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Re Architecture: Old and New In Adaptive Reuse of Modern Industrial Heritage

Ava Moshaver
Ryerson University

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**RE ARCHITECTURE: Old and New In Adaptive
Reuse of Modern Industrial Heritage**

by

Ava Moshaver

B.Arch Sci., Ryerson University 2009

A Design Thesis Project
presented to Ryerson University

in partial fulfillment of the
requirements for the degree of
Master of Architecture
in the Program of
Architecture

Toronto, Ontario, Canada, 2012

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ABSTRACT

Adaptation of existing buildings for new functions is not a new phenomenon: the theoretical approach towards *adaptive reuse* was well established and theoretically formulated as early as at the beginning of the 19th century. However, very few authors address the issue of cultural meaning of a place - *genius loci* - when discussing the process of *adaptive reuse*.

This thesis will explore an alternative strategy to a conventional adaptive reuse practices for a Modern industrial structure that not only complements but challenges and reveals the history through the tectonic character and the original intent of the design by preserving the spirit of place that is more than often lost in the process of adaptation by considering the meaning of place conveyed through its architectural expression. The adaptive reuse strategy is to be formulated and tested through design process for an adaptive reuse of a selected Modern industrial site.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Professor Masha Etkind, for her insight and guidance, for supporting me and giving me confidence during the undertaking of this thesis. Her knowledge, and patience added a great deal of value to my graduate experience.

I would like to thank my wonderful family, specially my brother. Thank you for your love and care throughout the entire process of the thesis and beyond.

Dedication

For mom and dad.

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CHAPTER 1 – INTRODUCTION

1.1 Problem Statement - Background Information

- **Introduction** - Historic buildings give neighborhoods their distinct character and at the same time provide a tangible connection to the past. However, their history and that of their settings are often ignored and not honored as part of our cultural heritage. As cities face fast rapid growth, the infill expansions for abandoned industrial sites become more and more attractive to the development community. These sites are usually centrally located in large cities such as Toronto. They are often located next to main transportation routes, surrounded by the neighborhoods that have grown up around them.

In the mid-twentieth century, the increase in automobile use and construction of major highways created alternatives to traditional rail road transportation and made it possible for people to live and work further away from the city core. Suburbs grew and industries moved out of the city, leaving downtown industrial sites abandoned. Buildings that had served industries in the cities now seem to be interlopers in their own neighborhoods.

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-Problem Statement –

As Modern architecture increasingly becomes part of the continuum of architectural history and its buildings experience threats that range from material to functional obsolescence, not to mention demolition due to abandonment and lack of appreciation, concern for its preservation has grown. It is important to look at the development of the protection of the twentieth- Century built fabric in order to determine the most appropriate way to continue to approach conservation and reuse of these buildings. Adaptive reuse is a strategy that has been used increasingly for protecting the historical buildings and sites; and while in most of the projects where adaptive reuse practice is being applied *the spirit of place* (genius loci) is often missed.

The first objective of this thesis is to formulate the meaning and spirit of the place as it applies to the site: Mount Dennis Neighborhood in West Toronto, former site of the Kodak plant. Within a proposed Master plan for the new college campus on the Kodak site the thesis will analyze and adapt the elements of Master plan that retain the meaning of place, its role in the city, its function as a generator in the community, its uniting role as it once was being a place of employment and recreation for local people.

The second objective is to investigate the relationship between new and old in the adapted and reused historic industrial buildings and sites in Toronto as applied to the surrounding community

and neighborhoods. Salvaging and reinstatement of Modern industrial structures is not only a worthwhile goal in itself but also a starting point for the complete transformation of post-industrial areas of the city into ones with a community focus. Buildings can reclaim their former prominence and environmental eminence while their heritage and community values will be preserved.

The third objective is to demonstrate that understanding of the original function, formal organization of site, use of materials and sustainability of industrial buildings in Toronto can provide viable strategies for re-use while making the heritage buildings viable once again in their new functionality and use.

Finally, the thesis will focus on the investigation of how two architectural systems impact on one another: heritage versus the contemporary; it will formulate principles and guidelines for successful intervention that while preserving the essence of the built environment will allow to adapt it for new and contemporary functionality. This thesis will investigate relationship between some meaningful aspects of the original Kodak Employees building and the proposed solution for new functionality and design. The proposed principles of the adaptive reuse strategy are to be formulated and tested through design process applied to Modern industrial Kodak site.

1.2 Research Questions

1. Why preserve? How to preserve industrial character while making new?
2. What is important to preserve in the original building that contains universal value and what are the character defining elements?
3. The relationship between new and old architecture during history has been a multifaceted issue, but continuity must be prioritized instead of tearing down if the character of historic places is to be preserved over the long term. So, the question is what are the principles of the proper relationship between historical modern architecture and the architectural production of the new?

1.3 Literature Review

Any adaptive reuse research should include a comprehensive exploration of heritage preservation. This research seeks to explore the preservation of our Modern industrial heritage

from the recent past and so it is of primary importance to define specific architectural styles associated with specific periods.

The first chapter begins by examining several of Hitchcock's definitions of International Modern style (1966). Definitions of heritage are compiled using principles set forth by Semes as guidelines (2009). Jane Jacobs (1961) mentions that the use of existing built forms in a city is essential, and also talks about the possibilities it can create: "Old ideas can sometimes use new buildings. New ideas must use old buildings." Prudon's ideas about preservation philosophies and standards, as well as preservation issues unique to Modern materials and systems will be discussed (2008). According to Prudon (2008) it is quite a challenge to preserve the design intent and character of a Modern building while using new materials and advanced technologies not available when the building was constructed.

The next part of the research focuses on different interpretations of *genius loci* (spirit of place). This section explores Schultz's concept of place as an approach to architecture (2000); Schultz acknowledges the importance of the existence of man and the spirit of place. Then different understandings of *genius loci* will be compared: the synchronic ones of Schultz (2000) and diachronic ones of Herbertson (1963). Then the idea of placelessness by Relph, E. C. (1976) in Modern architecture will be discussed. The next part of the thesis deals with maintaining the spirit of Modern International buildings by understanding and referencing their characteristics.

The next section of the report focuses on the definition and importance of adaptive reuse and looks at studies by Heath (2001). Then the impacts of adaptive reuse projects on the city as discussed by Berens (2010) and Semes (2009) will be looked at. According to Semes it is important to preserve heritage contexts since they are the models upon which future architecture and future cities can be designed. Then relevant literature by Schittich (2003), Machado (1976), and Cantacuzino (1975) on the subject of adaptive reuse within the disciplines of heritage conservation and architecture will be discussed. Various ideas are compared and categorized according to the approach they take towards adaptive reuse. Each approach is discussed separately and an overview of relevant literature is presented schematically. The conclusion will deal with gaps in current theories of adaptive reuse of historic buildings; the arguments of Brooker (2009) and Van Hooydonck (2006) will be considered. At the end of the chapter relevant case studies will be analyzed.

Since the research was conducted in the city of Toronto, the paper includes some exploration of Toronto's history and heritage. Authors such as Jane Jacob (1961) and Wilcox and McBride (2005) describe great metropolitan cities such as Toronto in terms of development and of their potential to grow. A set of maps and data collected from such references as the Toronto Atlas and institutions such the Toronto Archives provide an understanding of industry, a primary moving force throughout Toronto's history; these complete the survey. Information regarding industrial sectors in Toronto, ones that have been destroyed as well as those that remain standing, has been collected from various documents and websites. The research then focuses on such selected neighborhoods as Mount Dennis. Resources such as the "Toronto Official Plan" are referenced to give a better understanding of the issues facing new development projects in those areas. Again, relevant precedents in Toronto will be studied using background information on each of the buildings before and after conversion occurred.

Then in the next chapter, the research focuses on the original essences of the historical buildings as they relate to proposed uses (original versus proposed). According to Semes (2009), when new elements are added to a historic setting it is expected that these interventions will represent the uniqueness of our time just as the historic fabric itself reflects its own time. Robert (1989) argues that in our contemporary world form follows change rather than function; at the same time, the existing form or plan can act as a foundation for new uses. This section attempts to provide specific strategies that may be applied to adaptive reuse of historical industrial buildings. The research examines literature by Heath (2001) and Langston (2007). Also, resources such as *Standards and guidelines for the conservation of historic places in Canada* (2003) are referenced in the study of the preservation of those materials generally recognized as character-defining elements for historical areas. The final part of the research before the design exploration is dedicated to relevant case studies that illustrate and aid the understanding of the thesis.

1.4 Research Methodology

-The first chapter is an introduction to the research. This section is based on the posing of relevant questions on literature review, critical theories and premises related to Modern industrial heritage; its goal is to attain a basic understanding of the area under discussion.

Any research on composing old and new architecture was undertaken with fundamental definitions of heritage preservation and adaptive reuse in mind.

Chapters five and six contain basic information about the industrial development of Toronto throughout history, and also an analysis of a selected site in the west end of Toronto. In discussing the history of Toronto, its industrial nature will be explored.

The seventh chapter explains the formulated principles that should be applied to successful adaptive reuse of Modern industrial heritage. These principles are functionality, original architectural intent, formal organization, materiality, sustainability and feasibility.

If we want to learn how to build sustainable buildings and communities, we must study durable examples. Therefore each chapter examines relevant case studies as it collects, analyzes and interprets various examples of successful adaptive reuse projects in areas with industrial components.

Chapter eight is a design exploration based on knowledge gained from research and on specific approaches that were formulated throughout this research. The chosen site is a test case for the proposed principles.

Thesis Statement

The objective of this thesis is to investigate the relationship between new and old in adapted and reused historic industrial buildings and sites in Toronto as applied to the surrounding community and neighborhoods. Preservation of the abandoned Kodak employee building will be carried out by the theoretical concept of the adaptive reuse strategy. The practical approach is to demonstrate that an understanding of the original function, the formal organization of the site, the use of materials, and the sustainability of industrial buildings in Toronto can provide viable strategies for reuse, while making the heritage buildings viable once again in their new functionality.



CHAPTER 2 – MODERN INDUSTRIAL HERITAGE PRESERVATION

2.1 International style: Defining Industrial Heritage in Modernism

Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. By old buildings I mean not museum-piece old buildings, not old buildings in an excellent and expensive state of rehabilitation—although these make fine ingredients—but also a good lot of plain, ordinary, low-value old buildings, including some rundown old buildings.¹

(Jane Jacobs, 1961, p. 95)

Intellectual and visual complexity is a recurring theme throughout the history of Modern architecture and has been the main topic of many studies. Identifying specifications of this complexity helps us achieve comprehensive knowledge and to formulate and put into action sensible preservation policies. A basic characteristic of Modern architecture is its simplicity of forms and design and its use of ornamentation to suit the themes and physical characteristics of buildings. Modern architecture is based on the "rational" use of Modern materials, according to the rules of functionalist planning, and on the denial of historical background and associated ornamentation. Early Modern architecture was born in the 20th century; movements to adopt specific principles underlying architectural design developed along with the technological boom and the Modernization of society. The machine was the main inspiration for its visual aesthetic. The progressive atmosphere prevalent in the western world in the 20th century was in large part due to opportunities presented by advanced industrial production. Le Corbusier's five points, the Bauhaus, and the dialogues of such organizations as the CIAM, the International Congress of Modern Architecture, influenced architectural theory of the early Modern movement between the two world wars; robust beliefs regarding social values and aesthetic objectives were delineated. The advancement of technology, besides providing an opportunity to develop a new style without much connection to the past, provided the means to create improved and healthier living

¹ Jane Jacobs, *The Death and Life of Great American Cities* (New York and Toronto: Random House, (1961),

environments for the majority of the members of society. Later trends included design simplicity, lack of ornamentation, spatial clarity, innovative use of materials and abundance of light pouring through large windows; these came to represent Modern architecture in people's minds. These characteristics were not only widely found in residential architecture, but also in many other types; all were categorized and visualized under the umbrella of the International style, a term which would become popular (Prudon, 2008).

In 1932 the label "International style" to describe Modern architecture was coined by the Museum of Modern Art, New York City, and this definition would come to be globally accepted. Their exhibit presented Modern architecture as a new visual language with world-wide impact; however, aspects such as its primary social program and basis were not emphasized. The style presented and labeled by the Museum has been commonly designated "Modern"; however other labels such as International style, *Neue Sachlichkeit*, and functionalism have also been applied. What distinguished International style from others was that its design solutions were indifferent to location, site and climate. This was one of the reasons it was called 'International'; the style was not dependent on local historicity or on any national vernacular. (Later this would be identified as one of the style's primary weaknesses). Accordingly we can say "placelessness" can be counted as the spirit of its time for International Modern architecture (Hitchcock, 1966).

International style can bring together aesthetics, technology, and society and attain designs that are not only visually supreme but also practical for the populations that use them. Its underlying concepts were global design solutions and universal standards of living; it also incorporated global aesthetics principles (such as the regularity of grid over symmetry, and an aura of technical refinement (Architectures: Modernism and after, 2004)). The concept of International style was free from historicism and certainly from most references to the past. Its major theme was severe blockiness: cubic shapes; smooth flat planes with unornamented surfaces (often painted white); the absolute exclusion of all moldings and ornaments; and flat roofs and freedom of planning made possible by the adaptation of steel frame or reinforced-concrete post and slab construction. All this enabled the use of partitions in demanding spaces without the necessity of devising any structural role for them (Curl, 2006).

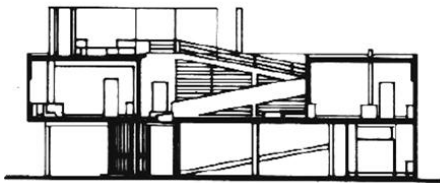
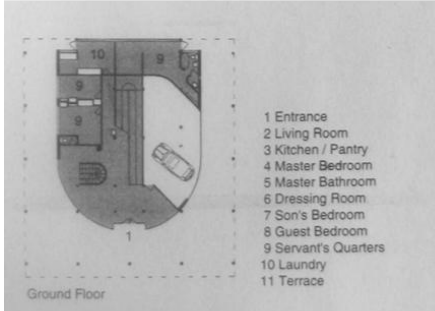


Fig 2.1 Villa Savoy

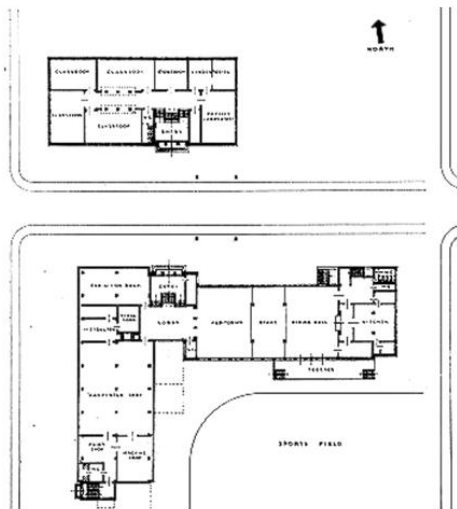


Fig 2.2 Bauhaus school

One of the most clearly recognizable and renowned examples of the International style is the Villa Savoy located in Poissy, France, designed by Le Corbousier and built between 1928 and 1931 using reinforced concrete. It embodies his design theories and aesthetics, specifically his five points of a new architecture: pilotis, a roof garden, a free plan, ribbon windows, and a free façade (Prudon, 2008).

Also the Bauhaus school, set forth by Walter Gropius in 1926, Germany, became one of the most influential currents in Modernist architecture and a paradigm for the International Modernist style. This style was marked by the absence of ornamentation and by harmony between the function of an object or a building and its design. The essential structure of the Bauhaus school includes an obvious and carefully thought-out system of connecting wings, which responds to the interior operating system of the school. Gropius constantly separated the sections of the Bauhaus building according to their functions and designed each in a different way.

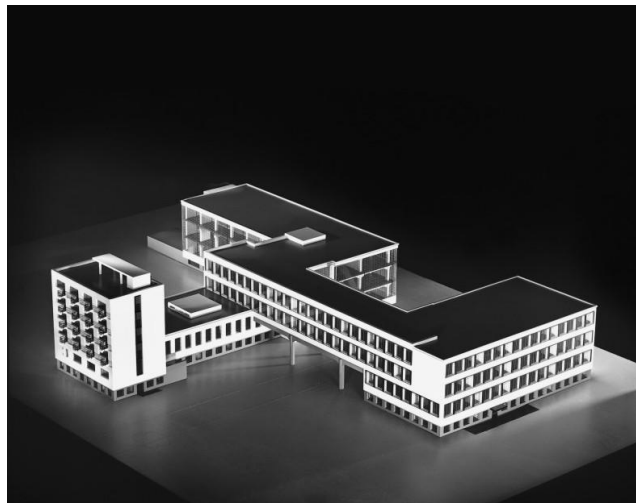




Fig 2.3 The Glass House

Furthermore, The Glass House, built in 1949 in New Canaan, Connecticut, by Philip Johnson is another significant example of the mid-century American interpretations of European Modernism or, as Johnson and Henry Russell Hitchcock called it in their 1932 book, the International Style. Philip Johnson, inspired by the Farnsworth House and Van der Rohe's Barcelona Pavilion, designed this unique transparent house whose structure is made of steel and the perimeter is completely composed by glass walls.

-Form Follows Function/ Program, Technology

*The building is a science and not the art, developed as an exaggeration of the idea of functionalism.*²

(Hitchcock, 1966, p. 35)

-Form follows function/program- is a theory associated with Modern architecture. If the form of a building was no longer selected from the old pattern book, clearly something other than form had to be its defining element. According to Sullivan this element would be the purpose the building was designed for. It was "form follows function", instead of "form follows precedent". The origin of this underlying principle is economic rather than ethical or historical. If a building provides adequately, completely and without compromise for its purpose, it is a functional building (Hitchcock, 1966).

² Hitchcock, H. R. (1966). In Johnson P. (Ed.), *International style*. New York: Norton.p.36

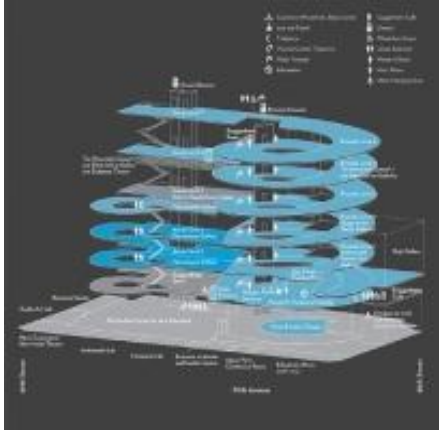
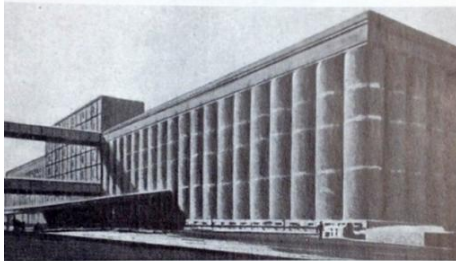
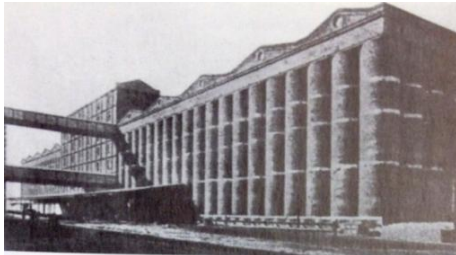


Fig 2.4 Guggenheim Museum

Also, “form follows the program” means that the use of a building should be the initial reason for its design. In Modern architecture planning became completely pliant to the needs of function or of program. The study of function, additionally, broke down most of the rules of planning that had been inherited from the past, just as structural advances enabled fundamental changes in plans. Frank Lloyd Wright believed that form and purpose or function of a building must be

joined in a spiritual combination; this premise is exemplified in the plan for the Guggenheim Museum, designed by Wright. Visitors would come into the building, take an elevator to the top floors, and then enjoy an unbroken and continuous art-viewing experience as they went along the spiral ramp.



1.2
Silo, Buenos Aires. Photograph
from article by Walter Gropius.
[“Die Entwicklung moderner In-
dustriebaukunst,” in *Jahrbuch des
deutschen Werkbundes* [Jena,
1913], opp. p. 16.]

1.3
Silo. Photograph from article by Le
Corbusier. (“Trois rappels à MM.
les Architectes,” *L’Esprit Nouveau* 1
[October 1920], p. 95; reprinted
in *Vers une architecture*, p. 17.)
© 2001 Artists Rights Society
(ARS), New York/ADAGP,
Paris/FLC.

Fig 2.5 American Silos

-Form Follows Technology- The reinforced concrete system, invented in the 20th century, became an essential component of construction. Buildings that used it generally also used post and beam structural systems. However, after World War I, flat-slab floor technology, which didn’t have ceiling obstructions and was relatively easy to build, predominated.

During the 1920s, Le Corbusier’s writing was marked by specific references to American technology. He acknowledged the methods, techniques and also the visual and symbolic characteristics of American mass production and industrial organization. These different figures and symbols were consistently a theme in his writings. In order to fully express his notion of “the first machine age”, he mainly utilized the imagery and symbolism of American

mechanization, industrial forms, and engineering techniques. He modified the then-current image of silos and created a new one in which the structure’s pediments were omitted, thereby

changing the concept of a flat roof. This alteration was not only dependent on geometry and expressive of purism, but also tied together the concepts of classicism and mechanization. Le Corbusier expressed his admiration of the American engineer and even later qualified it in his visionary plan as a new typology (Bacon, 2001).

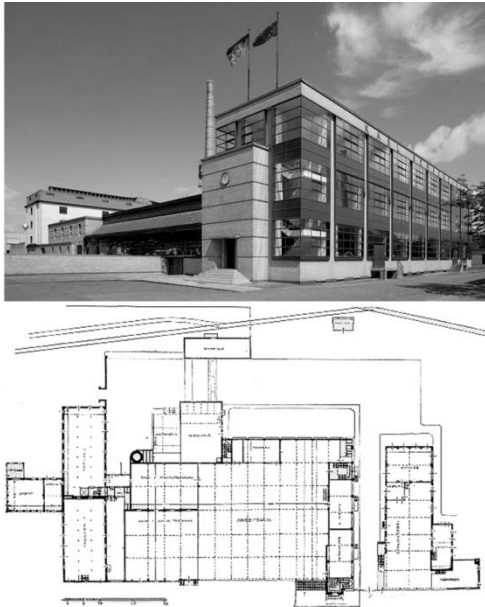


Fig 2.6 Fagus Shoe Factory

In 1930, the developments in power technology and advancements in machinery influenced the design of such buildings: these designs became linear as mounted drive shafts became common. Light remained the primary focus for industrial structures. Daylight was the main source of light, since any other sources were unavailable, unsafe or unaffordable. The introduction of cast iron and steel, which was followed by reinforced concrete, resulted in a reduced number of solid walls in buildings. One of the most impressive and readily visible changes that took place in 20th century building concerned the appearance and

construction of exterior cladding, including the curtain wall. The Fagus Shoe Factory in Alfeld on the Leine of Germany by Walter Gropius is an important example of this early phase of the glass and metal wall, where the structural systems have already been separated from the cladding. The separation of structure and glazing allows for a greater flexibility and for column-free corners, which is to become an important characteristic of Gropius' architecture (Prudon, 2008).

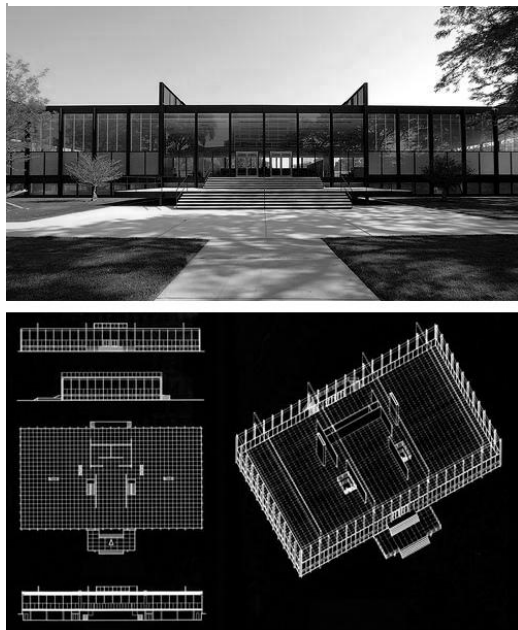


Fig 2.7 Crown Hall, Institute of Technology, Illinois

Different metals have been used in curtain walls over time and most of the early window wall systems were assemblies of rolled carbon steel sections with operable and fixed windows, vision panels and solid sections. Many of the window walls in the buildings designed by Mies van der Rohe incorporate carbon steel for

spandrels, framing, and glazing support members. Crown Hall, at the Illinois Institute of Technology in Illinois, completed in 1956 has this type of exterior detailing. Crown Hall is

architecturally significant because Mies Van Der Rohe took the basic steel and glass construction style and refined it. It is characterized by an aesthetic of industrial simplicity; with clearly articulated exposed steel frame construction. The steel frame is infilled with large sheets of glass of varying qualities of transparency. The result is a light and delicate steel and glass facade wrapping the open-plan, free-flowing interior of the upper level (Prudon, 2008). Considering all this inter-relatedness, it is hardly possible to separate architectural advances from engineering and technological ones (Berens, 2010).

-Modern Industrial architecture- industrial forms, materials and aesthetics had an incalculable influence on architecture and on the direction of early Modern architecture. Its processes inspired and continue to engage the imagination of artists and architects, from the anti-ornament sentiments of Adolf Loos to the design exploration of the Bauhaus and the sleek lines of the International style to the explicit expression of construction elements in the work of Rogers Stirk Harbour+Partners (Prudon, 2008).

Industrial architecture has two main characteristics: proficiency and safety. Early architects and Modern architecture were greatly influenced by industrial shapes, beauty and material. For instance, a simple exterior distinguished by flat surface of brick, wood or stone was introduced in industrial architecture. In the early 1920s, attention turned toward the use of the factory as an important building typology due to its significance as a place where goods were manufactured, and to its prominence as a workplace (Berens, 2010).

-Modern Heritage- Heritage has numerous aspects: heritage as things and heritage as a group of ideals. Heritage tells others a lot about who we are; we change things we acquire and ideals can take form and strengthen our identity through these changes (Semmes, 2009). A lot depends on how we observe our cities and towns. Modernity can be seen as a cultural investment that benefits from the identification of heritage and the respect for the long and multi-faceted history it represents. To paraphrase Adolf Loos: heritage is more compatible with an ancient truth than with the lie that accompanied the fiction of Modernism.

Modernity is the base upon which creativity is built. Innovative concepts springing from this creativity can in turn be articulated in architectural language. The spirit, aesthetic statements and manifestations of this language contribute strongly to our intellectual heritage. Modern heritage assets are solid representations of the past and evoke vivid memories of it. Also Modern heritage buildings are identified as historical and cultural dimensions that maintain a direct artistic, social and technological importance (Heritage at risk, 2004).

The concept of conservation and preservation includes the protection and maintenance of the built environment and the several cultural values it represents. While not yet distant in time, the 20th century can be considered historically extraordinary. This is despite the fact that, from a geopolitical point of view, it only lasted seventy-one years: after World War I the Victorian Age ended and “Modern society” was initiated. Appreciation of Modern heritage can be in danger due to a public lack of interest in it, and also due to the hyper-dynamic pace of everyday life and the technological advancements and spatial-functional demands that go along with it. All these conditions contribute to a future-oriented rush to progress that may leave heritage forgotten (Prudon, 2008).

Industrial buildings, remnants of Modernity and of the Modern movement, are found in rural, suburban and urban landscapes. Many Modern industrial buildings are outstanding historically and culturally and can be seen as exemplifications of the technology and function that inspired architecture in the first place. They illustrate the evolution of building structures; it can be traced in the transformation from use of traditional masonry to steel structure and reinforcement concrete. Industrial complexes and factories are both the substantial outcomes of, and promoters of, industrialized society. Industrial manufacturing offered opportunities to build better and less costly buildings in greater numbers (Prudon, 2008).

2.2 Preservation of Industrial Heritage

At the end of the 20th century, the architectural inheritance of the Modern movement emerged as more of a threat than at any other time. The built heritage celebrated the energetic spirit of the Machine Age. Many significant Modern buildings had already been destroyed or had changed beyond recognition at the end of the 1980s. This was primarily because they had not been regarded or respected as components of heritage, and also because their original uses had been considerably altered and the technology they used, although innovative at the time they were built, had not held up under long-term pressures.

While preserving Modern buildings may be seen as a positive step towards heritage maintenance generally, the growing focus on Modern architecture is not remarkable considering the fact that appreciation for architectural styles related to distinctive historical periods has increased over the years. Individual iconic buildings that have been singled out as unique in some way, for instance as being representative of a significant architect, are frequently the

primary centers of attention of preservationists. This is true especially as they have become endangered due to breakdown of materials or negligence of maintenance, or due to physical or functional obsolescence as they edge towards the half-century mark (the point at which historic importance is acknowledged in most jurisdictions). These structures are rallying points for the heritage movement, and their preservation serves to raise public consciousness generally; in turn, support is bolstered for preservation attempts that embrace other significant buildings, architects, and historic trends, sometimes with a specific period deemed especially worthy of conservation (Prudon, 2008).

Modern industrial heritage conservation tends to be focused mainly on our most recent past, which was characterized by mass mechanical reproduction. One significant complication regarding the conservation of Modern industrial buildings is that there is not a high level of public sympathy for them due to popular bias. An essential difference between the conservation of Modern industrial structures and that of traditional ones is an enormously accelerated level of replacement. Those structures made of traditional materials and by traditional construction practices are likely to have a slow rate of replacement (over decades or even centuries), whereas the innovative materials and efficient designs of Modern industrial structures are regularly maintained and replaced. Since manufacturing procedures are constantly changing, the conservation of early Modern factories is endangered by the fact that they face functional obsolescence. The fundamental challenge in terms of preservation has become the finding of appropriate new uses for buildings (Prudon, 2008).



Fig 2.8 Van Nelle Factory

Moreover, pioneering and innovative preservation policies had to be implemented that would take into consideration the sometimes extraordinary scale of buildings. Van Nelle Factory in Rotterdam designed by architect Leendert van der Vlugt is one of the world's most important examples of a preserved industrial building. Its preservation was the result of intensive public-private collaboration

involving the owner, regulatory agencies, the new developer, and other interested parties. Its adaptive reuse proposal was responsive to both the architectural meaning and functional practicality of the structure (Prudon, 2008).



Fig 2.9 Tate Museum, London

Industrial archaeology is devoted to the analysis and preservation of facilities and objects that relate to industrial processes, manufacturing systems and technological advancements. It generally attempts to engage traditional preservation techniques with results expressed in documentation and site conservation attempts that relate to smaller building structures. Industrial buildings have constantly faced endangerment from changes in manufacturing technologies and the social and economic circumstances that go with them; however, the number, size, functional designs, and engineering technologies of more innovative buildings and complexes has introduced challenges to preservation on an unprecedented level. To meet these challenges, projects have been introduced that display a wide range of every innovative strategy

imaginable. These have involved setting up continuity with the original sites, and, in more progressive cases, allowing

for a combination of advancement and preservation. Strategies of preservation regularly utilize museum amenities and arts-related programs that take their inspiration from large open interiors. The Tate Museum, housed in Gilbert Scott's 1947 Bankside power station in London, is one of the cases of such rehabilitation (Prudon, 2008).

In the 20th century there was a multitude of building typologies; however the trend was towards purpose-specific ones. For instance, factories found increasing expression over this century. They not only have a high risk of obsolescence, but also present a challenge in regards to preservation.

2.3 Issues affecting preservation of Modern Industrial Heritage

Functionality and obsolescence: Functionality and obsolescence: The main concerns in the preservation of Modern industrial architecture are functionality, obsolescence and life span. These concerns can be substantially defined with regards to function-specific designs, taking into account sudden changes which might affect the specific function of those architectures. Another consideration is that conditions may be worsened by Modern architects' use of experimental materials. Obsolescence for Modern industrial architecture may be either

functional or physical obsolescence. Functional obsolescence can be defined in two ways: either the original design is no longer functional or the rate of evolution of expectations has necessitated change. The latter is the more immediate concern; dramatic changes in expectations— of size, amenities, and accessibility, among others- have and will continue to challenge the adaptability of existing structures. Some changes that can often affect the functional obsolescence of a building and its program are: how the business and work are done or performed, expected type and variety of service and amenity, escalation of expectation and standards in residential and commercial real estate, and the capacity to accommodate volumes of people and/or goods or services.

The obsolescence of Modern industrial architecture is also definable in physical terms of materials and building systems. The experimentation and new developments in these fields, prominent in the 20th century, set the foundation for the post-war construction boom. Physical obsolescence is a much more critical condition for Modern industrial architecture than for traditional industrial buildings.

Design intent: Continuity and ability to identify the original design purpose is of the essence in the preservation of Modern industrial architecture. Original design intent can be defined as the visual and conceptual interpretation of the designer's creativity; as such, it influences both the building and its construction at the same time. An acceptance of greater reliance on the intangible (and therefore the less on material expression) diverges from conservation preservation practices: it demands the association of definition with authenticity and, to a lesser extent, with material preservation. On the other hand, in traditional preservation practice, the original material itself and its presence are noticed as the most authentic characteristic; accordingly these need to be preserved in Modern architecture. Parameters of both design intent and material authenticity are essential; however, the priority remains with design itself.

2.4 Impact of Industrial Heritage on Urban Context

The character of the city is determined by the experience of the urban fabric; it is built layer by layer, carrying forward the testimony of each subsequent generation. When we talk about the significance of preserving the man-made setting, we must also think about ways to sustain it in the future. Our environment is endangered when a contemporary improvement fails to appreciate a building's "architectural" value. So, it appears that principles of "past" and "progress" work together in the same context; this raises a couple of questions concerning

architectural reactions and how the value of the built environment can be demonstrated within a context of change.

Attention to the larger view of architectural heritage increased and finally began to focus on the impact of Modernity on the built fabric. Perspectives and views on our cities differ: historians see them in one way, architects in another, while residents observe them in a totally different way from tourists who are only visiting. Our motivations cause diverse expectations and interpretations vary broadly. All sites change their uses and appearance over time. As demography and context change, the character of the space shifts accordingly. The crucial concern is: How much of the original needs to be preserved in order to maintain the integrity of the urban context as initially realized?

The respond can be found in the words of Andre Malraux: „The world of art is a world of metamorphosis, not of immortality“(Choay, 1969)³. The course of change is, in fact, a permanent condition, but the circumstances of our time create a dilemma in terms of adapting new types of architecture, and more generally, in terms of fitting contemporary architecture into recent past urban context.

Urban transformation is an unavoidable process of urban growth. It is one that must be appropriately managed so as to sustain the overall cultural nature of a place, which is termed its 'sense of place'. In practice, urban conservation is perhaps today's most visible strategy for such management. It comprises the concepts of managing the pressure between continuity and change in the city and of recognizing the sense of a place and establishing precedents for the creation of the long-term characters for the urban context.

The destruction of urbanism is a major and grave change that has taken place in the recent past, and one that we must be aware of. The critical issue is how to attain urban context value that would both improve local character and support a sense of community (Cullen, 1961). We will not be so naïve as to assume that the entire built environment can be protected and secured. However, when working with heritage structures, this preservation is certainly desirable and must be consistent with their surviving physical context.

³ Choay, F. (1969). *The Modern city: planning in the 19th century*. New York: George Braziller.p ,15

2.5 Preservation Methodologies

Concepts of preservation that affect design methodologies for Modern heritage buildings must be discussed, and any discussion should outline the guidelines to which interventions must adhere in relation to the historic building. As published in the Standards and Guidelines of the Conservation of Historic Places in Canada (2003) there are different approaches to treatments for the conservation of Modern industrial heritage buildings; these can be broken down into four categories: preservation, rehabilitation, restoration and reconstruction. In response to functional exigencies of buildings from the more recent past, rehabilitation emerges as the most appropriate strategy. It focuses on the process that created the building rather than on its individual, tangible components. Furthermore, it is suitable that buildings with architecture rooted to a large degree in functional principles find uses that continue their original practicality. One approach could be that the appropriate rehabilitation of Modern heritage building through compatible programs should be consistent with the original design intent; this approach holds out promise for the continuity of that intent (Prudon, 2008). Traditional or older buildings can be “rehabilitated”; Modern buildings undergo “preservation”. It should be considered essential in conservation to find a use for a building that is compatible with its original one, and in this same spirit, and that will continue its functionality. Conservation must involve more than just keeping a structure standing.

2.6 Relevant Precedents

Fiat's Lingotto Factory

Architect Renzo Piano
Italy, Turin

The adaptive reuse schemes implemented at the Fiat Lingotto and Van Nelle factories are important to create potential of development and preservation schemes. Both concepts; they present factories of information and creativity, are in keeping with the original purposes of the buildings as manufacturing facilities relevant to contemporary culture. These new two programs are realized while maintaining the overall architectural integrity of the site and appearance of the buildings. They are important examples of flexible and creative solution for expansive, large scale Modern buildings and sites that face functional obsolescence. (Prudon, 2008)⁴

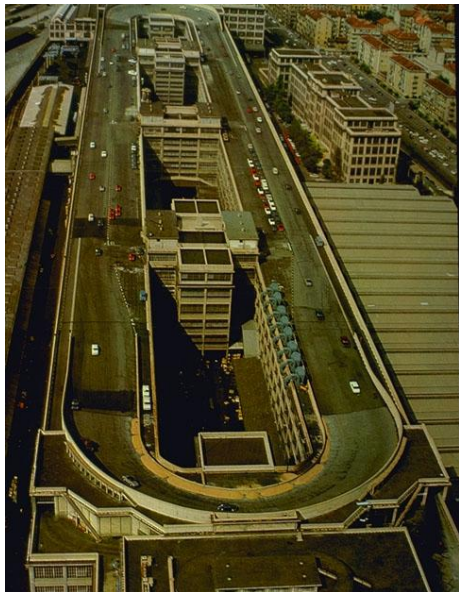


Fig 2.10 Fiat's Lingotto factory race track

Fiat's Lingotto factory was completed in 1923, not similar to any other automobile factory to date; the factory featured a spiral assembly line that moved up through the building and a concrete banked rooftop test track. This structure contains five stories and has helical ramps at the northern and southern termini, which basically provided the vertical circulation for the production process. The structure is the rigorous grid of reinforced concrete systems of columns and beams. The columns are approximately 35 centimeters and were placed on a grid of approximately 6 meters.

In 1983 the company sponsored a competition to generate ideas for the site rehabilitation. The design concept submitted by Renzo Piano Building Workshop was

selected. The proposal envisioned a multipurpose complex that would stimulate interaction between public and private sectors and serve the city's need for research, education, culture, and technology. The design solution that evolved out of the feasibility study and the subsequent schemes were not preservation or restoration in the conventional or historical sense, but rather an adaptive reuse strategy that first and foremost capitalized on the spirit of the site and the building.

⁴ Prudon, T. H. M. (2008). *Preservation of Modern architecture*. Hoboken: Wiley, p. 472

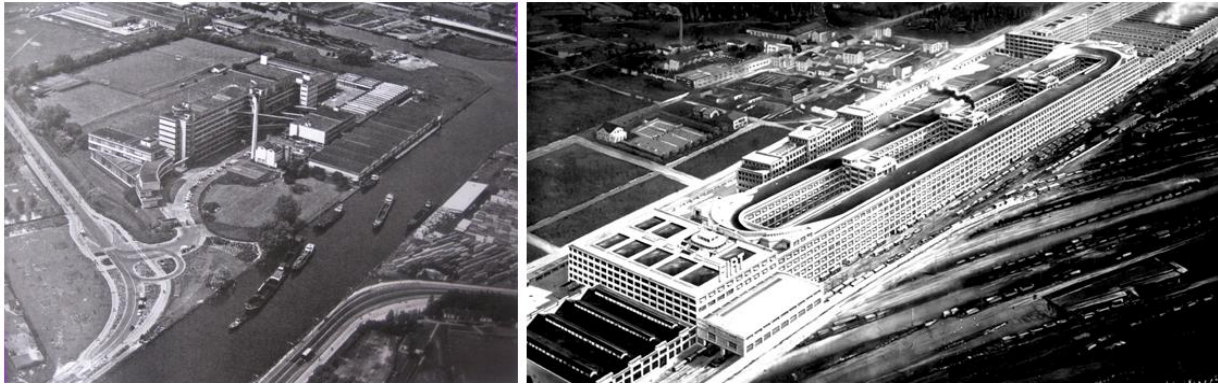


Fig 2.11 Fiat's Lingotto factory

The Fiat's Lingotto factory, like many late nineteenth and early twentieth-century factories in industrial cities, was constructed on what had been the outskirts of town, and in many such industrial cities, when production stopped, employee lost their jobs, and the local economy was destabilized. As a result, negative perceptions of the site itself had to be addressed in its rehabilitation. It also had to reconnect to the surrounding urban fabric.



Fig 2.12 Fiat's Lingotto factory spiral ramp

While the original concrete structure was found to be adequate for the new uses, the original exterior envelope's steel windows, so typical for many industrial buildings, were severely corroded and had no insulation, and the stucco, which had been applied to the brick spandrels, was failing. A new system was designed; it has insulated glass that resembled the original windows; while maintaining the masonry opening the windows are less subdivided than the originals, resulting in slightly larger pane sites. Bright green roll-down canvas sunshades were installed on the exterior. On the ground floor, the nearly 25-foot-high original openings were filled with a curtain wall-like glazing that was stiffened its elegant columns detailed with perforated flanges over the entire length of their shafts. The rooftop test track is accessible only to Fiat personnel, guests of the hotels. And visitors to the gallery, while the north ramp is used for access to the shopping centre on the second floor, the south one has been retained in its

original configuration and serves as an access ramp for service and emergency vehicles to the various floors of the main building. The building's exterior remains largely intact-only the windows and their configuration have been altered.

The conservation of the Fiat Lingotto Factory has also been an architectural success. Given its logical structure, simple exterior, and lack of interior finishes, the factory's rehabilitations had few limitations and many opportunities. Its adaptive reuse continues the spirit of the original building while maintaining its signature elements and the factory building once again contributes architecturally and culturally to the urban context of Turin.

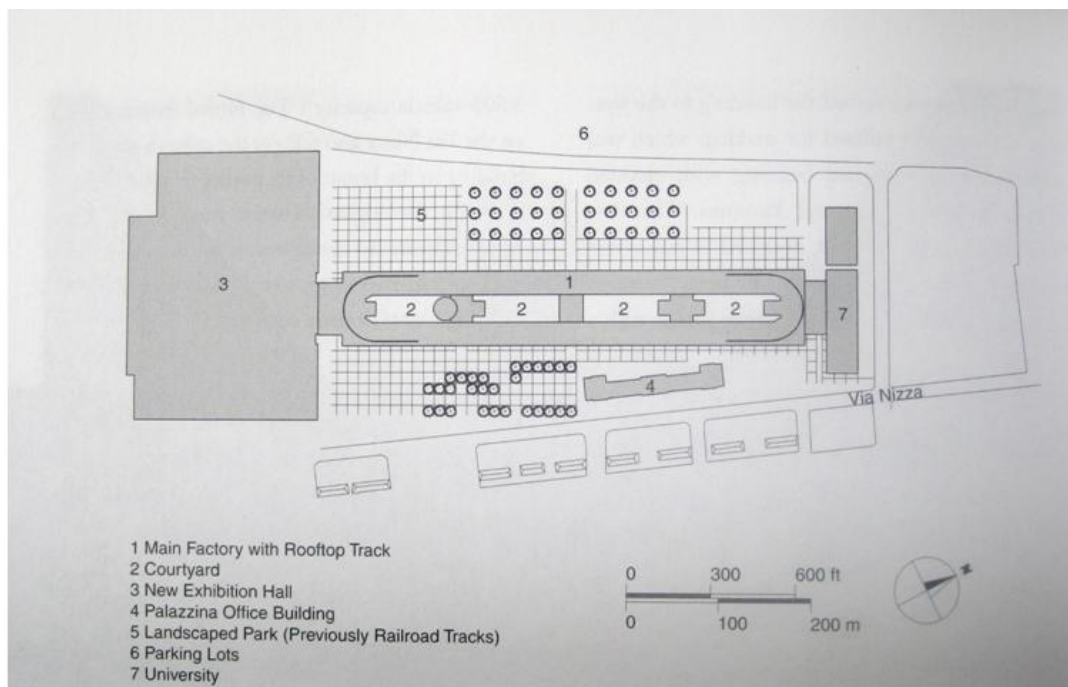


Fig 213 Fiat's Lingotto factory floor plan

CHAPTER 3- GENIUS LOCI

3.1 Defining the spirit of place: Genius Loci

"The place, is the concrete manifestation of the world of life, and as an instrumental art, architecture is the art of place." (Norberg Schulz, 2000 p.17)⁵

Understanding of the concept of place is the first step towards a definition of architecture. According to Norberg Schulz, architecture is "the art of place." Place allows us to acquire a clear sense and understanding of our existence. In Roman mythology a *genius loci* was the protective spirit of a place; however, not only is this term difficult to define but it has changed over the past two centuries. The *genius loci* was originally defined by its early users and also had a commonly used translation in the 18th century, a time when the aesthetic appreciation of new, especially more rural and garden landscapes was the fashion (cf. Hunt & Willis, 1988). In contemporary usage, *genius loci* usually refers to a location's distinctive atmosphere, or its "spirit of place". In Modern architecture the *genius loci* was usually considered but tended to be underestimated.

Genius loci has been defined and understood in different ways. Its meaning depends, first of all, upon whether history is understood synchronically (as eternal repetition) or diachronically (as an evolution of change). A synchronic reading of *genius loci* comes from Norberg-Schulz. He tries to identify the quality of Greek natural places and the classical architectural compositions that corresponded to them. However, his account fails to explain the changes in Greek forms before and after the classical period, and it also does not identify the specific social evolutions that put humanity at the centre of Greek art and history. Herbertson's understanding of social change is by contrast clearly diachronic (Herbertson, 1963). He presents the *genius loci* as an outcome of the concrete historical process, and presents the production of places as a multi-layered interaction between nature and culture into which ethnic and aesthetic considerations enter.

Our understanding of the *genius loci* is largely dependent on whether we conceive of culture and nature as continuous or discontinuous. However, in regards to it also, we find synchronic and diachronic interpretations with the latter divided between extra-historical views (in which a world of spirit changes the world) and historical views (in which human needs, process and struggles are changing the world) (Loukaki, 2007).

⁵ Norberg-Schulz, C. (2000). *Architecture: Presence, language, place* (1st ed. ed.). Milan: Skira Editore aLondon :[bThames;] & Hudson.

It is clear that the term *genius loci* is a multi-layered one with complex meanings. There are disputes among the authors over its meaning. The simplified meaning of a 'sense of place' is the recognition of the identity of a place. If a place's identity has continuity, it resembles the 'sense of reality' experienced by humans.

3.2 The spirit of place vs. the spirit of time (Genius Loci versus Zeitgeist)

"There is a Genius Loci as well as Zeitgeist- a spirit of a place as well as time. The spirit of a place changes with the spirit of the time; it alters with man's relation to the region. The historians have to reckon with both in his great cycle; the geographer has to consider both in trying to understand regional consciousness."

*(Herbertson, 1963, p. 153)*⁶

Integral to man-made places is the element of time, which of course comprises variation and change. Although the passage of time can be represented by the use of spatial properties such as rhythm and direction, architectural representations of it should also evoke constancy so that buildings can maintain their "personalities" over the years. Changes that occur through time are supposed to further the sense of *genius loci* and deepen qualities of local place. The 'spirit of place' and cultural identity have been prominent subjects in recent studies of place, due to the concerns of scholars such as Edward C. Relph that they are disappearing in the global placelessness of Modernism. Although placelessness is the main characteristic of International style, it is still essential for architects to consider the relation of a building to its site. As Renzo Piano mentioned, every project has a topographical component. To clearly understand the "placeform", each project must be specifically studied and its history, place, geology and climate thoroughly understood.

3.3 Genius Loci and Modern Industrial Heritage

Awareness of the tradition of a place is a key factor in understanding the uniqueness and character of that place, and inherent in this awareness is a projection of what this place will be like in the future as it discovers its potential. A building possesses meaning and this meaning is displayed in its physical structure. Therefore, it has a notable interaction with our values and our attitudes toward past and contemporary places, and our ideas of how they should alter or evolve in the future. Character establishes atmosphere and creates a world of form and substance. The physical structure of our building is definable culturally and geographically. But it is its

⁶ Herbertson, A. J., & Herbertson, D. (1963). *Man and his work: An introduction to human geography*. Black.P.153

architectural rendering that defines its spirit. There are two characteristics of our environment that can affect the spirit of our buildings: program and style (Schulz, 2000)

The intended program or use of a building determines its character and how it is built. A building's space must be compatible with its specific function, and also we must be mindful that this space will influence our freedom of movement and how we experience the building and its environs. Other aspects of use can be delineated as follows: arrival (path / entrance), departure, encounter (experience / atmosphere), meeting (social encounter), clarification (context), retreat and isolation.

Another aspect which should be considered in the preservation of the *genius loci* of a building is its style. Style also defines the character of place. Style can reflect the various languages of different countries; both style and language represent common meanings and values that can be universally interpreted. Style consists of forms and shapes which create a new totality; this is evidenced in the Classical, Gothic and Modern styles of architecture. According to Norberg Schulz (2000) style can renew itself and comply with "the spirit of the period which it belongs to". Style may effectively be influenced by the attempt of architecture to create durable design in the presence of change. Style may frequently be observed to be indicative of use; for instance, the Gothic has traditionally been used for churches, the Classical for universities and museums and today Frank Gehry's stylistic vision has resulted in architecture which is often used to house exhibition spaces. Hence, style can be defined as a timeless reaction to a place that not only determines building forms but changes over time and in response to history. In the other world the spirit of place can be preserved by retaining the style.

Genius loci can be defined as sum of all physical and symbolic values in a building. I believe that spirit of place (*genius loci*) in Modern industrial heritage can be maintained by preserving Modern industrial architecture's physical as well as symbolic values and characteristics such as grid, proportion and the notion that "Form follows function", a dictum originally expressed by Frank Lloyd Wright. Also important are simplicity and clarity of forms and elimination of "unnecessary detail", visual expression of structure (as opposed to the hiding of structural elements), the related concept of "truth to materials", (which means that the true nature or natural appearance of a material ought to be seen rather than concealed, altered or disguised as something else), use of industrially-produced materials and adoption of the machine aesthetic, particularly in International style Modernism where the visual emphasis is on horizontal and vertical lines.

3.4 Relevant Precedents

The Van Nelle Factory

Rotterdam, Netherlands

The buildings were designed by architect Leendert van der Vlugt from the Brinkman & Van der Vlugt office in cooperation with civil engineer J.G. Wiebenga, at that time a specialist for constructions in reinforced concrete, and built between 1925 and 1931. It is an example of *Nieuwe Bouwen*, Modern architecture in the Netherlands. In 1997 the concept of the VanNelle Design Factory was set up. It involved collecting together businesses involved in design and communication and providing them with a comprehensive set of support devices – necessitate by the complex's somewhat remote location. The renovation and adaptive reuse firstly focused on the main complex of the three factory buildings and was to take advantage of an exemplify the building's original design logic and vocabulary.

In the formulation of the building design standards, which includes doors, walls, partitions, and interior windows, the general sense of openness and transparency was maintained as best as possible. Inspired by the character and design of the original buildings, they are somewhat industrial and efficient in character.

The factory grounds still largely retain their original design. Among the most striking features are the glass aerial walkways that connect the factory buildings and the shipping office.

The factory was designed on the premise that a modern, transparent and healthy working environment in green surroundings would be good both for production and for workers' welfare.

The complex is the result of the radical application of a number of cultural and technical concepts dating from the early twentieth century. This led to a new, functional approach to architecture that enjoyed mass appeal right from the start. Therefore the spirit of production has been continued to new building (Prudon, 2008).



Fig 3.1 Van Nelle factories

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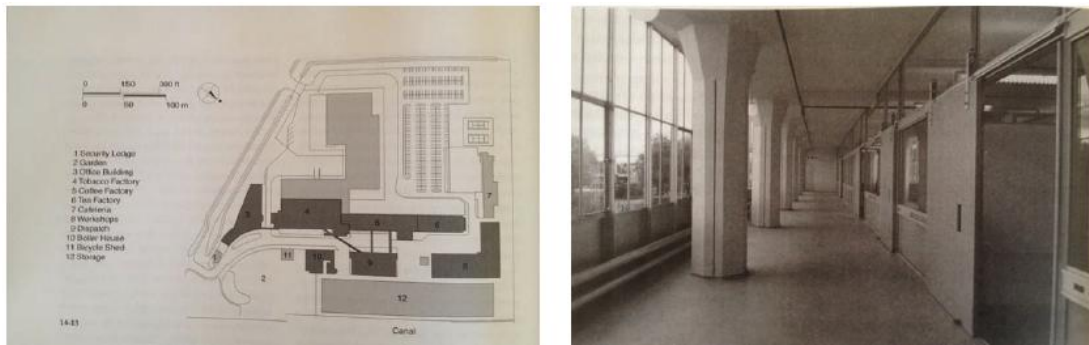


Fig 3.2 Floor Plan and Interior view

The complex has immense value in terms of international architectural heritage. Its design was based entirely on an analysis of the technical and social functions expected of a factory, with particular concern for the development of the lower social classes.

The main factory buildings were built in reinforced concrete with a flat slab floor system. The



modern appearance is largely the result of an early curtain wall consisting of steel window assemblies, each one floor high supported on a floor-by floor basis that extends uninterruptedly in front of the structural frame (Prudon, 2008).



Fig 3.3 Construction View and Curtain Wall

The factory's architecture and structure have been preserved in their original state, although it no longer contains any machinery, the manufacture of tobacco products having ceased in 1998. When the factory was given a different function (factories of information and creativity) as of the late 1990s, the authenticity of the building was carefully preserved. The architect who restored the premises worked on the assumption that the factory would become a world heritage site.

CHAPTER 4 – ADAPTIVE REUSE

4.1 Defining *Adaptive Reuse*

“More often than we like to admit, we are not engaged in changing the world to some determined end. We are adapting responding to outside forces beyond our control, seeking to survive, to preserve something, to maintain some desired level of performance.”⁷

(Lynch, K. 1972, p 199)

Adaptive reuse usually refers to the reuse of sites or buildings for purpose other than they were originally built or designed for. These new uses can offer economic, social and cultural benefits to their environments. As well, reuse is one approach to sustainability since it conserves original durable building materials. Adaptive reuse deals with issues of conservation and preservation of built heritage as well as strategies and policies. Once old structures become unsuitable for their functional and programmatic requirements, adaptive reuse becomes a sustainable option for reclamation of sites.

The urban areas that mostly became subjects to adaptive reuse in the process of development of the city in the 20th century included endless number of industrial sites and their buildings due to the fast development of industry and technology that forced the industrial processes to move further to the urban periphery away from the city center. Therefore, in the context of urban development, *adaptive reuse* turns into an approach to urban renewal where historical industrial facilities being that have being abandoned and neglected remain the carriers of social meaning. Heritage buildings are physical repositories of collective memory embedded in the place, in the dilapidating structures and their materials, in the obsolete infrastructure and the abandoned open spaces once preserved and retrofitted. They represent social value that celebrates intangible cultural heritage embedded in the historical material of the built form.

4.2 *Adaptive reuse* and Industrial Modern

Industrial structures are remarkable architecturally for their dimension and simple ornamentation, and also for their efficiency. Another important aspect is that worker safety is a

⁷ Lynch, K. (1972). *What time is this place?* Cambridge, Massachusetts: MIT Press.

prime criterion for the construction of industrial buildings. North American industrial buildings of the 19th and 20th centuries are leftovers from vernacular architecture that served a practical purpose rather than an aesthetic one. Modern-heritage industrial buildings are deserving of preservation and a new life. Many older industrial buildings have been ignored because they had no association with famous people, unlike some palaces and castles that have been carefully preserved. Many industrial buildings continue to be ignored by much of the conservation community because they are still considered as nuisances and eyesores. They are frequently unnoticed also because their environment has deteriorated, the landscape is contaminated, and it is considered that their architecture is unexceptional. This attitude ignores the notable detailing, character-defining elements, and careful use of public spaces usually found in industrial complexes.

Saving factory architecture speaks to the belief that these structures have the potential to transform the architectural fabric. Unfortunately, the anonymous lives of the many employees who worked hard under deplorable conditions are hardly ever acknowledged. Therefore, the questions we ask should be: 'What has this structure been?' and 'What could this industrial structure turn into?' Posing these questions will result in transformations that are mindful of the buildings' past.

Rejuvenation of the historical and cultural values of an industrial building is one worthwhile approach to adaptive reuse. When the historical industrial building was initially in use, it served a specific function in the community. It offered character to an area and created a 'sense of place'; acting as a link to the past is a significant attribute of historical buildings. It is possible to create a diverse neighborhood through different building types from different periods by not demolishing these structures but maintaining and improving them in a way that emphasizes essential characteristics. Also, decreasing the number of unoccupied or derelict buildings will help reduce both the crime rate and the incidence of antisocial activities in their area. Furthermore, adaptive reuse projects can help to revitalize the surrounding neighborhood, thereby providing economic benefits for both the municipality and the developer (Langston et al., 2007).

4.3 Impact of *adaptive reuse* on city development

An increasing number of cities are initiating holistic policy approaches to decrease and revitalize their derelict or underutilized heritage industrial structures. (Schilling, 2002) An option for our ever-growing cities, adaptive reuse is a sustainable strategy for existing structures and

materials. In North America today, one controversial concern in contemporary urban expansion is the adaptive reuse of aged urban industrial sites or structures. These sites are known as brownfields instead of greenfields due to the fact that they may contain chemical contamination; it is of course necessary to deal with this problem before the structures can be put to residential or commercial use. A successful adaptive reuse project can offer growth and also bring heritage tourism to its city and new life to its neighborhood (Berens, 2010).

The particularity of our times must be considered in the same way as is historic context; we must project it into the future so that it will be able to add new components to the historic fabric. In recent years our urban contexts suffered a great deal of damage because of misguided guidelines that refer to “the architecture of our time”. While it’s obvious that our opinions of the art and architecture of the past are unavoidably influenced by our concern about the present, we should try to set aside for awhile our obsession with applying “the architecture of our time” and appreciate historic sites as living entities that can grow and adapt without losing the character that makes them worthy of conservation and that can offer models for contemporary construction (Semmes, 2009).

4.4 Adaptive reuse as an approach for preservation of Modern Industrial heritage

Adaptive reuse is regarded as an essential strategy of cultural heritage in current preservation theory and practice. Since prehistoric times, there has been modification of buildings to adapt to changing demands; however, it is only recently that different strategies towards adaptive reuse have been developed (Cantacuzino, 1975).

After review and evaluation of contemporary literature on the adaptive reuse of heritage buildings, (1970s up to the today), we can identify three main strategies for heritage conservation: typological, technical and architectural.

- Typological approach- ‘A new use for old buildings’ by *Cantacuzino* was the first publication on adaptive reuse. Its introductory essay discusses the history of adaptive reuse and its role within current conservation practice. It goes on to give a variety of examples from all over the world; these examples are presented according to building type before adaptation. A number of authors including Douglas followed this strategy of creative re-use of buildings; he also organized a section of his broad work on building adaptation according to the typology of the building (Douglas, 2006). In contrast, many publications only deal with reuse of one specific building type, e.g. religious buildings or industrial buildings (Stratton, 2000).

-Technical approach- Several writers considered building adaptation as mainly a technical matter. Also, some 'guidebooks' have been written regarding how to decide on a new function for adapted buildings. 'The rehabilitation and re-use of old buildings' by Highfield published in 1987 is a booklet in which the author first explains the benefits of rehabilitation. He differentiates domestic and nondomestic buildings and in a technical chapter he discusses the upgrading of fire resistance, thermal function, acoustic performance, elimination of damp infiltration, condensation and timber decay; at the end is a compilation of some precedents which he explains mainly from a technical point of view (Highfield, 1987). Furthermore, a main portion of the work of Douglas is about technical characteristics of reuse. Highfield and Douglas discussed building protection but they approach the host space only as a shell or container instead of giving attention to aspects of preservation and heritage. A number of other authors such as Rabun & Kelso focused on technical criteria of reuse and emphasized the significance of an interdisciplinary strategy towards reuse of historic buildings; they dealt with conservation issues, planning, architecture and engineering.

- Strategic approach- The strategic approach concentrates on the processes and strategies used for adapting important structures. Machado's essay 'Architecture as Palimpsest' describes what he calls 'some pre-theoretical "suggestive material" that could be used as ideas to consider what is particular to remodeling' (Machado, 1976). He talks about a sequence of metaphors to propose various potential methods of remodeling. Robert also applies the metaphor of the palimpsest to clarify the theory of conversion. He sets forth seven ideas for conversion and gives examples from a broad span of history, presenting cases from ancient times up to the postModern age: (1) building within, (2) building over, (3) building around, (4) building alongside, (5) recycling materials or vestiges, (6) adapting to a new function and (7) building in the style of. All these ideas illustrate a particular physical intervention (Robert, 1989). Various design approaches for building reuse are defined by Brooker and Stone (2004). They looked at significant examples of contemporary conversions and considered three strategies for these: (1) intervention, (2) insertion and (3) installation. Although Brooker and Stone's strategy focused on the affective feature of each adaptation it also comprised physical intervention. For them, the original essence of building was the most essential and meaningful aspect in adaptive reuse (Brooker & Stone, 2004). Jäger (2010) provides a very similar strategy and illustrates it with a variety of examples that have been categorized based on the applied approach towards

the existing fabric, being (1) addition, (2) transformation or (3) conversion. The examples are chosen based on their architectural value and originality.

4.5 Comparative analysis of *adaptive reuse* strategies

In regards to the typological approach, the literature presents building types that have received major attention (e.g. industrial buildings, residential buildings and churches) as well as those which have been researched to a more limited degree (e.g. religious buildings other than churches, military buildings and commercial buildings). For the technical approach, it was clear that there are many strategies to deal with specific technical issues. The available standard works on construction still have relevance in relation to the adaptation of existing buildings.

In the case of the strategic approach, although each writer talks about a specific explanation of architectural approaches to reuse, there is a clear overlap among the categories offered by the different authors. Secondly, although a number of authors such as Rabun & Kelso distinguish adaptive reuse as an interdisciplinary task, the available documents mostly look at adaptive reuse from one particular perspective such as architecture, conservation, interior design or engineering, rather than from a multi-disciplinary one. Thirdly, information on a theoretical strategy that would compare and evaluate various historic theories on architecture and preservation through consideration of adaptive use is scarce.

Finally, after reviewing the available literature, it is clear that most authors do not deal at all with the concept of *genius loci* or the 'meaning' of the building to be reused, or deal with it only cursorily. Studies that could be categorized as taking a strategic approach tend to deal more with *genius loci* than ones that take a typological or technical approach. The most outstanding case comes from Brooker (2004) whose research specifically dealt with the conversion of structures whose location has been 'contaminated' by a prior use. As the starting point for transformation he proposed a number of strategies for dealing with this contamination. In the case of buildings which are not protected because they lack status as monuments, the owners and developers are mainly concerned with their socio-economic value. Of course this can endanger preservation of such 'soft values' as the historic, sociological, psychological, arty, cultural, moral and religious (Van Hooydonck, 2006)

4.6 Relevant Precedents

Combination of *Industry* and *Nature(sustainability)*

Duisburg - Nord Landscape Park

Latz + Partners

Duisburg, Nordrhein-Westfalen

Germany, 1990-2002

Redeveloping the Duisburg-Nord in the Ruhr region of western Germany – which is recognized for its steel industry – was proposed as a design competition in the late 1980's. Peter Latz's firm was the competition winner; their proposal extended the concept of rehabilitating a brown field's environment as a designed landscape park.



Fig 4.1 Duisburg-Nord Landscape Park

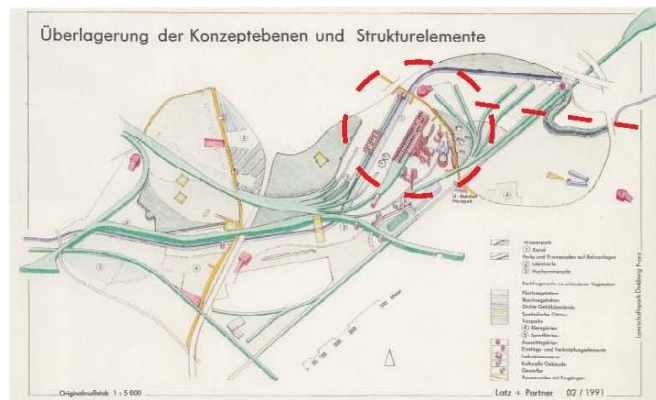
Looking for an answer to the question of “What can a park be?” was the first step which led to the transformation of the existing infrastructure to landscape features in the similar environment.

This was an effort to retrieve all suffers which occurred in this area by declining extreme social, economic, and ecological importance for a number of decades. This would be a revolution to bring back sense of liveliness to the forgotten area through maintaining the steel structures but combining them with nature and the surrounding landscape instead of ignoring them.

Latz's design concept constitutes two major functions: utilizing existing infrastructure and taking care of plant life. The first attempt was made by implementing any single element that remained of industrial structures and transforming them into recreational facilities to serve different users.

Providing walkways through and over the former blast furnaces, transforming the ore bunker to rock-climbing walls, and using the Piazza Metallica as a performance space for outdoor festivals are some examples of this transformation.

The dialogue happens when plants have been encouraged to grow and overtake former industrial components. A second aspect of this development is the growing of varieties of species that will improve soil quality; pioneer plants are first allowed to take root and they are followed by compatible species.



Conceptual Plan and Principal Structural Elements:
Water park, Rail Harp, Elevated Walkways, Vegetation Zones, Community Gardens, Sport Fields, Buildings



The Piazza Metallica transform to a space for performances and outdoor festivals



A slide that runs through a wall of a former ore bunker



The Sintergarten surrounded by massive concrete walls and designed with various formal gardens

Fig 4.2 Duisburg-Nord Landscape Park, Google earth 2010

Strategies in Conservation of industrial sites

Le Parc de la Villette

Located on 125 acres of industrial land in North-Eastern Paris

Bernard Tschumi

Paris 1982

France

Parc de la Villette, in Paris, designed by Architect Bernard Tschumi, was the result of a competition he won for the design of Paris' largest park in 1982. He was attempting to illuminate the deconstructionist philosophy behind a landscape design.

Tschumi's main idea was to transform both the huge "brown field" area and also "the largest discontinuous building in the world" and also to articulate new activities.

Jacques Derrida, the philosopher, encouraged him to follow an anti-Modernist approach that would consider form before function, and would 'deconstruct' traditional methods.

Utilizing the three geometries of points, lines and curves was the primary step in his design. A system of points with 26 contemporary "follies" or fanciful buildings in the form of steel pavilions, inspired by Russian Constructivist art and painted by crimson red colors to brighten up the park was proposed. A system of lines with two major axes, north-south and east-west, that would recognize the traditional French avenues was to be incorporated. The curved feature was the Cinematic Promenade.

In his theoretical points of view on 'event space' in a distinctly urban park, Tschumi proposed the deployment of a number of abstract, program-less structures dubbed 'follies'. These bright red structures were the consequences of the implementation of his design, which came to house various events related to the activities of the park.

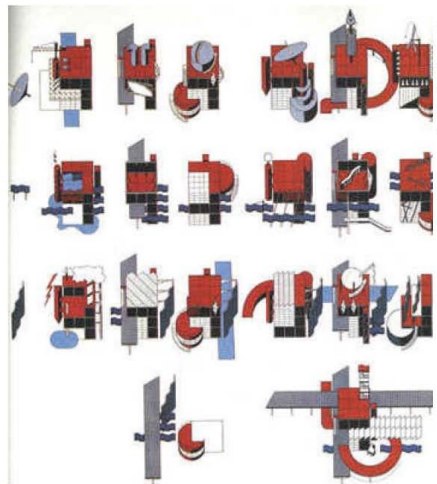
The competition objectives:

1. Mark the vision of an era
2. Act upon the future economic and cultural development of a key area in Paris

The Design concept reconsiders the conventional relationships between *Landscape*, *Architecture*, and *Urbanism*.

Discontinuous Building 'Deconstructed' the traditional methods.

↓
Dynamic Landscape



Grid of red-metal follies - with different functions - creates a matrix that works to organize the park and contradict the rigid Paris city grid.

Series of Layered Interventions:

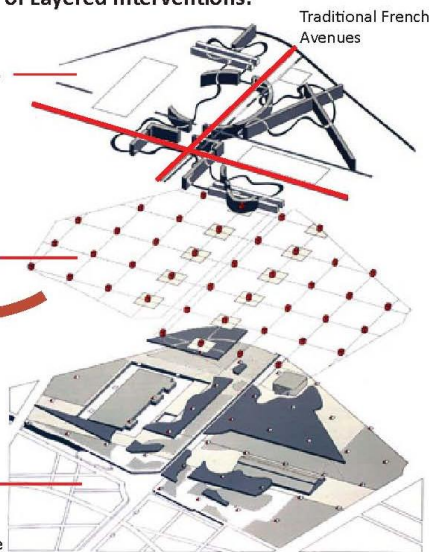
Lines

Points

Navigate users

Surfaces

Cinematic Promenade



Bernard Tschumi examines the juxtapositioning of images to create architectural sequences and events.

..... Developed a complex program of cultural and entertainment facilities.



Paths Pavements Overheads Pavilions-Follies

Fig 4.3 Le Parc de la Villette

CHAPTER 5 - INDUSTRIAL DEVELOPMENT AND TORONTO URBAN GROWTH

5.1 Impact of Industry on the City of Toronto Development

- The background - In 1788 the first plan for the city of Toronto, then located mainly along the shoreline, was completed. The new city was defined by its dramatic topography of rivers and ravines, features that also shaped its development. This series of rivers and creeks, flowing from ravines to Lake Ontario, defines Toronto's natural character. The city was initially located between the mouths of the Don River and the Humber River, but it gradually expanded past their boundaries.

Natural features of the city of Toronto were influential, but development of different types of transportation such as railways, highways and subways also played a significant role in how neighbourhoods were settled. The railway built in the 1850s along the waterfront and the Gardiner Expressway significantly improved Toronto's formerly weak connection to the shoreline. The subway further enhanced the value of neighbourhoods as public transit facilitated travel for citizens.

- History of Industry - In the 1850s the Toronto harbor was being transformed into an industrial zone and it was at this time that industrialization began in the city. In the early 19th century the manufacturing sector became the greatest source of employment for the entire city⁸. The growth of the automobile and the development and construction of railways and highways during the mid-20th century provided convenient transportation that allowed people to live and work a greater distance from the city. Following the workforces, industries transferred their facilities to the suburbs where it was possible to find reasonably priced land for development and for future expansion. This resulted in industrial areas in the downtown district becoming vacant and gradually being put to other uses. Developments that reused derelict industrial structures provided municipalities with opportunities for growth.

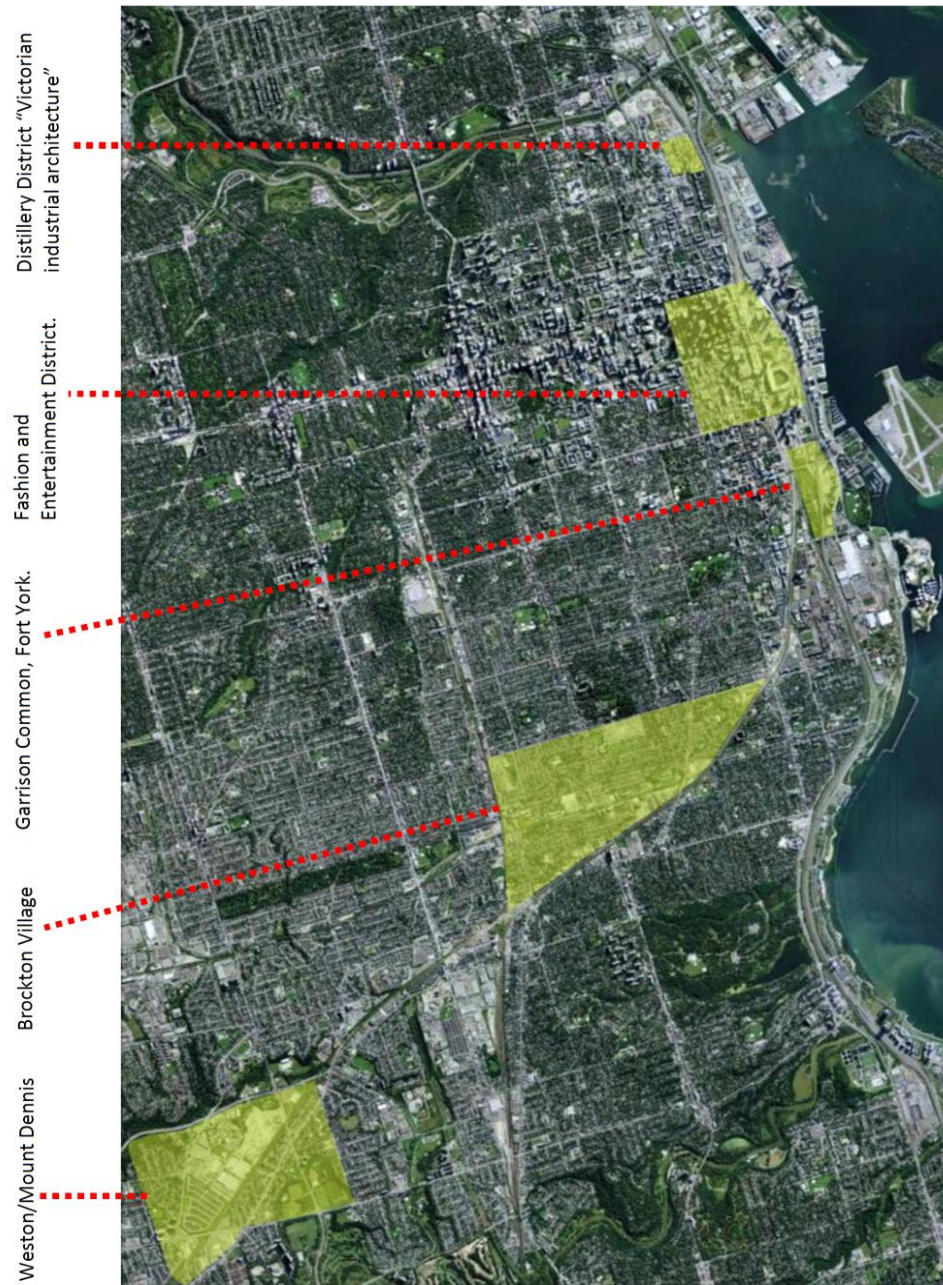
In the great city of Toronto there are numerous industrial sites that have been redeveloped over the last decades, but there remain several underutilized zones; also, quite a few sites are newly becoming vacant around the city. Since they can no longer be utilized for their previous industrial function, they have been destroyed with a plan to replace them with new buildings with Modern functionality.

⁸ City of Toronto, *Toronto Culture History*, 2006

5.2 Toronto along the railroad: Industrial development

At the beginning of the Industrial Revolution in the 1850s, a group of industrial buildings developed and came to be clustered in areas close to major transportation routes in Toronto such as the railway. Areas of town that had before housed small rural settlements were transformed by the railroad into important industrial areas. This trend continued and flourished into the 20th century with the expansion of industrial facilities for war efforts. As Toronto sprawled out, industrial sites grew up further out also. Most industrial lands followed rail lines, and later highway corridors, as the city expanded outwards. This trend continues in the present day, with the biggest factories and warehouses having moved to the suburban areas of Peel and York Regions.

- Toronto Industrial Zone- Industrial spots in Toronto have been divided historically into three different zones: the west, the east and the centre. In the east is the Distillery District, a national heritage site that contains the largest and best-preserved collection of Victorian industrial architecture in North America. Adjacent to this area are similar ones: the Fashion District and Corktown still retain their post-industrial character, but are now largely residential. The central zone, now known as the fashion and entertainment district, was formerly industrial but its character changed completely as financial services came to predominate there. Also, there was a considerable area of industrial activities in the west side of the city; known as Garrison Common (Liberty Village). Toronto still has some active older industrial areas such as Brockton Village in the west end and Mimico and New Toronto. The Weston/Mount Dennis and Junction areas in the west end of Old Toronto and York have a sense of grit to them, as they still contain factories, meat-packing facilities and rail yards near to medium density residential. There are also many under-utilized sites across Toronto, as well as ones that are becoming vacant. Due to difficulties in containing environmental contamination resulting from prior usage, vacant industrial structures have a tendency to stay unoccupied.



Map 5.1 Toronto Industrial zones

CHAPTER 6- INDUSTRIAL DEVELOPMENT: TORONTO WEST END

6.1 Mount Dennis Neighborhood: a selected site

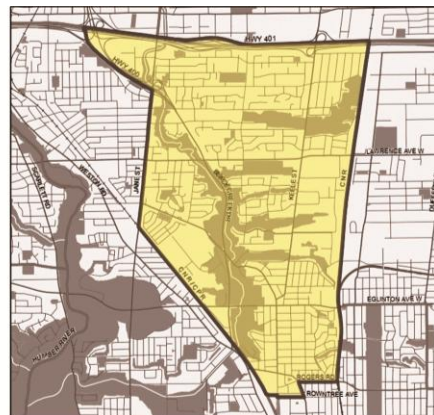
Weston-Mt. Dennis is one of 13 priority neighborhoods in Toronto. Located at the historic periphery of old Toronto bound to the east and west by the Black Creek Drive and Weston Road and diagonally bisected by an active rail corridor and the Humber River runs through its centre.

Several factors operating in unison have acted to isolate this site from the contemporary city.

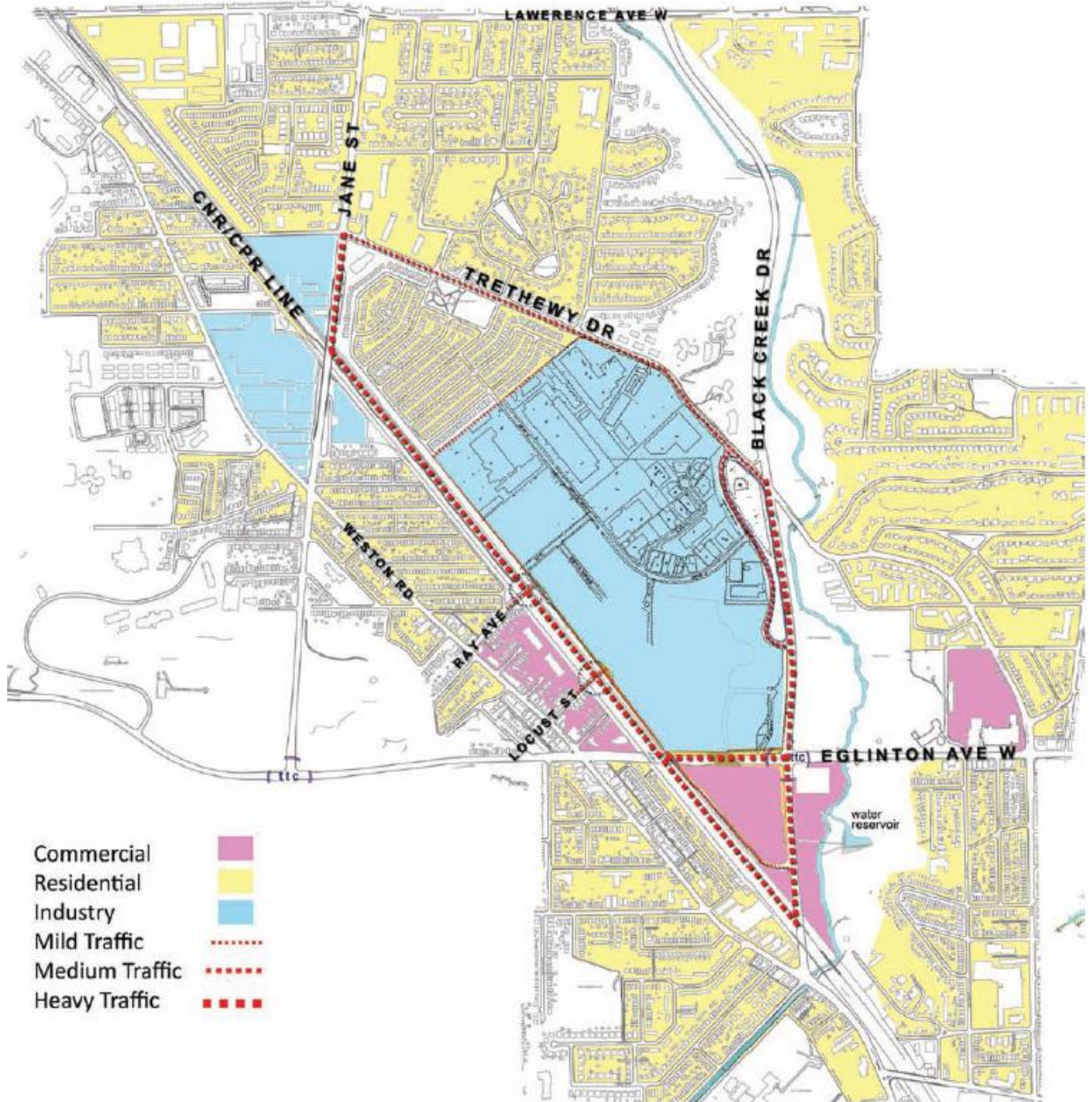
Much of the area of consideration was once zoned for heavy industry, notably the Kodak Plant on Photography Drive which helped define the look and feel of the neighborhood; 2,500 homes for workers were built during its century there, this factory complex was a major employer for Mount Dennis' residents until it was shut down in 2005. These days, with the factories mostly gone, this neighborhood can seem like a margin without a centre.

The area became what urban geographer Richard Harris described as an "unplanned suburb" in his book, *Unplanned Suburbs: Toronto's American Tragedy 1900 to 1950* (Johns Hopkins University Press, 1996). Workers at Kodak and the nearby stockyards built their own homes before municipal services were in place, and small developers built "infill" homes, gradually filling the streets with the current housing stock of former cottages and small, fully detached

homes, among the most affordable housing stock in Toronto for recent immigrants and first-time homeowners. A patchwork of residential development, either tiny postwar bungalows or looming 70s apartment blocks, currently form disconnected neighborhoods experiencing an upswing in violent crime.



Map 6.1 Mount Dennis Neighbourhood



Map 6.2 Site



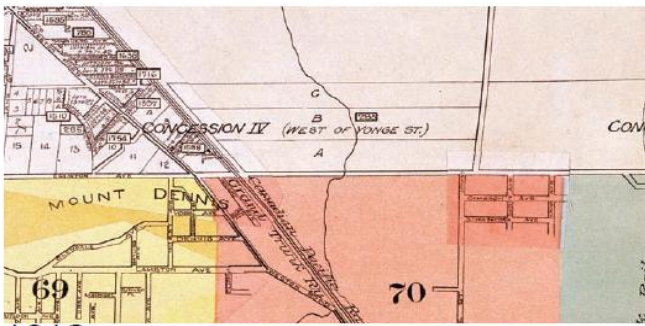
Fig 6.1 Site Views



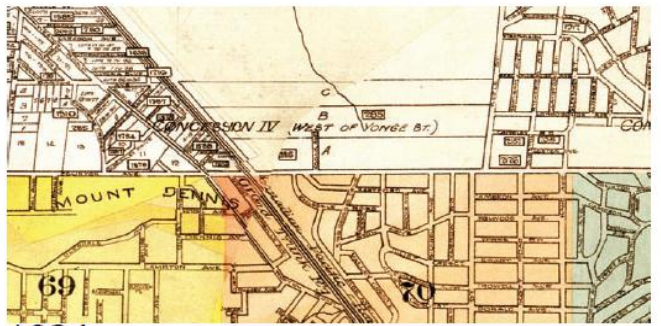
1899



1903

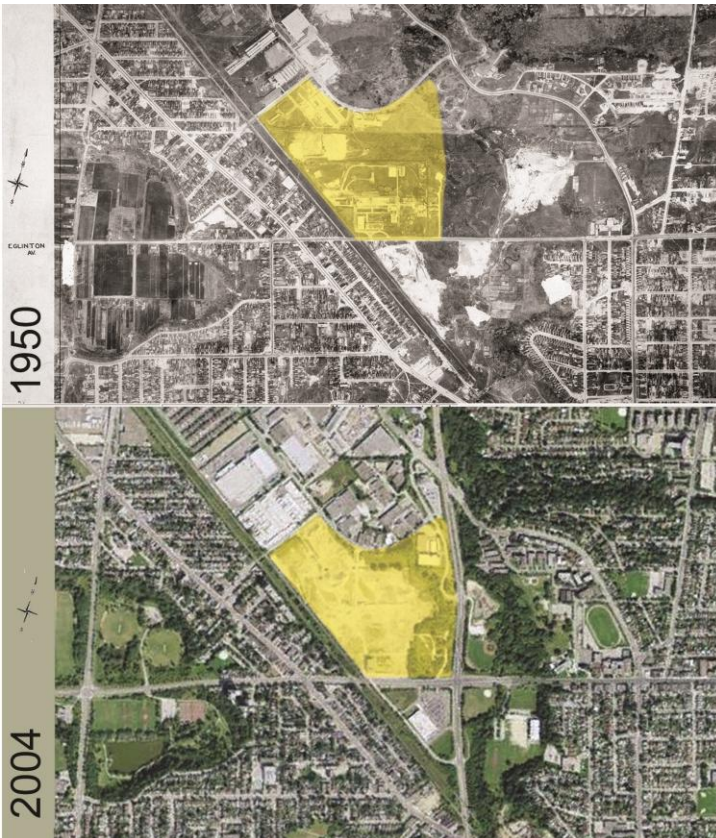


1913



1924

Map 6.3 Development of Mount -Dennis, 1899-1924



1950



2004



Looking East



Fig 6.2 Kodak Complex

CHAPTER 7-ORIGINAL VERSUS PROPOSED

The juxtaposition of the old and new allowed us to reveal the in between architectural spaces and turn those spaces into the place of the program. Architecture is a place of events rather than of form.— (Bernard Tschumi, p.87)⁹

All cities with a greatly developed architectural culture have issues regarding the interrelation of old and new architecture, concerning historical urban structures and those being built now and expected in the future. The strategy “to adapt the old architecture to contemporary use” takes on a broader capacity and meaning in these cities; it essentially involves proposing integrity and harmony among historical and new architecture. According to Semes (2009), the most important aspect of this perspective is *appropriateness* to setting; that is, it should be adaptable to possible future interventions, rather than just correspond with present style fads and fashions. It is preferable to choose continuity whenever possible but to avoid replication of historical buildings and introduction of strange shapes and materials that would deteriorate the historic essence. The relationship of new to old architecture is an essentially complex one that cannot be reduced simply to one of contrasts. There must be more attention given to including continuity in the equation if the character of historical context is to survive the development and change that are unavoidably a part of living cities (Seems, 2009).

There are five aspects that should be considered for successful adaptation of old structures for new uses: continuity, form follows change, materiality, sustainability and feasibility.

7.1 Continuity: intent and functionality / program

The character of our communities is defined with the help of the historic buildings that offer a tangible link to the past. Spirit and emotion are what make the structures a living part of our environment. It is important to mention that J. M. Richards (1957) in his revolutionary essay on the rediscovery of the values of industrial buildings, talked about the “*enterprising spirit*” they convey. We will be more prepared to provide an appropriate response to the issue of keeping monuments alive by means of respectful transformations that both save their past and promise a hopeful future when we are mindful of the immaterial spirit of architecture (Richards, 1957).

⁹ Tschumi, B. (1996). *Architecture and disjunction* (1st MIT Press pbk. ed. ed.). Cambridge, Mass.: MIT Press.

When historic buildings are abandoned, the best proposal for their new functions is that these be as similar as possible to the original ones. When this can be achieved, it is clear that the chances for successful transformations involving less intervention are greatly improved. It is not enough to save part of the original structure (machinery, etc.) or to display old images of its past since these can be irrelevant if they are not incorporated into the whole adaptation process.

This discussion brings us to the fourth question: what is the proper relationship between historical architecture and the production of new building and cities? Traditionally, the renovation or completion of old buildings into new buildings has presented distinct many-faceted challenges as a new architect continues the work of a predecessor and brings his own style to the project. For one thing, often a long time has elapsed between construction phases, for instance, after one architect's passing and the continuation of his work. Leon Battista Alberti, in his 15th-century Renaissance writing, recommended that architects, when undertaking work started by another, have respect for the intent of the initial designer and that they not force inharmonious forms onto the project that was underway. In the completion of the façade of Santa Maria Novella in Florence, Alberti followed his own recommendation when, instead of removing what had been begun a century ago, he completed the façade with delicate alterations to its style at the same time as he carefully combined the new and the old into a harmonious whole (Semmes, 2009).

Exploration of a historic site can provide information for new designs, as well as useful ideas for how to go about restoration. Historically, architects have seen themselves working within building cultures harmonious with surrounding monuments; we can respect or disrespect how they went about their work, but we must always be aware of their theoretical approach. In cases where they overvalued the idea of continuity and therefore attained results that distorted the ideals of their precedents, some difficult dilemmas have been created (Semmes, 2009).

An examination of how architects have historically identified and dealt with the association between historic and new building at culturally significant sites makes it clear that their most common strategy was that of continuity. In Athens, the Parthenon on the Acropolis, completed in the middle of the 5th century B.C., replaced a previous temple on the site but maintained the style of its ancestor. Also, the Louvre in Paris developed along four centuries without changing its original style (Semmes, 2009).

7.2 Form follows change

Function creates form, but what is to be done with the form when the function has disappeared? Can the remaining form accommodate a new function? The entire matter of working with existing structures turns upon the logic of form/function: an alteration will only do well when there is compatibility between the original and new uses. Both urban and building forms and functions can be successfully adapted and even changed to enhance the transformation process (Robert, 1989).

Current research has revealed that designed environments like plazas and rooms can accommodate various uses and can also present various visual meanings. Many portions of historic cities, sites and buildings are unique because they can be reasonably adapted to new uses; they possess transfunctional qualities. For example: the Stadium of Domitian became the base for the building surrounding Piazza Navona in Rome. Piazza Navona was initially a racetrack, but now its enclosed shape creates a magnificent plaza. This is a great example of how it is possible to use an existing form as the foundation and plan for new uses that will aid city growth (McClure & Bartuska, 2007).

The “form follows function” theory has been instrumental in putting the contemporary field of specialized design in line with social and cultural requirements. However, the philosophy behind this phrase in its original manifestation is not sufficient to meet all the demands of the 21st century and of the future. The meaning and application of the phrase “form follows function” are evolving and presently going through a level of transformation so extreme that Louis Sullivan would be very amazed by its current and usage and by the meaning it will likely take on in the future.

The Modernist concepts of the first quarter of the 20th century, progressive for their time, no longer exist as they once were; on many levels, they have had to adapt right along with our entire approach to design. The properties of form and function do not exist in a closed loop within the contemporary design process. Successful design for the present and in the future should now address the notion of “Form follows change or evolution”.

7.3 Materiality

Usage of existing built resources as quarries for new construction is a valuable form of recycling, and one that has been utilized throughout history. The environmental benefits of adaptive reuse projects are derived from the reuse and recycling of existing materials and structure, and from decreasing the quantity of waste entering landfills. Also, building reuse and general reuse of existing public infrastructures can diminish stress on municipalities, preserve the natural surroundings and decrease urban sprawl (Langston et al., 2007). Furthermore, the energy efficiency of heating and cooling systems in older structures can be updated because the envelopes of these buildings normally contain strong materials and several windows.

The Standards and Guidelines for the Conservation of Historic Places in Canada (2003) states that, since materials are generally recognized as character- defining elements, they contribute to the heritage value of historical areas and should be preserved. The continuing care of materials, including their proper conservation and repair, helps maintain the integrity and extend the lifetime of a historic place.

For preservation of Modern structure there is another concept that needs to be considered, that of material authenticity. It has served as one of the major philosophical underpinnings of preservation for the last hundred years. For Modern architecture, authenticity relies on the continuity of the original design intent more often than on the preservation of original materials. The primacy of design intent and eventual materials failure is not limited to Modern architecture; as noted earlier, the rate of material failure and its replacement is accelerated and witnessed within a shorter, observable time span. It can be argued that the restoration of Modern buildings should reflect their original building processes, too. Partial renovation should not be considered as an option for rehabilitation of Modern industrial heritage building; they should be renovated wholly or not at all. The emphasis has to be kept on the building in its entirety, its performance as a system and its intended appearance, and thus the artistry of its design. For instance, frames, connections, attachments, gaskets, glass and other parts that make up the curtain wall will fail over time, like any material or assembly. But the wall represents an entire system with the same detail repeated, so failure of one part can lead to the poor performance of all associated elements and ruin the entire thing. Rather than replacing the failing frames the whole assembly can be replaced with new, in-kind materials or improved design detailing, thereby restoring the curtain wall to its original (usually visual) design intent (Prudon, 2008)¹⁰.

¹⁰ Prudon, T. H. M. (2008). *Preservation of Modern architecture*. Hoboken: Wiley, p .45

7.4 Sustainability

The aims of environmental sustainability have to be in harmony with heritage conservation intentions when making choices regarding sustainability-related interventions. Awareness of the past and present environmental features and performance of an historic place is requisite to recognizing and developing suitable solutions. First of all, character-defining elements must be recognized and assessed so that their inherent environmental potential can be determined. This is a prerequisite to further attempts at adaption to, or interventions with, historic places to make them more sustainable. Decisions regarding resource-saving measures that concern energy, water or materials should involve weighing the environmental advantages of these measures against any possible negative effects on heritage value. Resolutions should be adopted that will derive benefit from the natural durability and adaptability of the historic structures (*Standards and Guidelines for the Conservation*, 2003).

Adaptive reuse of buildings has an important role to play in the sustainable growth of communities. Environmental advantages are more important when adaptive reuse engages historic structures, since these buildings provide so much to the landscape, character and usefulness of their contexts. The preservation of the original building's "embodied energy" is one of the most important environmentally positive factors of building re-use. The preservation of the original building's "embodied energy" is one of the most important environmental considerations when reusing buildings. Preserving this embodied energy will make the project a lot more environmentally sustainable than would completely new construction. Buildings that are adaptively reused will have lower embodied energy expenses than new ones.

In addition to dealing with the potential of the contamination at many industrial sites, bringing the buildings up to contemporary occupancy standards can also prove challenging. The thermal capacities of the materials, envelope, and systems of factory buildings are often rudimentary because they are designed for manufacturing uses. Characterized by single-pane glazed walls that lack adequate insulation, finishes, and systems, successful adaptation and conversions of factory and mill structures often require significant alterations.

7.5 Feasibility

All aspects of adaptive reuse projects should be carefully considered beforehand to ensure that the overall final-use goal is in fact feasible. When evaluating relevant literature, the following

characteristics should be considered in detail: environmental and locational concerns, legislative imperatives, financial/economic issues, and the market.

7.5.1 Short term feasibility

- **Environmental Characteristics-** All physical aspects of a building, such as size, construction material, structural integrity, and space layout are components that provide a strong basis for a project's design (Heath, 2001; Shipley et al., 2006). The developer and the professional team of engineers and architects will study these physical elements to ensure that a project can be adapted for alternative uses and also that it is suitable for its present specifications. Building systems, architectural, structural circumstances, space layout, site work, and contamination are the other physical environmental factors that affect the adaptation project.

- **Market Characteristics** - Rapidly changing markets can alter demand prior to a completion of a project. The assessment of present and future market needs requires consultation with those proficient in the fields of real estate and construction, and also necessitates sound knowledge of the historical background of the neighborhood in which an expansion is planned. The market demand for adaptive reuse projects is dependent on new expansions and requires awareness of the level of demand, the target market and the building site (Heath, 2001)

- **Locale Characteristics: Legislations and Policies** - It is advantageous to developers and architects to be able to accurately assess a site and also to determine how it has been transformed over time (Peiser and Frej, 2007). The concerns associated with the location of adaptive reuse projects are the same for those of a new building construction; these include features of the environment, safety and security, neighboring land uses, views, ease of access to use services and transportation and accessible private vehicle parking (Heath, 2001).

- **Legislative Characteristics** - The municipal, provincial, and federal governments and also several agencies, boards, councils, and commissions within these levels of government, have power over and/or control of land use in regards to what buildings may be located on them. By using tools such as Official Plans and Zoning By-Laws, Ontario Building Code, heritage designations and incentives, the reuse of industrial structures is both controlled and encouraged (Toronto Official Plan, 2007).

- **Financial Characteristics** - Considering that elements in an existing structure can be changeable, determining the financial feasibility of reusing a building can be complicated. The value of the land for its maximum and greatest use, less the destruction and construction costs of existing buildings and new buildings respectively, must be lower than the value of the land with its existing buildings, and also less than the costs of adaptive reuse for a project, to be regarded as financially feasible for adaptation rather than for new construction. Often in adaptive reuse projects, there can still be problems that arise during the period of construction; therefore, it is essential that proper evaluations be done to decrease the incidence of unforeseen expenses later during the project timeline (Heath, 2001).

7.5.2 Long term feasibility

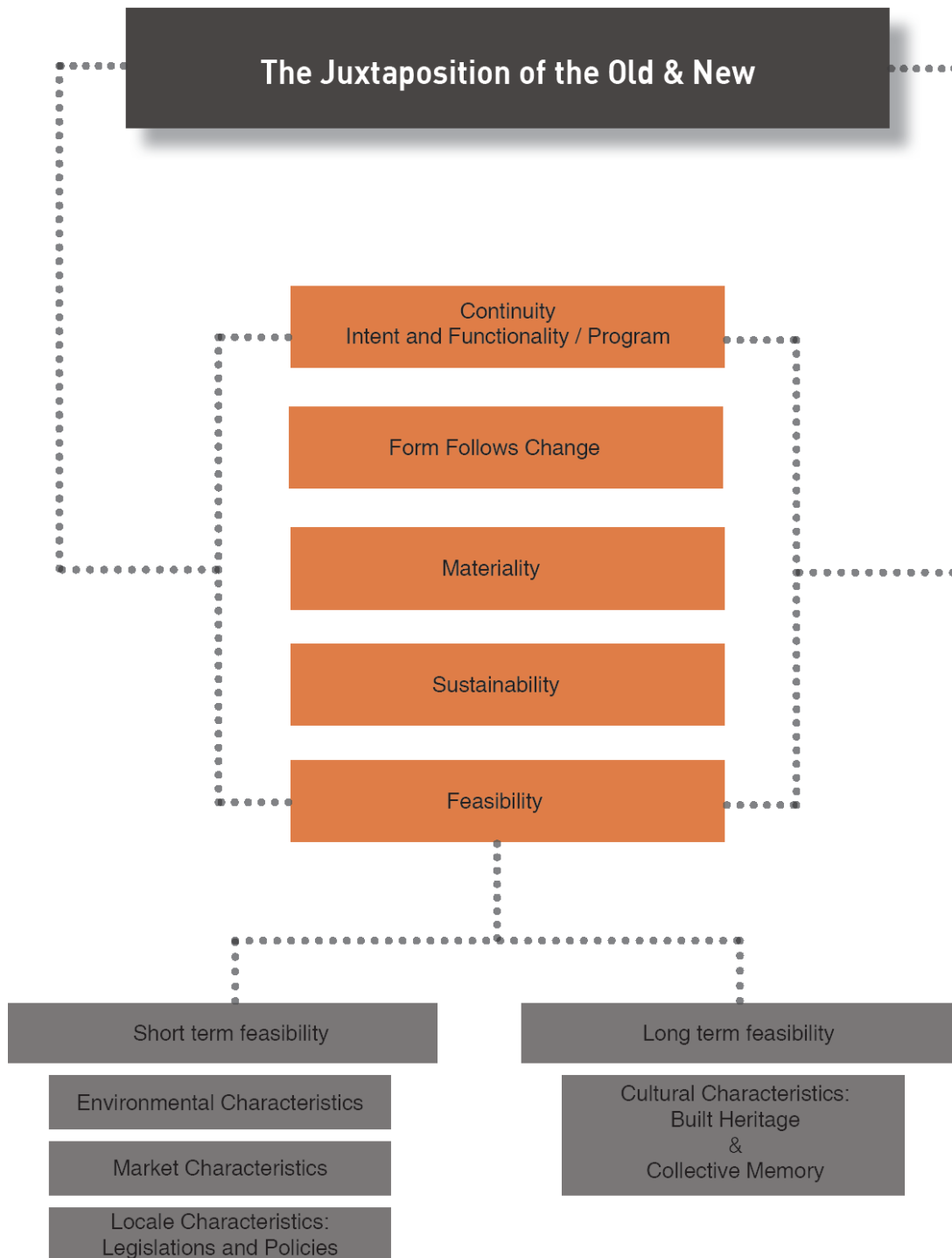
- Cultural Characteristics: Built Heritage and Collective Memory-

Another type of feasibility evaluates the investment according to long-term criteria and assesses the project's alternatives based on its impact on the local and general culture. For example, environmental and cultural factors must be understood and considered; for instance, an enterprise's own culture may clash with the goals of the project. Often developers look at immediate feasibility or short-term cost benefit; however, the planner or architect is responsible for considering long-term feasibility, aspects of which are benefits to society, preservation of community values, bringing new energy to the area, and providing community growth incentive. In terms of community identity, it has been said that heritage can bring a community together and maintain cultural distinctness.



Fig 7.1 Distillery district

People tend to have affection for heritage areas with distinctive atmospheres and for the most part want to protect them. When a community embraces its history and culture it tends to attract more people and more money. The Distillery District is a good example of this: twenty years ago it was not a valuable neighborhood. However, because the planners and architect looked at long-term returns when they were rehabilitating it, after two decades it is not only itself a huge economic stimulus but it has also energized adjacent neighborhoods.



Juxtaposition of the old and new

7.6 Relevant Precedents

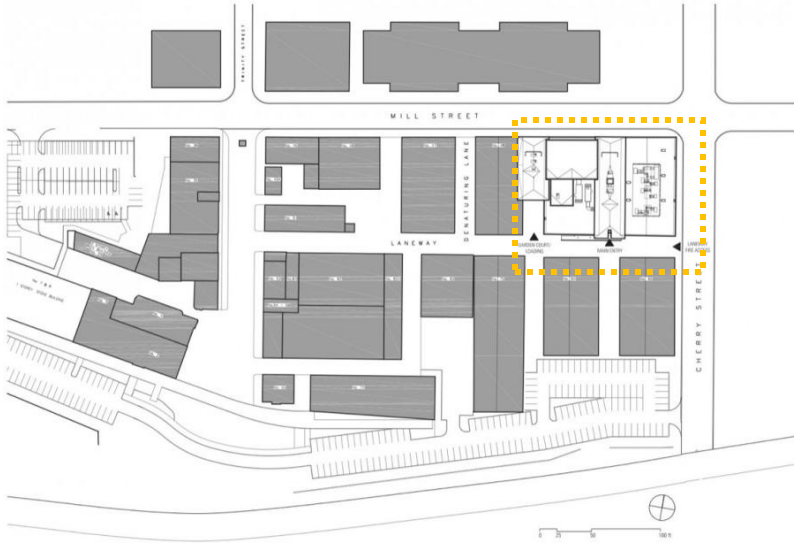
Young Centre for the Performing Arts

Architect: Kuwabara Payne McKenna Blumberg (KPMB) Architects

Location: The Distillery District, Tank Houses 9 and 10, Toronto, Ontario, Canada

The 44,000 sqf project of Young Centre for the Performing Arts (YCPA), which is the outcome of a partnership between George Brown College and Soulpepper Theatre Company, was delivered within a budget of \$10.0 million. There are not many new intrusions however everything is thoughtfully arranged for the greatest benefit. This project's focus was on designing a comprehensible plan order that could result in maximum building performance, and developing a dynamic stage for both teaching and live performances. There is a horizontal wooden canopy placed on the exterior of the building that creates a nice welcoming entrance and leads people into the main lobby. The main area of this YCPA is composed of a two-story high lobby that was built by filling the space between the two Tank Houses with giant neo-primitive Douglas fir timber trusses that add to the historic bearing walls. There is also a fireplace located in the lobby with a wide video screen, which also points out the interaction of old and new. The raw industrial look of this building is the general design characteristic that tries to value the historical background of the Distillery District. The raw aesthetic also mirrors the 'edge' values of the new performing arts center. Features such as the original windows, brick facades, and cobblestone pavements were preserved. Interior walls are simply painted and floors are concrete. Exposed ceilings create a visual canopy that blend with the context and are also very efficient. The design extends the historical composition of the Gooderham and Worts as an exceptional background and stage to the natural artwork and drama produced by the artists. The adaptive reuse of this complex forms an outstanding combination of the two inclinations. The original structures are preserved with their historical aesthetic and integrity, and their correlation to the street, which is also a nice experience for public.

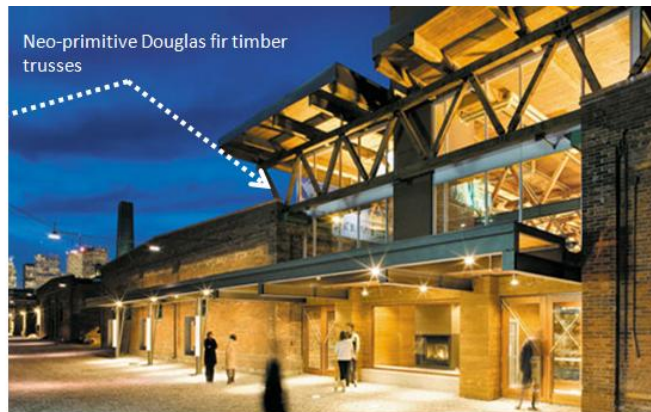
Critics: Even though a lot of people consider this complex as a successful adaptive reuse project but really it is not very truthful in terms of fabric intervention taking into account that instead of using fresh and modern materials the former trusses have been duplicated which is not very satisfactory.



Site Plan



Ground Floor Plan



Critics

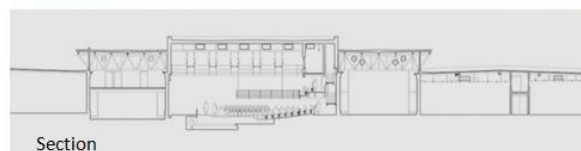
- Is not an honest material intervention because they imitate the old trusses instead of using contemporary material
- Not respectful
- Not sensitive enough

IDEA → -Maximize building performance
- create a dynamic platform for performance and teaching

-Horizontal wood canopy marks a generous entrance
-Design is characterized by a 'raw warm industrial' aesthetic to respect the historic fabric



Elevation



Section

Fig 7.2 Young Centre for the Performing Arts

Royal Conservatory TELUS Centre for Performance and Learning/KPMB

Location: Toronto, Ontario

Architect: Kuwabara Payne McKenna Blumberg (KPMB) Architects

The Royal Conservatory of Music (RCM) is founded in 1886 as the Canada's first arts and music institute. Since 1963, the RCM has been placed in McMaster Hall (1881) and Mazzoleni Hall (1910) in Bloor St. west. Approximately 18,000 square meter of new educational and performance area is renovated at The McMaster Hall and the building of the new TELUS Centre for Performance. The project is defined as the creation of the unique multi-use area for public, teaching and rehearsal facility, destination concert and performance areas.

The skylit pedestrian court is built from the Bloor street to the Concert Hall by encapsulating the area among the historical and new buildings thus it creates two entrance to the complex, one straight from Bloor street and the other one from backside of the building in order to facilitate the student's access . Some bridges are considered at the upper level to simplify the circulation between the higher levels of the new building and the historic one. The modern glazing work of the new extensions put counterpoints to the multicolored facades of the heritage building.

Defining a New Cultural zone for Toronto

In an urban view the complex is positioned in a remarkable area in mid-town Toronto adjacent to the down-town campus of University of Toronto and share a part of Philosopher's walk, a pedestrian path connecting Bloor St. to Hoskin Ave. The design is intentionally considered to recognize a recent cultural zone for Toronto in accordance with the variation of the ROM surrounding area and the developments of the Gardiner museum at the Queen's park corner.

The TELUS center conversion creates a flexible, active infrastructure to comply with new technologies such as e-learning and video conferencing workshops utilizing broadband technology and digital acoustic compliances. It will also contain 1,100 theater seat designed for live broadcast performance.



IDEA



- Academic Cultural Hybrid
- Defining a New Cultural Precinct for Toronto
- Respecting Heritage
- Academic – Professional Conservatory

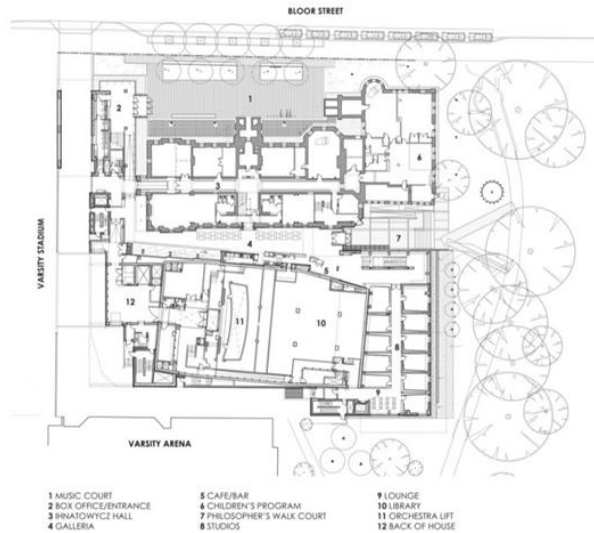


Design
Characteristics

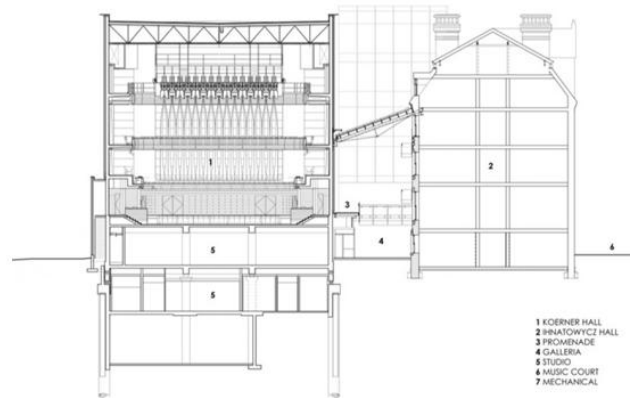
- Functionality (expand the space)
- Sustainability of material
- Considering the building's original use
- pedestrian court creates linkage between new and old
- Respecting the site (the creation of interstitial voids between new and old that enrich the user's experience of both.)
- respecting the context(harmony with ROM)



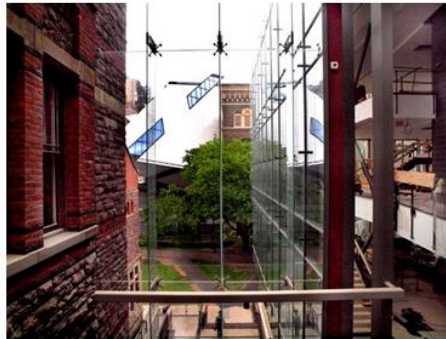
Fig 7.3 Royal Conservatory TELUS Centre for Performance and Learning



Ground Floor Plans



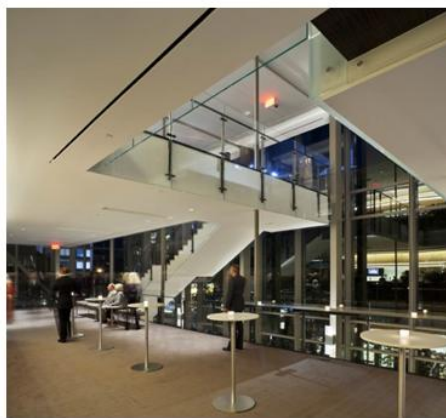
Section



Old and new composition



- sensitive combination of elements that complements rather than overwhelms the intimacy of the space
- Contemporary glazing systems for the new additions provide dynamic counterpoints to the polychromatic facades of the heritage buildings.
- Adapt to the new technology



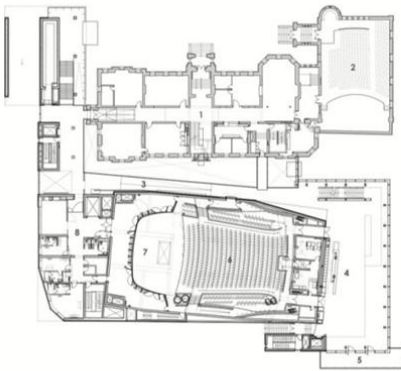
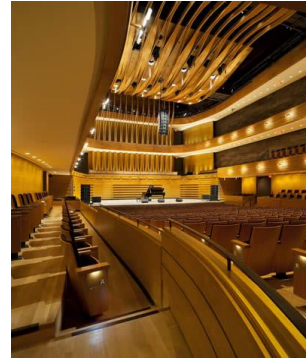
the primacy of acoustics throughout its new and renovated facilities,



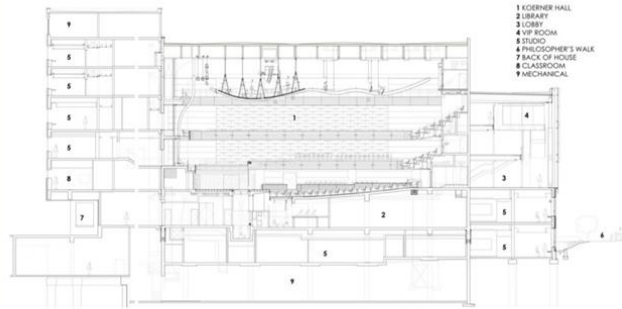
Fig 7.4 Royal Conservatory TELUS Centre for Performance and Learning



- Undulating wood "veil" integrated with the canopy over the stage will create a signature image for the RCM.



1 INNAOWYCH HALL
2 MAZZOLENI HALL
3 PROMENADE
4 LOBBY
5 BALCONY
6 KOERNER HALL
7 STAGE
8 BACK OF HOUSE



1 KOERNER HALL
2 LOBBY
3 LOBBY
4 VIP ROOM
5 STUDIO
6 PREGOPIER'S WALK
7 BACK OF HOUSE
8 CLASSROOM
9 MECHANICAL



Fig 7.5 Royal Conservatory TELUS Centre for Performance and Learning

Castellanza Civic Library, Conversion of an ex-industrial

Location: Italy

Architect: DAP studio

Castellanza is a town located in the province of Varese, in northern Italy. This region is an excellent example of requalification of the urban territory. The reuse of historical buildings and open areas is not only an effective recovery of historical statement of the city but also conversion of the city. The new Civic Center in Castellanza, which was a project part of a larger plan to redevelop the area, is located inside an old industrial building in front of onto the river Olona. The riverside upgrading process creates an opportunity to reorganize the city, producing an adapted system between the historic part and new intervention. Beside the exterior areas the whole project acts like a small city, offering a variety of services, not just information but also relaxation facilities. The main Focus of this project was to create a sense of belonging and identification by offering new methods to attain the relationship with the culture, residents, and information.

The project keeps the industrial building and leaves it just as it was. The structure, which is a flat-roofed brick body on two floors, has been renovated considering its distinctive elements such as the concrete decorations, brick walls, vaulted roof, and internal light pillars. The new projecting steel bow windows are the important feature components in the new interventions that create a powerful link among interior and exterior. Preexisting fixtures are re-stored and used for communication and exhibition purposes or as light boxes. The windows are actually illustrious by changing color lighting. The interior is consist of a ground floor seminar room and exhibition hall and also the library which is located at the top floor, designed like an archipelago of "functional islands" hanging in a free structure and attracting attention by their materials and contrasting colors.

All the corresponding tools that are there at the same time are enclosed by one specific space in which communication and isolation are created along softer lines rather than physical-distributional layering. This produces new patterns of behavior and a new way of visualizing and understanding spaces.



The materials used externally are washed cement for the pavement and corten steel for items such as metal tub grass and raise the steps.

Interior Spaces

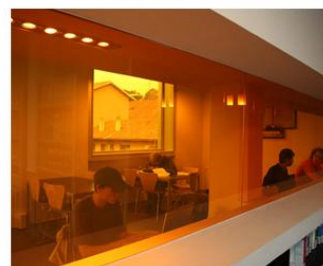
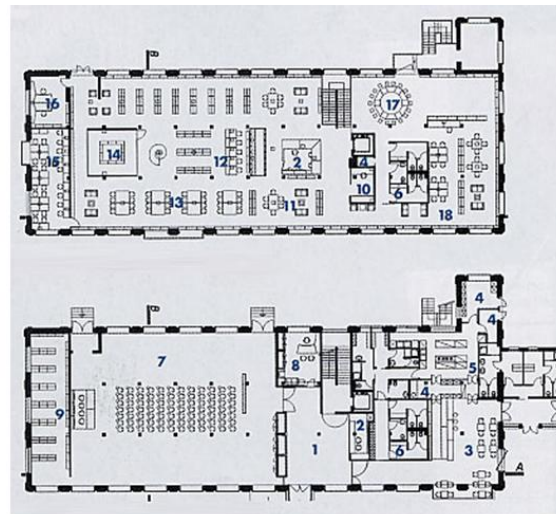
- the interior spaces are organized around shapes and volumes willing freely in space
- juxtaposition of different media by creation of special areas such as the "tunnel" polycarbonate with PC workstations

IDEA

- Relationship with the residents, culture and information, which can create a sense of belonging and identification.
- Opportunity to rethink the city, creating an integrated system focal point of information, culture and leisure, meeting place and social life
- Maintains and highlights the fundamental characteristics of the industry
- simple body on two levels, brick floor and roof:

New intervention

- Outside the bow-window steel and glass Performs as displays which used as a means of communication
- Internal "lamps" colored towards the city At night the color illuminated by lights gradually changes by changing the lighting will change the perception of space
- Bay windows from inside



What changes in architecture creates the appearance of new media?

The interaction of different logic levels



- 1-MULTIDIREZIONALITÀ: various communication tools to create spatial complexity
- 2.INTERACTION: spatial complexity and overlapping media generate interaction
- 3.ISOLATION: becomes a perceptual organization rather than physical / distribution

Fig 7.6 Castellanza Civic Library

Composition of old and new by urbanistic and sculptural gesture

Herzog & de Meuron

CaixaForum Madrid

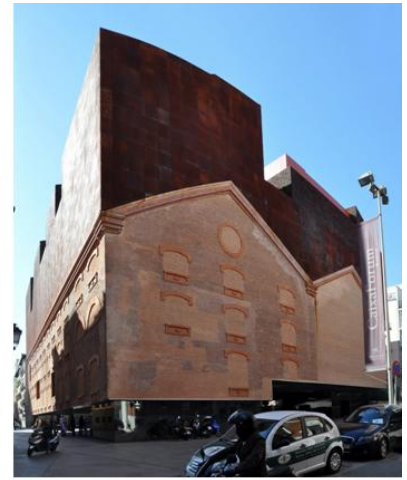
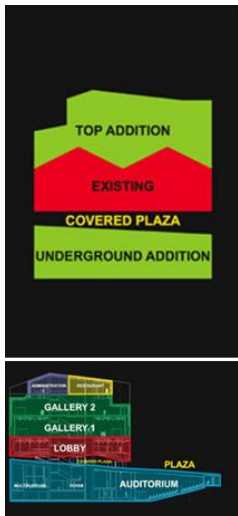
Madrid, Spain

The CaixaForum is found in the city's cultural center, facing the Paseo del Prado, near to places like Prado, the reina Sofia and the Thyssen Bornemisza museums. It is known as an urban attraction for both art lovers and architecture, It is designed in way which it seems to be lifted off the ground obviously opposing with gravity law, to absorb the visitors inside. The museum is now located at a previously 1899 operational power station; a part of important industrial architecture period which was owned by Caixa Foundation in 2001. An insignificant gas station was closed in order to a new small plaza be formed as a part of the paseo del prado and new CaixaForum. The brickwork is conserved as a symbol of early industrial period in Madrid, meanwhile the gas station a small functional unit, was obsolete.

A vertical garden with a height of 24 meter is designed accordingly with the botanist Patrick Blanc, mounts the square's wall.

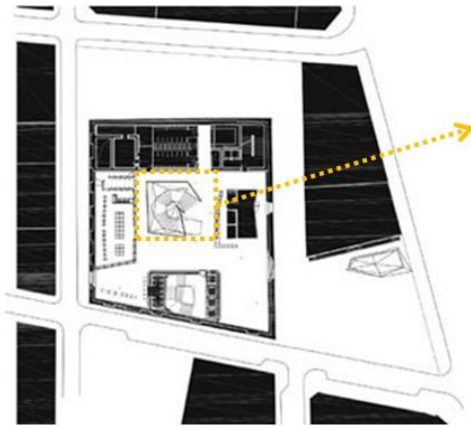
In order to conceive and introduce the new architectural elements of the CaixaForum Project, the architect began with a surgical process, removing the bottom and the areas of the building were not desired. This caused a completely new and inspiring point of view that at once responded to numerous problems created by the surrounding area. The removal of the bottom of the structure created a covered plaza below the brick shell, which currently seemed to hover above the street level. This welcoming space beneath the CaixaForum offers its shadow to visitors who would like to spend time or get together outside and is at the same time the entrance to the Forum itself. Dilemmas such as the thinness of the nearby streets, the location of the main entry, and the architectural distinctiveness of this recent art institution could be answered in the course of applying specific urbanistic and sculptural gesture.

The segregation of the building from the ground level resembles two separate world, underneath and top of ground. The underworld located below the topographically landscape plaza creates sufficient area for a theater, service rooms and parking spaces. The multi-storied building upper the ground encapsulate the entrance and galleries, as well as a restaurant and office areas. The contrast between the flexible and loft style aspect of the gallery areas in one hand and office areas is noticeable.



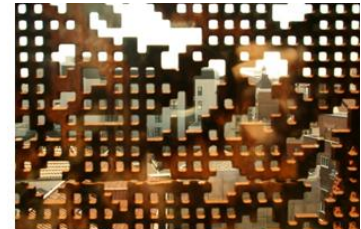
- Converted 1899 power station from early industrial age which was made from classified brick shell

- IDEA →
- sculptural aspect-CaixaForum's silhouette reflects the roofs cape of the surrounding buildings.
 - vertical garden-Harmony between Botanical Garden and the landscape of the Paseo del Prado.
 - "levitation"-Removal of the granite base surrounding the old factory, giving the impression of a floating building over a large public plaza,



+1 Level

- spatial complexity
- Sculpting the stairs



- Red of the top floors with the green of the wall next to it form a contrast



-Delicate usage of perforated Corten steel as a contemporary material intervention which contains touch of old



Fig 7.8 CaixaForum Madrid

University of Washington, Tacoma

Location: Washington

Architect: Moore Ruble Yudell

UW Tacoma was founded in 1990 and is one of three campuses in the University of Washington. The campus is set in downtown Tacoma's Union Station neighborhood, Warehouses historic district, built in the late 1800s and early 1900s at the western terminus of the great transcontinental railroad. This 46-acre downtown campus, constructed from restored and modified historic buildings, has won national recognition for improving its neighborhood and environment.



Fig 7.9 Tacoma's Union Station, opened on May 1, 1911

UW Tacoma has approximately 2,900 students in eight academic programs and there are day and evening classes offered for both full- or part-time students. The initial goal of the new campuses was to provide further academic opportunities for community college transfer students and to serve "time bound, place bound" students with degree programs meeting provincial needs. UW Tacoma is a relative example of an industrial area transformed to a university campus. University of Washington Tacoma Campus is situated directly across from Union Station.

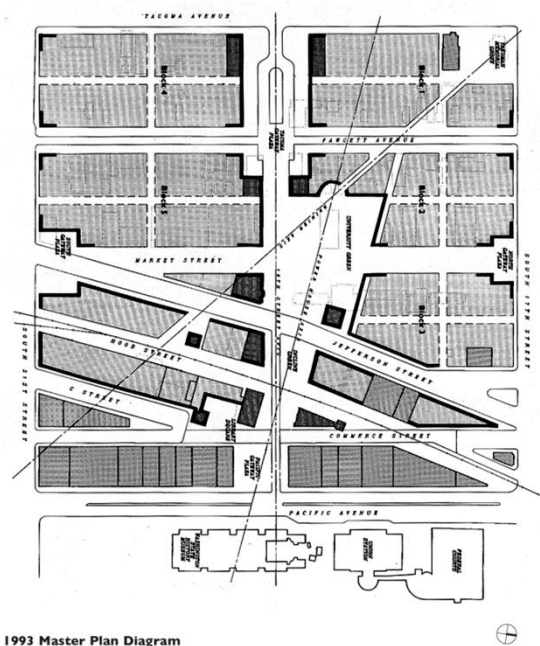


Fig 7.10 Commerce Street looking south through the current UWT campus at the "Mattress Factory" 1979



Fig 7.11 UW Tacoma,





1993 Master Plan Diagram

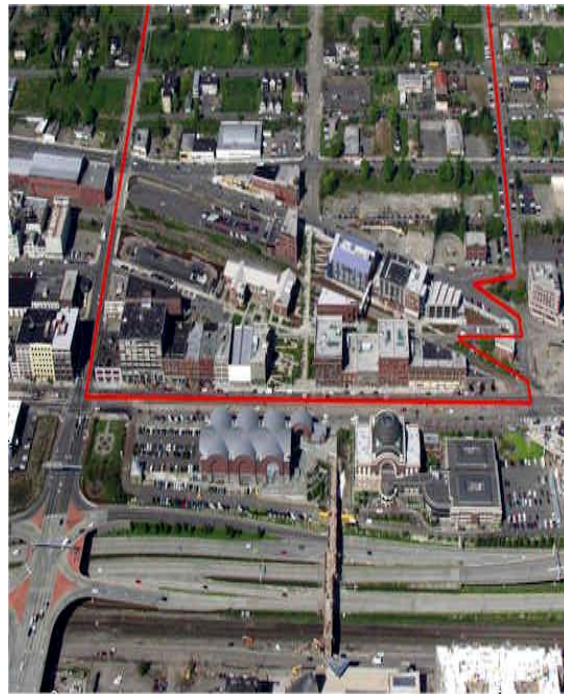


Fig 7.12 UW Tacoma, Campus Master plan

The primary principle of the master plan is the physical, social and economic connection of the campus to the adjacent neighborhood. The urban street grid is preserved through the campus; devoting some streets to the pedestrians and keeping other critical ones open to vehicular traffic. To improve commercial activities as an essential element of the campus life, retail development sites are strategically positioned at campus periphery and also within the campus core. Necessary student services such as book stores and housing food services are delivered entirely through the private sector.

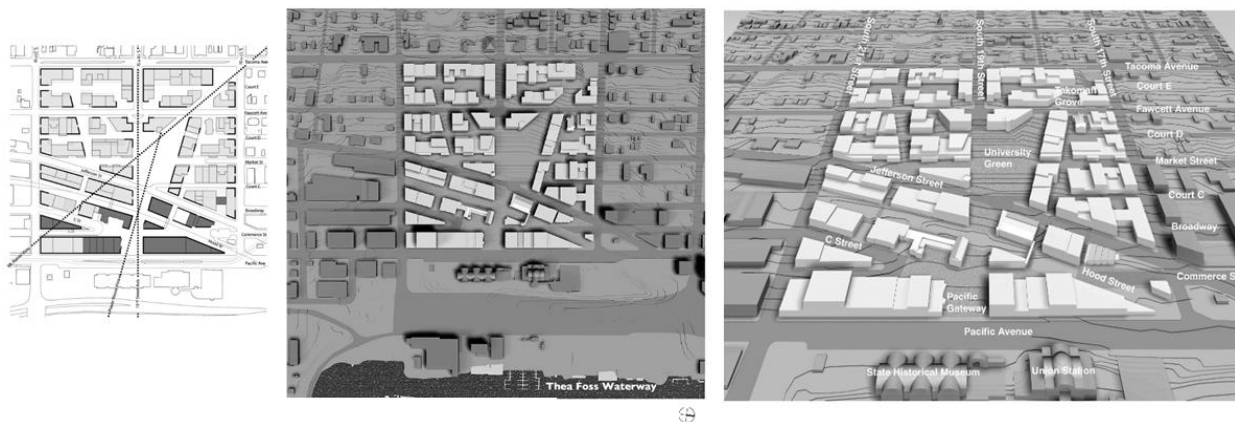


Fig 7.13 Campus Master Plan and 3d model Plan view

7.7 Conclusive Analysis of Relevant Precedents

Before attempting to speculate what kind of design intervention is suitable for a heritage building, this thesis must first investigate contemporary projects that deal with different levels of historic preservation. This step is significant to explore, as it speaks to the types of intervention that exist and how that influences a thesis design project.



Fig 7.14 Fiat's Lingotto Factory

Fiat's Lingotto Factory

The adaptive re-use strategy in this case was to keep the original concrete structure, which was satisfactory for some of the new activities. In addition, the new window system was designed and the stucco work was revitalized. The architect aimed to reuse the materials and systems which were used in the original design; it significantly helps the heritage value of this historical area (Prudon, 2008).

Since this factory was a production unit at some point, the architect maintained the spirit and concept of production by providing an information production centre. Consequently, the spirit, original intent, and historical identification of the building continued. The adaptive reuse strategy in this case was dealing with both an historic and a new building, in the realm of production.

The same approach will be taken in this thesis project, where the media spirit of the heritage building will be preserved. From the Kodak Company (production), the building will transform to a media information and educational facility (production). Furthermore, the concrete envelope and window frames will be preserved to maintain the historic identity of the building from the past.



Fig 7.15 The Van Nelle Factory

The Van Nelle Factory

The considerable success of the design of this project is especially related to basic decisions that were made within the spirit of the original design and without major architectural gestures that would have interrupted the general design intent and unity of the project (Prudon, 2008). This is the same approach that will be applied to this thesis project. The main structure will not be distorted or dramatically changed; rather, an existing

building will be added, with the introduction of a different type of production (educational production), conveying the building to a new era without changing its original spirit.



Fig 7.16 Duisburg - Nord Landscape Park

Duisburg - Nord Landscape Park

In this project, environmental sustainability is in harmony with heritage conservation intentions. Acknowledgement of the past and present environmental features and performance of an historic place is essential in identifying and developing proper solutions for the project. The strategy of the architect in this project is to use environmental and/or sustainable features and adapt them for contemporary use and revive these historic structures.



Fig 7.17 Le Parc de la Villette

Le Parc de la Villette

The idea of red follies will be reflected in the facade of this thesis project, with the theme of a film negative superimposed on the facade. The orange copper colour also emphasizes the iconic new-modern appearance of the project, which is in contrast with the impression of an existing industrial site. The orange facade, with its cinematic, iconic form generation is a step toward a future vision for the area; meanwhile, the spirit of site has been maintained.



Fig 7.18 Young Centre for the Performing Arts

Young Centre for the Performing Arts

A similar approach to that of the Young Centre will be taken in this thesis project, where the facade and different historical elements of the existing building are preserved. For instance, the window system, insulation, and roof of the existing building have been revived to preserve the historic identity of the building. Preservation and maintenance of the original materials and elements has been learned from this case study.



Fig 7.19 The Royal TELUS Centre for performance and learning

Royal Conservatory TELUS Centre for Performance and Learning/KPMB

Similar to this case study, this thesis project emphasizes the creation of a dialogue between new and old buildings. A contemporary glazing facade in both projects complements the characteristics of old and new, rather than overwhelming them. Furthermore, the new addition offers vibrant counterpoints to the polychromatic facades of the heritage buildings. It conveys a message of moving forward to new technology, while preserving the historical identities at the same time.

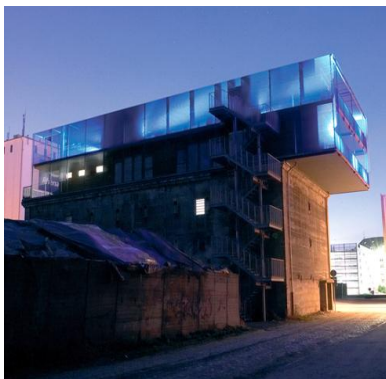


Fig 7.20 Upward extension of a bunker

Upward extension of a bunker

The idea of a dynamic facade on an existing structure has been derived from this example, where the playful form of the facade is reflected into interior spaces, bringing a new media sense to the project. In addition, applying new material, such as mesh, also brings the idea of a new media atmosphere to the building



Fig 7.21 Caixa Forum

Caixa Forum

This project is a collection of all of the adaptive reuse strategies deployed in the other examples. On one hand, the spirit of the site (historic characteristic) is preserved; on the other hand, the spaces introduced have a sense of new media and futurism. The vertical garden used in the project respects the environmental and sustainable aspects. Also, using a contemporary material (corten steel), which has the look and touch of “old,” is in harmony with the original existing material. This idea will be reflected in the exterior envelope of the new addition in this thesis project.



Fig7.22 University of Washington, Tacoma

University of Washington, Tacoma

This University of Washington campus is the centerpiece of an urban renaissance. It is a stimulating cultural, educational, and commercial revitalization, with a program of new construction and historic preservation. Tacoma's oldest remaining industrial structures were renovated for campus classrooms and offices, instead of the buildings being razed and new ones being erected. A previous group of abandoned, decaying structures was given new life, and soon after, businesses began opening in the immediate area for the first time in decades. The campus is located amidst 19th century warehouse structures, where street alignment shifts in response to an intersecting railroad, and the building's functional organization, simple prismatic shape, and architectural expression are empathically generated by its context. The University of Washington Tacoma is gearing up for a project that will transform the centre of the campus by turning an abandoned rail line into a pedestrian trail with plazas and gathering spaces. The whole scheme of this project will be reflected as a vision of the future in this thesis project, which proposes a Sheridan media satellite campus that incorporates media programs.

Final remarks:

These examples evoke a deep link to history while using modern materials and details, attempt to preserve building and urban context with adaptive reuse strategy. Although the projects studied are of different scales and programs, the intention of the studies was to look at the strategies used and as they are applicable to the proposed intervention at Kodak Employee building.

CHAPTER 8- DESIGN EXPLORATIONS AND CONCLUSION

For decades, Kodak Complex was the main representative of industry in its neighborhood, and the affordable housing for workers that sprung up around it helped attract many newcomers to Toronto. Mount Dennis soon turned into a high-density area, and at present it possesses a large percentage of immigrants from around the world. In the last twenty years, a lot of manufacturers have moved away or closed their businesses, taking employment and opportunities to learn skills along with them. Kodak was an emblematic company and when it finally closed in 2005, it left thousands unemployed. The downsizing that followed its shut-down destroyed the socioeconomic environment of Mount Dennis. The factory space it occupied still remains unused and vacant. A developer wanted to put 600,000 square feet of big-box retail on the site to restore jobs to the area; however the residents and the area's city councilor would prefer a new building with an industrial use.

The first goal of this thesis is to formulate the meaning and spirit of place as it applies to a selected site, specifically the former site of the Kodak plant (3500 Eglinton Ave West). In the absence of the Kodak complex, this previously industrial site will have a mixed-use complex introduced with the intention of regenerating the area. This is an appropriate strategy for providing education and job opportunities and it also will add dynamism to the surrounding area. With reference to a proposed master plan for the new college campus on the Kodak site this thesis will analyze and adapt the elements of this plan to ensure that it retains the meaning of place, the site's role in the city, and its function as a stimulus for the community, that is, its traditional role as a uniting force as a place of employment and recreation for local people.

The main goal here is to transform a site with a dead atmosphere into a district with facilities that will improve the quality of life for residents by providing education and jobs for them. The introduction of a variety of mixed-use facilities such as the Sheridan Media satellite campus, research and development facilities, as well as student housing and public amenities, will contribute to the revival of the surrounding area. This future development plan will be designed as a schematic master plan.

The relationship between new and old will be investigated; we will look at how adapted and reused historic industrial buildings and sites in Toronto relate to their surrounding communities. Reclamation and restoration of Modern industrial structures is not only a meaningful objective in itself but also a starting point for the complete transformation of post-industrial areas of the city into ones with a community focus. Another goal of this thesis is to demonstrate that

understanding of the original intent, formal organization of site, use of materials, sustainability and feasibility of industrial buildings in Toronto can offer practical strategies for their reuse and make historical buildings viable again with new functionalities. The proposed adaptive reuse design for the former Kodak employees' building would restore this unique heritage building that deserves respect as a distinguished landmark. Also, due to the fact that the site is located beside the rail road, it will be appropriate to use the rail road as a corridor and to maintain its functionality as a connector; a station stop should be proposed here.

Another aspect which will be analyzed in this thesis is the investigation of how two architectural systems impact on one another: original versus proposed or heritage versus contemporary. It will formulate principles for successful intervention that, while conserving the spirit of the built environment, also allows it to be adapted for new and contemporary use.

It is significant to acknowledge the heritage attributes of the Building before making any decision about transformation or removal of any element in the building. The heritage attributes of the Employee's Building, Canadian Kodak Company, which is related to its cultural heritage value as a representative example of industrial architecture are found on the exterior walls, roof and interior as described below, consisting of:

- The four-storey rectangular plan with a flat roof marked by a cornice
- The concrete construction and the use of piers to organize the flat-headed door and window openings on the principal (south) façade, side elevations (east and west) and rear (north) wall
- The organization of the lower storey of the principal (south) façade into five bays with a central entrance; protected by a suspended canopy (the original canopy has been replaced), the entry is located in a large flat-headed opening with a transom and flanked by single flat-headed window openings; the remaining window openings on this wall currently contain three-part industrial sash windows
- On the interior, the south entrance hall with a curved double staircase

With regards to what has been discussed in chapter 7, the design exploration is developed based on five main principles defined as primary design ideas:

- 1. Continuity of intent**
- 2. Form follows change**
- 3. Materiality**
- 4. Sustainability**
- 5. Feasibility**

1. Continuity of intent:

- To respect and preserve the historical context
- To bring in the essence of the community
- To recognize the distinctive attribute of the heritage building which has been revitalized to serve everyone in the community
- To create a dynamic environment (campus) and bring life back to its residents
- Respectful transformations(to maintain the grids and proportions of the historical structure)
- To propose functions similar to the original ones

2. Form follows change

- To adapt and reuse historic industrial building for contemporary function
- Use an existing form as the foundation and plan for new use by consideration of original use

4. Materiality

- To assess recognize and preserve character-defining elements so that their inherent environmental potential can be determined
- Relationship between solid and fluid geometry (Relationship between concrete structure of the old and double skin translucent material of new)

5. Long term feasibility

- To propose Sheridan media satellite campus
- Making a linkage between different parts of the isolated community by proposing connection to the surrounding neighborhood from the campus

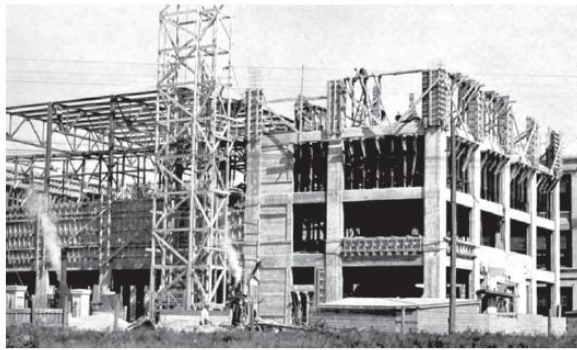


Fig 8.1 Historical Background on Employee building



Stairs in lobby, 1942



Opening ceremony of Photo Museum (View of the Lobby) - 1987

Photo Museum



Exterior View



Front View



West View



Entrance View



East view



Concrete Bridge connected to adjoining Building

Fig 8.2 Employee building, Views and Elevations



Fig 8.3 Employee Building Interior Views

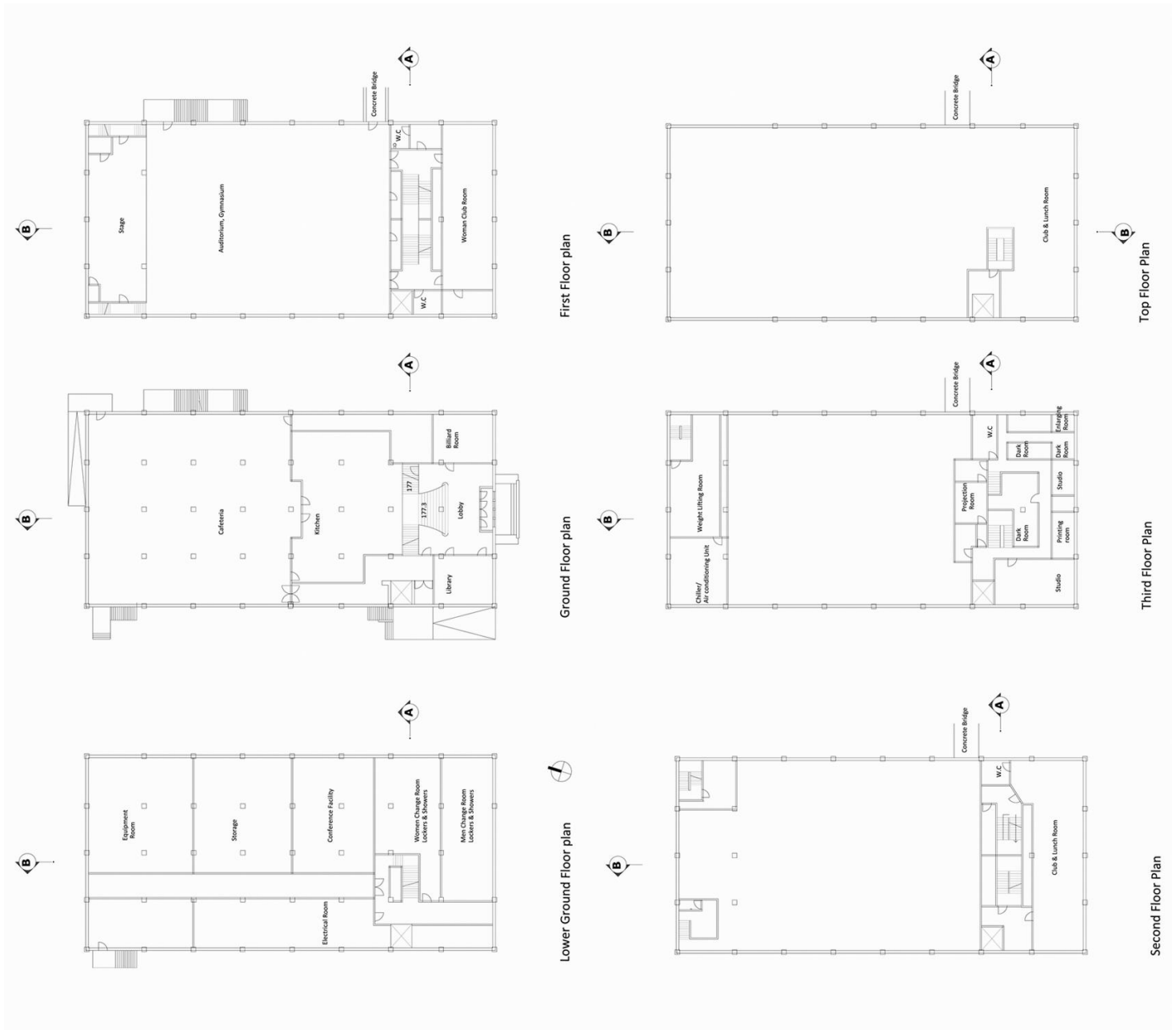


Fig 8.4 Existing Employee building Plans

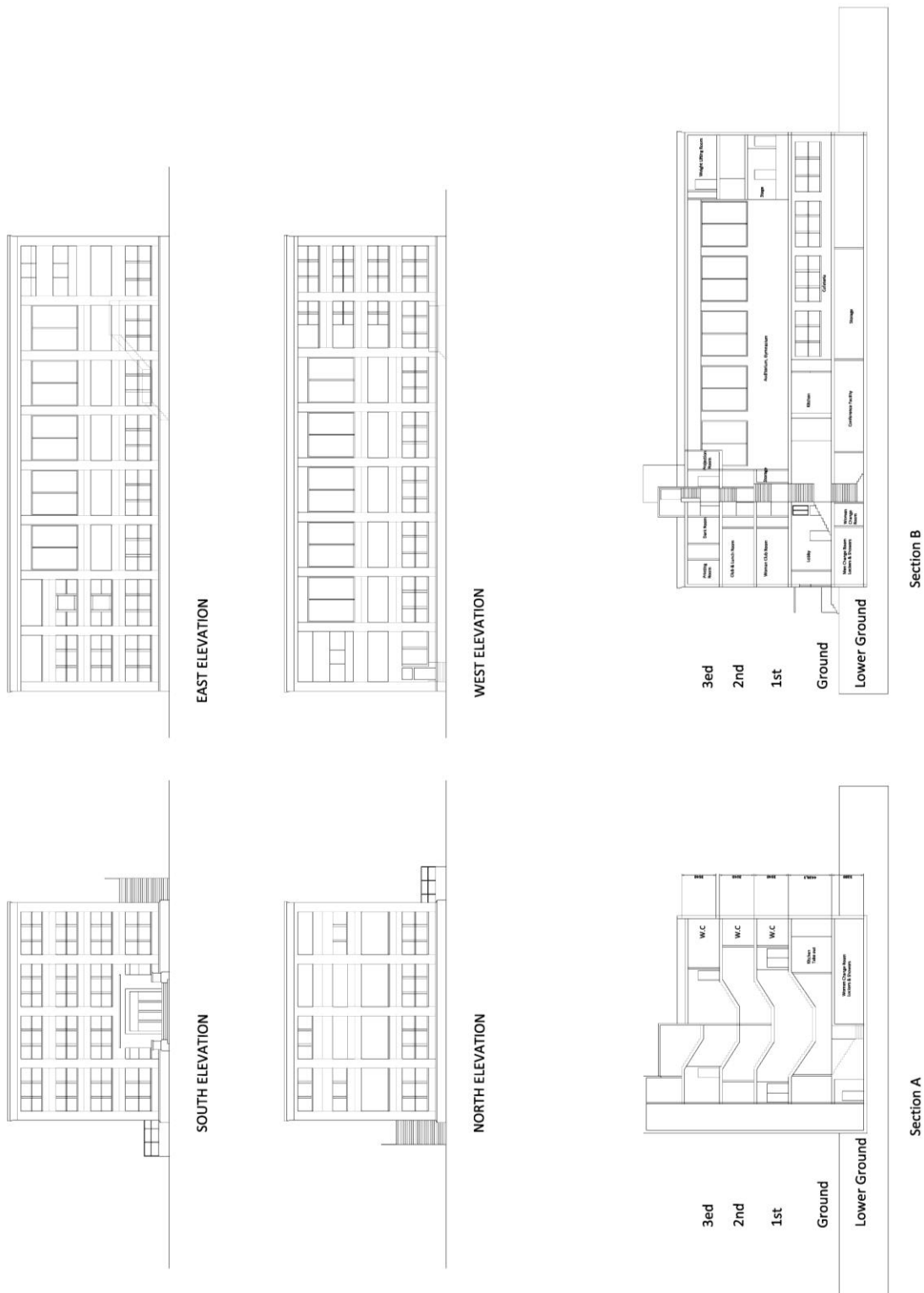
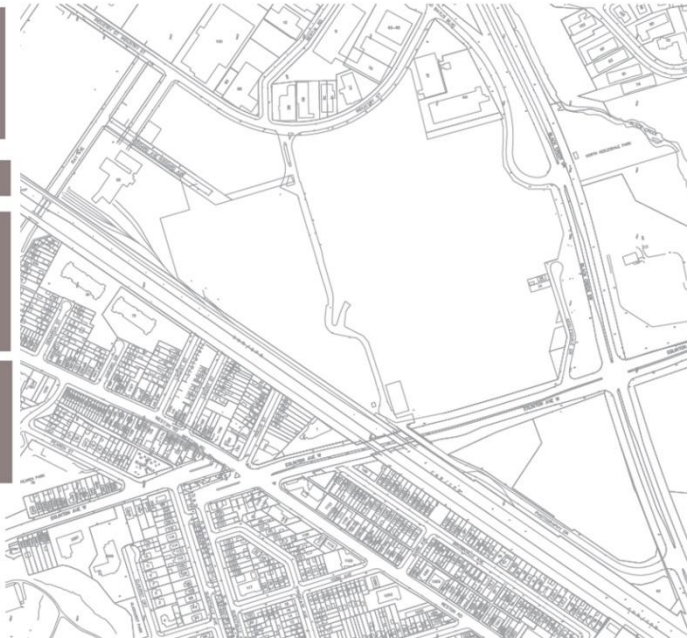
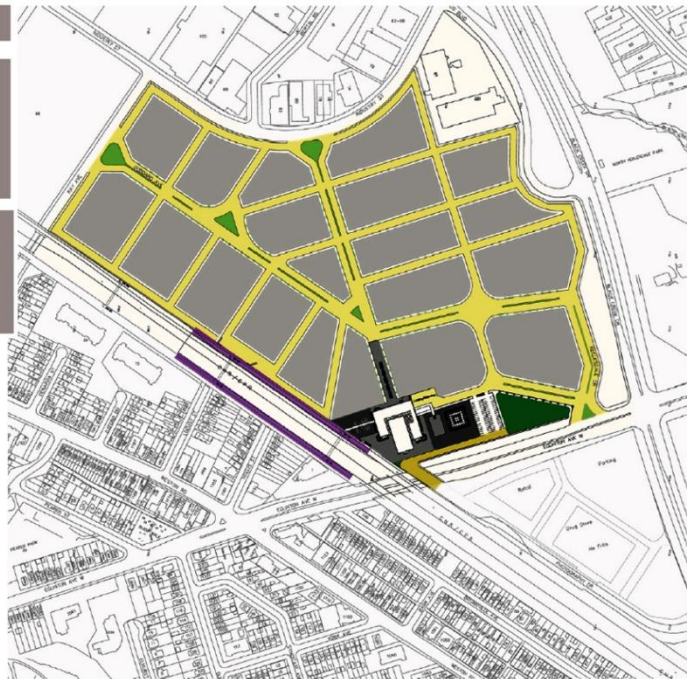


Fig 8.5 Existing Employee building Elevations and Sections

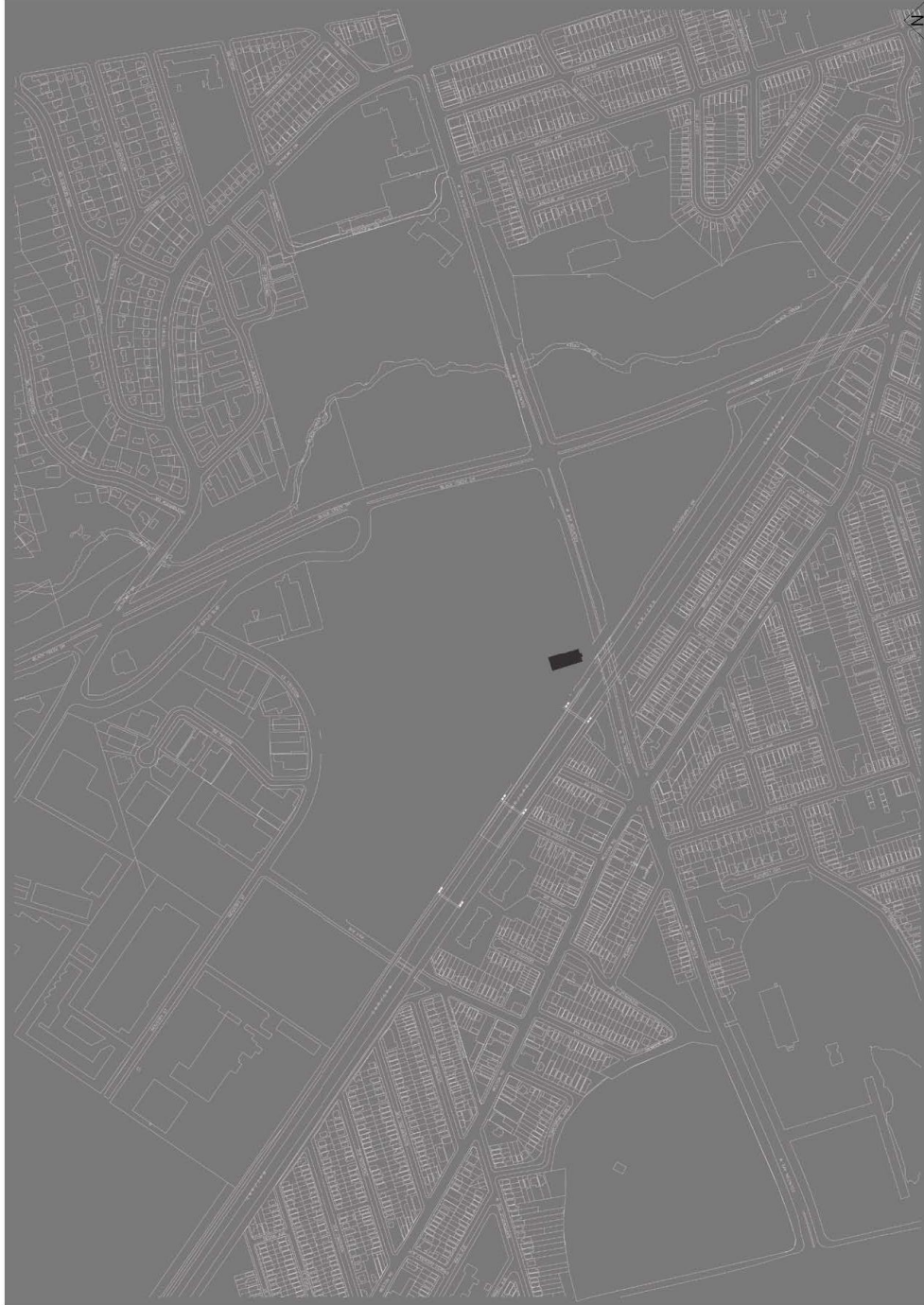
SITE STRATEGY	
ORIGINAL	
PROGRAM	MEDIA INDUSTRY (Kodak Complex) Offices, Packaging, Assembly, Chemical processing, Warehouses, Power plants
EXPRESSION	MODERN INDUSTRIAL ARCHITECTURE



PROPOSED (Sheridan Media Satellite Campus)	
PROGRAM	SHERIDEN MEDIA SATELLITE CAMPUS; Photography, Animation, Film R&D, Education
EXPRESSION	HERITAGE OF THE MODERN AVANTGARDE + CONTEMPORARY MATERIAL



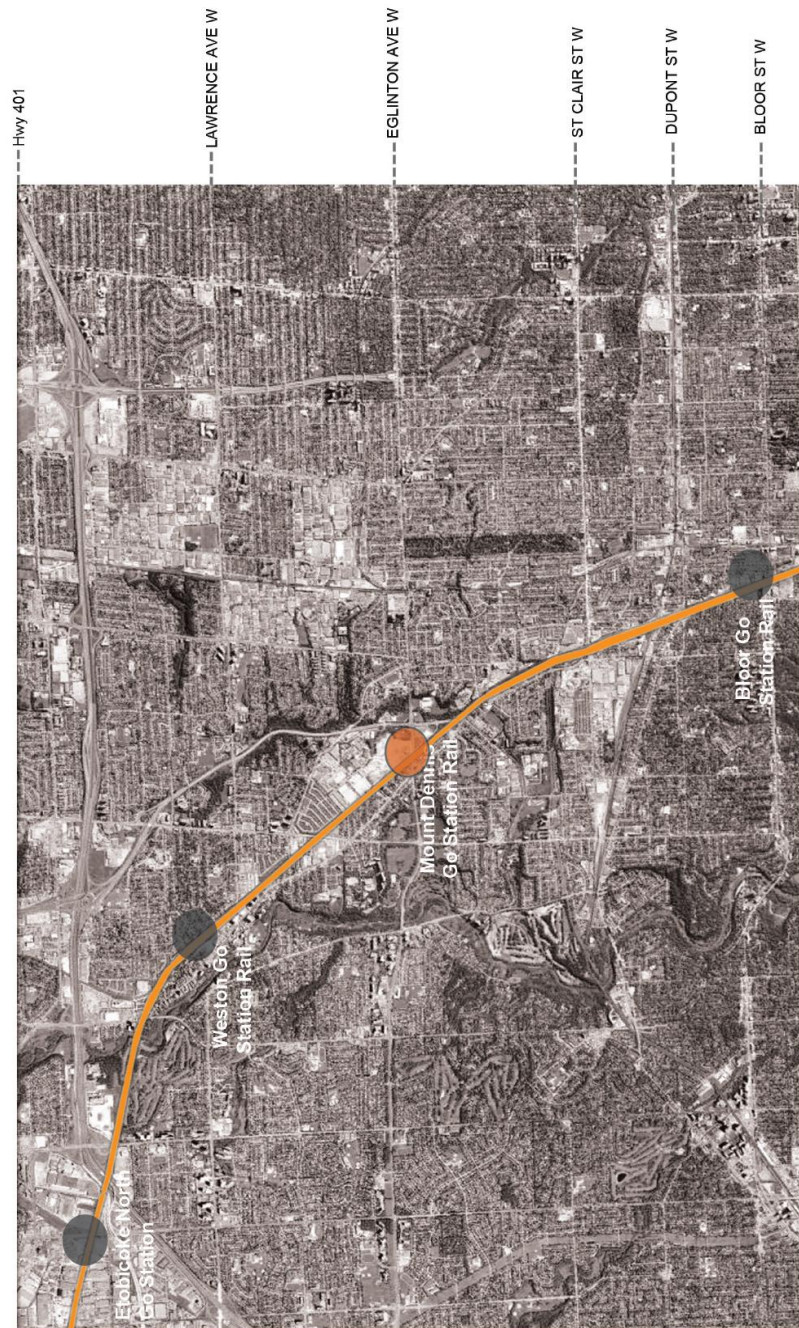
Proposed Strategy for Schematic Master Plan



Existing Site Plan

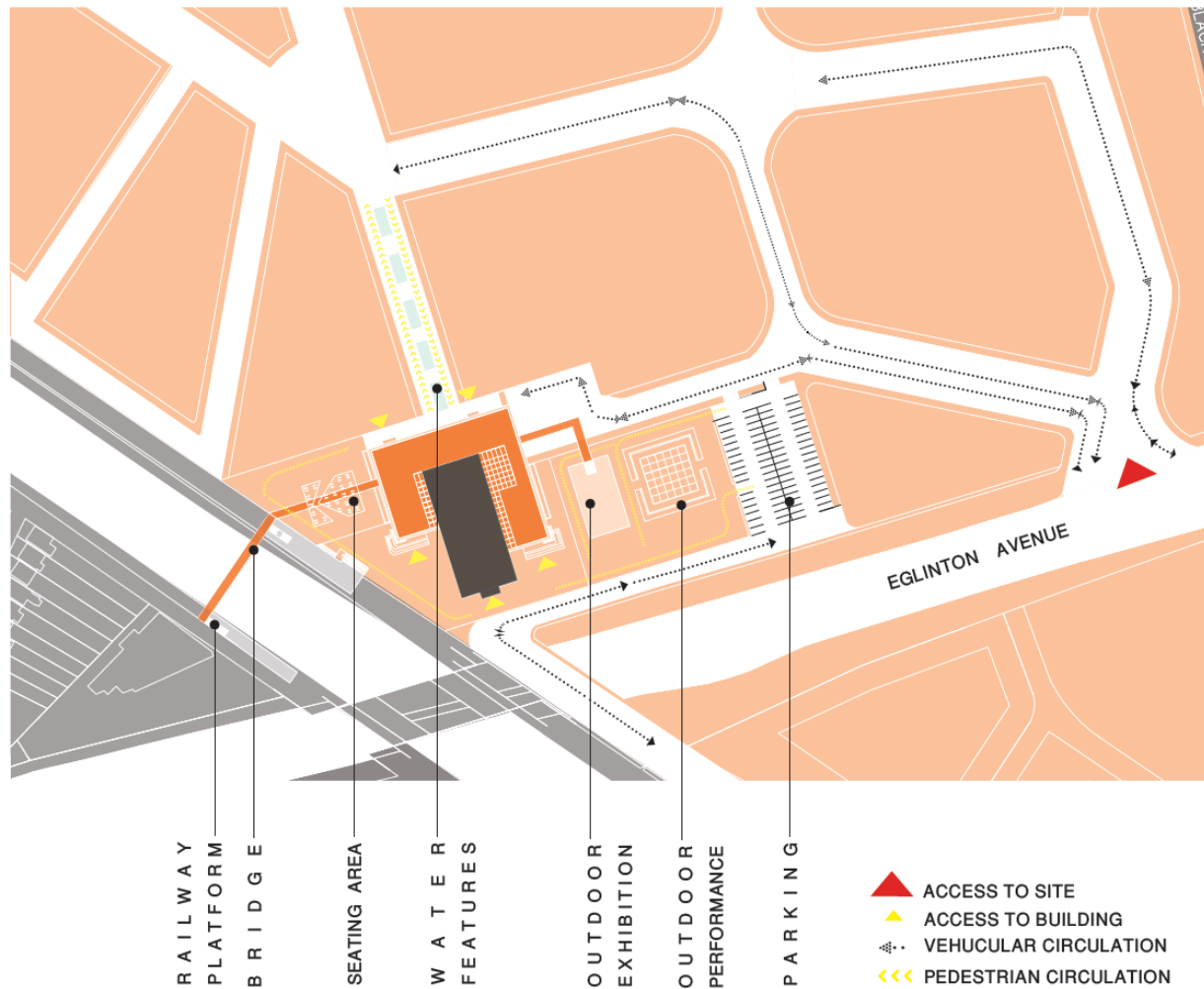


Proposed Schematic Master Plan



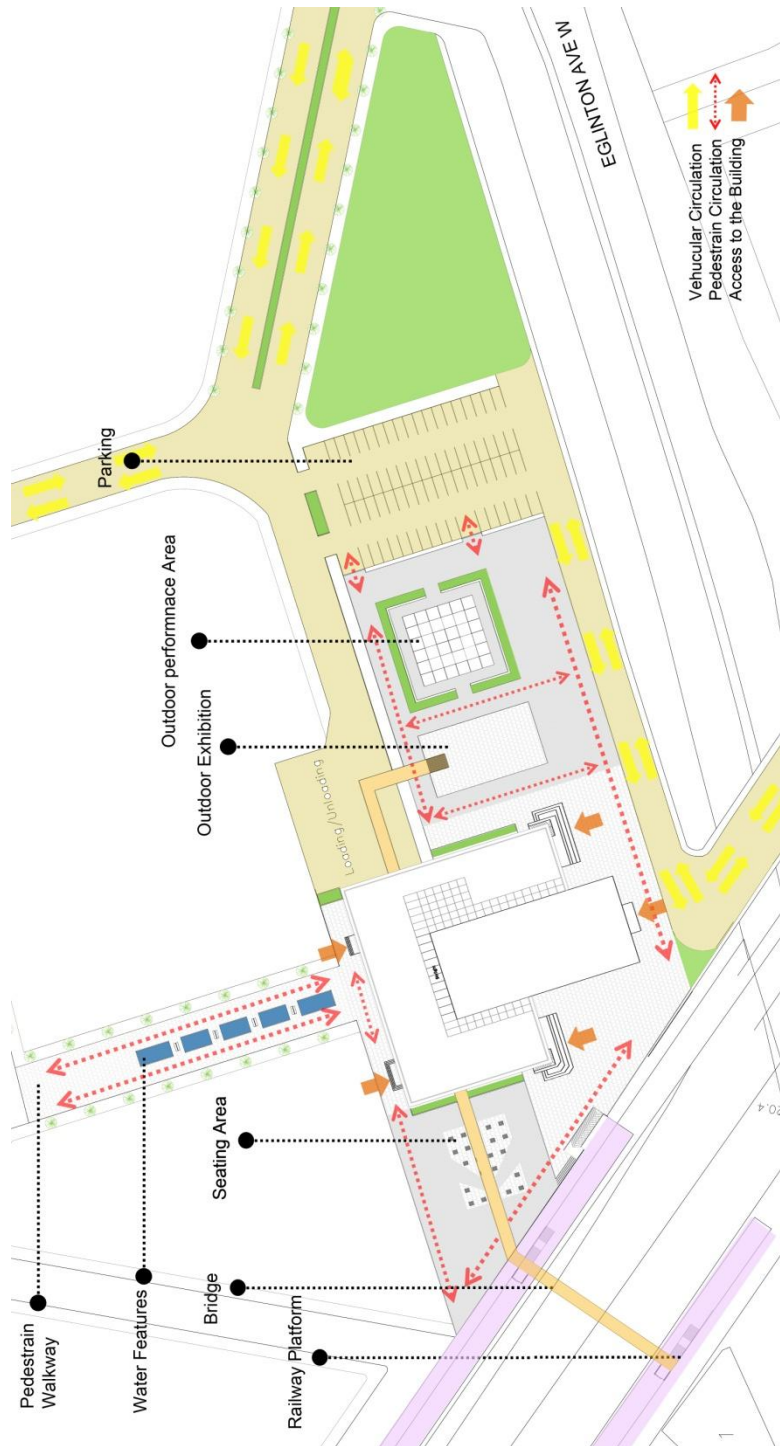
Proposed Mount Dennis Go Station

- In the post industrial city Rail road should be used as a corridor
- Maintain the functionality as a connector



Site Plan

-By proposing Master plan for the new college campus on the Kodak site the thesis will analyze and adapt the elements of the Master plan as it retains the meaning of place, its role in the city, its function as a generator in the community, its uniting role as it once was being a place of employment and recreation for local people.



Site Plan

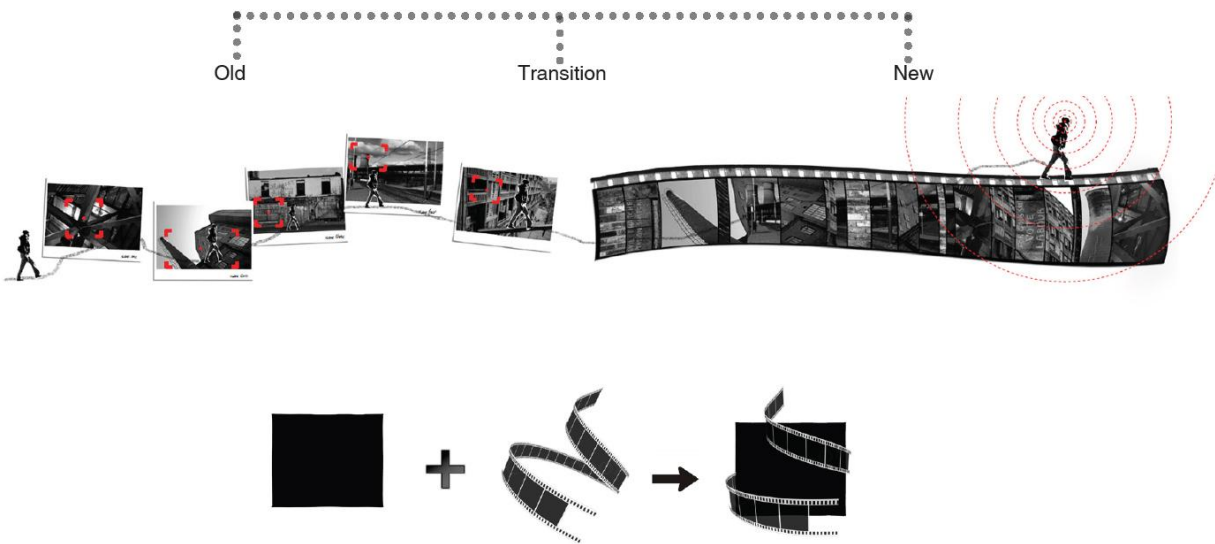
BUILDING STRATEGY	
ORIGINAL	
PROGRAM	EMPLOYEE BUILDING
EXPRESSION	MODERN INDUSTRIAL ARCHITECTURE



PROPOSED (STUDENT Activity Cnter)	
PROGRAM	STUDENT ACTIVITY CENTER (Exhibition, Learning Center, Cinema, Cafe)
EXPRESSION	FORM FOLLOWS CHANGE TRUTH OF MATERIAL SIMPLICITY / NO ORNAMENT

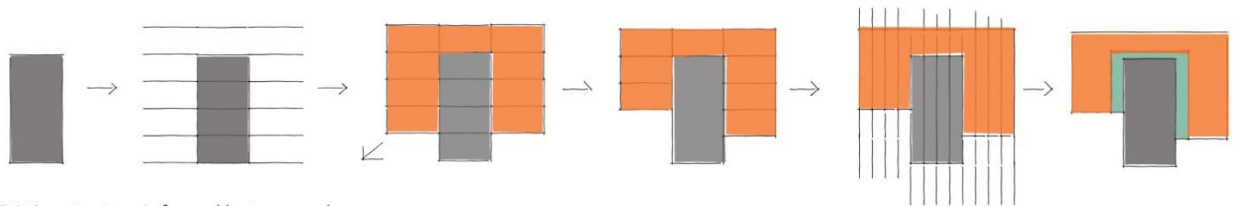


Strategy for Building Design

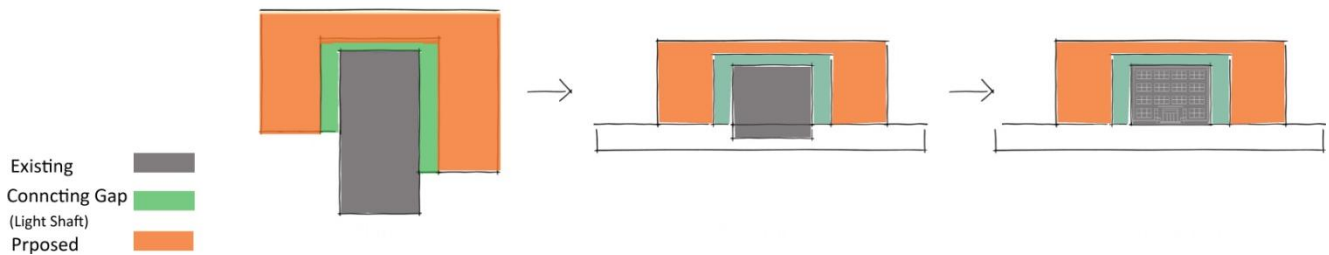


Concept Diagram

Maintaining the Modern essence of old by having the same structural grid in the New addition



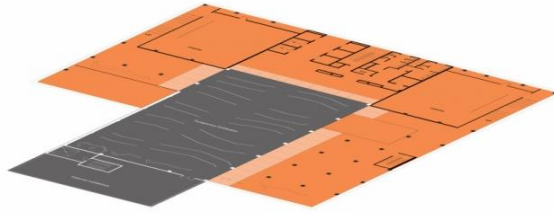
Existing structure is framed by two new layers



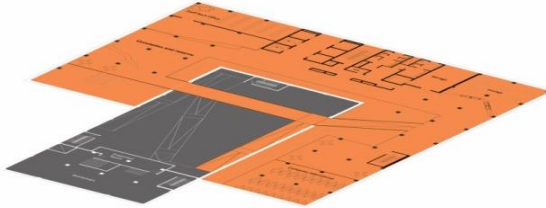
Concept Diagram, Old versus New

Investigate the relationship between new and old in the adapted and reused historic industrial buildings and sites in Toronto as applied to the surrounding community and neighborhoods.

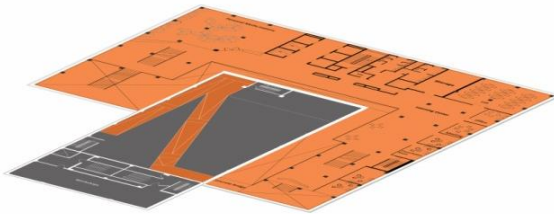
4th



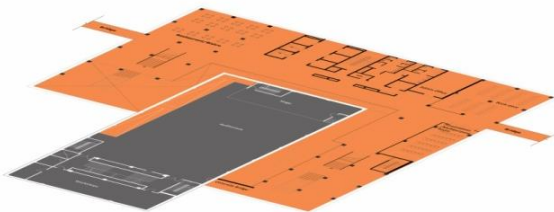
3ed



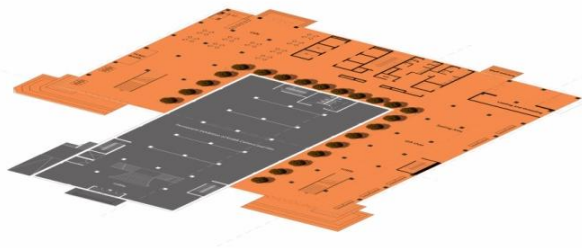
2nd



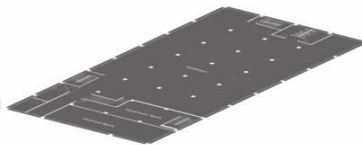
1st



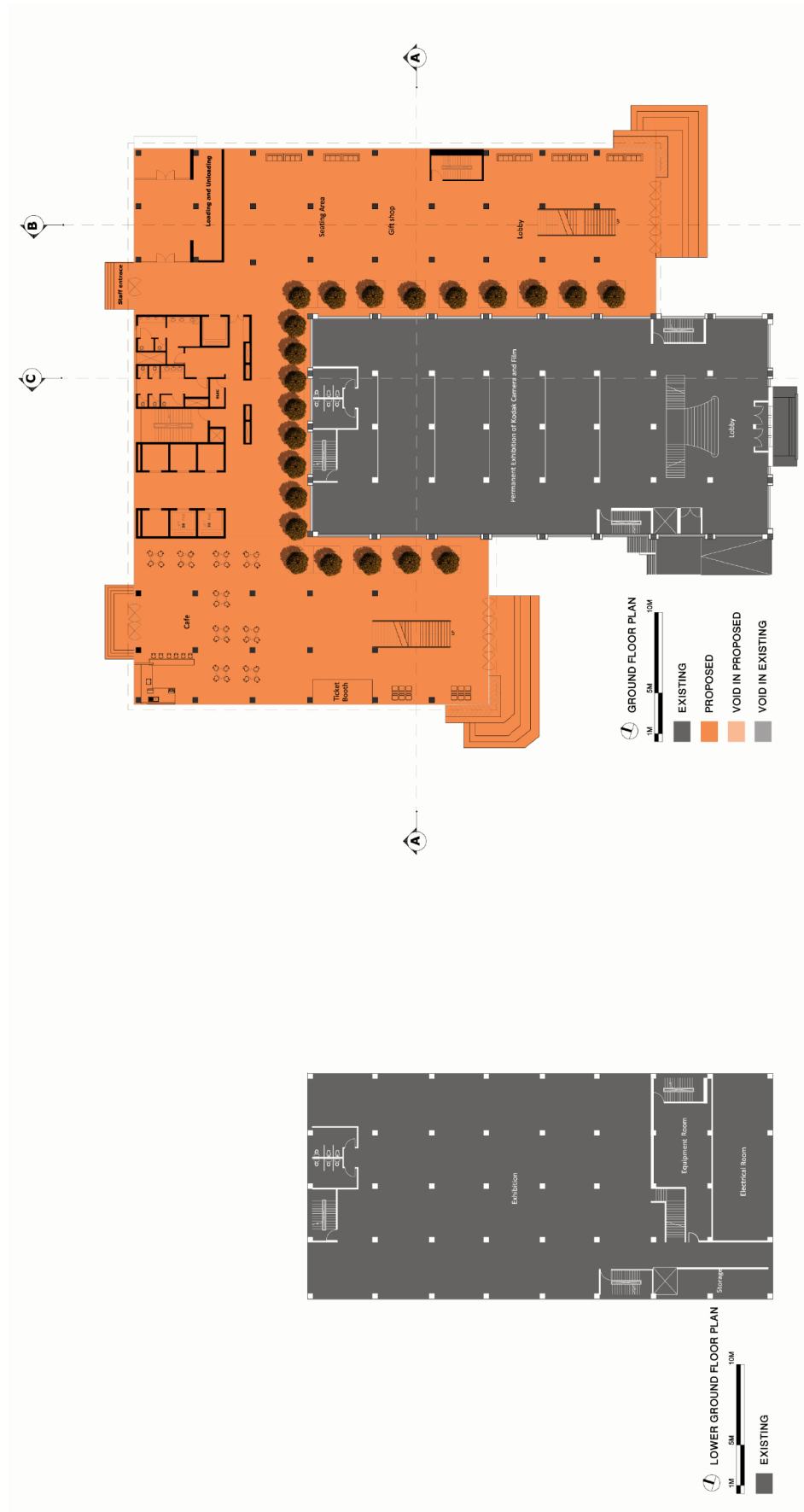
Ground

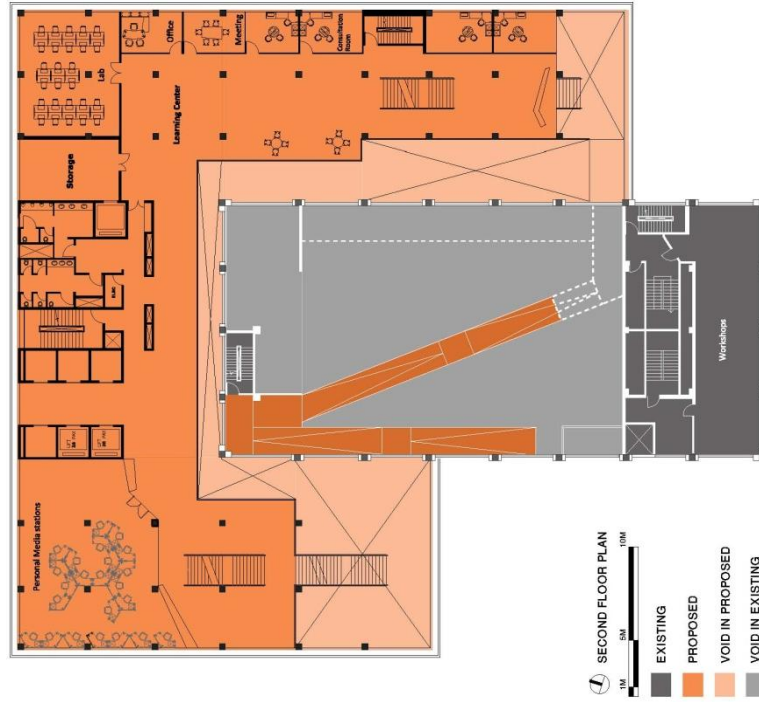
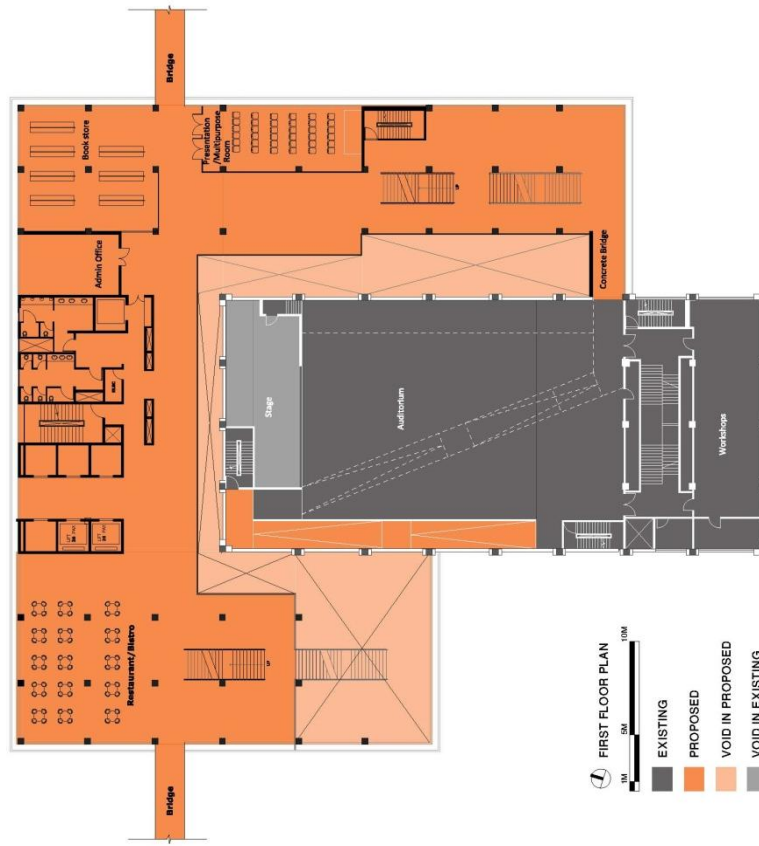


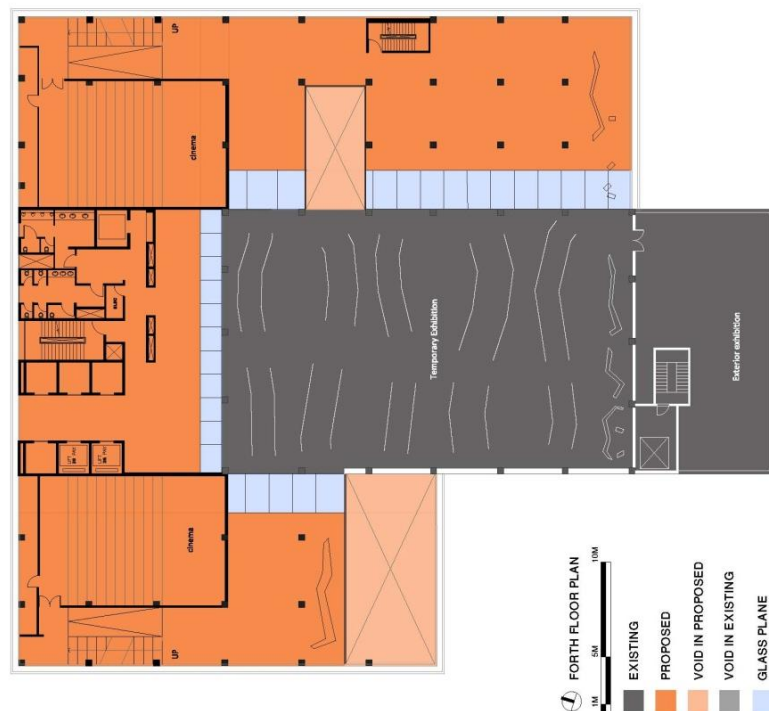
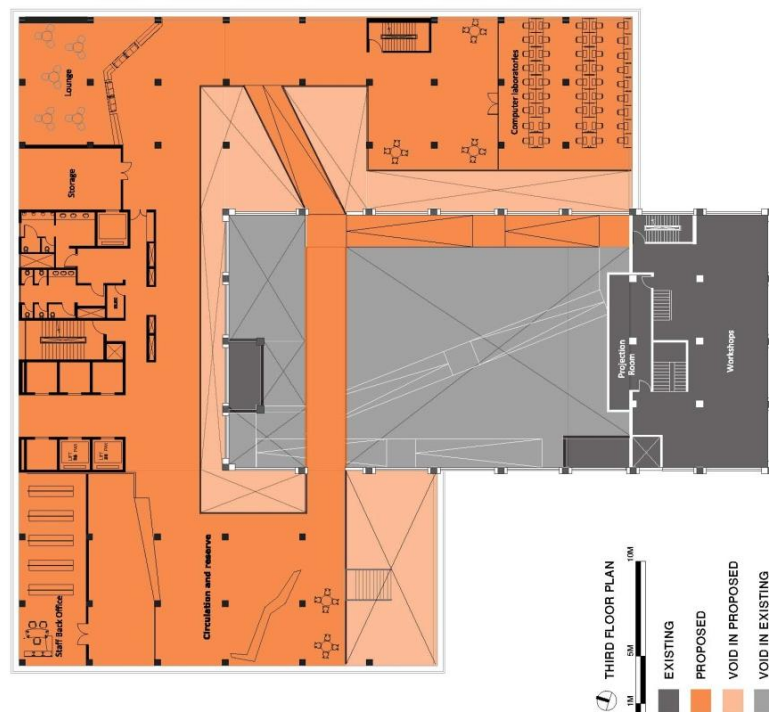
Lower Ground



Floor Plans









Ground Floor(Lobby)



First Floor (Learning Center)



Suspended ceiling is erased
to expose existing truss

Existing truss structure

Temporary photo exhibition
along the ramp

Proposed ramp with glass
railing

Reuse Of original glass block
and introduction of new
double glazing window

White plaster is stripped
away to add proper
insulation and drywall

Proposed ramp connecting
existing building to new
addition with hardwood floor

Structural steel cable
suspended from existing
roof truss structure



Second Floor(Personal Media Stations)



First Floor (Restaurant)



First Floor (Amphitheater)



Fourth Floor (Exhibition)



Fourth Floor (Exhibition)



Fourth Floor



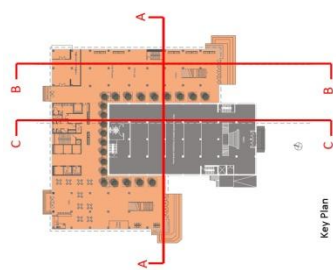
Third Floor (Ramp conncting old structure to the new addition)



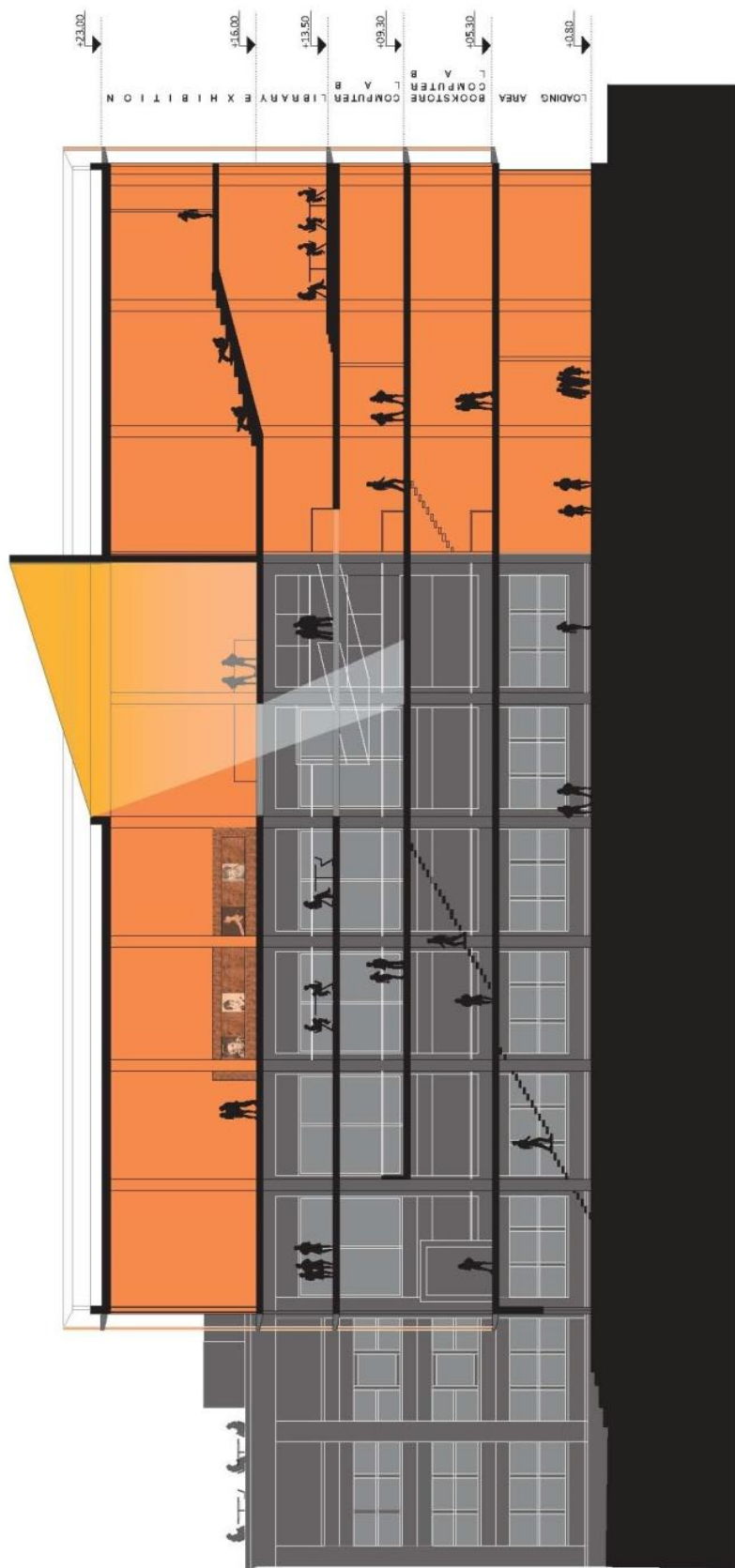
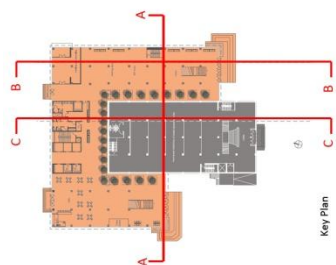
View of the proposed Gap (light shaft) between old and new building



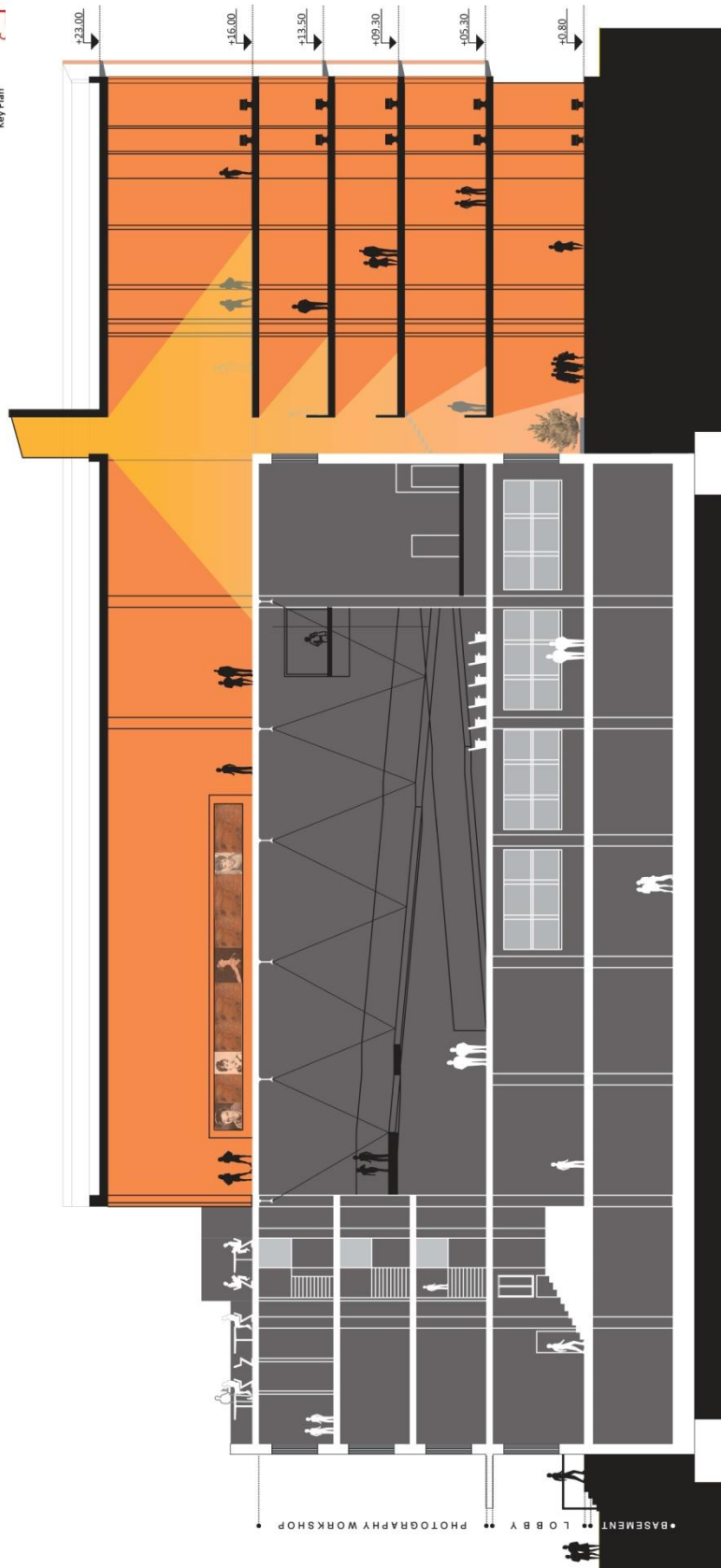
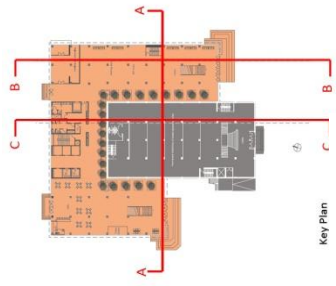
Third Floor (View of the connecting bridge between old and new building)



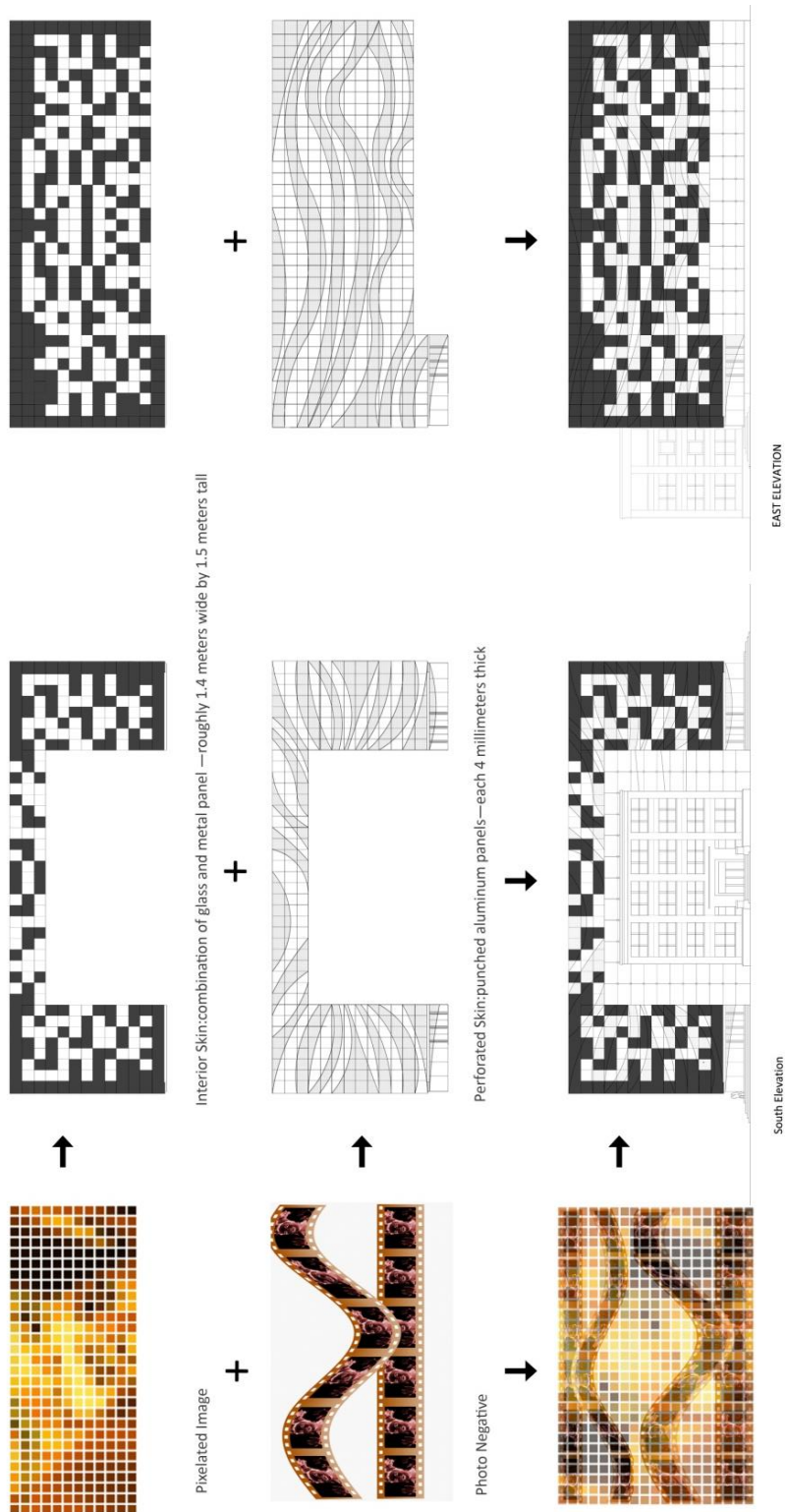
Section A-A



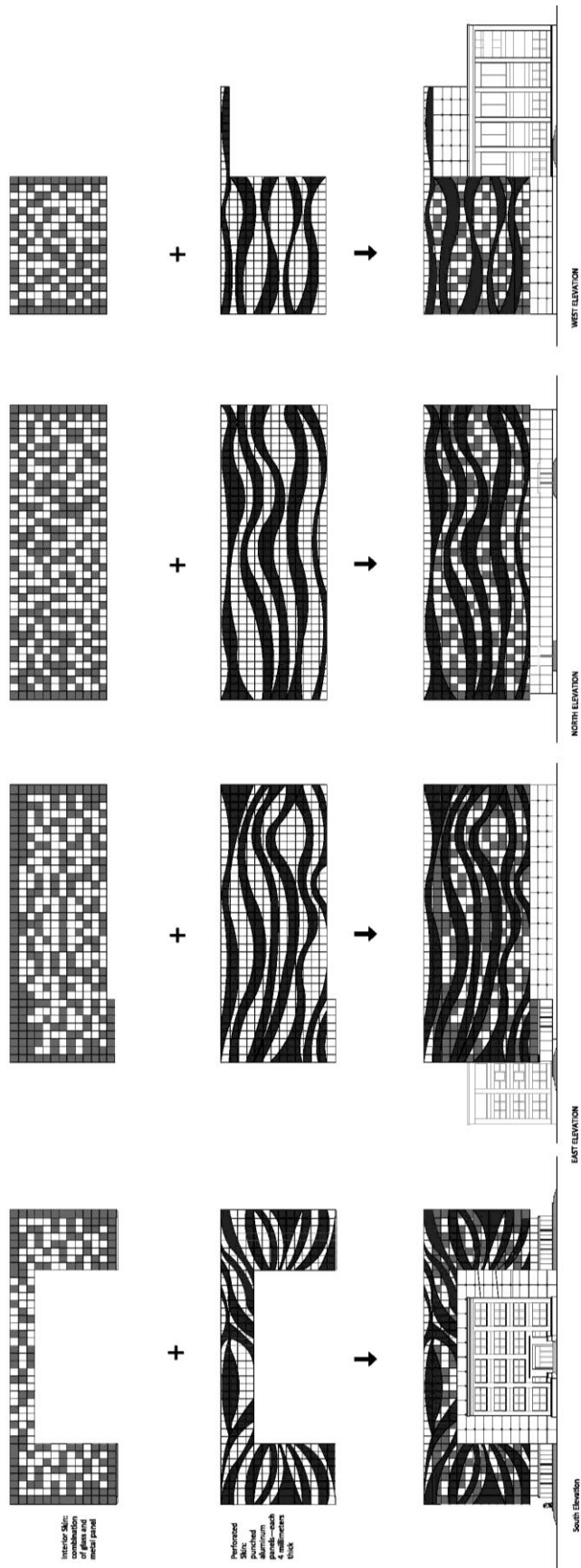
Section B-B



Section C-C



Elevations





Top View



Front View of the Student activity center



Exterior views



Exterior views



Exterior View (Bridge Connection to the proposed addition)



Aerial View

CONCLUSION

This thesis strives to offer one possible strategy for the successful adaptive reuse of Modern industrial heritage buildings. Research herein demonstrates that it is not only important to retain and restore modern heritage buildings but also to adapt them so as to give them new uses that are similar to their original intents. This project does not follow the dictum of “form follows function”. Instead, adaptations for contemporary use have resulted in new forms based on old forms but adapted for contemporary use. The project preserves the spirit of existing form and space; it introduces additional spaces that are necessary for modern use. For instance, the original building envelope and window frame are preserved and upgraded by the addition of insulation in the walls and double glazing for the windows. This material preservation of elements maintains the original characteristics of a building. The contemporary material that has been used in the new addition may be an updated version of the old; it therefore preserves historical identity at the same time as it is the product of contemporary technology. Finally this thesis design project looks at long-term feasibility for a neighborhood; specifically, it proposes the transformation of an industrial area into a Sheridan media satellite campus. The primary aim of its master plan is for the satellite campus to be physically, culturally, socially and economically connected to the adjacent neighborhood.

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