an indoor market space in inclement weather.

In order to meet the needs of local residents and the larger region, a range of local serving and regional retail has been accommodated through a variety of retail spaces, locations and sizes. Whether it is an anchor retailer that accommodates its large footprint on the second floor, or the smaller shops that serve from the ground floor, flexibility for a range of shops and services has been met. Furthermore, the building

typology and arrangement that has been developed also accommodates for change in use over time. Retail can be converted easily to office, community space and even housing, and office and community space can be converted to retail with minimal alteration to the existing building footprint, and without altering the basic operating structure of the shopping center.

While not fully realized, the facades of the buildings have been considered, and aim to complement the wider community character. Kingston is known as the 'limestone city' therefore it makes sense to include materials such as limestone and brick. As well, windows at street level and awnings will help tie the Kingston Center into the architectural language of its surroundings.

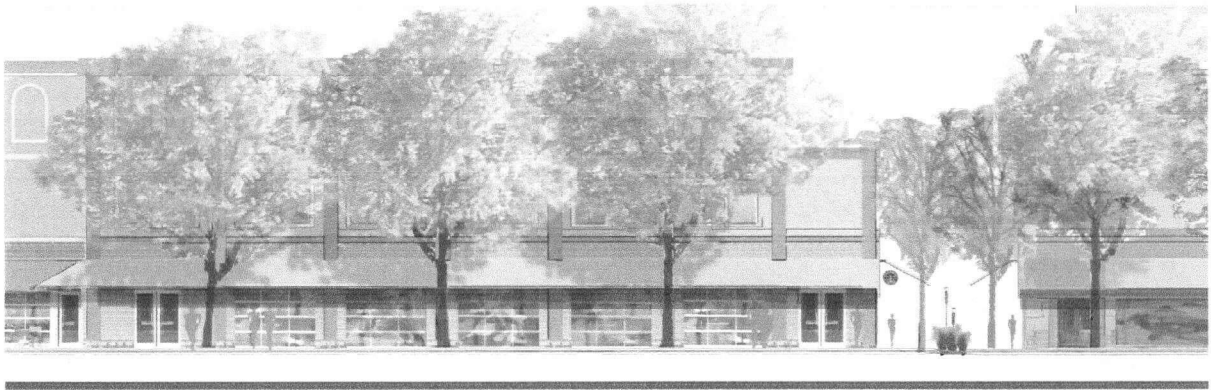


Figure 3.5: Elevation: Community market and flexible retail space.

NTS

3.5 DESIGN: MIXED, MULTI AND ADAPTIVE USE.

The conversion of a shopping center, which is currently single use to one that accommodates a range of uses and provides for flexibility in some of these uses over time, is possible through application of the following principles:

- Include variety in building facades at street level
- Determine a variety of uses in one building (live, work, shop)

- Employ a building footprint that is replicable for a range of uses to make shop, work and live spaces interchangeable
- Ensure both retail and residential present a "friendly face" to the street
- Use green roofs as recreation area
- Showcase stormwater collection as a visual amenity
- Use surface parking as civic space
- Allow for loading and customer entrances on all sides of the building

As mentioned with relation to complementing the community character, consideration has been given to the appearance of building facades, and every effort in the layout of buildings and the organization of individual retailers has been to allow for a range in the visual streetscape. From materials, to a mix of both the local and regional retail, there is variety in the mall.

The schematic at right shows how a variety of uses can be incorporated into one building through multi-floor development. Underground parking accommodates vehicles belonging to both residents and customers. Ground floor retail incorporates a mix of local and regional serving stores with some regional retail also being included on the second level adjacent to offices. Apartment residential is accommodated on the top floors. This is in keeping with the Strategic Plan for Kingston that identifies Princess Street as "focus for transit supportive, higher density development" (Richards, 2004: ES-2).

The variety of these uses can also be incorporated from building to building, as the footprints are similar. This will allow for easy change in use, particularly of retail spaces over time, without the need for changing the overall structure of the shopping center.

The building type that has been developed for the retail area can handle both pedestrian and vehicular access on all sides, so the shopping center presents a "friendlier" face to the street. Furthermore, this addresses the concept of minimizing the delineation between front and back, and celebrates both the services and the customer. In addition, by parking the

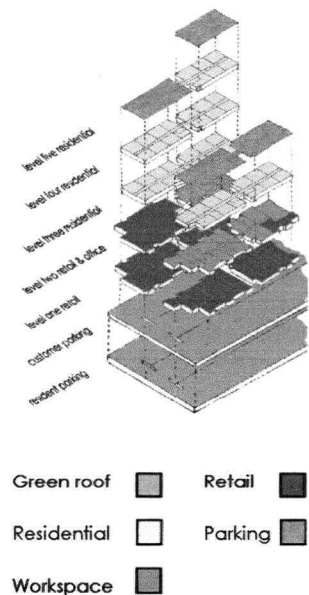


Figure 3.6. Axonometric detail of building uses.

Chapter three: Solution

bulk of the cars in underground lots, the visual aesthetic of the site is improved.

In residential areas, both car storage and services are handled via rear lanes, so that homes are closer to the street, creating a more visually pleasing streetscape than typical, driveway-oriented suburban development.

Stormwater collection has also been incorporated both as a visual amenity and as an extension of the park space. In the retail center, it occurs in localized channels that allow people to see and hear the flow of water. Infiltration occurs in central vegetated areas that are accented with seating areas, street trees and night lighting. Stormwater detention areas are designed to accommodate active use in dry seasons, and include south facing, casual seating to provide for a range of use throughout the seasons.

The intent of the program is to allow for some surface parking to be converted to civic space at certain times. The most southerly area of the Loblaws surface lot would make for an excellent seasonal skating rink, with good connections to community facilities and housing. In addition, the parking along the south side of the pedestrian mall could be easily converted into festival space, or used as a temporary extension to the mall for events like seasonal sidewalk sales.

3.6 DESIGN: GREENING.

The most significant and obvious change to the retail landscape is the inclusion of green infrastructure and amenities on the site. These have been incorporated to reflect the following design principles:

- Maximize connections between live, work and shop
- Minimize personal vehicle use on site
- Minimize area of impervious cover
- Stack parking
- Orient buildings to maximize solar capture
- Shade building entrances to reduce artificial cooling
- Use alternative power generation where appropriate
- Provide both intensive and extensive green roofs on all new buildings

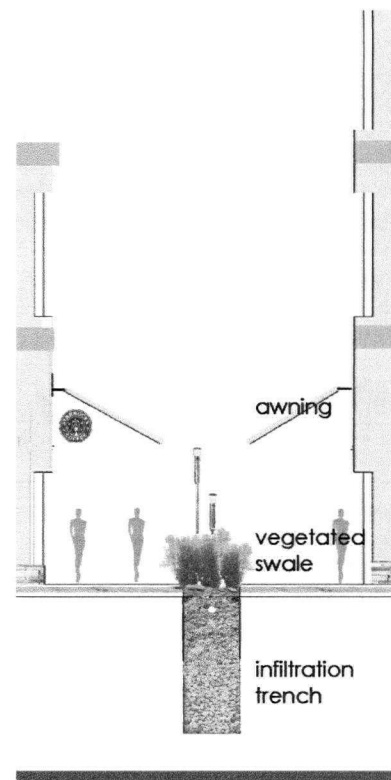


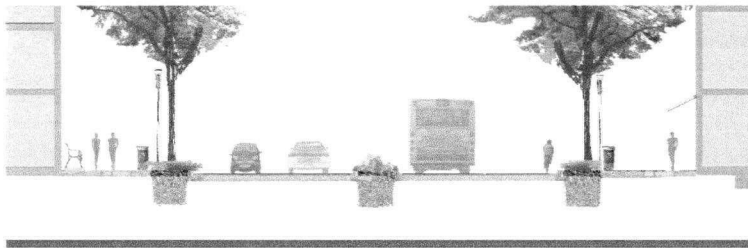
Figure 3.7: Detail section of stormwater infiltration chimney. Vegetated swale allows for natural drainage, while also providing a visual amenity.

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- Use re-purposed and/or recycled building materials and site features

The mixed use plan illustrates well the improved connections between living, working and shopping areas. Throughout the site, a range of uses are provided for, in some cases within the same building. All of these buildings are easily accessed by transit, personal vehicle and, more importantly, by the pedestrian. The range of access opportunities improves connectivity between live, work and shop spaces.

In an effort to emphasize these improved connections on the site, use of the personal vehicle is kept to a minimum through effective and direct traffic routes, central access points to parking areas, and the provision of alternatives to the personal vehicle. This contributes to an overall increased feeling of pedestrian safety and greatly improves the aesthetic of the shopping center site.



Section C: Pedestrian Mall

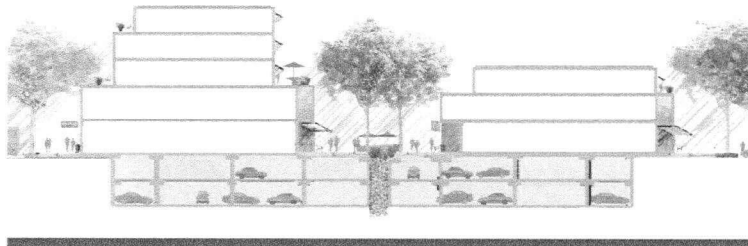
NTS

Figure 3.8: Detail street section. Note canopy cover, infiltration areas and range of transportation modes accommodated: pedestrian, cyclist, public transit and personal vehicle.

The reduction in surface parking areas that results from minimizing personal vehicle use indicates a need to accommodate parking in other ways, and stacking parking is an effective method. Due to construction considerations, it was most appropriate to provide underground parking on this site, both for residents and for shopping center customers.

These moves also mean a dramatic reduction in the impervious surfaces on the site. Currently, 100% of the site is impervious, and the re-design proposes a minimum 25% reduction in non-permeable surfaces. As a result, this will help decrease the risk of flooding, reduce overland runoff and lessen the need for traditional stormwater infrastructure. As mentioned with regards to mixed use, this also provides a more pleasing visual aesthetic.

Other considerations that deal with environmental functions of the site are related more specifically to the buildings themselves. Ideal solar orientation for this site would be north/south to ensure that each building can benefit from passive solar access throughout the day. Given the constraints of the physical boundaries of the site, particularly Princess Street which runs at a diagonal along the north side, a modified north/south orientation was developed. To compensate for some buildings having a north facing public edge, building heights were designed to maximize solar access by placing lower storey buildings to the south, and by having staggered roof lines that allow for solar exposure to the lower storeys of buildings to the north.



Section D: Pedestrian Mall

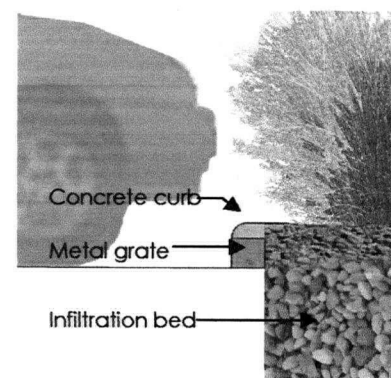
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Given the hot summer climate and the desire to reduce artificial means of climate control, trees and awnings were placed near building entrances which receive full sun and wind exposure. This will help moderate the microclimate around these entrances, aid in reducing artificial heating and cooling costs, and provide a more pleasant shopping environment.

In addition to physical site considerations, the details of site furnishings have been developed to reflect the sustainable objectives of the project. Curbs have been designed to protect vegetation from damage during winter snow removal, but allow for infiltration from parking lot and road runoff via a grate embedded in the curb face. Use of alternative power generation comes from solar panels on the awnings of south facing buildings, which, as can be seen in the detail at right, allow for active solar capture year round, while shading building interiors in the summer and ensuring passive solar heating in the winter.

Figure 3.9: Detail section of shopping centre. Note a range of residential, work and retail uses in one building; stacked parking; articulated architecture to maximize passive solar; and stormwater infiltration areas.

Figure 3.10: Detail section of curb and infiltration trench. A metal grate allows for water to infiltrate, while the concrete edge prevents vegetation from damage.



Chapter three: Solution

Two other significant changes to traditional site building have been incorporated into the design. Green roofs have been proposed for all shopping center buildings, including extensive systems that will enhance building insulation, mitigate stormwater runoff and enhance habitat value and intensive systems that will accommodate additional recreation space and community garden space for apartment dwellers. Furthermore, recycled and repurposed building materials will be used in construction throughout the site, not only to meet sustainability objectives, but to help enhance the site character, and provide a unique retail environment.

3.7 SITE PROGRAM COMPARISON: EXISTING vs. PROPOSED.

A comparison of the existing Kingston Center program to the proposed design is necessary to understand the implications and potential benefits to be gained from the aforementioned design features that are an illustration of the design principles. The following is a breakdown of the program specifics for each design category. It highlights how design for community focus, mixed, multi and adaptive use and green can benefit the consumer, the site and the city.

3.7.1 Community.

Item	Existing	Proposed
Number of pedestrian controlled access points	6	9
Number of community facilities	1 (fitness centre)	6 (fitness centre; park; community garden; flexible retail space; library; market)
Area of park space (ha/acres)	0	2.5 acres (1.01 ha)
Percentage of site devoted to park space	0	8.4%

3.7.2 Mixed, multi and adaptive use.

Item		Existing	Proposed
Housing	Total square footage	N/A	406,050 ft ² (37,723m ²)
	Number of townhouse units	0	115(@1350ft ²)
	Total square footage	N/A	155,250 ft ² (14,423m ²)
	Number of apartment units	0	340(@700 ft ²)
	Total square footage	N/A	238,000 ft ² (22,111m ²)
	Number of live/work	0	8(@1600ft ²)
	Total square footage	N/A	12 800 ft ² (1,189 m ²)
Retail	Total square footage	272,820 ft ² (25,340 m ²)	331 000ft ² (30,751 m ²)
	Number of local serving units	66	64
	Square footage of local serving	115 130 ft ² (10,696 m ²)	113 500ft ² (10,545 m ²)
	Number of regional serving units	7	11
	Square footage regional serving units	157 690 ft ² (14,650 m ²)	217 500ft ² (20,206 m ²)
	Square footage of flexible retail space	0 N/A	6500ft ² (604m ²)
Office	Total square footage	40,000ft ² (3716m ²)	94,000ft ² (8733m ²)
Hotel	Total square footage	N/A	260,000ft ² (24,154m ²)

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Item		Existing	Proposed
Parking	Area of surface parking	31770m ²	4986m ²
	Number of surface spaces	1765	277
	Area of underground parking (over 2 levels)	N/A	33120 m ²
	Number of underground spaces	0	1840
	Customer	0	1100
	Residential	0	740
	Area of on-street parking	N/A	1728m ²
	Number of on-street spaces	0	96
Total spaces		1765	2213
Total commercial spaces		1765	1377
Total residential spaces		N/A	740
Total hotel spaces		N/A	
Total on-street spaces		N/A	96

Retail parking ratio: 4.16/1000 ft²

Residential parking ratio: 1.8 spaces/dwelling unit

3.7.3 Greening.

Item		Existing	Proposed
Total site area (31 acres/ 12.54ha)		125 453 m ²	125 453 m ²
Total green roof area		N/A	7972 m ²
% of total site		N/A	6.35%
Area of permeable hard surface		N/A	3225 m ²
% of total site		N/A	2.57%
Area of permeable soft surface		150m ²	17180 m ²
% of total site		0.12%	13.69%
Area of active infiltration		N/A	625 m ²
% of total site		N/A	0.51%
Area of stormwater detention		N/A	1300 m ²
% of total site		N/A	0.98%
Estimated % reduction in electricity consumption through use of alternative power sources			
Solar		N/A	15%
Geothermal		N/A	40%

FUTURE IMPLICATIONS.

4.1 FUTURE IMPLICATIONS: RETAIL AND SUSTAINABLE LIFESTYLE CHOICES

This project has focused on bringing together sustainability and consumer-oriented design to promote more sustainable lifestyle choices. Largely, the intent has led to a consumer-based strategy that provides opportunity for social interaction, mixed use and a greener environment. By basing the design of the shopping center on consumer behavior, which "...tracks certain life goals that reflect a vision of the good life" designers may be able to achieve a more sustainable and appropriate solution (O'Shaughnessy, 1987:9). Because people are sensitive to their surroundings (which is why the pleasant mall setting had long been appealing), there are a few characteristics of the human condition that can be applied to place design to improve the relationship of customer to retailer. According to O'Shaughnessy (1987:9), people prefer to be:

- Healthy not ill
- Full of life not miserable and sluggish
- Physically secure not physically threatened
- Loved and admired not hated and shunned
- Insiders not outsiders looking in
- Confident not insecure
- Serene/relaxed not tense and anxious
- Beautiful not ugly
- Rich not poor
- Clean not dirty
- Knowledgeable not ignorant
- In control of life not at the mercy of events
- Entertained not bored

Key points from this mean the retail landscape should be environmentally healthy, busy, inclusive, beautiful and entertaining. Developing a model that speaks to these characteristics may lead to greater sustainability of this aspect of retail.

A strategy such as this may help facilitate the adoption of a more sustainable lifestyle. Rem Koolhaas sees the retail landscape as a potential "...template for urbanity itself – from the scale of the neighborhood to that of the metropolis" (Leong, 2001: 385). With objectives of sale, re-sale, exchange, mixed, multi and adaptive uses, the retail environment is poised for a typological change.

Now, shopping centers are widely perceived as monocultures. "Shopping centers are a lot like junk food: no matter how opulent the merchandise or spectacular the setting, they are basically the same, blandly familiar and ultimately boring, lacking any real flavor" (Alexander, 1980: 8). However, they could become as exciting as the city once was, as they, in fact, become the city. Both the principles developed for this project, and the design that has resulted through illustration of these principles, offers an alternative to the bland retail landscapes of the past, and showcases the retail environment as a vibrant, multi-faceted, green community focus.

CONCLUSION.

CONCLUSION.

This project has been an illustration of how a problem may be solved by interpreting research and precedents to develop design principles that inform design of the retail environment. Many precedents are widely recognized as good urban design strategies; others, somewhat more obscure, are still widely regarded as conceptual. The use of both types in combination has allowed for clear communication of design intent, and ultimately facilitates a saleable project.

Through this process, it has become clear that the revitalization of the retail environment for a more sustainable future is a feasible and reasonable undertaking. It is now apparent that the shopping center "... is about the future. It builds new habits by converting itself into a point of reference, making the city accommodate its presence and familiarizing people with the ways in which they should function in [it]. The [shopping center] contains a 'premonitory project of the future'..." (Sarlo, 2001: 13). As such, the Kingston Center and the principles on which it is designed will help to inform consumers of the lifestyle benefits to be gained through sustainable design, and serve as a model for future development.

The following paragraph aptly describes both the intent and the outcome of this project, and provides a fitting conclusion to the discussion of sustainable, retail- focused, landscapes.

We have lived by the assumption that what was good for us would be good for the world. We have been wrong. We must change our lives [and know] that what is good for the world will be good for us. (Fodor, 199:140)

This project has achieved success in exploring such possibilities, and is a clear indication of how simple changes can have a large impact.

BIBLIOGRAPHY.

REFERENCES.

1. Alexander, Laurence A. 1980. Strategies for Stopping Shopping Centers. Downtown Research and Development Center. New York, NY.
2. Blauvelt, Andrew. 2003. Strangely Familiar: Design and Everyday Live. Walker Art Center. Minneapolis, MN.
3. Carmona, Matthew et. al. 2003. Public Places Urban Spaces. Architectural Press, Jordan Hill, Oxford, UK.
4. Cha, Tae-Wook. 2001. Ecology. In: *Harvard Design School Guide to Shopping*. Taschen. Koln, Germany. pp321-335
5. Cherniak, Theresa. 2004. From Big-box to Town Center. Masters Thesis Project. Landscape Architecture Program. University of British Columbia. Vancouver, BC.
6. Condon, Patrick M., Jacqueline Teed and Sara Muir with Chris Midgley. 2002 [Online]. Sustainable Urban Landscapes: Neighborhood Pattern Typology. Available from World Wide Web, [Online] at <http://www.sustainable-communities.agsci.ubc.ca/projects/typology.htm/>. Cited March 7, 2005.
7. Condon, Patrick M., Joanne Proft, Jacqueline Teed, Sara Muir. 2002. Sustainable Urban Landscapes: Site Design Manual for B.C. Communities. James Taylor Chair in Landscape and Livable Environments. University of British Columbia, Vancouver.
8. Cook, Edward, A. 2000. Ecological Networks in Urban Landscapes. Wageningen University, Netherlands.
9. Duany, Andres; Elisabeth Plater-Zyberk and Jeff Speck. 2000. Suburban Nation. North Point Press, New York, NY.
10. Flavelle, Dana. 2004. Traditional mall now a harder sell. In *The Toronto Star* [Online]. Cited, September 21, 2004.
11. Fodor, Eben. 1999. Better Not Bigger. New Society Publishers, Gabriola Island, BC.
12. Gillespie, J. E., R. E. Wicklund. and B. C. Matthews. 1966. The Soils of Frontenac County. Report No. 39 of The Ontario Soil Survey 1966. Research Branch, The Canada Department of Agriculture and The Ontario Department of Agriculture. Ottawa, Toronto, ON.
13. Hawken, Paul. 1993. The Ecology of Commerce. HarperBusiness, New York, NY.
14. Herman, Daniel. 2001. Mall. In: *Harvard Design School Guide to Shopping*. Taschen. Koln, Germany. pp461-475

Bibliography

15. Kowinski, William Severini. 1985. The Malling of America. William Morrow and Company, Inc. New York, NY.
16. Leong, Tsung Sze. 2001. Gruen Urbanism. In: *Harvard Design School Guide to Shopping*. Taschen. Koln, Germany. pp 381-389.
17. Macinnis, Jordan. 2003. *Design File*. In Azure. Azure Publishing Inc. Markham, ON. November/December 2003, pp 86-87
18. Makovsky, Paul, and Andrew Yang. 2005. *Shopping Etc*. In Metropolis. Horace Havemeyer III. New York, NY. March 2005, pp 110-120.
19. Martin, Frank Edgerton. 2004. *With or without civic memory*. In Landscape Architecture Magazine. American Society of Landscape Architects, Washington, DC. Vol 94, No. 5. May 2004. pp 76-85.
20. Natural Resources Canada. 2004. Earth Energy, Ground-Source/Geothermal Heat Pumps, GeoExchange. Natural Resources Canada, Ottawa, ON.
21. O'Shaughnessy, John. 1987. Why People Buy. Oxford University Press, New York, NY.
22. Philp, Lori. 2003. Vehicular Accommodation. Undergraduate Design Thesis Project, University of Guelph. Guelph, ON.
23. Richards, J.L. et. al. 2004. Final Report: City of Kingston Urban Growth Strategy. J.L. Richards & Associates Limited. Kingston, ON.
24. Wines, James. 2000. Green Architecture. Benediky Taschen Verlag GmbH, Hohensollernring, Koln Germany.
25. Sarlo, Beatriz. 2001. *Abundance and Poverty*. In Scenes from Postmodern Life. University of Minnesota Press. Minneapolis. pp 9-43
26. Terraplan Inc. 2004. Kingston Center Redevelopment Plan. Terraplan, Toronto, ON.
27. Upton, Dell. 1998. Architecture in the United States. Oxford University Press. New York.

FIGURES.

- Figure 1.1: Cha, Tae-Wook. 2001. Ecology. In: *Harvard Design School Guide to Shopping*. Taschen. Koln, Germany. pp321-335
- Figure 1.2: Mall of America Official Website. [Online] [Cited April 18, 2005] Available from World Wide Web at: www.mallofamerica.com.
- Figure 1.3: Author's photo
- Figure 1.4: Gallop, Jayson. [Online] [Cited April 18, 2005] Available from World Wide Web at: http://www.imperialoil.ca/CanadaEnglish/ThisIs/Publications/2001q3/pages/market_square.html
- Figure 1.5: [Online] [Cited April 18, 2005] Available from World Wide Web at: http://www.gibnet.com/tourist/t_ms2.gif
- Figure 1.6: City of Kingston. [Online] [Cited April 16, 2005] Available from World Wide Web at: www.cityofkingston.ca
- Figure 1.7: Author's photo
- Figure 1.8: Author's photo
- Figure 1.9: Author's photo
- Figure 1.10: Author's photo
- Figure 1.11: Macinnis, Jordan. 2003. *Design File*. In Azure. Azure Publishing Inc. Markham, ON. November/December 2003, pp 86-87
- Figure 1.12: Makovsky, Paul, and Andrew Yang. 2005. *Shopping Etc*. In Metropolis. Horace Havemeyer III. New York, NY. March 2005, pp 110-120.
- Figure 1.13: Mountain Equipment Co-op Website [Online]. [Cited April 18, 2005] Available from World Wide Web at www.mec.ca
- Figure 1.14: Author's photo
- Figure 1.15: Author's photo
- Figure 1.16: Author's photo
- Figure 1.17: Author's photo
- Figure 1.18: Makovsky, Paul, and Andrew Yang. 2005. *Shopping Etc*. In Metropolis. Horace Havemeyer III. New York, NY. March 2005, pp 110-120.
- Figure 1.19: Author's photo.
- Figure 1.20: Stanwick, Sean. [Online] New Urbanism at Cornell [Cited April 16, 2005]. Available from World Wide Web at" <http://www.audacity.org/Images%20for%20audacity.org/New-Urbanism-at-Cornell-by-Sean-Stanwick.jpg>
- Figure 1.21: Author's illustration
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Figure 1.40: Author's illustration
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Figure 1.42: Author's illustration

Figure 2.1: Chaing, Jack. 2005. Kingston Whig Standard. Kingston, ON

Figure 2.2: Author's illustration

Figure 2.3: Author's illustration

Figure 2.4 : EllisDon Corporation [Online]. [Cited April 6, 2005]. Available from World Wide Web at: www.ellisdon.com/ed/markets/commercial/retail/cata/

Figure 2.5 : Author's photo.

Figure 2.6: Courtesy: Kingston Construction Association, Kingston, ON. 2004.

Figure 2.7: Gillespie, J. E., R. E. Wicklund. and B. C. Matthews. 1966. The Soils of Frontenac County. Report No. 39 of The Ontario Soil Survey 1966. Research Branch, The Canada Department of Agriculture and The Ontario Department of Agriculture. Ottawa, Toronto, ON.

Figure 2.8: Gillespie, J. E., R. E. Wicklund. and B. C. Matthews. 1966. The Soils of Frontenac County. Report No. 39 of The Ontario Soil Survey 1966. Research Branch, The Canada Department of Agriculture and The Ontario Department of Agriculture. Ottawa, Toronto, ON.

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