DESIGNING SUSTAINABILITY:

Interior Adaptive Use, Materiality and Vancouver's Woodward's Building

BY
Erin K Cunningham

A Thesis/Practicum
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements for the Degree of

MASTER OF INTERIOR DESIGN

Department of Interior Design
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THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

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ABSTRACT

Energy use, resource consumption, pollution, social exclusion, and segregation are some of the current challenges facing interior designers. Importantly, sustainable development provides designers with the tools to address these challenges by questioning the outcome of specific actions, the long-term costs of design and the social responsibility of those who practice in the field.

This design practicum proposes a possible framework of development emphasizing sustainability, social, economic, and environmental, and contemporary theory that acknowledges and incorporates difference. The project site is the Woodward's building located in the Eastside of downtown Vancouver, British Columbia. Once a thriving market centre serving lower and middle class shoppers, the Woodward's building has been vacant since 1993. Located at the edge of sprawling gentrification and lower class and unemployed residents, a revitalized Woodward's building will have to meet disparate economic and social interests.

The intent of the project is to demonstrate how the creation of a flexible and adaptable interior public space can meet the needs of urban consumers and less fortunate district residents, now and in the future. An overarching goal of this project is to illustrate the need and capacity for the interior design field to address complex issues and create well-informed designs.

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To my family, Dad, Mom, Mora and Jesse, and to my husband, Joel, whose love and support enabled me to keep my spirit strong throughout the project.

"Illegitimus non carborundum"

TABLE OF CONTENTS

Abstract		II
Acknowledgements		III
Introduction		1
1	**Sustainability**	**8**
	1.1 Environmental	12
	1.2 Economic	19
	1.3 Social	22
	1.4 Summary	24
2	**Literary Review**	**26**
	2.1 Adaptive Reuse	26
	2.2. Public Space	31
	2.3 Interior Pedestrian Places	35
	2.4 Atria	39
	2.5 Markets	43
	2.6 Summary	48
3	**Theoretical Analysis**	**49**
	3.1 Heterotopia & Michel Foucault	52
	3.2 The Fold & Gilles Deleuze	56
	3.3 Summary	58
4	**Case Studies**	**60**
	4.1 Red River College, Princess Street Campus	61
	4.2 Vancouver's Public Library	66
	4.3 The Hull House Settlement, Chicago	73
	4.4 Summary	78

5 Design Application 79

5.1 Theory 79
5.2 Atria 82
5.3 Public Interior Pedestrian Place & Market 83
5.4 Adaptive Reuse 86
5.5 Environmental Sustainability 87
5.6 Economic Sustainability 91
5.7 Social Sustainability 92
5.8 Furnishings 95
5.9 Security 96
5.10 Summary 96

Conclusion 98

Works Cited 102

Appendix A: Programme 107

Appendix C: Furniture, Finishes and Lighting 134

Appendix C: Design Presentation 150

LIST OF FIGURES

1 Sustainability

Figure 1: Campbell's Sustainability Model 11

4 Case Studies

Figure 2: Exterior View, Princess Street Campus, Winnipeg MB 62

Figure 3: Atria, Princess Street Campus 64

Figure 4: Atrium Entrances, Princess Street Campus 65

Figure 5: Exterior View, Public Library, Vancouver BC 66

Figure 6: Floor Plan, Public Library, Vancouver BC 69

Figure 7: Atria, Public Library, Vancouver BC 69

Figure 8: Hull House, Chicago IL 74

Figure 9: Evolution of the Hull House, Chicago IL 74

Appendix A Programme

Figure 10: View of Woodward's from Cordova & Cambie 112

Figure 11: Woodward's: corner of Hastings and Abbott 112

Figure 12: Boarded up shops: 100 block of West Hastings 112

Figure 13: Victory Square 112

Figure 14: Downtown Vancouver, Map 113

Figure 15: Downtown Eastside, Map 113

Figure 16: Woodward's Site & Pattern of Land Use 113

Figure 17: Existing Building Shell and Structure 119

Figure 18: Historical Woodward's W 120

Figure 19: Zoning Diagram 130

Figure 20: Zoning Elevation 130

Appendix B Furniture, Lighting & Finishes

Figure 21: Saturna Wall Mounted 142

Figure 22: Saturna Pendant 142

Figure 23: Saturna Post Mounted 143

Figure 24: Bronze Metallic Matte Finish 143

* All figures by Erin K. Cunningham unless specified otherwise

LIST OF TABLES

1 Sustainability

Table 1: Environmental Features of Green Materials 18

2 The Design

Table 2: Metal Siding 89

Table 3: Glass Terrazzo Tiles 89

Table 4: Salvaged Wood Floors 89

Appendix B Furniture, Lighting and Finishes

Table 3: Lighting Schedule 142

Table 4: Environmental Features Key 146

Table 5: Salvaged Wood Floors 147

Table 6: Salvaged Brick 147

Table 7: Laminated Glass 148

Table 8: Low-E Glass 148

Table 9: Metal Siding 149

Table 10: Terrazzo Tiles 149

INTRODUCTION

Increasingly, sustainability is reshaping social, political, and economic life as governments, organizations, and consumers grapple with depleting resources. As a more educated public demands responsible building practices, the building industry has become progressively scrutinized. In conjecture, sustainability has become a focus of the design community. Economics, environmental regulations, consumer demand, self-interest and altruism can all be cited as impetuses for this focus. Unfortunately, as interest in the topic has grown, the term "sustainability" has become a catch phrase for a variety of phenomenon in both intellectual and professional fields. What the term is, and implies, has, to a large extent, become lost in its jargon as well as its marketing. As a result, it is important that the concept be treated with specificity.

In the design field, the term sustainability has become synonymous with environmental point systems like the United State's Green Building Council's Leadership in Energy Efficiency and Design (LEEDS) and Building Research Establishment's (BRE's) Environmental Assessment Method (BREEAM). While not discounting the importance of these programs and their relation to the goal of sustainability, an overemphasis on their ability to achieve sustainability has led to a narrowing of the understanding of the concept as well as an overstatement of what these programs can achieve. Sustainability is a multifaceted concept that has three main precepts: the environmental, the social, and economic well being of current and future generations. Often, as illustrated in the example of these

point systems, there is an overemphasis on the environmental aspects of sustainability to the detriment of social and economic considerations.

This discussion focuses on the ways in which these three dimensions of sustainability can be addressed through interior design. Implicit to this discussion is the idea that this field has the potential to play a valuable role in addressing the various dimensions of sustainability. Significantly, this project proposes a design that incorporates all three dimensions of sustainability: economic, environmental and social.

The design context for this project is the Woodward's building, located in downtown Vancouver, British Columbia, Canada. Currently, the city of Vancouver is planning Woodward's redevelopment. A central component of this redevelopment is that it be developed in a manner that is "socially, environmentally and economically sustainable" (City of Vancouver, 2004, p.1). Vancouver's downtown eastside, one of Canada's poorest neighborhoods, has undergone a gradual gentrification over the past decades. This process will likely continue through the city's hosting of the 2010 Olympics. Woodward's is located at the cusp of this eastbound gentrification, and has come to symbolize an interface between the interests of wealthy investors and economically disadvantaged area residents. This project proposes, through design and text, to create a lasting and useful interior public pedestrian place, which will meet the needs of a myriad of different interests. The proposed design emphasizes environmental, economic and social sustainability. Sustainability not only offers

an inclusive conceptual framework, it also subverts competing interests to a greater interest—long-term sustainability.

The Woodward's building opened in 1903 on the corner of Hastings and Abbott Street. It was the flagship store for the Woodward's company, founded by Charles A. Woodward. After opening, the building continued to develop, expanding twelve times between 1903 and 1957 to the size of half a city block. Importantly, Woodward's was a focal point of the Vancouver community, providing low and middle-income residents with retail and food services. Unfortunately, in 1993 the Woodward's enterprise went bankrupt and the Hastings store closed.

Since the buildings closure several propositions have been made to redevelop the building. Most of these proposals have involved turning the building into high-end residential spaces. Local residents felt that these developments would push the low-income residents out of the neighborhood and opposed these propositions. In 2001 the province of British Columbia purchased the building in a context of increasing concerns over the eventual use and allocation of the building. In September 2002, the "Woodward's Squat" took place, in which local community members and homeless people occupied the building in a demand for social housing. The squat ended in December 2002 when the City found temporary alternative housing in nearby buildings. In March 2003, the City of Vancouver bought the Woodward's building from the province with the condition that funding would be provided for 100 non-profit housing.

The Woodward's squat highlighted that the redevelopment of Woodward's could not serve a single interest but had to meet the needs of the broader community. Due to the tensions surrounding Woodward's redevelopment, the City of Vancouver has gone to considerable lengths, including numerous public meetings, to make sure Woodward's development process is transparent, accessible and geared at the citizens. Significantly, the City has involved the community in development plans by holding visioning workshops and "ideas fairs" with the community. The following key themes for the building's redevelopment have emerged from these visioning workshops: a) residential use or housing, b) health, c) recreational uses, d) cultural uses, e) commercial, and f) retail, employment, social and institutional. To highlight a couple of key points, the most popular commercial and retail use for the building involves the creation of public market style shops and services, including cafes and restaurants. Notably, the original building had a food floor, which drew the community in and provided for essential needs. The cultural themes emphasized a multifunctional cultural performance space for exhibits, presentations and plays.

In regard to the these considerations, this project involves the creation of a mixed use space with parking at the basement level, open public space on the first floor, non-profit, educational, community and office space on the second and third floors, and subsidized housing on the remaining levels. Because designing a 670,000 square foot building does not fall under the purview of this project, this project will concentrate on designing specific components of the building. In

particular, it addresses the design of a public interior pedestrian space on the first floor of the building. According to the City of Vancouver, the redevelopment of Woodward's must have a community focus and stimulate growth (City of Vancouver, March 2004, p.1). An interior public space creates a focal point for the community and the local residents, and generates economic activity. Moreover, as illustrated by the community visioning fairs, community members advocated the concept of a large interior public space containing a food market and retail. Importantly, this project will approach the design of a marketplace, circulation and performance space in a sustainable manner. Adaptive reuse and materiality will provide the vehicle in which to carry out this goal.

The methods used to develop this project are varied: case studies; observation; investigation of drawings; qualitative analysis; design exploration; and a comprehensive consultation of books, journal articles, reports and websites. The emphasis of this investigation is exploration and description rather then drawing definitive conclusions. Sources are drawn from a variety of fields including interior design, architecture, urban planning, geography, sociology and history.

Chapter One outlines the various precepts of sustainability. It breaks sustainability down into three main headings: economic, environmental and social and, citing a variety of sources, gives a background and definition of each of these dimensions. Chapter Two consists of a literature review of pertinent topics separated into six main components: a) adaptive reuse, b) public space, c) interior pedestrian spaces, d) atria, and e) markets. This analysis allows for a

better understanding of the subject matter and an educated platform on which to base the design. Theory will be discussed in Chapter Three. French theorist Michel Foucault's concept of heterotopia and French philosopher Gilles Deleuze's theory of the fold are quarried for their conceptual relevance to the project and applicability to sustainability. In Chapter Four, the literature review and discussion of theory is bolstered by an analysis of several case studies. This chapter explores and presents detailed information concerning three main projects: a) Winnipeg's Red River College's Princess Street Campus, b) Vancouver's Public Library and c) Chicago's Hull House. These case studies represent qualitative descriptive research, and information is pulled from these specific contexts to provide this project with examples of practical experience as well as inspiration. Finally, in Chapter Five the project's design, a culmination of the ideas raised in the previous chapters, is discussed.

While not claiming to supply the definitive answer to the question of how to address sustainability, this project seeks to contribute to the growing knowledge base surrounding the subject matter by illustrating ways in which sustainability can be addressed through design. Specifically, the project reveals that sustainability is a multi-dimensional concept and, as such, should be addressed on a multi-dimensional level. This exploration is pertinent to the field of design. Rising Green House Gas emissions (GHGs), dwindling supplies of fossil fuels, growing poverty and an increasing segregation of power and wealth underscore the importance of the issue. Significantly, this project recognizes that by itself design cannot hope to solve the broader environmental dilemma. Largely,

sustainable designs are counter-sites within a broader, unsustainable city context. It is their impact as a viable alternative that gives them their strength.

1 SUSTAINABILITY: PRECEPTS & BACKGROUND

Often the expressions sustainable design, green design and ecological design, are used interchangeably. The distinctions between these labels can be unclear, and as a result, their practical application is ambiguous. In general, these terms express an approach to space that involves designing for the advantage of the user and the environment. However, these concepts are not synonymous. Whereas green and ecological designs are mainly oriented towards the physical environment, sustainable design has broader connotations. Sustainability refers to utilizing resources today in a manner that will not impede the choices of future generations (Gissen, 2003, p. 185). This term suggests a comprehensive approach that takes into account a broader social and economic context. According to the World Business Council for Sustainable Development, "sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality, and social equity" (p. 185). These three forces, or dimensions, are often referred to as the "triple bottom line" (p. 185). To create a sustainable design all three of these components should be addressed.

According to architect David Gissen (2002) in *Big & Green: Toward Sustainable Architecture in the 21st Century*, the concept of sustainability can be traced to a speech by retired United States President Theodore Roosevelt in 1920, where he stated, "I recognize the right and duty of this generation to develop and use the natural resources of our land; but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after

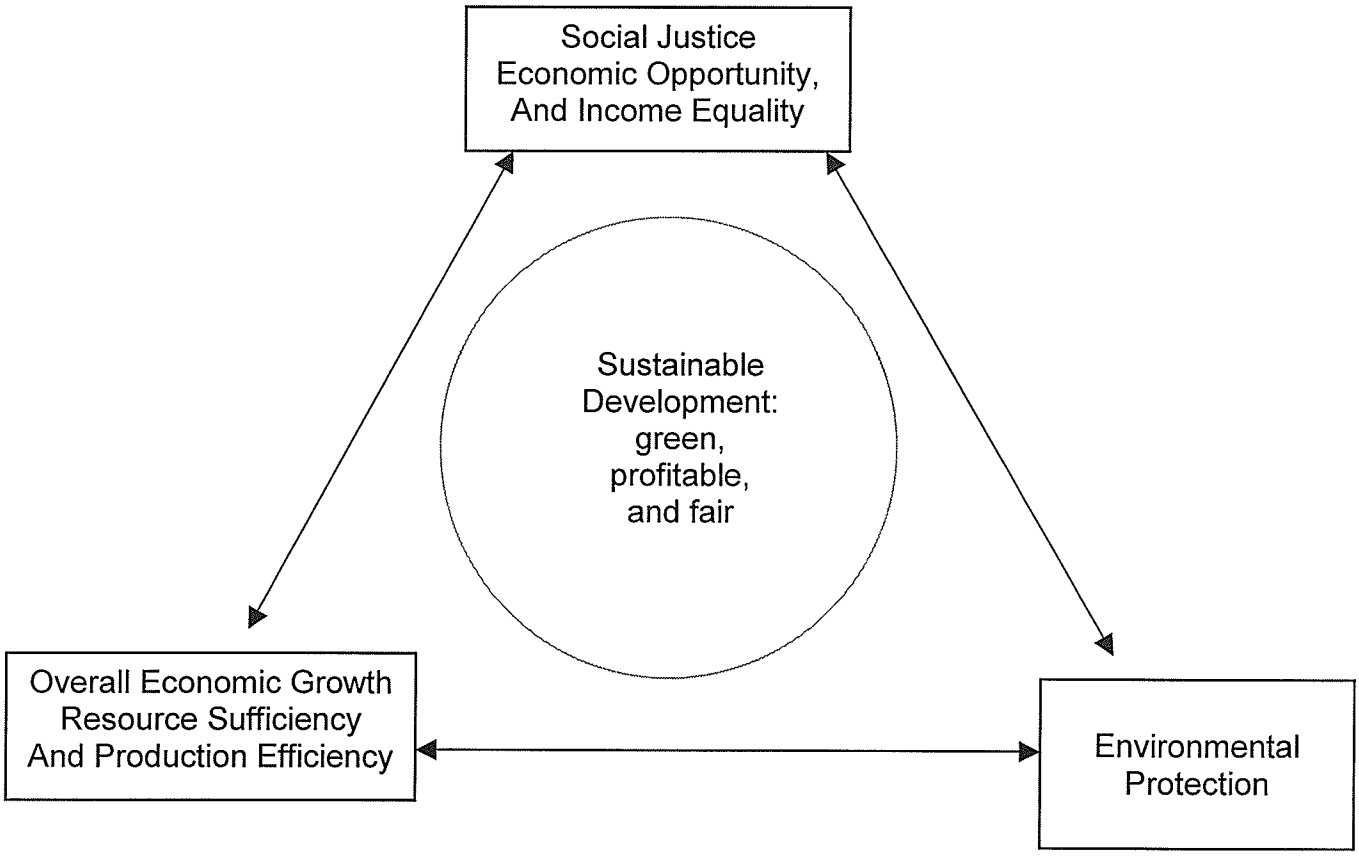
us" (p. 185). This concept was cemented in the 1987 United Nations World Commission on Environment and Development, where it was affirmed that sustainable development is meeting "the needs of the present without compromising the ability of future generations to meet their own needs" (p. 185). Specifically, scientist Michael Braungart (2002) describes sustainability as a term "often used to describe efforts to integrate social and environmental concerns with the more carnivorous aspects of the global economy" (p. 118). Notably, sustainable design is a proactive, largely precautionary practice, which demands economic, social and environmental considerations be addressed in tangent.

In her article, "*Civil Economy and Civilized Economics: Essentials for Sustainable Development*", economist Neva Goodwin (2001) defines sustainability as "Socially and Environmentally Just and Sustainable Development" (SAEJAS Development) (p. 3). Goodwin outlines three concepts that have combined to create the rubric of SAEJAS Development. First, "development is the use of economic means to enhance people's choices and improve human well-being" (p. 13). Second, "achievements in development must not imperil the well-being or the range of choices in the future" (p. 13). And third, "development must be especially concerned with the people who now have the most unsatisfactory quality of life and the poorest choice set" (p. 13). This rubric is attractive because it extends the objective of sustainability from maintaining the status quo for future generations to *improving* and *enhancing* the choice set of contemporary and future societies. Moreover, Goodwin stresses that particular

attention should be paid to people who have the least amount of options and the lowest quality of life.

Planner Scott Campbell (1996) in his article "Green Cities, Growing Cities, Just Cities?" outlines a similar concept, which has been described as "the most elegant definition of sustainability yet devised" (Moore & Brand 2003, p. 2). Campbell's definition is delineated in a triangular model, seen in Figure 1. The image of the triangle represents "the competing demands of the three Es" of "environmental protection, economic development, and social equity", which are located at the three corners of the triangle (p. 3). Campbell states, the "3 corners of the triangle represent goals" and the "three axes represent the three resulting conflicts" (para 26). Sustainable development is situated at the center of the triangle and represents "the balance of these three goals" (para 26). This is an attractive diagram in which to consider sustainable development because it demonstrates that all these forces have to be brought together to reach sustainability. Moreover, it depicts the relationship between these three dimensions in a succinct diagrammatic fashion. Notably, this is an idealistic model. In most cases it is difficult to balance these multiple forces.

Figure 1: Campbell's Sustainability Model



(Adapted from Campbell, 1996, p. 2)

1.1 Environment: Materiality, Dematerialization and Rematerialization

This section serves as an introduction to the various components of green, or environmental design. Further details on how these elements relate to this project in particular will be elaborated on in Chapter 5, which outlines the redesign of the Woodward's building. The majority of sources utilized in this section are government and non-government organization's (NGO's) materials, including Internet sources, company reports and government releases. Primarily, these are used because they are comprehensive, up-to-date and currently being utilized by professionals within the field. Significantly, research has involved cross-referencing the Canadian BREEAM Green Leaf with LEED as well as looking at Canada's Commercial Building Incentive Program (CBIP).

Leadership in Energy and Environmental Design (LEED) is a rating system instigated by the US Green Building Council (USGBC), a non-profit organization that looks to greening the building industry. The Canadian BREEAM Green Leaf is a self-assessment method that involves residential, commercial and industrial buildings. Natural Resources Canada's Commercial Building Incentive Program (CBIP) provides financial incentives for the inclusion of energy efficient measures in new commercial, or industrial, buildings and is an excellent resource in regards to energy efficient design. Another noteworthy source is Manitoba Hydro's Power Smart for Businesses, which offers ideas and case studies on how to achieve energy efficiency.

In *Big & Green: Toward Sustainable Architecture in the 21st Century*, Braungart (2002) states that "one of the goals" of sustainable design is the

"decoupling of material use from economic growth" (p. 118). By this, he highlights the importance of looking at the value of materials beyond simply economics. Significantly, materiality is the primary way in which the physical environment will be addressed in this design. However, design components such as energy efficiency, indoor air quality, building configuration and water consumption, will be considered in relation to materiality as well as for their own attributes. These design components are integral to environmental design and should be considered in relation to any project dealing with environmental sustainability. An emphasis on materiality also fits nicely into the goal of adaptive reuse, where the extent to which the building is restored, recycled and retrofitted is significant. As Braungart states, "recycling building materials and retrofitting building mass" are some of the methods "being employed to reduce the environmental impact of large-scale structures" (p. 119). Reusing or adapting an existing structure, before demolishing or rebuilding, aids in conserving resources and energy as well as reducing waste and green house gas emissions. Braungart illustrates this point with the example of the "renovation of the Audubon Society's offices in a 100-year-old building in Manhattan" which, "preserved 300 tons of steel, 9,000 tons of masonry, and 560 tons of concrete while making the building a model of high-tech energy efficiency" (p. 119).

The configuration of a building can significantly influence its environmental performance. With this project, the basic form of the building is predetermined. However, manipulating the preexisting form can improve its performance by allowing, among other things, greater access to daylight and natural ventilation.

Another significant component of the redesign is that it will bring amenities, such as retail and grocery to the neighborhood, which circumvents the energy consumption that occurs to find essential needs elsewhere. Notably, certain aspects of Woodward's existing configuration are beneficial to its environmental impact and it is important that this project take these aspects into consideration, including local weather patterns and provisions for public transportation. Moreover, this project involves the reuse of an abandoned commercial building, a Brownfield site. Redeveloping a Brownfield site curtails the loss of open space, fills in gaps within the urban fabric and creates denser neighborhoods. Significantly, the adaptive reuse of a building, as opposed to demolition, lessens the impact on adjacent properties and reduces the use of resources.

Notably, an amplified interest in environmental design has led many people to return to the modernism mantra of "less is more" in an attempt to save resources and stem consumption. This is "essentially a strategy of doing more with less in an increasingly crowded world" (Braungart, 2003, p. 118). The idea of "less is more" manifests itself in concepts like energy efficiency, water efficiency and dematerialization. Attempting to maximize energy performance, energy efficiency involves the reduction in energy consumption for given energy services, such as lighting or heating. Energy-efficiency enhancing measures include, but are not limited to, energy preserving exterior and interior lighting, occupancy sensors, increased u-values[1] on glazing and higher insulation levels. Significantly, energy efficiency also involves the consideration of alternatives for

[1] U-value measures the extent to which a product keeps heat from escaping from a building.

heating, lighting and cooling, such as incorporating passive solar technologies like daylighting and natural ventilation, which reduce heating, cooling and lighting loads (Office of Energy Efficiency, 2005).

Water Efficiency also factors into the mantra of "less is more". The two main types of water efficiency measures considered with this project are wastewater technologies and water use reduction. The aim of these measures is to reduce the consumption of potable water within the building. Wastewater technologies include reclaiming water-utilizing measures such as grey water treatments. Grey water is generally any water that has been used in a building with the exception of toilet water. Often plantings are utilized to recycle grey water. After treatments, this water can be used for different purposes, such as irrigation and toilet water. In turn, water use reduction can take the form of waterless urinals, double flush toilets, and motion triggered sink faucets. Another path to water reduction is through utilizing rainwater for plant irrigation and toilet flushing. This is an excellent option in light of Vancouver's rainy coastal climate. Utilizing these technologies puts less strain on the waste systems, resulting in less energy use (CaGBC, 2004, p. 29-32).

Dematerialization is similar to the concept of energy efficiency, concentrating, instead, on the idea of using materials economically. Braungart (2003) refers to dematerialization as the "materialists way to efficiency" (p. 119). In its most reduced form it means, "simply using less materials to make things" (p. 119). Reduce, reuse and recycle are commonly referred to words within its auspices. Dematerialization often takes the form of attempting to build light, or a

"culture of lightness" (p.119). Significantly, it can aid in creating a healthy interior environment. In their book *Construction Ecology: Nature as the Basis for Green Buildings*, Charles J. Kibert, Jan Sendzimer and G. Bradley Guy (2002) state, "de-energization, decarbinization, and detoxification of the industrial system should accompany dematerialization if significant resource and ecological benefits are to be achieved" (p. 16). Building reuse is another important component in reducing materiality. The use of salvaged, refurbished, reconstituted and reused materials is an extension of this concept. Using these materials aids in reducing waste as well as demands on virgin materials, which, in turn, limits extraction and processing impacts.

As previously outlined, the detoxification of materials is a component of dematerialization. This aids in creating healthy indoor environments. In *"Evaluating and Selecting Green Products",* architect John Amatruda (2004) defines indoor air quality as including three main variables: the first is "the introduction and distribution of adequate ventilation air"; the second is the "control of airborne contaminants"; and the third is "the maintenance of acceptable temperature and relative humidity" (para 5). Material choice considerably impacts indoor air quality. Monitoring indoor air quality involves consciously selecting building materials, products, finishes and adhesives in which Volatile Organic Compounds (VOCs), and other irritating and toxic substances are reduced.[2] Natural ventilation, access to daylight, and specifying materials that do not emit toxic substance or gasses and removal of toxic

[2] VOCs, as defined by John Amaturda (2004), are chemicals, which "contain carbon molecules and have high enough vapor pressure to vaporize from material surfaces into indoor air at normal room temperatures" (para 12).

materials from a building are some of the measures that can be taken to create a healthy indoor environment. Notably, creating a good indoor environment can also involve filtering indoor air through the use of plantings.

In consideration of the above points, the evaluation of materials for environmental purposes can be multifaceted and somewhat subjective. Precise data is hard to find, and the judgment of materials often hinges on the goals of an individual project be it energy efficiency or recyclability. Often these goals do not correlate. As such, a qualitative analysis is an apt way in which to judge materials and is the method utilized for the purposes of this project. Impetus for this analysis comes from a variety of sources, including Public Works and Government Services Canada's *"National Master Specification Guide to Environmentally Responsible Specifications for New Construction and Renovations"*, LEED, BREEM, CBIP and Manitoba PowerSmart. Figure II illustrates basic characteristics to be considered when specifying a product. The life of the product is broken down into four main stages: extraction; manufacturing processes; building operations; and waste management. Each stage has a set of criteria to aid in the selection of products. This chart is as comprehensive as possible while providing a simplified version of a wide range of phenomena on which to base the selection of materials. In relation to the project, the greater the amount of material used, the more emphasis will be placed on its evaluation.

In *Big & Green*, Braungart (2003) states that a key to "ecologically intelligent design" is the concept of "rematerialization" (p. 122). Rematerilization,

which involves adding value to a material and the environment, is an important concept to consider in relation to the components discussed above. As a concept, it is similar to Goodwin's SAEJAS development, which stresses enhancing the environment as well as maintaining it. An excellent example of rematerialization is C & A Floorcoverings, which is in the process of prototyping a product with fibers that "interact with sunlight and other elements to actually purify the air" (Grahl, 2002, para. 21). The goal of rematerialization is "not less impact, but more – life supporting structures that leave a big positive, ecological footprint" (Braungart, p. 122). Significantly, the intent is to create "more habitat, more clean water, more fresh air, more pleasure, more beauty, more biological and cultural diversity, more fun" (p. 122).

Table I: Environmental Features of Green Materials

Environmental Features of Green Materials			
Life Cycle Stage I Extraction	Life Cycle Stage II Manufacturing Process	Life Cycle Stage III Building Operations	Life Cycle Stage IV Waste Management
○ Renewable Energy Source ○ Recycled Content ○ Remanufactured ○ Salvaged ○ Certified	○ Waste Reduction ○ Pollution Prevention ○ Embodied Energy Reduction ○ Natural Materials	○ Energy Efficiency ○ Reduced Ozone Depletion ○ Water Treatment & Conservation ○ Nontoxic ○ Renewable Energy Source ○ Longevity ○ Adaptability	○ Biodegradable ○ Recyclable ○ Reusable ○ Others

1.2 **Economic:** Social capital

The economic dimension of sustainability deals with the concept of creating additional value, growth, development, productivity and opportunities. Careful management of resources and cost reduction in energy and materials are important components of economic sustainability that cross over into environmental sustainability. In relation to this project, adaptive reuse can enhance the economic dimension of a building design through revitalizing a flagging local economy, generating revenue and reducing material use. Another way in which the economy is addressed in this design project is through the concept of social capital. In *Public and Private Spaces of the City*, Ali Madanipour (2003), professor of urban design at the University of Newcastle, traces the use of this term to the early twentieth century when it was coined by Lydia Hanifan "a school reformer in West Virginia in 1919" (p. 221). Following this, the term has gained credence through the works of authors like Jane Jacobs who, in her book *The Life and Death of Great American Cities*, describes "the neighborhood networks forged by long-term residents as a city's irreplaceable social capital" (p. 221). Moreover, sociologists, such as Pierre Bouden, James Colemen and Robert Putman, have given the term intellectual, political and popular currency.

This versatile concept is often criticized for being too flexible and broad in scope. In *Civil Economy and Civilized Economics*, Goodwin (2001) states, social capital is "intended to describe the existence and importance of the cultural norms, ethics, trust, and other social habits or tendencies which impact the

efficiency with which cooperative endeavors (such as production) can be carried out" (p. 4). Recently, the concept of social capital has received worldwide political attention. To illustrate, in 2003 the Canadian Federal Government initiated a policy research initiative exploring the possibility of using social capital as a public policy tool in one of five running horizontal projects. A series of articles were published as a component of this project in the government journal *Horizons* (Volume 6, Number 3). Among these is Robert Judge's (2003) article *"Social Capital: Building a Foundation for Research and Policy Development"*, which seeks to establish what social capital is and how it can be utilized. In this article, Judge poses the question "what would make it [social capital] a form of capital?" (para 5). Traditionally, according to economics, "capital has classically referred to various physical assets, both private and public, that may be developed and used to produce goods and services, including things as machinery, buildings, transportation networks and the like" (para 5). Unlike this concept of capital, social capital is intangible; it is the "idea that social relations", like social networks, norms and trust, can "form a capital asset" (para 11). It suggests that tangible benefits can emerge from social relations, which can be seen as an important mine of support and resources and, in turn, can rejuvenate the economy.

Goodwin (2001) refers to the concept of social capital as "controversial" and relatively new" (p. 4). It is a useful concept but should be used with caution. At times, the term is employed as a means of quantifying human experience and value. People and communities become numbers and are considered in terms of

their monetary value only. In *Public and Private Spaces of the City*, Madanipour (2003) suggests that a fine line is walked between trying to keep a community financially viable and "marketing localities" (p. 224). Significantly, social capital utilizes "the language of economics to talk about a social and cultural phenomenon" (p. 223-224). This suggests that social capital is a thing, a possible commodity, however, as Madanipour argues, social capital is also a process,

> Most uses of social capital seem to think of it as a 'thing', an asset that can be utilized in different ways ; as indeed the term suggests a form of capital. But it could be argued that social capital is also a process, one of constantly producing reciprocal norms and networks. . . . A part of public sphere that is not constantly used and maintained will collapse or be marginalized. (p. 224)

If viewed as a process, an intangible asset rather then a tangible commodity, social capital can be perceived as a "multi-dimensional, open-ended part of social life" (p. 224). Maintaining or promoting social capital no longer becomes "a means to achieving a limited target" but a farsighted way of sustaining a community, politically, socially and economically.

The idea that fostering social relations can be a form of economic sustainability is an attractive notion. Notably, Madanipour states public space can be considered a form of social capital because it is an integral part of "civil society, which can promote cohesion and prevent further fragmentation and atomization of society" (p. 238). This is relevant to the Woodward's project, which seeks to create a public space that can maintain a set of relation within the Woodward's neighborhood over a series of time. Moreover, it illustrates an important cross over between economic and social sustainability.

1.3 **Social:** Facilitating Options

This project is based on the premise that architecture is inherently a social practice. This is neither a new nor an extremely revolutionary concept. As architect Thomas A. Dutton and architect and cultural critic Lian Hurst Mann (1996) state in "*Modernism, Postmodernism, and Architectures Social Project*", "statements of architecture's relation to society appear in written texts from the time of Vitruvius, based on the premise that architecture engages society and that a knowledge of society and its processes is basic to the education of architects" (p. 12). Social issues that encompass architecture include, among many, equity, community, poverty, minorities, inner cities, and transport. Despite its primary role to architecture, the social aspect is often marginalized in the creation of designs where aesthetics or technologies take precedence. In his article, *"The Suppression of the Social in Design: Architecture as War"*, Anthony Ward (1996), professor of architecture and community design, discusses the absence of social consideration in a practice, which is inherently a social activity. He suggests that this absence stems from the division in architecture between a "culture of taste" versus "culture of knowledge" (p. 29). Often, as Ward asserts, this divide is classified as architecture-as-art versus architecture-as-science. Ostensibly, both these groupings tend to ignore the idea of architecture-as-a-social-object in their adherence to the myth of a transcendent aesthetic or an objective technology. Arising from this dilemma is the question, what is socially responsible design?

In their article, Dutton and Mann outline the response of a 1993 exhibition of student work organized by the Pratt Institute and Architects/Designers/ Planners for Social Responsibility to this question. The response to the question began with, "socially responsible design celebrates social, cultural, ethnic, gender and sexuality differences; it is critical of existing asymmetrical social structures and relationships of power and seeks to redistribute power and resources more equitably" (p. 18). Notably, the response states that socially responsible design "takes as its frame of reference the collective meanings of empowerment" and "recognizes that the process of participatory self-empowerment is a never-ending, ongoing struggle – that there is no 'ideal' or utopian state that can every be achieved" (p. 18). However, a critique of the student's show, in particular, and social design, in general, is that the aesthetic is often forgotten in the concentration on the social, what Dutton and Mann describe as "privileging process over product" (p. 18). This ignores the ability of the aesthetic to have a social context. The form of a design can represent social issues, such as resistance and compliance, empowerment and disempowerment. Dutton and Mann describe this passing over of the aesthetic as a "contradiction with the advocates of social responsibility: they grant the political power of aesthetics to secure hegemony, but they do not take responsibility for their own aesthetic production" (p. 19). In essence, they ignore "the potential of aesthetics as an apparatus of power to promote oppositional cultural production (p. 19). To combat this, Dutton and Mann suggest that architecture needs to bring together intent, form and content in order to address the social.

Buildings are social spaces. They can inhibit or facilitate a variety of behaviors, "communication, movement, intermingling, contamination, power, dis/order, innovation, and creativity" (Kornberger & Clegg, 2003, p. 77). This does not suggest that buildings determine behaviors. The idea that architecture can control and predetermine behavior and social relations is commonly labeled as architectural determinism (Ingersoll, 1996, p. 122). Architectural determinism is often seen as a detriment to socially responsible design. Buildings can facilitate social behavior without assuming the power to dictate it. Urban planner Rae Bridgemen (1993) succinctly states this in her article *"The Architecture of Homelessness and Utopian Pragmatics"*, in which she asserts that combining the social with the built does "not suggest that the built environment can determine social behavior, rather that the built environment reflects certain values and in turn reinforces those in a somewhat circular fashion" (p. 1).

1.4 Summary

Sustainability is a multifaceted concept that looks towards safeguarding the choices of future generations. This section provides a definition of sustainability in relation to the built environment, which encompasses environmental, economic and social interests. The consideration of all three of these aspects of sustainability is important in the complex and diverse context of the Woodward's building. Located in a neighborhood that straddles two distinct socioeconomic regions, different and often competing interests make the development of this building a sensitive topic.

Sustainability, if considered a three-pronged approach encompassing the environmental, economic and social, offers a unique approach for mediating between these divergent interests: a neighborhood that is in need of economic rejuvenation through consumption and production; a resident population actively calling for a more equitable distribution of resources and opportunities; and a city and building industry which is looking to implement more responsible building practices in order to conserve resources. Finding a midpoint between these three goals is a fundamental aim of this design project. In the following chapter, the way in which these dimensions can manifest themselves through built form is described in greater detail through a description of topics pertinent to this project.

2 LITERATURE REVIEW

The intention of this literary analysis is to investigate various discussions that tie into sustainability, the Woodward's building and the intended design for this building. Because of the cross-disciplinary nature of this design, sources have been culled from a variety of fields, including urban studies, history, architecture and geography. The following sections represent an exploration of pertinent concepts including, adaptive reuse, public space, interior pedestrian spaces and markets. An analysis of these subjects helps to inform the design process. Although organized under separate subject headings, these topics are not exclusive. Each section informs the other and, taken as a whole, aid in creating a foundation of knowledge on which to base the design of the Woodward's building. Perhaps more importantly, this analysis breaks down components of space specific to this discussion, and moves the design from a macro-level overview to a more specific micro-level investigation.

2.1 Adaptive Reuse

This section addresses the difference between various types of preservation and illustrates why adaptive reuse is the most suitable medium for this project. Mixed-use buildings and the revitalization of historic neighborhoods are an important part of this discussion. This section also acknowledges the potential of resulting gentrification in the rehabilitation of a building and considers various ways in which this can be addressed through design.

The adaptive reuse of a building is an apt vehicle for sustainable design because, like sustainability, preservation involves social, political and economic forces. Adaptive reuse is a subtype of preservation that involves working with what already exists to create "a new category between save and demolish – the hybrid" (Moore, 1998, p. 214). It looks at rehabilitating a building through "accommodate[ing] the consequences of economic change" (Tiesdell, Oc & Heath, 1996, p. 166). Rehabilitation looks to capture the essence, or spirit, of a place – its genius loci (p. 167). "Restoration, refurbishment and conversion" are key components of rehabilitation (p.171). The extent to which they are applied depends on the type of rehabilitation that is to take place. There are two main types of rehabilitation, "surface" and "deep" (p. 171). At its most profound, "deep" rehabilitation can involve retaining the original function of the building (p. 171). However, one flaw with "deep" preservation is, reemploying the previous use of the building is often not viable in the current economic climate. In contrast, taken to its extreme, surface rehabilitation involves restoring just the façade of a building, referred to as facadism, while the interior is demolished. This practice has come under fire as being "two-dimensional", stage-set like and lacking "unity" and integrity" (p. 175). A compromise can be found on the continuum between "the perils of an excess of juxtaposition that destroys the context's architectural coherence and a slavish uniformity that entombs and freezes the context at a particular historical moment" (p. 197).

One of the debates surrounding the adaptive reuse of buildings is whether new areas should meld with the existing architecture or stand out against it as

something new – "should the repair be made invisible as if no problem had occurred or should the new work be uncompromisingly new so that what is old and what is new is easily discerned" (Tiesdell et al, 1996, p. 173) In *Revitalizing Historic Urban Quarters* architect planners Steven Tiesdell, Tanner Oc and Tim Heath (1996) suggest that, as a way of mediation, juxtaposed architecture should contrast with the "architectural character" but keep in tune with the "spatial character" of the surrounding buildings (p. 192). This concept is often referred to as "contextual continuity" (p. 192).

This particular project involves the adaptive reuse of the Woodward's building, which was designated a class C heritage site in 1996. According to the historic statement issued on the building, certain sections must be maintained whereas other sections are open to reuse. In particular, the 1903 section of the building, located along Hastings and Abbott, must be retained as well as the Woodward's "W", and its steel tower (Director of Current Planning, 2004, para 5). The rest of the building is open to restructuring. The degree to which the building should remain intact and how to meld a contemporary aesthetic with the traditional are interesting design challenges. A large extent of "selective demolition" has already taken place with the Woodward's buildings, initiating a more flexible revitalization process, rather then strict preservation (Tiesdell et al, 1996, p. 167). A new function will be introduced to the Woodward's building and areas of the building will be selectively demolished in order to accommodate this function. This will be done with "necessary respect for the building's architectural integrity and original character" (p. 173).

As already implicated by the previous demolition, more of the exterior will be left in its original character then the interior. However, portions of the building will be rebuilt utilizing a contemporary vernacular, which will visually contrast with the existing structure. Importantly, the new construction will reinforce Woodward's impressive presence on the street and maintain neighborhood roofline levels. This new construction recognizes the dynamic community that exists in the Victory Square neighborhood. Woodward's was built in a series of expansions, each enacted in order to accommodate the changing needs of the public. Also, the building has played many different roles in the surrounding neighborhood including: previously, as a place to purchase household necessities, recently as a place to protest and, currently, as a key to neighborhood revitalization. The rehabilitation of the building will highlight this unique "genius loci".

As previously stated, revitalization involves "bringing areas back into "active use" (Tiesdell et al, 1996, p. 207). The type of place that is to be constructed is a key component of the revitalization of a historic building. Buildings are "physical and functional/social construct[s]" and the intended use can notably impact whether a revitalization is successful or not (p.18). Tiesdell, Oc and Heath assert that there is "no standard formula for successful revitalization" (p. 201): each project offers new challenges. However, "functional diversification", in which there are multiple functions within a building, is often cited as a more economically viable way to design (p. 205):

> Like other areas, revitalized historic urban quarters need to create a diverse economic base and a balance between different needs and

> demands. This can be achieved by introducing or reintroducing mixed uses. (p. 205)

A mixed-use building is often designed according to the concept of a "hierarchy of uses" (p. 211). Integral to this concept is the idea that a space should draw people in by creating a lively street front. As Tisdell, Oc and Heath state, "The challenge in creating a lively urban quarter is to ensure that the most interactive uses claim the appropriate street frontages" (p. 211). In consideration of this, street front should not be given over to parking spaces or residential units. These functions can create a dead zone. As such, offices and residences are generally placed on the upper floors. Parking can be located beneath or adjacent to the building, allowing the street front to be left open for activities that will enliven the street and attract people. Notably, markets are an attractive choice for enlivening the street front because they "offer an intense series of transactions between the seller and the public; the stall and the street" (p. 210-211).

The recreation of a building can revitalize neighborhoods; it puts unrecognized or abandoned buildings back into use, which helps to stimulate urban renewal. A reoccurring challenge to revitalization is often the resulting gentrification. Revamping the physical dimension of a building can threaten the functional character of a neighborhood. Tiesdell, Oc and Heath (1996) are forthright in their assertion that "[a]rguably, gentrification is an inevitable outcome of the revitalization of historic urban quarters that have deteriorated and experience obsolescence" (p. 204). Whether the revitalization will cause gentrification cannot be adequately determined beforehand. However, certain

efforts can be taken in order to address the possible repercussions of gentrification. For example, creating a design that attempts to sustain and represent the local community by providing non-profit services, employment and low-income housing can aid in mitigating the effects of gentrification.

A discussion of adaptive reuse in relation to the Woodward's building is valuable for a variety of reasons. First, it illustrates the reasoning behind the choice of adaptive reuse as a component of this project as well as the choice to juxtapose a contemporary vernacular against the traditional architecture. Second, it explains various precepts of revitalization and ways in which the economic rejuvenation of the Woodward's neighborhood can, partially, be addressed through the creation of a mixed-use building. Third, consideration of the concept of a hierarchy of uses aids in establishing a logic for organizing this mixed-use space.

2.2 Public Space

The following discussion outlines the definitions of, and relationship between, public and private space. Expressly, it gives a brief overview of the history of public space in the Western world and relates this to developments in the East. This overview leads up to contemporary times and a discussion of the increased segregation between public and private spaces and the concept of the semi-private.

Space is often broken down into two different and separate spheres, public and private. In Greece these realms were traditionally spatialized as agoras and oikos. The agora is defined as a public square, market, or place for

assembly. It constituted "the public realm of the city-state", and was characterized as the "realm of speech, action and freedom" (Madanipour, 2003, p. 235). The definition of oikos is house or household.[3] In her article, *Ageograpahia, Heterotopia, and Vancouver's new public library*, urban geographer Loretta Lees (1997) illustrates that, traditionally, public space has been defined as "areas that members of the public are at liberty to enter" (p. 322). This can include, not exclusively, a "city's streets, its parks, its places of public accommodation" as well as "its public buildings or the 'public sectors' of its private buildings" (p. 322). However, Lees asserts that although "the publicness (sic) of space is legitimated by its unmarked universality, it depends upon particular constructions of the public and the proper sphere of its activities" (p. 322). As an example, she refers to the Greek agoras, which as outlined above, were believed to be one of the places where "democracy" and the idea of the "public" were initially "hammered out" (p. 322). However this space was physically and conceptually, barred to "slaves, women and foreigners" (p. 322). This contests the idea of public space as a unified conception of open, accessible and unregulated democratic space and suggests that public space can be utilized to promote, or restrict, specific agendas. It is a politicized space that can be used to support "single minded" conceptions of space or a pluralistic space that contains conflictual notions of "publics" (p. 323).

Throughout history, public space has taken on many different forms and served many different purposes. In medieval times, Madanipour (2003) outlines

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[3] Notably, this word is the base for the contemporary terms, economy and ecology.

in his book *Public and Private Spaces of the City*, public spaces were "treated as outdoor rooms, enclosed within lively and clear edges, closed vistas, embellished by public art, with a centre left open to be used for various activities" (p. 236). In contrast, he describes Renaissance public space as "centrally planned display, symmetrically laid out, restricting the private interest to conform to public display of the power of the royal court, the secular state and the emerging age of reason, whose symbols occupied the centre of the space" (p. 236). In general, Madanipour asserts, throughout the different periods in history public spaces were "variations on the theme crossroads, which were articulated for unity and display" (p. 236). These concepts of public space represent a largely Westernized view of that realm; however, in the East there were many similarities with themes and forms. As in the Western examples, public spaces were often located centrally and utilized for display, politics, business, religion and socializing (p.236-237). In both localities, public space has been associated with demonstration, contestation and organization. As Madanipour states, "In both Eastern and Western cities, throughout their histories, public spaces have remained contested places, through wars, revolutions, and upheavals, as their control meant the control of the common symbols of power, the control of the city and of society" (p. 237).

Madanipour (2003) outlines that in contemporary times elements, like "scientific discoveries, technological development, urbanization and globalization", have changed the form and conception of public and private spaces (p. 237). He suggests that these changes have led to an increased

segregation between the private and public realms and a narrowing of use within both these spheres. Where formally work, leisure and living were incorporated into a common domestic space, they are now segregated into "mono-functional intimate and exclusive places" (p. 237). As a result, public space has misplaced its "integration of cultural and political significance" (p. 237). Lees (1997) offers an interesting counterpoint to this argument, discussed in further detail in the following chapter, in which she suggests that public space is no more "open/ or closed" then it was traditionally and that this belief stems from largely utopian visions of public space. She asserts that even though a "utopian image of social mixing provides a strong anticipatory and counterfactual position from which to criticize the privatization of city space, it may also blind critics to possibilities of new urban environments" (p. 337). Lees suggests that some of the new public places, in particular interior public places are interesting for their juxtapositioning of the public, private and semi-public in a manner that "unsettles these fixed distinctions" and opens up the possibilities of a new form of interaction (p. 337). However, Lees proposes, in order for these spaces to be "effective " public space they should offer room for contestation (p. 335).

This discussion of public space is integral to the creation of a design for the Woodward's building. Ostensibly, through its ownership, the Woodward's building has been a subject of public discourse and is now in the hands of a public body, the City of Vancouver. Moreover, it was claimed as a public space by the Woodward's squat in 2002 in which the protestors took over the space and used it as a public forum in a call for social housing. As a space,

Woodward's has to meet diverse public interests. Any design of this site has to address the fact, and the extent to which, Woodward's is a public space.

2.3 Interior Pedestrian Places

This project proposes the creation of an interior public place. This section outlines the history and various manifestations of interior pedestrian places. As well, it describes some of the pitfalls associated with the interiorization of public space and ways in which to address these problems. By doing so, it lays the groundwork, through precedent, for the creation of a successful interior pedestrian place.

The form of this typology ranges across time and place. In his book *Interior Pedestrian Places*, architect Michael J. Bednar (1989) discusses various types of interior pedestrian places. He illustrates that, as an architectural form, "interior urban places" have proliferated since World War II (p. 8). Largely, he suggests, this is due to the protection they provide from weather and traffic (p. 8). Because of this shelter, these spaces allow "opportunities for strolling, and locations for social conduct" (p. 10). Significantly, interior pedestrian places are often multi-use spaces with "provision[s] for retail, entertainment, and cultural activates along with office uses (p. 11).

The concept of the interior pedestrian place existed well before the twentieth century. Bednar (1989) provides the example of the Greek "stoa", which was centrally located and consisted of "detached, roofed colonnades that served social, political and economic purposes" (p. 10). He also points to the Roman "porticus", which "connect[ed] houses, temples, and shops in a system of

covered pedestrian passages" (p. 10). Similarly, he illustrates that "in the Medieval and Renaissance eras, systems of street arcades were extended throughout many Italian cities, thus enabling the inhabitants to traverse undercover to all districts" (p.10). The advent of "glass-and-steel enclosure systems" in the nineteenth century created the possibilities for new types of interior pedestrian spaces (p.8). "Many interior-place types", Bednar asserts, grew out of this development, including "gallerias, conservatories, exhibition halls, train sheds, indoor markets and winter gardens" (p. 8). Notably, this new roof technology allowed for the possibility of spaces that "are experientially interior but perceptually exterior" (p. 15). Bednar states in the last half of the twentieth century "the nineteenth-century precedent of interior pedestrian places has been rediscovered" (p.8). He suggests that "new place types have been created, based on the needs of complex, high density urban development, and aided by improved technologies" (p. 8). These place types take the form of "new retail gallerias, shopping centers, festival market places, multiuse centers, public atria, winter gardens, skyways, and concourses" (p. 8).

An important component of interior pedestrian space its role as an enclosed passage. In his book *Shopping Malls Design: European Passages – 32 Passages in France, Belgium, Holland, Germany, Austria & Italia*, Yoichi Arai (1999) defines passage as "literally a 'pass-through' alley, a short cut with a roof" (p. 5). Generally this passage contains "shops on both sides" and connects "two or more buildings and/ or courtyards" (p. 5). Notably, Arai states that it was "both commercial aspirations and pedestrians' convenience that prompted the

invention of the passage" (p. 5). It created a "safe and clean walking path", with "vertical connections as well as horizontal" (p. 5).

"The pioneer of the passage", Arai (1999) asserts, is the "Galeries de Bois which was made in the precinct of Palais-Royal in central Paris in 1789" (p. 7). The Palais-Royal became, "for the Parisians, a place for political agitation, strolling, shopping luxury items, information gathering and diversion" (p. 7). An important attribute of this "pioneer" passage, and the passages that followed in its wake, was that it was "a multi-functional complex" containing, among other things, retail, cafes, restaurants and theatres (p. 9). Arai suggest that as "'a migrating space' with multiple functions", the passage "accepted ambiguity of [the] customer's intentions" (p. 9). Thus, the passage allowed for "contemplating, discovering, experiencing, learning and appealing" (p. 9). The passage creates a space for strolling spontaneous meetings, theatrical performances, people watching and shopping. It is "a multi-functional, ambiguous space" (p. 9).

Arai lists several main characteristics of a passage. First, "the passage is a pedestrians' bypath". Second, they were often semi-public due to private investing. Third, "from the users' point of view, the passage was public in that it was open to everyone". Fourth, "it was designed by a single designer and developed by a single developer with a single design policy". Fifth, "as the glass and the steel frame secured skylight inside. The passage became an all-weather amenity space'. And sixth "it was a space for people to stroll in" (Arai, 1999, p. 7-9). Arai suggest that the atmosphere of a passage should be "expectant of something exciting" (p. 9). This involves creating a festival feel of "new

encounters and discoveries"(p. 9). Often a passage involves the "restoration of 'street' culture" with "neighborhood and shops" creating "a community around the street" and "open cafes, kiosks, street vendors, roadside performers and also beautifully designed street lights and bill boards" suggesting street life (p. 9).

A potential problem with interior public spaces is that they can become too insular, depriving the street of energy and creating a dead zone. In this case "pedestrian activity is displaced from the street to the middle of the block, causing a decline in street life" (Bednar, 1989, p. 215). There are a number of ways in which this problem can be addressed. First, "shop windows [can] somewhat alleviate the street deadening" (p. 216). A second option is "double frontage – entrances to the stores along both the street and the mall" (p. 216). Third, there is the option of creating "separate stores along the street and along the mall" (p. 216). These three options allow for an active street life to coexist with an active interior pedestrian space. Another problem, according to Bednar, is "the lack of connection to the surrounding context of pedestrian places"(p. 19). As a solution he suggests that indoor interior places should take their inspiration from "streets and squares", which "work well as social places because they connect to other pedestrian places and serve as locations for given purposes" (p. 19).

A critical component of the interiorization of public space is accessibility. Indoor pedestrian spaces can also become exclusive "through the privatization of pedestrian space, the result of which is limited access and controlled use" (Bednar, 1989, p. 8). Many different design components can create this atmosphere of exclusivity. Specifically, Bednar suggests that "the psychological

barrier of a fixed, visually conspicuous entrance – whether guarded or not - can be a significant deterrent to access" (p. 19). However, visual transparency and large entrances that are "integrated with the existing street and sidewalk systems" and allow "exterior spaces" to "flow freely into the buildings and be joined with the interior pedestrian areas" aid in breaking down these barriers by questioning the distinction between exterior and interior (p. 98). This allows the "perceptual and physical movement from exterior to interior" to be one of freedom, "fluidity and continuity" (p. 14). An excellent example of this type of space is the Galleria Vittorio Emanuele II in Milan. Opened in 1867, this space remains in contemporary times linked to surrounding areas, like the Duomo, the Cathedral and La Scala, the opera house (p. 18). Significantly, the Galleria is an inclusive public space, which, owned by the municipal government, "remains open twenty-four hours a day and allows freedom of access to a full spectrum of society – from beggars to noblemen" (p. 18), an apt precedent, given the nature of the Woodward's site.

2.4 Atria

As evident in the following section, the atria form is a distinguishing characteristic of interior pedestrian places. There are many benefits to utilizing this design typology. In his book *Atrium Buildings: Development and Design* Richard Saxon, chairman of Building Design Partnership, UK, and past president of the British Council for Offices, (1983) explores the virtues of atrium structures utilizing Bill Hiller's "four functions of architecture", cultural, economic, shelter and accommodation. First, atriums cultivate culture by emphasizing "play; people

watching and promenading, movement through space, enjoyment of nature and social life" (p. 5) Second, economically atriums are attractive because their distinctive architecture draws people in. As a result, atrium structures generally have good "earning power" (p. 6). A crossover point between its economic and cultural significance is that "atrium design can allow more successful recycling of existing buildings, with consequent saving of investment" as well as culture (p. 6). Third, atria design addresses the environment, by allowing for daylighting and a reduction of "heat loss and gain" in buildings (p. 6). In terms of the fourth characteristic, shelter, atria allow for an "all-weather public gathering space" (p. 6). In other words, it enables for the intake of light while keeping "wind, rain, solar gain and extreme temperatures away from the overlooking space" (p. 6). Lastly, in relation to accommodation, the atrium offers a constructive space, which can act as a lobby and a circulation space as well as "a restaurant, lounge, exhibition or performance space, or a market area" (p. 6). Moreover, "the vistas and accessibility it creates can enable upper levels to work as extensions of the 'ground' level" (p. 6).

The history of atria design is diverse. Atrium spaces in Roman and Islamic structures were constructed of cloth, wood and masonry (Saxon, 1983, p. 9). These structures were rarely enclosed because of the temperate climates in which they were located. With the glass and iron structures of the industrial revolution our contemporary conceptions of the atrium were founded. Saxon makes reference to Milan's Mengoni's Glaria, built in 1867, as an example of the industrial atria whose technology allowed for the idea that "whole streets could be

roofed in a version of an Islamic bazaar on the scale of a Great Exhibition building" (p. 11). Saxon points out that the "Middle-Eastern pattern of city development" has taken the atrium concept to its extreme through the creation of "courtyard planning with totally introverted buildings, continued from the Roman tradition" (p. 17). The example of Isfahan illustrates this point, where the exteriors are not distinguishable from the interiors and the bazaar forms the main throughway. Significantly, "as an interest in eastern thought grows in the West, so the emphasis on building interiors compared to exteriors grows with it" (p. 17).

With the consideration of atria structure as a design element, it is important to draw out the ways in which they can address the three dimensions of sustainability. Atrium design is particularly apt at addressing the environmental aspect of sustainability, Saxon (1983) illustrates that atria can be used as "passive solar climate-controllers" (p. 17). It creates a buffer zone between the exterior and interior, which allows for daylighting and solar heat retention. Essentially it operates as "a transitional area from outside to inside" (p. 6). It performs as a "draught lobby, cutting air heat loss from movements in and out of the buildings" and buffers a building from "the full force of external climate – air temperature, radiation, wind and water" (p. 55-57).

There are various types of buffer atriums, ranging from a canopy roof to a fully enclosed and tempered space. For this project an unheated buffer zone will be created. The temperate climate of Vancouver makes this a particularly attractive option. This basic buffering zone is an "enclosure without comfort control" (Saxon, 1983,p. 85). Notably, this form offers better energy savings then

a "tempered buffer space", which looks to achieve "full human comfort standards" (p. 85). Without heating it allows for "shelter and shade", "winter air containment" and natural ventilation in the summer (p. 85). Furthermore, with an unheated buffer space the walls of the atria "do not need to have specific insulation value where they divide fully heated space from partially or completely unheated enclosed spaces" (p. 57). As well, these unheated spaces do not need to be insulated from the outside (p. 57). Significantly, atria also allow "the chance of bringing nature into the building on a large scale" (p. 25).

In addition to the cultural attributes previously discussed, socially atria designs "provide more sympathetic building masses and good pedestrian routeways in cities" (Saxon, 1983, p. 17). They create a "public interior", which expands a city's pedestrian space (p. 17). According to Saxon, these spaces are capable of being both "routes and destinations" (p. 49). When manifest as routes "they provide mid-block passages and cut-offs, reviving the intricacy of the older city" (p. 49). In addition, the atrium allows indoors "the street-theatre and busking traditions" (p. 66). In order to encourage the public use of atriums it is important to design the space so it is inviting from the street and not overly introspective. When designed as such, an atrium "can be an urban room, one of the suite of memorable spaces which make up a city's character." (p. 138)

Building on the economic attributes illustrated previously "atrium building is one of the strategies for getting more comfort for less energy-cost" (Saxon, 1983, p. 55). Notably, the atrium form has been used as an impetus for revitalization. Saxon gives the example of "Gruen's Midtown Plaza in Rochester

in the 1950s" which illustrates that "the idea of using a single project to spark off general city-centre revitalization has proved workable" (p. 52). Because of their draw, atriums can help to rejuvenate urban areas. Revitalization indicates increased economic activity and revenue, and taps into the benefits of social capital.

2.5 The Market

The history of interior pedestrian places and the atria form are closely intertwined with the idea of the market. In this redesign of the Woodward's building the interior pedestrian plaza takes the form of a market. Traditionally markets have held an important role in the Western world. According to historian James Schmiechen and design historian Kenneth Carls, (1999) in *The British Market Hall: A Social and Architectural History*, "from medieval times well into the nineteenth century, the most important economic and social center of urban life and a dominant feature in the townscape was the public market" (p. 3). Dating from the eighteenth century markets were mostly open air, essentially an extension of the street (p. 3-4). Often the market, because of its political, economic and cultural importance, occupied the centre of the town. This market generally "consisted of a ramshackle collection of stalls (or stances)" (p. 4). Alongside these open-air stalls markets incorporated various types of covered space (p. 5). This was referred to as the "market house" (p. 7). The market house was a multiuse space, which generally accommodated market stalls with perishable items and administrative activities, such as weighing or measuring, in the ground level arcade and above a range of activities from town jails and a

residence for the market keeper, to the town hall (p. 7). Aside from changes in materiality from wood to masonry, this structure remained largely unchanged in form until the mid-eighteenth century (p. 7). Notably, the majority of the market lay outside of this building, consisting of wooden stalls and cloth roofs, the placement of which was unplanned and disorderly and transient in nature (p. 8).

Significantly, these market spaces were places of entertainment as well as commerce. Largely, this entertainment was produced by, and geared towards, the lower working classes. In the late 18th century and moving into the 19th century, markets were increasingly "split into specialty areas, which often spread out up and down nearby streets" (Schmiechen & Carls, 1999, p. 5). This was a middle class attempt to make the market more respectable in response to the growth of towns, the congestion on the streets due to the markets and the crime associated with these markets. However, this trend "proved to be inconvenient and unpopular with the buyer and seller alike" (p. 28). In response, there was a movement to an "enclosed, centralized market and the birth of the market hall" as a dominant structure (p. 28). Again this space was centrally located but this time the space was either fully or partially enclosed. These large spaces became a place for "considerable spatial and architectural experimentation" and introduced a new vernacular (p. 31).

In the development of this new vernacular in the early nineteenth century inspiration largely came from historical precedents like "the classical agora and temple, the renaissance piazza, the middle eastern bazaar, and the late eighteenth-century French glass-covered arcade" (Schmiechen & Carls, 1999, p.

63). The development of this glass roof structure marked the market hall architecture of the industrial revolution. While the interiors of these market halls, with their glassed in roofs, were innovative for the time, the exterior was less then awe-inspiring. As Schmiechen and Carls state, "Sheer, size, bulk, and economy, therefore, made the market hall ideal for the simplicity and flatness of elevation inherent in the classical revival and Renaissance styles" (p. 84). In the late nineteenth century in an effort to reinvent the exterior of the marketplace to increase marketability "large plate-glass shop fronts" were incorporated to market wares to the street (p. 87).

In the interior of the market hall "the placement of stalls and shops and the layout of the aisles were critical in establishing retail patterns as well as social market behavior" (Schmiechen & Carls, 1999, p. 105). Specifically, the location of the pillars dictated the "interior arrangement" where stalls were placed "by breaking the market up into alleys or sections" (p. 105). Further integral components to the design of the market were the inclusion of "interior storage facilities and convenient cart entrances" (p. 107). Another important component was that the "architect had to arrange the internal space without giving undue prominence to any particular stall or shop" (p. 107). This often led to an increasing standardization of shutters, lighting, signage and fixtures (p. 108). This concept of equality also played out in the placement of entrances. Generally, there was a multitude of entrances with precedence given to none (p. 107). However, all of these entrances were accentuated from the exterior to draw people in. Notably, stairs were considered undesirable and unprofitable in the

entrances. "Most markets were built with an understanding that shoppers disliked having to move up or down stairs", Schmiechen and Carls state (p. 110). Instead, slopes were added to compensate for differences between street levels and the market (p. 111).

Market halls were often multi-use spaces and frequently incorporated "restaurants and snack bars", "offices for market clerks" and "public lavatories" (Schmiechen & Carls, 1999, p. 112). Flooring ranged, over time and location, from "thin stones of various lengths and breadths" and "yellow-brick" to "a concrete floor known as a 'filler joist' floor" (p. 113). Asphalt floors became common in the mid-nineteenth century for their sanitation and acoustic attributes (p. 133). Lighting mainly came from the glass ceiling. However, this often caused too much heat to accumulate in the interior environment. To counteract the adverse effects that this heat had on the market goods, material was often hung to create shade, atriums were located on an east-to-west axis in order to capitalize on the northern sun, and often clouded glass was utilized in the construction of the atria in order to counteract the suns rays (p.113). Gas lighting and electricity were used in place of daylight in nighttime hours. Common materials utilized in the design of a market were "glazed tiles, salt glazed bricks, terrazzo, glazed slate, and glass", which were incorporated because "they were nonabsorbent and could be washed down" (p. 133). In the mid-nineteenth century "white glazed tiles" became widely used because they were considered "sanitary" and "reflected light" (p. 113). Of note was the incorporation in most market places of clocks.

By the nineteenth century markets were a powerful social, political and economic force. Often located at the centre of town, it was a popular place, sought after as "a source of cheap food and free entertainment" (Schmiechen & Carls, 1999, p. 160). It was also "one of the town's principal promenade[s]" (p. 162). To a great extent, the market became a place of social mixing where individuals from all walks of life could be viewed. However, generally the middle classes went to the markets in the morning and towards the end of the week while the working classes went in the afternoon and at night (p. 165). Also, the mixing was on "middle-class terms" and aimed at "imparting" middle class values to the working classes, a reversal from the earlier open-air markets. Notably, the public market was also "one of the town's major employers" and "because of its size and location, was frequently the center of the town's social and political activities" (p. 163 -170).

A contemporary vernacular that has evolved out of the indoor market is the festival marketplace. According to Bednar (1989) in *Interior Pedestrian Places*, the festival marketplace "combines entertainment, socialization, specialty shopping, and recreational eating – usually in a historic setting" (p. 92). As the "predominant marketing strategy" the festival marketplace relies on "visual merchandising", which involves displaying goods in an appealing setting" (p. 64). As such, the "environmental character of the public space" becomes its "primary attraction" (p. 64). These markets "are full of shifts in plan and section geometry, which are intended to form a series of linked spaces. In part, "these spaces are modeled on the souk, or bazaar, spaces that are revealed through discovery." (p.

97) This feeling of discovery is reinforced through a multitude of entrances that allows for a "unique" experience depending on the route chosen" (p. 98). One of the most prominent design attributes of this type of market is "the fluid relationship of inside to outside pedestrian space", which creates an equilibrium between "the private commercial space" and the "public social space" (p. 94). As such, the visitor is at liberty to shop or stroll.

2.6 Summary

This section discusses five different, but interconnected, types of space: a) adaptive reuse, b) public space, c) interior pedestrian spaces, d) atria and markets. By doing so the discussion moves from a macro approach, the form that the redesign of the Woodward's building will take, an adaptive reuse project, and successively narrows this down to a more micro level, the creation of a marketplace. Each subsection provides a background and analysis of these various types of space. Laced through this analysis is a description of how these spaces interact with environmental, economic and social sustainability. What emerges is an in-depth understanding of the complex space that this redevelopment of Woodward's is attempting to create. The theory investigated in the following chapter takes up this topic of complexity and explores its conceptual and material implications.

3 THEORETICAL ANALYSIS

"The new comes into being when we change the figure-ground relation, when we challenge the established order of inside/outside and container/contained; it occurs in the space in-between, at the margins that every order produces as its supplement and necessarily excludes as its Other. The new emerges in pockets, in folds, where the established order is reversed, in heterotopias, where the dominating grammar is questioned and invented anew" (Kornberger & Clegg, 2003, p. 78).

New conceptions of space as a social object have arisen from social theorists, geographers, sociologists and anthropologists, including Henri Lefebvre, Michel Foucault, Gaston Bachelard, Gilles Deleuze and Jacques Derrida. In his book *The Badlands of Modernity: Heterotopia and Social Ordering*, sociologist Kevin Hetherington (1997) refers to these social conceptions as a new cultural geography of which he suggests there are a "number of key theoretical claims" (p. 20). The first precept is that "space and place are not treated as sets of relations outside of society but implicated in the production of those social relations and are themselves, in turn, socially produced" (p. 20). The second is that "space and place are seen to be situated within relations of power and in some cases within relations of power-knowledge" (p. 20). In addition, "power is said to be performed through spatial relations and encoded in the representation of space or as 'place myths'" (p. 20). Third, "spatial relations and places associated with those spatial relations are seen to be multiple and contested" (p. 20). More explicitly, frequently space means different things for different people. To the extent that a space is dictated by dominant or "hegemonic discourse" within the same space "interstitial or marginal spaces" can exist in which the

dominant discourse can be challenged (p. 20). Hetherington asserts that these ideas have had a significant impact on "spatial theory" (p. 20). In particular, concepts and places of resistance, transgression and margins have "become one of the main foci that characterize this new cultural geography" (p. 21).

These precepts of a new cultural geography are useful for this project because it involves a plurality of goals. It is interested in the reconceptualization of public space, addressing the three dimensions of sustainability, representing the various users groups and exploring the multiplicities of Woodward's history through adaptive reuse. This design aims at giving form to these concepts by supplying an appropriate design for a manifold of social relationships. In order to create this type of space this project draws on two theories in particular, Michel Foucault's concept of heterotopia and Gilles Deleuze's concept of the fold. These concepts are integral to this discussion because,

> Both concepts allow us to think space socially: they question the contemporary obsession with order; they rethink the simple but powerful inside/outside division that still informs spatial reflections widely, as the fold and Heterotopia are both spatial and social concepts that reframe a generative building's very core and pose anew questions of dis/order, flexibility, problem generating, movement and design. (Kornberger & Clegg, 2003, p. 81)

Importantly, these theories are attractive because they combine the spatial and the social, with the aesthetic not being lost in the process. They respond to the plurality of elements that this project seeks to address, such as negotiating the space between public and private, inside and outside. Significantly, they advocate spaces where "events can unfold" and dualities can exists, which allows for plurality and change (p. 88). In this sense, the site can facilitate its own

transformation, and incorporate broader social, economic and environmental shifts. Because the site is malleable, it can be formed and reformed by use.

In their article *The Architecture of Complexity* management experts Martin Kornberger and Stewart Clegg (2003) utilize these two theories in a discussion of organizational space in relation to management issues. Through utilizing these theories, they propose, "the interplay of order and disorder and inside/outside relation, which these spaces provide, are spatial preconditions of organizational change and creativity" (p. 75). In particular, they concentrate on the concept of temporality and how this can be accommodated in spatial form. Implicit in this idea of change is the concept a generative building. Generative suggests the ability to produce or create something. Kornberger and Clegg use this term to describe a type of architecture that leaves room for change, chance encounters, flexibility and a plurality of voices. More specifically they suggest generative buildings "encourage plurality, contradictions and dissensus through its spatial organization" (p. 80). They also state that generative buildings are often "built and designed by the people who inhabit them, or modified considerably beyond their designers plans" (p. 80). This type of building is often called minor, or guerilla, architecture and its creator's, illegal architects (p. 80-81). An example of guerilla architecture can be seen in protest architecture, in which protestors and activists "co-opted architecture as a tool for political demonstration" (Hosey, 2000, 147). Notably, the possibility remains open that architects and designers can also create this type of space. Creating a generative building suggests the

creation of a plan with no beginning or end – a space that allows for temporality, mutability and multiplicity.

3.1 Heterotopia - Michel Foucault

Foucault first expounded on his concept of heterotopia in *The Order of Things*, which dealt mainly with language and meaning. However, it was Foucault's speech to a group of architects in 1967 concerning the concept that facilitated its entry into the spatial vocabulary. In 1984 this speech was published under the name of *Des Espace Autres* by the French journal *Architecture/ Mouvement/ Continutie*. This paper was translated into English as *Of Other Spaces.* Originally a medical term, applied in the case of growths that are abnormal in situation, Foucault used the term to evoke a concept of a counter site - an in-between zone that allows for "spaces of alternate ordering" and otherness (Hetherington, 1997, vii). *Of Other Spaces* reveals six principles that frame the concept of heterotopia. Within these principles, Foucault discusses a myriad of different details, from heterotopic typologies and their entrances and exits (openings and closures) to time in relation to space. Included among the examples of possible heterotopic spaces are cemeteries, museums, libraries, fairgrounds, boats, prisons and gardens. Of particular interest to this discussion is Foucault's third principle, which states, "The Heterotopia is capable of juxtaposing in a single place several spaces, several sites that are in themselves incompatible" (Foucault, 1998, p. 32). This precept is useful to this project in the sense that it bridges binaries, place/nonplace, ordinary/extraordinary,

public/private, nature/man, social/economic, by allowing them to exist in the same space.

In *Of Other Spaces*, Foucault's description of heterotopia is alternatively vague and extremely detailed. In her article *Heterotopia Deserta: Las Vegas and Other Spaces*, Sarah Chaplin (2000), head of School of Architecture, Kingston University, London, refers to Foucault's treatment of heterotopia as "discursive ambivalence" (p. 205). Chaplin asserts that this ambivalence is used as a device to draw "attention to the interdependency between spatial theory and spatial practice" (p. 206). She sees this as a "productive fuzzy space" that allows scholar to take the concept of heterotopia and find "relevance" for it in "different contexts" (p. 206). Theoretically and practically, heterotopia invites the mixing of disparate elements, and by its very ambiguity invites a rethinking of space.

Indeed, a wealth of knowledge can be found in the scholarship built up around this concept. Chaplin (2000) makes reference to the Italian theorist Gianni Vattimo in the assertion that heterotopias as opposed to utopias, perfect places, are increasingly attractive to Western society. She states that a "paradigm change" took place in the 1960's between what Vattimo sees as "art and everyday life" (p. 211). This "shift has brought about a change in the dominant aesthetic sensibility, making contemporary Western society more predisposed towards images and sites of imperfection, compromise, hybridity and incompletion" (p. 210).[4]

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[4] In response to Vattimo's commentary, Chaplin suggests that "[i]f the shift from utopia to heterotopia is to do with the bringing together of art and everyday life and a revolution of taste values, then at its heart lies Pop Art" (p. 211). Notably, in the 1960s, Pop Art represented the popularization of art and, vice versa, the incorporation of fine art into popular culture through

Additionally, Foucault's term heterotopia engages the concept of utopia. However, unlike utopias, which by the very nature of their definition exist in no place or in "unreal space", Foucault suggests heterotopias inhabit "real sites" (Foucault, 1998, p. 26). In *Twice-Told Stories: The Double Erasure of Times Square* urban historian M. Christine Boyer (2001) describes Times Square as an example of "a heterotopic space juxtaposing in a single real place several types of space" (p. 32). It allows for otherness and by doing so flouts standards of representation.

Heterotopias are often located in urban sites due to the disparate parts of the urban fabric. In *Spaces of Hope*, geographer David Harvey (2000) asserts that heterotopia "encourages the idea of simultaneity of spatial plays that highlights choice, diversity and difference" (p. 184). As such, it allows for the examination of different "behaviors and politics" within the city as well as their rights "to shape parts of the city in a different image" (p. 184). Heterotopia is a refutation of a homogenous society and "by extension its utopian antidotes" (p. 184). The concept of heterotopia is based on the presumption that "connections to the dominant social order are, or can be, severed, attenuated, or, as in prison, totally inverted" (184-185). Essentially, it "questions the grammar of an existing order and destabilizes it" and "open[s] up a world full of gaps and differences" (Kornberger & Clegg, 2003, p. 85).

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challenging the idea of art as an elitist activity and by attempting to make it accessible to the general society. In essence, it represented a social movement similar to William Morris' attempt to create a design that was accessible to the masses. Like Pop Art, heterotopias are spaces that challenge order and break down constraints.

Kornberger and Clegg (2003) assert that there are "three realms" to heterotopia (p. 86). The first realm is heterotopia as a space for "experimentation and temptation" (p. 86). The second is hetorotopia as a "space for new languages" (p. 86). More specifically, "it is a place where one can hear voices that are normally not heard, where these dissonant voices are multiplied" (p. 86). The third is heterotopia as a "space for new identities" (p. 87). Essentially, a heterotopia is "a space where experimentation, new language games and new assemblages of human and non-human materials occur", ultimately resulting in new uses of different space (p. 87).

In his book *The Badlands of Modernity: Heterotopia & Social Ordering*, Kevin Hetherington (1997) states that often the word heterotopia is "substituted with marginal space, paradoxical space or third space" (p. 41). He cites six ways in which the term in contemporarily used. Of these six, three suit the concept of heterotopia explored in this project. These three, not in the original order, are as follows,

1. "As sites that are constituted as incongruous, or paradoxical, through socially transgressive practices" (p. 41).
2. "As sites that are ambivalent and uncertain because of the multiplicity of social meanings that are attached to them, often where the meaning of a site has changed or is openly contested." (p. 41).
3. "Sites that are marginalized within the dominant social spatialization" (p. 41).

Notably, Hetherington highlights the marketplace as an exemplary example of a heterotopia (p. 28). He states that the marketplace is " a pre-eminent paradoxical space associated with strangeness and Otherness: it

creates a world of the unfamiliar, chance encounters, the exotic, the pleasurable, and with throwing off social constraints in which the centre and the margin as distinct spaces are blurred" (p. 28-29). Moreover, markets, as multi-use spaces, bring together people, objects and building typologies that are not usually grouped together. This creates a "confusion" of "representations" that "marks" the market as a heterotopic space (p. 29).

3.2 Fold: Gilles Deleuze

The concept of the fold is not new, nor the sole invention of Deleuze. References to this concept can be found in Plato, Martin Heidegger and Stephane Mallarme (Rajhman, 1993, p. 61). However, Deleuze's text *Le Pil* (the Fold) is unique for drawing out the concept of the fold and spatiality in terms of the Baroque and a rethinking of German philosopher and mathematician Gottfried Wilhelm von Leibniz. Moreover, this text draws correlations between conceptual space and tangible space. It explores "conceptual space as something 'pliable' or even susceptible of being folded, unfolded and refolded anew" (p. 61). And suggests that if conceptual space is pliable to being folded in multiple ways then so to can tangible space. Importantly, Deleuze displays an interest in closures, openings, surfaces, boundaries and bifurcations. The fold, similar to Foucault's heterotopia, allows for plurality and difference in the use of space. Also, like Foucault's heterotopia, the fold "can be deliberately created" (Kornberger & Clegg, 2003, p. 85)."

The fold addresses "the manner in which thought 'orients' itself within that space"(Kornberger & Clegg, 2003, p. 85). The idea of the fold "opens up a new

conception of space and time" (Eisenman, 1993, p. 24). It incorporates a concept of a singularity, which also contains difference - space as continuous but distinct. In other words, a totality made up of visible composite parts. The space of the fold can be conceptualized as drawing lines through the Cartesian grid. In essence, the fold decimates the grid. Singularity and multiplicity merge by connecting the grid, while still acknowledging the points. Combining the ideas of chance, destiny and multiplicity, the fold opens up new fields with the possibility of new rules. It encourages rather then eliminates chance, which in itself leads to an "erosion of determinism" (p. 62). The fold contains opportunities of visualizing differently- it makes room for things that did not previously exist. Fundamentally, the fold create a "mid-place' - a place of the unforeseen where difference and plurality can exist.

Deleuze uses the concept of the fold to explore ideas around boundaries, such as inside/outside, inclusion/exclusion (Kornberger & Clegg, 2003, p. 82). Significantly, he views social boundaries as negotiable zones. The fold is an intermittent or interstitial space. As Kornberger and Clegg suggest in *The Architecture of Complexity*, "folding produces ambiguous spaces, neither inside nor outside, neither ordered nor chaotic but in-between, social spaces" (p. 84). It is a liminal space, a point of transition. In *Folding in Time: The Singularity of Rebstock*, Peter Eisenman (1993) describes it as a " zone of undecidability" (p. 24). It is in these zones that Deleuze asserts, "identity is formed and transformed" (Kornberger & Clegg, p. 84). As a "space in-between, the fold is a passage that enables identities to be formed beyond the dominating image of a

linear development in time" (p. 87). Specifically, passages represent these "spatial zones of becoming" (p. 84).

Like Foucault's heterotopia, Deleuze's fold contains an element of "temporality" (Rajiman, 1993, p. 61). Folds are "transitional and marginal zones" (Kornberger & Clegg, 2003, p. 84). Often these can be neutral, interactive zones. Kornberger and Clegg illustrate these spaces as "the balcony where teacher and taught smoke a cigarette" in a "non-smoking building", "the library where both meet because of their lack of knowledge; or the chance encounter over latte in the local café" (p. 85). As evident, the fold is neither an inside/outside, exclusive/inclusive space but rather an interstitial zone, a space in-between. This space of alteration and passage is a place "where heterogeneous things intermingle and events unfold" (p. 83). Quintessentially, a fold is created where the lines between the inside/outside, included/excluded, and public/private blur, and new interaction takes place.

3.3 Summary

In order to create a space, which encompasses the multi-faceted nature of sustainability and the Woodward's building this project draws on Michel Foucault's concept of heterotopia and Gilles Deleuze's concept of the fold. Both the fold and heterotopia are spatial and social concepts, which respond to the plurality of elements in this project. Theory allows us to go beyond the practical components of structure and see space as serving other much less tangible needs. Importantly, these theories witness a shift from the tangible to intangible and underscore the mutability of space. Theory is an important component of the

design process and, as illustrated in the example of Times Square, is already present in contemporary design and practice. Consulting the works of prominent theorist like Foucault and Deleuze draws out this presence and relates it to broader intellectual trends. It puts a name to the phenomena and by doing so exposes the implications of design and suggests how theory can bolster space. The conscious application of theory can augment and improve the built environment.

4 CASE STUDIES: EXPLORATION & DESCRIPTION

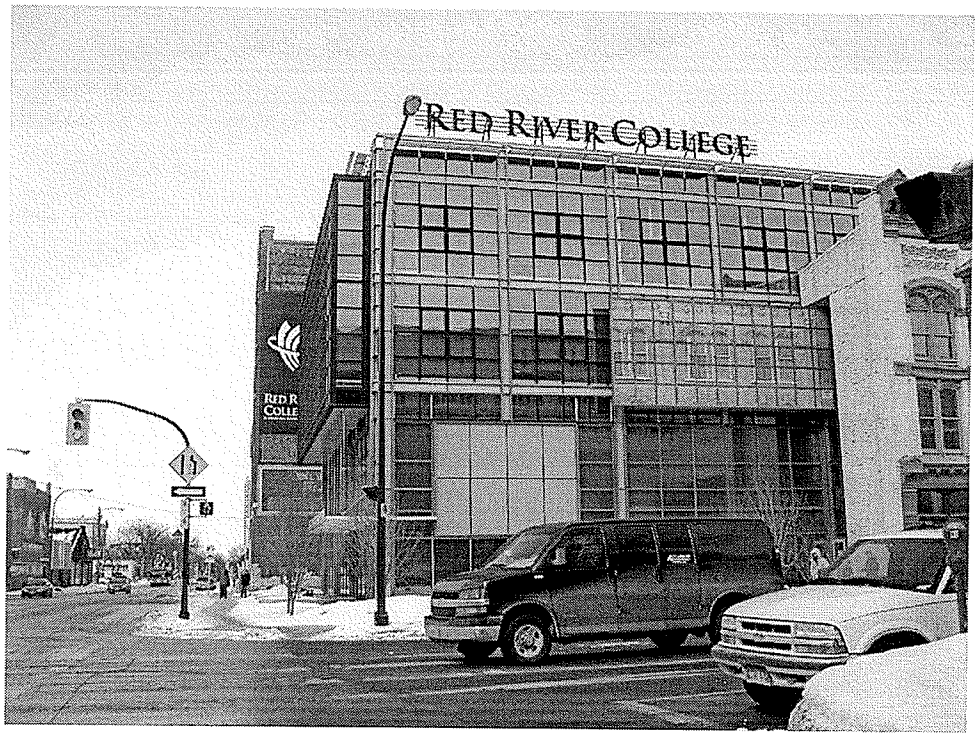
For the purposes of this project three case studies were conducted: the Princess Street Campus of Red River College in Winnipeg, Manitoba; Vancouver's Public Library in Vancouver, British Columbia; and The Hull House in Chicago, Illinois. These case studies allow for specific discussions of topics that are pertinent to this project. The Princess Street Campus is an example of an adaptive reuse project that seeks to incorporate environmental sustainability. Its clever juxtaposition of contemporary technology and architecture within a historical context make it an excellent precedent for this project. Furthermore, its use of the atria form as a public concourse also renders it attractive. The Vancouver Public Library is a useful precedent because it deals with issues of revitalization and public space within the same region as the Woodward's building. Like the Princess Street Campus it also uses an atria form to create an interior pedestrian space. Moreover, it is a valuable case study for its label as a heterotopic space. The Hull House in Chicago is informative as a precedent because it is a multi-use community space that blurred the boundaries between public and private. Also, environmentally, socially and economically it strove for sustainability. Finally, it can be seen to contain both heterotopic and fold-like qualities. Significantly, all three of these projects are explored for their conceptual as well as material significance.

4.1 Red River College, Princess Street Campus, Winnipeg, Manitoba

The Princess Street Campus of the Red River College (Figure 2) was constructed and opened in three phases from 2002 through 2004 by Corbett Citanel Architects. Its development involved "the refurbishment of an entire city block in downtown Winnipeg to provide a satellite campus for the media and information technology programs" for Red River College (McMinn, 2003, p. 16). Like the Woodward's project, the development of this campus was "intended to act as a catalyst to stimulate redevelopment of the surrounding area" (p. 16). Notably, the Princess Street Campus displays "a variety of approaches to environmental [design] that includes the re-use of materials, energy efficiency, and building on a Brownfield site" (Canadian Architect, 2004, p. 20).

The campus is an exemplary example of preservation mixed with environmental design. Located in the exchange district it comprises "the addition of a new simple steel frame building that is stitched into the remaining warehouse buildings" (Canadian Architect, 2004, p. 21). This enables the campus to preserve the heritage of the historic buildings while creating a functional space (Figure 2). Moreover, through this device the structure "evokes a scale and character of similar buildings within the Exchange District's context while providing a clear juxtaposition between new and old" (p. 21). Its historical context is also represented through "screened images of demolished building" and archival photographs, which adorn the interior (p. 21).

Figure 2: Exterior View, Princess Street Campus, Winnipeg MB



Integrated smoothly with "these features of historic interpretation" are various sustainable technologies. Significantly, the design "includes a linear garden that filters recycled gray water from washroom sinks and showers from the on-site fitness centre" (Canadian Architect, 2004, p. 20). A further water consumption measure is the use of waterless urinals. Moreover, "large expanses of industrial glazing allow for passive solar gain, ventilation, and natural daylighting, and take in views of the surrounding Exchange District context" (p. 20). Daylighting techniques are "augmented by artificial lighting activated by CO2 and occupancy sensors" (p. 17). Glazing is "spectrally-selective", which allows for" filtering out heat producing portions of the solar spectrum", while also allowing the "greatest possible visible light transmittance" (p. 20). The roof is planted in areas with prairie grass and "interior fit-outs" permit

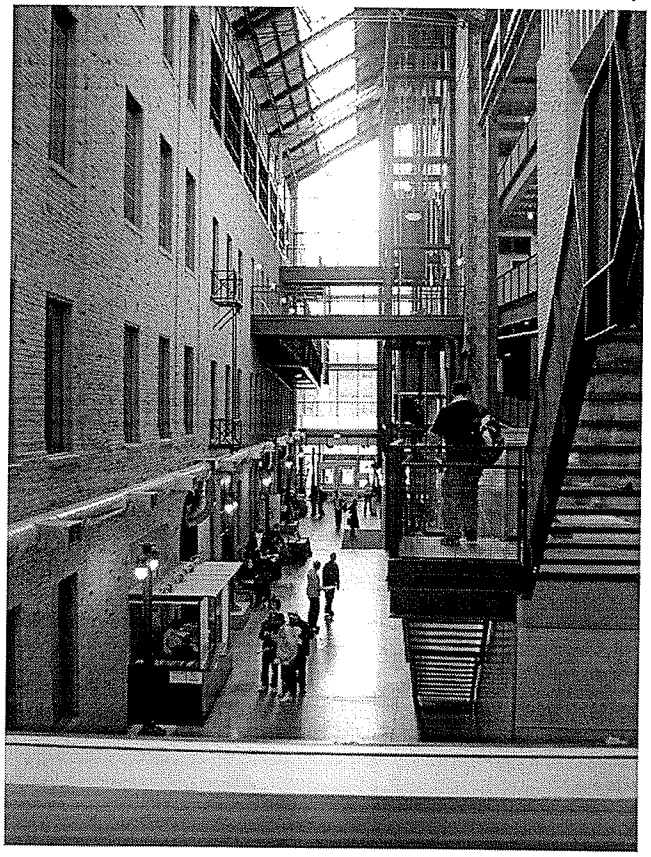
"flexibility without major interior reconstruction" (McMinn, 2003, p. 17). This kind of adaptability gives the design longevity. Finally, a photovoltaic panel has been incorporated into the design, which converts daylight into energy.

In terms of materiality, the Princess Street Campus is composed of "reclaimed brick, heavy timbers, glass, millwork and some tile" (McMinn, 2003, p. 16). As part of the environmental agenda "a large amount of material from existing building demolition, including timber trusses, case iron columns and re-usable lumber were salvaged in addition to the extensive re-use and restoration of millwork and windows from the Princess Street heritage facades." (p. 17) The demolitioned buildings' materials were reused and reconstituted, which aided in reducing the embodied energy of the redevelopment. Also, the design utilizes "low embodied energy, locally-sourced construction materials and low HCFC content insulation" (p. 17). The concept of dematerialization is further explored through "a reduction in the use of finishes such that materials are left in their natural colour or texture wherever possible" (Canadian Architect, 2004, p. 20). Moreover, "drywall, paint surfaces, ceramic tile and suspended ceilings have been reduced or eliminated wherever possible" (p. 20).

Particularly pertinent to this project, is its use of an atrium form to create a public concourse (Figure 3). This linear atrium links "three distinct building volumes" (McMinn, 2003, p.16). Fashioned "as an exterior laneway" the atrium also "acts as a climatic buffer zone to the adjoining spaces" (p. 16). Moreover, it provides both vertical and horizontal access. Multiple staircases and an elevator are utilized to access the upper levels of Red River College, while, horizontally

the concourse provides cross block connections. There are two main entrances into the atrium space, one on William Avenue and the other located on Elgin Avenue. From the exterior each of these entrances has a different, but prominent, visual character (Figure 4). As well, the atrium can be accessed through adjacent side spaces, such as the Tim Horton's. Within the space there is a security room, minimal plantings and access to washrooms and various adjacent spaces. Notably, the security office is glassed in, which allows for efficient visual regulation of the atrium space but also renders it a more conspicuous element.

Figure 3: Atria, Princess Street Campus, Winnipeg MB



Through the use of the atrium form the Princess Street Campus provides an excellent example of "interplay between interior and exterior spaces"

(Canadian Architect, 2004, p. 21). The curtain wall, which shapes the one side of the atrium, is situated back from the historic façade. Also, the use of glass creates a visual continuity between the street and the interior. A less successful element of the atrium is the weather buffer located at the two main entrances. Although it is an essential element in the Winnipeg climate, it serves to separate the exterior from the interior, severing the continuity of the streetscape.

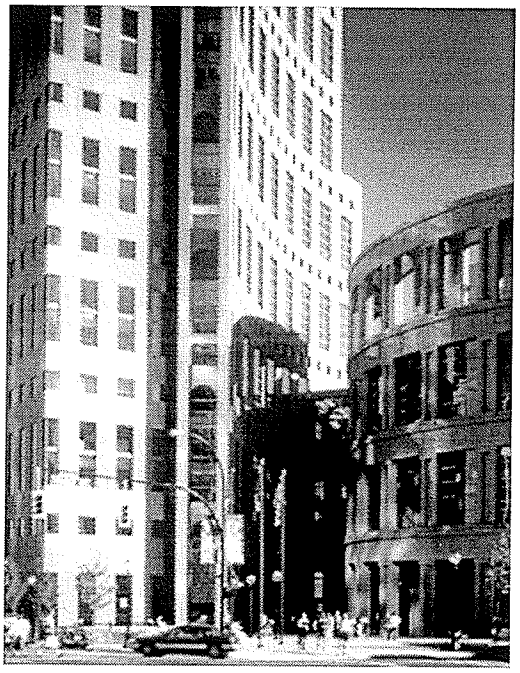
Figure 4: Atrium Entrances, Princess Street Campus, Winnipeg MB

William Avenue Elgin Avenue

4.2 Vancouver Public Library, British Columbia

Both Red River College and the Vancouver Public Library juxtapose old architecture against contemporary forms. However, whereas the Red River College is shaped within a historic neighborhood and structure, Vancouver's Public Library manufactures a historic exterior reminiscent of the Roman Coliseum. In her article *Ageographia, Heterotopia, and Vancouver's New Public Library*, Loretta Lees (1997) describes the library as a historical façade with "dramatic spaces and neoclassical detailing", which wraps around a surprisingly contemporary "rectangular library building" (p. 332). The entire building is set back from the street to create a pedestrian plaza that narrows as it is funneled into the interior (Figure 5). The severe "precast cladding of the outer shells – dense, gravity-bound, classically detailed – gives way to a modernist glazed interior" (Graif, 2000, p. 27).

Figure 5: Exterior View, Public Library, Vancouver BC



Note: From Moshie Safdie Archive, CAC, McGill

The Vancouver Public library is an appropriate case study for this project for a number of reasons. Like Woodward's it involves comparable issues of gentrification, revitalization and public space. Also, the public library is located "towards the eastern section of downtown" in a neighborhood marked by urban poverty, Granville Street, and situated alongside an extremely gentrified locale, Yale town (Lees, 1997, p. 331). Notably, according to Lees, one of the intents of the City of Vancouver in the construction of this space was to "stabilize or secure the rehabilitation or gentrification of the eastern fringe of downtown" (p. 333).

Designed by architect Moshe Safdie the public library was opened in June 1995 and received a wide range of critique. Overwhelmingly, the public responded positively to the design. However, building professionals largely critiqued it as a Disnesque design, which exemplified a pastiche of historical forms unconnected to the city and the subject matter. To a large degree the form of the public library expresses the City's agenda for the building. Rather then responding to the local context, the Vancouver Public Library was intended to be a civic landmark. The objective was to create a destination point in what was to be a revitalized city core. The architecture of the library communicates this disconnection with its "fortress-like imagery" that displays a dislocation from its context by spiraling "in on itself, away from the street, as if it were under siege" (Lees, 1997, p. 334). An article in the 1999 January edition of Architectural Review describes the public library as a structure "which looms rather threateningly from a downtown block" (p. 21). Rather then an interactive building,

its structure is "introverted" (Lees, 1997, p. 334).[5] As an entirety, the exterior of the public library ashh gives the impression of a private space rather then a public space.

According to Lees the faults of the exterior are in sharp contrast with the "gentle" interior whose "sunny top-lit arcade sweeps round the south side of the building providing a new enclosed urban space with little shops and cafes on the outer (curved) side" (Architectural Review, 1997, p. 21). Sandwiched between the façade and the library building, the plaza becomes "a cavernous atrium, surrounded by glass and filled with people shopping, strolling by, or seated in cafes" (Lees, 1997, p. 332). The atrium, which is overlooked by the "internal glass façade" of the rectangular library, is "formed by a second elliptical wall that defines the east side of the site" (Graif, 2000, p. 24). This "glass-roofed concourse serves as an entry foyer to the library" (p. 24). Cafes and retail stores are located on one side of the atrium and the library is located on the opposite side (Figure 6 & 7). A small bridge conveys people from the atrium space into the rectangular library building. Significantly, the atrium space is a particularly useful example for this project because it is a multi-use space that acts simultaneously as retail, passage and social space as well as public, private and semi-private space. It is also useful for its classification as a heterotopic space.

[5] Similarly, Lees suggests that "megasturctures" like the public library are often considered "anti-urban in that they are segregated from the city outside, and yet also attempt to recreate popular city life within" (p. 334).

Figure 6: Floor Plan, Public Library

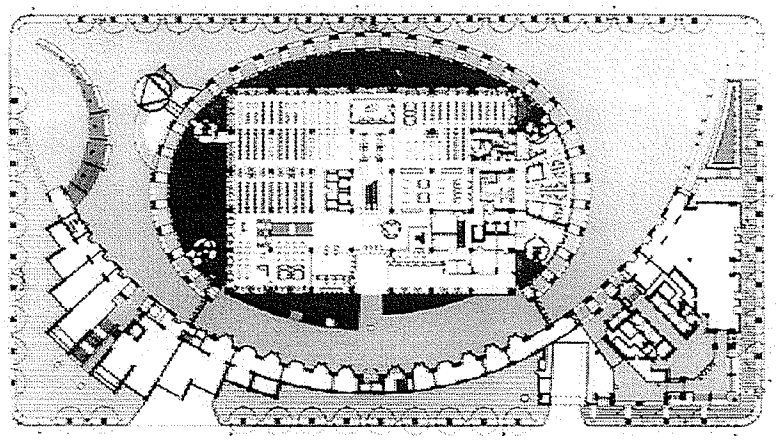


Figure 7: Atria, Public Library

Note: Both Photos From Moshie Safdie Archive, CAC, McGill

Despite receiving praise for its overall structure the atrium's content has been a source of much critique. Lees (1997) gives the following description of the content of this space,

> Designed as a liminal space inside of, yet outside of, the library, the arcade is lined with seven outdoor retail establishments (with seating in the arcade): global food outlets such as McDonald's, a Kamiya Japanese Restaurant, Flying Wedge Pizza, Gutenberg's Café, Sorento Market, Yogen Fruz, and Blenz Coffee, as well as a Toronto Dominion bank machine. (p. 336)

In particular, the type of retail has generated the critique that the environment created is "more shopping mall than street" (p. 336). As a mall generally represents private interests this suggests the lack of a true public space. In her article *The Paradox of Public Discourse: Designing Vancouver Library Square* Linda Lewin Graif (2000) details a follow up interview after the opening of the library in which one of the main complaints stated by the participant was, "the

concourse could have been more selective with the choice of vendors ... it feels a little too corporate/commercial" (p. 30). Another participant stated, "I'm mad that McDonald's is part of the complex and the food in general is too expensive. This is a community building and the stores don't relate to the community" (p. 30). Significantly, in content and in form the building is introverted.

Graif (2000) states, the program for the building's development "called for a dynamic, people-oriented information and cultural centre" (p. 20). However, as Lees (1997) illustrates, "Although homeless or street people and other so called social deviants are not specifically excluded by library policy, the fortress-style architecture, security consciousness, and middle-class ambience (bourgeois playground) of the library, in general, does nothing to attract them or make them feel at home" (p. 339). She suggests that this is an issue that was evident from the advent of the project,

> But what is missing from Safdie's sketch of the library, and from the real life street within it, 'are panhandlers, religious zealots and street punks who adhere to any surface intended as a public place. (p. 337)

The library, in form and policy, allows for only one interpretation of the concept of public and the acceptance of a particular type of person. What is introduced is an anesthetized public, which congregates within a sanitized interior street. Rather than a symbol of revitalization, the library has become a civic landmark for gentrification.

Lees (1997) describes the public library as "a controlled space" where "security guards patrol the library, atrium and courtyard" (p. 337). She states it is "the presence of this private security force", which "blurs the distinction between public and private space" (p. 338). This control extends to the exterior courtyard,

> These red-pink bricks delimit the library site, covering the open plazas at the front and back of the library and the surrogate street. No political or religious activity is allowed, nor may leaflets be distributed, within the library walls and these activities are restricted within the cobbled courtyards around Library Square. (p. 338)

Certain sections of the library display greater amounts of security. Understandably, the children and youth sections as well as the washrooms are some of the most regulated spaces. This security is cleverly implemented through form as well as policy. The children's area is located below the ground level and secured. The youth section is on the main level and visually open. The washrooms are positioned in the same place on each floor and have an "open design" with "large gaps above and below cubicle doors", enhanced lighting and are regularly patrolled (p. 339). Significantly, Lees points out these "public-safety measures" are often indispensable in guaranteeing "the publicness of this space for women and young children, who have traditionally found the unpolicied but otherwise public space of the street not especially safe" (p. 339). Less comprehensible is the accounts of homeless people being restricted from the library for lack of personal hygiene. Lees suggests that this "feeling of comfort and personal safety is a subjective one" and an equilibrium needs to be established between maintaining "the peace of some patrons in the library against the liberty of others" (p. 339).

Moderating her description of the public library as a place that in form and policy represents private interests, Lees (1997) suggests that the library can be seen as a device to "arrest the further alienation of the community" through its incorporation of public space both in the interior and exterior of the building (p.

334). In the same vain, Graif (2000) states that the atria, by creating a link between the exterior and the library, "presents "a meeting place for social, cultural, and commercial activities in all seasons" (p. 25). This space is one of the most "public space[s]" of the library – "exuberant, flooded with light and activity" (p. 27). Lees also contends that the atrium further "unsettles these fixed distinctions" by juxtaposing "traditionally separate elements of public and private space in one site, with civic, social and commercial functions liberally mixed together" (p. 337). It is "in the tensions of this liminal space" that Lees maintains, "the arcade seems to take on some of the heterotopia's qualities of transgression and reconstruction, opening up new possibilities for urban living" (p. 337).

Beyond the atria, Lees (1997) refers to the library's intellectual space as having "the greatest potential to be a democratic public space, for it is relatively free, open and offers possibilities for contestation" (p. 341). It is in this space that she sees the richest example of heterotopic qualities. Interestingly, in her discussion of its relation to Foucault's concept of heterotopia she refers to Deleuze as well,

> Both Foucault and Deleuze stressed the links between thought and chaos, flux, simultaneity and contemporaneity. It is within this intellectual space that the library is able to act in the terms of the heterotopia, as a contestory countersite, as a political space. Though abstract and immaterial, this site is directly related to the material site of the library by the very fact that the resources themselves, or the resources for accessing other resources are situated in the library building. (p. 342)

Beyond public access to the books, which is contended with reference to user fees and the need to have a set Vancouver address, the resource Lees is

referring to is the free Internet access that is supplied by the library. Conceptually, the Internet creates a fold within space; it allows for the existence of another sphere within a space. Lees suggests that the concept of heterotopia problematizes the distinction between "material and ideological space" (p. 342). The Internet space is an ideological space; however, "it is defined by the order of material space" (p. 342). The resistant space of the Internet is "realized through material space" and it is in this way that it becomes an embodied utopia – heterotopia.

4.3 The Hull House, Chicago, Illinois

Founded in Chicago, Illinois, in 1889 by Jane Addams and Ellen Gates Starr, The Hull House was a social settlement house, which physically began with the leasing of a 33-year-old house, built by Charles G. Hull in 1856 on 800 South Halsted Street (Figure 8). By 1907 it had grown into a 13-building complex that enveloped the original building (Figure 9). This complex covered half a city block and also included a nearby playground. The architect Allen Pond designed most of the expansions, including the Butler Art Gallery, the Jane Club, the Auditorium and the Coffee house.[6] Inhabited by middle-class men and women, the purpose of the Hull House settlers was to use their learning in a socially beneficial manner to educate and help the surrounding neighborhood. Notably, the Hull House was situated in an ethnically diverse region marked by urban poverty. A great deal of the Hull House resident's activities were aimed at helping immigrants adjust to a new American life. Among its accomplishments, the Hull

[6] Jane Addams met Allen Pond before she selected the original Hull House venue.

House brought in public baths, a public playground, a public kitchen, college extension courses, a public swimming pool, and a public gymnasium. It also sponsored a theater, a kindergarten, a nursery, a music school and an art gallery. Although mainly demolitioned in 1963, with the exception of a few of the buildings preserved as a museum, the Hull House Settlement continues as an institution today.

Figure 8: Hull House, Chicago IL

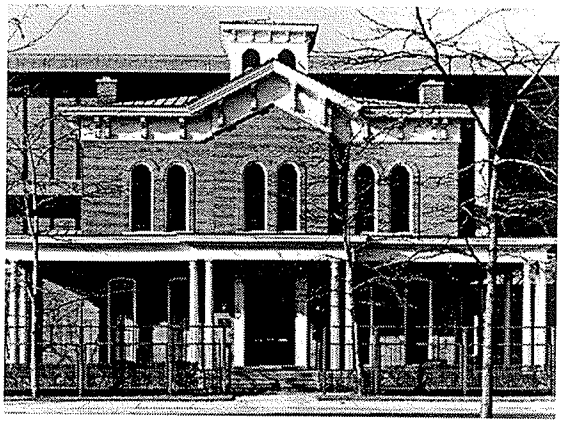
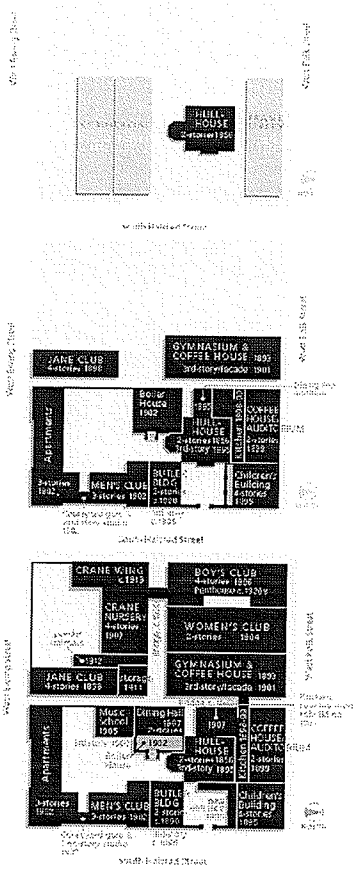


Figure 9: Evolution of Hull House



Note: Photos from *Urban Experience in Chicago: Hull-House and Its Neighborhoods, 1889-1963.* Retrieved from, http://www.uic.edu/jaddams/ll/urbanexp/geography/groundplans.htm

The Hull House complex was a multi-use space. It allowed for a variety of activities from domestic tasks and book readings to political activism. Sharon

Haar (2002) describes the various activities in *At Home in Public, The Hull House Settlement and the Study of the City*,

> Activities included extensive lectures, clubs, and classes, as well as a college extension department, an art exhibit room and studio, a public reading room, a summer school held at Rockford Seminary, a kindergarten, five bathrooms, a stamp station, a day nursery, and a diet kitchen. (p. 107)

The degrees in which these activities were accommodated by the architecture vary in the evolution of the House. By 1897, resident Dorothea Moore described the Hull House as "almost submerged" with only "the long windows and wide doorway to hint of the aspect that was its own" (Moore, 1897, p. 629). To a large part these modifications were "more intrinsic than external – growing out of growing needs – and therefore present in themselves a kind of rough estimate or history of them" (p. 629). Haar suggests that the Hull House, by virtue of being an object shaped by ever-changing concepts and circumstances, became an "embodied utopia", where there were constant shifts in its meaning and significance. Arguably, it could be said these shifts of meaning and significance and the resultant ambiguity and blurring of boundaries, renders the Hull House both heterotopic and fold-like. Indeed, an "embodied utopia", or an existing utopia, is, according to Foucault, a heterotopia.

Significantly, within the settlement "transience" became "crystallized" (Haar, 2002, p. 109). By growing and adapting in relation to how it was occupied, the Hull House was a generative building. As Haar argues, the Hull House was built through "repetition and iteration; neither objects nor subjects were fixed." (p. 105). Notably, the building that formed the basis of the Hull House settlement

preexisted the creation of the community. However, like the Vancouver Public Library, the Hull House was "functionalist architecture clothed in historicist iconography" (p. 105). Although, the settlement was initially created within an existing structure, this structure did not determine the activity that took place within it: "Victorian architecture need not compel Victorian lifestyles or values" (p. 105). Instead, the architecture was modified to accommodate changes in meaning within the community. It was a "trace" of societal activities (p. 109). Haar moderates this concept by stating that the architecture, despite this accommodation, is more then the sum of these activities. Instead, she suggests that it is "the interaction between message, inscription, and the materiality of the surface inscribed", which creates a space (p. 109). Rather then being a passive recipient of an idea, architecture actively engages in the formation of ideas. A space is formed where the message, the activity and the architecture meet. This is similar to Lee's discussion of the interaction between conceptual and material space outlined in the case study of Vancouver's public library. The arrangement of material space makes room for conceptual space.

In the Hull House settlement the distinctions between public and private spaces were largely "permeable and interdependent" (Haar, 2002, p. 109). Haar suggests that the settlement occupied an "ambiguous space" between "the personal and the political, the private and the public, the citizen and the city into lived experience, in space, through time" (p. 102). She describes spaces and "interests" within the Hull house as "overlapping, ambiguous" and at times "contradictory" (p. 99). And, she suggests that this ambiguity allowed for the

tangible and intangible boundaries that separate architecture, politics, community and the home to be removed. Notably, "the house was an extension of the homes of its neighbors" as well as a "forum for civic life paralleling that of the greater city." (p. 107). It offered "the domestic to the space of the city" and civic life to the community (p. 111). This fluidity was represented in the architecture as described by social activist Beatrice Webb,

> Hull House...is a spacious mansion, with all its rooms opening, American fashion, into each other. There are no doors, or, more exactly, no shut doors: the residents wander here, there and everywhere; the whole ground floor is, in fact, one continuous passage leading nowhere in particular. (From Beatrice Webb's American Diary, 1898, edited by David A. Shannon, 1963, quoted in Byron and Davis, p. 61).

Despite its physical stature, an "ensemble of thirteen buildings occupying a full city block", Addams did not consider the settlement a fixed institution but, instead, argued "for a sustained 'flexibility', adapting as the environment demanded" (Haar, 2002, p. 104).

The Hull House settlement represented a plurality of goals. Haar (2002) explores this, "Addams stated that the principle behind the plan, sometimes referred to as a scheme, was to ameliorate the social, economic and environmental problems of nineteenth-century urban life" (p. 101). This idea foreshadows the concept of sustainability explored in this project. These goals were met on material and conceptual levels. The buildings displayed an economy of resources, "the ceiling of the coffee room is formed by the actual tile arches that support the second floor, and these tiles, washed and treated to a single coat of boiled oil, ranging in color from a light whitish buff to a deep sienna, make a very effective and architectural ceiling, demonstrating the possibilities of the

material now universally hidden by plaster" (Pond, 1902, para 8). The Hull House's social role is self-evident. It supplied the neighborhood with a set of resources that aided in improving and sustaining the community culturally and physically. Economically, through the creation of social programs, low-income housing and neighborhood amenities, the Hull House contributed to the stability of the region.

4.4 Summary

These three case studies each exhibit particular characteristics that this project seeks to incorporate and, as such, are useful as precedents for this study The adaptive reuse of buildings, atria design and the incorporation of environmental sustainability are explored through the Winnipeg's Red River College. Ownership of public space, the atria form, issues of revitalization and gentrification as well as theories of heterotopia and the fold are exhibited in the case study of Vancouver's public library. Finally, multi-use space, private versus public space and the interface between architecture and social activity are explored through the case study of the Hull House. As is evident in the discussion of these precedents, each site outlines the possibilities and the pitfalls involved in addressing complex social and political issues with design. However, it is with the fuller understanding of their pitfalls and possibilities that this project can better incorporate the intent of spatial arrangement with its results.

5 THE DESIGN: BRINGING THE CONCEPTUAL INTO FORM

"The juxtaposition of the unusual creates a challenge to all settled representations; it challenges order and its sense of fixity and certainty. This process of similitude is revelatory, like a collage, it brings forward the out-of-place and offers it up as a basis for alternative perspectives and orderings, reveling what is hidden among the ruins: little fragments of the past, forgotten lives, found objects, strange, unsettling novel things that have a poetic wonder about them. (Hetherington, 1997, p. 50)"

So far this project has explored four different elements: a) a discussion of sustainability and its precepts, b) an analysis of pertinent topics including adaptive reuse, public space, interior pedestrian space, atria, and markets, c) an exploration of relevant theory, d) and a investigation of case studies. In this last chapter the preceding discussion is synthesized into a design, which looks at creating "coherence from the[se] forces at play" (Childs, 2004, p. 193).

5.1 Theory

An important intent of this design is to create a critical space, which brings together a collage of different viewpoints and representations. The theories of the fold and heterotopia allow for these multiplicities, and are transformed into form in various ways. In particular, a multi-use space allows for "random juxtaposition in creating alternative perspectives" (Hetherington, 1997, p. 43). Specifically, this project proposes the development of a mixed-use building, including underground parking, retail, non-profits, clinics, office space, and subsidized housing. This is the space between, alternatively interior/exterior, public/private, preservation/demolition, revitalization/gentrification, as well as the environmental, economical and social. Transitional spaces, such as "colonnades, front porches,

semi-public gateways and foyers, elaborate facades and courtyards" connect and "allow interaction and communication" between these different realms (Bednar, 1989, p. 240). Significantly, this project involves the creation of a public interior pedestrian area, which as a circulation space, links these various elements and forms this space in-between. This area contains the necessary ambiguity to incorporate and challenge various social concepts.

It can be argued that, in several ways, Woodward's is already a heterotopic space. Significantly, the protest that took place in the building created an embodied alternative. Protest construction challenges dominant paradigms,

> They are meant to temper the unchecked idealism of official space by dramatizing the conflict between ambition and obligation, between society's possibilities and its basic responsibilities. (Hosey, 2000, 157)

In *Slumming in Utopia: Protest Construction and the Iconography of Urban America*, architect Lance Hosey (2000) suggests that by, "Overlaying pictures of poverty and wealth, these installations play up class-defined divisions of urban space, the economic segmentation of the city" (p. 154). A "spatial montage" is created by the juxtaposition of these protest sites against civic architecture (p. 154). As such, these sites can be viewed as heterotopias in that they seek to establish a "counter-site" that is " not simply a figurative condition but a physical construct" (p. 154). In the current climate sustainable design can also be considered heterotopic. It is an embodied alternative that exists within a different narrative. In essence sustainable design is protest architecture – it represents an alternative juxtaposed against the existing infrastructure. In itself, the interior pedestrian space created in this design can be classified as a heterotopic space because of the different components it consists of and purposes it serves, such

as the mixing of old and new, rich and poor, public and private. The emphasis on recycling, buildings, materials and functions, enhances the site's heterotopic nature. Significantly, disparate elements are brought together to create a new shape and form a different type of space. Notably, this design utilizes, like protest architecture, which partakes in architectural cannibalism, materials salvaged from the existing infrastructure in order to create an alternative. Salvaged brick and scaffolding are utilized in the construction, and a discarded shipping freight houses one of the most theoretical spaces in the design – an area for free Internet access. As illustrated in the case study of Vancouver's public library, unregulated Internet space creates an intellectual countersite, which permits contestation of existing norms and values

Likewise, Woodward's already contains many of the attributes of a fold space. To start, the retail store, the protest and the development have coexisted within the same space. The concept of the fold allows room for a design that "is a present that gathers the past and holds the future pregnantly" (Till, 2000, p. 291). The adaptive reuse of the Woodward's building is a way to explore these attributes and form a space of connection between these different events. Notably, incorporating new architecture with older architecture highlights the different ages of the building. Adding an atrium also creates a fold in the Woodward's building as well as in the streetscape. It forms a space in-between effectively mediating between inside/outside and public/private. The distinctions between indoor and outdoor space blur as the atrium creates an indoor/outdoor space with the street continuing through the building and the weather partially

buffered against. Significantly, the atrium creates a transitional space as well as a destination spot and poses a challenge to Vancouver's grid system by slicing through the building to create a connection between Cordova and West Hastings. Also, on a smaller scale, the inclusion of benches in the recycling centre renders it fold-like by allowing it to be a place for leisure, spontaneous meetings and recycling.

Combining these two theories, this project seeks to create a generative space that is user defined and created. Various seating platforms allow for a variety of uses including sitting, leaning, tying shoes and placing bags. The multitude of plantings creates a changing, generative environment through growth. And open spaces allow for spontaneous activities. Areas of the space are open to reconceptualization. Shipping freights house seating areas that can be utilized for eating, socializing and game playing. These freights are on track systems and can be moved, or modified, to accommodate changing needs. Also, large planters on castors allow for the plantings to be moved and regrouped. The stage area continues this theme of flexibility and user adaptability by incorporating bleacher-like seating that can be pulled out when the area is in use. Importantly, this creates a space that can evolve and grow over time, like the trees and plants that inhabit it, to meet, hopefully, evolving community needs.

5.2 Atria

Slicing through the Woodward's building to create an atrium space is a way of addressing the multiplicitous nature of this project. It creates a heterotopic-fold space that allows for the simultaneous recognition of all three of

the dimensions of sustainability: environmental, economic and social. The atrium establishes an indoor streetscape, which spans the Woodward's building and, through this, the dichotomies of the surrounding neighborhood manifest in the creeping gentrification of Gastown and the extreme poverty of Hastings Street. This cross block passageway has two main entrances. On Hastings, the atrium space is visually extended into the street through the use of a metal awning. Visual transparency enhances this connection by allowing both the inside and outside to be readily assessed. Rather then forming a straight line, the atria twists and turns creating a space that suggests play and a multitude of opportunities. Similar to Vancouver's Public Library, the Cordova Street entrance is recessed from the street, which allows the exterior to spill into the interior creating a visual and contextual continuity between the two. Reinforcing this is the transparency of the atrium, which challenges distinctions between outside and inside. Like the Hastings entrance, wood flooring is continued from the interior to the exterior. As well a railing slices through the glass disturbing the distinctions between the two.

5.3 Public Interior Pedestrian Place & Market

The atrium forms a public interior pedestrian space. This space offers a variety of experiences: a restaurant; a café; a sandwich shop; laundry facilities; a recycling depot; gardening shop; bakery; fresh seafood, meat and cheese; produce; exhibition area; restaurant; bookstore; children's play area; and a performance area. Located at the two main entrances, Hastings and Cordova, are bike parking, telephones and lockers. The Hastings' entrance incorporates an

existing staircase as well as the addition of a ramp for universal accessibility. A laundry facility is located near this entrance. It supplies coin-operated washers and dryers, a seating area, folding tables, lockers and industrial sinks. Adjacent to this space are washrooms, a to-go sandwich place and a gardening supplies store. A planter, holding a Norfolk pine, offers temporary seating. Progressing into the public atrium space a series of shipping freights are encountered, which offer spaces for seating, a desk area for information personnel and room for free internet access. This area leads into a large open space containing a performance stage. Spandex structures hanging over the stage create lighting as well as a projection surface. Framing this space are a bookstore, an interactive recycling depot and, on the second floor, a restaurant. A mezzanine runs overhead, defining the space as well as allowing passage from one side of the atrium to the other. Turning the corner, the atrium funnels into a more linear form. Located to one side of this space are a bakery counter, fresh meat and cheese counter and a fresh seafood counter. On the other, is an exhibition and artisan shop for local artists and artisan's to display their work. Jutting out over these shops is a series of balconies, which form public places to rest, meet or people watch from the second or third floors. Shipping freights and benches, framed by plantings, offer places to rest under the protection of an overhead canopy. The atrium takes a turn to the left and flows out through the Cordova entrance. In this area the ceiling height drops to three stories. A produce shop is located alongside of this space and a café and public washrooms along the other side. Large panes of glass render this space visually accessible from the atrium and

street. Accessible by stairs and elevators is a second level located on top of the produce area. This level forms a two-story garden, again visually accessible from the atria and the street. Within this garden space a variety of seating offers views in and out of the atrium.

This interior pedestrian space creates vertical as well as horizontal connections. Large expanses of glass augment these connections through transparency. Physically located on three levels, the public space is also visually connected to the remaining four levels of residential space. This verticality is enhanced by the use of elevators and stairs within the atrium space. Vertical accessibility blurs boundaries between public and private by allowing for private, public and semi-public to exist in the same space. Significantly, the elevators play an important role beyond enhancing the vertical connections of the building. They represent a space in-between. Although ostensibly a site for transportation, the elevator, as a "transitional" and "interstitial" site, also creates space for "strange encounters, [and] unusual coincidences" (Garfinkel, 2003, p.175). Encased in glass and wrapped by a staircase, the elevator represents a fold.

Throughout the atria space terrazzo flooring inlayed with wood serves to unite the atrium's disparate components. This fluidity is enhanced through the use of corrugated metal on the sides of the retail spaces and reclaimed brick from demolition on the remaining walls. Large glass windows, which mimic the exterior of the Woodward's building, create contextual continuity with the exterior as well as ample display areas. On the upper levels of the public space the railings of the balconies are composed of scaffolding and glass elements. Nature

inspired imagery is screened onto the glass to draw the greenery of the ground floor up into the higher levels. Wide ledges on the planter boxes, found throughout the space, create temporary seating. As well, ledges created by the wide sills of the retail windows provide a place to lean, sit or place bags.

5.4 Adaptive Reuse

The adaptive reuse component of this project has been heavily influenced by the research on preservation, functional diversification and hierarchy of uses, outlined in Chapter 2. In regards to this research, a market place and retail will be located at street level to draw people in, offices, non-profits, a daycare and clinics will be located on the second and third floor, and subsidized housing will take up the remainder of the building. Parking will be located in the basement as well as in an adjacent building to avoid the creation of a dead zone.

The design of the atrium seeks to disturb as little of the exterior of the Woodward's building as possible. Existing entrances are utilized, retail is retained along the Hastings and Abbott fronts and the original 1903 section of the building is left intact. Moreover, materials from demolitioned areas of the exterior, such as brick, are reused within the public atrium. Notably, the contemporary architecture of the atrium contrasts with the existing architecture. Glass emerges from the historic brick façade to create a juxtapositioning of old and new, while maintenance of rooflines creates a contextual continuity with the surrounding buildings.

As previously noted, the interior of Woodward's has already been stripped down to its basic structure, which allows for more flexibility in the design of the

interior.[7] However, in the redesign the columnar grid and ceiling heights are, with the exception of the atrium space, respected and maintained. The hollowed out core of the building, a result of previous demolition, is incorporated into the atrium volume in order to lessen the amount of new demolition. And existing staircases and elevator shafts are incorporated into the new design where possible.

Notably, the programming responds to the functional character of the surrounding neighborhood by incorporating basic necessities, like subsidized housing, non-profits, food services, Internet access and a recycling depot. With its incorporation of a retail and market space the public interior space of the atrium fulfills the traditional role of the Woodward's building, which provided a food floor and retail centre for the neighborhood. Also, like the original building, the redesign draws people in from outside the immediate locale by offering unique services, atmosphere and an attractive design.

5.5 Environmental Sustainability

Environmental sustainability is addressed on multiple levels. One of the main ways in which the environment is dealt with is through materiality. Careful choice of materials, as outlined below, aids in creating a healthy interior environment. The Terrazzo floors are partially composed of recycled glass. Benches in the recycling room are formed from tailgates, which highlight the function of the recycling depot as well as indicate the possibilities of reusing existing objects. The reuse of scaffolding from building construction as well as

[7] Refer to Section 4 of Appendix A, Programme Document, for more information on the current state of the Woodward's building and its historical significance.

shipping freights reinforces this environmental aesthetic and aids in reducing waste and energy use. Utilizing salvaged red brick from the Woodward's building is another example of reuse, which curtails demolition waste and energy use.

As illustrated in Figure III, the corrugated metal clad walls of the retail spaces have significant environmental benefits. Metal siding is highly recyclable. Notably, it is possible to obtain product that has been 90 percent-plus recycled. It is also very durable, light and easy to transport. Because of its durability it can be reused after its life in one building is over. Low maintenance also contributes to these environmental qualities. The majority of the flooring is composed of Terrazzo tile. The environmental features of this material, as outlined in Figure IV, are that Terrazzo does not absorb odors or pollutants, has a long life, is easily cleaned and maintained, and resists abrasion and wear, which gives it a very low life cycle cost. If installed with a cement and acrylic mortar, which have low emissions, it is a very safe flooring choice. Significantly, the Terrazzo tiles are made from recycled glass, improving its environmental performance. Within the design, salvaged wood is utilized in the wall construction and to create seating. As evident in Figure V, salvaged wood is a recyclable, non-toxic, durable, renewable natural resource. In particular, the use of salvaged wood rather then new wood aids in conserving resources and reducing waste. [8]

[8] Further information on the environmental qualities of the materials used can be found in Appendix B.

Table 2: Metal Siding

Extraction	Manufacturing Process	Building Operations	Waste Management
			Biodegradable
Recycled Content			Recyclable
		Nontoxic	Reusable
	Natural Materials	Longevity	

Note: Refer to Figure II in the Environmental Section of Chapter 2 for the key

Table 3: Glass Terrazzo Tiles

Extraction	Manufacturing Process	Building Operations	Waste Management
	Waste Reduction	Energy Efficiency	
Recycled Content			Recyclable
		Nontoxic	Reusable
	Natural Materials	Longevity	

Table 4: Salvaged Wood Floors

Extraction	Manufacturing Process	Building Operations	Waste Management
	Waste Reduction		Biodegradable
Recycled Content			Recyclable
		Nontoxic	Reusable
Salvaged	Embodied Energy Reduction	Renewable Energy Source (RES)	
Certified	Natural Materials	Longevity	

Within the design, water efficiency is achieved through a variety of methods. Rainwater is harvested from the roof and stored in ground level

cisterns. This is utilized for toilet flushing and plant irrigation. Low flush toilets supplement this water conservation. Moreover, a greywater system is incorporated into the second story garden. Through filtering the air, generous plantings also help create a healthy indoor environment.

An integral energy efficiency measure of this design is the daylighting attributes of the atrium. A great deal of Woodward's lighting will be supplied by daylighting. The building's high ceilings aid in daylighting effectiveness by allowing the light to penetrate deeper into the space. The structure of the atrium optimizes its daylighting potential. The atrium is "largely top-lit, and with a clear, unobstructed glazed roof to achieve the maximum transmission of light", which is ideal in a "temperate overcast climate" like Vancouver's (Saxon, 1983, p. 78). This allows "diffuse light from all parts of the sky" into the atrium (p. 78). The sawtooth roof structure is aligned East to West in order to maximize on light. Moreover, the atrium is wide, approximately 40 feet, which, in an overcast climate, allows more light to reach the lower floors. Reflective devices, like glass and metal cladding, also aid in maximizing the effects of the daylighting (p. 80).

Light is "drawn off for each storey only to the extent necessary, with the rest reflected back for further transmission downwards" by utilizing diffusing glass in varied strength from top to bottom (Saxon, 1983, p. 81). Planting can interfere with daylighting strategies because it absorbs light. In consideration, the sides of the atrium are left sparsely planted and landscaping is mainly kept to the floor of the atrium (p. 81). Where needed, electrical lights on photosensitive dimmers will

supplement the daylight. At night, rather then lighting the entire atrium, which would take significant amounts of energy, only the first three floors will be lit.

Vancouver's weather patterns calls for a warming atrium to maximize on the light. As such, this atrium is "designed to admit sun freely and will therefore generally be at least 5 degrees Celsius warmer than outside" (Saxon, 1983, p. 60). This has the result of "shortening the heating season in the surrounding accommodation and reducing fuel need" (p. 86). However, in the summer, the "surplus internal heat" created by Woodward's deep floor plan will need to be counteracted (p. 85). Offsetting this heat to some degree is the daylighting, which reduces electrical lighting loads. The green house and stack effects also help cool the atrium.[9] Space for warm air is accommodated for at the top of the atrium so it will not affect upper levels (p.87). Blinds also help to "preserve daylighting delivery cooling effects" (p. 87). Natural ventilation from the buffer atrium will help to create a healthy indoor air quality.

5. 6 Economic Sustainability

As evident in the previous sections, this redesign of Woodward's involves careful management of resources and cost reduction in energy and materials. These attributes fall under the purview of economic sustainability as well as environmental sustainability. There are, however, further components that

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[9] The greenhouse effect, in essence, is a warming effect created as a result of the radiation from the sun being able to pass through glass but not back out again (Saxon, 1983, p. 84). Saxon describes the stack effect as "the result of the action of pressure differences with altitude; air will always move from a lower opening to an upper one in any enclosed volume." (p. 84) Combined with wind over the openings and the "buoyancy of air warmed by the greenhouse effect there will be strong stratification of air by temperature in a tall closed volume, and an equally strong upward draught when openings are made." (p. 84)

address economic sustainability in Woodward's redesign. In particular, the content of this space encourages social relations and cohesion, which are aspects of social capital. In general, this is achieved through the creation of a flexible public space. And in particular, it is achieved by a design that can be reconfigured, adapted and customized by the users thereby promoting an open-ended approach to fostering social relations within the community.

Economic activity is generated through the incorporation of retail, and the generation of retail, maintenance and community-directed employment. Ideally, this economic activity draws from the locale's social capital, enhances connections, partnerships and strengthens the community. In addition, efficient heating, cooling and water systems, introduced by the atrium design and rainwater recycling have a socio-economic impact. Economically, these design components reduce the operating costs of running the building as well as the individual apartments. Socially, reduced operating costs free up resources for residents. Notably, many of the ways in which economic sustainability is addressed in this project, such as access to resources and opportunity, tie into social sustainability and are discussed in the next section.

5.7 Social Sustainability

Various components of this design play into social sustainability. Importantly, this design encourages socioeconomic diversity in the community through the creation of a mixed-use building, which house retail, subsidized housing, non-profits, and community/public space. Moreover, the interior public

space encourages demographic diversity with its broad range of services, amenities, and universal accessibility.

Universal accessibility is an important component of social sustainability. Ramps, wheel chair lifts and elevators populate the design. As regulated by the National Building Code, single steps, which can cause tripping, are not present in the design. Circulation space is ample and easily maneuverable. Braille is supplied in Wayfinding areas and the signage is bold and easily read. Also, seating is arranged in order to accommodate wheelchair access. In addition, the building encourages pedestrian accessibility. It is located near multiple forms of public transportation, including the sky train, seabus and street bus. A bike lane also runs by the building.

Notably, ample bike parking is located within the atria space to accommodate this bike traffic. Additionally, a parkade has recently been constructed adjacent to the building. Although, generally not associated with universal accessibility, these components contribute in making the building more accessible and, as such, more socially sustainable.

Inclusion is another central value in socially sustainable design. Social inclusion can take on many forms. For example, the commitment to universal accessibility demonstrated by this design represents inclusion. Significantly, the design promotes inclusion by eliminating "separate but equal facilities" in favor of facilities that are "integrated into one strong design" (Childs, 2004, p. 151). For example, the elevator and staircase are integrated into one massing. This ensures that physically disabled people can partake in the same experience as

physically abled people. Another way in which this design promotes inclusion is through the incorporation of design elements that accommodate transitional/ homeless people. Lockers at the entrances provide places to store belongings, a laundry area offers services and seating, a take-out sandwich shop provides food, and an information desk provides pamphlets and information on local services and shelters. Additionally, addressing issues such as social conflicts and feelings of social discomfort, also aids in creating a feeling of inclusion. Creating different zones that appeal to different groups alleviates discomfort and fences off potential conflict. This design offers a variety of seating, from open interactive areas, to more secluded places. Importantly, this design incorporates a variety of different activity zones that facilitates a variety of behavior, from people watching to game playing. Moreover, creating multiple entrances and exits "so that it is more difficult for a group to dominate an entrance" is also utilized (p. 81).

Promoting quality of life also falls under the auspices of social sustainability. This can involve designing for the benefit of disadvantaged groups, promoting healthy relations between people, strengthening cultural identity and empowering people. This design seeks to empower the community by emphasizing public forum, self-sufficiency, and environmental awareness, including recycling and material and resource use. Moreover, the flexible and interactive nature of the space invites users to take control of, and recognize their impact on, their environment. This is evident in the children's playground, which allows the children to create different configurations of the play area, the stage,

which may be altered to facilitate different audience sizes, and the shipping freights, which can be reconfigured according to need.

5.8 Furnishings

The furnishings that populate this design, as well the materials, are chosen for their sustainable qualities. A large deal of the seating is specked from Brent Comber Originals Inc., a local Vancouver manufacturer whose sculptural work also forms seating and table surfaces. Sourcing a Vancouver, or West Coast, manufacturer cuts down on transportation costs thereby reducing the embodied energy of the product. Adding to the environmental qualities of these pieces is that they are created out of reclaimed wood and inspired by scenery of the North West Coast (www.brentcomber.com/inspirations.html). Much of the wood supplied is sourced from BB Wood Recycling Ltd in partnership with the Burnaby Association for Community. These groups recycle discarded utility poles into dimensional lumber in order to make products, such as bollards. Sourcing this group ties into social sustainability; significantly, the Burnaby Association for Community offers skill development and support for people with disabilities, including experience in its wood shop (www.bamh.org). Benches and garbage receptacles are sourced from Wishbone Industries Ltd., another local manufacturer. These products are made from 100% post-consumer and industrial waste plastic (www.wishboneltd.com/main.html). Notably, the ergonomic design of these site furnishings taps social sustainability.[10]

[10] For more information on the environmental qualities of the furnishings refer to Appendix B

5.9 Security

In his book *Squares: A Public Place Design Guide for Urbanists*, Mark C. Childs (2004) outlines how design can facilitate security. Childs states, "the relationship between the design of places and crime is not clearly understood"; however, he also states that "there appear to be three approaches to reducing crime and disorder through physical design that are both promising and also apply to the design of civic places." (p. 81). The first is the idea of "occupancy proxy", which, in essence, identifies regular and thorough maintenance as a deterrent to vandalism, property or personal crime by indicating "someone is on the grounds" (p. 82). The second approach is natural scrutiny, which involves "seeing and being seen" (p. 82). This can be achieved through "provision of sufficient and even lighting", visual transparency and open sightlines (p. 82). The third approach deals with the concept of "situational crime prevention" (p. 82). In other words, certain crimes have been linked to particular spaces, such as dark alleys. Lighting these dark alleys or engaging anti-graffiti surfaces is "situational crime prevention" (p. 83). This design approaches the risk of crime through the creation of long interior sightlines, visual transparency and lighting. Natural security is invoked in a space that is constantly overlooked by the spaces above. Significantly, Childs' states when addressing this risk "care should be taken with this approach so that the plaza doesn't become an uninviting fortress" (p. 83).

5. 9 Summary

The adaptive reuse of the Woodward's building, the materials, furnishings and content reflect the goals of environmental, economic and social

sustainability. By carving an interior public pedestrian space out of the Woodward's building, this design challenges distinctions between interior and exterior, private and public. This connection is enhanced through the use of materiality and transparency. The theoretical precepts introduced by heterotopia and the fold reflect the need for a space that allows room for multiplicities and contestation, and bolsters transformation of regional conflict, strife and poverty, into an accessible, fluid interior public pedestrian space and market. While accommodating all walks of life in one space may seem an unachievable goal, this design proposes an accessible interior public space, not by being all encompassing, which, as demonstrated in the literature review is a rare characteristic of public space, but by encouraging contestation and multiplicity through inclusion and participation.

CONCLUSION: BRINGING IT TOGETHER

This practicum examines environmental, economic and social sustainability in the context of the Woodward's building in Vancouver, BC. Sustainability is an important concept in many different fields. Because rising Green House Gas emissions, dwindling supplies of fossil fuels, growing poverty and an increasing segregation of power and wealth underscore the importance of this issue, the possibilities it contains, for reshaping the way in which we interact in the world make it central. It should be considered more than just a subcategory in design, but one of the guiding principles, as illustrated by this practicum.

This project has three objectives. First, to introduce terms and concepts associated with sustainability. Second, supply various examples and theories that encompass sustainability and, third, to give form to the above precepts through the creation of a design. The literature review, which involves a discussion of adaptive reuse, public space, interior pedestrian space, atria and markets, frames the redesign of the Woodward's building. By referring to current researchers and scholars on the subjects, the literature review explores ideas that have been established on the topic as well as the strengths and weakness of these concepts. What emerges from this discussion is that the redesign of Woodward's involves the creation of a complex space. The challenge of identifying a complex space instigated a discussion of theory.

Michel Foucault's theory of heterotopia and Gilles Deleuze's theory of the fold supply a theoretical foundation for the formation of the design and serve as a basis for design innovation. Foucault's concept of heterotopia is utilized to

describe both aspects of the existing Woodward's site and particular aims of its redesign. Significantly, this concept is pertinent for its exploration of sites that can contain multiple meanings, thus offering room for contestation. This helps to frame the creation of a space that can contain the three dimensions of sustainability, address the multiple needs of the Woodward's neighborhood and create a design that, to a large part, contests current building practices. Similarly, Deleuze's discussion of the fold explores the conception of a space that encompasses plurality and multiplicity. A subtle difference between these two theories is that Foucault focuses on the juxtapositioning of different elements, while Deleuze focuses on the totality of composite parts, emphasizing the merging rather then juxtapositioning of different types of space as well as the space that forms this connection. As such, the concept of the fold demonstrates how the different elements of the project are brought together to create a cohesive space. Taken together, these theories propose the concept of generative space. This term is used to describe a style of architecture that allows room for adaptability, plurality and chance encounters. The creation of a generative space suggests the formation of a design with no beginning or end. It is a space formed through use.

The literature review and theory is bolstered by a review of three case studies, Vancouver's Public Library, Red River College's Princess Street Campus and Chicago's Hull House. This section validates design decisions by critically examining other design solutions engaged with similar topics. The case studies illustrate ways in which sustainability, theory and form interact. In each

case study the critical concern is the manner in which the precepts raised in the previous chapters manifest themselves in built example with various degrees of success. What emerges from this analysis is that topics, like sustainability, generative architecture, revitalization, theory and contested space are not new concepts and are, as underscored by the examples of Red River's Princess Street Campus and Vancouver's Public Library, still pertinent today.

This design creates an accessible interior public space, which answers the needs of diverse interests by incorporating the three dimensions of sustainability: the environmental, the economic and the social. The design, through adaptive reuse and an emphasis on materiality, displays a possible design solution to the Woodward building's specific context. This is achieved through a layering of materials, form, and content. This design proposes a variety of experiences; it is a place for socializing, for eating, for shopping and for playing. Ideally, interior public space facilitates connection and contestation. This is addressed in the design by the proposal of unmediated spaces, juxtaposed alongside structured, or arranged, sites that allow for flexible, generative use.

The underlying contention of this project is that interior design has a significant role to play in addressing complex issues, such as the multidimensional nature of sustainability, in a complex context like the Woodward's building. Together, the sections of my discussion propose a rationale for the ability of an interior public place to facilitate the needs of the immediate neighborhood as well as a broader social consciousness. I hope that

this research, as manifest in text and design, contributes towards creating a body of knowledge within the field of interior design.

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Figure References

Figure 1

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Figure 5, 6 & 7

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Figure 8 & 9

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PROGRAMMING INFORMATION

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VOODWARD'S
BUILDING

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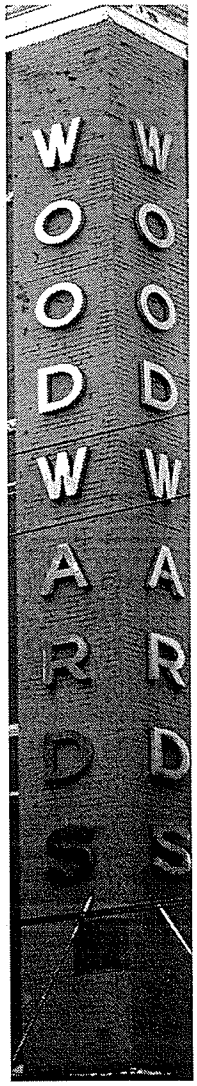


TABLE OF CONTENTS

1	**Executive Summary**	**110**
2	**The Site**	**111**
3	**The Neighborhood**	**114**
	3.1 Transportation Information and Provisions	114
	3.2 Traffic Pattern and Pedestrian Circulation	115
	3.3 Weather Patterns	115
4	**The Building**	**116**
	4.1 Background	116
	4.2 The Current Building	117
	4.3 Historic Significance	119
5	**Venue Profile**	**120**
	5.1 Capacity	120
	5.2 Hours of Operation and Duration	121
	5.3 Public Image	121
6	**User Profile**	**122**
	6.1 Employees & Their Job Functions	122
	6.2 Residents of the Building	122
	6.3 Neighborhood Uses	122
	6.4 Visitors	122
	6.5 Patron Demographics	123
7	**Functional Requirements**	**123**
	7.1 Hierarchy of Access (Security and Restrictions)	123
	7.2 Universal Design	123

8	**Spatial Requirements**	**124**
	8.1 Preliminary Spatial Organization	124
	8.2 Atrium	125
	8.3 The Market	125
	8.4 Circulation	125
	8.5 Information Access area	126
	8.6 Performance Area	126
	8.7 Anchor Food Store	126
	8.8 Gardening Supplies	126
	8.9 Recycling Depot	127
	8.10 Laundry	127
	8.11 Used/New Bookstore	127
	8.12 Café	127
	8.13 Play Area	128
	8.14 Artisan/Exhibition Space	128
	8.15 Washrooms	128
	8.16 Green Space	128
9	**Summary**	**131**
10	**References**	**132**

1 Executive Summary

Sustainable design involves a complex interplay of social, political and economic forces. It entails utilizing resources today in a manner that will not affect the choices of future generations (Gissen, 2003, p. 185). This is an increasingly pertinent issue as green house emissions continue to escalate, fossil fuels dwindle, poverty continues to be prevalent in urban inner cities and the concept of social capital remains unexplored. This practicum seeks to demonstrate the possibility that the design of a sustainable environment, with an emphasis on materiality, can benefit the environment, the social context and the economy.

The proposed site for this study is the Woodward's building in Vancouver, British Columbia. The Woodward's building contains a unique set of characteristics that make it an ideal medium for this project. Significantly, the city of Vancouver is currently planning Woodward's redevelopment, which will involve the application of new materials and a creation of a new function for the building. As a result, the extent to which the building is restored, recycled and retrofitted is significant in this design process. Central to this redevelopment is the concept that it be developed in a manner that is "socially, environmentally and economically sustainable" (City of Vancouver, 2004, p.1). Notably, the redesign of the building would allow for all three components of sustainability - environmental, social and economic - to be addressed. The Woodward's building is situated within a neighborhood that has suffered an economic slump with high unemployment, an exodus of business and a dearth of new investment. Woodward's redesign needs to reassert its pivotal community role, by promoting, enhancing and maintaining the community.

This project will concentrate on the design of an interior pedestrian place in a manner that is environmentally, socially and economically sustainable. According to the City of Vancouver, the redevelopment of Woodward's must have a community focus and stimulate growth. An interior pedestrian place creates a focal point in the community for the local residents and generates

economic activity. This space will mainly occupy the first floor of the existing Woodward's building. The square footage is approximately 79, 236 square feet. The remaining floors of the Woodward's building, although programmed for residential and commercial use, will not be addressed in this design.

2 Site

Located in the 100 block of West Hastings Street, the Woodward's building is bordered by three distinct heritage areas, Victory Square, Gastown and the West Hastings Street Corridor. Victory Square was constructed in the 1920's and is used for Remembrance Day ceremonies. Gastown is one of Vancouver's oldest historical warehouse and commercial areas. Buildings in this area date from 1886 to 1914. This area has been largely gentrified with high-end retail, residence, bars and lounges. The Hastings Street Corridor was constructed around the turn of the 19th century and remains largely undeveloped. Many of the buildings are not currently in use. As of the 2001 consensus the storefront vacancy rate on Hastings Street, between Cambie and Main, was 50% (Central Area Planning, 2001, p. 27).

A survey of the surrounding areas reveals a range of businesses and activity. South of the Woodward's building, along Hastings Street, there are approximately a dozen abandoned buildings, a pawn shop and various substandard apartments. The North side, marked by West Cordova Street and bordered by Gastown, shows development with a new parkade and redeveloped apartments/loft space and a café. Along the East side of the building runs Abbott Street, which contains a low-end pub and Chinese-food eatery. West of Woodward's, towards Cambie Street, is an empty lot bordered by the Cambie pub, a student and blue-collar pub. There is a striking economic difference between West Cordova and West Hastings, which the Woodward's building straddles. On the Cordova side there is Gastown, a major tourism and business center; while, the Hastings side houses some of Canada's worst urban poverty, punctuated by open drug abuse.

Figure 10: View of Woodward's from Cordova & Cambie

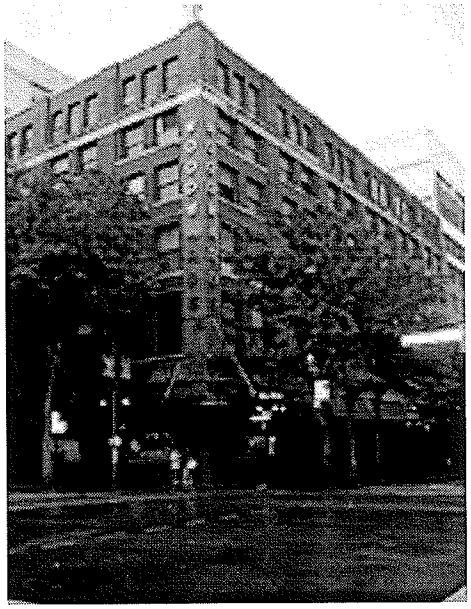


Figure 11: View of Woodward's from the corner of Hastings and Abbott

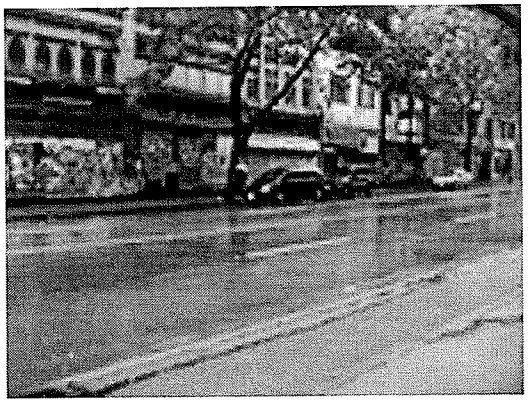


Figure 12: Boarded up shops in the 100 block of West Hastings

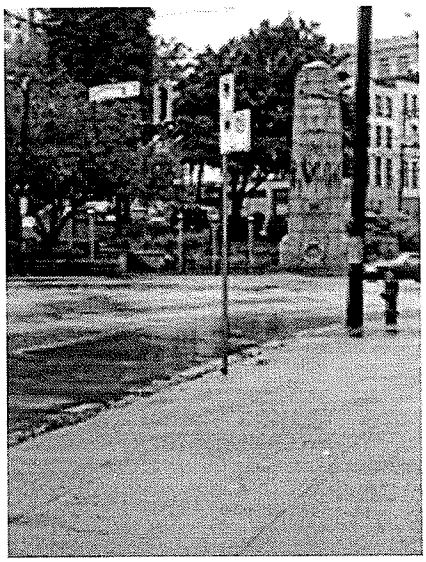
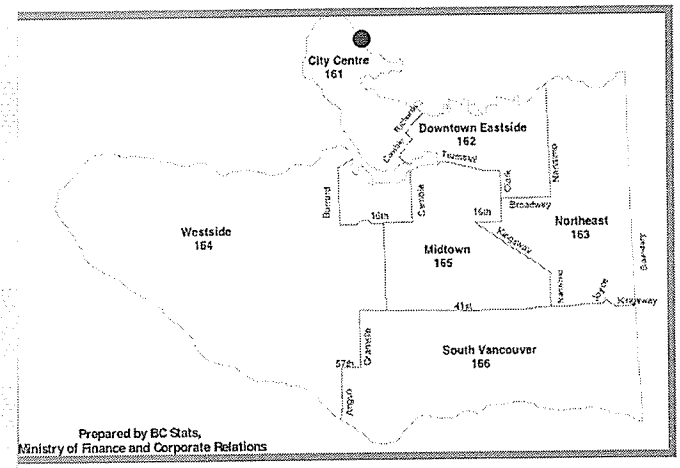


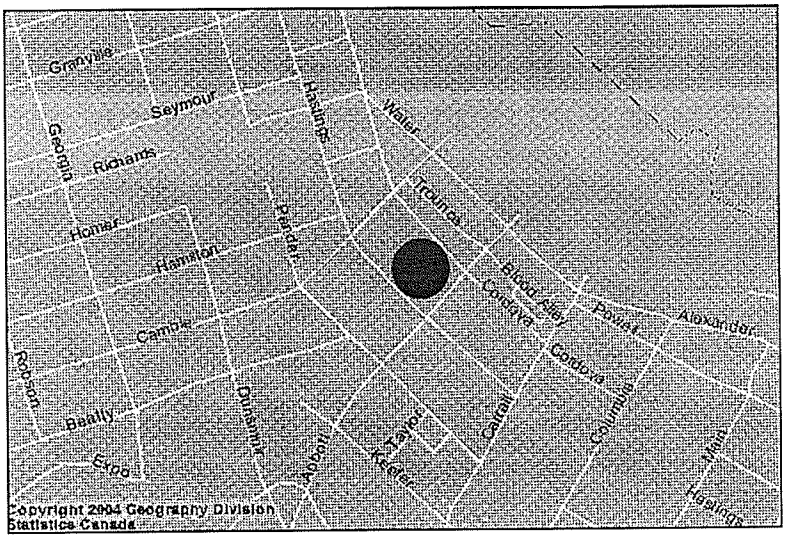
Figure 13: Victory Square

Figure 14: Downtown Vancouver: Site demarcated by red circle



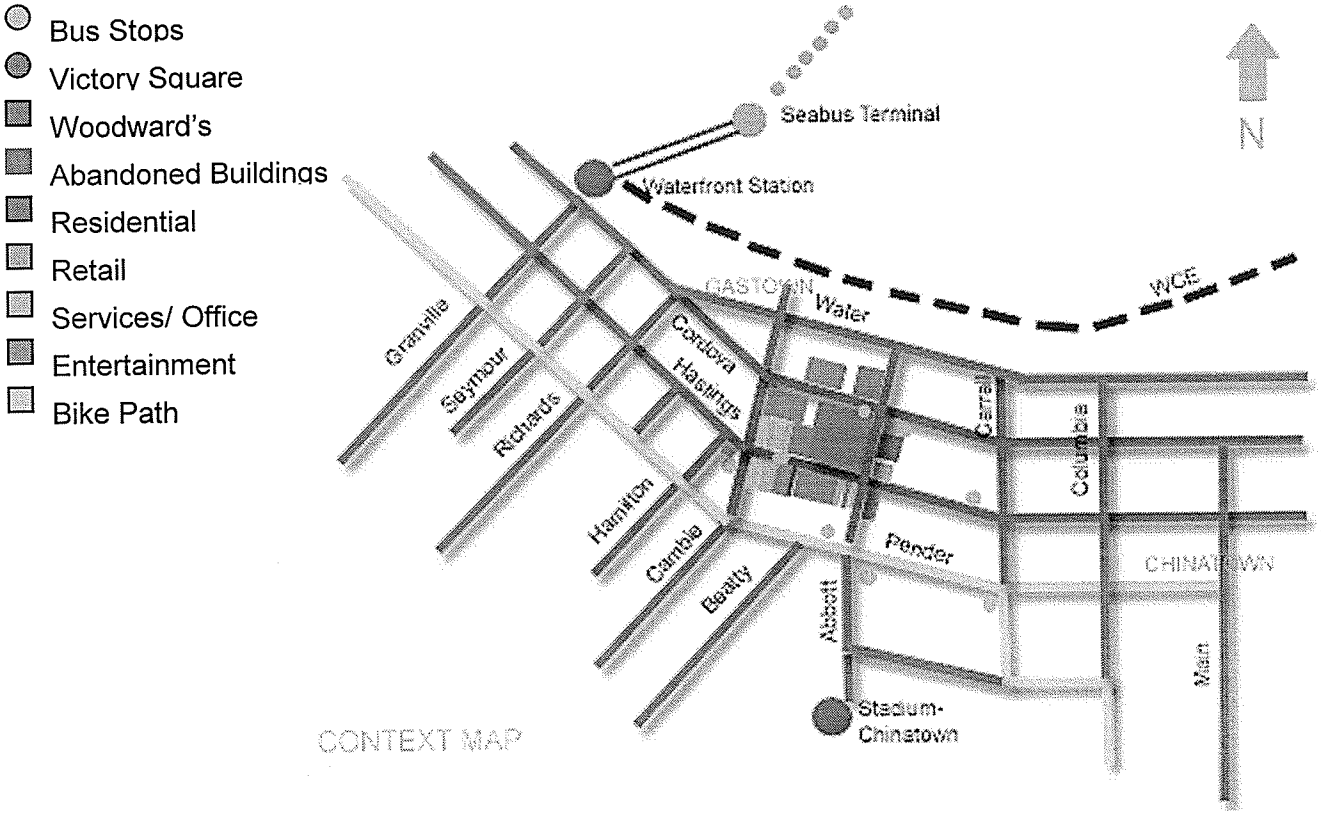
Note: From British Columbia Satistics

Figure 15: Downtown Eastside: Site demarcated by red



Note: From Geography Division Statistics Canada

Figure 16: Woodward's Site & Pattern of Land Use



3 The Neighborhood

The neighborhood that Woodward's is situated in was originally a blue collar area, orientated towards the dockyards, which were only a few blocks away from the building and a major source of employment in the area (Wells, 2004. p. 48) However, from the late 1980s onward the area suffered an economic slump, with an "exodus of legitimate business and a lack of new investment" ("The Future of Woodward's, 2004). Furthermore, poverty and "high unemployment among residents has resulted in a number of social issues that have unquestionably affected the health and well-being of the community" (Ibid). The impetus of this slump has been largely debated and attributed to a wide range of phenomena from the Expo in 1986 (Wells, 2004, p. 48) to the open drug use on Hastings Street (CCAP, 2001, p. 13).

Buildings that are "narrow, vertically proportioned and form a street wall" characterize the Gastown, Victory Square and Hastings areas (Design Guidelines, p. 8). Designated heritage buildings in the immediate neighborhood are the Fiat Building, the Commercial Hotel and the Cambie Hotel. Common characteristics of the buildings in the vicinity are that the "ground floors of all buildings contain active uses like retail, restaurant or institutional functions" and a "high level of pedestrian traffic has historically occurred at street level" (p. 8). Furthermore, "Facades vary in height and have robust cornice encroachments, punched windows and extremely high quality materials and detailing" (p. 8).

3.1 Transportation Information and Provisions

Located in Central Vancouver, the Woodward's site is accessible by many different forms of transportation, including bus, car, sea bus and sky train. From the Woodward's block it is possible to catch public transportation to East, North and Central Vancouver. There are multiple bus stops located by, or adjacent to, the building. All of these bus stops are less then .5 kilometers away from the building, Figure 15. Additionally, the Sea Bus, located at Waterfront Station and servicing the North Shore, is a ten-minute walk from the building. The sky train is

also accessed at this location and services Surrey, Burnaby, New Westminster and areas of Central Vancouver. Hastings, Abbot, Cordova and Cambie are all open to vehicular, bicycle and pedestrian traffic. Metered parking is available on the street. Also, in 1995 the City of Vancouver purchased a parkade from Fama Holdings that lies adjacent to the Woodward's building on Cordova Street. This parkade is currently being developed by the city with the possibility of being utilized by potential Woodward's patrons.

3.2 Traffic Pattern and Pedestrian Circulation

Hasting Street is a major traffic artery that stretches from Burnaby Mountain (home of Simon Fraser University) to downtown Vancouver. Cordova Street, which runs parallel to Hastings street, is a smaller, quieter street. Currently it is intermittently shut down to vehicular traffic between Abbot and Hastings due to street construction and construction on the parkade that lies adjacent to Woodward's. Cambie, another major traffic artery, stretches from the North end to the South end of the city of Vancouver. Abbot, which runs parallel to Cambie, is a smaller two-lane street. All these streets are accessible by pedestrian, vehicular and public transportation.

3.3 Weather Patterns

Situated in downtown Vancouver, the Woodward's building is subject to a mild, temperate climate. The daily average low occurs in January and is recorded as 4.8 Celsius, with the daily average high in August hitting 18.3 Celsius. November, with an average of 239.2 mm, is the month with the most precipitation whereas August, with 50.8 mm, is the driest month. December is one of the darkest months, with an average of 50.8 hours of bright sunshine. And July, which records 294.5 hours of sunshine, is one of the brightest months (Environment Canada, 2004).

4 The Building

4.1 Background

The Woodward's building on Hastings and Abbott opened in 1903. It was the flagship store for the Woodward's company, founded by Charles A. Woodward. After its opening, the store continued to develop in twelve expansions between 1903 and 1957. Woodward's was a focal point of the Vancouver community and provided the low to middle income neighborhood with retail and food services. However, the Woodward's enterprise went bankrupt and the Hastings store closed in 1993. Initially the building was sold to Fama Holdings, who proposed to develop the store into high-end retail and residences. Local residents who felt that the proposal would not benefit the community opposed it. Negotiation over the development ensued; however, due to a lack of support and funding the project was never realized. In 2001 the province of British Columbia purchased the Woodward's building from Fama Holdings. The province's intent was to develop a mixed-use space, which would provide low-income housing and retail services. Again, due to a lack of initiative and funding the project was not successful. Meanwhile in September 2002, the "Woodward's Squat" took place in which local community members and homeless people occupied the building in a demand for social housing. The squat ended in December 2002 when the City found temporary alternative housing in nearby buildings. In March 2003, the City of Vancouver bought the Woodward's building from the province ("The Story of Woodward's, 2004).

As previously stated, the original Woodward's building was constructed in 1903 at the corner of Hastings and Abbott. Clad in reddish-brown brick this timber framed building featured defining elements like "double-hung windows, rusticated stone-sills and classical entablature cornice" (Director of Current Planning, 2004). Between 1903 and 1957 the building progressively expanded until it occupied half a city block bordered by the streets Hastings, Abbot, and Cordova. Until the 1946 development, which involved the west side of the

building, the expansions retained a similar architectural aesthetic to the original building. The 1946 expansion represented a departure, with its steel-framed construction and large industrial style windows. Before its closure in 1993, the Woodward's building was a major destination point for "food, household goods and employment to many people in the local community and beyond" (Davidson, 2004, p.1).

4.2 The Current Building

Located at 101 West Hastings, The Woodward's building sits at the property line and is a significant presence in the neighborhood, dominating the street line. As it currently stands, the Woodward's store occupies half a city block and is bordered by three streets, West Hastings, Abbott, and West Cordova. The approximate square footage of the building is 670,000 square feet and the structure is eight stories high including a full basement and a partial sub basement (Request for proposals, 2004, p. 6). Currently, the city has begun the planning phase for the redevelopment of the building. Integral to these plans is the revitalization of the surrounding community. The neon "W" sign, which stands atop the Woodward's building, has been turned on to signal the beginning of this process. ("The Story of Woodward's, 2004).

Since it closure in 1993, the Woodward's Building has remained largely unused with the expectation of movie companies, which have been allowed to utilize it as a set in order to generate revenue for the City of Vancouver. The exterior remains largely untouched; however, from 1996-2001 Fama Holdings started preparatory development work on the building. As a result, the interior has been stripped down to its structure and historical features, such as cornices and signage, have been removed and stored. Also, most of the interior walls and the old mechanical system were removed. An anchor pit has been created to allow room for cranes, which was intended to be broadened out into an open-air atrium.

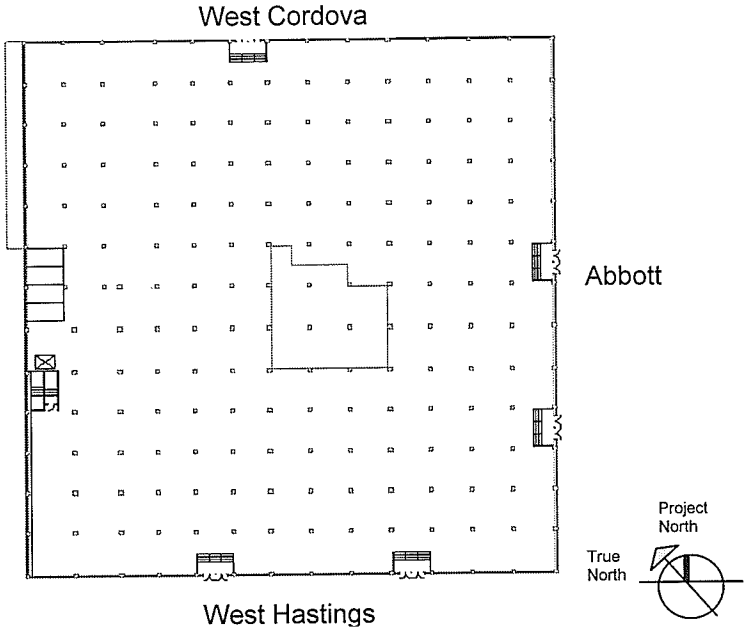
According to development permits No. BU404718 and DE217797, Woodward's is zoned as a multi-use complex for retail, commercial and

residential use. The basement can also be developed for parking. In particular, retail is required along West Hastings and Abbot Street. Character defining elements of the Woodward's building, as articulated by Commonwealth Historic Resource Management, include "the original volume and west-facing windows of the auditorium", "the pedestrian orientation of the ground level, including the mosaic tile and Woodward's signs in the pavement, the rows of doors with large push-plates at the customer entrances, the Woodward's signs above the entrances, the display windows with glazed transoms, and the Art Deco canopy and its suspension rods", "the open columnar grid in the interior, which creates a large, flexible space" and "the traditional semi-public uses of the interior space, especially for retail shopping" (Director of Current Planning, 2004).

Since its closure, many proposals have been made as to the redevelopment of the Woodward's building. Local residents, who would like the building to promote, enhance and maintain the current community, have opposed many of these schemes. When the City of Vancouver purchased the building, it planned to acknowledge the function of the original building and the needs of the surrounding community in its redevelopment. In " Woodward's Urban Design Guidelines" (2004), the City highlights that the redevelopment of the building must have a community focus and stimulate growth within the community (City of Vancouver, p.1). In light of this, response to context is pivotal in the redesign of the Woodward's building. In order to involve the community in redevelopment plans, the City has enacted visioning workshops and idea fairs with the community. Significantly, when the province sold the Woodward's building to the City of Vancouver it was with the condition that the province would provide funding for 100 non-profit housing. This need for housing, particularly co-op housing, was reinforced in the community visioning sessions as well as the 2002 Woodward's Squat. The introduction of a food shop, or market, was highlighted by the City and the community as an essential component to the redevelopment of the Woodward's building. The original building had a food floor, which drew the community in and provided for essential needs. During the community visioning fairs the concept of a large interior public space with a "pedestrian plaza"

containing a food market and retail was also brought forward by community members. Moreover, the inclusion of non-profit organizations has been another focal area for the City's redevelopment plans. The idea of a market, retail, non-profit organizations and housing allows for a mixed-use building that could aid in revitalizing rather then gentrifying the surrounding community. (City of Vancouver, 2004, p.1-20)

Figure 17: Existing Building Shell and Structure: Not to Scale



4.3 Heritage Significance

The Woodward's building was designated a class C heritage site in 1996. Certain sections of the building should be maintained whereas other sections are open to reuse and restructuring. At the request of the City of Vancouver, the Common Wealth Historic Resource Management issued a statement of significance concerning the Woodward's building's historic substance. Generally, the statement concerns the façade of the building; there appears to be more leeway allowed with the interior. According to the statement, the 1903 section of the building, located along Hastings and Abbott, should be maintained as well as the Woodward's "W", and its steel tower:

> Of greatest value are the original four-story timber-framed building (1903), with brick facades at Hastings and Abbott Streets (by noted architect W.T. Whiteway, expanded to six floors in 1903-1908); the 1925 wing, which extended the building to Cordova Street and the large illuminated "W", which has become a Vancouver landmark. (Director of Current Planning, 2004)

The rest of the building is open to restructuring. However, it is recommended that as much of the original building be retained as possible. The degree to which the building should remain intact and how to meld a contemporary aesthetic with the traditional becomes an interesting design challenge. This aspect of the redevelopment of the building lends itself to an emphasis on materiality.

Figure 18: Historical Woodward's "W"

5 Venue Profile

5.1 Capacity

According to the National Building Code of Canada (National Research Council of Canada [NRC], 1995) an interior pedestrian space can be classified as a Group A Division 2 occupancy. The total project area is 79, 236 square feet, which indicates a total occupant load of 2, 641.

5.2 Hours of Operation & Duration

Hours of operation will reflect the needs of people who live and work in the area, providing weekend and evening hours for shopping and day hours for employment, shopping and food services. It may also be possible that some areas of the plaza may be open 24 hours, for security issues and to keep the plaza alive and dynamic.

5.3 Public Image

Architecture is a form of communication. Societal values are expressed through urban forms and "how cities are shaped and maintained inevitably reflects the belief of their makers" (Hosey, 2000, p. 146). As such, comprehension of the message that architecture is communicating is crucial. The image of the building needs to appeal to a broad basis of people from disparate backgrounds. It should recognize and cater to the diverse surrounding neighborhood as well as attract people from the outside community.

In "Second Nature: On the Social Bond of Ecology and Architecture", Richard Ingersoll (1996), states "A good building must convince one that it is good – it must have appeal as a cultural product as well as a phenomenal, sheltering device" (p. 146). Taking this statement into account the Woodward's building should reflect the various elements of sustainability that it is promoting - the environment, the social and the economic. The materiality and spatial order of the building will, to a large part, represent these concepts. Notably. the consideration of environmental impact in the selection of materials will represent a commitment to environmental sustainability. The type of spaces created and the revitalization of Woodward's will represent a commitment to economic sustainability. Finally, by respecting and representing the purpose and aesthetic of protest architecture, the design of the Woodward's building will represent the importance of social sustainability. Layered upon civic architecture, protest construction offers a critique of urban systems, which facilitate disparity in standards of living. It enables the disenfranchised to stake a claim within the city and gives them a voice.

6 User Profile

6.1 Employees and their Job Functions

It is intended that the commercial uses of the Woodward's building should generate employment for the local neighborhood. It is quite possible that the businesses, which will occupy the regenerated Woodward's building, will provide various job opportunities for residents of the Victory Square neighborhood. Labor categories would include but not be limited to security, information, janitorial, service oriented and skilled labor.

6.2 Residents of the Building

The residents will have access to separate entrances into the building, which will include lobby and mail area. Amenities within the atrium space will support the activities of the residents by supplying gardening supplies, grocery and baking goods, paid laundry, a recycling area and a place for residents to exhibit and sell their arts and crafts. Moreover, the atrium creates a public community space for the residents of the building as well as the surrounding neighborhood.

6.3 Neighborhood Users

The atrium space will allow neighborhood residents access to basic necessities, such as groceries, laundry and a recycling depot. As well, the space offers users access to neighborhood information and free Internet access. Public laundry and lockers to store belongings are particularly attractive options for transitional people within the area.

6.4 Visitors

The space offers tourists access to a unique atmosphere, which includes food, retail and exhibition of local arts and culture. Its central location and access to multiple forms of transportation heighten its appeal as a destination spot.

6.5 Patron demographics

Generally, patrons will be drawn from the immediate neighborhood. Woodward's is located in the Victory square district of the downtown eastside. 46% of the population in this area is between 20-45 years old. In comparison to the larger Vancouver community, there is a significant proportion, 1 in every 5 individuals, of people 65 years and older. Less then 2% of the residents are 20 years and younger. Residents of the area are generally transient with, as of the 2001 census, 29% of the population having lived there longer then 5 years and 79% of the population having lived in the neighborhood less then 5 years. Another marker of the transient nature of the neighborhood is that only 8% of the dwellings are owned and 92% of the dwellings are rented. English is the predominant language. And notably, 68% of the residents are low income. These demographics have remained surprisingly consistent from 1995 to 2001. (Statistics Canada, 2001, p.1-2)

7 Functional Requirements

7.1 Hierarchy of Access (Security and Restrictions)

Security is an important component of this design. It is a large multi-use space including a variety of spaces and needs, residential, non profit, retail and commercial, in a community that is notorious for its drug use and crime. There will be controlled access to upper levels, such as card-accessed elevators. The non-profit floor will be accessible to the public only during certain hours. In concerns to the plaza, it is a large space, which will contain a mix of people. Security devices and people will be deployed. However, the design will also promote security through the creation of long interior sightlines, transparency and lighting.

7.2 Universal Design

Appropriate space and size will be provided for approach and use. Universally accessible signage will be utilized, which communicates pertinent information to a variety of users in an effective manner. One in every five people in the neighborhood is over twenty-five. This is an important statistic to keep in mind in terms of accessibility. In particular, the entrances of the building will need to be updated in order to allow wheelchair access.

8 Spatial Requirements

This project proposes the development of a mixed-use building. As required by the historic statement, retail will run along Abbott and West Hastings. This retail will be accessible from the street and from within the building. The interior pedestrian place will take the form of an atrium space. Circulation will be expansive and accommodate cross-block connections. Mainly located on the first floor, this public space also extends into the second and third floors. These floors house a community college a daycare, health clinics, non-profits, rentable studio space, community space and office space. The remaining floors accommodate subsidized housing. Loading docks are located off the back lane of the first floor. Freight is brought to various parts of the building from this area without disturbing the activity of the interior pedestrian place through the use of underground parking area and freight elevators.

8.1 Preliminary Spatial Organization

Where possible existing staircases and elevators will be utilized; however, the building will be made more permeable through the creation of further entrances on the Hastings, Cordova and Abbott Street fronts. Separate entrances will be supplied for residents, which include mail and lobby areas. As well, the building will be upgraded to include multiple fire exits, elevators and stairs in accordance to code requirements.

The interior pedestrian place will take the form of an atrium space. A market, green space, performance area, Internet access area, restaurant, play-

area, recycling depot, gardening shop and laundry shop will be located within this space. These stores will edge the interior passage way and create a street-like setting. The performance area and Internet access booth will be located near the center of the passage. Moreover, green space will create a variety of areas for repose within this space. Mainly located on the first floor, this public space also extends into the second and third floors and, as such, has a vertical as well as a horizontal presence. Multiple elevators and stairs facilitate this verticality. Following is a brief description of the various spaces that will be provided and their purposes.

8.2 Atrium/ Public Space

The atrium forms a public interior pedestrian space. This space offers a variety of experiences. As such, flexibility of space is essential. An informality of atmosphere will be suggested through the creation of a street-like atmosphere. Also, the entire design will be barrier free. Two main entrances, one on Hastings and the other on Cordova, will create cross street connections. Each entrance will accommodate telephones, washrooms, lockers, bike storage and ramps. The atrium will be a non-heated buffer zone, which will aid in energy efficiency. Predominantly the lighting will be supplied by daylight. Visually accessible from the street, the atrium will create a connection between the interior and the exterior.

8.3 Market

This public interior pedestrian space takes the form of a market. Rather then a transitional market created through temporary vendors, permanent vendors, which border the interior pedestrian space, will occupy this market space. The market includes, a dry goods shop, a produce store, a bakery, fresh seafood and meat and chesse counters, a performance area, a recycling centre, gardening supplies store and artisan shops.

8.4 Circulation

Circulation is an important component of the design and will be expansive in order to create an area of connection between a multitude of spaces. Bordered by the storefronts, the circulation becomes a browsing space and takes on a street aesthetic. Its expansiveness allows for a variety of activities, including busking, socializing, games and people watching.. Green spaces form part of the circulation area, providing places to rest and a protective overhead canopy.

8.5 Information Access Area

This area will be located in a central spot within the atrium space. It includes, interactive message boards, computers with Internet access, hook-up areas and seating.

8.6 Performance Area

This space will be large and informal. It will include a stage that can be booked for performances, book readings and exhibitions. A variety of seating accommodates its various functions and allows the space to also act as a gathering area that offers informal seating for conversing, eating and people watching.

8.7 Anchor Food Store

This store would consist of basic non-perishable food items, such as canned foods and baking items. It will be oriented towards the immediate neighborhood and will be affordable and accessible. It is located adjacent to the market stores.

8.8 Gardening Supplies

This store supplies gardening paraphernalia as well as plants to meet the needs of the immediate building, the neighborhood and outlying regions. Located adjacent to the Hastings entrance, it allows easy access in and out of the atrium space.

8.9 Recycling Centre

This space is centrally located thereby easily accessible from both the Cordova and Hastings entrances. It contains two parts. The first section is an interactive recycling wall containing three reverse vending machines, a handwashing station, and three recycling bins. This space is open to the atrium area. The second part of this is the recycling processing area. This area is located in the service core of the Woodward's building and closed off to the atrium space. This allows for acoustical control as well as easy access to freight elevators for loading needs. The recycling centre accommodates the recycling needs of the building and the neighborhood, represents the environmental dimensions of sustainability and aids in providing an interactive learning environment.

8.10 Laundry

The laundry area is located adjacent to the Hastings entrance. It supplies seating, sinks, folding tables and lockers for storage. It also contains a food and service counter as well as seating to service this counter. Washrooms are located adjacent to this space for convenience.

8.11 Used/New Bookstore

This space offers new and used books as well as trade-ins on old books, in order to appeal to a variety of customers. It also supplies a newsletter, on the Woodward's community similar to the Beacon, the in-house newsletter aimed at Woodward's employees. It is located adjacent to the café performance area and Internet access space. Moreover, it is accessible from the Abbott street as well as the atrium space.

8.12 Cafe

This store will supply coffee and pastries to go. It is accessible from the atria space as well as the laundry area. The counter leading into the laundry space also acts as a service counter for this area. On the atria side, the counter

is situated adjacent to the performance area and bookstore. Seating around the performance area allows places for customers to sit and relax.

8.13 Play Area

For security reasons it is important that this space be visually accessible, contained and easily monitored. Access to washrooms will be supplied as well as seating for parents and lockers for the storage of goods.

8.14 Artisan shop/ Exhibition space

This space will accommodate local artists and artisans by displaying and marketing their work. This space allows room for the artists to work and be seen while a large expanse of glazing displays this work. The artisan shop will be located adjacent to the performance area, which can be utilized as a place to showcase the work. Venues like this are important for a variety of reasons. Significantly, they attract tourists while showcasing local culture and bringing in revenue to the local economy.

8.15 Washrooms

Washrooms will be supplied according to occupancy load. In reference to the occupancy load there should be 34 water closets for each sex (Time Savers Standards for Interior Design & Space Planning, 1991, p. 425). Per washroom there will be 6 water closets. Due to the size of the building there will be more then one location for the washrooms. Also, due to security issues these washrooms will be highly visible and well lit.

8.16 Green Space

Interior landscaping will populate the design. These spaces will offer both a place to repose and shade from the daylight. Moreover, the multitude of plantings creates a changing, generative environment through growth.

* NOTE – The circulation space, which includes the performance area, Internet access booth and green space, will be the main focus of the design. The artisan shop, coffee shop, recycling depot, gardening supply shop, market stores and laundry area are peripherals and will be developed in less detail.

Figure 19: Zoning Diagram: Not to Scale

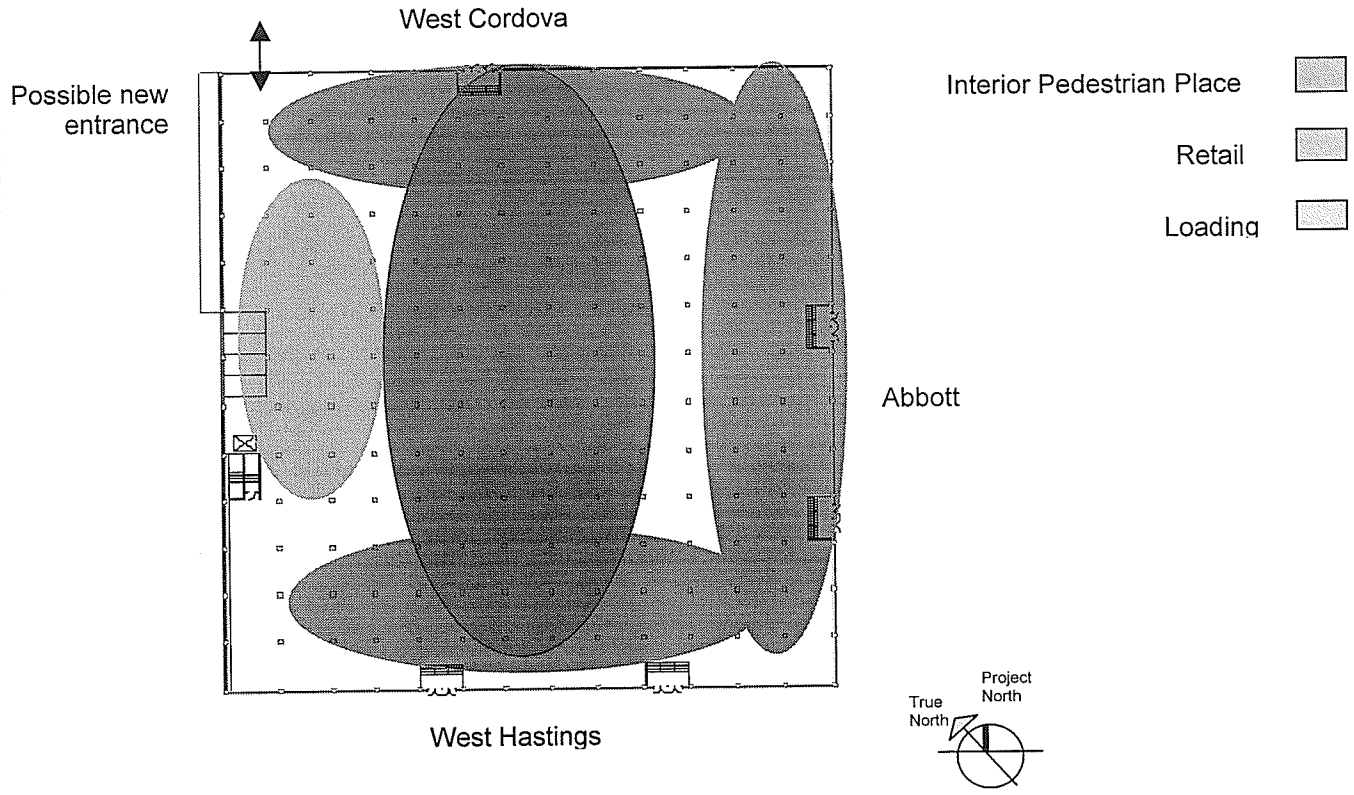
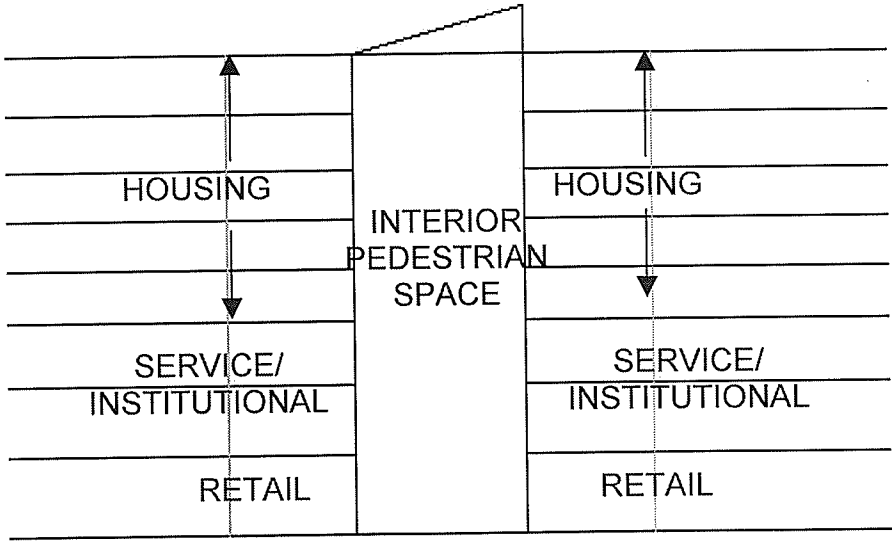


Figure 20: Zoning elevation



9 Summary

This project proposes, through design and text, to create a lasting and useful interior public place, which will meet the needs of a myriad of different interests through a design that emphasizes environmental, economic and social sustainability. This programme informs the design by supplying information on the context, issues and codes surrounding the Woodward's building. The information supplied here is built upon in the written practicum document, which explores the various dimensions of sustainability, adaptive reuse, public space, atria, interior pedestrian space and the market form as well as an analysis of pertinent theory.

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Figure References

Figure 14:

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Figure 15:

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APPENDIX B

FURNITURE, LIGHTING & FINISHES

TABLE OF CONTENTS

1	**Furniture Selection**	**133**
2	**Lighting Fixture Schedule**	**140**
3	**Finishes**	**142**
	3.1 Material examples	142
	3.2 Environmental features	144

1 FURNITURE SELECTION

PROJECT: Woodward's, Vancouver, BC

QUANTITY: 14

MANF: Brent Combers Originals Inc.

MODEL: SA.3 Saddle Long

DESCRIPTION: Long rectangular bench made with Douglas Fir

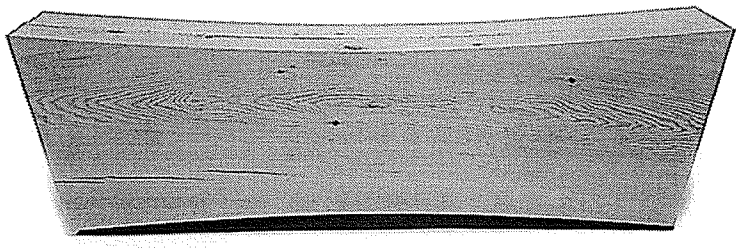
W: 13"
D: 60"
H: 18"

FINISH: Clear

LOCATION: Second & third level of atrium space

ENVIRONMENTAL QUALITIES: Local Manufacturer. Produced from salvaged wood.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver BC

QUANTITY: 6

MANF: Brent Combers Originals Inc.

MODEL: EG-1 EAGLE

DESCRIPTION: Rectangular bench made from Douglas Fir

W: 15"
D: 60"

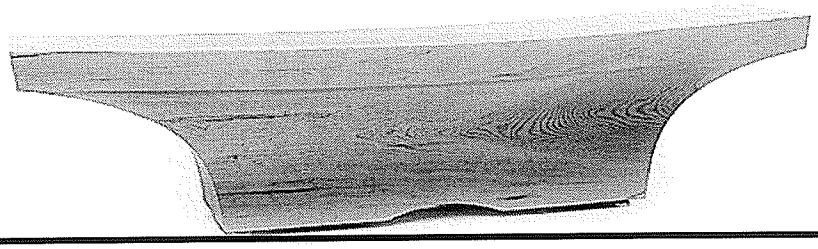
H: 16.5"

FINISH: Clear

LOCATION: Ground level of atrium

ENVIRONMENTAL QUALITIES: Local manufacturer. Produced from salvaged wood.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 3

MANF: Brent Combers Originals Inc.

MODEL: DR-1 Drum

DESCRIPTION: Western red cedar stool

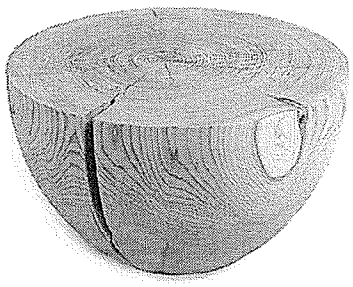
D: 22-24"
H: 15"

FINISH: Clear

LOCATION: Ground level of atrium space

ENVIRONMENTAL QUALITIES: Local Manufacturer. Produced from salvaged wood.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 4

MANF: Brent Combers Originals Inc.

MODEL: TR-1 Trunk

DESCRIPTION: Western red cedar stool

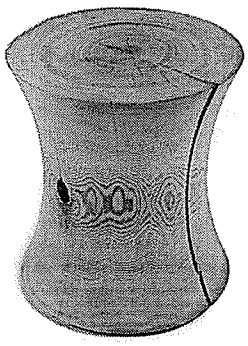
D: 18-20"
H: 20"

FINISH: Clear

LOCATION: Ground level of atrium space

ENVIRONMENTAL QUALITIES: Local manufacturer. Produced from salvaged wood.

ILLUSTRASTION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 8

MANF: Wishbone Industries

MODEL: CB8 Cascades

DESCRIPTION: Bench with a powder coated cast metal frame and post-recycled plastic back and seat

W: 24.41"

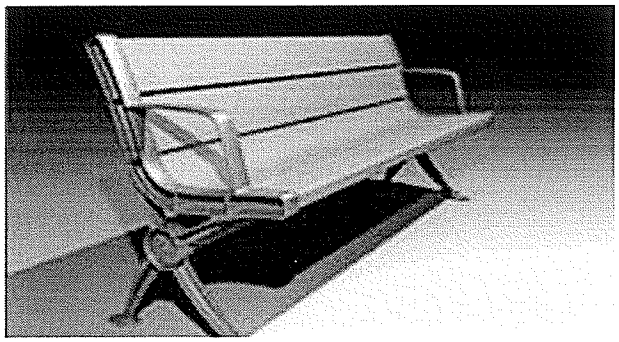
H: 31.68"

FINISH: Lumber: Sand
Frame: Metallic Charcol

LOCATION: Second level garden & third level play area

ENVIRONMENTAL QUALITIES: Local manufacturer. Made from 100% recycled plastic lumber. Highly durable and non toxic.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 8

MANF: Wishbone Industries

MODEL: CT8 Cascades

DESCRIPTION: 32 US gallon trash receptacle with a powder coated cast metal frame and post-recycled plastic lumber sides

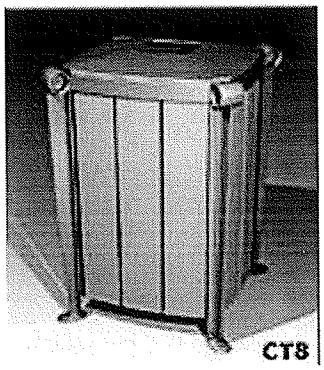
W: 28,11"
H: 29,91"

FINISH: Lumber: Sand
Frame: Metallic Charcoal

LOCATION: All levels of the atrium space

ENVIRONMENTAL QUALITIES: Local Manufacturer. Made from 100% recycled plastic lumber. Highly durable and non-toxic.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 4

MANF: Tomra

MODEL: T-605

DESCRIPTION: All-container return system with crate facility.

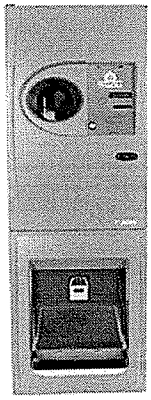
W: 60 cm
H: 172,5 cm
Depth 83, 5 cm

FINISH: Blue

LOCATION: Recycling Centre

ENVIRONMENTAL QUALITIES: Used to sort and store beverage containers and issue an appropriate refund.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 2

MANF: Tomra

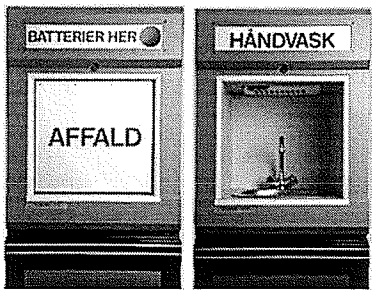
MODEL: T-605

DESCRIPTION: Waste disposal and hand-wash units
W: 60 cm
H: 172,5 cm
Depth 83, 5 cm

FINISH: Blue or red

LOCATION: Recycling centre

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 16

MANF: Laszlo Custom Metals

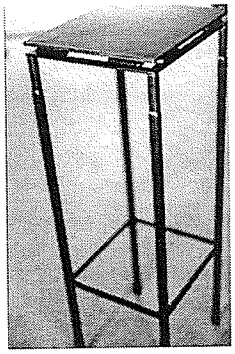
DESCRIPTION: Stools
L: 16"
W: 16"
H: 31"

FINISH: Metal

LOCATION: Sandwich shop & Cafe

ENVIRONMENTAL QUALITIES: Local Manufacturer. Composed of highly recyclable metals.

ILLUSTRATION:



PROJECT: Woodward's, Vancouver, BC

QUANTITY: 9

MANF: landscapeforms

MODEL: Mingle

DESCRIPTION: Table & Chairs
Seats: 17" high
Tabletops: 29" high
Tabletop:: 42" diameter

FINISH: Steelhead

LOCATION: Restaurant

ENVIRONMENTAL QUALITIES: Local manufacturer. Recycled content of 60% and 100& recyclable. Universally accessible.

ILLUSTRATION:

2 LIGHTING SCHEDULE

LIGHT FIXTURE SCHEDULE						
SYMBOL	TYPE	DESCRIPTION	VOLTAGE	MOUNT'G	MANUFACTURER	QUANTITY
	TTT 42W Triple	Saturna Direct/indirect compact fluorescent, BZ	347	Wall Mounted	Rebelle Architectural Lighting	40
	TTT 42W Triple	Saturna Direct/indirect compact fluorescent, BZ	347	Post top Luminaire	Rebelle Architectural Lighting	24
	TTT 2632W Triple	Staurna Direct/Indirect Compact fluorescent, BZ	347	Pendant	Rebelle Architectural Lighting	42

Table 3: Lighting Schedule

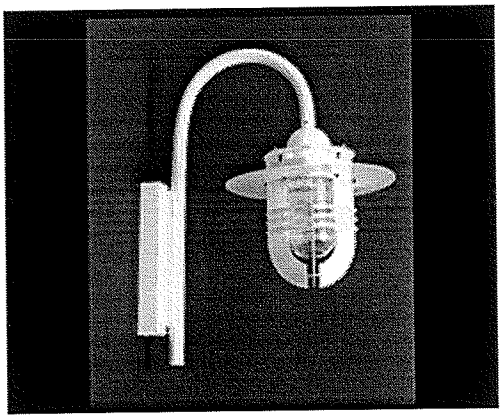


Figure 21: Saturna Wall Mounted

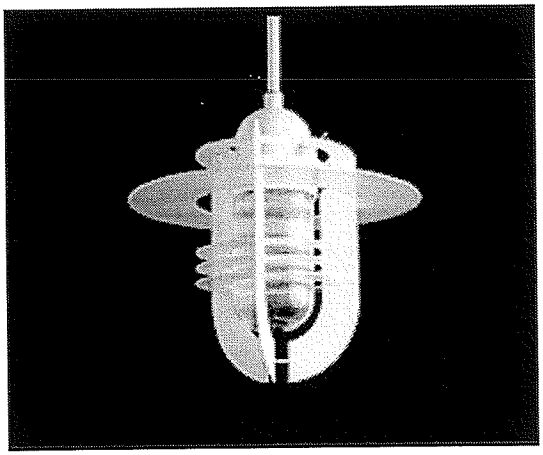


Figure 22: Saturna Pendant

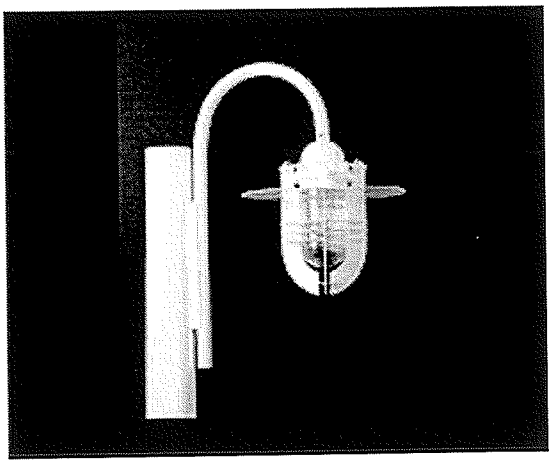


Figure 23: Saturna Post Mounted

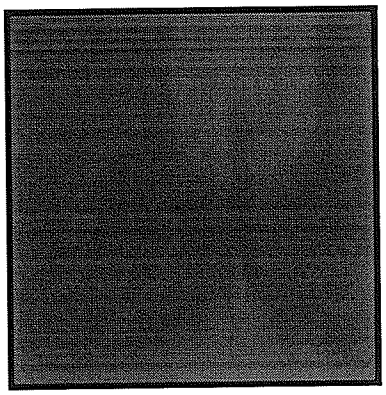


Figure 24: Bronze Metallic Matte Finish

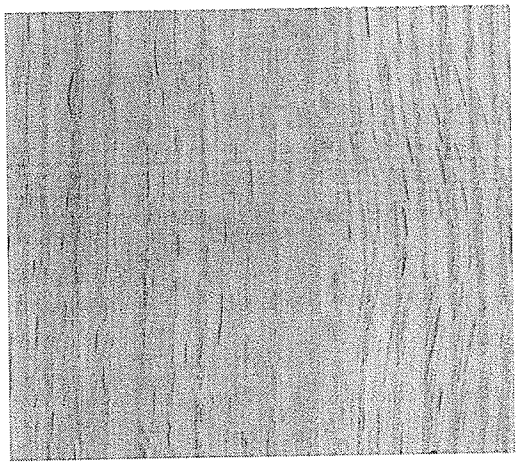
Note: All lighting is from a local Vancouver Manufacturer and utilizes energy efficient fluorescents

3 Finish Selection

3.1 Material Types

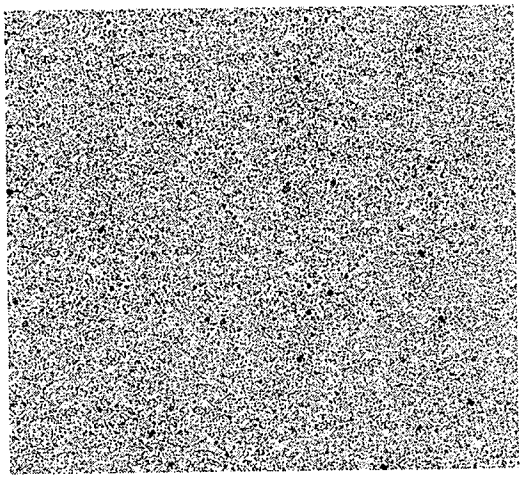
Salvaged Wood Floors

Man:
Style:
Colour: Natural
Location: Accent flooring, Window edging & counter tops



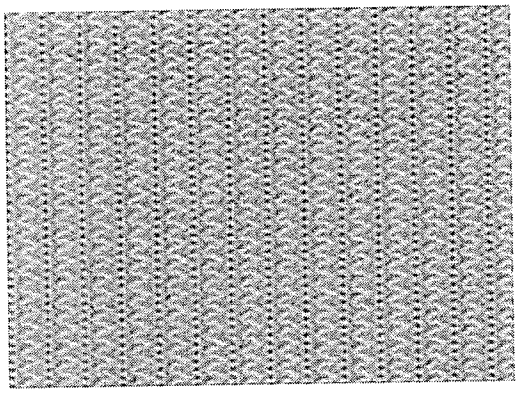
Terrazzo Flooring

Man: American Terrazzo
Style: Enviroglas
Colour: Custom mix
Location: Main flooring type on first three levels of the atrium space.



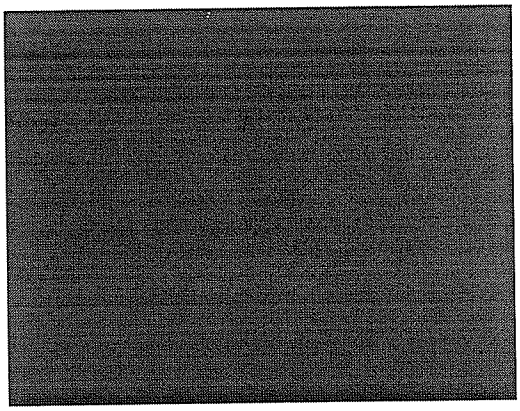
Rollar Shades

Man: Hunter Douglas Contract
Style: Greenscreen
Colour: White
Location: Atrium roof & Windows
Note: PCV free



Paint

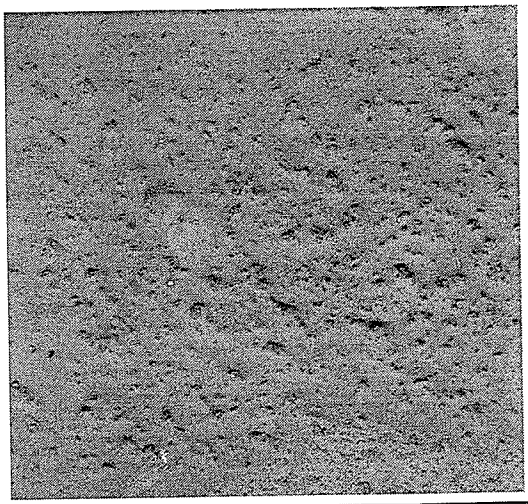
Man: AFM Safe Coat
Style: Acrylic metal primer
Colour: bronze
Location: Metal Columns
Note: Low VOCs



Reconstituted brick

Man: Salvaged from demolitioned areas of the Woodward's building

Colour: Natural
Location: Walls of atrium



Decorative Interlayered Glass

Man: DuPont
Style: SentryGlas Expressions
Colour: Pattern on translucent background
Location: Residential balconies

3.2 Environmental Features

Environmental Features of Green Materials			
Life Cycle Stage I Extraction	Life Cycle Stage II Manufacturing Process	Life Cycle Stage III Building Operations	Life Cycle Stage IV Waste Management
○ Renewable Energy Source ○ Recycled Content ○ Remanufactured ○ Salvaged ○ Certified	○ Waste Reduction ○ Pollution Prevention ○ Embodied Energy Reduction ○ Natural Materials	○ Energy Efficiency ○ Reduced Ozone Depletion ○ Water Treatment & Conservation ○ Nontoxic ○ Longevity ○ Adaptability	○ Biodegradable ○ Recyclable ○ Reusable ○ Others

Table 4: Environmental features key

Environmental Features of Salvaged Wood Floors			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
Renewable Energy Source	Waste Reduction		Biodegradable
Recycled Content			Recyclable
		Nontoxic	Reusable
Salvaged	Embodied Energy Reduction	Renewable Energy Source (RES)	
Certified	Natural Materials	Longevity	

Table 5: Salvaged Wood Floors

Environmental Features of Salvaged Brick			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
	Waste Reduction		
			Recyclable
		Non Toxic	Reusable
	Embodied Energy Reduction		
Salvaged	Natural Materials	Longevity	
		Adaptability	

Table 6: Salvaged Brick

Environmental Features of Dupont Laminated Glass			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
		Energy Efficiency	
			Recyclable
		Nontoxic	Reusable
		Longevity	
		Adaptability	

Table 5: Laminated Glass

Environmental Features of AFG Low-E Glass			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
		Energy Efficiency	
			Recyclable
		Nontoxic	Reusable
		Renewable Energy Source	
		Longevity	
		Adaptability	

Table 6: Low-E Glass

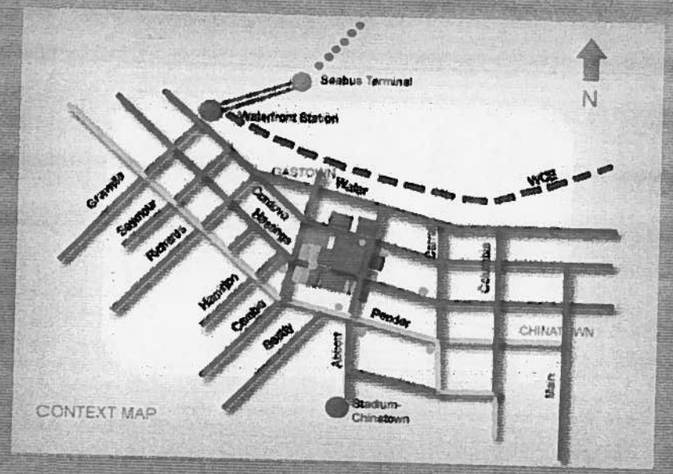
Environmental Features of Garland Metal Siding			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
			Biodegradable
Recycled Content			Recyclable
		Nontoxic	Reusable
	Natural Materials	Longevity	

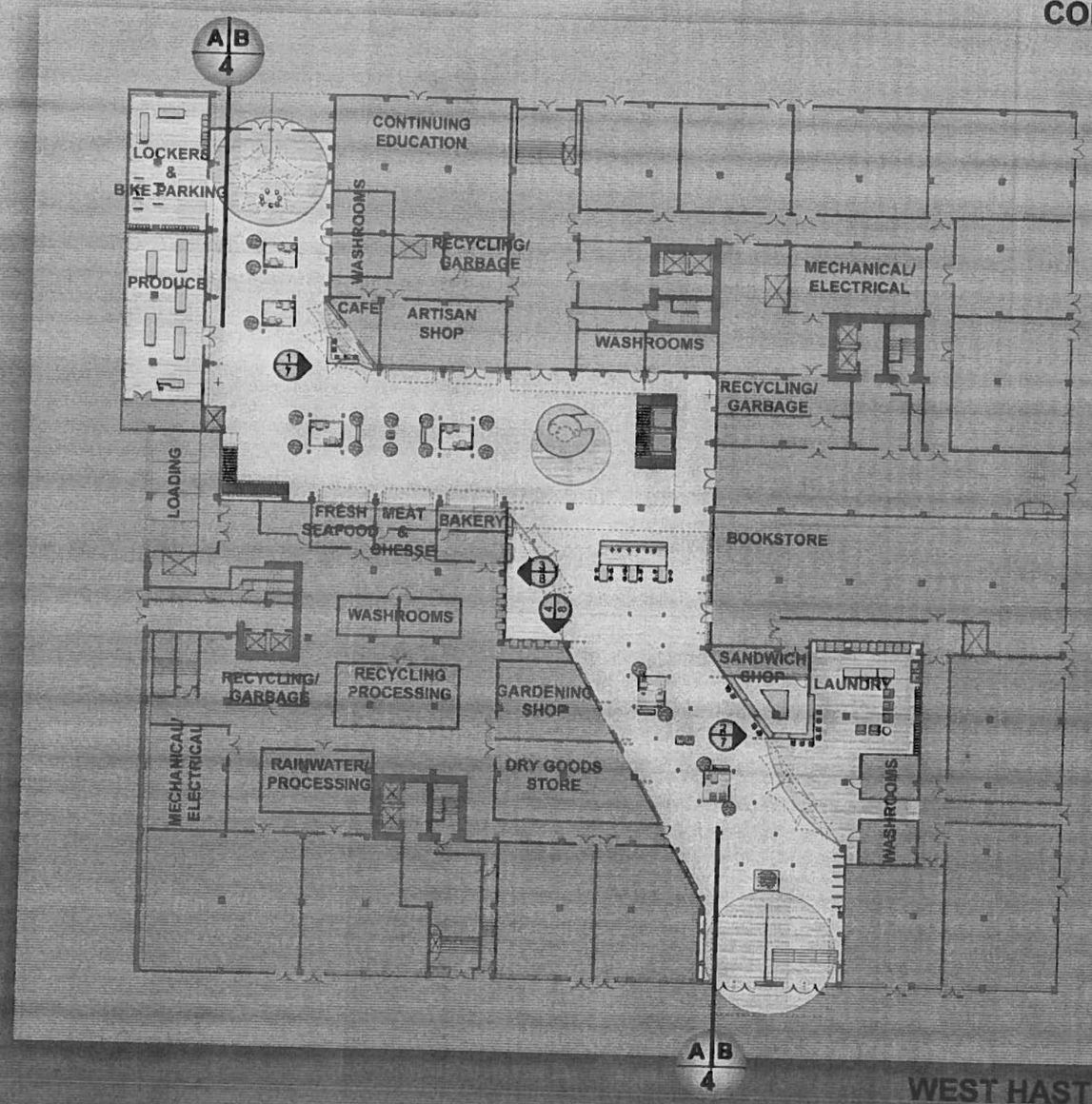
Table 8: Metal Siding

Environmental Features of Glass Terrazzo Tiles			
Extraction	**Manufacturing Process**	**Building Operations**	**Waste Management**
	Waste Reduction	Energy Efficiency	
Recycled Content			Recyclable
		Nontoxic	Reusable
	Natural Materials	Longevity	

Table 9: Terrazzo Tiles

APPENDIX C
DESIGN PRESENTATION



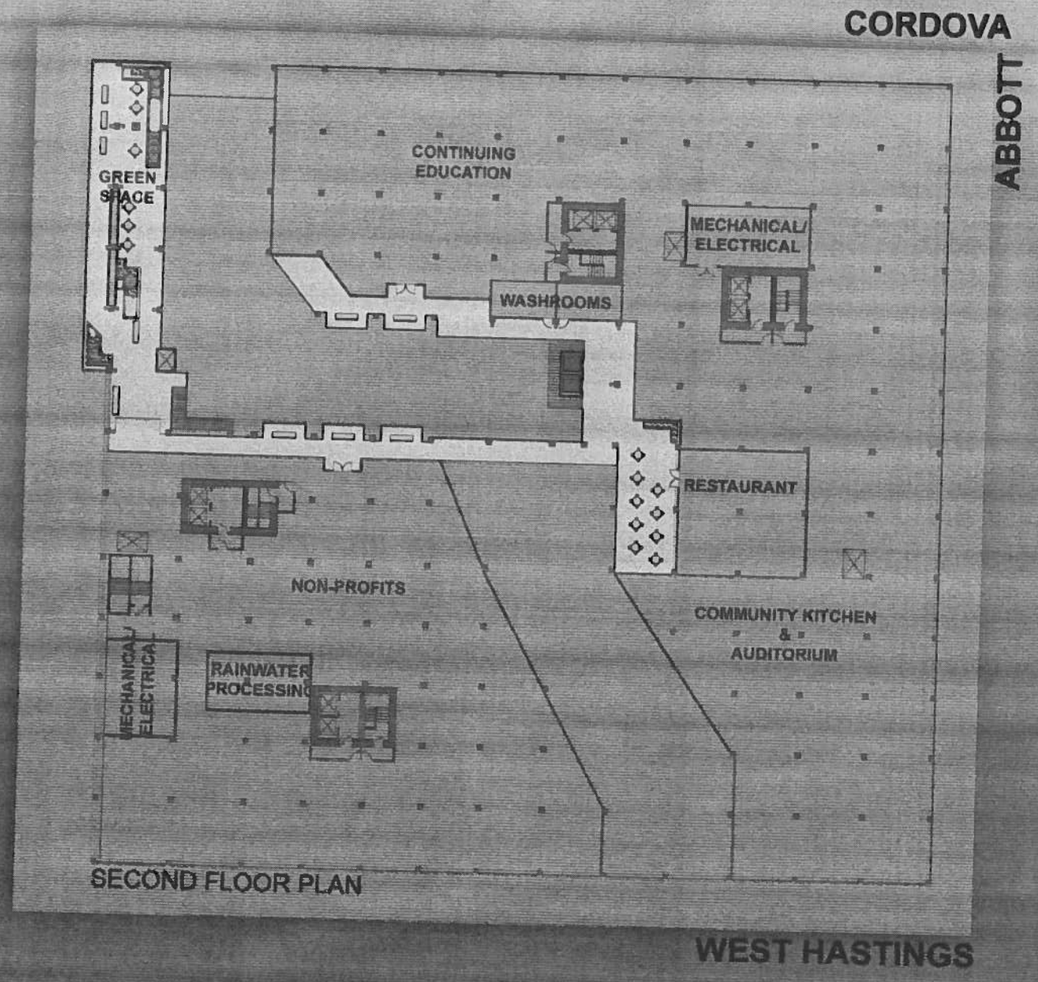


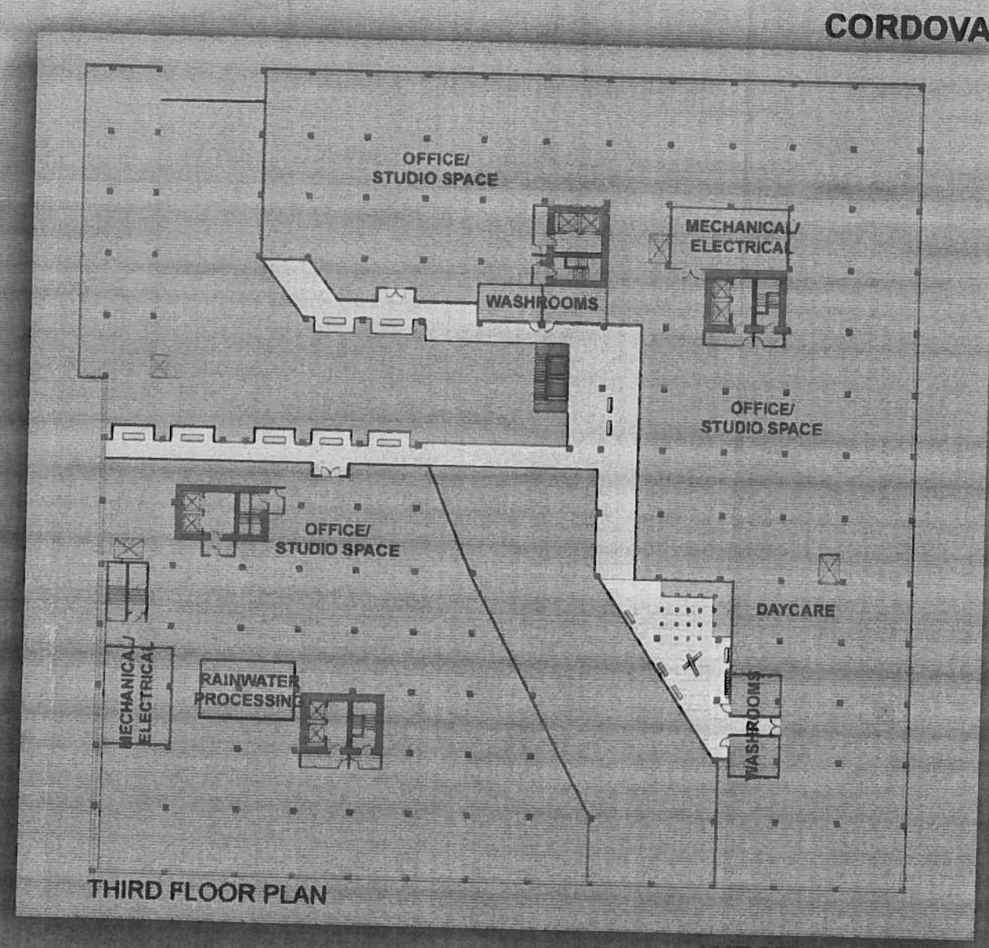
DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

FIRST LEVEL FLOOR PLAN

NOT TO SCALE



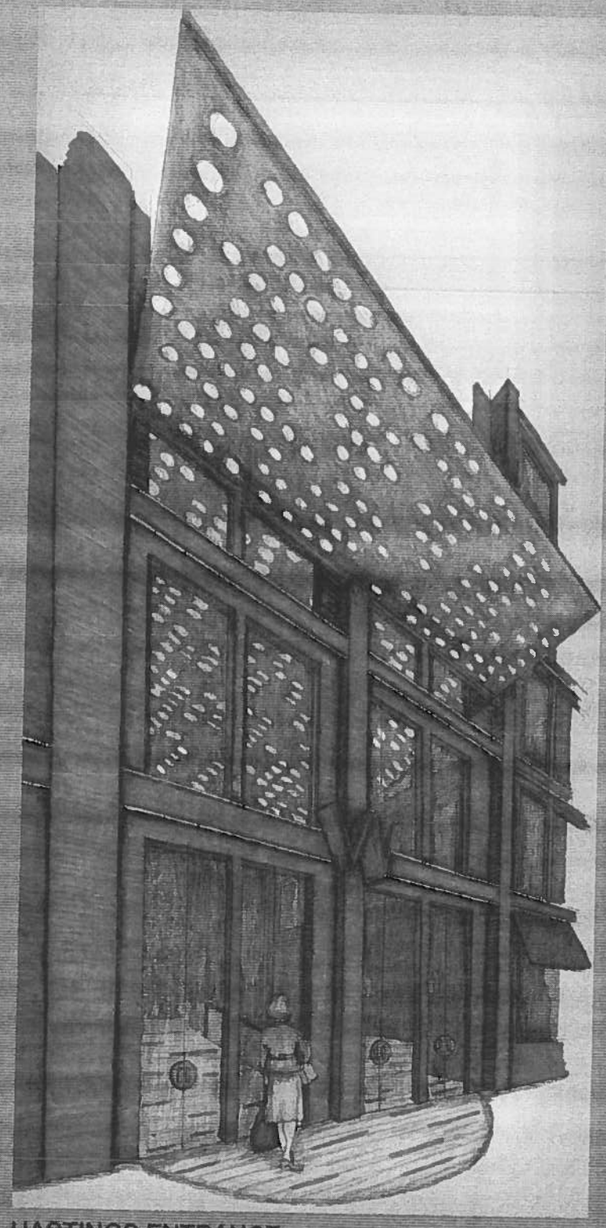


DESIGNING SUSTAINABILITY

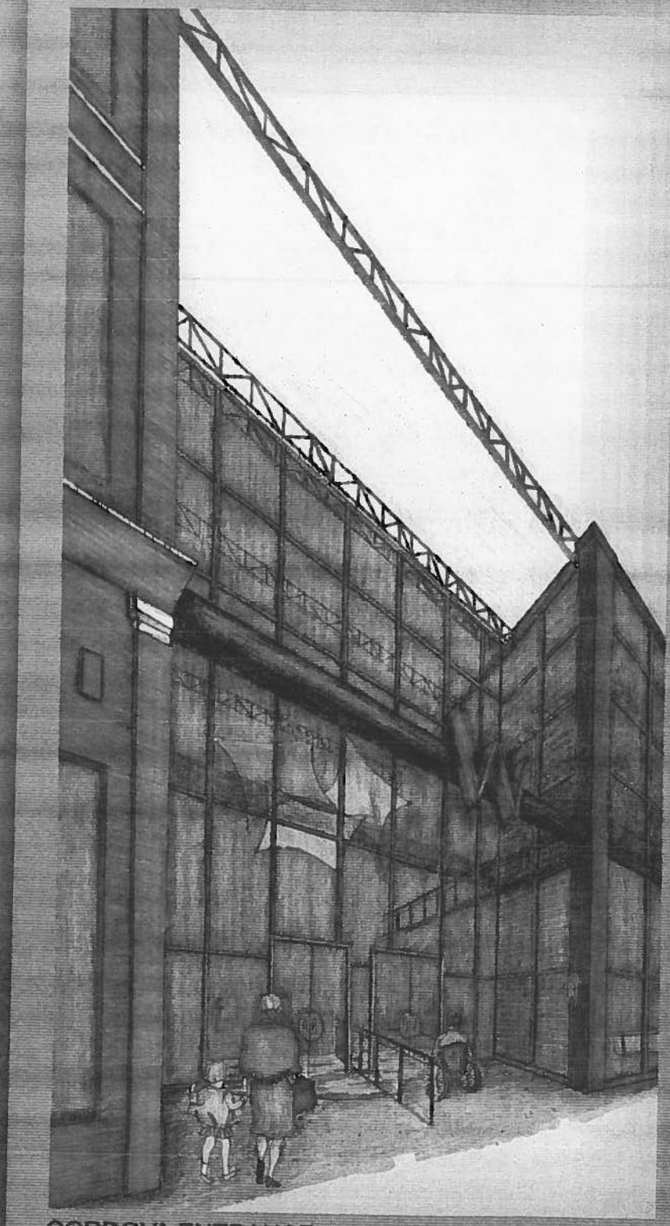
ERIN K CUNNINGHAM

SECOND & THIRD LEVELFLOOR PLAN

NOT TO SCALE



HASTINGS ENTRANCE



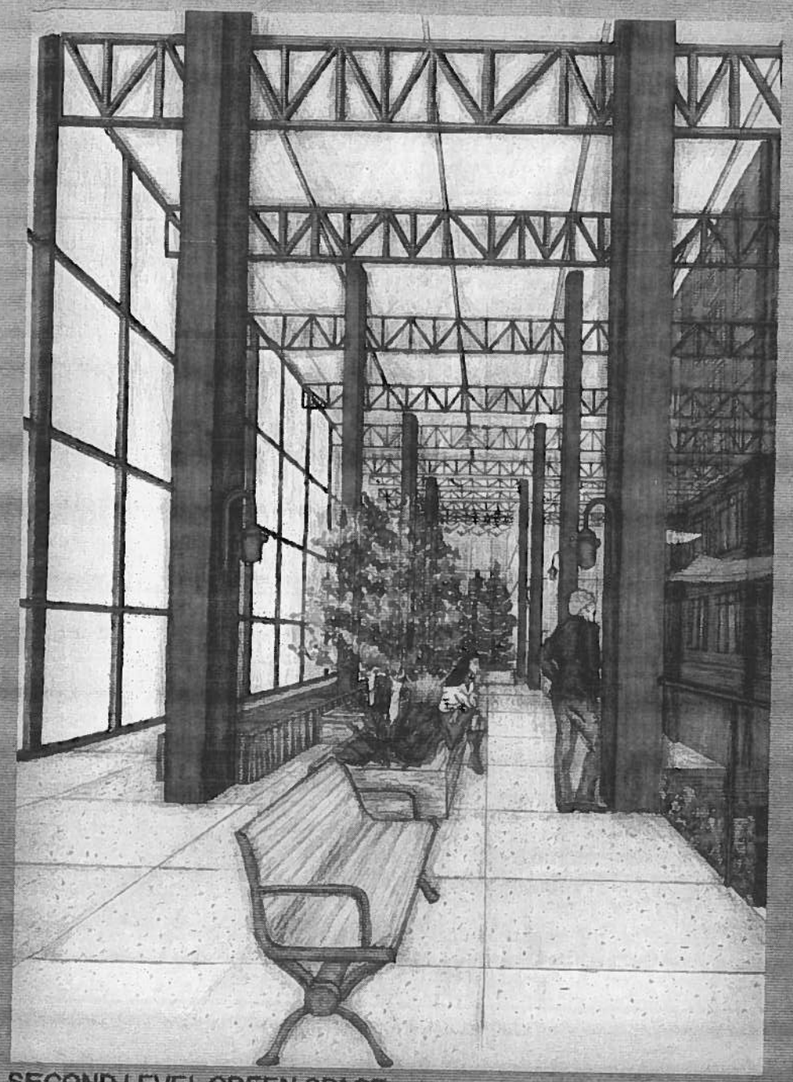
CORDOVA ENTRANCE

PUBLIC INTERIOR PEDESTRIAN PLACE

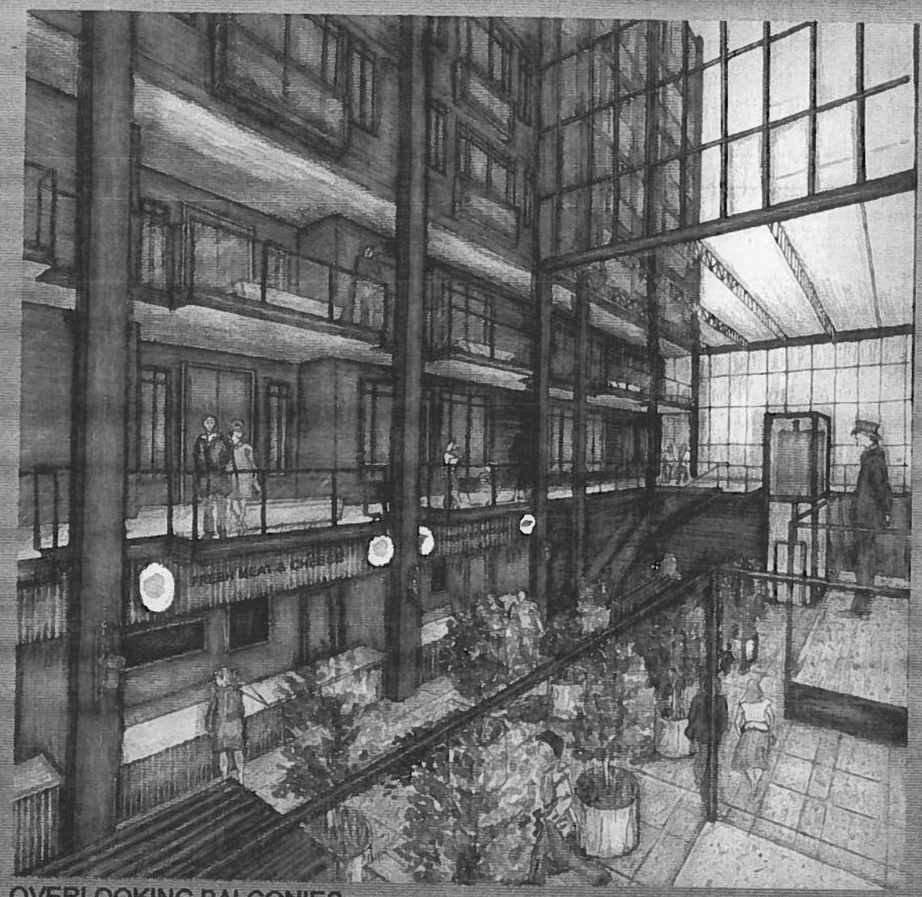
DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

3 PERSPECTIVES



SECOND LEVEL GREEN SPACE



OVERLOOKING BALCONIES

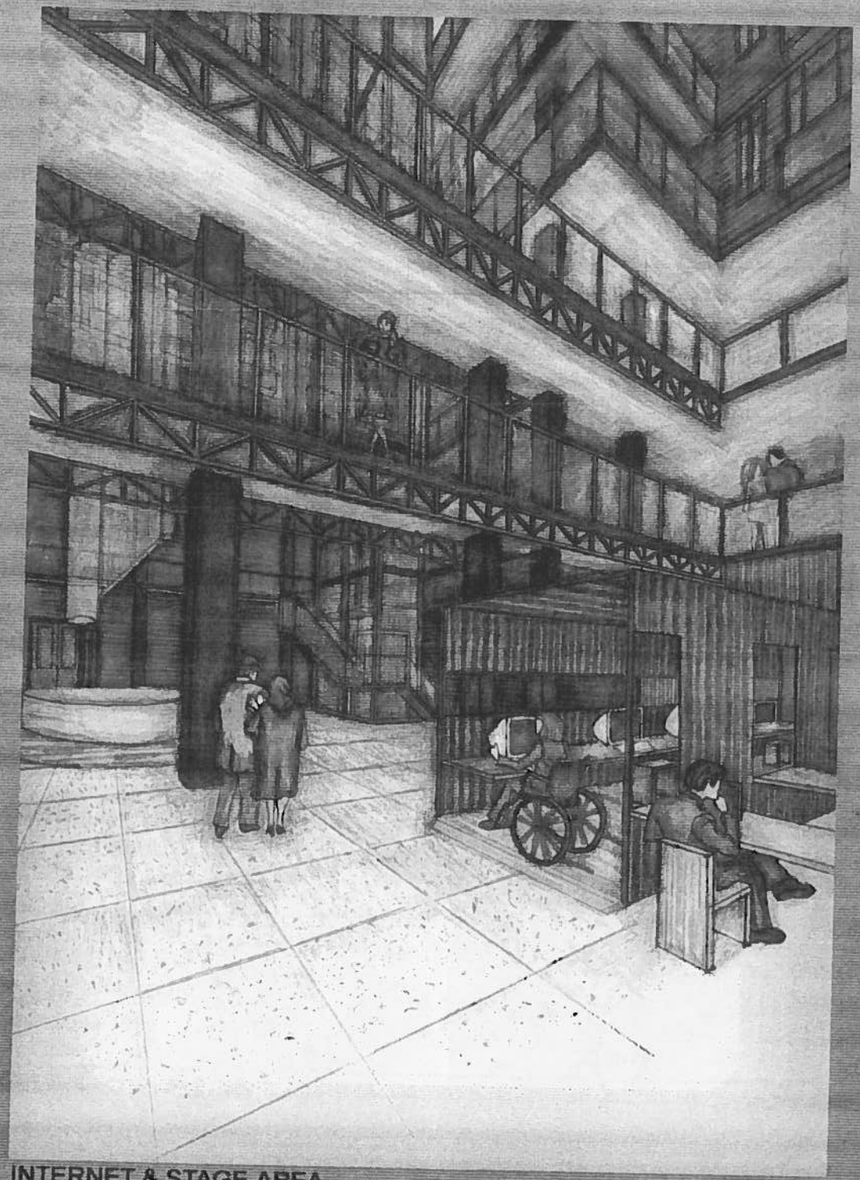
VERTICAL CONNECTIONS

DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

PERSPECTIVES

4



INTERNET & STAGE AREA

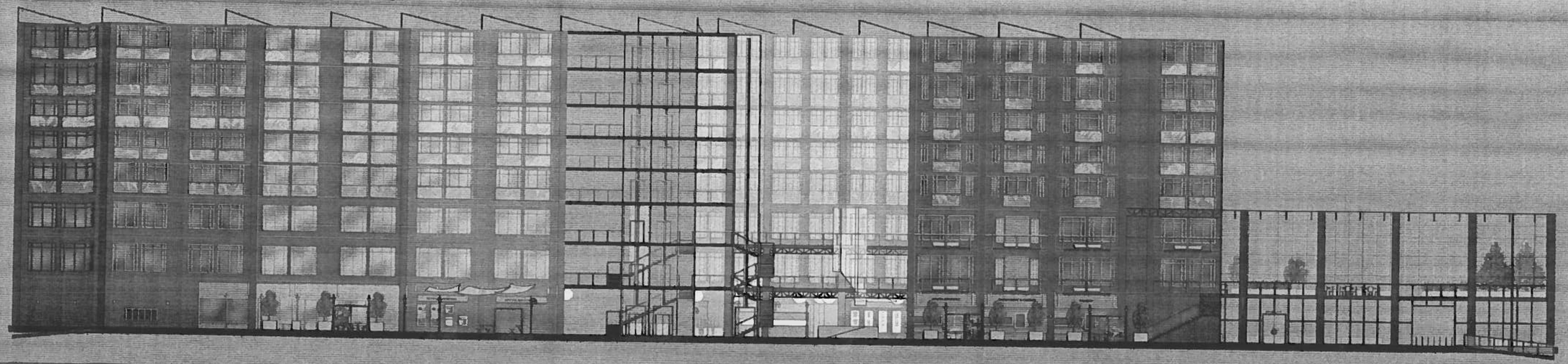
PLAY AREA

INTERACTIVE SPACE

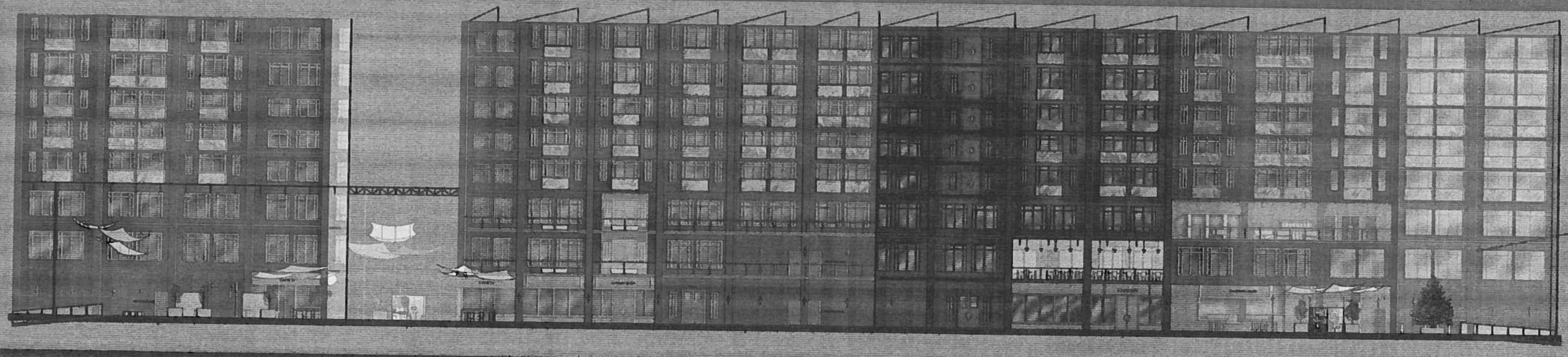
DESIGNING SUSTAINABILITY

5 PERSPECTIVES

ERIN K CUNNINGHAM



SECTION A



SECTION B

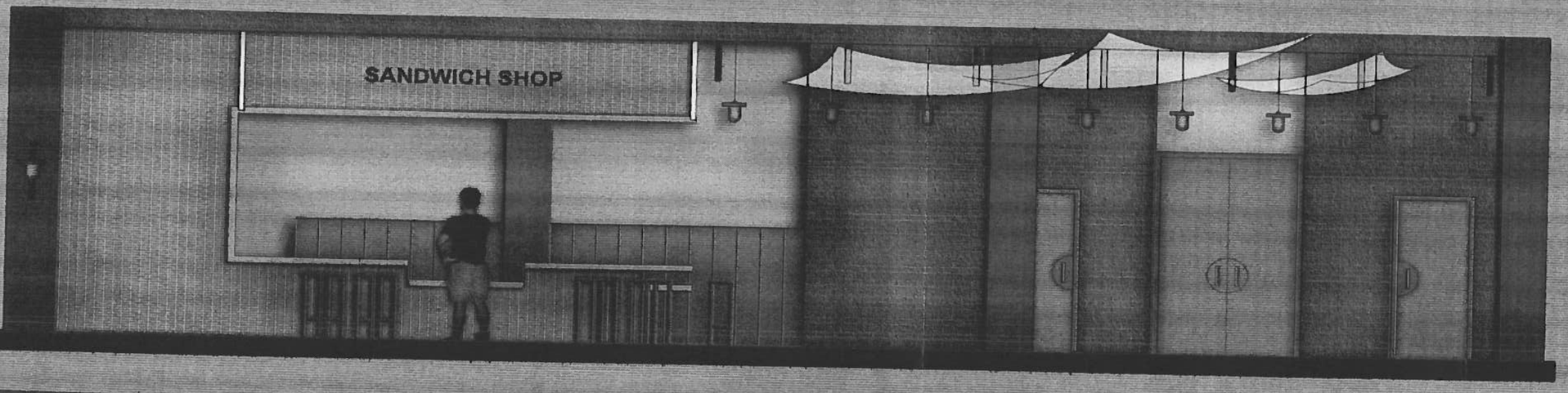
HORIZONTAL CONNECTIONS

DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

SECTIONS
NOT TO SCALE

ELEVATION 1: CAFE



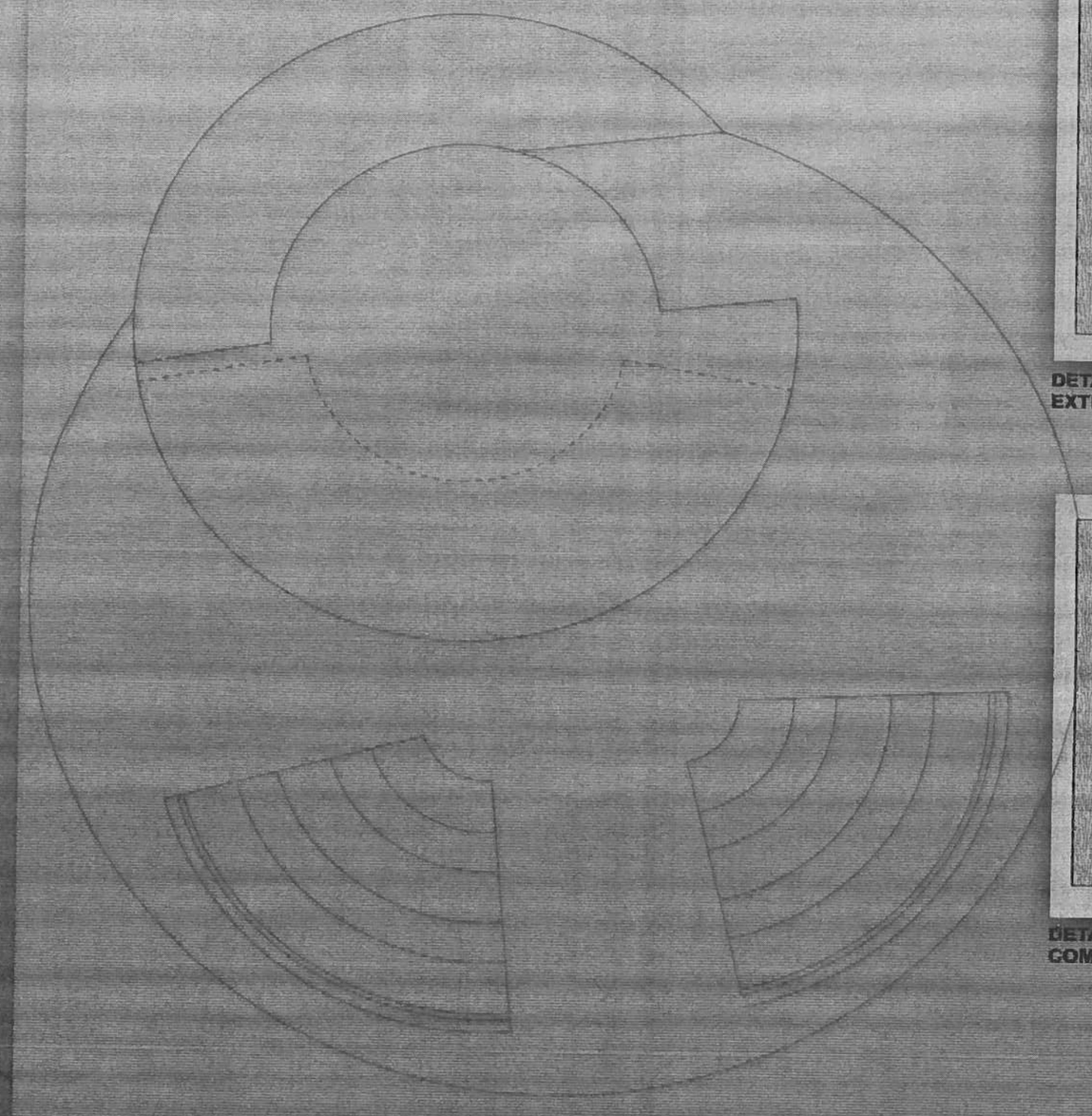
ELEVATION 2: SANDWICH SHOP

DESIGNING SUSTAINABILITY

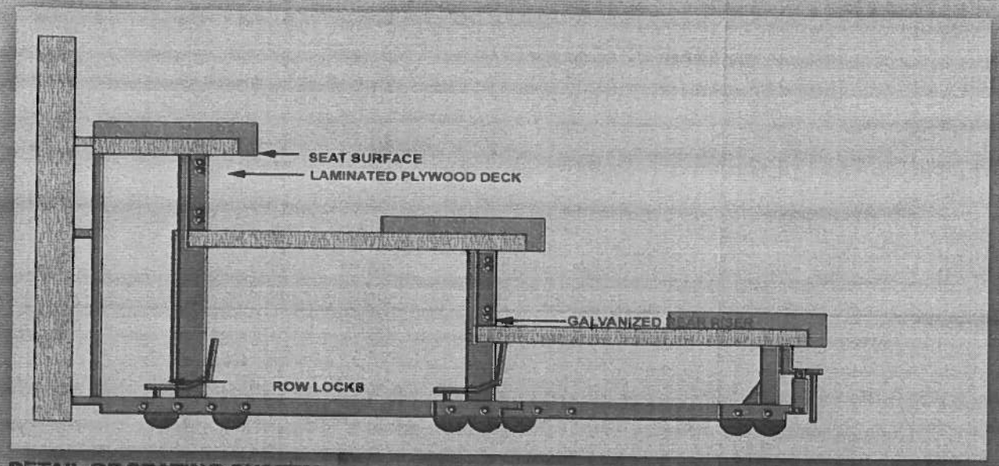
ERIN K CUNNINGHAM

ELEVATIONS
NOT TO SCALE

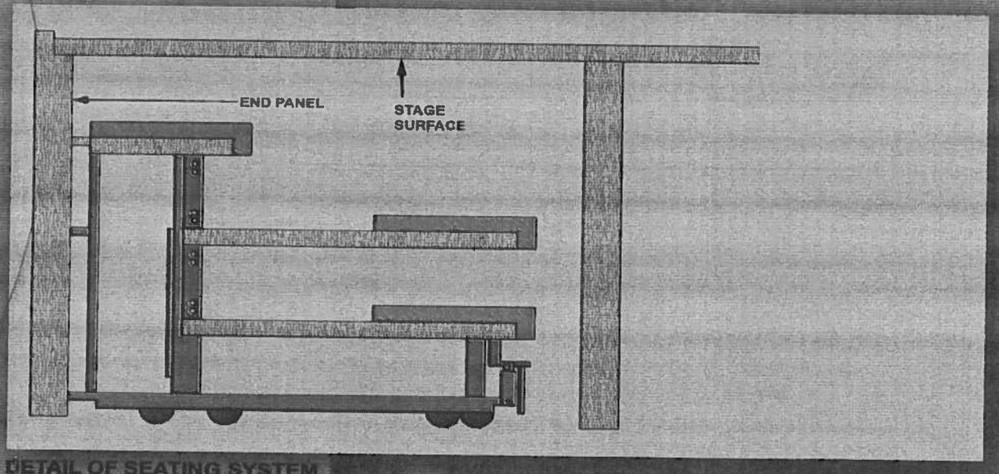
FLEXIBLE SEATING SYSTEM



STAGE PLAN



DETAIL OF SEATING SYSTEM EXTENDED



DETAIL OF SEATING SYSTEM COMPRESSED

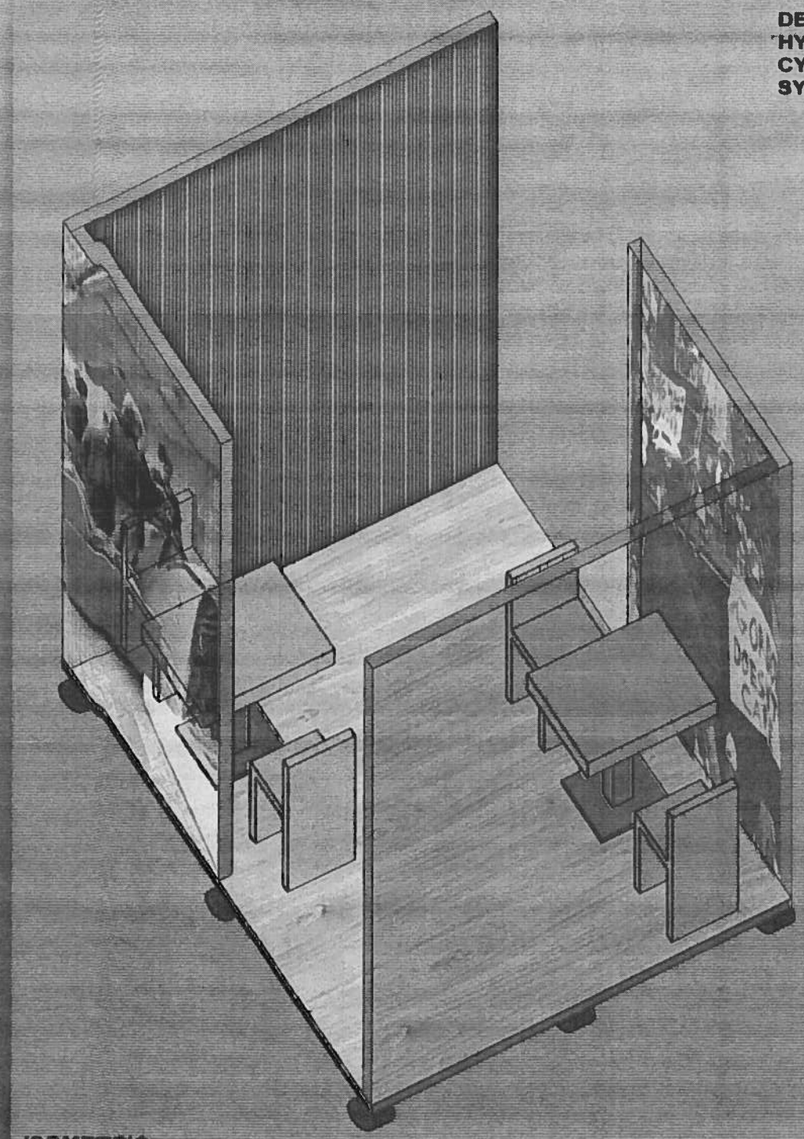
USER ADAPTABILITY

DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

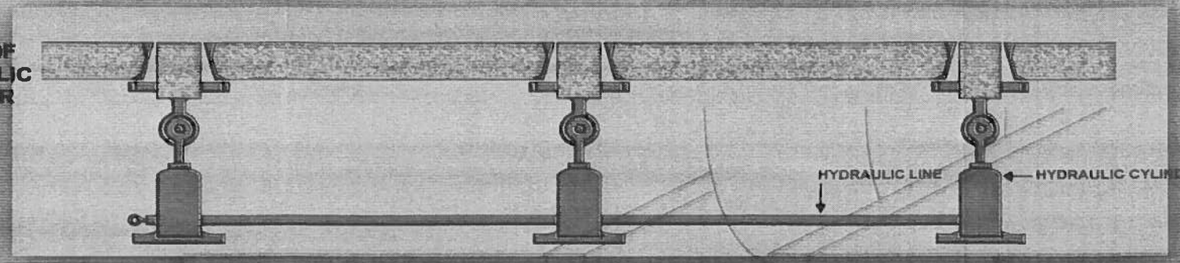
8 DETAILS
NOT TO SCALE

HIDDEN FLOOR RAILS

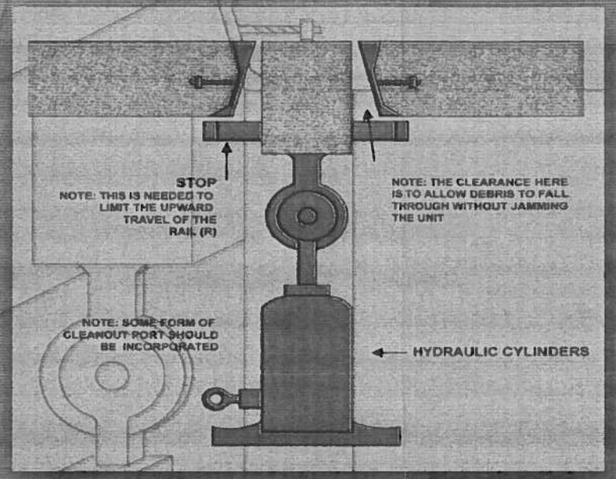


ISOMETRIC:
SHIPPING FREIGHT

DETAIL OF HYDRAULIC CYLINDER SYSTEM

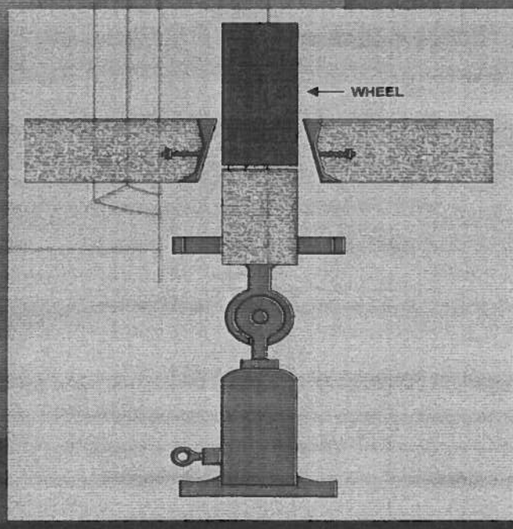


DETAIL OF RAIL EXTENDED FLUSH WITH THE FLOOR



CLEANOUT/ MAINTENANCE PORT

DETAIL OF RETRACTED RAIL



FLEXIBLE ENVIRONMENT

DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

9 DETAILS
NOT TO SCALE

ELEVATION 3: RECYCLING CENTRE

ELEVATION 4: RECYCLING DISPOSAL

CRITICAL AWARENESS

DESIGNING SUSTAINABILITY

ERIN K CUNNINGHAM

10 ELEVATIONS
NOT TO SCALE