THE PROPELLING MONUMENT
LATENT ARCHITECTURE WITHIN THE EXISTING URBAN FABRIC

by

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in partial fulfillment of the requirements for
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The Propelling Monument

Latent Architecture within the existing urban fabric

M.Arch. (2013)

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ABSTRACT

An increased awareness of the existing urban fabric has led to a return of interest of the built environment in architecture. Can architecture emerge from within built buildings at different moments after construction, or does architecture occur only within the design of new buildings, as commonly assumed? This thesis examines the theories in adapting existing urban fabric as a key urbanistic strategy: to enrich cities with a layering characteristic of time. It encourages a perception of the latent architectural potential within built buildings, that architecture is a temporal state rather than a finished artefact. Most importantly, it fosters an experiment of the counterpoint of different interventions with the layers of the existing building to sensitively establish a new form of architecture. An abandoned Generating Station in Toronto is used as a testing ground to demonstrate how to re-think architecture as emerging from within built buildings at different moments of time.

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To my parents, Simon and Connie
To my brother, Leslie
To my dog, Kai Je
To my friends...

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Drawn by author

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Drawn by author

demolition

contemporary residential in contrast with old housing fabric

contemporary residential

mass amount of high-rises being built

*Figure 0.1 -
From demolition to re-development
of the country's historic fabric*

Preface

“Architecture cannot be a pure and autonomously artistic fabrication of space and form as its very purpose is to structure, articulate and express real human existence and life. Through time, architecture has been rooted in lived reality in different ways.”

— Juhani Pallasmaa (Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture*, 2011, p. 101)

This thesis began with a personal reaction towards China’s recent re-development, modernization and destruction of the country’s historical fabric. (Figure 0.1) My personal belief that dealing with what exists is crucial, both in cultural and sustainable terms to the future of cities and their citizens led me to question the value and possibilities of the existing fabric. Through destruction, the construction efforts of past generations will be lost, along with a reading of the past and the collective urban memory. Demolition and new construction in the built environment is inevitable for contemporary life in China, especially in the 21st century when many other cities around the world are continually redeveloping at an unprecedented rate largely due to globalization and urbanization. The quest for a *tabula rasa* (“blank slate”) leads to the constant challenge of architecture, new versus old, and has been the primary task for architecture ever since Modernism emerged in the late-nineteenth century. However, can we reconsider the existing fabric as a positive and integral part of dynamic cities and open up new possibilities for architecture?

Palimpsest

Figure 0.2 (top)

Archimedes' Palimpsest- residual layers of previous texts remained on the surface

Figure 0.3 (above) -

Architectural Palimpsest- the layers of the former building remain on the present facade

For me, it is critical to understand a city as a collective construct layered over time. The city as a complex architecture is very comparable to a palimpsest (Figure 0.2 & 0.3), “a manuscript or piece of writing material on which later writing has been superimposed on effaced earlier writing” (Oxford Dictionary). During this process, previous layers may be hidden, blurred, altered, segregated, or completely erased once the new layers overwrite them. Conversely, this thesis seeks to question and reveal the potential of the previous layers as they continue to be affected by the newer layers.

How can architecture mediate between past, present, and future? Is the past something to be banished and dismissed, or something to be actively engaged? Can the existing built and natural environments be viewed as foundations for creating vibrant and significant new places? Can contemporary architecture also emerge by adapting the existing fabric?

“Demolition and replacement may sometimes be meaningful or necessary but there are often even more meaningful alternatives.”

— Muck Petzet, architect (Petzet, 2012)

Thesis Statement

Architecture is a temporal state; it can emerge from within existing buildings even years after they were constructed. The ambition of converting existing buildings as an alternative to demolition and replacement affords opportunities for both environmental and cultural sustainability, but it also affords a unique opportunity to reveal the embedded, latent architectural possibilities within each individual existing building. This thesis proposes that sensitive contemporary interventions can act as a counterpoint to the old layers in the existing buildings to enhance and reveal something that was unintended when it was originally designed, resulting in a latent architecture..

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Figure 0.6 Shearing Layers of Change
 "Because of the different rates of change of its components, a building is always tearing itself apart." – Stewart Brand

0.1 Introduction

Every new architectural intervention will someday become old. (Figure 0.6) When the passing of time has brought an end to architectural life – by way of natural decay of materials, function becoming obsolete, or becoming overshadowed by newer architectural interventions – buildings diverge from the contemporary life in the city becomes abandoned, forgotten, hidden and demolished to make way for new replacements. In the 21st century, our built environment continues to transform at an unprecedented rate due to social, cultural, and technological advancements that demand new architectural interventions to comply with contemporary life. In addition, cities are being challenged with new typologies, new density, new ways of living, and most importantly cities today are evolving within their existing fabric to more efficient and sustainable models rather than developing on the periphery.

All of this raises the question: What does architecture represent to society and urban life when its architectural life has come to an end? To reiterate the view expressed by architect Muck Petzet, this thesis raises questions and thoughts to open a discussion of more meaningful alternatives to demolition and replacement in order to encounter our past.

Although sustainability, economics, or nostalgia for the past, may all be appropriate arguments for seeking more meaningful alternatives, this thesis proposes that expressing the importance of the cultural and social sides of architecture should be the primary goal. For instance, as the built environment continues to transform, it is necessary to represent the continuity of the collective urban memory and to grow from our heritage. Architect Juhani Pallasmaa advocates, “Architecture cannot be a pure and autonomously artistic fabrication of space and form as its very purpose is to structure” (Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture*, 2011). This indicates how architecture is much more than just a means of facilitating spaces and functions with form, light, material, and program.

As people are directly engaged with the built environment every day, this thesis advocates for a symbiosis between architecture and humanity. Architecture influences the way in which we live our lives. It can direct and manipulate the way in which people engage with their social values, and educational, commercial and spiritual needs. This statement can also be inverted. People directly influence and manipulate the built environment in response to social needs, cultural mixes, economics, and technological advancement. This means that the relationship between society and architecture is in constant flux as buildings and people constantly evolve. New buildings are built to facilitate our social development, and existing buildings are being re-

shaped. (Hay)

“We shape our buildings and afterwards our buildings shape us.”

— Winston Churchill, 1943

“First, we shape our buildings, then they shape us, then we shape them again-ad infinitum.”

— Stewart Brand, 1994

British politician Winston Churchill’s statement provides a starting point to address the fine balance between architecture and humanity in our built environment. The quote simply states that at first, buildings reflect the qualities of the people who design and construct them. But after that, the people who live and work in them are influenced by the qualities of the buildings they inhabit. These places are where we have our thoughts and express emotions. They can provide the physical connection with our personal and collective memories. This quote originated from a speech Churchill made when addressing the nation with regard to the re-building of the House of Parliament after it was damaged by bombings during the Second World War. Churchill argued that rather than building a new version, he would like to see it “restored in all essentials to its old form, convenience and dignity” (Churchill, 1943). This quote is a reminder of how architecture continues to transform us long after its construction, being a part of our collective and urban memory.

Later, Stewart Brand, an American writer, expanded on Churchill’s statement by adding “then we shape them again-ad infinitum.” There’s a 51-year gap between the two statements. Following the Second World War, society was changing rapidly, technology and science accelerated development in travel and communication. Brand’s reworking of Churchill’s quote provides a critique of the idea of Modernist architecture – “form (ever) follows function” written in 1896 by Louis Sullivan. Rather than just focusing on the functional use of space, Brand advocated the need to understand building over time. Thus, he argued that “building” is both a verb and a noun because it involves people (Brand, 1994).

Now in the 21st century, it is a critical time to act and think about our existing fabric as globalization and urbanization feed mass communication and mass culture. Correspondingly, architects are becoming ever more creative designing new forms and expressing radical ideas and manifestos. This is where and when the question of encountering our past becomes more interesting. The argument made by Churchill and Brand has intensified interest in preservation and attention given to the past has increased. Although new constructions are constantly being formed to support contemporary life, the act of preservation is also progressively becoming a part of re-shaping the modern city.

The movement championing non-heroic buildings started in the 1950s with Alison and Peter Smithson's "as found" approach. It opposed top-down strategies in favour of the advantages of bottom-up approaches when comprehending and experiencing a city. "They deliberately positioned themselves in stark contrast to modernism's functionalization and realisation mechanisms for architecture and town planning, and instead formulated an approach and attitude towards the real and existing city and its spatial and social dimensions" (Klanten & Feireiss, 2009).

The "as found" approach is still relevant today as the discipline of preservation and conversion of existing buildings is certainly changing and is being challenged in the contemporary context as it continues to integrate with city development. It is evident that preservation is no longer a matter of inaction, but involves creativity and imagination. This is an interesting point because, typically, preservation means to maintain an original or existing state, but today, the best way to keep buildings safe from harm is to convert them to new uses and modernize, as to reconnect back with present-day life. Art historian Alois Riegl recognized this conservational act in 1903 when he discussed present-day values in the cult of the modern monument.

Riegl acknowledged that the monument fulfilled other purposes relating not to commemoration but to use and aesthetic enjoyment... he classified these present-day values into two main groups: use-value and art-value. (Arrhenius, 2012, pp. 100-101)

There are many exciting precedents for old and abandoned existing buildings with no practical, functional, or aesthetic reason for retention, but they have been converted with present-day values to give another meaningful life to the ruin. For example, a silo can become an apartment; or a slaughterhouse can become a vibrant mixed-use facility with shops, studio and stages; or an abandoned power station can turn into a modern art museum. All of these examples illustrate how each of the existing buildings has potential within. This thesis recognizes these potentials and argues that latent architecture can be revealed by actively re-engaging with existing buildings. (Figure 0.4 & 0.5)

In addition, these projects also exemplify how contemporary architecture can positively emerge by converting existing buildings that reveal unintended architectural qualities. The extent of the intervention may range from a very subtle repair to complete restructuring or reshaping of the original. All of which has its own success according to the uniqueness of each project.

What is intriguing about these projects is the new interventions and strategies for converting these existing buildings. They have the ability to not only rehabilitate the ruin by amplifying the

power which the structure once had and now possesses over time, but also to provide a sense of continuity for the city and its people by expressing the cultural and phenomenological aspects of architecture.

This topic of converting existing buildings into the present-day will always be an inevitable challenge. As the city constantly evolves, there will always be remains and ruins left abandoned, forgotten, hidden and eventually demolished. Precisely for this reason, I want to explore and open up discussions in this category of buildings, especially when society's awareness of the past is increasing as our built environment continues to transform more rapidly and homogenously. What opportunities does this hold for contemporary architecture? What are the latent architectural possibilities embedded within these existing buildings? What can be done?

0.2

The Intent of the Thesis

“When working on existing buildings, an architect is no longer a free agent, but an interpreter and developer. The amount of restraint and flexibility this requires is what makes this worthwhile and exciting challenge...” (Heilmeyer & Petzet, 2012, p. 10)

The question of working on existing ordinary buildings (ranging from houses, to factories, to infrastructure) that are potentially in danger of demolition becomes even more interesting and architecturally debatable than that for the buildings in the category of monument where the values of existing architecture and priority for conservation are already accepted. Instead, their existence depends on the architect making a conscious decision to maintain and reinforce them. Although ordinary, Petzet argues, “such buildings, which are all too often dismissed as worthless, have potential and qualities that can be brought to the fore through qualified and creative remodelling” (Heilmeyer & Petzet, 2012).

In support of Petzet’s argument, the intent of this thesis is to take on the subject of architecture in the existing fabric and to explore the **latent** architectural possibilities in conversions of existing buildings into the present-day.

Latent

is an adjective that you use to describe something that is capable of becoming active or at hand, though it is not currently so.

(www.vocabulary.com)

adjective

(of a quality or state) existing but not yet developed or manifest; hidden or concealed.
(Oxford English dictionary)

adjective

1. present but not visible, apparent, or actualized; existing as potential: latent ability.
2. Pathology. (of an infectious agent or disease) remaining in an inactive or hidden phase; dormant.
3. Psychology. Existing in unconscious or dormant form but potentially able to achieve expression: a latent emotion.

(www.dictionary.com)

0.3

Latent Architecture- Architecture Emerges From Within Existing Buildings

Preservation has returned to the center of architectural theory and practice, after languishing in the margins over half a century. (Otero-Pailos, *Restoration Redux*, 2012)

The idea of designing the “endings” of buildings is an important contribution of historic preservation to architecture, as the latter has previously only been concerned with the design of opening sequences, to use a filmic analogy. (Otero-Pailos, *Creative Agents*, 2006)

Why has preservation returned to the center of architectural theory and practice? Also, what and how is the idea of designing the “endings” of buildings to be considered in the 21st century? In his article “Creative Agents”, Jorge Otero-Pailos – an architect, artist and theorist specialized in experimental forms of preservation – explains the interest of preserving architecture in contrast to intervention in the practice of historic preservation, which is to preserve or aestheticize the endings of buildings as a way of protracting them, often referred to as “saving” the building.

But “saving” a building is never a disinterested act. One can save a building in the interest of say culture, or economy. What does it mean to “save” it in the interest of architecture? (Otero-Pailos, *Creative Agents*, 2006, p. iii)

Otero-Pailos advocates that architecture can emerge within buildings at different moments. We usually assume that the architecture of a building is fully formed in the original design, but it can continue to emerge years after the building has been constructed. With this point of view, the purpose of intervention shifts from historic preservation, which predominantly attempts to reveal the building’s existing architecture, to revealing something that was unintended or not explicit – latent architecture. The projects in Otero-Pailos’s article each present a different design philosophy in preserving the past while designing for new uses. Other examples include David Chipperfield and Julian Harrap’s restoration of the Neues Museum in Berlin (Figure 0.7); Diller Scofidio + Renfro’s subtle morphing of Lincoln Center (Figure 0.8) and their High Line in New York (Figure 0.9); and Rem Koolhaas’s forensic preservation of the Hermitage in St. Petersburg (Figure 0.10).

Architectural preservation opens old buildings to new meaning. This proposes that architecture be perceived in a temporal state rather than a finished state once design and construction are complete.

Types of Latent Architecture:

*Figure 0.7 (top left) -
Restoration- David Chipperfield and Julian Harrap's Neues Museum (2009)*

*Figure 0.8 (top right) -
Subtle Morphing- Diller + Scofidio's Lincoln Center (2009)*

*Figure 0.9 (bottom left) -
Subtle Morphing- Diller + Scofidio's High Line (2009)*

*Figure 0.10 (bottom right) -
Forensic preservation- OMA (ongoing)*

Building on this argument, Otero-Pailos presented the work by Gordon Matta-Clark, titled *Splitting* (1974), where the artist cut and split in half an ordinary house before it was to be demolished (Figure 0.11). The split allowed natural light to penetrate what was once solid, thereby creating something new – a space both physical and conceptual – and raising new questions about the architecture long after it had been erected (Figure 0.12). How does it shape one's experience differently? How does it restrict and alter one's movements? Otero-Pailos explains, "It interrogated the definition of architecture according to the principle of structural stability, and examined the limits of the possibility of inhabitation" (Otero-Pailos, *Creative Agents*, 2006). In this sense, Otero-Pailos argued that the work installed architecture into the existing building, making it emerge from within.

Similarly, in another work by Matta-Clark, titled *Day's End* (1975), he transformed an abandoned pier warehouse in New York's industrial area (Figure 0.13) into what he described as a "sun and water temple" (Collection Online, 2013). Matta-Clark removed sections of the floor to reveal the water under the building, and removed part of the roof and wall to allow light to stream within the black box warehouse throughout the day (Figure 0.14 & 0.15).

Both examples of Matta-Clark's interventions at the endings of buildings, demonstrate the potential for installing new meaning through a simple action of cutting, slicing, and opening of the old building. The creative approach of adding new interpretation to what already exists contributes to and expands the notion of the earlier theorists about preservation as a debate on how to merely "respond" to a given existing condition. It also challenges architectural conventions, ultimately "transforming its relationship to this building at this particular time...to create 'events' of appropriation...to create opportunities to witness how the upsurge of buildings into architecture, and of architecture in and through buildings, stamps both of them in time, and renders them historic" (Otero-Pailos, *Creative Agents*, 2006).

This emphasizes how contemporary architecture can also emerge by adapting an old building and criticizes the old notion that new architecture is only possible through new construction. Preservation signals another important new attitude to the past, not as history but towards the question of temporality. The circumspect attitude "towards the past makes contemporary architecture more concerned with temporality, rather than 'imageability' of space and form" (Otero-Pailos, *Restoration Redux*, 2012). Considering the role architecture plays in the collective practice of remembrance and identity formation helps people draw inspiration from buildings and imagine themselves as part of local communities and even larger societies.

Figure 0.11 (left) - *Splitting* (1974)
Figure 0.12 (right) - Interior

Figure 0.13 (left) - *Day's End* (1975)
Figure 0.14 (middle) - Interior
Figure 0.15 (right) - Interior

0.4

The Research Questions and Thesis Framework

What is the best way of integrating something new into existing construction? By deliberately contrasting, by complementing, or by adapting to it? Or is it legitimate for the new to interpret the existing? Is it possible, in the case of a larger building of historic value, to react in a differentiated way, in relation to a particular situation, according to quality and degree of destruction...? (Schittich, 2011)

These are some of the fundamental questions to be asked with any type of conversion within an existing building. This thesis begins by researching and understanding the current phenomenon before speculating on any position in relation to these questions .

Chapter One, **Awareness of the Existing Fabric**, discusses the contemporary dilemma in urban transformation – the coexistence of preserving the past and modernizing the city. In recent discussion, Rem Koolhaas's "preservation is overtaking us" and Mason Randall's "memory infrastructure" both express an urgency to act and give innovative prospects to the re-interpretation of the past – the existing fabric. There is a growing and expanding trend of preserving and conserving ordinary buildings that do not fit into the category of historic preservation such as abandoned factories, warehouses, department stores etc. Now, in an effort to safeguard these buildings as urban memories within the dynamic growth of a city, architects are acting upon this critical moment in conversions and re-integrating existing buildings into the present-day with optimistic and creative design attitudes. Renewed interest in conversions steers architecture away from a nostalgic or static re-creation of the past and towards a more radical, controversial, and experimental representation.

This type of work in conversions provokes an existential quality in architecture. It proposes layers of unspecified awareness of the past and temporal duration, which encourages a respectful dialogue with the past and differs from historic preservation or post-modernist attempts. This is in response to Juhani Pallasmaa's concerns regarding today's architecture, loss of communicative and expressive power, in place of mere utility, economy and seductive images concerned with novelty.

Chapter Two, **Urban Perspective: Re-considering the Importance of Monuments**, focuses on the architecture of the city through a study of the urban fabric to invoke an awareness that architects should maintain when engaging significant buildings from the past. In doing so, it first introduces a classic urban theory of Aldo Rossi's that is still relevant today, which discusses

the architecture of the city as made up of monument and fabric. It provides the basis of how this expanded group of concerns with ordinary buildings are shifting the perceptions and role of monuments. These monuments of today are not to be perceived in the traditional or default sense as static, but rather as 'propelling' monuments that synchronize with the process of urbanization. These monuments are to have symbolic function of place and time while also providing present-day use and aesthetic enjoyment. In parallel, Alois Riegl's (1903) idea of the 'unintentional' monument and Thordis Arrhenius' (2012) idea of the 'fragile' monument provide more insight into how there is always a paradoxical relationship when 'propelling' these monuments into the present-day while conflicting with the memory-value embedded within the buildings.

Chapter Three, **Building Perspective: Contemporary Interventions Enhancing the Old Layers**, presents research on architectural projects and theories that have in a significant way, incorporated the memory-value and present-day value in their design. The case studies present a methodology in a multi-layered model that juxtaposes the layers of old and new. The old layer of memory-value is expressed and revealed while the new layer of present-day value addresses use, enjoyment and aesthetics. By stratifying these two contrasting layers, a unique spatial tension arises with existential, temporal and experiential qualities within architecture. In this way, the contemporary interventions enhance the old and vice versa by layering.

PART ONE

Chapter 1 Awareness of the Existing Fabric

1.1

Preservation is Overtaking Us

The question of conversion is ubiquitous... conversion has reached everyday buildings and has not been restricted to heritage buildings for some time. Today one can operate on the assumption that anything and everything is available for conversion – there is no building that is a priori unfit for conversion. (Jessen & Schneider, 1999, p. 11)

A closer reading of our cities reveals that there is another kind of transformation at work in the huge wave of development. That is the upsurge of preservation of our existing fabric. Rem Koolhaas described this phenomenon: “the current moment has almost no idea how to negotiate the coexistence of radical change and radical stasis that is our future” (OMA, Cronocaos, 2012). The scale and importance of preservation has been escalating each year, due in large part to cultural and heritage concerns. In the extreme, Koolhaas provocatively states that “in many cases, the past becomes the only plan for future...” (OMA, Cronocaos, 2012).

This is a radical shift from his “generic city”, which provoked questions about identity, history and our past in our contemporary city.

What are the disadvantages of identity, and conversely, what are the advantages of blankness? What if this seemingly accidental – and usually regretted – homogenization were an intentional process, a conscious movement away from difference toward similarity? (OMA, Generic City, 2006)

This type of city, he argues, is not planned. It just happens and buildings are demolished once they are no longer in use or are unable to fulfill their original purpose (Koolhaas & Mau, The Generic City, 1994). Existing buildings of the past are seen as an impediment to urban development. As there will always be new interventions or buildings to replace the old, innovative buildings are an expression of new social demands and new forms (Koolhaas & Mau, The Generic City, 1994). The result of this “generic city” is the loss of the existing fabric of the city – where history, culture and memory are contained – due to the tabula rasa approach of Modernism. The past is seen as a burden on the creation of a new tradition, a new future, and a new society.

Listed Cultural Heritage

Figure 1.1

Expansion of typologies being preserved from Beijing Preservation Study with Harvard, 2003

In contrast to this notion, today the past appears to be an ever more significant source for cultural production on a larger scale. It cannot be ignored. It is no longer just the preservation of a few historically important monuments in our city, but the 'old' is taken care of in an increasingly ambitious and widespread fashion. Heritage objects today can be almost anything. Even the city's infrastructures and industrial sites are considered to be heritage, particularly in cities that developed during the 19th century's Industrial Revolution. In addition to the built forms, landscapes are also framed in the name of memory and turned into heritage objects (Arrhenius, 2012).

In 1987, Robert Hewison coined the term "Heritage Industry" to describe what he considered a commercialized version of the past – produced heritage. It was a critique of how heritage was largely imposed from above to capture a middle class nostalgia for the past. However, Thordis Arrhenius argued that the heritage objects of today are different from the negativity that Hewison was concerned about. She stated that heritage has changed its identity again and the identification of these heritage objects come from a society that loved the old of the past buildings because they provoke memory and express a quality of age (Arrhenius, 2012).

As our built environment continues to evolve and transform more rapidly, the preservation movement has also been rising. It has become a discipline of concern within the 21st century

Figure 1.2

Expansion of the scale of preservation from Beijing Preservation Study with Harvard, 2003

as historic preservation is expanding its boundaries. To constantly revisit and improve upon previous architectural discourse in this field, it is necessary to keep pace with the pressures of urban growth and redevelopment. The expanded boundaries of historic preservation have been recognized and presented by architect and architectural historian Paul Bentel in his article, “Where Do We Draw the Line? – Historic Preservation’s Expanding Boundaries” and Rem Koolhaas’s “Preservation is Overtaking Us,” which is an observation through the study of cultural heritage declared by UNESCO (Figure 1.1). Both articles explain how historically, preservation logically began with ancient monuments and then expanded to religious buildings. These very old buildings were preserved with a clearly defined and singular historical significance, such as architectural merit and archaeological value. Later, the preserved structures expanded to not only those of sacred substance, but also buildings of sociological substance to the point that we now preserve concentration camps, department stores, factories and amusement rides (Koolhaas, Preservation is overtaking us, 2004). Similarly, Bentel’s definition of these expanded boundaries are controversial cultural landmarks, such as large-scale infrastructure, obsolete industrial sites, and multivalent heritage territories, “common and seemingly unremarkable structures, natural landscapes devoid of human invention and buildings of the recent past that are frequently put forward to demonstrate the new frontiers of the field” (Bentel, 2004).

Rem Koolhaas continues looking at the change in the type and scale of building identified for

preservation under UNESCO. He also addresses the interval or distance between the present and what was preserved (Figure 1.2). In 1818, the preserved was 2,000 years in the past. In 1900, it was 200 years in the past. Then in the 1960s, it became 20 years in the past. Koolhaas states that “we are living in an incredibly exciting and slightly absurd moment, namely that preservation is overtaking us” and that “everything we inhabit is potentially susceptible to preservation” (Koolhaas, Preservation is overtaking us, 2004) (Figure 1.3). What is more interesting is the comparison done on preservation and inventions, and the realization that “preservation is not the enemy of modernity but actually one of its inventions... because clearly the whole idea of modernization raises either latently or overtly the issue of what to keep” (Koolhaas, Preservation is overtaking us, 2004). With change, you must consider what to maintain.

↑ Change = ↑ Preservation

For Koolhaas, preservation (although a theme long neglected) was intrinsically bound to contemporary construction and urban theory, and it must be central to any experience of the twenty-first century landscape. Currently, the relation of past to present and what it means for architecture, particularly for preservation, is not clear. As Koolhaas has stated “Architects – we who change the world – have been oblivious or hostile to the manifestations of preservation” (OMA, Cronocaos, 2012). Pallasmaa has also noted that “architecture is usually seen in futuristic terms” (Treib, 2009). As a result, an already large and ever-increasing part of the globe is displaying the same kind of bad preservation: commodified, sanitized, and individualized. Instead, he advocates that preservation move away from nostalgia and mere surface to the experimental and combative.

The listed cultural heritage started in 1819: France's Ministère de l'Intérieur attains budget for preservation of remains of classical antiquity

From Ancient Monument...

Figure 1.3

An illustration of the progression in Listed Cultural Heritage (refer to Figure 1.1)

1.2

Urban Transformation – The Coexistence of Preservation and Modernization

A novelty today, tomorrow a ruin from the past, buried and resurrected every day,
lived together in streets, plazas, buses, taxis, movie houses, theatres, bars, hotels,
pigeon coops and catacombs,

The enormous city that fits in a room three yards square, and endless as a galaxy,
The city that dreams us all, that all of us build and unbuild and rebuild as we dream,
The city we all dream, that restlessly changes as we dream it.

I speak of the city, shepherd of the centuries, mother that gives birth to us and devours
us, that creates us and forgets.

— Octavio Paz, 'I Speak of the City' (Scott, 2008, p. 184)

The observations by Bentel and Koolhaas lead to questioning how then preservation and modernization can relate to one another. In other words, this question reiterates Koolhaas's concern that "the current moment has almost no idea how to negotiate the coexistence of radical change and radical stasis that is our future" (OMA, Cronocaos, 2012). It is critical to understand the city as a collective construct layered over time, and preservation as a form of permanence within this ever-changing built environment, in order to provide future generations an opportunity to read the city's memory and past in a physical way that encourages a richer and more diverse context. Thus, preservation in architecture is to address the city's growth in more than a merely functional manner. It should also seek to meet society's cultural expectations. Contemporary preservationists such as Randall Mason, discuss preservation as a product of modernity and not a reaction against it. What is interesting about this argument is that Mason uses the city of New York as his example. It is common to think of New York as one of the most modernized and experimental cities in the world. However the question of encountering the past is still probed. It began in the 1960s with the demolition of the Pennsylvania Station for the new Madison Square Garden complex (Figure 1.4).

However after the instance of Pennsylvania Station, Grand Central Station faced the same threat of demolition. A 55 storey tower was proposed above the station, but the preservation commission stepped in and successfully protected the station in 1967. Today, Grand Central Station is restored and has become a beloved Manhattan landmark. In addition, the station continues to be re-envisioned with new proposals to add present-day value to the historical building (Figure 1.5 & 1.6).

Figure 1.4 - The demolition of Pennsylvania Station

Vision for New York's Iconic Grand Central Station

Figure 1.5 (left) - SOM's proposal

Figure 1.6 (right) - Foster + Partner's proposal

Memory Infrastructure

Randall Mason argued that “modernity begets preservation”, and used the term ‘memory infrastructure’ to describe what preservation creates and asserts as a key urbanistic strategy: “creating places that represented stability and continuity with a noble past, providing a cultural counterweight to the often chaotic growth of the metropolis” (Mason, 2009). It is not a passive or reactive matter of merely resisting change but an integral part of active city development. By having a conversation about the past, it also gives the past a visual, formal presence in our present and future. Interestingly, Michael Holleran built on the argument Mason made by comparing preservation with other infrastructure that is critical to the modern city.

“Just as the modern metropolis was not manageable or liveable without the new infrastructure of transportation, sanitation, water, and power –infrastructure that took elaborate physical form– it was also not manageable, comprehensible, or liveable without ‘memory infrastructure’” (Holleran, 2009).

The perspective of understanding preservation as working with the past, differs from the idea of preservation as an opposition or a resistance to modernization. In earlier notions of preservation, it was considered mostly as anti-development. This was characterized by urban historian Kenneth Jackson’s quip that “history is for losers” (Mason, 2009), or the modernist thought of history “as an impediment to the goal of creating a new tradition, a new future, a new society”, which led to preservation being perceived as critical of and resistant to modernization (Mack, 2012).

Because of this overlooked attitude towards the past, Vittorio Gregotti and Kenneth Frampton have described the resurgence of conservation as a protector of architectural heritage, of nature, and of historical memory. Their position “originates largely from a widespread feeling of resistance to the domination of scientific thought, whose task is to continuously surpass the present: what has been done does not matter; what matters is to see what can be done” (Gregotti, 1996). Recognizing the theme of conservation was to place emphasis upon its problematic relationship to modernization, particularly relating to urban changes. “Full crisis lay not only within the historical urban core but also in the ever-proliferating tentacles of the megalopolis” (Gregotti, 1996).

In support of that, Fred Scott advocated for the act of alteration as an alternative to what he calls “pure architecture” (Scott, 2008). He asked, “Is demolition the only option when the function of a modernist building is obsolete?” (Scott, 2008). This comes from an observation that the change that causes existing buildings to become obsolete is when they no longer have a place in the current built environment. “Buildings change as the city changes” (Scott, 2008). The inevitable passing of time causes existing materials to decay, a decline in the building’s aesthetic value,

the loss of its initial intent, or the loss of contextual relationship with the built environment. Eventually, it loses contact with the urban realm. Scott identified three possibilities for these existing buildings, “namely to remain unchanged, to be altered or to be demolished” (Scott, 2008). As mentioned above, he advocated for the act of alteration. However, the reworking of the existing building is not the sole territory of conservationists; it is actually radical and controversial. As he put it, “the desire to reorder what already exists is inherently an act that disobeys existing orders” (Scott, 2008).

Throughout history, buildings have been adapted for new uses to establish a new dialogue with the present. The ruins of the baths of Diocletian in Rome (Figure 1.7), were converted by Michelangelo into a church (Figure 1.8). The Roman Arena in Nimes, France, (Figure 1.10) was altered into a small fortified town in the Middle Ages where the medieval inhabitants resided within the massive arches of the structure and built houses in the open performance space. (Figure 1.9) Another famous example is the Great Mosque in Cordoba, Spain, which was remodelled several times from a church to a mosque; each of the interventions distinctively inserted into the middle of its structure (Bloszies, 2012) (Figure 1.11 & 1.12). Buildings were expected to outlast civilizations: “they evolve and they are changed, but their reuse emphasises continuity” (Brooker & Stone, 2004). This continuity involves the remembrance of the former function and value, and also has the memory of its previous purpose embodied within its very structure. Thus, it creates a composite of meaning and consequence that produces a multi-layered complexity into the qualities of the place and its surroundings impossible to replicate in a new building. (Brooker & Stone, 2004)

Figure 1.7 (left) - Ruins of the baths of Diocletian (mid 16th century)
Figure 1.8 (right) - Church, converted by Michelangelo (1561)

Figure 1.9 - The transformation of the Roman Arena in Nîmes during Middle Ages

Figure 1.10 The Roman Arena in Nîmes today

Figure 1.11 - The Great Mosque of Cordoba (650), remodelled several times

Figure 1.12 - Conversion from Saint John's Church to Umayyad Mosque, 1979

The memory infrastructure of today's buildings is certainly shifting from the historical architectural marvel or heritage to the expanse of ordinary buildings (refer to section 1.1). However, Graeme Brooker and Sally Stone, argue that although modern architecture has been perceived as an autonomous form based on an interpretation of the city through technology, nature and function, there are modernists who participate in preservation. There is also an emphasis on the development of contextualists and other approaches to buildings and urbanism as found in later modernists such as Eric Gunnar Asplund, Aldo Rossi, Giancarlo de Carlo, Carlo Scarpa, and Giorgio Grassi. They all developed a constant dialogue with history in their work (Brooker & Stone, 2004).

“It appeared that the art of remodelling was lost to the dogma of modernism, but this is patently untrue. It has not always been the case that the modernists overlooked the existing” (Brooker & Stone, 2004).

Today, there is an increased effort to engage with the existing “based upon the reaction to what is perceived as the detrimental erosion of the city and its contents by modern architecture” (Brooker & Stone, 2004). As people become more interested in the value of culture from living in the city centre, more and more types of existing buildings are being converted, even if their quality is arguable. Actively engaging within our existing fabric is an ever more meaningful way of making new space in our increasingly congested cities. We have the same or more opportunities if we consider that ‘preservation is overtaking us’. We must adapt new uses to these increasing numbers of preserved buildings and establish a new dialogue with the present. We must not move towards a nostalgic or static historical preservation and representation, but rather towards what Fred Scott and Rem Koolhaas suggested: a more radical, controversial, experimental and combative attitude.

1.3

Memory, Urban Memory and History Today

“The past is everywhere and it is nowhere.” (Crinson, 2005)

Never before have there been so many preservation societies, museums, conservation areas, and listed buildings. A consensus among leading urban theorists established that some epochal change has been occurring to cities and their relation to the past being everywhere and nowhere. Demolition or redevelopment seems like interchangeable threats that the material traces of the past be swept away, taking ‘memory’ with them. In the meantime, as if to resist the ease of memory loss, Mark Crinson argued that “memory is both a burden and liberation” (Crinson, 2005).

At times, there is even an overwhelming feeling of a limitless archive within the city as a physical example of our ‘memory’. Crinson termed this ‘post-modern urbanism’ or even ‘post urbanism’, where the past is treated “as something to be quoted selectively, something already deracinated: the ‘villaging’ of city centres to evoke lost or mythical forms of public life” (Crinson, 2005). He explained some of these as *nostalgie de la boue* or memory with the pain taken out. For example, “there are historic buildings that are little more than the carcasses of former functions... ‘historic interiors’ that are preserved as if in aspic, facades saved while their innards are gutted and completely rebuilt and new museums established in old mills, steelyards and power stations” (Crinson, 2005) (Figure 0.4 & 0.5).

This is where the understanding and distinction in the relation of memory, urban memory, and history becomes important in order to articulate the contradictions and potential of our current urban concerns in relation to the past.

Memory and Urban Memory

In our everyday understanding, the term ‘memory’ has two closely linked meanings: our recollection or remembrance of past experiences that have somehow stuck or become active in the mind while other experiences have been forgotten; and an ability by which we recollect the past through our built environment (Crinson, 2005). Both aspects are considered to be closely linked to the individual; in a more modern view of the term, it can be seen as a subjective matter where the individual mind chooses to activate a past event or experience. It can be projected from the individual by modification (memorial) or addition of a qualifier –collective memory– (Crinson, 2005). Conversely, a memory may be chosen to be forgotten and erased.

The term 'urban memory' is not defined as intuitively in comparison to 'memory'. Crinson argued that urban memory could be anthropomorphism –the city having a memory – but more commonly “it indicates the city as a physical landscape and collection of objects and practices that enable recollections of the past and that embody the past through traces of the city’s sequential building and rebuilding” (Crinson, 2005). This type of memory is constructed by time and people whose lives have been lived in the city. It is felt as a physical manifestation. It is their involvement that shapes what is remembered in the city beyond the discourses of architects, developers, preservationists, and planners although it is also often those professions that strategically shape urban memory.

“[Urban] memory, then has come to be associated with such notions as the authentic, personal, subaltern, auratic and humanised, as opposed to such matters as the mass media and globalisation, which are deemed to be agents of amnesia.” (Crinson, 2005, p. xii)

Collective Memory and History

The relationship between memory and history was first studied by a French sociologist named Maurice Halbwachs (1877-1945). In his work, *On Collective Memory*, he differentiates between memory and history. (Maurice & CoserLewis, 1992) Halbwachs saw history as an instrumental and overly rationalized version of the past, in contrast to memory which was intimately linked with collective experience (Crinson, 2005). Halbwachs advocated that memory binds groups of people together with commonality by referencing them with the physical spaces and previous instances, often a founding moment, of that collective identity.

“The collective nature of Halbwach’s memory made it amenable to the collective spatiality that is the city.” (Crinson, 2005, p. xiii)

Halbwach’s idea of collective memory was re-introduced by the architectural theorist Aldo Rossi in his *The Architecture of the City* (1966), and more recently addressed by the architectural historian Christine Boyer in her *City of Collective Memory* (1994). Rossi’s book was written as a critique of the modernist redevelopment of European cities after the Second World War. In it he argued that the human body and the city are seen as similar in being the creation of a unique set of experiences.

Rossi described the city as architecture: ‘architecture of the city’, a gigantic man-made machine, large and complex. Rossi did not only mean the visible image of the city and the sum of its different architectural parts, but architecture as construction, the construction of the city over

time. With time, the city grows upon itself, and certain more limited but still crucial aspects of the city –namely urban artifacts– acquire consciousness and memory. This then constitutes “the soul of the city”, containing the city’s history and its distinctive and definitive character, its memory. (Rossi, 1988) To Rossi, this is the deepest structure and form of urban artifacts in the architecture of the city.

“One can say that the city itself is the collective memory of its people, and like memory it is associated with objects and places. The city is the locus of the collective memory. This relationship between the locus and the citizenry then becomes the city’s predominant image, both of architecture and of landscape, and as certain artifacts become part of its memory, new ones emerge. In this entirely positive sense great ideas flow through the history of the city and give shape to it.” (Rossi, 1988, p. 130)

The collective memory participates in the actual transformation of space in the works of the collective. They define the concept of locus or specific place as not just by space but also by time: succession of events, feelings, memory of the past and potential memory in the future. It is the characteristic principle of urban artifacts; architecture, permanence and history together help us to understand the complexity of urban artifacts. All of it “forces us to pause for a moment on the relationship between place and man, and hence to look at the relationship between ecology and psychology” (Rossi, 1988). Accordingly, Rossi argued that a city remembers through its buildings, and so the preservation of old buildings is equivalent to the preservation of memories in the human mind.

“History exists so long as an object is in use; that is, so long as a form relates to its original function. However, when form and function are severed, and only form remains vital, history shifts into the realm of memory. When history ends, memory begins... History comes to be known through the relationship between a collective memory of events, the singularity of place (locus solus), and the sign of the place as expressed in form.” (Rossi, 1988, p. 7)

Although the process of urban change has always been the domain of history, Rossi advocated that the succession of events constitutes a city’s memory and this is the preferred psychological context for making sense of the city (Crinson, 2005). As a result, our choice of preservation or demolition of the traces in the city shapes our collective memory of the space. If many or significant buildings are swept away then memory loss and an identity crisis are threatened, causing the city to lose its typology (its memory forms) and its distinctiveness to continue to act as a guide or exemplar for the people living in it.

Thirty years later Christine Boyer updated Rossi’s work with a refreshing view that highlighted recent changes in society and the contemporary metropolis. She argued that the modernist

city repressed subjective memory and instead instrumentalized the past. She argued that the collective project and social order that was city building had been dissipated by what she called the “pictorialization of space and time through a matrix of well-designed fragments... fictional styles of life and imaginary behaviours” (Crinson, 2005). In this vision, the city is itself washed from the slate of memory and we have lost the interpretive means to “translate memories and traditions into meaningful contemporary forms” (Boyer, 1994).

According to Boyer, “the purities of modern urban planning have left us face to face with displacement, disengagement, and disenchantment when it comes to the urban experience” (Boyer, 1994). By contrast, similar to Halbwachs and Rossi, she advocated that the significance of the city is a collective expression of architecture by carrying the memory traces of earlier transformation of the city, whether it is deformed or forgotten memories, or memories modified to suit other needs or destroyed for other purposes. These collective forms and memories tell us the changes that are taking place and also help us differentiate one city from all the others. The urban memory is to be carried forward to the present through the physical artifacts: the city’s streets, monuments and architectural forms, and traces (Boyer, 1994).

Lieux de memoire (sites of memory)

A related discussion on the contrast between history and memory also appeared in French historian Pierre Nora’s series of volumes on *lieux de memoire* (1996). He claimed that memory and history, far from being synonymous, are fundamentally in opposition. History is an intellectual activity; it calls for analysis and critical discourse to reconstruct and represent the past. On the other hand, memory is life, borne by living societies; it is also a present phenomenon, emotional and vulnerable to a number of factors and is part of what makes a community (Crinson, 2005). Nora noted that memory of this kind in postmodern history is different from the premodern idea of Halbwachs’s ‘collective memory’, due to the disappearance of close organic communities living in continuity with their pasts. In other words, in today’s mass culture (on a global scale) collective memory no longer exists. Instead, only sites of memory exist which remind us of the past, of a (broken) memory.

“Lieux de memoire [sites of memory] exist because there are no longer any milieus de memoire [environment of memory], settings in which memory is a real part of everyday experience.” (Nora, 1996, p. I)

Nora believed that because memory had been eradicated by history and the bonds of identity were broken in comparison to the premodern time, lieux de memoire had come into being in compensation. These sites are “devoted to embodying or incarnating memory and entirely

reliant on the 'specificity of the trace' for which we feel a superstitious veneration. While including such things as historical figures, books, emblems and commemorative events, lieux de memoire are also buildings, monuments and place" (Crinson, 2005, p. xiv). Nora continued by stating that examples of lieux de memoire are found in the kind of decontextualized monument that is identified with the modern city. These sites of memory are either removed from their surroundings so that they achieve a previously unconsidered prominence or positioned in some new synthetic context. Nora argued that these sites represent the sign of memory's disappearance and society's need to represent what ostensibly no longer exists. (Nora, 1996) Ultimately, they exist to help us recall the past – which is perhaps necessary in order to make living in the modern world meaningful.

1.4 architecture as Existential Art

“Whether intended or not, architecture and designed landscapes serve as grand mnemonic devices that record and transmit vital aspects of culture and history.”
(Treib, 2009)

More specifically, what is the current role of architecture in the changing perspective of memory, urban memory and history? In his book, *Spatial Recall: memory in architecture and landscape*, Marc Treib, a landscape and architectural historian and critic, proclaimed that our built environment functions literally as a text or narrative, where the “memories embedded in the form remain to be unearthed, read, and decoded –however imperfectly or incorrectly. Memories may metamorphose into meaning over time” (Treib, 2009). There are built forms that purposefully pursue meaning as part of their making, such as cemeteries and memorials, but the richer traces of memory always lie behind history, culture and civilization. Treib argued that this idea of externalized memory has been realized in different ways at different times, from the ‘emulation’ characteristic of classicism to the modernist age. “Human memory is acquired; we are born with a clean slate upon which experience makes its marks. As with the human, so with the built environment” (Treib, 2009). This is why most societies respect the aged as sources of wisdom acquired over time and through experience. Treib believed this applies to buildings and landscapes too, which can acquire wisdom in their fabrics; “they can tell us things, should we choose to ask and listen?” (Treib, 2009)

Juhani Pallasmaa poetically articulates,

“An architectural experience silences all external noise; it focuses attention on one’s very existence. Architecture, as all art, makes us aware of our fundamental solitude. At the same time, architecture detaches us from the present and allows us to experience the slow, firm flow of time and tradition. Buildings and cities are instruments and museums of time. They enable us to see and understand the passing of history.”
(Pallasmaa, *An architecture of the seven senses*, 2006)

Phenomenology in Architecture

Along with many architects and writers discussing the phenomenological aspect of architecture, Juhani Pallasmaa has been writing for over 15 years to propose a critique of the hegemony of vision and how the architectural potential of the other senses has been neglected. In his article,

“The geometry of feeling: a look at the phenomenology of architecture”, Pallasmaa questioned “why do so very few modern buildings appeal to our feelings... they hardly give us any sense of the meaning of our world or our own existence” (Pallasmaa, *The geometry of feeling- a look at the phenomenology of architecture*, 1996). His points in this article have been turned into questions: has architecture gradually detached itself from its intentional background and become a discipline which is more and more fully determined by its own rules and value systems? Or has it become a field related to technology which still ventures to be a form of free artistic expression? Pallasmaa advocated that architects have to consider the images and feelings of the people who live in the buildings as the genuine ‘basic vocabulary’ of architecture, and not just to see the buildings as a mere physical objects tied to their practical purposes and many other external conditions such as their unique entity or formal expression.

Pallasmaa has identified that architecture is threatened by two opposite processes in our time: instrumentalisation and aestheticisation.

“On the one hand, our secular, materialist and quasi-rational culture is turning buildings into mere instrumental structures, devoid of mental meaning, for the purposes of utility and economy. On the other hand, in order to draw attention and facilitate instant seduction, architecture is increasingly turning into the fabrication of seductively aestheticized images without roots in our existential experience and devoid of authentic desire of life.” (Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture*, 2011, p. 119)

According to Pallasmaa, **architecture not only provides physical shelter, facilitates activities and stimulates sensory pleasure, but also provides lived and embodied existential metaphors.** When this quality of existence is lost, “architecture is turned into meaningless fabrication and construction, at best a demonstration of technical and retinal virtuosity.” (Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture*, 2011, p. 101) Architecture is more than simply an artefact or an aestheticized object; it is fundamentally reliant on a deeper history and culture.

“Architecture essentially is an existential art. That is to say, architecture articulates our experiences and provides essential frames and horizons for the perception, understanding, and evaluation of our own life situation.” (Pallasmaa, *On history and culture*, 2007, p. 105)

The existential quality of architecture builds on the ideas of Christian Norberg-Schulz, an architect, architectural historian and theorist, who is concerned with architecture’s loss of communicative power. To Norberg-Schulz, “Architecture is a living reality. Since remote times architecture has

helped man in making his existence meaningful. With the aid of architecture he had gained a foothold in space and time” (Norberg-Schulz, 1993). And he advocated that architecture ought to be understood in terms of meaningful (symbolic) forms, which is similar to Aldo Rossi’s idea of monuments in comparison to the fabric that functions related to time. This will be discussed in further detail in Chapter 2.

Current political and economic forces support the globalization of lifestyles, customs, and values, causing experiential and emotional shallowness within today’s globalized culture. In addition to political and economic forces, modernity has been dominated by a futuristic bias in favour of novelty. This appreciation of novelty is nothing new, but Pallasmaa maintained that it “has probably never been as obsessive as in today’s cult of spectacular architectural imagery” (Treib, 2009). The bias towards newness in our globalized world is not only an aesthetic and artistic value, but a strategic necessity of the culture of consumption and, consequently, an inseparable part of our materialistic culture. There is a concern that excellence in architectural quality is directly related to its degree of novelty and uniqueness.

Time and Memory

This leads to another concern that Pallasmaa expressed: the unprecedented acceleration of urban development. He stated that “the incredible acceleration of speed during the last century has collapsed time into the flat screen of the present, upon which the simultaneity of the world is projected” (Pallasmaa, *The eyes of the skin*, 2012).

According to Milan Kundera, a novelist, there is a secret bond between slowness and memory, and between speed and forgetting. He explains, “the degree of slowness is directly proportional to the intensity of memory: the degree of speed is directly proportional to the intensity of forgetting” (Treib, 2009). Although the ‘beauty of speed’ proclaimed by F.T. Marinetti – a poet and editor – in his Futurist Manifesto is seen as magnificent and fascinating, Pallasmaa opposed it. In his view, “architecture is inherently a slow and quiet, emotionally low-energy art form in comparison with the dramatic arts of sudden affective impact” (Treib, 2009). He thought that architecture needs to bring remembrance and emotions to safeguard our memories and human experiences. Pallasmaa explained how built structures are significant memory devices in three different ways: “first, they materialize and preserve the course of time and make it visible; second, they concretize remembrance by containing and projecting memories; and third, they stimulate and inspire us to reminisce and imagine” (Treib, 2009). Thus, to work with the past is to facilitate our memories so that we understand the depth of time as the memories continue to record and suggest cultural and human narratives.

To further support the contrast to the globalized world of spatial and material reality, Pallasmaa argued that we also inhabit a 'lived' world in which the "material and the spiritual, as well as the experienced, the remembered, and the imagined, constantly fuse into each other" (Treib, 2009). In this cultural, mental and temporal milieu, "[h]uman construction also has the task of preserving the past, enabling us to experience and grasp the continuum of culture and tradition" (Treib, 2009). Our existential and lived reality is thick and layered and thus architecture should not be concerned only with physical and geometric space but also with 'existential space'. In the words of Pallasmaa, "lived 'existential space' is structured on the basis of meanings, intentions and values reflected upon it by an individual, either consciously or unconsciously; existential space is a unique quality interpreted through the memory and experience of the individual" (Treib, 2009).

This concept of 'lived existential' space was also addressed by Martin Heidegger, a philosopher, who is known for his existential and phenomenological explorations revolving around the question of being. He advocated the value of experience over the mathematical in spaces which concerns mainly with spatial quality, the physical side of architecture. Instead, it can be a phenomenological appreciation of space, with emphasis on the value of human experience. He believes in "space as the context in which people identify places for themselves and explore how such identification might happen" (Sharr, 2007). Such experience allows for expression of the daily emotions which mathematical space fails to address.

Pallasmaa then identified three different kinds of architecture in relation to this 'existential' quality: "one that cannot recall or touch upon the past, and another that evokes a sense of depth and continuity. There is also an architecture that seeks to remember literally, like the architectural works of historicist postmodernism, and another that creates a sense of deep time and epic continuity without any direct formal reference" (Treib, 2009). First, the Parthenon is an example of permanence that cannot be recalled or touched upon, with the sense of preservation to maintain its memory and temporal dimension (Figure 1.13). Second, the Mississauga Civic Centre is considered a work of historicist postmodernism that references the architectural language of its history and evokes the character of its former farm context: the clock tower is the windmill; the main building on the southwest corner represents the farmhouse, etc. (Figure 1.14). Third, works such as Alvar Aalto, Dimitris Pikionis, and Carlo Scarpa (Figure 1.15) evoke a sense of depth and continuity without any direct formal reference. According to Pallasmaa, this type of architecture evokes a primordial, unspecified awareness of the past and temporal duration. It creates a sense of time and sets itself in a respectful dialogue with the past, both distant and immediate.

Figure 1.13 (top)
Parthenon
Permanence that cannot be recalled or touched upon

Figure 1.14 (middle)
Mississauga Civic Centre
A work of historicist postmodernism that references

Figure 1.15 (bottom)
Castelvecchio
Sense of depth and continuity

1.5

Remarks-

Urban memory and Latent architecture

“Has preservation become a dangerous epidemic? Is it destroying our cities?”
(Ouroussoff, 2011)

This is a question Nicolai Ouroussoff, an architecture critic, raised after reviewing Rem Koolhaas's 'Cronocaos' exhibition as a conclusion about preservation is overtaking us. From the discussions in Chapter 1, we conclude that this may be coming from the need for 'memory infrastructure' as our city continues to evolve, or as a critique or resistance to our modern architecture which lacks the existential quality. Whatever it may be, we should have a positive attitude towards it. As Koolhaas maintains, “Is preservation really inertia? Perhaps it's time that architects take on the task of giving life to innovative prospects for the reinterpretation of the past” (Ballesteros, 2011).

Thus, preservation is not just limited to the question of what is authoritative, conservation-worthy or memorable inventory in the traditional sense –in support for musealization of cities– but to be more aware of our existing fabric and question its potential. Certainly, there are buildings in the city that we need to protect or conserve but this is not the focus of the thesis. Rather, its focus is to advocate that architecture as a temporal state rather than a finished state, and that architecture can happen even after the building is built, in order to be re-integrated with the dynamics of the city.

From this perspective, let us re-consider the High Line in New York (Figure 1.16 to 1.18) or the Tate Modern in the heart of London (Figure 1.19 to 1.22) as precedents. They are not just simply a re-use of an existing fabric of the city but they position themselves for the continuous elaboration and refinement of the culture from within, valuing them not by what is (as already existing) but what could be (a reinterpretation of the past). These projects tend to have a sense of depth and continuity with time/ past without any direct formal reference that has been discussed by Pallasmaa at the end of this chapter. And this is where the strength of these projects is: a symbiotic relationship between urban memory and latent architecture. The necessity of urban memory gave these architectures the opportunity to have a second life in the city or conversely, engaged these ruins and allowed it to express its repressed meaning to the city.

The next chapter, Urban Perspective: Re-considering the Importance of Monuments, will begin with a discussion of monuments which is related to the perspective that has been established in this chapter. The discussion will be about the important function they have in a city and also

how the perception of monuments has been shifting over time. Following these two discussions, the second part of the chapter will address the architectural questions of how to encounter with monuments and what are the challenges since the 19th century.

*New York's High Line (2009) by Diller Scofidio + Renfro
Figure 1.16- Site plan*

*Figure 1.17 (bottom left) - High Line (Abandoned state)
Figure 1.18 (bottom right) - High Line- Park (2009)*

*London's Tate Modern (2000) by Herzog and De Meuron
Figure 1.19- Aerial view*

*Figure 1.20 (bottom left) -
Abandoned Bankside Power Station (1981- 2000)
Figure 1.21 (bottom middle) - Exterior of Tate Modern (2009)
Figure 1.22 (bottom right) - Interior of Tate Modern (2009)*

Chapter 2

Urban Perspective

Re-considering the Importance of Monuments

“Architecture is a continuing dialogue between generations which creates an environment across time.” — Vincent Scully

2.1

Architecture of the City- Monument and Fabric

“Just as the walls, the columns, &c., are the elements which compose buildings, so buildings are the elements which compose cities.”

— Jean-Nicolas- Louis Durand (Rossi, 1988, p. 35)

As discussed earlier in chapter 1, Aldo Rossi described the city as architecture: ‘architecture of the city’, a gigantic man-made machine, large and complex. Rossi did not only mean the visible image of the city and the sum of its different architectural parts, but architecture as construction, the construction of the city over time. With time, the city grows upon itself. On the one hand, “destruction and demolition, expropriation and rapid changes in use and as a result of speculation and obsolescence” are all signs of recognizable construction of the city over time, and Rossi described it as the ‘urban dynamic’ (Rossi, 1988). On the other hand, there are also certain more limited but still crucial aspects of the city which acquire consciousness and memory. Rossi called these ‘urban artifacts’, which are of a dominant nature, primary elements because they participate in the evolution of the city over time in a permanent way, often becoming identified with the major artifacts constituting the city. (Rossi, 1988)

“The union of these primary elements with an area in terms of location and construction, permanences of plan and permanence of building, natural artifacts and constructed artifacts, constitutes a whole which is the physical structure of the city.” (Rossi, 1988, p. 86)

Rossi expressed the importance of primary elements within the urban fabric, offering fixed points in the urban dynamic. He argued that primary elements play an effective role in the dynamic of the city to give the city order, its own quality and individuality.

Rossi identified two main permanences, or primary elements, as the most significant urban artifacts: housing and monuments. In terms of housing, Rossi distinguished between housing and individual houses. Housing is defined as residential districts in the city that may persist over many centuries, while individual houses within the district tend to change over time. Therefore, the changes in housing and the imprints left on them become the signs of daily life, a collective memory.

The second permanence is what this thesis focuses on: monuments. Monuments are defined by Rossi as primary elements in the city which are persistent and characteristic urban artifacts. "A monument's permanence is a result of its capacity to constitute the city, its history and art, its being and memory" (Rossi, 1988). It is an individual artifact that persists in the city as a generator to the form of the city, acting as a fixed point in the urban dynamic. What distinguishes monuments from other urban artifacts is their nature as places of symbolic function of event or 'place', and thus a function related to time, as opposed to a place of conventional function, which is only related to use. As a permanence and primary element in the city, a monument is dialectically related to the city's growth, and this dialectic of permanence and growth is characteristic of time. Rossi described the primary elements as "those elements which can both retard and accelerate the process of urbanization in a city... thus they are catalytic" (Rossi, 1988). Rossi further defined two types of 'monuments': pathological and propelling.

2.1.1

The Function of Propelling Monuments

“Those that are pathological... do not adapt to changing conditions and so freeze time, retarding the life of an area... Rossi is not interested in the cosmetic conservation of these sorts of elements. His interest is in propelling elements whose original forms persist through changing functions and whose role is catalyst and anchor to city life, as well as consolidating the unique identity of an area.” (Scott, 2008, p. 188)

When a monument retards the process of urbanization, it is considered to be **‘pathological’**. These preserved or pathological permanences, which are mummified presences in the city, often tend to have a permanent character to their location within a specific context. The example given by Rossi is the Alhambra in Granada, which he described as a museum piece within the city, like an embalmed body. (Figure 2.1) It was once the major function of Granada, housing the Moorish or Castilian king. Now, it stands virtually isolated in the city and nothing can be added. “It constitutes, in fact, an experience so essential that it cannot be modified” (Rossi, 1988). This type of monument is dialectically opposed to the concept of evolutionary time in the city; it stands outside of technological and social evolution.

Figure 2.1 -
Pathological Monument- Alhambra in Granada

However, the permanence of monuments in the city is not only “pathological”. The other type of monument, according to Rossi, is ‘**propelling**’. These “serve to bring the past into the present, providing a past that can still be experienced” (Rossi, 1988) and continue to constitute an important urban focus. Instead of mummifying an historical presence, propelling monuments tend to synchronize with the process of urbanization. They are not defined only by an original or a previous function, nor by their context, as Rossi explained. They are able to accommodate different functions over time and that they are able to survive the test of time. The propelling monument continues to function as a record of history, losing its original function. Only its form remains intact. The example provided is the Palazzo Della Ragione in Padua (Figure 2.2). The function within this form has now been altered; it no longer fulfills the original intent of the building. It is the expression of the form that still impresses us as visitors, and we are subjected to different experiences and different impressions of it.

This type of propelling monument points to Rossi’s idea that built form is ambiguous in relation to function and also ambiguous in relation to meaning... it is possible to manipulate it so that the building will represent something different from that which was originally intended.

“When one visits a monument of this type, one is always surprised by a series of questions intimately associated with it. In particular, one is struck by the multiplicity of functions that a building of this type can contain over time and how these functions are entirely independent of the form. At the same time, it is precisely the form that impresses us; we live it and experience it, and in turn it structures the city.” (Rossi, 1988, p. 29)

In comparison to pathological monuments, the propelling monument is a much more positive element in the evolution of the city. As explained by Rossi, “the dynamic process of the city tends more to evolution than preservation, and that in evolution monuments are not only preserved but continuously presented as propelling elements of development.” (Rossi, 1988)

The identification of pathological and propelling monuments corresponds to Pallasmaa’s discussion on architecture that evokes the ‘existential’ quality. Notably, the pathological monument is the ‘one that cannot recall or touch upon the past’ and the propelling monument ‘evokes a sense of depth and continuity’. Both continue to play an important role as primary elements within the dynamic of the city.

How would we think about pathological and propelling monuments today as our awareness of the past has increased and expanded to ordinary buildings, as noted by Rem Koolhaas and Paul Bentel?

Figure 2.2 (left) -
Propelling Monument- Palazzo Della Ragione in Padua

Figure 2.3 (right) -
Chronological development of Palazzo Della Ragione
(top) original building built in 1218
(middle) beginning of the 14th century
(bottom) two loggias were added in 1425 to 1440

vs.

Figure 2.4- Contemporary case studies of Pathological and Propelling Monument
Venice (a city) as a Pathological Monument
New York's High Line Park and Tate Modern as a Propelling Monument

2.2

The 1903 Prophecy- Shift from 'Intentional' to 'Unintentional' Monuments

Today's monuments are no longer just classified as religious or sacred buildings, but have expanded to include almost any type of building. The expansion in typology or size continues to bring new challenges and questions as to what we can do with them.

This new force of monuments affirms the prophecy of the shift from 'intentional' monument to 'unintentional' monument as the modern cult of monuments outlined by the Austrian art historian Alois Riegl. The shift speaks of how the role and perception of the monuments have changed and raises the difficulty and challenges of encountering them with 'present-day value'. This will be further discussed in section 3.1.1.

A century ago, Riegl made an unprecedented attempt to look at the popularization of heritage in Western culture. In his 1903 essay, "The Modern Cult of Monuments: Its Character and Its Origin". He set out to understand the phenomenon of heritage, particularly its explosive development and expansion in Western society. Similar to the recent effort of Rem Koolhaas and Paul Bentel, Riegl predicted that there was to be an "imminent emergence of a ubiquitous admiration for the old, while putting forward an intriguing proposal for how this 'cult' of the old would affect the notion of the 'monument' " (Arrhenius, 2012). This effect on the monument altered its role in our culture. Riegl argued that there was an evolution in history from the cult of the 'intentional' monument to the modern cult of 'unintentional' monument, where the monument is constructed by the onlooker.

The erection of 'intentional' monuments can be traced back to the beginning of human culture. "A monument", Riegl wrote, "in its oldest and most original sense is a human creation, erected for a specific purpose of keeping single human deeds or events alive in the minds of future generations" (Arrhenius, 2012). The intentional monument is associated with a specific meaning and is not intended to have other interpretations. It is conceived of as a marker, a memorial or a remembrance of a particular individual or event. However, to Riegl, these monuments were no longer central; "when we talk about the modern cult and preservation of monuments, we are thinking not about 'intentional' monuments, but about monuments of art and history" (Foster & Ghirardo, 1982).

Unintentional Monument

This modern cult of monuments in art and history is where the shift from ‘intentional’ monument to ‘unintentional monument’ took place. Riegl saw the development of heritage as a phenomenon closely related to a perception of history as a movement. “Everything that has been and is no longer we call historical, in accordance with the modern notion that what has been can never be again... irreplaceable and irremovable link in a chain of development” (Foster & Ghirardo, 1982). Because of the irreplaceability of past events, everything could be considered as a part of the past no matter how recently it had been created, and this was how the unintentional monument was formed. They were “unintentional in so far as they were not erected with the purpose of commemorating any specific event or person but still monuments in their irreplaceable value for modern man” (Arrhenius, 2012).

“In the twentieth century we appreciate particularly the purely natural cycle of becoming and passing away... thus modern man sees a bit of himself in a monument, and he will react to every intervention as he would to one on himself.” (Arrhenius, 2012, p. 100)

Riegl called the unintentional monument a ‘datable invention of the West’; its history and origin traced back to the Italian Renaissance. The critical distinction between intentional and unintentional monument is “left to us to define” (Arrhenius, 2012); it is open to ‘subjective’ interpretation rather than an ‘objective’ designation. In other words, these unintentional monument is much more interested in how the “onlooker constructs the monument” (Arrhenius, 2012). This expands the definition of a monument to include “any artifact, regardless of its original significance and purpose, [which] can be considered a monument as long as it reveals the passage of a considerable period of time” (Foster & Ghirardo, 1982).

Passage of time

This definition was also similar to Hitchcock’s observation of the monument in the symposium ‘in search of a new monumentality’ (Paulsson, 1948). He argued that all the buildings we are producing today, whatever their character, will in time become monuments. They do not refuse the passage of time; instead they render the past present and establish a transparent connection to the event or the person that the monument commemorates that arises over time. This concept of the passage of time further differentiates the two types of monument. Since the primary function of the intentional monument, according to Riegl, “is to keep memory alive; to arrest the soft forgetfulness of history”, age is always an obstacle. (Arrhenius, 2012) As a memorial, it must maintain an ageless appearance; any signs of decay would suggest a fading interest in the memory it promotes. For that reason, the tradition of erecting monuments is to use durable

materials that resist the signs of age. On the other hand, the unintentional monument suggests a completely different logic. Rather than suppressing the loss, it “leaves loss at the center” (Arrhenius, 2012). The historical object in the realm of heritage, it rejects a transparent presence in preference to the obscured and distant past as its critical characteristics.

Riegl then underlined that, for the modern cult of monuments, “age becomes the sign that defines the object as a monument” (Arrhenius, 2012) and supported a view of “age as the clue to the extension of heritage into mass-culture” (Arrhenius, 2012). The function identified for these monuments in modern society is beyond the value in its specific relation to a historical period, but dominated by its capacity to reveal the process of development itself, the experience of it being old. Riegl saw the visual directness as the future potential of age in a mass society as it appeals directly to our emotional experiences, moods and feelings, what he called *Stimmung* rather than our rational thinking (Arrhenius, 2012) – what Juhani Pallasmaa heavily emphasized as he discussed the phenomenology of architecture. It does not require scientific or art historical knowledge to appreciate. In this visually oriented analysis, the values defining the monument are based on their visual effect upon the beholder.

Riegl further identified and distinguished the monuments from the value attributed to them based upon the visual effect they have on the beholder. There are three forms of ‘memory-value’: intentional commemorative-value, historical-value and age-value. (Arrhenius, 2012) The first, intentional commemorative-value (Figure 2.5), only relates to the class of ‘intentional monuments’ and the latter two, historical and age-value relate to the class of ‘unintentional monuments’. To clarify, the historical-value also refers to a specific moment in history but it is unintentional in that the choice of it is left to our subjective preference. For example, the Roman aqueducts were constructed as an infrastructure to provide a constant flow of water from distant sources into their cities and town (Figure 2.6). Today, it is still maintained as an ‘unintentional monument’ within the contemporary city and a few are still partly in use. Another example is the Hiroshima Peace Memorial; it became an ‘unintentional monument’ after the tragedy of the atomic bombing of Hiroshima in 1945 (Figure 2.7). Lastly, the age-value is even more expansive in its scope (Figure 2.8 & 2.9), and as noted earlier by Riegl, “it revealed to the onlooker that a considerable period of time had passed since it was new” (Arrhenius, 2012).

Figure 2.5 -
Intentional Monument (commemorative value) -
Vietnam Veterans Memorial

Figure 2.6 (left) -
Unintentional Monument (historic value) - Roman Aqueduct

Figure 2.7 (right) -
Unintentional Monument (historic value) - Hiroshima Peace Memorial

Figure 2.8 (left) -
Unintentional Monument (age-value) - White House: Scottish Ruins (before)

Figure 2.9 (right) -
Unintentional Monument (age-value) - White House: Scottish Ruins (after)

Figure 2.10 - Diagram of relationships between various types of memory value and present day value from unintentional vs intentional monuments by Thordis Arrhenius.

2.2.1 Memory Value Conflicts with Present-day Value

After explaining the shift from ‘intentional’ to ‘unintentional’ monument, Riegl continued to discuss and question how these monuments are to be encountered over time. He asked,

“Should the monument be reconstructed to regain its completeness and coherence of form or should it be allowed to disintegrate, to return to nature?” (Arrhenius, 2012, p. 98).

Riegl speculates that by classifying and identifying the different values attributed to the monument, it will suggest different kinds of conservation strategies.

Memory value

To re-state the three forms of ‘memory-value’ which Riegl distinguished, they are: ‘intentional

commemorative value', 'historical-value' and 'age value' (Foster & Ghirardo, 1982). Conservation strategies according to Riegl's classification can be summarized as follows:

'Intentional commemorative-value': the (intentional) monument must simply be maintained in a pristine state; any sign of decay will represent a loss of interest in its intended purpose. (Figure 2.5)

'Historical-value': the (unintentional) monument must define a precise and authentic moment in history. In this case, the task of restoration is to restore the building back to its 'original' state. However, these requirements will risk jeopardizing the monument's viability as an authentic historical document. It may also be difficult to distinguish what was original and what was not. This is seen as an increasingly complex issue. (Figure 2.6 & 2.7)

'Age value': the (unintentional) monument must 'truthfully' display the changes and evolutions it has undergone since its construction. Primarily, the monument has to communicate the passage of time thus restoration in itself becomes problematic. The fundamental strategy is to protect it from the corrosive forces of nature, modernization or in contemporary times from the effects of commercialization. (Figure 2.8 & 2.9)

Present-day value

Riegl did not stop here with conservation strategies, but took it one step further where it started to become complicated: he added the "present-day" values into the discussion of the monument. He acknowledged that the monument had to fulfill other purposes than just 'memory-value'. It also had to be useful and provide aesthetic enjoyment: what he termed "use-value" and "art-value" (Arrhenius, 2012). Although Riegl added that these values were not part of the modern cult of monuments as they conflicted with the 'memory-value', it is crucial to identify them because they impacted the conservation of the monument and affirmed that the only way to safeguard our cultural heritage was to put it to use.

The "use value" tends to conflict with both historical and age-value, especially the latter. The conflict with the historical value is that the new function may not fit with the restored 'original' state of the monument. In addition, use value requires maintenance of the object but this denies the age-value of 'loss at the center' since the value is in the dissolving of form and colour that reveals the passage of time

The "art-value" is more complex since the notion of art is different in different historical periods and is always changing. Riegl argued that, to possess art-value "[i]t was required that the object

was a discrete entity, which revealed no decay in shape or colour” (Arrhenius, 2012). Since the monument with historical-value is to be restored to its ‘original’ state, it is usually compatible with art-value. However, it strongly conflicts with age-value since the very process of aging that occurs over time is what gave it its monumental value.

“To satisfy both art-value and age-value in the same object is unfeasible: where the monument’s conception, shape and colour satisfy our modern Kunstwollen (will to art), it follows that this value should not be allowed to diminish in significance in order to conform to the expectation of age value” (Arrhenius, 2012, p. 102).

In addition, the strongest opposition to age-value is “newness-value” as a subclass of art-value. To Riegl, the art-value of newness has a specific power in modern society similar to how the aged was valued. The aesthetic qualities of newness always involve a complete and polish state to distinguish itself from the past. “Newness-value” clearly opposes the signs of age and decay that is valued in the monuments.

Although Riegl introduced the ‘present-day value’ into the discussion of the modern cult of monuments, he argued that it did not place the past completely into the realm of the modern.

“Riegl’s age-value placed the monument firmly in the realm of the old where it was isolated from the functionality and use of the everyday. The old was not to be directly reused but only to return to the present in the form of its otherness, as the cult of the old. The new on the other hand defined its newness by its very coherence with the present, its oneness with the time.” (Arrhenius, 2012, pp. 102-103)

This is where the memory value conflicts with present-day value and where it becomes difficult when dealing with the past. Can there be a balance between the two architecturally? Instead of conflict, can we view it as a symbiotic relationship between old and new? No matter how subtle or aggressive the type of intervention for the present-day value is, it will require construction and destruction. Just as Rem Koolhaas explained, preservation is not a matter of inaction. How can it be done while respecting the memory value which the society at large cares for?

2.2.2

The 19th Century Fundamental Debate- Ruskin vs. Viollet-le-Duc

The conflict between memory value and present-day value has always been discussed when dealing with the past. John Ruskin and Eugene Emmanuel Viollet-le-Duc, the two men who are known as the ‘grandfathers’ of preservation, were enthusiasts of Gothic architecture. They have two different points of view: Viollet-le-Duc argued for the restoration of old buildings to their ‘original condition’ in the ultimate state; and Ruskin was the protector of old buildings who advocated for the preservation of old buildings in their ‘existing condition’ (Scott, 2008). In relation to the discussion of Riegl, Viollet-le-Duc is more supportive of the present-day value and Ruskin is more of the opinion of preserving the memory value of the existing architecture.

“We have no right whatever to touch them. They are not ours. They belong partly to those who built them, and partly to all the generations of mankind who are to follow us...Do not let us deceive ourselves in this important matter; it is impossible, as impossible as to raise the dead, to restore anything that has ever been great or beautiful in architecture.”

— John Ruskin, 1849

“To restore a building, isn’t to maintain it, to repair or rebuilt it, it is to recover a perfection that may have never existed at any given time.”

— Eugene Emmanuel Viollet-le Duc, 1855

To expand, Viollet-le-Duc supported conservation and restoration to completion and he argued that “if a portion of the building were missing, the totality or completed design could not be experienced as intended by the constructor of the building” (Demel, 1996). On the other hand, Ruskin was a preservationist. He believed in the expression or qualities of the building’s age, “the golden stain of time” (Demel, 1996). At the National Historic Preservation Act of 1966 conference, there were three papers presented that attempted to link the contemporary preservation movement to a greater historical continuum of preservation activity (Demel, 1996). Two of the papers were on the discussion between Viollet-le-Duc and Ruskin in the 19th century. The first was presented by Jaques Dupont, entitled “Viollet-le-Duc and restoration in France” and the second was by Sir John Summerson, entitled “Ruskin, Morris, and the ‘Anti-scrape’ Philosophy”. Although the architectural context – the Gothic – predated both Ruskin and Viollet-le-Duc, the debate between them centred on the preservation of this particular historic architecture.

Dupont’s essay explained that Viollet-le-Duc’s methodology towards restoration was to study each existing building’s architectural styles and construction methods, and then to “make every

effort to retain hidden clues which might lead to the discovery of the successive changes or evolution in the building. The building was viewed as a totality of evolution in both aesthetic and structural terms” (Demel, 1996). This is what makes Viollet-le-Duc’s position so interesting. On the one hand, he respected the existing but on the other hand, he believed in evolution. As a result, he had no fear of ‘adding elements’ to a structure in order to sustain its existence even when he recognized the contributors, both past and present (such as artisans, craftsmen, engineers, architects and many others) that had formed the spirit of the building as a whole.

“Knowing that restoration inevitably unsettles old buildings, one must compensate for this curtailment of strength by giving power to the new parts, by perfecting the structure, by clamping walls, and by [introducing] greater resistances, for prolonging the life of the building is the true task of restoration” (Demel, 1996)

The ‘added element’ Viollet-le-Duc inserted was the use of the newly available materials to express his interest of the totality of evolution. He argued that adding new materials strengthens the existing building, and adds a new ornamentation that places a new symbolic meaning alongside the existing. Furthermore, the use of new materials and construction methods to extend the life of the existing is to provide a superior method to those used in the past. To him, it was not logical to repair or reconstruct a building with old methods with known faults when there were more refined and better methods available. This concept of completion of restoration reflects the belief that it was the restorer’s job not only to prolong the life of the existing building but to renew it as well, “... because, before everything else, his [the architect’s] task is to make the building live” (Demel, 1996). As Viollet-le-Duc put it,

“There is another overriding condition that must always be kept in mind in restoration work. It is this: both the methods and the materials of construction employed by the restorer must always be of superior quality.” (Demel, 1996)

His position on the added element is evident in his architectural proposals for the Market Hall (Figure 2.11) and the Vaulted Hall (Figure 2.12) where there is a clear indication of the difference between the pre-industrial, masonry construction method and materials and the modern industrial ones. When we look deeper, aside from being contrasted in material and construction method we will see a relationship between the old and new. Instead of being supported by a series of vertical columns for the vaults, Viollet-le-Duc took into consideration of how a medieval vault might have been constructed if its builders had structural iron available (Hearn, 1990). In this manner, Viollet-le-Duc tried to relate the old to new even if they were in great contrast.

However, the strength of Viollet-le-Duc’s effort towards restoration was also seen as a concern for the existing which was rejected in the preservation movement during his time. The reason

was that the ‘added element’ for the restoration of the building often used new materials and construction methods which “modified and surpassed the original building’s aesthetic” (Demel, 1996). As a result, it possessed new meanings that were different from those originally intended. No matter how well-intentioned the new elements may be, they added an alternate layer to the building which remarkably altered the existing historical record.

Figure 2.11 - The added element in Market Hall

Figure 2.12 - The added element in Valuted Hall

In contrast to Viollet-le-Duc, Ruskin argued against anything that would diminish the expression and qualities of the building’s age. For Ruskin, as buildings mature, the expressed weathering and exposure give emotional meaning. This emotional meaning is given by age; it is “ennobling, beautifying and [gives] glory to the structure” (Demel, 1996). Ruskin particularly favoured the Gothic style, with the overall workmanship being superior to that of other styles. Although the structures may have been disregarded, neglected or abused, the materials withstood the test of time. This allowed for the emotional meaning to become apparent, displaying its age. This is expressed in the following passage from Ruskin’s “Lamp of Memory”:

“For, indeed, the greatest glory of a building is not in its stones, nor in its gold. Its glory is in its Age, and in that deep sense of voicefulness, of stern watching, of mysterious sympathy, nay, even of approval or condemnation, which we feel in the walls that have long been washed by the passing waves of humanity. It is in their lasting witness against men, in their quiet contrast with the transitional character of all things, ... it is in that golden stain of time, that we are to look for the real light, and colour, and preciousness of architecture; and it is not until a building has assumed this character,

till it has been encrusted with the fame, and hallowed by the deeds of men, till its walls have been witnesses of suffering, and its pillars rise out of the shadows of death, that its existence, more lasting as it is than that of the natural objects of the world around it, can be gifted with even so much as these possess, of language and life” (Demel, 1996)

Ruskin’s attitude towards restoration, however, was provocative. He considered restoration more detrimental than destruction: “restoration... it means the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed” (Demel, 1996). Instead of restoring and destroying, Ruskin argued that we should take proper care of the monuments. The only appropriate way is an attitude of minimal intervention, continual and proper maintenance to ensure the health of the building. “A few sheets of lead put in time upon a roof, a few dead leaves and sticks swept out of a water-course, will save both roof and walls from ruin.” (Demel, 1996)

Figure 2.13 - Viollet-le-Duc, 'Restored' Chateau de Pierrefonds

Figure 2.14 - Contemporary precedent of Viollet-le-Duc’s 'Restored' theory

The work of Ruskin was carried on by William Morris, who focused on the theory, and Philip Webb, who developed its practical implications. Both sought to stop the destructive activity of restoration and were primarily concerned with the protection of buildings of great age. Under the influence of Ruskin, their work reveals a connection established through honest, simple craftsmanship with the repair of old buildings and the design of new (Demel, 1996). Repair rather than restoration was the key, and minimal intervention was the only appropriate method. Ruskin has put it, “with a few sheets of lead and a few dead leaves to save the roof and walls from ruin” (Demel, 1996).

The debate between Ruskin and Viollet-le-Duc shows that there is value in existing structures and shows how we can add present-day value onto today’s unintentional monuments. Ruskin informs us of the importance of the ‘age value’ and Viollet-le-Duc informs us about the possibilities of how we can have intervention from within and still have a symbiotic relationship between the old and the new.

Figure 2.15 - Ruskin, love of ‘Preserved’ Ruins of the theater of Marcellus in Rome

Figure 2.16 - Contemporary precedent of Ruskin’s ‘Preserved’ theory

2.4

Today's Fragile Monument

In Riegl's schema, the historical process of the monument has evolved from the cult of the intentional monument, to the desire of preserving the historical significance of a monument for a given culture – the nationalistic monument – and finally to the stage of the universal value of age. This final stage in the evolution of the modern cult of monuments “was a ubiquitous phenomenon that knew no borders; its expression was accessible to all” (Arrhenius, 2012).

“Riegl remarkably put forward a notion of the monument that rejected national narrative in favour of the homogenising cross-cultural qualities and effects of age.” (Arrhenius, 2012, p. 104)

This phenomenon has continued to be discussed by a recent conservationist and architect, Thordis Arrhenius, who has studied the discourse of conservation and its effect on the role of the monument in contemporary western society. Her study built on the schema that Riegl had established concerning the modern cult of monuments. Through her recognition of the continually expanding proportion of heritage objects in our physical environment today, she advocated for “how the monument [had] gradually been transformed from an object that originally communicated permanence to an object that was about fragility and loss, removed from the present for reasons of history and sentiment” (Arrhenius, 2012). This recognition of the transformation of the monument by Arrhenius corresponds to Riegl's speculation on the power of age-value. It is to be the most modern value and the one that would guide the conservation of the monument in the future. As she states,

“The dichotomy between the attraction of the shiny new and the feeling for the aged would compete in a world of objects. Riegl, writing on the brim of modernism, predicted that the attraction of the new was stronger than that of the old. The masses' love for the new, Riegl saw the largest hindrance to a general recognition of age-value... A century later the situation appears somewhat qualified. The comfort of the old and familiar dominates popular discourse... Riegl's prophecy that the force of the old would conquer the masses seems to have been fulfilled to an extent that he could hardly have foreseen” (Arrhenius, 2012, p. 102).

Fragile Monument

‘Fragile monument’, a term used by Arrhenius to describe the popularization and expansion of the old in contemporary society, appears to be closely bound to the narrative of age – loss and danger. “Not until the object is threatened, homeless, on the edge of demise, does it qualify itself

for protection and gain its status as a monument”; “exposed and vulnerable, always in need of reinforced protection, this monument is at the same time both lost and found; at the point it loses its use-value it gains its memory-value” (Arrhenius, 2012). Arrhenius argued that fragility of the monument had been mostly identified in the 20th century with the forces of capitalism and urban modernization. During this time, architects of the Modern Movement had been accused to favour their own artistic freedom over the values of the historic context that tended to ignore the reconfigurations of the city. (Arrhenius, 2012)

Along with the popularization and expansion of conservation oriented towards the narrative of loss and age, Arrhenius underlined a need to re-think the discipline of conservation. As the monument was being fundamentally transformed -- that is, it became increasingly about fragility, vulnerability, disintegration and destruction rather than the more traditional notion of permanence or aesthetics -- Arrhenius argued that existing tradition or practice no longer make sense in relation to the transformed ‘heritage object’, and maintained that the discourse of conservation should be opened up in order to grasp the cult of the past today. She stated that throughout history, “authenticity, origin and authorship are concepts at the core of the polemic that has surrounded conservation” (Arrhenius, 2012). This value judgment tends to repress the very unsettled nature of the authentic as put forth by Arrhenius; instead she claimed that **“authenticity is identified no longer with any ideal historical form but with a building’s actual materiality or its processual re-making”**. (Arrhenius, 2012)

Paradoxical relationship

Arrhenius further identified a paradoxical relationship between destruction and conservation that is revealed when re-thinking the nature of fragility of the monument. The paradox involved the ‘fragile monument’ and is similar to the conflict of present-day value with the age-value as discussed by Riegl. From one point of view, it needs to express its age in order to convey its memory-value through the visual evidence of the process of time; from another point of view it is in need of protection. Arrhenius noted that this paradox had continued to mark the discourse of conservation since the 19th century, where the monument could demand either a more antiquarian tradition of preservation or a more contemporary one of restoration. First, preservation places fragility and loss at the centre where any kind of restoration is considered as a threat, but Arrhenius noted that “to abandon the monument to the corrosive forces of nature and time would result in its degradation, and finally in its ceasing to be a monument” (Arrhenius, 2012). In contrast, restoration protects the monument from those natural forces but the paradox of restoration as it appeared in the 19th century is that it “threatened the integrity of the monument as a historical document on the one hand; on the other the absence of restoration threatened its very being as an historical object” (Arrhenius, 2012).

2.5

Remarks- Conflicts Become Possibilities in the Paradoxical Relationship

From the initial discussion of monuments and fabrics in the city to the difference in pathological and propelling monuments, this thesis sees the propelling monument as being more appropriate for today's urban fabric. The reason is in its ability to synchronize with the process of urbanization by accommodating different functions over time while still serving as an important record of history (as discussed in Chapter 1). It can be more of an integral part of the city's growth..

However, the propelling monuments of today have the same challenges as the unintentional monuments discussed during the 19th century and the fragile monument discussed recently. This challenge is described as the paradoxical relationship between the memory value and the present-day value; in other words, a conflict in having to retain its historical layers (Ruskin) while having to accommodate the new functions (Viollet-le-Duc).

There are many case studies that turn the conflict of the paradoxical relationship of memory-value and present-day value into possibilities for design. For example, the Neues Museum (2009) in Berlin by David Chipperfield (Figure 2.17) and Tadao Ando's Punta Della Dogana Museum (2009) in Venice (Figure 2.21) both illustrate it. In the case of the Neues Museum, the design took advantage of the historical signs of damage inflicted by the bombs during the war and also the sign of its age as it was abandoned over the years. These old layers are revealed and expressed as counterpoints with the new interventions. (Figure 2.18 to 2.20) Similarly, Ando's design exposed the existing brick wall and wooden roof trusses, and removed previous renovations that concealed these elements to retrieve the historical layers of the memories of the former customs warehouse. (Figure 2.22 to 2.24) Both of these examples clearly demonstrate what possibilities this paradoxical relationship can bring.

The next chapter, "Building Perspective: Contemporary Interventions Enhancing the Old Layers", will continue to develop the architectural possibilities in this paradoxical relationship after discussing the perspectives of the 20th and 21st century architectural theories on this topic.

Figure 2.17 (top) - Neues Museum in Berlin by David Chipperfield (2009)

Figure 2.18 (left) - Interior, inserted stair contrasting with the old fabric

Figure 2.19 (middle) - Interior of gallery, inserted light into gallery

Figure 2.20 (right) - Interior of gallery, revealing the old layers of brick

Figure 2.21 (top) - Punta Della Dogana Museum in Venice by Tadao Ando (2009)

Figure 2.22 (left) - Interior of gallery, brick vs. concrete

Figure 2.23 (middle) - Interior of main space, exposed old brick and wood trusses

Figure 2.24 (right) - Interior, inserted concrete stair

Chapter 3

Building Perspective

Contemporary Interventions Enhancing the Old Layers

3.1

Case by Case– IT is the Master

The nuclear reactor in Kalkar, which never did ‘breed’, has been reconfigured into a congress and leisure center, a disused transformer station in Cologne now accommodates galleries, and the multiplex cinema in Freiburg’s new main railway terminal is now being used for offices and a planetarium (Jessen & Schneider, 1999, p. 11)”.

In the 21st century, the list of conversions continues. As Alois Riegl and Thordis Arrhenius have suggested, the best possible way to safeguard our cultural heritage is to put it to use with present-day value rather than to leave it in isolation from everyday life. This is certainly the case as more and more ordinary buildings are being converted. These conversions demonstrate how adapting existing buildings as an alternative to demolition and replacement is not only culturally or sustainably crucial for our future but they also present the broad spectrum of tasks and possibilities in conversions. The design philosophy of these conversions can range from blurring the old and new, to a distinct separation of interventions and existing fabric through contrasting form and materials, and finally to partial destruction in order to achieve the feat of finding a practical use for some of the cumbersome buildings. All of these have their own distinctive strategy with regard to the existing building’s memory value.

This is where contemporary thinking behind encountering the preserved, existing form has shifted as preservation reaches into the ordinary such as industrial structures, city infrastructure, or factories -- buildings that are not considered historically valuable. Thus, the design philosophy is no longer a matter of inaction, of just thinking what is conservation-worthy, or memorable inventory in the traditional preservation mindset. As Rem Koolhaas claimed, there is a void in the contemporary architectural debate on the issue of preservation. Since the fundamental debate between Viollet-le-Duc (‘original’) and John Ruskin (‘existing’), “no voice of equal intensity has been raised on the issue of preservation... the arrogance of the modernists made the preservationist look like a futile, irrelevant figure” (Stoppani, 2011). Although their positions still remain a key reference in any debate on preservation, Koolhaas thinks of preservation in the sense of ‘maintain[ing] or keep[ing] alive’, and not so much focused on the opposition of ‘original’ and ‘existing’. Rather, the emphasis is on ensuring ongoing accessibility and enjoyment (and sustainability) (Stoppani, 2011). To accomplish this, Koolhaas’ approach to preservation alters the existing as necessary but still maintains its identity and presence. Regardless of how modest or how radical the transformative actions are, preservation is always an intervention, which involves processes of the production of something new. Preservation can never be neutral, it is

always “to a specific degree: relative and somewhat impossible to reconcile with life” (Stoppani, 2011).

Case by Case

Building on the argument that Koolhaas has made, Manuel J. Martin-Hernandez, in his article “Architecture from Architecture -- Encounters between Conservation and Restoration” expressed a more contemporary opinion in relation to re-engaging the past. He stated that there always seems to be a strategy or an abstract universal method for conservation, a sort of a-priori rules to the existing. He referred to the classic debate between John Ruskin and Viollet-le-Duc, and Alois Riegl’s classification and identification of the values attributed to monuments and thought they had limitations. As he argued, “Understood as design projects, interventions in architectural heritage cannot obey a priori rules, since each must develop as a response to specific conditions” (Martin-Hernandez, 2007). Therefore, he advocated a “case by case” methodology to overcome these limitations in the late 1920s, which was later elaborated on by Ambrogio Annoni, an architect, and followed by Nathan Rogers, an architect and writer. Annoni wrote:

“In front of the monument, it is the master; and all work of restoration is determined, in every particular case, from it” (Martin-Hernandez, 2007, p. 65)

As a successor of Annoni, Rogers also believed that an intervention in architectural heritage requires resolving every situation as a defined case with particular conditioning factors. It is not a question of conserving the existing or restoring it to the original, but it is a single act. “Conservation does not make sense if it is not understood as updating the past, and construction makes no sense if it is not understood as a continuation of the historical process” (Martin-Hernandez, 2007). In this sense, to conserve and to design are not opposing activities. Conservation is involved in intervention.

This synthesis of conservation and restoration has influenced the contemporary debate of this discipline. The Krakow Charter, similar to the 1931 Athens and 1964 Venice Charters, is the last international document of consensus, approved by the International Conference on Conservation in 2000. It brought together more than three hundred specialists from universities, government offices, and institutions like ICOMOS (International Council on Monuments and Sites) to make legal resolutions in cultural heritage invention, with a view to uniting the member nations in the 21st century. (Martin-Hernandez, 2007) Article 6 of the Krakow Charter states that “conservation requires an appropriate ‘restoration project’ that defines all the methods and objectives. In many cases, this also requires an appropriate use, compatible with the existing meaning and space” (Principles for conservation and restoration of built heritage, 2000).

Re-composition by contrast

The contemporary emphasis on synthesizing conservation and restoration within the concept of the 'restoration project' was discussed by Gustavo Giovannoni, one of the authors of the Athens Charter. He encouraged the 'restoration architect' to "fulfill the triple role of historian, builder, and artist, [who] also had to account for the environment's multiple condition" (Martin-Hernandez, 2007). On the one hand, restoration needs to rehabilitate but on the other, it needs to conserve. This is very similar to the discussion of the paradoxical relationship of memory and present-day value by Riegl and Arrhenius. These multiple demands on a single project are defined as an act of 're-composition'. The concept of it is to accommodate new technical methods or new living conditions into the specific historical environment to take into account urban evolution while protecting the historical environment. It is to be considered more as a process than a finished act of intervention. This perspective of 're-composition' helps to transcend the limitations of previous historicist techniques for Modern architects.

Martin-Hernandez gave a classic example of this conception of re-composition in the work of Carlo Scarpa, an Italian architect: the Castelveccchio Museum in Verona (Figure 3.1) which was reconstructed between 1957 (phase 1) and 1973 (phase 2). The work met all the recommendations of the Athens Charter at that time: "contrast between new and old, absence of ornament in the intervention, [and] differentiation in the added elements" (Martin-Hernandez, 2007), as can be seen in the double façade that was formed by the old holes and the new carpentry (Figure 3.2), the cooper roofing materials that replaced missing tiles (Figure 3.3) or the juxtaposition of the new steel stair and the old brick wall (Figure 3.4). Other than added elements, Scarpa also removed part of the historical layers in order to achieve clarity in the existing building. This project by Scarpa has been considered the benchmark for all creative conversions, with the distinct separation between the interventions and the existing fabric through contrast in form and materials.

This method of contrast in a multi-layered model reveals the layers of the old fabric while making the new interventions visible. If we consider the discussion on the Ruskin and Viollet-le-Duc debate or the paradoxical relationship between memory and present-day value, this project presents a balance between them by strategically stratifying the old and new. This position of adapting the existing building for the present-day is critical in this thesis and will be further explored in the next section.

“Any intervention has to be designed and thought out in a new way. You can’t say: I’m modern- I’m going to use metal and plate glass.’ Timber might be more suitable, or something more modest. How can one make certain statements if one isn’t educated, educated to histories.”

— Carlo Scarpa (Dal & Mazzariol, 1984, p. 287)

Figure 3.1 (top left) - Castelvecchio Museum in Verona

Figure 3.2 (bottom left) - double façade of new offset behind the old façade

Figure 3.3 (top right) - Copper roofing materials replacing missing tiles

Figure 3.4 (bottom right) - juxtaposition of the new steel stair and the old brick wall

VS.

*Figure 3.5 (top) -
Neues Museum in Berlin
layers and fragments: the idea of
difference*

*Figure 3.6 (above left) -
The Waschanstalt Wollishofen in Zurich
Existing fabric as material for the new
entity*

*Figure 3.7 (left) -
Interior*

3.2

Multi-layer: Stratifying Layers of the Old (memory) and the new (present-day)

“Remodelling is a process of providing a balance between the past and the future. In the process of remodelling the past takes on a greater significance because it, itself is the material to be altered and reshaped. The past provides the already written, the marked ‘canvas’ on which each successive remodelling will find its own place. Thus the past becomes a ‘package of sense’, of built up meaning to be accepted (maintained), transformed or suppressed (refused).” (Machado, 1976, p. 27)

This quote by Rodolfo Machado, an architect, underlines the importance of and respect for the old which is critical for the argument of this thesis. Conversion is not to bring the old into completely anew or to restore for the present-day but to reveal and amplify the old. The success of the marriage of the old and the new, of past and future is dependent upon a firm understanding of the existing building to provide the principles and basis for the appropriate interventions. This is evident from Castelvechio (shown in 3.1), but there are also many other recent projects which take on a similar design philosophy, such as the Neues Museum (2009) in Berlin by David Chipperfield (Figure 3.5). In this project, the stratification of the old and the new in different layers gives a unique existential (symbolic), spatial and temporal quality as an experience to this particular building. In more details, this type of design approach is explained in the article, “Conversions -- the New Normal” by Johann Jessen and Jochem Schneider. There they stated that there are three different identifiable approaches and criteria for the creative interventions of existing buildings: ‘preserving the old in its entirety -- seeking inspiration in the original’, ‘layers and fragments: the idea of difference’ and ‘the existing fabric as material for the new entity’ (Jessen & Schneider, 1999). The second approach, layers and fragments, explains the Chipperfield project and out of the three it is of most interest to this thesis. Before discussing it further, however, I will explain the other two first.

The first approach of ‘preserving the old in its entirety -- seeking inspiration in the original’ represents a desire to preserve and protect the old building and is usually associated with heritage protection. It has more to do with restoration in order to present its pure and authentic original, and the present-day function is limited by having to adapt to the existing spaces within.

The third approach of ‘existing fabric as material for the new entity’ is in the opposite end of the spectrum from the growing trend to preserve ordinary buildings. It regards the existing building as “freely available and changeable ‘building material’ and [sets out] to use it directly in

order to fashion a 'new entity'" (Jessen & Schneider, 1999). In this approach, the old and new is completely merged without any contrast to set them apart. It basically presents itself as a homogeneous whole, without the limitation of treating the old as a stage to showcase the new. The Waschanstalt Wollishofen (2000) in Zurich by agps.architecture (Figure 3.6) represents this approach where the existing building was perceived as material. In this project, the building was basically dismantled right down to the load-bearing structure and completely re-clad anew (Figure 3.7). The original buildings are no longer recognizable after the conversion other than the remaining chimney, which is still visible. It is evident that the third approach completely transforms the existing, and thus it lacks a temporal dimension and enduring value as compared to the Neues Museum, for example.

The second approach, 'layers and fragments: the idea of difference', sets in between the other two approaches as it treats the old and the new equally. Comparatively, the first approach is too protective of the old and the third approach overlooks the qualities of the old. Again, this approach can be seen in the work in Castelvechio and Neues Museum. The conversion is then a result of the interaction between different layers and fragments stratified together in relation with each other. (Figure 3.8 & 3.9) This is comparable to Rodolfo Machado description of, 'old buildings as palimpsest', as it uses the term palimpsest to make a metaphorical connection between remodelling and writing. (Scott, 2008) This metaphor of palimpsest suggests the building is to be written over, partially erased and written over again but the traces of the previous writing remains apparent. In this metaphor, the new intervention is written over as an obvious addition, so that it is clearly visible to contrast with the existing material for it to remain apparent. In doing this, as described by Johann Jessen and Jochem Schneider,

"A spatial tension arises between the different temporal and iconic layer...the strategies aimed at emphasizing differences do not seek to completely revise the existing object. On the contrary, the historic structure is seen as an opportunity for reinterpretation." (Jessen & Schneider, 1999, pp. 18-19).

It is precisely this 'spatial tension' which makes this approach so appealing. The task for the architect is then to show how these new contrasted layers and fragments are to be stratified with the old as an opportunity to reinterpret the existing building. How then does the layer of the new establish a symbiotic relationship with the old? What are the factors that influence the condition of the existing? How can the new interventions amplify the power which the structure once had or which the ruin/ abandoned structure now possesses?

Figure 3.8 (right) -
apartment and studio building in Sent

Figure 3.9 (below) -
Documentation Centre in the Reichs
Johann Jessen and Jochem Schneider's
example of layers and fragments: the idea of
difference
"the space is composed of different frag-
ments which only formulate a new whole
as a result of their interaction" (Jessen &
Schneider, 1999).

3.3

Layers of The Old

The Enduring Value

As explained in the previous section, the success of stratifying the old and the new layers is dependent on a firm understanding of the existing in order to provide the principles or basis for intervention. In that perspective, the layers of the old are equally important to the interventions. This section will focus on the enduring value of the old layers that is gained over time as significant to the success of converting an existing building.

Buildings are always changing. Aside from the shift in cultural value and its relationship to the city, the inevitable process of aging and weathering apparent in stains and erosion marks on the structure or material can be seen as an enduring value from the old layers rather than as an antagonistic characteristic. These layers can convey the building's process of aging through its material. In one section of the book, *The Eyes of the Skin: Architecture and the Senses*, Pallasmaa discusses about Materiality and Time and opposes most of today's standard construction that deliberately aims at ageless perfection with a relative immateriality and weightlessness of recent technological construction (such as glass, metal). Instead, he advocates that materials should have integration in the dimension of time,

“...materials express their age, as well as the story of their origins and their history of human use. All matter exists in the continuum of time; the patina of wear adds the enriching experience of time to the materials of construction” (Pallasmaa, *The eyes of the skin*, 2012, p. 34).

The material expressions of age are often encountered when designing within existing buildings, especially those that were abandoned or in a ruined state. What is most interesting about the patina of wear in the material is the uniqueness of each particular building according to the history of the building, its former function, or the condition of the atmosphere. It is evident that much of the contemporary work grasps this expression as an opportunity for the design. In Figure 3.10 to 3.13, a selection of different materials of patina from different projects is presented to show how patina varies in response to its materiality (in concrete, in brick, in steel, in wood). For instance, the concrete stains in Zeche Zollverein by OMA and the new expansion in Tate Modern by Herzog and de Meuron express their abandoned states by retaining water marks on the concrete from the former industrial usage. As an example for the patina of the steel, the project, Urban Outfitters Campus by MS&R Architects, the steel structure was previously painted with a coat of paint which has started to peel off because of the change in temperature and the age of it. However, MS&R Architects retained most of it by only lightly brushed it off and then sealed it to show the layers of paint that existed as a layer of history.

(From top to bottom)
Figure 3.10
Patina of CONCRETE in
Zeche Zollverein
& Tate Modern

Figure 3.11
Patina of BRICK in
Neues Museum &
Punta Della Dogana

Figure 3.12
Patina of STEEL in
Urban Outfitters Campus

Figure 3.13
Patina of WOOD in
Roundhouse

The process of un-layering the layers of history and discovering the peculiar spaces created throughout history before inserting the new is part of MS&R Architects's old/new philosophy. They believe that the conversion of existing buildings involves an intersection between what once was and what is going to be in the future (MS&R, *The Old/New Philosophy*, 2013). In some cases these layers of history are obvious; in other cases they are hidden. In the case of the obvious, the Neues Museum by Chipperfield (Figure 3.14 & 3.16) and Foster Associates' re-work on the Reichstag in Berlin (Figure 3.15) were attempts to come to terms with the "history and nature of the building [which] preserved the shell and bullet marks on the walls made by the Russian soldiers during the Second World War" (Brooker & Stone, 2004). These signs of old layers tend to deliver a rustic quality as a counterpoint and balance with the new additions.

On the other hand, the hidden requires a selective digging and creative demolitions to uncover the various historical strata of the existing. It reveals the complex remains of the various eras of construction during the various phases of expansion and structural modifications. This uncovering of the historical readings is notable in the work of Carlo Scarpa on Castelvechio in Verona where Scarpa was not troubled about demolishing part of building in order to achieve a historic clarity in the existing building. As Sergio Los comments, it was "more than a theory of restoration, he was interested in historic clarity, so that history might become recognisable through the orderly coexistence of the various fragments" (Brooker & Stone, 2004).

Figure 3.14 (above)-
un-layering: Neues Museum
in Berlin

Figure 3.15
(left)
un-layering: Reichstag in
Berlin

Figure 3.16

A study of detail textures of the materials in Neues Museum. Completed by Charlotte Storrar, an interior and spatial design student at the Chelsea College of art and design.

top to bottom:

External details

Repaired plasterwork is left visible, contemporary materials differentiate between old and new, concrete composite is used throughout, bullet holes litter the facade, new materials create interest through texture, new brick is used where damage was too great to be repaired.

Internal structure

Floors are repaired where possible, columns are left with damage visible, existing structure sits side by side with new, mosaics are prominent throughout, existing ceilings have been retained and exposed.

Internal surface

Original brickwork is exposed, surfaces vary between old and new, damaged paintwork is left to give a true representation of original colour schemes, existing signage and displays remain from the old museum.

3.3

Layers of The New Methods of Stratification

Figure 3.17(above) - Methods of Stratification: subtle, intermediate to contrasting

There are numerous ways to stratify layers of old and new; the stratification of the two can be subtle, intermediate or in complete contrast. The questions of form, material, construction method or technique, and the details of how they come together are all factors in deciding how to adapt existing buildings for the present-day. Figure 3.17 illustrate how these factors can change the degree of closeness with the existing. The building on the left is the most subtle, where the interventions are closely related to the existing building's geometry and material choice with a touch of difference. The one in the middle contrasts in an intermediate way by introducing different palette of materials; and lastly, the one on the right shows complete contrast, introducing a new geometry/form and also the use of modern material.

The following two sub-sections will continue to explore the concept of stratification. The sub-section on strategy classifies two different methods of juxtaposing the old with and the new,

and the one on element re-interprets the fundamental elements in architecture in the context of conversions to express and amplify the qualities of the building.

Strategy

In contrast to designing a new building, when designing within an existing building the most important and meaningful factor is the establishment of a relationship between the old and the new. “The new could not exist without the original” (Brooker & Stone, 2004). There are strategies of either a complete integration with the old or a contrast where the old and the new are seen to stand apart. The following sub-sections will introduce two different types of strategies, both effectively responding to the existing but distinct. The strategy of intervention (section 3.3.1) accepts and appreciates the original building and establishes the most intimate relationship with the original building through the new design, the ‘two become one’. The second strategy is when the original allows for and accommodates an insertion (section 3.3.2) of new elements without letting the original be touched. The purpose of identifying the two strategies is not to select which to use, as they often overlap, but to acknowledge its strength in relation with the old.

Element

The manipulation of the elements in a re-work of an existing building expresses the very qualities of the building -- what it looks like, how it sounds or what it feels like. These elements define its quality and give it its individual nature. There are six elements that will be discussed, each focusing quite specifically upon how it alters the existing building. The addition of plane (section 3.3.3) can define spaces, whether it is vertical as of a wall or horizontal as of a floor or ceiling, and it can also alter the visual and physical movement of the space. Introducing natural or artificial light (section 3.3.4) can change the perception and influence the feel of the existing building. The surface (section 3.3.5) or material used is the tactile element that distinguishes the old and the new. Adding or subtracting openings (section 3.3.6) can facilitate movement, admit light and create a new view. It helps to establish the relationship between places, internally or externally. Lastly, the movement (section 3.3.7) through or around a building changed by adding new vertical or horizontal routes provides access to different areas and can also bind together separate spaces.

Figure 3.18 (top left) - Maison Roduit in Chamoson (before intervention)

Figure 3.19 (top right) - Maison Roduit in Chamoson (after intervention)

Figure 3.20 (above) - Exterior vs interior composition

3.3.1 Intervention

Intervention is a process that transforms a building, the new and the old become intertwined and completely dependent upon each other. (Brooker & Stone, 2004)

An intervention is a strategy that can reveal and activate the hidden potential within a building, and is based upon a close study of the qualities in the existing building. This strategy usually consists of a series of small consistent alterations throughout the building, rather than a large single move. These small interventions irreversibly alter the original building, either by subtractions that strip away or remove part of the existing to reveal a certain historical layer, or additions that clarify a certain characteristic of the existing for present-day use. In this case, the intervention of the new is dictated by the form of the original building. Similar to Rodolfo Machado's position (refer to section 3.2), this strategy is "Form follows form! The building determines how it is to be reused and the position of the new spaces, how they are to relate to one another and their size and scale, is already imbued within it" (Brooker & Stone, 2004).

A simple case study that illustrates this strategy of intervention is the Maison Roduit in Chamoson, Switzerland (2005) that used to be a rural house built in 1814 by Savioz-Fabrizzi Architectes (Figure 3.18 & 3.19). In this project, the architect sought to maintain and reinforce the original character of the building by emphasizing the existing stone structure while partially removing the old deteriorating wooden structure. In order to do so, concrete was used for parts that were to be replaced and the former texture of the timber was used as the formwork. The exterior volume was left unchanged with new window openings for light and views. That was flushed with the exterior in order to minimize their impact on the volume of the building (Figure 3.20).

The success of this strategy is dependent upon how intimate a relation it has with the old and the new which makes the small consistent alterations (rather than a large single move) more effective. This is evident in the Scarpa's work on Castelvechio, where the intervention consisted of new layers of addition to make up a multi-layered model which was sympathetic to the original building (refer to section 3.1).

Figure 3.21 (top) - S(ch)austall in Ramsen, Germany

Figure 3.22 (above) - Naumann Architektur and Dovecote Studio in Suffolk, UK

3.3.2 Insertion

The insertion of a new functioning element not only provides a use for an often redundant or neglected space but also serves to enhance and intensify the building itself. (Brooker & Stone, 2004)

Insertion, as the word suggests, is to insert a new element into, between or beside an existing structure. The inserted element is often seen as independent; it is a large, powerful single element that establishes a dialogue between itself and the existing. “It is at its best when the clearest possible distinction between the crisp new contemporary work and the crumbling antiquity of the existing is established and therefore, the style, the language, the materials and the character of each are different” (Brooker & Stone, 2004). This is also commonly known as the ‘contrasting method’ in the re-work of the existing. (Demel, 1996) The simple insertion of a house within a house in both S(ch)austall in Ramsen, Germany (2004) by Naumann Architektur (Figure 3.21) and Dovecote Studio in Suffolk, UK (2009) by Haworth Tompkins (Figure 3.22) clearly illustrates this strategy.

Although the insertion is independent, particular qualities such as scale, dimensions, proportions, rhythm and structural composition are derived from the original. In contrast with the strategy of intervention, the host building is relatively physically unaltered in insertion; it retains its original integrity. However, if the insertion is excessively stronger than the original building, it may lose the chance to dialogue between the old and the new. Therefore, it is important for the two to strengthen and reinvigorate each other to allow the building to be looked at afresh, as though new life had been drawn into both. It is “a symbiotic relationship between the two elements [that] is established based upon juxtaposition, counterpoint and contrast, and this relationship heightens the quality of both” (Brooker & Stone, 2004). Lastly, in addition to enhancing and intensifying the existing, insertion can also provide new uses and a new life to the redundant or neglected spaces: for example, by adding new circulation or floors and by providing unseen and unintended space within the former design.

The strategy of insertion is evident in the works of Norman Foster, notably the Sackler galleries for the Royal Academy of Arts in London of 1991 (Figure 3.23). Foster inserted a highly contemporary steel and glass element for circulation and entrance, which revealed the existing context and slightly reconfigured it. The inserted work is not autonomous from the existing but is embedded within it. This is how, as Foster said, “contemporary interventions can enhance the old by relying on sensitive juxtaposition rather than historical pastiche” (Partners, 2012).

The concept of the design is the rediscovery of the 14-foot gap light well left between Burlington

House and the Victorian extension, into which Foster inserted vertical circulation in the form of a new elevator and staircase. Originally this narrow gap between the two buildings did not permit any physical access by the users and was a grim space. After the intervention, however, the historical faces of the two buildings, once hidden, were made visible from virtually any vantage point. "Because of the new work, the old is made accessible for appreciation whereas before it was hidden. The new work has revealed the past" (Demel, 1996). As the visitors are ascending the stairs, the architectural elements of the historical façade are studied from viewpoints that are previously unattainable. Through this revelation, new interpretations of the existing building are supported as well. The interpretations are not limited to the visual but also involve an interpretation of use. In the upper storey, the cornice of the historical façade becomes a sculptural plinth (Figure 3.24). The sculpture from the Royal Academy of Arts is placed on top of these plinths as part of the exhibition.

Figure 3.23 (top) - Strategy of insertion in Foster + Partner's Sackler Galleries

Figure 3.24 (above) - Interior view of the insertions

Figure 3.25 -
Stratified architecture: stratification of planes

Figure 3.26 -
Stratified architecture: stratification of spaces

Figure 3.27 - Stratified architecture: understanding volumes and spaces as planes, floors, walls and ceilings

3.3.3 Planes

In conversions, planes can re-organize and separate space, whether it is horizontally or vertically. It is a major element of design used both inside and outside a building and is probably the most obvious detailed element in any building. Inside a building, it can be the inner walls, the floor, or the ceiling which provide and define visual or acoustic spaces. As for the outside, the façade or the window provides environmental protection and defines an intimate relationship between the inner and outer spaces. The element of planes is dominant in Carlo Scarpa's reworked projects, described as "stratified architecture" (Schultz, 2007). The principle of stratification as a methodology is to allow elements of different origins to be combined into a non-hierarchical whole by considering the construct as multi-layered. (Figure 3.25 & 3.26) It reveals "what was there earlier [that] remains in existence like a kind of palimpsest and begins a communication with the newly added elements" (Schultz, 2007).

These new elements are added as functional elements that are required by the existing building; for example, it might call for planes, or 'layers', to provide the supporting structures, whether it is to protect from the rain, the cold, or the heat. Scarpa's stratified architecture embodies the principle of stratification to define space and transport narrative components involving the locale, history or material. It makes visible "the process of becoming and the time-related sedimentation of materials and meanings" (Schultz, 2007). By making it visible, the layers applied at different points in time in the development of the building are revealed. This is achieved by understanding volumes and spaces as compositions consisting of planes, floors, walls and ceilings as the basis of the language of a stratified architecture (Figure 3.27).

There are two main categories of stratification: spatial stratification and material stratification. Spatial stratification is used to describe the succession of planes or spatial sequences to create spatial complexity and distance within an existing condition (Figure 3.16). This in turn creates zones that can be experienced simultaneously or are visible in the form of vistas as opposed to completely separated suites of rooms. Spatial stratification is thus defined by the space between layers. Material stratification, on the other hand, consists of material planes that lie immediately in layers on top of each other which together form a new element of interpreting the old (Figure 3.29). What is important is not just the shaping of space by stratification, but also the atmosphere which is embodied in the existing building. As Schultz explained, Scarpa's use of spatial and material stratification was to "serve not only to create space but also to formulate a certain atmosphere that links tradition and the past with the present" (Schultz, 2007).

Figure 3.28 (above)- Spatial stratification
Figure 3.29 (right) - Material stratification

Aside from the interior planes, according to Rob Krier, “the façade is the most essential architectural element” (Brooker & Stone, 2004) that can communicate the function and significance of a building. It can speak of the era in which it was built and provide a sense of history of the place. The attention to the façade was also emphasized by Robert Venturi, in the form of the architectural metaphor of the duck and the decorated shed (Figure 3.30). The decorated shed is a symbolic element or ‘facadism’ which is commonly seen today. To Venturi, it is “a method where a simple, even boring building literally has a sign placed in front of it telling the observer what purposes or functions the building encompasses” (Demel, 1996). One of the early projects by Venturi that includes this concept of decorated shed is the competition entry for the Football Hall of Fame in 1967. A large electronic screen dominates the entrance to the building, displaying sports images to say that this is a hall of fame building. Behind this screen is the actual museum space that is a simple vaulted space considered as a black box by a museum curator or a ‘shed’ by Venturi (Demel, 1996) (Figure 3.31). The vaulted space creates a flexible open area for displays but it is a banal building that relies on the ‘façade’ to convey the symbol.

Another example of facadism as a symbolic element is the CaxiaForum in Madrid, Spain (2007) by Herzog & de Meuron (Figure 3.32). The formerly abandoned electrical station was converted to a modern art gallery. The architect reused the landmark brick shell of the original façade and surgically removed the base and other unwanted sections of the building for a continuous flow with the public space that served as the entrance (Klanten & Feireiss, 2009). Windows were also punctuated to comply with the function inside and the addition on the rooftop used oxidized cast-iron that was meant to be of similar colour and weight as the brick of the façade. However, as one enters the building, the interior is totally detached from the façade (Figure 3.33).

Figure 3.30 (left) - Decorated Shed

Figure 3.31 (right) - Example of Decorated Shed: Football Hall of Fame (1967)

Figure 3.32 (left) - CaxiaForum in Madrid (2007)

Figure 3.33 (right) - Interior

Figure 3.34 (top left) - Day's End (1975)

Figure 3.35 (top middle) - Interior

Figure 3.36 (top right) - Interior

Figure 3.37 (bottom left) - Night view of Tate Modern

Figure 3.38 (bottom right) - Interior

3.3.4 Light

Light is often seen as a material palette for design, and it is probably the most effective way to alter an existing space completely. Whether natural or artificial, light can indicate space and define form that was perhaps hidden or unidentified before. The intensity of light from low to strong exerts an influence on the attitude towards a place. It can also be manipulated to illuminate specific places to indicate a relationship of one space to another or to indicate the movement throughout the space. The work of Matta Gordon Clark, titled *Day's End* (Figure 3.34 to 3.36), in 1975 was an alteration of an abandoned pier warehouse in New York's industrial area into what Clark would describe as a temple-like space (Attlee, 2012). This is an illustration of how the space can be altered completely simply through introducing light. Clark removed sections of the floor to reveal the water under the building, and removed part of the roof and wall for light penetration throughout the day. The hole that was removed on the main riverside façade emulated a rose window, and was done based on the orientation of the sun to provide a certain spatial quality.

The Tate Modern Museum in London designed by Herzog & de Meuron in 2000 also introduced light as the primary design element within the re-work of a grimy abandoned power station. The work optimized their gallery space for the natural or artificial light found in the existing condition. Also, they introduced 'the lantern', a glass box on the roof which made a huge impact on the amount of natural light received into the main bulk of the massive brick structure. It functions as a light well during the day and as a beacon at night which is visible by the city (Figure 3.37). Most importantly, "this intervention has the symbolic quality of representing the sheer quantity of raw power once physically generated in the building and it now appears to glow with the stored latent energy" (Brooker & Stone, 2004).

Figure 3.39 (left) - The Media Centre in Hamburg: Retained patina of brick

Figure 3.40 (right) - New insertion: clean concrete, steel and glass contrasts with old: patina of brick walls and rust on the steel column

3.3.5 Surface

The choice of surface (materials and texture) defines the character of the space. For example, the atmosphere of the space with a coarse concrete finish is quite different from that of a space with polished marble. The properties of each specific material often determine its use: timber creates warmth, steel is cold and appears strong, brick is traditional and intimate, concrete has modernist connotations as neutral and glass is transparent (Brooker & Stone, 2004). That is why the choice of material is often the primary element to differentiate and symbolize what is new and what is old.

Through the process of weathering that results in stains, erosion marks or damage from usage, the surface of the material reveals its historical or age value. These signs of wear give a rustic quality that can be used as to counterpoint and balance any new additions. From my point of view, this temporal quality on the surface of the material is the most critical element in conversions because it provides a sense of continuity with the past while also creating a 'spatial tension' with the different temporal layers of the past to the present (Jessen & Schneider, 1999).

The Media Centre in Hamburg designed by Architects Me di um in 1993 is an example of this. The project was a re-work of the old propeller factory to house a cinema, design studios, shops and restaurant/bar. The architects described their process of working with the redundant structure as 'soft architecture' (Brooker & Stone, 2004), and that their new forms and function were like 'grafted' onto the historical skeletons and roots. Thus, the surface of the old walls and floors were left in their found state to provide a counterpoint to the crisp new interventions (Figure 3.39). These historical layers of stains on the brick walls and the rust on the steel columns were in open view to all. By contrast, the new insertion was set next to the old and was made out of crisp plaster, clean concrete, steel and glass. (Figure 3.40) This contrast of the rustic (old) and the crisp (new) created a temporal quality that can only be attained through the passage of time.

3.3.6 Opening

Adding or subtracting openings in the re-work of existing buildings can alter the physical or visual movement to establish new relationships between spaces and places. They can be used to frame a certain space, create a picture-like view in the existing building or create new sequences, giving rhythm and movement to an undefined space. The sizes and proportion of these openings also determine the light, the relationship with the interior or exterior and the aesthetics of the façade since the intended use of the opening of the former building has been changed. Sizes of the windows or location of the entrances are often altered in conversion for new use.

The Museum of Cultures located in Basel designed by Herzog & de Meuron was required to create a new entrance and a multi-use gallery in 2001 (Figure 3.41 & 3.42). The Museum of Cultures had shared an entrance with the city's Natural History Museum, and Herzog & de Meuron relocated the entrance to the basement level at the rear of the building. It opened the cloistered courtyard to the town's main square, the Munsterplatz -- a highly visible location (Lentz, 2012). Now, visitors can access the museum's entrance through this gently used and ramped path. (Figure 3.43 & 3.44) This has altered completely how the building is perceived. In addition, the windows have also been altered for functional and aesthetic purposes. The newly inserted deep windows reveal frame views of medieval Basel. On the other hand, there are windows from the original building for more wall space for exhibitions. As it had "too many windows... there was too much daylight for the exhibitions" (Lentz, 2012).

- 1 INFORMATION BOOTH
- 2 LOWERED COURTYARD
- 3 ENTRANCE
- 4 SHOP
- 5 RECEPTION
- 6 CLOAKROOM
- 7 WORKSHOP
- 8 OFFICE
- 9 TECHNICAL AREA
- 10 GALLERY
- 11 NEW COLUMN-FREE GALLERY
- 12 STORAGE

(From top to bottom)

Figure 3.41 - The Museum of Cultures (2001)
before interventions

Figure 3.42 - After interventions

Figure 3.43 - Section

Figure 3.44 - Plan

3.3.7 Movement

The movement or circulation within a building can occur in a number of ways. It may be through a simple corridor that connects a different number of rooms, or it may be through more dramatic gestures such as stairs, ramps and bridges. When re-working an existing building, the change of the original circulation may reveal or enhance unintended reading of the space. An example would be Castelvecchio where Scarpa moved the entrance from the original centre location to the northeast corner in order to articulate the circulation to enhance and utilize a vista through the existing vaulted openings for the gallery spaces (Figure 3.45). Another main design approach was the placement of the main piece, statue of Cangrande, as the nodal point of the museum, where visitors will encounter it twice while they are walking through (Figure 3.45).

(From top to bottom)

Figure 3.45 - Castelvecchio

Figure 3.46 - Ruhr Museum

Figure 3.47 - Museum Sant Pere de Roda

In addition, stairs, elevators, escalators, ramps and bridges are all necessary functional elements to connect spaces that have the potential to bring expression and drama to a space (Brooker & Stone, 2004). Stairs as the most elementary component can have a great impact on the quality of the space, given its sculptural and vertical quality of being three-dimensional. It can easily become the focal point or subtly added in to provide new access to previously unused space.

In the project of OMA's Ruhr Museum and visitor's centre at Essen, the new circulation element of the stair and escalator is the most visible sign of the building's conversion as a symbol of its new use in comparison to the subtle re-work throughout the rest of the museum (Figure 3.46). The choice of orange colour added a reminiscence of a river of molten steel.

In contrast, the contrast in the new circulation of stair and ramp in the Museum Sant Pere de Roda by Lapena Torres in 1991 is much more subtle (Figure 3.47) due to the focus on preserving the distinct character of the complex while "ensuring that the new inserted elements did not detract from it" (Brooker & Stone, 2004). These circulation elements were added to create a functioning museum, ascending and crossing spaces between previously separated spaces.

3.4

Remarks – Does Contrast Always Work?

As the field of conversion is being redefined and expanded, the design principles on how to intervene in the existing fabric are also put in question. In the article “Conversions -- the New Normal” by Johann Jessen and Jochem Schneider, they state that “it has become apparent that even the motto ‘contrast always works’ has lost its formulaic meaning as a canonized adaptation of Carlo Scarpa’s work, and has been replaced by an approach targeted to the particular object... ‘form follows the existing’” (Jessen & Schneider, 1999). This is also in support of the concept of ‘case by case’, where the specific solution depends on the corresponding object and task (as discussed in section 3.1).

However, this thesis believes that the methodology of contrast which ‘always works’ is still the most appealing because, as explained in section 3.1, the contrasting method as a method which produces a multi-layered model stratifies the old and the new and allows both to be clearly visible. Not only does it make the old and new layers equivalent but also by stratifying these two layers, it produces an architecture that contains complexity of spatial, temporal and experiential qualities (a spatial tension as described by Johann Jessen and Jochem Schneider) (Figure 3.48).

This is precisely what makes conversion attractive from a design point of view: from the stratification of different historic and new inserted layers, it emerges a different architecture within the existing one. And it is also why it is important to be conscious in the strategy of intervention and insertion -- how to establish a relationship between the old and the new, and how to re-interpret the fundamental elements in architecture such as plane, light, surface, openings and movement in the context of conversions.

Part two of the thesis will apply all of part one’s researches and theories into the context of Toronto, and uses an abandoned power station as a design project for this thesis.

Figure 3.48 - A collection of all the discussed Methods of Stratification images for presenting multi-layer as a design approach

“...contemporary interventions can enhance the old by relying on the sensitive juxtaposition rather than historical pastiche.” (Partners, 2012)

Figure 4.1

Toronto's urban fabric (pre-amalgamation)

Source: City of Toronto Property Data Map 2010

PART TWO

Figure 4.2
Toronto's (historic) urban fabric
Source: City of Toronto Property Data Map 2010

Chapter 4

Latent Potential In Abandoned R.L. Hearn Generating Station

Figure 4.3 (opposite) -
The development of Toronto

Figure 4.4 (right) -
Historical view of Toronto

Figure 4.5 (bottom) -
Prospect of Toronto's skyline in 2020

4.1 Toronto's Change and Stasis

"Buildings change as the city changes" (Scott, 2008, p. 17)

Urbanization has caused cities to change quickly through the multiple processes of making, remaking and destroying. In cities like Toronto, the successful growth and increase of densification in the urban core has resulted in rapid development of new buildings. The city is continuously under construction and destruction (Figure 4.3 to 4.5). Along with the change of the city (when you change, you think of what to maintain), there is a voice for the protection of the city's past and character, that is, preservation. An online search of articles yields results such as "15 Toronto architectural gems under threat" (2012) (Figure 4.6), "the crumbling state of heritage preservation in Toronto" (2011), and "Architect Michael McClelland discusses Heritage" Preservation (2011).

Figure 4.6 - 15 Toronto architectural gems under threat

The list ranges from 19th century houses, farmhouses, theatres, and industrial relics to more modern buildings. One of the most significant changes for many North American cities such as Toronto is the recent decline of local industry in the midst of a rapidly shifting global economy. Many of the industrial buildings either stand as relics in the active city or are threatened with demolition to make way for the new urban growth. These buildings are originally built not for human, but for engines and machines. The size and location of these relics give an apparent monumental quality to them.

This author sees these industrial relics as 'unintentional monuments' which are significant not so much architecturally but in its urban memory. What is interesting about them is that their original intention was simply functional: to hold services or as an infrastructure for the city such as that for generating power or a workspace to produce bricks or other industrial products. However, they endure and can now survive in the evolution of the city. What is holding them up is not their structure or function or art value but their ability to speak of the city's layers of time.

The basic premise to preserve these 'unintentional monuments' is that they represent our past and that somehow, they represent use even today. One question has always been critical when considering these relics: what are the effects that these buildings have on the current and future generations?

"Yes, they represent a manufacturing structure that had long provided the basis for the [industrial] economy. Yes, they illustrated processes of extraction and production now non-vital and discarded. Yes, we have learned to preserve historic structures as tangible evidence of our past, a collective memory externalized in individual buildings and collectively in cultural landscapes. But one wonders about the precise effect these buildings have on the psyche and memory of the current generation, and will have on those to come." (Treib, 2009, p. 209)

This thesis expands on this basic premise. It seeks not only to preserve these representations of the city but also to engage them by proposing to install architecture within the building. It asks the question: can there be a more meaningful and powerful architecture that will evolve within these relics? Rather than demolishing them or isolating them as museum artifacts in the living city, can we let a new architecture emerge from within them? As we have come to understand, preservation is not a matter of 'inaction' for architecture; it always requires research, interpretation and disclosure even if the work is minimal and subtle.

This author believes strongly in the importance of these industrial relics as 'unintentional monuments' for our city and proposes to reconnect with the repressed potential and meaning of these relics or sites in the midst of rapid urbanization and growth within the contemporary city. The challenge would then be how to transform a 'building made for machines' to a 'building made for humans'. The thesis advocates preservation as an act of

conservation. On the one hand, we need to rehabilitate and even amplify what the structure previously possessed and now possesses – its age and urban memory. On the other hand, we need to engage it for the opportunity to create a new architecture within which there are juxtaposition of the old and the new, spatial quality and phenomenological aspects.

Figure 4.7 - A map of the 15 architectural gems under threat (highlighted in orange) overlaid ontop of Toronto's (historic) urban fabric

4.2

Toronto's Rehabilitated Industrial Sites

“Our strategy was to accept the physical power of Bankside’s massive mountain-like brick building and to even enhance it rather than breaking it or trying to diminish it. This is a kind of Aikido strategy where you use your enemy’s energy for your own purposes. Instead of fighting it, you take all the energy and shape it in unexpected and new ways.” (Moore & Ryan, 2000, p. 125)

In Toronto, there are several rehabilitated industrial sites: Evergreen Brickworks (2006), Distillery District (2003), enWave power plant (1987), Queen’s Quay terminal (1983) and a recent proposal for the Canadian Malting Silos. Each one of them was abandoned at one point, but is now redesigned and reconnected back with the contemporary city. For instance, the most recent project was the Evergreen Brickworks (Figure 4.8 & 4.9) which was one of Canada’s preeminent brickyards in the late 19th century. The revitalization project includes working with the layers of history retained in the site and also adding new layers of the present with new buildings. In brief, the former quarry area is now converted into a city park and natural area, while the abandoned buildings have been transformed into a cultural centre with markets, recreation, and restaurants. In these spaces, there is juxtaposition of the old and the new, and the former machinery is spotted occasionally. Also, parts of the roof are removed to enhance the truss structures and allow sunlight to penetrate to create a new sense of space. Stairs are also added which lead up closer to the roof area where it was once inaccessible to create a new vantage point and experience of the building.

Figure 4.8 (left) - Evergreen Brickworks (2006)

Figure 4.9 (right) - Evergreen Brickworks (2006)

Besides, there are also well-preserved spaces, ‘the kiln’, considered as the most dramatic space where it showcases its former brick production area. The whole atmosphere experienced within this space is totally different from the rest of the building. Here, visitors are able to access, smell, or touch the former tunnels where the brick was once fired and dried. It was a space that was

previous built for clay or dried earth only.

The Evergreen Brickworks is oriented more towards cultural and community programming due to its remote location. In contrast, the Distillery District (Figure 4.10 & 4.11) is located near the heart of downtown and the waterfront. Thus, the area is now a historic and entertainment mixed-use development containing cafes, restaurants, retails, galleries and 'creative' studio space within the large collection of Victorian-era industrial heritage buildings. The Distillery District has been renovated and re-developed to integrate with the downtown. It provides unique streetscapes that feature the former spatial qualities and façade characteristics of the largest distillery in the world during the late 1860s.

Figure 4.10 (left) - History of Distillery District

Figure 4.11 (right) - Distillery District (2003)

Unlike the previous two examples where multiple buildings are redeveloped, Queen's Quay terminal (Figure 4.12 & 4.13) and enWave power plant (Figure 4.14 & 4.15), located on the waterfront of Toronto, are examples of singular industrial buildings that have been converted. Queen's Quay terminal was in fact the first converted industrial warehouse building to become a mixed commercial, office space and residential condominiums in 1983. In the design, there are additions and subtractions. First, part of the former 'L' shaped 1920s building was removed, resulting in the remaining rectangular block. Then, for the interior, part of the original concrete structure was removed to create the atria, exposing its huge round columns, conical capitals and drop panels.

Lastly, four storeys were added to the top of the building which are the condominiums with the spectacular view of the lake (Williams, 2010). All of these were necessarily determined by the 'present-day' value of 'use' and it conflicted with the 'memory' value according to the criteria of Alois Riegl. Similarly, in the enWave power plant, the new addition in glass and steel contrasts with the original brick building of the industrial power plant. It converts to a contemporary art gallery and a theatre. As of March 2012, the building is still being redesigned.

Figure 4.12 - Queen's Quay terminal (1983)

Figure 4.13 - Interior

Figure 4.14 (above) - enWave power plant (before intervention)

Figure 4.15 (right) - enWave power plant (1987)

This process of retaining the urban memory from converting industrial relics into spaces for contemporary life is still an ongoing process as the city continues to develop and as the society continues to be interested in the past. The Toronto Canada Malting Silos (Figure 4.16) is the perfect example of this dilemma. This industrial relic has been partially demolished (2010) and currently only the silos remain for its symbolic value. There have been ongoing discussions on how to preserve the silos, whether to just leave it as a ruin in the waterfront or to re-adapt it. There has been a proposal by KMPB Architects (Figure 4.17 & 4.18) for turning the silo complex into "The world's first music city" which includes a Canada Malting Museum, a music museum, a music education centre, retail stores, etc.... (Metronome) Another proposal by WEST 8 +DTAH (Figure 4.19) is to turn the existing silos into a water filtration plant – a living machine, to pump water in from the inner harbour and filter it into the silos. In addition, there will be city activities such as an interpretive centre, pavilions and a nightclub on the upper floors of the silos complex. Although neither of the proposals mentioned was materialized, the city is currently slowly improving the site. The work in progress to improve the east end of the site is by WEST 8 +DTAH. The project is to repair and build a water edge promenade in between the silos and the water.

Figure 4.16 - Canada Malting Silo (Today)

Figure 4.19 - WEST 8 +DTAH proposal

Figure 4.17 - KPMB proposal Music City Canada

Figure 4.18 - KPMB proposal Music City Canada

Interestingly, the most recent re-working of Evergreen Brickworks exposed the passage of time – its age value – more than the other three projects. There seems to be a gradient in showing ‘the loss at the centre’, from Evergreen Brickworks, to Distillery District then to enWave power plant and finally to the first conversion of Queen’s Quay terminal. If we think of it metaphorically as a palimpsest, Evergreen Brickworks have minimum scraping off of the previous layer, and the new layer not only makes the building useful again but also enhances the previous layers. By contrast, the first conversion of an industrial building in Toronto -- the Queen’s Quay terminal -- has been restored completely anew with paint and repairs in both the interior and the exterior of the existing building where the signs of ‘age’ or previous layers have been scrapped off. This phenomenon can be seen in other rehabilitated industrial sites such as the Wychwood Barns (2008) (Figure 4.20) and Roundhouse (2010) (Figure 4.21). Is Alois Riegl’s prophecy of ‘age value’ (‘loss at the centre’) in the modern cult of monument and Arrhenius Thordis’s prophecy of ‘fragility’ in monuments relevant to a modern city such as Toronto? If yes, how may the increased interest in the preservation

Figure 4.20 - Wychwood Barns (2008)

Figure 4.21 - Roundhouse (2010)

of our past and the memory (part of the urban memory) represented in buildings be dealt with as the modern city continues to grow and develop?

Figure 4.22 (above) - Toronto's Rehabilitated Industrial Sites: From complete restoration to the approach of considering the paradoxical relationship

Figure 4.23 (opposite) - A map of Toronto's Rehabilitated Industrial Sites (highlighted in red) overlaid on top of Figure 4.7

4.3 Opportunity and Potential- Port Lands Redevelopment

The question now expands to the industrial relics at the Port Lands, as the City of Toronto is currently redeveloping this area along with the waterfront. The man-made Port Lands were once the largest wetland on the Great Lakes, but in the beginning of 1880s, the area was gradually filled in to make more land for industry and shipping. Since then, most of the Port Lands have been utilized for industrial purposes and what we see today is the industrial evolution up to 1971. (Figure 4.24) Currently, with the decline of industry in the city, the majority of the area lacks any use and the heavy industry from the past makes development of the brown field site much slower and more difficult.

“The massive underutilized industrial area with extensive waterfront access conveniently located close to downtown is an unprecedented future development opportunity.” (Waterfrontoronto, 2012)

The Port Lands redevelopment takes on the unprecedented opportunity for waterfront revitalization and has been an ongoing process resulting in a recent film studio (2005), and a new recreation area known as Cherry beach which includes a sports field (2008). There are also two major redevelopment projects (Figure 4.25 & 4.26) currently in progress: the Lower Don Lands with mixed-use communities (ongoing, competition held in 2007) (highlighted as 1 in Figure 4.25) and Lake Ontario Park (ongoing, completion expected 2017) (highlighted as 2 in Figure 4.25). The vision is to revitalize the once heavy industrial sites (Figure 4.27 & 4.28) to new natural and green communities (Figure 4.29 to 4.31) in order to reconnect the public back to the water and also reconnect the Port Lands back with the city.

Figure 4.24 (left) -
Toronto's evolving shoreline

Figure 4.25 (opposite, top) -
Port Lands current redevelopment plan

Figure 4.26 (opposite, bottom) -
Port Lands current redevelopment plan

Figure 4.27 (left) - Industrial presence of Port Lands
 Figure 4.28 (below) - Port Lands Today

WATERFRONToronto's vision

(From top to bottom)

Figure 4.29 -
Phasing of Port Lands Revitalization

Figure 4.30 -
Green Vision of Port Lands Revitalization

Figure 4.31 -
Green Vision of Port Lands Revitalization

Figure 4.32 - Aerial view of R.L Hearn Generating Station

Figure 4.33 - Under construction

Figure 4.34- Under construction

4.4

Introduction of R.L Hearn Generating Station

In between the two Port Lands redevelopment areas, there is a strip of land that is unplanned. (Figure 4.36) Along this strip, there stands a listed heritage building, an industrial ruin which is a power station according to Waterfront Toronto's analysis. This power station is named Richard L. Hearn Generating Station (known commonly as Hearn Station) and has been abandoned since 1983. With its sheer size comparable to six of Toronto's city blocks (90m x 250m, 22,500m²) and a chimney at a height of 214.9m, it is a building that cannot be ignored. It has remarkable potential as a hub or as an urban catalyst as the Port Lands continue to redevelop.

The Hearn Station was constructed in 1952 of structural steel frame and brick infill construction in late Art Deco style (Figure 4.33 & 4.34), and was later expanded in 1959, doubling its size by adding four more power generators. It reached its full generating capacity in 1961 with its former 8 chimney stacks and 8 generators. However, because of it being the single greatest polluter in the Toronto area in the early 1970s, the eight original stacks were replaced with a single 760 foot stack (Figure 4.35 & 4.37).

Figure 4.35 (above) - Timeline of R.L Hearn Generating Station

Figure 4.36 (below) - Strip of land that is unplanned, where R.L Hearn Generating Station is located. The highlighted red are industrial relics in the Port Lands

*Figure 4.37 -
Photo of R.L Hearn Generating Station at its
peak power capacity in 1961 with the eight
chimneys later replaced to one in 1971 due
to pollution.*

Lake Ontario

1961

Figure 4.38 (top) - Section of R.L Hearn Generating Station

Figure 4.39 (above) - Spatial organization of the R.L Hearn Generating Station

The Hearn Station is basically divided into three sections: turbine room, boiler room and control room, (Figure 4.38 & 4.39) with the boiler room having the largest volume measuring 58m wide by 230m long by 42m high. The spatial drama within this building is even greater since most of the original machinery has been removed. To get a sense of the immense size of this industrial building, Figures 4.42 compares the power station with Toronto's main public civic, and cultural buildings.

Another interesting aspect of the building is the notable difference between the construction of the original 1952 side and the 1960 expansion in terms of its structural grid dimension to accommodate the larger machinery (Figure 4.39).

Figure 4.40 - A size comparison study by William Macivor's *Generating Potentials: The Use of Collage Techniques in an Adaptive Reuse of the R.L. Hearn Generating Station, Toronto*

Figure 4.41 - The original R.L. Hearn Generating Station's elevation retrieved from Toronto's Archive

Figure 4.42 - Size comparison with other Toronto buildings

Figure 4.43 - Height comparison of the smokestack with other Toronto buildings

- Pedestrian Bridge
- Vehicular Bridge
- Major Roads
- Public Promenade
- Future Promenade
- Dedicated Parkland
- Existing Park
- Floodplain and River Infrastructure
- Sediment Basin
- Greenway
- Green Corridor
- Future phase bridge
Note: Artist's Vision

Figure 4.44 - Port Lands redevelopment plan- diagram

- LRT Transit
- BRT replaced by LRT in future phases
- New stop in transit study
- Existing TTC service
- Future phase bridge
Note: Artist's Vision

Figure 4.45 - Port Lands redevelopment plan- Major Transit

- Green Corridor
- Activation connector
- Future phase bridge
Note: Artist's Vision

Figure 4.46 - Port Lands redevelopment plan- Pedestrian Green Corridors and Potential Activation Areas

Figure 4.47 - Toronto's evolving shoreline and the vision of Port Lands from industrial to green in 2025

Soon, the abandoned Hearn station will be sitting in the heart of the Port Lands redevelopment with its north end related to urban life and the south end related to the park. (Figure 4.44) The building provides remarkable potential to be transformed to fit within the Port Lands redevelopment plan of greenery, parks, cultural, educational, and other facilities. Ultimately, it can be imagined as a propelling monument that can function not only in use but most importantly also in time.

However, there was a demolition permit issued for Hearn Station in 2010 as it has been abandoned for almost 30 years and its value has been debatable. Since then, increased attention has been raised to ask for alternatives: articles were written, blogs were set up from the public, forums were formed to discuss possible alternatives, and there was an increase in urban explorers who

came to the site before its possible demolition. The existing building has become what Arrhenius described as a 'fragile monument' and further affirms Riegl's discussion of the 'unintentional monument' as it continues to have the narrative of age and loss.

This thesis sees the Hearn as alive with potential as opposed to just something of the past. Can the Hearn Station be re-imagined just like the other rehabilitated Toronto industrial sites presented above (refer to section 4.2)? Are we able to activate its potential or repressed meaning to develop a new dialogue for the Port Lands and the contemporary city of Toronto, as the sign of its industrial past continues to diminish? Architecturally, the question to be asked is what are the embedded latent architectural qualities within the abandoned power station which it once had and which it now possesses over time? How can it be revealed and taken advantage of through conversions while adding present-day value of use and enjoyment? The following section will present two previous proposals by Behnisch Architects, one from 2007 and the other from 2010, illustrating different approaches to the Hearn Station and a suggestion of the potential this building may have for the future of the Port Lands redevelopment.

4.5 R.L Hearn Generating Station- Previous Proposal from 2007

In 2007, Behnisch Architects prepared a proposal to transform this complex from one that used to pollute its surroundings, to one that will sustain them. The main vision was to make Hearn a hub that will sustain the growth of Lake Ontario Park and the development of the Port Lands. (Figure 4.53) As the Port Lands continue to get re-developed with a network of trails and green spaces at close proximity, the Hearn's immense size and unique site will provide a remarkable potential for its surroundings. Behnisch proposed a variety of program opportunities ranging from Arts, Culture, Education, and Sports along Lake Ontario, and potentially a campus for Ryerson University. As for the architectural approach to the building, the architect uses "the strategy of an archeologist to decipher the structural and spatial arrangements of the Hearn to better understand the process of how the Hearn once functioned revealed inherent spatial qualities which were used a building organizing strategy" (Architekten, 2007).

Figure 4.48 - Aerial view
Figure 4.49 - Aerial view
Figure 4.50 - Elevation
Figure 4.51 - Plan
Figure 4.52 - Section
Figure 4.53 - Rendering of the proposal

4.5.1

R.L Hearn Generating Station- Previous Proposal from 2010

Another attempt by Behnisch Architects was to put three ice rinks inside the Hearn Station (Figure 4.54) after the initial proposal for using it for Ryerson University was rendered obsolete by the university's acquisition of Maple Leaf Gardens.

"They don't have to take all that space," added Mr. Behnisch yesterday, noting the Hearn is three times the size of the old London power plant that is now the Tate Modern gallery. "We have space for three hockey rinks. You could put tennis courts, half [indoor] soccer fields. You could have a conference centre and events space, rock concerts, Oktoberfests. It has great potential." (Kuitenbrouwer, 2010)

This proposal mainly utilizes the immense volume in the existing building and relates its program-use with the proposed Lake Ontario Park.

Figure 4.54 -Rendering of the hockey rink proposal inside the R.L Hearn Generating Station's Turbine Room

The Propelling Monument
Latent Architecture Within The Existing Fabric
Richard Yiu Cheong Li

Chapter 5 Latent Architecture in Industrial Ruins

5.1

The Character of Industrial Ruins- Space and Age

What is interesting about these industrial ruins is not only its cultural and heritage values but the idea of converting them from buildings for machines to buildings for human use. Since these industrial ruins were formerly built as a mere representation of the necessary spaces for the industrial process, they are spatially interesting with many peculiar spaces, unusual large structures, hollowness, and are massive in volume and monumental as post-industrial latent spaces. This thesis is also interested in the narrative of age within these industrial ruins; for instance the patina on its structure and surfaces, or the ruin-like experience of being in an atmosphere that is exposed to exterior weather. This narrative of age gives the space a monumental quality that is related to time in addition to the spatial quality. These are considered as great potentials of conversions in old buildings which are impossible to achieve in a new building today.

The case studies shown above present the 'what could be' to the 'what have been' as the possibilities of these industrial ruins when converted and integrated back with the contemporary city. Each one of them is unique in design as a response to the existing building. There are case studies of buildings that have been restored completely which focus more on the spatial quality of the existing and there are others that also consider the narrative of age and use it as potential material for the projects.

First, this section will present a series of images to visually expand on the qualities and character of these industrial ruins that have been embedded once built and gained over time as potential for industrial conversions. These images are mainly by Bryan Allen, a graduate student from the University of California at Berkeley, and are part of his research for his master's thesis entitled "Post-Industrial Latent Space". (Allen, 2012) He has extensively travelled to explore and capture these latent industrial spaces (Figure 5.1 & 5.2).

Second, before presenting a selection of case studies on industrial ruins converted for contemporary use, there will be a comparison between the two schemes for the Tate modern by Herzog & de Meuron in 2000 and the competition proposal by the finalist David Chipperfield in 1994. Although Chipperfield did not win the competition, his scheme is a relevant example for this thesis in how he positioned the importance of the historic layers of the power station. In brief, it proposes a building within a building scheme that considers the skin of the former building as an umbrella that does not restore the existing completely but retains its character as an industrial ruin. Most importantly, it provides a perspective as to how Tate Modern could have been when the thinking about the old is different.

Following that will be a section presenting a selection of case studies on industrial ruins that have applied the paradoxical relationship between the memory value of age and present-day value to their conversions. This will be more relevant to the questions this thesis has raised .

Industrial Ruins

What could be...

Volume, Spatial, Structure, Atmosphere, Material, Patina

Figure 5.1 - Images showing the character of industrial ruins

The Propelling Monument
 Latent Architecture Within The Existing Fabric
 Richard Yiu Cheong Li

Post-Industrial Latent Space- What have been...

Volume, Spatial, Structure, Atmosphere, Material, Patina

Figure 5.2 - Images of post-industrial latent space

5.2

Re- Imagine Tate Modern

The Tate modern (2000) by Herzog & de Meuron is a well-known precedent for rehabilitating a former Power Station into a modern art gallery in the heart of London (Figure 5.3 & 5.4). However, what are less publicly known are the competition proposals prepared in 1994. The David Chipperfield proposal (one of the five finalists), maintained as much of the existing building's character as possible beyond just the volume and the skin, in contrast to Herzog & de Meuron's scheme which preserved just the latter. This initial concept was achieved by recognizing the difference between the building volume (300,000 m²) and the competition brief of program area (100,000m²). As a result, he considered the building as an umbrella where it "naturally modifi[ed] the inside climate of the building but not [control] it" (Tate), and proposed a **building within a building** scheme (Figure 5.5 to Figure 5.8).

Chipperfield argues,

"To insulate the skin against heat loss would not only be enormously costly, but would also destroy the existing industrial character of the space... The result would be the worst of all worlds, resulting in what to all intents would be an entirely new building but in the form of an old one" (Tate).

So, with the building within a building scheme, Chipperfield maintained the Power Station's existing character and leave the existing structures independent of the new construction. Can we claim this as an approach to balance or respond to both Ruskin and Viollet-le-Duc?

Figure 5.3 (left) - Herzog & de Meuron Tate Modern in London (2000)

Figure 5.4 (right) - Interior

Figure 5.5 (top left) - Interior, building within a building scheme

Figure 5.6 (top right) - Interior, building within a building scheme

Figure 5.7 (below) - Initial design concept, David Chipperfield's proposal for Bankside Power Station

Figure 5.8 (bottom) - Section, David Chipperfield's proposal for Bankside Power Station

In addition to harnessing the power of the existing character, Chipperfield claimed that the building within a building scheme allows a “rich interplay between public and private, interior and exterior, conditioned space and unconditioned space” (Tate). Secondly, it goes along with the idea of it being a public space: the space in between the existing skin and the new inserted volume creates these public spaces. The solid becomes the body of the museum and the void is the public space, where there can be terraces above the solid insertion or squares underneath. Chipperfield imagines this in between space as similar to railway stations or food markets which have an interesting atmosphere of light, weather condition and openness (Figure 5.11).

Another note Chipperfield mentioned in his design proposal was that even though the existing character of the building is important, the building needs to make at least some symbolic changes that signify its new role in the present time. He warned that “the danger is that going too far toward maintaining the industrial character of the building as it is, would be to reduce it to a stylistic mannerism, trivialising it as a perverse form of aesthetic decoration” (Tate). Chipperfield then uses the Persian carpet as a metaphor for his scheme where part of the building uses modern material or construction method (Viollet-le-Duc’s approach) while the rest of it would be left exactly as it is (Ruskin).

Figure 5.9 (above) -
The relationship between mass, frame and skin is fundamental in David Chipperfield’s study of the Bankside Power Station

Figure 5.10 (above) -
Turbine Hall in Herzog & de Meuron’s Tate Modern
Figure 5.11 (opposite) -
Turbine Hall in David Chipperfield’s Tate Modern

5.2.1

Latent Architecture in Industrial Ruins: Case Studies

Industrial ruins can be seen as alive with latent architectural potential, post-industrial latent space, as opposed to something of the past. Through careful and sensitive attention to the layers of the old, contemporary interventions can enhance the power that the ruin now possesses and also create something that was unintended or not explicit at the moment it was constructed. When designing within the industrial ruins of the past, it is important to note Rodolfo Machado's discussion about remodeling again. To reiterate, remodeling is "a process of providing a balance between the past and the future" where "the past takes on a greater significance because it, itself is the material to be altered and reshaped" (Machado, 1976, p. 27). From this point of view, the layer of the old in industrial ruins expresses architecture with the dimension of time and the cultural aspect of urban continuity, which is every bit as critical as the layers of the new interventions.

The case studies that are selected in this section continue to reinforce this position that is being established throughout this thesis. Thus, the common theme among these case studies focuses upon the method of contrast in a multi-layered model (as discussed in section 3.1), which reveals the layers of the old fabric while making the new interventions visible as a counterpoint to each other in their design. The case studies show how the method of contrast can vary from the use of construction materials of our time such as light-weight construction and glass, in the selection of distinct colour palette and form, to the attention of detail with the existing layers.

Figure 5.12 - Aerial view of Zeche Zollverein

Figure 5.13 - Area of focus: Ruhr Museum (2006) and Essen Design Centre (1997)

Zeche Zollverein

Essen, Germany

Foster + Partners and OMA

1997 and 2006

Both of these projects are located in the former coal mine, Zeche Zollverein in Essen, constructed between 1928 and 1932 and abandoned in the mid 1980s. The abandoned industrial area of 100 hectares was declared as a World Heritage Site by UNESCO in 2001. A master plan has been developed by OMA with the goal of finding a contemporary use for the former industrial site so that it becomes a symbol of the new Ruhr area. (OMA, ZOLLVEREIN KOHLENWÄSCHE, GERMANY, ESSEN, 2006- Conversion of a coal refinery into a museum and visitors centre, 2013) Since the area is declared as a World Heritage Site, similar to all the other buildings the new program within both of the existing buildings will be added without removing the existing machines that dominate the former industrial building. Although most of the existing fabric (facade, structure, machinery) had to be preserved, there are similarities and differences between Foster & Partners and OMA in their creative design.

Figure 5.14 (left) - Diagram of interventions

Figure 5.15 (middle) - The former powerhouse

Figure 5.16 (right) - Essen Design Centre

Essen Design Centre

Essen, Germany

Foster + Partners

1997

“...we were impressed by the industrial qualities of the old building – we didn’t want to tidy it up or smooth it over. We knew that the success of the project would depend on bringing the old and the new together in counterpoint.” (Jenkins, 2008)

The overall philosophy of the Zollverein project was the emphasis on retaining the physical traces of the industrial building's history and character while adapting the building for its new use (providing 4,000 m² of exhibition space). The interventions are largely insertions allowing the original to exist relatively untouched. For example, four of the five boilers (a sixth had been planned but never installed) were hollowed out within the powerhouse and two new floors of exhibition spaces were inserted with subtle but contrasting material and texture for the walls and lighting fixtures. This is called “boxes within boxes” (Norman), and one of the boilers was left as an industrial relic. This is done to preserve the industrial character of the boiler and enhance the spatial drama of the 22m-high central ‘nave’ created by these two banks of boilers (Figure 5.20). Walking around these areas is like “experiencing Piranesian contrasts of light and dark, view into mysterious industrial spaces” (Jenkins, 2008).

Another important element in the intervention is the deliberate contrast between old and new. For instance, the absence of the sixth boiler is compensated by inserting a distinguishable, exposed concrete box housing vertical circulation and new program while restoring the balance of the incomplete symmetry from the missing boiler (Figure 5.21). Also, the execution of the newly inserted staircase and walkways to form bridges across the galleries is extremely lightweight. It uses glazed balustrades to maximize transparency and the staircase and walkways are suspended from the roof of the powerhouse to juxtapose the lightness in construction with the heaviness of the original fabric (Figure 5.22). Although Foster’s re-work added new function to the building, only parts of the building are air conditioned; the main space of the refurbished industrial area is left naturally ventilated to retain the industrial atmosphere of the building.

Figure 5.17 - Model of the existing condition

Figure 5.18 - Model of interventions

Figure 5.19 - Model of interventions

Figure 5.20 -
22m- high central 'nave'

Figure 5.21 (above) -
The insert of the
'sixth boiler' as an
independent concrete
box

Figure 5.22 -
lightness in construction
walkways, stairs and
bridges

Figure 5.23 (right) -
Plans

Figure 5.24 (left) - Damage to existing boiler
 Figure 5.25 (middle) - Exterior of existing boiler
 Figure 5.26 (right) - Hollowed out boiler

Figure 5.27 - Plan and Section

Figure 5.28 - Contrasting interventions in hollowed out boilers to allow the original to exist relatively untouched and be legible

Ruhr Museum

Essen, Germany

OMA

2006

Figure 5.29 (top) - Diagram of interventions

Figure 5.30 (above) - Former coal refinery transformed into museum and visitors centre

Similar to the Essen Design Centre by Foster & Partners, in Ruhr Museum -- the conversion of a coal refinery into a museum and visitors centre, roughly 80 per cent of the machinery has been left in place for reasons of conservation. The former coal-washing plant, which is more a machine than a building, has a labyrinth-like assembly of concrete bunkers and transport machinery designed for sorting mine waste from coal. Although these spaces are unlikely venues for a museum, in OMA's design the partitioning of the museum space has remained largely unchanged. There are additions of mezzanine floors, stairways, and doorways for circulation and to open views to unseen industrial spatial drama. These additions are very subtle and respectful to the layers of the old that are in close proximity. For instance, the railing near the machinery uses a similar colour palette as it blends in with the machinery. The same goes for the flooring and also the use of glass for exhibits to maximize transparency against the patina of stain and rust of the original fabric. Another respectful strategy to the layers of the old is the use of refurbished machinery to frame spaces and exhibitions: the old and new work in harmony (Figure 5.32).

There are subtle interventions but there are also more dramatic, contrasting interventions that help to retain the original industrial character. This is apparent in the main vertical circulation to the museum outside of the building -- a 60m long contrasting orange-coloured escalator (representing the colour of the burning coal) that takes visitors to the height of 24m where the main museum entrance is. This simulates how the coal once moved from the top to the bottom (Figure 5.33 & 5.34). The same contrasting orange colour is also present at the main stairway which is hidden inside one of the bunkers within the building and experienced as a separate entity (Figure 5.35). Other contrasting interventions are the white and charcoal panels, and walls and furniture within the building which juxtapose the lightness and smoothness against the heaviness and roughness of the original industrial fabric.

Figure 5.31 - Model of the existing structures, planes and walls, and machinery

Figure 5.32 - Views before and after interventions

24m Entrance

17m The Present

12m Memory

6m History

Figure 5.33 (top) - Plans and location of contrasting orange coloured escalator and stairway

Figure 5.34 (bottom) - Section

Figure 5.35 - The more dramatic, contrasting interventions uses the colour orange that adds a reminiscence of a river of molten steel.

Figure 5.36 - Diagram of interventions

Figure 5.37 - Magna Science Adventure Centre

Magna Science Adventure Centre

Rotherham, England

Wilkinson Eyre

2001

“The generation of a dynamic dialogue between the existing structure and a series of new elements placed within it revitalizes original space through dynamic contrasts. The two may be different but it is their juxtaposition that provides vitality for both.”
(Brooker & Stone, 2004)

The former Templeborough steelworks was once the largest smelting plant in Europe which was built in 1917 and measured 350m long by 50m wide. The colossal length of the industrial space was organized to accommodate a linear production process. The intent of the design was to allow the natural beauty and awe-inspiring scale of the former industrial building to be read and experienced while adding new interventions (Figure 5.38 & 5.39). Therefore, inside the shed space the architect installed four pavilions to be read as independent of the existing fabric in terms of its form, texture, material and construction. For instance, the cigar-shaped air pavilion is a tensile structure that hangs from the original crane rail in the shed as if it was floating within the building (Figure 5.43). Another example is the water pavilion, where “it seems fragile and light in comparison to the massive shed and discarded structures and debris around it” (Brooker & Stone, 2004). In addition, these pavilions are also positioned to provide visitors a maximum drama as they manoeuvre around the industrial space.

Aside from the contrast in the visual aspect, the experience of the space inside these pavilions is also in stark contrast with the retained dirt, dust, and darkness of the former industrial building space. This is achieved by the choice of materials (colour and texture) within the pavilions and also being the only spaces which are heated and air conditioned (mainly for practical reasons). While the main industrial space in the huge shed is left exposed to outside weather, its experienced as an in-between space, a sort of inside/ outside area.

Figure 5.38 - Exploded axo of existing and new interventions

Figure 5.39 - Views of the retained industrial character with the interventions

Figure 5.40 - Interventions as separate entites are highlighted in colour

Figure 5.41- Section of pavilion

Figure 5.42 - Section of Pavilion

Figure 5.43 - The insertion of the four pavilions are to be read as independent of the existing fabric in terms of form, texture, material and construction.

1965

1991

1991

1991

Figure 5.44 - Timeline of Mill City Museum: From abandoned to ruins

1874

Figure 5.45 (above) - Former (flour) mill factory on the river front of Minneapolis
Figure 5.46 (opposite) - Mill City Museum (2012)

1991

2000

2003

Mill City Museum

Minneapolis, Minnesota

MS&R

2003

The Mill City Museum was formerly a (flour) mill factory built in 1874 on the river front of Minneapolis, a well-known, important historical area. The eight-storey building was abandoned in 1965 and during 1991 the mill was nearly destroyed by a fire. Since then the building stood in ruins, was fragile and needed to be braced for stabilization. Along with the city's vision in redeveloping this abandoned industrial area, the architects of MS&R turned the ruin into something that could be used by the public while also honoring the history of the place. MS&R Architect's idea was to build within the burned out mill, not only from a preservation point of view in keeping the core historical building but also from a redevelopment point of view. The Mill City Museum was seen as a potential catalyst for redevelopment, functioning not just as a preserved isolated structure but becoming a part of the urban fabric.

“A creative adaptive reuse of an extant shell of a mill building, with contrasting insertion of contemporary materials, weaving the old and the new into a seamless whole. . . . It is museum as a verb.”

— AIA National Honor Awards Jury (MS&R, 2013)

The architectural challenge of building within the burned out mill was to establish a balance between restoring and maintaining the ruin. For instance, the intervention that was required for the jagged top of the ruined wall which was severely damaged after a fire (and which would not have survived without an intervention) was intended not to “look like an intervention [but] to look like the day after the wall collapsed” (MS&R, Mill City Museum, 2013). (Figure 5.47) The patinas on the stones of the facade of the ruin were maintained as is to reveal its history: the red stones were burned at a high temperature while the gray stones were not. (Figure 5.48) Similarly, for the interior of the building, part of the ceiling was kept charred from the fire. (Figure 5.49) There were no attempts to change or renew these layers, even as a modern functional building (MS&R, Mill City Museum, 2013). This is most evident in the ruined courtyard where the old was greatly respected and left intact. A lot of the other old layers such as the rail corridor, flour bin armature, silos, the mills, and the machinery were also retained as part of counterpoint with the new interventions.

The newly inserted interventions, again, were in contrast with the former industrial building, with the use of the latest glass facade system with a touch of history by having an 1898 section drawing of the mill imprinted within the glass. The purpose of the contrast of the old and the new in construction, materials and texture is to enhance one another (Figure 5.51). Today, this building has become one of the most popular public places in the city of Minneapolis where weddings, parties, or musical events take place (Figure 5.53 to 5.55). As Tom Fisher, Professor & Dean of the University of Minnesota College of Architecture, described, this project has led us to re-think about ruins: “ruins are not something to tear down but they are to inhabit and to re-imagine” (MS&R, Mill City Museum, 2013).

Figure 5.47 (top) - Intervention: jagged top

Figure 5.48 (middle) - Retained patina on the stones of the facade of the ruin

Figure 5.49 (bottom) - Retained charring on the ceiling

OLD (existing)

- 1 Museum (lower three floors)
- 2 Rail Corridor
- 3 Ruin Courtyard
- 4 Flour bin armature
- 5 Head House (potential museum expansion)
- 6 Silos (energy distribution/ chilled water storage)
- 7 Humboldt Mill (museum offices)
- 8 Utility Mill (residential lofts)

NEW (intervention)

- A Facade with 1898 section drawing of mill
- B Flour Tower (history theater in an elevator)
- C Express elevator to observation deck
- D Observation deck (ninth floor)
- E Offices (five floors above museum)

Figure 5.50 - Diagram of Old (existing) and New (intervention)

Figure 5.51 - Views of contrasting insertions of contemporary interventions weaving with the old into a seamless whole

Figure 5.52 - Section

Figure 5.53 (left) - The ruin courtyard as public space, wedding event
 Figure 5.54 (right) - The ruin courtyard as public space, music event

Figure 5.55 - Contrasting contemporary interventions set within the ruins as counterpoint between the old and new

Figure 5.56 (above) - Former buildings at the Navy Yard

Figure 5.57 (opposite, left) - Aerial view of the five buildings in the Navy Yard to be transformed

Figure 5.58 (opposite, right) - Urban Outfitters's Corporate Campus (2006)

Urban Outfitters Corporate Campus

Philadelphia, Pennsylvania

MS&R

2006

These former buildings at the Navy Yard served as a ship building and repair facility from 1868 to 1996 when they were decommissioned and abandoned. In 2004, Urban Outfitters had an idea to transform five (out of the 187) dilapidated historic buildings in Philadelphia's Navy Yard into their headquarters. Despite the falling brick, rusty steel, broken glass, and abandoned machinery, both the client and the architect saw great potential in these 19th century low-rise industrial buildings. (MS&R, urban outfitters corporate campus)

“The new design brings out the best of the old and highlights the historic features in ways that might have been less successful with a more traditional response. . . . The tension between old and new, tactile and smooth, light and dark, indoor and out, all of this while holding in character with the corporate image—genius.”

—AIA National Honor Awards Jury (MS&R, Urban Outfitters Corporate Campus, 2013)

The intent of the design was to create an environment that utilized the factory’s original characteristics of industrial materiality and open volume. Therefore, the design preserved the scars, which the Navy had inflicted throughout its history, rather than stripping the shipyard building clean. As explained by Jeffrey Scherer, the firm principle was “it’s all about revealing the palimpsest of history, rather than sanitizing it back to one moment in time” (McKnight & Howard, 2009) (Figure 5.61). For instance, the old paint that was on the steel structures and walls on the interior of the building was partially peeled off. By brushing it off and then sealing it, it showed the layers of paint that existed. These layers of paint were originally all popped out while the heat was turned off when the Navy Yard was abandoned. Also, ample materials were reused where possible such as the stairs. They were made from the wooden beams with new finishes that were of an industrial character.

Another challenge was in how to occupy the huge industrial space found in the centrepiece of the campus (Building 543) that was formerly used for bending plates for ships measuring 85 feet high, 85 feet wide and 400 feet long. (Figure 5.63 & 5.64) The approach was to maintain and emphasize the grandeur of the monumental interior throughout by keeping the volume open and leaving the steel structure and brick walls exposed. (MS&R, Urban Outfitters Corporate Campus) In this space, the concrete floors and the industrial equipment such as the cranes were also retained to frame new spaces and help bring the space to human scale.

Figure 5.59 - From former production to creative industry

Figure 5.60 - Site plan of the five re-used facilities

Figure 5.61 - Reveal patina of material as palimpsest of history to create tension with the new interventions

Figure 5.62 (below) - section

Figure 5.63 (bottom) - Before and after of the huge industrial space, measures 85 feet high, 85 feet wide and 400 feet long

Figure 5.64 - Adapting the grandeur of an industrial space from machinery to humans

Chapter 6

Design: The Propelling Monument

Figure 6.1 (on previous page) - Aerial view of R.L Hearn Station in the city of Toronto
 Figure 6.2 (top) - Initial schematic idea sketches
 Figure 6.3 (left) - Aerial view of the whole former Shipyard complex into a Park
 Figure 6.4 (middle) - Restoration of the former industrial building's form and steel structures as urban memory
 Figure 6.5 (right) - Franklin Court, ghost structure as memory of the former house
 Figure 6.6 (on next page) - Thesis design process of Hearn Station

6.1

Initial Schematic Ideas- A Reflection

Throughout the progression of this thesis, my design response and attitude towards the Hearn Station have changed continually. Figure 6.6 illustrates my initial schematic idea from being more destructive to the Hearn Station in comparison to the later design response where it slowly respects more and more of the existing building while also being more sensitive to layers of the old.

The intent of the initial schematic ideas was mainly how to change the Hearn Station completely by, for example, removing its existing brick façade, puncturing a large openings to have a porous link between the park and the redeveloped area on the north, or exposing all the steel structure and leaving it open as a park. Although these options change the Hearn Station completely, the form of the existing building or the structure still remains as a reminder or a memory of the urban fabric that once was a power station. These approaches were very similar to the concepts in Shipyard Park at ZhongShan, China by Konjian Yu and Wei (2002) (Figure 6.3 & 6.4), or the Franklin Court (Ghost Structure) at Philadelphia by Robert Venturi and Denise Scott Brown & Rauch (1976) (Figure 6.5) where only the memory of the existence of the old was important. The origin of these design approaches was to challenge the status quo of preservation or conservation that is typically the strategy for these types of industrial heritage ruins.

However, these early schematic ideas seem to be missing the essence of the Hearn Station as the attention was more towards establishing it as an urban memory or establishing cultural continuity (as discussed in Chapters 1 and 2) rather than crafting an architectural response to the existing building. The later schematic ideas reflect this weakness, thus the schemes are more respectful and more sensitive to the layers of the old within the building possessed over time (as heavily discussed in Chapter 3). This led to increased interest in the layers of the old, such as the patina on the materials, the spatial quality of the abandoned industrial space, the aging quality of the atmosphere and experience of the space, the remains from the existing, or the texture and colours of the structures and materials. All of these are considered as potential in designing the interventions. The success of the project would be dependent on how to bring the old and the new together in counterpoint to have a building that functions in the urban context and architecturally.

6.2 R.L Hearn Generating Station- Layers of the Old

It is critical to understand more about the Hearn Station. Although the Hearn Station has been abandoned for about 30 years (since 1983) and most of the industrial machinery was removed in 2007 due to a lease to a film studio, the layers of the old are still being enriched by time and its changes. Spatially, after the removal of the machinery (Figure 6.8 & 6.9), the clarity of the space and the experience of its colossal quality are ever more apparent. For instance, the concrete plinths measuring 12mx 20m x10m and the larger addition from 1960 of a 22mx 21mx 10m plinth are now completely pure in form and lined up in an undisturbed 240m-long hall. Also, the removal of the boilers that were once located in the boiler room has now created 8 monumental spaces with a height of 42m within the main volume of the building. As the Hearn Station continues to be abandoned, the patina of rust and stain continues to layer onto the jungle-like steel structure and the concrete plinths give the building a dimension of time and layers of history that are waiting for their potential to be revealed.

Figure 6.7 (top) -
Aerial view of Hearn station

Figure 6.8 (left) -
Removed industrial machinery
(turbine)

Figure 6.9 (right) -
Removed industrial machinery
(turbine)

R.L Hearn Generating Station- existing

skin

turbine room- concrete plinth

boiler room- void

steel structure

transmission tower
+ smokestack

The quality and potential of this building are hard to describe in words. The layers are so rich visually and so complex. Therefore I devote the following pages mainly to photos of the layers of the old. The purpose of them is to give the reader an experience of the context, the form and the volume of the building and the smokestack, its spatial quality, its material quality, the textures, the patina on the steel, brick, and concrete plinth, the atmosphere of the interior... etc.

Figure 6.10 - Diagram of Layers of the Old of Hearn Station

Figure 6.11 (below) - Elevation, a collage of images

Figure 6.12 (above) - View of the exterior facade of Hearn Station: its material, its texture, its patina, its damages...

skin

north

west

Figure 6.13 (top left) - Concrete plinth
 Figure 6.14 (top right) - Scale of the concrete plinth
 Figure 6.15 (middle) - Upper space of the concrete plinth
 Figure 6.16 (bottom) - Looking back to the boiler room from the turbine room
 Figure 6.17 (opposite) - Spatial quality of the 240m nave-like concrete plinth

turbine room-
concrete plinth

Figure 6.18 (left) - 42m void from the removal of the boiler

Figure 6.19 (right) - Scale of the void

Figure 6.20 (opposite) - 42m void from the removal of the boiler

boiler room-
void

Figure 6.21 (top) - The upper part of the steel structures
Figure 6.22 (above) - The ground floor view of the steel structures
Figure 6.23 (opposite) - The complexity and patina of the steel structures

steel structure

Figure 6.24 (top) - View of Hearn Station across from Shipping Channel

Figure 6.25 (above) - Looking up inside the smokestack

Figure 6.26 (opposite) - View of the smokestack from below

transmission tower + smokestack

The Propelling Monument
Latent Architecture Within The Existing Fabric
Richard Yiu Cheong Li

6.3 Thesis Parti

architectural approach

This thesis proposes the importance of the propelling monument as a counterweight that represents stability and continuity with a noble past that contributes towards a dynamic urban fabric. As a propelling monument, the function of time is critical and gives the building its monumental value. This value is not merely in its form but also in its material, texture, atmosphere, or sensation that has been possessed over time.

Therefore, this thesis does not look for a completely new building that would destroy the existing industrial character of the space, but instead proposes that interventions should be made to interact with the character and quality of the old. Thus, the design intent is to create a spatial tension by a multi-layered model (as discussed in section 3.2) in order to have a rich interplay between the old and the new, interior and exterior, conditioned and unconditioned space, lightness and heaviness in construction and material, smooth and rough textures, clean and patinated surfaces, and to have attention to the details of connecting new and old.

To achieve this, the interventions are to be inserted sensitively according to the existing character and quality (Figure 6.27). They are largely to be inserted in areas where possible, to allow the original to exist relatively untouched where it can enhance the layers of the old spatially and materially. Other interventions are added for practical reasons: stairs, elevator cores and newly glazed wall in order to keep some of the spaces conditioned.

Figure 6.27 - Thesis Parti

layers of the old + site consideration

Figure 6.28 (top) - Industrial character of the Hearn: layers of the old
Figure 6.29 (above) - Site consideration
Figure 6.30 - (below) - Section of site consideration

6.4 Thesis Design

architectural approach

Continuing from the thesis design parti, which proposes a multi-layered approach to restoration, the spaces highlighted in red on the drawings (Figure 6.31 & 6.32) and wood in the study model illustrate where the interventions are to be inserted in the design (Figure 6.33). The white and the clear (void) of the model are kept as is and are considered to be the most important space within the project. This is a space where the full industrial character and quality is kept intact as it is, including being an unconditioned space (a perception of its quality as a ruin), and including the patina of the brick, steel and concrete plinth as expressed, the volume of the spaces as unobstructed and having the atmosphere of an industrial space (light-dark space). In addition, this space is also intended to be as porous as possible so that it can become a public space (forum-like) and have a strong relationship with the adjacent upcoming Lake Ontario Park (Figure 6.32). It is imagined that part of the trails or the park activities would fill into this main public space of the building and even the birds or animals are welcome to activate this volume.

Figure 6.31 - Ground floor plan of Thesis design, it is to be porous as possible to connect with park activities

Figure 6.32 - Sectional relationship with the context

Figure 6.33 - Study model, retained (void) vs interventions (wood)

Figure 6.34 - Study model, retained (void) vs interventions (wood)

Figure 6.35 - Study model, retained (void) vs interventions (wood)

Thesis Design

components of the old and new layers

As mentioned earlier, the insertions are inserted where the original will exist relatively untouched. Thus, most of them are inserted in between the existing steel structure (slightly offset), for example, the seven main volumes are inserted where the boilers were once located (eight boilers in total). One of them is to be left as is, which will be shown in the next section: “original spatial drama preserved”. This void will not only give an experience of the colossal space (42m high void) but will also open up the main entrance with natural light from the main façade window and skylight (proposed above) as a warm welcome into the building (Figure 6.X). This space will then be the area where most light will filter through in contrast to the rest of the darker space in the building.

Other insertions such as bridges of light-weight steel construction (suspended from the new roof with maximum transparency with glass) are mainly for circulation purposes and are intended to read as an independent component. Also, the new addition of the glass box on top of the existing building is to expose the visitor to its surroundings (Port Lands and the city of Toronto) which provides a spatial contrast with the lower industrial atmospheric spaces (darker and more rustic). The last insertion is on the top of the smokestack. This is not only to symbolize its new role in the present time but also to imagine that this will act as a light beacon along with the other three smokestacks on the Port Lands to form an overall experience of its noble past. (Figure 6.36)

Other spaces such as the upper turbine room and the control rooms will require refurbishing the existing skin and roof with insulation and replacing the broken windows in order to function as programmable spaces.

Figure 6.36 (above) - The 3 smokestacks in Port Lands

Figure 6.37 (opposite) - Exploded axo to illustrate the layers of the old and new

layers of the new (insertion)

- inserting light beacon at the top of the smokestack
- inserting new glass box on top of the existing building, floats above the roof line
- inserting new roof to replace the removed existing roof
- inserting new volumes in the voids of the removed boilers
- inserting new bridges as circulation connectors
- inserting vertical circulation in the smokestack.

layers of the new (intervention)

- refurbishing existing skin and roof
- replacing existing window
- adding new floors
- removing parts of the existing for view and access

layers of the old (retain)

- concrete plinth
- steel structure
- smokestack
- skin
- patina
- spatial drama
- industrial atmosphere

original spatial drama preserved

The in-between space- **unconditioned** space vs. conditioned space

As mentioned above, this central space (formerly the boiler room) containing the largest industrial volume will be kept as is to maintain its original spatial drama. Not only will this be a dramatic space with a jungle of steel structure at a height of 42m and with the patina on the steel and the smell of rust (giving the sensation of a raw industrial space), this unconditioned space will also be experienced as an indoor/ outdoor space. It is imagined that the function of this space will be in flux as the exterior weather and temperature change. (Shown in Figure 6.116 & 6.118) For instance, in summer park activities can infiltrate into this space and in winter, outdoor events can occur while being protected from the harsh wind and snow. There can be numerous possibilities within this in-between space between the park and the programmed space within the building.

Figure 6.38 (above) - Boiler room- Retained industrial character of the unconditioned space

Figure 6.39 (right) - Section and Plan diagram of the unconditioned space

Figure 6.40 (above) - Diagram of unconditioned space

original spatial drama preserved

Other important spatial drama of the original is also preserved, such as the 240m long cathedral nave-like space in the turbine room that has been created after the removal of the turbines (Figure 6.41). Above this space, another 20m high and 240m long unobstructed space is to be thought of as a natural fit for a column-free museum space with skylights from above and views out to relate to the transmission towers that are remnants of the industrial past (Figure 6.42). Lastly, the intent of preserving one of the 42m high voids in the boiler room (Figure 6.43) created by the removal of seven out of eight boilers while the other has been inserted with new volumes to support the new programme.

Figure 6.41 (top) - Concrete plinth- 240m nave-like space (shown in Figure 6.120)

Figure 6.42 (middle) - Above the concrete plinth- free span of 240m horizontal space (Shown in Figure 6.122)

Figure 6.43 (bottom) - The Void- 42m vertical void from the removal of the boiler (Shown in Figure 6.116)

programmatic relationship

responding to the new context and space

After determining the architectural approach for the interventions to the Hearn Station, a variety of program opportunities becomes apparent. Although during the process of designing the interventions, the programmatic relationship with the context and volume was considered, because the building is so open and large, many different programs would be appropriate. Therefore, the priority was to determine the architecture, then its program.

The proposed organization of the program was a response to the context: the relationship with the park on the south and with the transmission towers, the remnants of the industrial past, and the urban life on the north (Figure 6.45). The south side of the ground floor is to be as porous as possible to relate to the park activities, and the north side is to have industrial related (dirty) programs such as artifact workshops and artifact handling or services. These would be exposed to the public so that they can relate to more of its industrial production while utilizing the sturdy concrete plinth and the existing 4m-thick foundation flooring. Then above that will be incubator spaces (clean) for either art, or small studios to continue the legacy of this industrial building. Then at the very top is the multi-purposed space contained within a glass box, spatially contrasting with the industrial space below that has a 360-degree panorama view of the surroundings (Port Lands and City of Toronto). In other words this top space is to reconnect with its context whereas the lower spaces are more inward focused.

Figure 6.44 - Diagram of program

Figure 6.45 - Section: Proposed programmatic relationship with the context

(From top to bottom)

Interventions of retaining existing column

Figure 6.47 - Centenary Hall by Petznika Pink

New floor were offset from the base of the existing column

Figure 6.48 - Corkin Gallery by Shim-Sutcliffe

Existing heavy timber columns were preserved, with new cruciform steel bases replacing the existing rubble stone foundations

Figure 6.49 - Technopole Angus by Ædifica

The existing steel columns were preserved with signs of patina

Detail of interventions- being sensitive of the old layer

steel column- inserting wood (warmth) to existing steel structures (cold) at ground floor

Figure 6.50 - Diagram of intervention's location

Figure 6.51 - Existing condition of the steel structures at ground floor

Figure 6.52 - Interventions of wood insert in existing steel structures at ground floor

Figure 6.53 - Detail view of interventions, to be read as respectful to the existing steel structure

Figure 6.54 - Sketches of steel column intervention

(From top to bottom)

**Insertion of contrasting material and colour
lightness vs heaviness**

*Figure 6.55 - Alvéole 14 by LIN - FINN GEIPEL + GIULIA
ANDI ARCHITECTS*

The roughness and patina of the concrete was retained

Figure 6.56 -

*The juxtaposition of the contrasting old fabric and new
insertions*

concrete plinth- contrast between smooth (coloured panel) and tactile (concrete)

Figure 6.57 - Diagram of intervention's location

Figure 6.58 - Existing condition of the concrete plinths
Patina of the stain and wear is to be retained

Figure 6.59 - Inserting smooth orange- coloured panel
(indicate industrial related program use) contrast with the rough and tactile concrete plinths

Figure 6.60 - Sketches of concrete plinth intervention

Interventions for openings

Figure 6.61- Castelvécchio by Carlo Scarpa

The use of contrasting planes to indicate the new entrances of the existing building

Figure 6.62 - Tate Modern by Herzog & de Meuron

The ground floor of Tate Modern has removed parts of the existing wall of the Bankside Power Station at ground floor in order to achieve the multiple openings into the building.

Figure 6.63 (opposite, top) - Existing condition of the exterior

Figure 6.64 (opposite, left) - Interventions of smooth green- coloured panel (indicate public related program use) contrast with the patina of the existing red brick for entrances frames

Figure 6.65 (opposite, right) - Interventions of smooth green- coloured panel (indicate public related program use) contrast with the patina of the existing red brick for windows frames

openings- entrance/ door/ window with contrasting colour frames against the patina brick

Figure 6.66 - Diagram of intervention's location

Figure 6.67 - Sketches of openings intervention

(From top to bottom)

Insertion of new contrasting roof on top of existing structure

*Figure 6.68 - St. Michael Cathedral Coventry by Basil Spence
The new roof is to be inserted above the ruins of the old cathedral*

Figure 6.69 - Entrance view

The new roof is clearly distinguishable by its colour and material

roof- gently inserting new roof above existing structure

Figure 6.70 - Diagram of intervention's location

Figure 6.71 - Existing condition of the roof

Figure 6.72 - Inserting new roof to replace the removal of the existing roof that was required for new interventions and insertion into the existing building

Figure 6.73 - Sketches of roof intervention

Figure 6.74 - Permeable pavers

The idea of the refurbished brick as pavers for the boiler plaza is to allow greenery to be grown inside the industrial space as to have a relationship with the Port Lands's Lake Ontario Park.

floor- refurbish removed existing brick facade as main plaza flooring

Figure 6.75 - Diagram of intervention's location

Figure 6.76 - Existing floor condition of the boiler room

Figure 6.77 - The refurbished brick from the removal of the brick facade is to be cut in half and used as flooring for the boiler plaza in the main space of the building

Figure 6.78 - Sketches of boiler plaza floor intervention

(From top to bottom)

Insertion of contrasting new volumes while keeping the space as an in-between space (unconditioned)

Figure 6.79 - Red Hall by Petznika Pink

Figure 6.80 - Red Hall by Petznika Pink

New programme space are inserted within the building, offset from the existing facade to create an inside/ outside area as circulation and event space

Figure 6.81 - Factory Life by Julie D'Aubioul

Movable temporary units and workshops are inserted within the existing building

The existing building envelope is left as is, (not an insulated envelope) to create an interspace between these two shells is a 'covered outdoor' space

insertion- inserting heat-treated wooden (warmth) louvers volume for programme in voids

Figure 6.82 - Diagram of intervention's location

Figure 6.83 - Existing condition of the void

Figure 6.84 - Insertion of wooden boxes within the void of the removed boiler

Figure 6.85 - Heat treated wooden louvers in order to withstand weathering to contrast against the existing steel structures which will continue to rust and stain

CONTRAST WOOD (WARMTH) WITH STEEL (COLD) TO CREATE A WARMER

Figure 6.86 - Sketches of insertions in the void of the boiler

(From top to bottom)

Inserting contrasting circulation

*Figure 6.87 - Essen Design Centre by Foster + Partners
(refer to pg. 186)*

*Figure 6.88 - Ruhr Museum by OMA
(refer to pg. 190)*

insertion- lightness construction, suspension bridges in between existing steel structures

Figure 6.89 - Diagram of intervention's location

Figure 6.90 - Existing condition of opening in the existing steel structures

Figure 6.91 - Inserting bridges suspended off from the new roof, it is to be contrasted with the existing fabric in terms of construction, colour, (in orange to represent industrial) texture and material

Figure 6.92 - Sketches of bridges intervention

[public]

- 1 community/ recreation center
- 2 gallery/ retail/ shop/ cafe
- 3 auditorium
- 4 incubator lobby
- 5 incubator workspace
- 6 boiler plaza
- 7 roof terrace

[industrial]

- 8 museum
- 9 artifact workshop
- 10 artifact handling/ service

[service]

- 11 admin
- 12 back of house

[multi-purpose]

- 13 elevator lobby
- 14 sky lobby
- 15 multi-purpose

[public]

- 1 community/ recreation center
- 2 gallery/ retail/ shop/ cafe
- 3 auditorium
- 4 incubator lobby
- 5 incubator workspace
- 6 boiler plaza
- 7 roof terrace

[industrial]

- 8 museum
- 9 artifact workshop
- 10 artifact handling/ service

[service]

- 11 admin
- 12 back of house

[multi-purpose]

- 13 elevator lobby
- 14 sky lobby
- 15 multi-purpose

Figure 6.95 (left) - Perspective section

Figure 6.96 (above) - Detail of the suspension system of the bridge

The process to the existing removal of old layers

Figure 6.97 (above) - South-west of Hearn station
Figure 6.98 (below) - Removal of the existing layers

Figure 6.99 (above) - North of Hearn Station

Figure 6.100 (below) - Removal of existing layers

The process contemporary interventions
exterior

Figure 6.101 - Interventions for exterior

The process contemporary interventions
turbine room + perimeter service rooms

Figure 6.102 - Interventions for conditioned space in Turbine room and the perimeter Service rooms

The process contemporary interventions

boiler room- the main space

Figure 6.103 - Insertions for new programme in Boiler room and Rooftop

The process contemporary interventions smokestack

Figure 6.104 - Insertions for smokestack

Figure 6.105 - Aerial of proposed Hearn Station

Site the existing

2013

Figure 6.106 - Existing site plan of Port Lands and Hearn Station

Site the future
2013 +

Figure 6.107 - Proposed site plan of Port Lands and Hearn Station

Figure 6.108 - Plans and Elevations

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Figure 6.109 - Plan and Section A

Figure 6.110 - Plan and Section B
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Figure 6.111 - Plan and Section C

Figure 6.112 - Plan and Section D
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Figure 6.113 - Plan and Section E

Overall: existing

Overall: proposal

Layer: interventions

Figure 6.114 -

A collage of elevation showing the different layers

Overall existing , Overall proposal, Layer: interventions and Layer:old

Layer: old

Figure 6.115 - Existing condition of the 42m void from the removal of boiler

Figure 6.116 (on next page) - Main Entrance of Hearn Station (refer to pg. 232 and 235 for more details)

*Figure 6.119 -
Existing condition of the 240m nave-like space in the concrete plinths from the
removal of the turbines*

*Figure 6.120 (on next page) -
Preservation of the original spatial drama, as entry into workshops, museum,
and artifact handling/ service (refer to pg. 235 for more details)*

240m nave-like turbine concrete plinths

Figure 6.121 -
Existing condition of the 240m clear span above the concrete plinth from the removal of the turbines

Figure 6.122 (on next page) -
Preservation of the original spatial drama, as the main gallery space of the museum. It is imagined to become an industrial museum and have a visual connection with the existing transmission towers on the north (refer to pg. 235 for more details)

**240m clear span
above concrete plinths**

*Figure 6.123 -
Existing condition of the existing jungle- like steel structures in the boiler room*

*Figure 6.124 (on next page) -
View out from the bridges constructed from light-weight steel construction (suspended from the new roof with maximum transparency with glass) into the upper portion of the retained existing jungle like steel structures atmosphere*

Existing Jungle- like steel structure

Figure 6.125 -
Toronto's rehabilitated
industrial sites and proposed
R.L Hearn Generating Station
as a network of Propelling
Monument within the urban
fabric

Conclusion

This thesis on the creation of a propelling monument has to do with the city's and architecture's interest in the existing fabric. Through writing the thesis, I have developed an increased interest in the city as a complex system that is a collective construct layered over time by people and buildings. With time, the city grows upon itself through destruction and construction for the need of contemporary life. This thesis proposes the creation of a propelling monument as an important urban artifact that acts as a fixed point in this process of change: it gives the city a characteristic of time (showing its history and its memory). This is to be considered as a key urbanistic strategy: to provide a cultural counterweight to the rapid growth of cities today. It is not intended to be a passive matter of merely resisting change but rather as an integral part of enriching active city development.

This urbanistic strategy is applied to the context of Toronto as the city is in rapid change due to the increase of density from urbanization (as opposed to the typical North America's urban sprawl model). I thus propose the abandoned R.L. Hearn Generating Station as a propelling monument in the process of the Port Land's redevelopment. The intent is to provide the area with a cultural counterweight and a characteristic of time. More importantly, it is to function together

Figure 6.126 -
A view of proposed R.L. Hearn Generating Station (Propelling Monument) from Lake Ontario Park

with other rehabilitated industrial sites in the city of Toronto to create a network of urban memory for a more diverse and culturally richer city. (Figure 6.123) Also, it is to raise awareness of other potential, forgotten or abandoned sites: how they can express their repressed meaning to the city.

The challenge then becomes an architectural question of how to intervene in the abandoned R.L. Hearn Generating Station in order that it becomes a propelling monument. The proposal of this thesis is not merely to question how to conserve the existing building (as a historic preservationist) and accommodate new functions; instead, it proposes to reveal something that was unintended or not explicit within, its latent architecture (as discussed in section 0.3).

This thesis illustrates how an abandoned, obsolete building, often dismissed as worthless with no practical function or aesthetic reason for retention, can be seen as alive with potential by attending to the architecture that emerges from within the existing building. It challenges us to re-think our relationship with the existing fabric, and to think that contemporary architecture can also emerge by adapting an old building. It criticizes the old notion that new architecture is only possible through new construction. As Otero-Pailos has advocated, architecture is to be perceived in a temporal state rather than a finished state once design and construction are complete. The intent of the design project is to illustrate this by re-interpreting the propelling monument (R.L. Hearn Generating Station) as in a temporal state. This is done by using the strategy of a multi-layered model that stratifies the new layers as a counterpoint to the old layers: it is not to be completely restored into a new building but only partially in order to create a latent architecture that acknowledges the temporal dimension of incompleteness.

*Figure 6.127 -
A view of proposed R.L Hearn Generating Station (Propelling Monument) from Lake
Ontario Park at night with the other two smokestacks and CN tower*

“This circumspect attitude toward the past makes contemporary architecture not just more open to what the future might bring, but more concerned with temporality, rather than the “imageability” of space and form.”

(Otero-Pailos, Restoration Redux, 2012, p. 42)

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