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Legacies of the Modern Movement: Intraurban Freeways and the Renewed Role of Heritage

par Brooks Cameron Piper

Faculté de l'aménagement

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Legacies of the Modern Movement: Intraurban Highways and the Renewed Role of Heritage

Présenté par
Brooks Cameron Piper

A été évalué par un jury composé des personnes suivantes

Juan Torres
Président-rapporteur

Claudine Déom
Directrice de recherche

Nik Luka
Membre du jury

Résumé :

Ce mémoire explore l'évolution récente de la définition du patrimoine ainsi que son application potentielle à l'infrastructure autoroutière dans les contextes urbains à travers le monde. La nouvelle approche au patrimoine ici proposée, contrairement à une interprétation conventionnelle du terme qui met l'accent sur les attributs esthétiques ou historiques, reconnaît une plus grande variété des valeurs que peut posséder une structure. Ceci inclut des valeurs sociales et écologiques existantes ou ajoutées grâce à la réhabilitation. Cette interprétation plus large du patrimoine témoigne de l'émergence d'un nouveau paradigme de la conservation du patrimoine qui trouve ses racines dans les textes de Graham Fairclough et dans la Recommandation adoptée par l'UNESCO en 2011 concernant le paysage urbain historique. Ces développements théoriques proposent une vue holistique du patrimoine où la totalité de l'environnement urbain hérité possède potentiellement des valeurs. Selon ces principes, le mot patrimoine ne s'applique pas exclusivement à ce qui est rare, ancien ou esthétique, mais peut l'être à ce qui est banal, récemment construit et mal-aimé. Ce nouveau paradigme permet de questionner l'infrastructure comme un patrimoine. Ce concept est mis à l'épreuve à travers trois études de cas d'autoroutes intraurbaines vieillissantes dans trois environnements urbains très denses: le centre de Séoul (Corée), Seattle (É.-U.), et São Paulo (Brésil). Examinant ces cas, ce mémoire réfléchit sur le rôle d'une nouvelle perspective patrimonialisant dans la gestion de l'infrastructure vieillissante en ville.

Mots clés : Patrimoine, Conservation, Valeurs, Réutilisation adaptative, Infrastructure, Paysage, Paysage historique urbain

Abstract:

This paper explores the changing definition of heritage in recent years and its potential application to aging automotive infrastructure in urban settings across the globe. The proposed new approach to heritage, unlike a conventional understanding of the term, which emphasizes aesthetic and historical attributes, acknowledges a wider range of values that a structure can possess. This range includes social and ecological values either existing or added through adaptation. This broader understanding of heritage reflects current discussions about a paradigm shift in heritage conservation, which is rooted principally in English scholar Graham Fairclough's writings and in UNESCO's Recommendation on the Historic Urban Landscape. These theoretical developments embrace a holistic view of heritage, with the totality of the inherited urban environment potentially exhibiting value. Based on these principles, the term “heritage” applies not only to that which is rare, old, or aesthetically pleasing, but also to that which is commonplace, recently built, and unappealing. This definition suggests that not only buildings and monuments but also infrastructure can constitute heritage, as it can be associated with a broad range of values. This concept is put to the test through three case studies of aging intraurban expressways in three dense urban environments: central Seoul (Korea), Seattle (USA), and São Paulo (Brazil). Through examining these cases, this thesis attempts to deduce the role of this new heritage perspective in dealing with aging automotive infrastructure in cities.

Keywords: Heritage, Conservation, Values, Adaptive Reuse, Infrastructure, Landscape, Historic Urban Landscape

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List of Abbreviations

DoCoMoMo: International Committee for Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement

FHA: Federal Highway Administration

HUL: Historic Urban Landscape

ICOMOS: International Council of Monuments and Sites

ISC20C: International Scientific Committee for the Twentieth Century

SPAB: Society for the Protection of Ancient Buildings

UNESCO: United Nations Educational, Scientific, and Cultural Organization

Remerciements

En octobre 2016, à une conférence à San Antonio, TX, j'ai assisté à la présentation de Claudine Déom qui traitait d'une ouverture de la définition officielle du patrimoine au Québec. Après la présentation, je lui ai posé une simple question : Est-ce que les belles stations de métro du style moderniste à Montréal possèdent un statut patrimonial? Celle-ci a déclenché les questionnements qui constituent la fondation de ce mémoire. Les infrastructures de transport pourraient-elles être considérées comme des objets patrimoniaux? Je savais à ce point qu'il existait une maîtrise en conservation du patrimoine à l'Université de Montréal, mais c'est surtout cette expérience qui a suscité mon intérêt de venir faire mes études au Canada et en français. Je remercie donc Claudine et l'Université de Montréal pour l'ouverture d'esprit qui a tant défini mon expérience. À travers ce mémoire. Claudine et ses collègues à la Faculté de l'Aménagement se sont assurés que je reçoive une éducation nuancée en conservation du patrimoine tout en m'exposant à de nouvelles disciplines telles que l'architecture de paysage et l'urbanisme. Je voudrais remercier également mon amie et éditrice Jessica Stilwell qui m'a permis de suivre un horaire rigoureux de rédaction et d'améliorer constamment ma prose grâce à ses commentaires et à son expertise. De plus, je remercie ma mère, toute ma famille, et mes amis à Montréal et ailleurs qui m'ont encouragé tout au long du processus. Finalement, je remercie la ville de Montréal, qui m'a tellement inspiré avec son dynamisme, sa créativité, et son ouverture.

Introduction

Roman amphitheatres host punk rock concerts, sixteenth-century barns become luxurious twenty-first-century rural retreats, and factories from the Industrial Revolution house lofts and studios for artists. Through the years, each of these spaces has acquired a new function and a new value through adaptations that have responded to changing needs and aspirations. Their initial use value as arenas for gladiators, housing for livestock, or centres of production having diminished with technological and economic advances, the structures came to be infused with aesthetic or historical value. These associations in turn drove efforts to reconfigure and adapt the structures to contemporary needs. Values are thus at the core of decisions to maintain, modify, transmit, or demolish structures. The Getty Conservation Institute's Thesaurus of Art and Architecture defines value as the "relative worth of a thing, idea, place, or person based on esteem and judged in terms of importance, usefulness, or desirability."[1],[2] This definition reflects how such relative worth can be tied both to usefulness and to importance and desirability—aspects that can stem from aesthetic or historical characteristics, as would be the case in the three examples above.

The arena, barn, and factory, associated with aesthetic and historical value, correspond to a conventional understanding of built heritage. These structures were selected for transmission to future generations and adapted for reuse in ways that

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[1] "Value," Getty Research Institute, Art and Architecture Thesaurus, accessed May 4, 2019. http://www.getty.edu/vow/AATFullDisplay?find=value&logic=AND&note=&english=N&prev_page=1&subjectid=300411675.

[2] Another definition of value is provided by the Getty Research Report: " Value can be defined simply as a set of positive characteristics or qualities perceived in cultural objects or sites by certain individuals or groups " (De la Torre and Mason 2002:4).

emphasized prized characteristics: great acoustics, sturdy exposed beams, or vast windows. However, the built environment of the more recent past challenges these patterns of adaptive reuse. Twentieth-century technologies allowed for mass-production of buildings often suited only for one specific use, like fast-food restaurants or suburban dwellings. As some of these buildings age out of their usefulness, they lack the aesthetic and historical associations that made earlier structures unique. The twentieth century heralded the construction of a vast network of urban roads and highways, reconfiguring the way cities looked and operated. Today, this infrastructure is aging and deteriorating. With declining use value and few aesthetic or historical associations, does this built legacy have other values that could be enhanced through adaptive reuse?

Value, or more frequently *values,* can also refer to a society's shared set of priorities and principles. As a reflection of these values, *heritage* exemplifies what a given culture finds worthy of transmission to future generations. Urban heritage in particular emerges from diverse and varied layers from different periods in a city's history, showing an evolution in values and evoking the passing of time. This evolution includes layers that are problematic or challenging. Most cities today include evidence of dramatic transformations from the twentieth century. Buildings and structures from this period represent a different set of values from those we hold today and from those of earlier eras. The twentieth-century built environment often does not reflect concerns with environmental efficiency and local distinctiveness that have become more dominant in recent urbanist discourse, favoring instead the circulation of the private automobile. Suburbs, shopping malls, strip malls, and elevated freeways all constitute parts of the

automobile's contribution to the urban landscape. As cities were reconfigured to accommodate the car, whole swathes of historic urban fabric were lost. Highway engineers razed neighborhoods while demographic shifts created ghost towns out of once-vibrant city corridors. Today, many cities wish to move away from their auto-centric organizational structure and focus on spaces for pedestrians, cyclists, and transit.

Intraurban freeways, like shopping centres and strip malls, are no longer synonymous with modernity and efficiency. They are the products of the values of another time. In Montreal, Seoul, and San Francisco, to name but a few examples, local authorities have demolished elevated freeways and constructed public parks and urban boulevards in their wake, electing to remove this aging layer of the urban environment in favour of a new one that better represents today's values while fitting within the constraints of municipal budgets.[3] [4] This infrastructure raises larger questions about the inherited built environment of the twentieth century and how it can be managed today. A period of mass production and dramatic change, the twentieth century and its values continue to define enormous sectors of today's cities. Managing these areas and adapting them to today's needs will require new strategies and mechanisms.

Widespread retrofit of the twentieth century's built legacy is absolutely critical if sustainable development objectives are to be reached in coming years and decades. One tool that is potentially useful in this process is UNESCO's Historic Urban Landscape

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[3] Alissa Walker, "Six Freeway Removals that Changed their Cities Forever," *Gizmodo,* 5 May 2016. https://gizmodo.com/6-freeway-removals-that-changed-their-cities-forever-1548314937.
[4] Andy Riga, "Say goodbye to elevated stretch of Bonaventure Expressway," *Montreal Gazette,* 7 July, 2016. https://montrealgazette.com/news/local-news/say-goodbye-to-elevated-stretch-of-bonaventure-expressway.

approach (HUL).[5] Through this approach *all* elements of a city's built environment—not only those deemed valuable or unique but also those considered mundane or even undesirable—are interpreted as heritage with the potential to exhibit value. Starting from this perspective, professionals from many different fields come together to envisage solutions that integrate the existing built environment with emerging strategies that work toward goals of social, ecological, and economic sustainability. HUL takes overlooked elements of cities and examines their potential to contribute to a greater quality of life. Diverging from dominant approaches in the field of heritage conservation, HUL favors a holistic viewpoint over a search for rarity and uniqueness. HUL interprets the city as a complex ecosystem composed of both tangible and intangible elements. Not limited to buildings, sites, or monuments, this approach sees each built element and cultural practice as contributing to the richness of the urban environment as a whole.[6]

Recognizing the potential value of existing urban fabric as a historic urban landscape would constitute a first step of implementing the HUL approach: choosing to operate not based on the assumption that certain components have heritage value and others do not, but rather from the pretext that *all* of a city's inherited elements can contain value and should be managed and adapted so as to serve current needs and uses and welcome those of the future. This interpretation extends practices of adaptive reuse to an ever-expanding body of heritage with a widening array of potential values. Recent years have illustrated a shift toward this mindset. Architects, planners, and decision-

[5] UN Educational, Scientific and Cultural Organization, "Recommendation on the Historic Urban Landscape," (Nov. 10, 2011), https://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf.
[6] UNESCO, Historic Urban Landscape.

makers are faced with the formidable challenge of adapting elements of the twentieth century's built legacy to serve new needs desires while contributing broadly to more sustainable patterns of development.

Implementing the HUL approach consists of exploiting and maximizing the potential of the existing urban environment to function in a contemporary context. While daunting, this objective offers a provocative endeavor in the field of heritage conservation and can be illustrated by specific projects currently underway. In light of the intersections between transportation infrastructure, changing and emerging values, and urban heritage, this thesis builds toward three cases of the transformation of automotive infrastructure as a potential new application of a heritage perspective. In each case, an elevated freeway once charged with aspirations of efficiency and modernity represents a structure in conflict with today's values: strips of road fragmenting neighborhoods and perpetuating lifestyles that contribute to climate change and air pollution. Transformed and reinterpreted, these controversial structures have the potential to take on new value as vectors rather than inhibitors of ways of urban living that are more ecologically and socially responsible.

In cities across the world, infrastructure assembled through widespread construction campaigns in the 1950s, 1960s, and 1970s is reaching the end of its functional life, just as planners and urbanites are increasingly turning from the private motor car to alternative modes of transportation. Incidents like the deadly highway collapses in Minneapolis in 2007 and Genoa in 2018 speak to the approaching structural obsolescence of this infrastructure worldwide, while the success of projects like New

York's High Line or Seoul's Seollo 7017 testify to today's appetite for an approach to infrastructure transformation that emphasizes quality of life, public space, walkability, human scale, and sustainability. As more transportation infrastructure becomes structurally obsolete due to aging materials and constant use, decision-makers must now determine how to reconstruct, reuse, or remove them. Given a broader definition of heritage, openness to new approaches to its conservation, and an expansion of the set of actors involved, what is the role of a heritage perspective in the transformation of intraurban automotive infrastructure? Inspired by the HUL approach and taking advantage of illustrative case studies, this thesis will attempt to answer this central research question through the proposal of a new conception of heritage, values, and their transmission to future generations.

Much context is needed before one can discuss automotive infrastructure as a new manifestation of built heritage. Departing from iconic monuments, the inclusion of more ordinary buildings, recent heritage, cultural landscapes and intangible heritage takes us to a point where infrastructure can join the heritage conversation. This paper begins by distilling the development of heritage conservation as a practice and discipline over the past two centuries into a concise and accessible narrative. The first chapter provides a portrait of the field of monument and material-based heritage conservation from Viollet-le-Duc's restoration of castles and cathedrals to the development of legislation and national and international mechanisms for heritage conservation in the twentieth century, including the UNESCO World Heritage List.

State and international actors effectively created an infrastructure for identifying and conserving heritage, and as the new millennium neared it began to show its cracks. One of these cracks was brought about by the development of discourse focusing on more recent heritage: modern buildings from the twentieth century. The challenges that this broader definition posed to heritage practitioners and the struggle to renew existing approaches to better manage this new category constitute the subject of the second chapter. Arriving at the third, critiques and shortcomings of dominant approaches are brought to the surface in the new millennium with the development of a new paradigm in heritage conservation, marked by vastly different conceptions of both heritage and the strategies for its management. This chapter establishes a wider and more open delineation of heritage to serve as the working definition for the remainder of the thesis.

Progressing from the general to the more specific, the fourth chapter selects the urban street as an illustrative example heritage under the new paradigm. Adopting an urbanist lens, this chapter traces the roots of the highway in the congestion and pitfalls of the urban street at the turn of the twentieth century and the utopian cities planned by Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier in response, all with an emphasis on high-speed transport corridors facilitating circulation and mobility. The chapter then shifts to a realization of these ideals: the construction of limited-access motorways in dense urban settings at the expense of existing urban fabric, illustrating dominant societal value systems of the time. Finally, this chapter examines changes in these values-systems over the last fifty years with reference to the millennial generation's

new set of priorities and aspirations concerning urban living, insofar as they centre around environmental and social-justice concerns.

The fifth and final chapter engages a definition of heritage that encompasses new values and a holistic understanding of the urban landscape; this chapter questions the potential value and recognition of automotive infrastructure as heritage within existing projects that both affirm and reject these notions. The three case studies—the complete transformation of a highway in Seoul (South Korea), the appropriation of a part-time public space in São Paulo (Brazil), and the demolition of a viaduct along the Seattle (USA) waterfront—show how an understanding of infrastructure as heritage has both succeeded and struggled to create meaningful spaces that contribute to cities' identity and quality of life.

Drawing from a base of scholarly and news publications focusing on architecture and urban design, these three case studies were selected as unique examples of transformations of aging automotive infrastructure. Each case study is analyzed with an emphasis on the role of a heritage perspective in the decision-making process as illustrated by the actors involved and the justifications for transformation. Actions taken in Seoul, Seattle and São Paulo represent changes in appearance and function, even demolition as a response to contemporary values. These cases emerged from sources with a global focus with further research then conducted with a heavier emphasis on local media platforms in each specific case. In contrast, projects like the Bentway, a space beneath Toronto’s Gardiner expressway redesigned as a park and ice rink alter the area

around the infrastructure while leaving the roadway intact and unchanged. [7] This type of project is more common, but did not have the same implications in heritage discourse, as the use value of the road did not enter into conflict with the projects' potential social values. This value conflict constitutes the core of this thesis's effort to distill how a heritage perspective can mitigate between different needs and perspectives to create meaningful and democratic solutions.

Chapter five provides a portrait and analysis of each case study focusing on the role of a heritage perspective in the decision-making process surrounding each one. The chapter concludes with a discussion that highlights points in common and of divergence between them. This discussion elucidates how HUL principles have played out in varied contexts with mixed results and hopefully prompts a more evolved and nuanced conception of automotive infrastructures as part of the urban landscape with potential to inaugurate new roles for the heritage lens.

[7] For a list of similar projects wherein the space *around* infrastructure is transformed, see this article: Megan Barber, "11 Ugly Urban Underpasses Now Functioning as Public Parks," Curbed, 13 Feb. 2018. Accessed 12 Jul. 2019. https://www.curbed.com/2017/1/9/14183876/freeway-underpass-park-public.

Chapter 1: A brief history of heritage conservation

In recent years, definitions and understandings of heritage have expanded to include structures, landscapes, and practices associated with a broad range of values: social, ecological, economic, and more. In contrast, for much of the last two centuries, heritage conservation practitioners, mostly experts in art history and archeology, have employed a much narrower definition of heritage that has focused on the aesthetic and historic values that they considered to be inherent in certain structures or monuments. The discourses surrounding cathedrals and palaces of Europe and the Greco-Roman ruins of the Mediterranean all focus on such monuments.

This chapter explores heritage conservation and the debate over how to manage and protect heritage through the retention of its aesthetic and historic value. At the heart of this debate, theorists Eugène Viollet-le-Duc in France and John Ruskin in England presented opposing arguments for how to care for monuments and which elements to prioritize. The turn of the century brought with it different conceptions of heritage and its management. Aloïs Riegl, an Austrian art historian proposed at the turn of the 20th century an approach recognizing a range of values that a monument could exhibit, with the notable addition of "use value."

[1] Around the same time, Italian theorist Gustavo Giovannoni questioned the notion of the isolated historic monument by focusing on urban heritage—the value of the historic urban environment as a whole. A middle section of the chapter offers a portrait of

[1] Aloïs Riegl, *Le Culte Moderne des Monuments,* translated by Mattieu Dumont & Arthur Lochmann, (Paris: Éditions Allia, 1903), 73-75.

legislation and resolutions developed at the governmental and international levels to standardize the identification and protection of heritage, building off of the work of the theorists in the first section, especially that of John Ruskin and the conservationists. These legal and political structures institutionalized an approach to heritage focusing on aesthetic and historical values which was called into question by several practitioners and scholars in the 1990s, who argued for the inclusion of other values and perspectives in the identification and management of heritage. A brief analysis of several key documents generated by such groups and individuals comprises the third and final section of this chapter.

1.1 Early Theories & Roots of the Heritage Conservation Movement

Viollet-le-Duc & Restoration

In the 1830s, the declining state of cathedrals and churches in France generated much concern amongst writers, architects, and members of the public. Victor Hugo published *Notre-Dame de Paris* in 1831 and brought the neglected church into the limelight, urging readers to pause and consider Gothic architecture and its meaning. At this time, religious buildings both large and small across France were reeling from damages inflicted during the French Revolution and the years of instability that followed it. Due in part to Hugo's advocacy and in part to structural collapses, such as that of one of the towers at the historically significant Abbey Church of Saint Denis, these churches were increasingly perceived as threatened by time and neglect (fig. 1).[2]

[2] Jukka Jokilehto, *A History of Architectural Conservation* (Oxford, UK: Elsevier Ltd., 1999), 137-139.

In 1838, young architect Eugène Viollet-le-Duc began to observe the meetings of the Council of Historic Buildings, and was granted the position of assistant inspector to the construction works at the royal archives. This role exposed him to many of France's aging churches and familiarized him with their structural problems and the methods available for resolving them.[3] In 1840, he was assigned to the restoration of the medieval Abby Church of Vézelay, an experience that would shape his approach to future restorations. Rather than trying simply to construct copies of medieval structures, he sought to put himself in the position of the original craftsmen and generate designs that he felt corresponded to their logic.[4] By 1846, his restorations had propelled him to the position of Chief of the Office of Historic Monuments in France. He continued to restore many historic buildings and churches over the course of his career, including the Abbey Church of Saint-Denis, Saint-Sernin of Toulouse, the Castle of Pierrefonds, and the fortified village of Carcassonne.

Between 1854 and 1868, he presented much of the knowledge he had accumulated in the multi-volume *Dictionnaire de l'Architecture française*, which offered a portrait of French architectural history with a particular focus on monuments.[5] In an 1866 volume, Viollet-le-Duc defined restoration thusly: "The word and the thing are modern. To restore a building is not to maintain it, to repair, or to rebuild it; it is to reinstate it in a complete state which may never have existed at any given time."[6] This

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[3] Jokilehto, *Architectural Conservation*, 140-141.
[4] Martin Bressani, "Viollet-le-Duc Eugène Emmanuel - (1814-1879)," *Encyclopædia Universalis*, accessed 5 April 2019. http://www.universalis-edu.com/encyclopedie/eugene-emmanuel-viollet-le-duc/
[5] Jokilehto, *Architectural Conservation*, 140-141.
[6] Translated from French. Philippe Bondon and Philippe Deshayes, *Viollet le Duc, Le dictionaire d'architecture: Relevés et observations,* (Liège, Belguim: Éditeur Pierre Mardaga, 1979), 230.

definition spread and took root across Europe, influencing restoration architects like Sir George Gilbert Scott in England, Friedrich von Schmidt in Austria, and Pietro Selvatico Estense in Italy, all known primarily for their work on Gothic religious architecture.

Viollet-le-Duc's career spanned an evolution in approaches to historical structures, and his innovations had a lasting influence on the practice. In the 1830s, the principles of minimal intervention following careful study of a structure and its history dominated French architects' approach to restoration. This type of intervention ensured that a structure would remain standing in a given state with minimal evidence of the restorer's work. This approach was thought to best reflect the aesthetic and historical moment of the building's creation. A historic structure's value was perceived as a product of its function as a relic from another time, a standing art historical time capsule.[7]

As historical structures deteriorated, the desire to leave original forms unaltered conflicted with the need to maintain architectural and aesthetic integrity. Viollet-le-Duc's restoration of the Cathedral of Notre-Dame-de-Paris illustrates this tension (fig. 2). The church, whose construction first began in 1163, had undergone many changes over the centuries and endured many structural failures by the mid-1800s. It was thus impractical either to leave the cathedral completely unaltered or to restore it to some imaginary "original" state, that is to say, to restore it to an appearance reflecting one particular point in its history. Through its layers of modifications, the cathedral bore witness to a variety of significant historical and artistic movements.

[7] Jokilehto, *Architectural Conservation*, 138.

After extensive research, Viollet-le-Duc and his partner Jean-Baptiste Lassus restored different elements of the church to what they perceived as the intended states from different eras, windows from one century, statues from another, drawing from available historical resources. The end result was a cathedral with features attesting to centuries of accumulated alterations and additions, each treated in a way that Lassus and Viollet-le-Duc hoped would contribute to a unified whole. While certain elements were reconstructed, contemporary architects considered Notre-Dame one of Viollet-le-Duc's more carefully researched and nuanced projects.[8] In some of his other restoration projects, however, Viollet-le-Duc took more liberties with his approach, reconstructing more components with less historical fabric available. In these instances, he has been accused of favoring just one of the architectural movements and historical periods reflected in a structure to the detriment of the others. The ramparts of Carcassonne, where he opted for a unified aesthetic instead of a conscious effort to represent successive building campaigns, illustrate this critique (fig. 3).[9]

John Ruskin & Conservation

Another significant approach to historic landmarks and monuments emerged out of a critique of Viollet-le-Duc's. An English art critic, writer, and painter named John Ruskin spearheaded this anti-restoration movement. His argument centred on the material authenticity of buildings or monuments, which he argued restoration architects

[8] Jokilehto, *Architectural Conservation*, 145-147.
[9] Lucy MacClintock, "Monumentality versus Suitability: Viollet-le-Duc's Saint Gimer at Carcassonne," *Journal of Architectural Historians* 40, no. 3 (October 1981): 218. DOI: 10.2307/989695.

compromised through their interventions. Ruskin proposed conservation as an alternative to restoration, in which the value of an artifact or structure emerged from its uniqueness as the direct result of the actions of the original artist in a specific historical context (fig. 4). This emphasis on original materials laid the foundation for an aesthetic and historical value that Ruskin argued fully developed only through long periods of aging. He expounded his philosophy of architectural conservation in his 1849 text *The Seven Lamps of Architecture*, in which he dissected the different attributes that, according to him, form architecture and imbue it with value: truth, life, obedience, sacrifice, beauty, and memory. Within this framework, only an edifice composed of original materials has value as a testament to history and the past. Any consequent intervention cheapens the structure and lessens its value.[10]

Ruskin unapologetically appreciated signs of age and disdained any effort to "restore" historic structures. He established this opposition in his “Lamp of Memory,” professing,

> But so far as it can be rendered consistent with the inherent character, the picturesque or extraneous sublimity of architecture has just this of nobler function in it than that of any other object whatsoever, that it is an exponent of age, of that in which, as has been said, the greatest glory of a building consists; and, therefore, the external signs of this glory, having power and purpose greater than any belonging to their mere sensible beauty.[11]

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[10] Jokilehto, *Architectural Conservation*, 174-175.
[11] John Ruskin, *The Seven Lamps of Architecture* (New York: Farrar, Straus, and Giroux, 1971), 183.

He proceeded to pejoratively define restoration as

> the most total destruction that a building can suffer: a destruction out of which no remnants can be gathered; a destruction accompanied with false description of the thing destroyed. 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.[12]

Ruskin proposed a very different set of principles from Viollet-le-Duc and the restoration movement. This approach and its dissemination through Ruskin's writings influenced other adherents to the "anti-restoration," "anti-scrape," or "conservation" movement, such as Cambridge fine arts professor Sidney Colvin and John James Stevenson, a Scottish architect. Both of these men saw value in a building's original materials and the visible signs of their aging, and expressed these views through writings of their own.

Designer and activist William Morris also aligned himself with the conservation movement and its ideals, and instituted them as founding principles of his *Society for the Protection of Ancient Buildings* (SPAB), which grew to be one of the noteworthy forces for heritage conservation in Britain.[13] This organization viewed conservation as attainable through the routine maintenance of historic structures which did not require an architectural or art historical background. Concerned citizens with sufficient free time and interest in historical buildings could provide the day-to-day upkeep of historic monuments, prolonging their lifespan without jeopardizing their material integrity.

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[12] Ruskin, *Seven Lamps,* 184.
[13] Jokilehto, *Architectural Conservation*, 183-184.

While distancing historic structures from restoration architects, SPAB's conception of maintenance, nevertheless limited to those with time and resources on their hands, reinforced associations between heritage conservation and an elite or genteel class.[14]

Aloïs Riegl & Multiple Values

An understanding of historic buildings on the basis of different values, increasingly prevalent in today's heritage discourse, originated in the writings of Aloïs Riegl. Writing just after the turn of the twentieth century, Riegl famously dissected historic buildings and sites according to a set of values laid out in his text, *The Modern Cult of Monuments*. In this work, he identified a multitude of values that can be attributed to a monument, including commemorative values like historic, memorial, and age values, but also current-day values of use, artistry, and newness. Riegl's work emphasized the concept of multiple values being attributed to the same building or artefact, and argued that some monuments were prized because of exhibiting a superabundance of one or several of these values. An older church, for example, could have use value as a space for religious ceremony, artistic value from its architectural elements, and age value embodied in visible signs of aging or patina.[15] All of these values could be important, but the decision of which was more important would depend on context.

As mentioned earlier, Riegl distinguished between "intentional" and "unintentional" monuments, which are constructed and appreciated for different reasons.

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[14] Christopher Miele, "'A Small Knot of Cultivated People': William Morris and Ideologies of Protection," *Art Journal* 54, no. 2 (Summer 1995), 75. DOI: 10.2307/777465.
[15] Riegl, *Monuments,* 9-11.

Intentional monuments are expressly constructed to serve a commemorative function, like obelisks devoted to victories in war. Unintentional monuments are the buildings and structures erected in response to contemporary needs that are only conceived of as monuments years or even centuries after their construction, having at this point amassed age and historical values.[16] Historic houses fall into this category. Riegl's approach rejects notions of universal value, as the values he proposes shift with time and with changing standards of beauty. Historic buildings thus represent the values of their unique moments in history, and can be appreciated for different reasons as time passes and ideals change.

Riegl's theoretical framework impacted the development of policy in German-speaking and Nordic countries.[17] His approach restructured debate between restoration and conservation as a conflict of values. Riegl made it clear that an historic building could exhibit not only one value, but many. Theorists and practitioners continued to favour what Riegl described as the historic and artistic values of monuments, but he still managed to explicitly acknowledge use value and novelty value, which had received little attention before his treatise.[18] Riegl's perspective was especially prescient: beyond his immediate influence, he laid the groundwork for a values-based approach to heritage that will reappear in the third chapter. Nevertheless, at the turn of the twentieth century, conservation with a priority given to age value was increasingly popular in both policy and practice.

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[16] Riegl. *Monuments*, 68-70.
[17] Jokilehto, *Architectural Conservation*, 218-219.
[18] Riegl. *Monuments*, 80-82.

Gustavo Giovannoni & Urban Heritage

Most theorists in heritage conservation addressed individual structures or monuments when writing about heritage and its protection. Like the much-lauded Gothic cathedral, most of these structures stood out as exceptional, showcasing an uncommon wealth of decoration and other artistic features. More ordinary structures, however, would be the focus of Gustavo Giovannoni, director of the school of Architecture in Rome from 1925 to 1935 and professor of restoration classes there until 1947. His theory of *restauro scientifico* or scientific restoration offered a strategy for managing not only monuments but also historic urban areas as a whole, including what he referred to as the "minor architecture" that made up large swathes of the city. Giovannoni was keenly aware of the opposition between the historic urban fabric and the infrastructure of the modern city, made apparent by 1908 plans that sliced through older parts of Rome to construct new boulevards. He also understood the city as the product of historical layering, with different aspects representing the many different periods of its history. He appreciated the contrast between his “minor architecture” and more monumental structures. Taking a progressive stance, he advocated for the conservation of historic areas by improving living conditions for those who lived there and strategically incorporating modernization through careful planning. His objective was to incorporate new infrastructure in a way that minimized destruction of historic fabric and communities (fig. 5). These ideas gained some approval from decision-makers in plans for Rome and Venice, yet proved difficult to implement on a wide scale.[19]

[19] Jokilehto, *Architectural Conservation*, 220-221.

In the twentieth century, most policies continued to focus on buildings judged by experts as exceptional due to historic and artistic value, and how to restrict their modification. Ruskin's conservation movement grew in popularity in England and across Europe, while Viollet-le-Duc's brand of liberal restoration was less prominent by the beginning of the twentieth century. By this time, though theorists like Riegl and Giovannoni put forward ideas of multiple values and urban heritage, these approaches took a backseat to efforts to identify and protect historic and artistic monuments. Public support tended to concentrate on individual monuments perceived as historically or artistically valuable. Centralized approaches to heritage grew out of the priorities of scholars, practitioners, and citizenry concerned with heritage. Entities at the local, national, and international levels developed legislation to manage conservation. The next section will further examine some of these policies.

1.2 Heritage Conservation in the Twentieth Century: An Infrastructure for Monuments

Early Legislation & Movements in Quebec

To illustrate general trends in heritage conservation policy across the globe in the twentieth century, this section will begin with a brief overview of heritage legislation in Quebec. The province's policies reflect more widespread patterns in which centralized state entities became responsible for the identification and protection of important buildings and sites. Because of the division of powers in Canada, responsibility for cultural heritage falls to provincial authorities, so in this case "the centralized state entity"

is Quebec and not Canada.[20] In the series of laws to be examined, buildings are awarded a special heritage status that attempts to limit the modifications that can be made to them. As these laws evolved from 1922 to 1972, the state awarded itself increasing power to decide what constitutes heritage and to limit the changes that can be made to it. Legislation in the twentieth century thus affirmed change-limiting conservation principles similar to those attributed to John Ruskin above.

In 1922, the province passed the *Loi relative à la conservation des monuments et des objets d'art ayant un intérêt historique ou artistique* (Law Concerning the Conservation of Monuments and Artefacts of Historical or Artistic Interest), which opens:

> Whereas the conservation of monuments and artefacts is of a national interest;
>
> And whereas there exist in the province monuments and artefacts whose artistic and historic character is undeniable; and whereas classification is the first condition for the conservation of monuments and artefacts…[21]

This law explicitly references *conservation*, and *artistic* and *historical* values as a priorities and guiding principles, with *classification* as the primary mechanism for their implementation and protection. A commission of five heritage experts was responsible for deciding which buildings would be listed, which buildings were "of a national interest."[22]

Classification of a site under the 1922 law required the consent of the property-owner and, once listed, the law stated that no modifications could be made to the

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[20] "Histoire de la protection du patrimoine au Québec," Culture et Communications: Québec, last modified November 19, 2015, accessed January 28, 2019, https://www.mcc.gouv.qc.ca/index.php?id=5122.
[21] Assemblé du Québec, *Loi relative à la conservation des monuments et des objets d'art ayant un intérêt historique ou artistique,* Quebec, Law, Quebec City, 1922.
[22] "Histoire de la protection du patrimoine au Québec."

building or artefact without the Commission's consent. A site's heritage value was recognized as existing within its original form and materials, which required protection from modifications that could compromise this value. Quebec's Commission also maintained a register or inventory of historic sites and objects, facilitating the classification and analysis of the province's monuments. In 1929, the Commission recognized the province's first three monuments: the Chateau Ramezay, the Notre-Dame-des-Victoires Church, and Jesuit House of Sillery in Quebec City, all three sites dating back to the French regime in the seventeenth and eighteenth centuries (fig. 6).[23] The two houses served as museums and the Church as a tourist attraction. These selections demonstrate a priority given to age and historic value, and an emphasis on the protection of individual structures.

At the behest of the federal government in 1952, Quebec expanded the *Loi relative aux monuments* to include pre-historic and archeological heritage as well as sites, not just buildings and artefacts, of aesthetic and historical value. This law also afforded the state more power to enforce heritage regulations upon and possess designated properties. In 1963, this legislation expanded once more and was renamed the *Loi des monuments historiques* (Law Concerning Historic Monuments). This rendition of the law allowed for the protection of entire districts as opposed to individual buildings. In 1972, the province replaced existing legislation with the *Loi sur les biens culturels,* which was then modified in 1985.[24] The 1985 legislation further centralized the identification and protection of

[23] "Histoire de la protection du patrimoine au Québec."
[24] "Histoire de la protection du patrimoine au Québec."

heritage, giving the commission's classification of a monument precedence over the consent of the property owner. The law also included measures to protect the areas surrounding buildings and monuments with heritage status, and distinguished procedures for cultural and natural heritage areas.[25]

The evolution of heritage legislation in Quebec from 1922 to the 1972 law reflects broader global trends of establishing centralized systems to limit modifications to buildings and objects of historic and artistic value, and of a gradual expansion of the definition of heritage from individual monuments to more broadly defined districts and landscapes. It also demonstrates a centralized, top-down approach to heritage conservation, with government-affiliated experts making decisions about what structures exhibit value and merit protection.

Venice Charter (1964)

In the second half of the twentieth century, many of the challenges and objectives of heritage conservation surpasses borders and political boundaries. In the European Theatre, the rampant loss of historic buildings and artefacts during and after the Second World War affected nations on both sides of the conflict. Heritage specialists thus wished to establish mechanisms and standards for conservation not only within national borders but at the international level as well. The Venice Charter of 1964, drafted by a group of mostly European heritage experts under the auspices of the "Second International Congress of Architects and Technicians of Historic Monuments," consisted of an

[25] "Histoire de la protection du patrimoine au Québec."

international set of guidelines for managing and conserving heritage. Arising from still deeply-ingrained nineteenth-century principles of conservation, the charter advocated for minimal change to a building's architectural and aesthetic characteristics. It stated in article five that "the conservation of monuments is always facilitated by making use of them for some socially useful purpose,"[26] yet the overall tone and theme of the charter is best conveyed through article three: "the intention in conserving and restoring monuments is to safeguard them no less as works of art then as historical evidence."[27] This statement explicitly associates "monuments" with their artistic and historical values, affirming and reinforcing the emphasis on these values conveyed in heritage legislation in countries around the world, as in the laws cited above in the case of Quebec.

A "monument" according to this charter includes "not only the architectural work itself but also the urban or rural setting."[28] This addendum implicitly acknowledges the significance of both urban and rural landscapes, yet in a way that remains centred on an individual monument. The charter included surroundings not because of their own value, but because of the context they provide for a monument of historic and/or artistic value. Broadly conceived, for the charter landscapes only matter insofar as they provide a context for individual monuments. Setting forth these principles, the Venice Charter established and ingrained the conventional framework of heritage conservation. Affirmed by the charter, notions of the monument, the importance of original materials, and

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[26] International Council on Monuments and Sites, *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)* (Venice: International Council of Monuments and Sites (ICOMOS), 1964). https://www.icomos.org/charters/venice_e.pdf.
[27] ICOMOS, *International Charter*.
[28] ICOMOS, *International Charter*.

artistic and historical value continued to comprise the status quo in heritage conservation in the latter half of the twentieth century.

Conservation Activism

Brought together by a mutual response to unprecedented threats, both natural and cultural conservation movements took off in the 1960s and 1970s, especially in North America. After WWII, the United States and Canada enjoyed economic prosperity, a population boom, and widespread construction campaigns as the growing and affluent population sought access to property. These new developments often occurred at the expense of existing built and natural environments. In the United States, Rachel Carson's *Silent Spring* (1962) forced its readers to pay attention to the fragility of the earth's ecosystems, while urbanist Jane Jacob's 1961 book, *The Death and Life of Great American Cities* brought readers' focus to the values of historic urban fabric.[29] As historic preservation groups across the United States and Canada banded together to save neighborhoods at risk of demolition, environmentalists joined to protect natural ecosystems from threats of degradation and destruction.

Local preservation groups enjoyed some significant victories against development schemes, and environmental activists succeeded in passing important pieces of legislation that defended various elements of the natural environment. In the United States these laws included the Wilderness Preservation Act of 1964, the Endangered Species

[29] Jane Margaret Jacobs, *The Death and Life of Great American Cities* (New York: The Modern Library, 1993); Rachel Carson, *Silent Spring* (London: Penguin Modern Classics, 1962).

Conservation Act of 1969, the Clean Air Act of 1970, and the establishment of the Environmental Protection Agency in the same year. In Canada, the 1973 Wildlife Act also reflected this movement. The United Nations created its environmental program in 1972, and published the Cocoyoc Declaration in 1974, which made explicit the links between human-caused environmental degradation and threats to quality of life.[30]

The 1973-74 oil embargo further pressured both individuals and nations to reconsider the way they used resources. With the backdrop of a burning Cuyahoga river in Ohio and the Torrey Canyon oil spill in Cornwall, UK, environmental activists enacted legislation with the goal of ensuring a better environment for future generations. Amid legislative victories for heritage conservators, including the Historic Preservation act of 1965 in the US and the earlier Historic Sites and Monuments Act in Canada, in 1975, former first lady Jacqueline Kennedy Onassis spoke on behalf of Grand Central Terminal in New York, which was ultimately saved in a 1978 Supreme Court ruling (fig. 7).[31] The Environmentalist movement shared a fundamental philosophy with heritage conservationists: the belief that the current society has a responsibility to endow future generations with a livable and rich environment, be it built or natural.

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[30]John C. Keene, "The Links between Historic Preservation and Sustainability: An Urbanist's Perspective," in *Managing Change: Sustainable Approaches to the Built Environment* (Los Angeles: Getty Publications, 2001), 11.

[31] Kristen Flanagan, "*AD* Remembers Jacqueline Kennedy Onassis's Preservation Work," *Architectural Digest*, June 30 2014. https://www.architecturaldigest.com/story/celebrating-jacqueline-kennedy-onassis.

UNESCO World Heritage

Illustrating efforts to establish international mechanisms for both natural and cultural conservation, in 1972 the United Nations Educational, Scientific, and Cultural Organization (UNESCO) adopted its "Convention Concerning the Protection of the World's Cultural and Natural Heritage." This convention addressed the widespread threat to outstanding natural and built environments by laying out a plan to designate and protect the most significant sites at the global level, relying on a set of shared criteria and international cooperation. These sites, UNESCO officials hoped, had values that could resonate across geographical, political, and cultural divisions.[32] UNESCO, of course, is a division of the United Nations whose primary goal is not heritage conservation but world peace. The goal of "World Heritage" is to promote this peace by protecting monuments imbued with value that can be appreciated by those from different backgrounds.

While recognizing the significance of the distinct local heritage of regions across the world, UNESCO's approach thus fixated on sites deemed to have global or universal value. UNESCO realized this proposed plan in 1978 with the compilation of a list of World Heritage Sites. Sites were added to this list following a formula laid out in the "Operational Guidelines for the Implementation of the World Heritage Convention," first published in 1977 and revised frequently thereafter with the most recent edition dating

[32] UN Educational, Scientific and Cultural Organization, Convention Concerning the Protection of the World's Cultural and Natural Heritage, (Nov. 16, 1972), https://whc.unesco.org/archive/convention-en.pdf.

to July 2017.[33] These editions convey the criteria used to evaluate nominations for world heritage status, with separate sets for cultural and natural heritage.

The 1978 guidelines include as potential values to meet the criteria of world heritage designation artistic or aesthetic significance, rarity or age, influence on other developments, characteristics representative of movements or styles, fragility, and associations with traditions or beliefs. Criteria for natural sites similarly stress rarity and representativeness as qualities that constitute universal value and merit world heritage status.[34] The first sites to be added to the list according to these criteria included Germany's Aachen Cathedral, the city centre of Quito in Ecuador, and Yellowstone National Park (fig. 8, 9). The World Heritage List both set and followed contemporary trends in heritage conservation. Its criteria and the sites it selected as having "outstanding universal value"[35] reinforced the importance of historic and artistic values. The diversity of UNESCO's site designations reflects an emerging openness to diverse manifestations of heritage that would be further developed in the coming decades, yet the ideas of the monument and impeding change continued to dominate the field of heritage conservation at international, national, and regional levels.

[33] UN Educational, Scientific and Cultural Organization, Operational Guidelines for the Implementation of the World Heritage Convention (Jul. 12, 2017), https://whc.unesco.org/document/163852.
[34] UN Educational, Scientific and Cultural Organization, Operational Guidelines for the Implementation of the World Heritage Convention (1978), https://whc.unesco.org/archive/opguide78.pdf.
[35] UNESCO, "Convention," (1972).

1.3 Debate and flux after 1992

The 1990s marked a time of changing perspectives and approaches in the field of heritage conservation. Scholars and professionals questioned values and definitions that had remained at the centre of the discipline since the nineteenth century. They weighed historical and artistic values against other emerging notions of value. Increasingly, new conceptions of what constituted heritage gained acceptance by both individuals and organizations. Researchers also paid increasing attention to the overlap between concerns in heritage conservation and in spheres such as ecology, economics, and sociology. In the 1990s, heritage specialists broke with long-established presuppositions and, in doing so, proposed new directions for inquiry and action. This section, through describing a chronological progression of milestones and significant documents, will illustrate how changes in this decade paved the way for radical changes in the new millennium, which will be the subject of chapter three. The recent heritage of the modern movement and the twentieth century would enact further limitations on dominant conservation strategies, which will be elucidated in chapter two.

Cultural Landscapes & the UNESCO World Heritage Convention (1992)

One of the developments in the 1990s was an increasing emphasis on *cultural landscapes*, a term that refers to sites marked by human interactions and associations with the natural environment. This notion extends not only to the physical fabric of buildings, towns, or farms, but also to the practices, traditions, and culture that simultaneously shape and are shaped by the land. In 1992, cultural landscapes took

centre stage at the UNESCO World Heritage Convention in La Petite Pierre, France. At this meeting, UNESCO designated cultural landscapes as a new category for listing. As a type of site that emphasized both human influence and ecological components, this category contrasted with the earlier opposition of natural and cultural heritage.[36]

This mechanism allowed World Heritage to recognize sites that were significant not only for natural or cultural attributes, but for the interaction of the two. The decision reflected a broader shift of focus in the field of heritage conservation from buildings and materials to values and relationships between people and places. Cultural landscapes contained layers—elements that stayed the same across the centuries and those that reflected more recent change.[37] They could thus simultaneously represent different eras, with age-old farming techniques existing alongside newer technologies and innovations, for example. Older elements or practices still present in cultural landscapes allow current generations to better understand past societies.

Viewing landscapes as elements of heritage demanded new methods of conservation that took into account issues of land-use policy, resource management, and economic patterns, among others.[38] Writing about cultural landscapes in an introduction to a roundtable meeting on that theme in 2010, Canadian heritage scholar Christina Cameron asserted, "The characteristics that require conservation are not only physical

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[36] UN Educational, Scientific and Cultural Organization, "Report of the Expert Group on Cultural Landscapes, La Petite Pierre (France) 24-26 October 1992." http://whc.unesco.org/archive/pierre92.htm.
[37] Peter Fowler, "World Heritage Cultural Landscapes, 1992-2002: A Review and Prospect," in *Cultural Landscapes: The Challenges of Conservation* (Ferrara, Italy: UNESCO World Heritage11-12 November, 2002), 17.
[38] Noel Fojut, "The Philosophical, Political, and Pragmatic Roots of the Convention," in *Heritage and Beyond,* Daniel Therond and Anna Trigona ed., (Strasbourg: Council of Europe Press, 2009), 15-17.

but intangible attributes like feeling and meaning."[39] This form of conservation required very different strategies from those used for architectural monuments or artefacts in a museum. While approaches referenced earlier in the chapter valued the areas surrounding monuments for the context they provided, landscape offered a lens through which broader areas could be valued for themselves.

The 1992 World Heritage Convention further divided cultural landscapes into three categories: (i) designed, (ii) organically evolved, and (iii) associative. Landscapes in the first category include parks and gardens. Those in the second are divided between "relict" and "continuing" landscapes—often agricultural areas that have been or are still being shaped by human practices like farming in a way that is specific to the local area (fig. 10). The third category applies to spaces left mostly in their original state but that have taken on profound cultural meaning in surrounding communities (fig 11).[40] The three categories reflect the flexibility of this emerging concept and an effort to adapt existing conservation methods to an understanding based more on intangible values than on physical material.[41] Still evolving, the landscape approach to heritage conservation has initiated a broader process of re-envisioning heritage and looking to an increasing number of associated factors and issues that would come to shape discourse in the ensuing decades, so that it would focus not only on monuments but also on a more

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[39] Christina Cameron, Introduction, *Conserving Cultural Landscapes,* conference proceedings, Montreal, Canada, 10-12 March, 2010.
[40] Fowler, "Cultural Landscapes," 18.
[41] Peter Fowler, "World Heritage Cultural Landscapes, 1992-2002: A Review and Prospect," in *Cultural Landscapes: The Challenges of Conservation* (Ferrara, Italy: UNESCO World Heritage11-12 November, 2002).

holistic understanding of built and natural environments as potential receptacles of values.

Social Values in Heritage Conservation (1992)

Another emerging concept in the 1990s was that of social value, determined by local communities. In 1992, the Australian Heritage Commission (AHC) produced a discussion paper entitled "What is a Social Value?"[42] In this document, they proposed several definitions of social value, including, "importance as places highly valued by a community for reasons of religious, spiritual, cultural, educational, or social associations," which they took from the criteria of the Register of the National Estate.[43] How can simply acknowledging the value of a site to a certain community contribute to a more equitable society on a larger scale? The AHC document offers this explanation of social value: "In each city, and certainly in many rural localities, communities have spoken up about places that they value, despite the dismissal of such places as insignificant by experts."[44] Recognizing the validity of a local community's value system rejects the superiority of the dominant cultural narrative and has the potential to restructure the designation process as a roundtable where multiple voices can be heard and affirmed.

Heritage conservation thus enters a broader conversation about equity. In a system where heritage is defined by values recognized by experts rather than those perceived by

[42] Chris Johnston, *What is a Social Value?* (Canberra: Australian Government Publishing Service, 1992), 1, http://www.contextpl.com.au/wp-content/uploads/2014/06/What_is_Social_Value_web.pdf.
[43] Johnston, *Social Value.*
[44] Johnson, *Social value*, 4.

the community, the opinions and associations of non-experts are superseded by those of more closely linked to a prevailing cultural narrative. Defining and acknowledging social value as another way of understanding a place's significance affirms that all members of a community have the capacity and the right to define what parts of the built environment they see as heritage worthy of passing on to future generations. This right applies to all levels of the conservation process, including identification of what constitutes heritage and decisions about its management. The Australian document suggests that people who live within a given environment have a right to make decisions about what aspects of it are important to them, regardless of accepted standards of aesthetic, historic, or age value.

The principal aim of recognizing social value is the inclusion of more voices in the conversation surrounding heritage. This value also acknowledges the critical role that community members have in conserving or managing heritage by ensuring its continuation in ways that centralized governments with shrinking budgets cannot. This notion of giving responsibilities for identification and management of diverse forms of heritage to smaller local communities would become a key principle in heritage discourse in the new millennium, and will be addressed in greater detail in chapter three.

Nara Document on Authenticity (1994)

While some heritage specialists reassessed the relevance of conventional values and approaches, many actors in the field remained focused on questions of aesthetic, age, and historical value. State agencies continued practices in which experts identified

heritage sites that were then protected through legislation and state financing. Yet the questions and the gap between conventional themes and a new reality persisted. In 1994, heritage specialists from the public, private, and non-profit sectors converged at a conference in the Japanese city of Nara to further question another key tenet of heritage conservation: authenticity. In twentieth-century conservation, a practice dominated by Western attitudes and approaches, material authenticity—the presence of original materials at a heritage site—predominated.

However, in other cultures, and notably in Japan, authenticity is disconnected from the materials used. Rather, it is perceived as rooted in the skills and expertise needed to build a given structure. At Japan's Ise Jingu grand shrine, for instance, artisans and craftsmen have dismantled and reassembled the built structure every twenty years for over a millennium (fig. 12). Repeated reconstruction has allowed them to transmit skills across time, and to protect the design from the effects of age.[45] In 1994, the Nara Document on Authenticity, adopted by UNESCO, recognized the need to open up existing conceptions of authenticity to include other perspectives and other cultures, beyond those of Western Europe and North America.[46] By suggesting a new definition of authenticity, the Nara Document paved the way for a more inclusive definition of

[45] Rachel Nuwer, "This Japanese Shrine Has Been Torn Down and Rebuilt Every 20 Years for the Past Millennium," *Smithsonian Magazine*, October 4, 2013, accessed January 23, 2019, https://www.smithsonianmag.com/smart-news/this-japanese-shrine-has-been-torn-down-and-rebuilt-every-20-years-for-the-past-millennium-575558/.
[46] International Council on Monuments and Sites, "Nara Document on Authenticity." Nara Conference on Authenticity in Relation to the World Heritage Convention, Nara, Japan, 1993. https://www.icomos.org/charters/nara-e.pdf.

heritage, affirming the importance of forms that had been overlooked by earlier definitions, and thereby paving the way for further developments in the new millennium.

Openness both to other definitions of authenticity and to other ways of assessing significance and value reflects a broader shift in the understanding of the ultimate goals and objectives of heritage conservation. The practice has conventionally led to a tangible end product or result: a monument preserved and protected for all time, or at least for the foreseeable future. When groups banded together to save Independence Hall in Philadelphia or Chateau Ramezay in Montreal, their efforts yielded fruit. The historic sites were restored and protected, and designated as national historic sites by the United States and Canadian governments respectively. In both cases, the approach in some way emphasized material authenticity. Yet authenticity and meaning can exist or be attributed to things beyond material forms, like knowledge, practices, and cuisine. These kinds of heritage would gain official recognition with the adoption of UNESCO's *Recommendation on Intangible Heritage* in 2003.[47] The Nara document opened the door to an understanding of heritage conservation that prioritized process rather than product and recognized the value of traditions and skills, in addition to that of physical materials, as receptacles of meaning and significance.

[47] UN Educational, Scientific and Cultural Organization, "Convention for the Safeguarding of the Intangible Cultural Heritage," Paris, 29 September to 17 October 2003, https://unesdoc.unesco.org/ark:/48223/pf0000132540.

Sustainable Development & Heritage Conservation (Sustaining the Historic Environment 1997)

In 1987, the United Nations World Commission on the Environment and Development distributed a report entitled "Our Common Future" in which it addressed the importance of developing societies in a way that respects the constraints of the natural environment. This document coined the term "sustainable development," commonly associated with the "triple bottom line" of minimizing negative ecological, economic, and social impacts.[48] These three objectives are also referred to as the "three pillars" of sustainable development. This approach merged environmentalism with other movements and disciplines. Evoking ties between the conservation of natural and cultural heritage present in the activist movements of the 1960s and 1970s and the objectives of the 1972 UNESCO World Heritage List, sustainable development evolved as an increasingly significant factor in the management of heritage.

Concerns about sustainable ecological development percolated through heritage conservation discourse in the 1990s. The connection between the conservation of the natural environment and that of the built environment grew clearer and more widespread. In 1997, English Heritage[49] produced "Sustaining the Historic Environment," a document that explicitly framed approaches to heritage conservation within a larger reflection about ecologically-responsible development. The document begins with a nod

[48] Gro H. Brundtland, *Our Common Future: Report of the World Commission on Environment and Development* (Oslo: United Nations Commission on Environment and Development, 1987).
[49] A branch of government devoted to the protection of heritage. In 2015, the name of this branch changed to "Historic England," while "English Heritage" became the name of a new trust and charity organization responsible for managing historic properties.

to a dominant tenet in natural conservation discourse: "we need to take a balanced view of the need for development, reconciling growth with the requirement to stay within environmental thresholds of change and loss."[50]

English Heritage's "Sustaining the Historic Environment" pamphlet takes its cues from environmental conservation movements. Rather than pinpointing individual sites of cultural significance, it emphasized the value of the inherited environment in its totality, as an ecosystem, including ordinary buildings and landscapes. As described within the document, "the whole of our environment has been shaped and created by people and their work. The past, and its impact on the landscape, can be appreciated in every part of the country."[51] Adopting this view, one interprets the inherited environment as an ecosystem in which even the smallest element plays a significant role in a greater network that relies on a mass of individual pieces to create a greater functioning whole.

The English Heritage document goes a step further by introducing the definition of a new value to its list: the resource value. The pamphlet defines this term with the justification, "longer-lived buildings usually make better use of the energy and resources that were used during their construction, and reuse is usually more economic than demolition and redevelopment. Conservation is inherently sustainable."[52] English Heritage asserts that any ecological benefits achieved through heritage conservation represent an important value that the historic environment can possess. Attributing an

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[50] English Heritage, "Sustaining the Historic Environment: Perspectives on the Future," in *The Heritage Reader*, ed. Graham Fairclough, Rodney Harrison, John H. Jameson Jr., and John Shofield (New York: Routledge, 2008), 314.
[51]English Heritage, "Sustaining", 315.
[52] English Heritage, "Sustaining", 316.

ecological value to heritage incorporates it into the broader conversation of sustainable development.

This statement is significant not merely because of the sentiment it conveys, but also because of the context in which it is found, a publication by a *heritage* organization, not by an environmental advocacy group. Bridges between disciplines conventionally linked to heritage, like art history, and those such as ecology and sociology would become increasingly crucial in the new millennium, reflected in the proceedings of a symposium hosted by the Getty Conservation Institute in 2002 entitled *Managing Change: Sustainable Approaches to the Built Environment*.[53] This publication included writings from actors in an array of disciplines—economics, urbanism, ecology—each approaching heritage from their varied perspectives.

Culture as the Fourth Pillar (World Bank 1998)

In addition to these three frequently-cited "pillars" (economic, social, and ecological) mentioned in the Brundtland report and traceable to the heritage discourse of the early 1990s, "culture" emerged across publications and conferences as a proposed fourth pillar of sustainable development. In 1998, the United Nations, in partnership with the World Bank, held a conference focusing on the role of culture in sustainable development.[54] One of the concepts that linked culture with sustainable development

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[53] Jeanne Marie Teutonico and Frank Matero ed., *Managing Change: Sustainable Approaches to the Conservation of the Built Environment, (*Los Angeles: The Getty Conservation Institute, 2002).
[54] James Allen Smith, "Conserving Cultural Heritage," in *Culture in Sustainable Development: Investing in Cultural and Natural Endowments*, ed. Ismail Sarageldin and Joan Martin-Brown (Washington D.C.: The World Bank, 1999), 89.

was "cultural heritage," which evoked both the existing built environment and important traditions and knowledge passed down within communities. The Getty Research Institute's Art and Architecture thesaurus defines cultural heritage as

> The belief systems, values, philosophical systems, knowledge, behaviors, customs, arts, history, experience, languages, social relationships, institutions, and material goods and creations belonging to a group of people and transmitted from one generation to another. The group of people or society may be bound together by race, age, ethnicity, language, national origin, religion, or other social categories or groupings.[5556]

For sustainable development to take place and have a lasting impact, it must be implemented in a way that acknowledges these factors within a given community. This kind of progress can result from changing certain behaviors but also from identifying those that already contribute to sustainable objectives. Ecological concerns can be intimately linked to strategies for more participatory heritage conservation insofar as attachment to place can encourage a greater sense of responsibility for maintaining a healthy environment.

Historian James Allen Smith contributed to the conference with a talk entitled "Conserving Cultural Heritage."[57] In this talk, Smith drew parallels between

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[55] "Cultural Heritage," *Art and Architecture Thesaurus,* the Getty Research Institute, accessed November 18, 2018.http://www.getty.edu/vow/AATFullDisplay?find=cultural+heritage&logic=AND&note=&english=N&prev_page=1&subjectid=300265422.

[56] An alternate definition can be found cited in the Getty Research Institute's Research Report: "the notion of cultural heritage embraces any and every aspect of life that individuals, in their variously scaled social groups, consider explicitly or implicitly to be a part of their self-definition." (Avrami, Mason, and de la Torre, 2000). The report attributes this quote to an unpublished talk by museologist Susan Pearce in 1998.

[57] Smith, "Conserving Cultural Heritage," 89.

environmental and cultural conservation, and called for expanded dialogue between the two fields. He argued that heritage practitioners like professionals in natural conservation emphasize the significance of diversity and the evolution of an environment over time. The cultural environment is made rich through its diversity and through the recognition of processes that unfold across multiple generations. Sustainable development acknowledges the role of a cultural environment that can be protected and enriched during the present and well into the future. Furthermore, within the context of a movement aiming to reconfigure the way humankind interacts with the natural environment, Smith argued that cultural heritage and landscape reveal, like a text, a history of these interactions.[58]

Policies and attitudes that prioritize a healthy cultural environment can enhance the lives of future generations. Sustainable development implies a commitment to the natural environment: through the healthy function of the economy, society *and* through a cultural environment worthy of transmitting to future generations. Rather than proposing an additional value to be taken into account in heritage evaluation, the cultural pillar reinforces the link between heritage conservation and sustainable development. These links create the foundation for approaches that exist not within but between disciplines. Environmentalists have a responsibility to consider cultural aspects of projects, and heritage specialists to consider ecological and social values of their work—above and far beyond the dominant aesthetic and historic values that directed the discipline through the nineteenth century and most of the twentieth.

[58] Smith, "Conserving Cultural Heritage," 89.

Conclusion

Approaches to and attitudes toward heritage are rooted largely in theory developed in the nineteenth century. From these theories, conservation, whereby experts identify monuments and legal mechanisms prohibit their alteration, emerged as a major influence for the development of policies such as those of Quebec. This approach solidified as governments developed an infrastructure for the identification and protection of monuments. This dominant system was reinforced at the international level by documents like the 1964 Charter of Venice and the development of the World Heritage program by UNESCO. Driven by principles of material authenticity and artistic and historic values, the approach was largely rooted in European philosophy and context. It emphasized uniqueness and impeding change.

Yet, by the 1990s, this structure demonstrated its weakness and its non-universality. The emphasis on artistic and historical values allowed heritage specialists ignore other potential values, while the European framework failed to respond to differences in the ways various cultures perceived their own heritage. Furthermore, as the next chapter will explore in greater detail, the more recent heritage of the twentieth century, a time of simplified architectural vocabulary and mass-production, posed fundamental problems to a system that prioritized rarity. The growing gulf between an aging built environment and monument-based approaches would result in a call for an overhaul of heritage conservation theory and practice, the topic of chapter three.

Images

Figure 1. Abbey Church of Saint-Denis showing missing tower lost due to poor structural reinforcement. Photo by Brooks C. Piper, September, 2015.

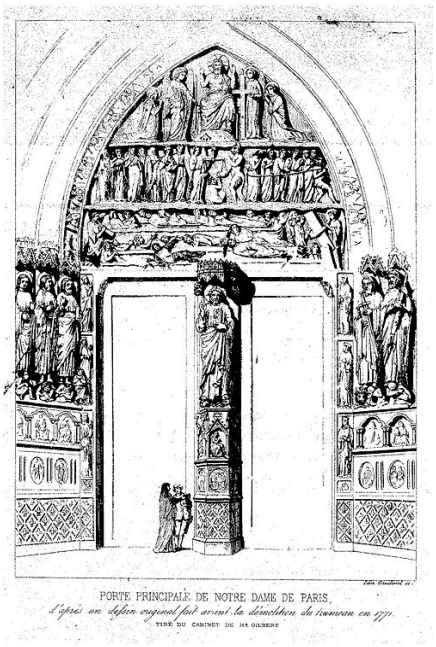

Figure 2. Illustration from Lassus and Viollet-le-Duc's restoration of the Notre-Dame Cathedral, Paris. Uploaded by Coyau, February, 2010. From Wikimedia Commons. https://upload.wikimedia.org/wikipedia/commons/2/28/Lassus%2C_Viollet-le-Duc_-_Projet_de_restauration_de_Notre-Dame_de_Paris_-_page_5.jpg

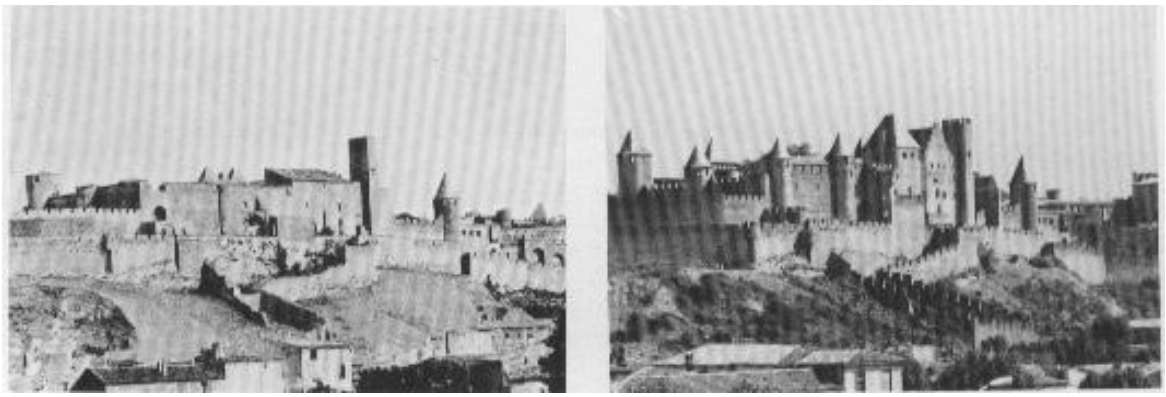

Figure 3. Carcassonne, pictured before and after Viollet-le-Duc's restoration. Image uploaded by Panouillé, February 2010. From Wikimedia commons.
https://upload.wikimedia.org/wikipedia/commons/f/fa/Carcassonne_avant_viollet_le_duc_par_panouill%C3%A9.jpg

Figure 4. Watercolor of Venice by John Ruskin, emphasizing visible signs of age. From *Ruskin, Turner and the pre-Raphaelites,* Robert Hewison, 2000. Uploaded by Yann, September 2008. From Wikimedia Commons.
https://commons.wikimedia.org/wiki/File:Study_of_the_Marble_Inlaying_on_the_Front_of_the_Casa_Loredan.jpg

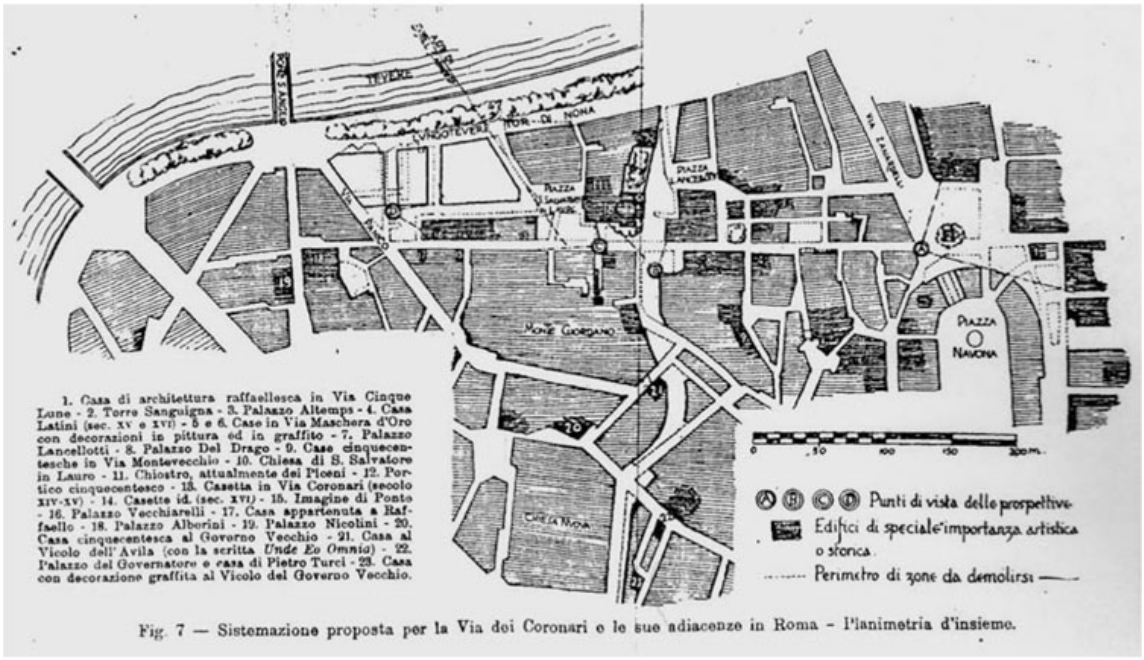

Figure 5. A plan for Rome illustrating Giovannoni's urban-scale approach to heritage. From Guido Zucconi. "Gustavo Giovannoni: A Theory and a Practice of Urban Conservation." *Change Over Time* 4, no. 1 (2014): 76-91. https://muse.jhu.edu/.

Figure 6. Chateau Ramezay, one of the first sites listed by the Historic Monuments Commission in Quebec in 1929. Photo by Jean-Frédéric L'Heureux, 2016, © Ministère de la Culture et des Communications. From Repertoire du patrimoine culturel du Québec. http://www.patrimoine-culturel.gouv.qc.ca/rpcq/document/rpcq_bien_92534_268809.JPG?id=268809

Figure 7. Jacqueline Kennedy Onassis leaving Grand Central Terminal in New York after a news conference. Photo by Harry Harris, AP photographer. From Kristen Flanagan, "*AD* Remembers Jacqueline Kennedy Onassis's Preservation Work," Architectural Digest, June 30, 2014. https://media.architecturaldigest.com/photos/55f9e1fb4254f7de3455fb12/3:4/w_525,h_700,c_limit/dam-images-daily-2014-07-jackie-o-jackie-kennedy-onassis-birthday-01-h545.jpg

Figure 8. Aachen Cathedral, one of the first UNESCO World Heritage Sites, listed in 1978. Photo by Uwe Aranas, CE Photo, 3 August 2014. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Aachen_Germany_Imperial-Cathedral-01.jpg

Figure 9. Yellowstone National Park, one of the first UNESCO World Heritage Sites, listed in 1978. Photo by Jon Sullivan, 18 October 2006. From Wikimedia Commons.
https://commons.wikimedia.org/wiki/File:Mammothhotsprings.jpeg

Figure 10. Coffee plantations in Colombia, listed as a Category ii cultural landscape by UNESCO World Heritage due to the significance of treatment of land and cultural practices linked to the cultivation of coffee in the region. Photo by Hoako, 19 March 2016. From Wikimedia Commons.
https://commons.wikimedia.org/wiki/File:El_%C3%8lguila_(5),_Valle,_Colombia.JPG

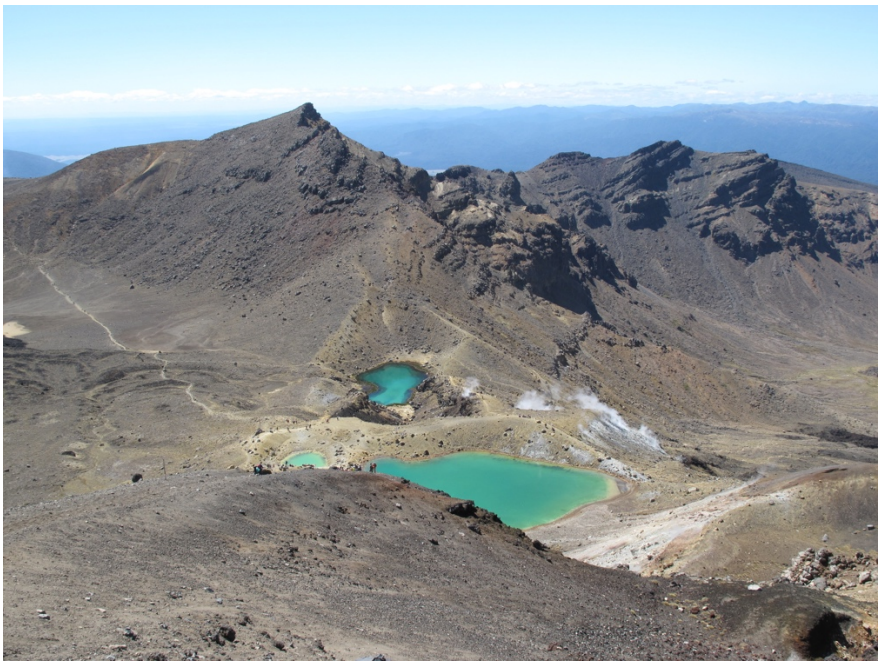

Figure 11. Tongariro National Park, New Zealand, a category iii cultural landscape listed because of the significance of the natural site to the Maori people. First cultural landscape of any category to be listed as a cultural landscape. Photo by Adélie deMarre, used with permission of creator.

Figure 12. Ise Jingu Grand Shrine, rebuilt every twenty years, Japan. Photo by N Yotarou, April 2008. From Wikipedia Commons. https://commons.wikimedia.org/wiki/File:Naiku_04.jpg.

Chapter 2: Modern Architecture and its Conservation

Due to widespread social and technological advances, the twentieth century witnessed the creation (and destruction) of the built environment at a scale unprecedented in architecture. The modern movement emerged as the distinct contribution of this period of dramatic change, developing a new architectural vocabulary with its own principles and aesthetic in rupture with the historicizing tendencies that had come before. This architecture distinguished itself by and derived its value largely from its novelty, so as it aged it lost its defining characteristic. As the twentieth century drew to a close, modern architecture itself was increasingly threatened with demolition and as a recent phenomenon it exhibited little historic value. It can be as challenging to define as it is to conserve, and this paper will ultimately attempt to convey the debates surrounding how to accomplish both goals. This chapter will analyze several definitions both of modern architecture and of modern heritage to indicate how different groups understand the idiom and its conservation.

In particular, architects and scholars who admired the modern movement for its theoretical underpinnings developed an initiative to protect as built heritage aging modern architecture that fit a definition with a heavy emphasis on aesthetic and historic values. Due to a limited appreciation for the aesthetics of modern architecture in the wider population coupled with the ubiquity and repetitiveness of modern forms, modern architecture enthusiasts struggled to justify the movement's place in traditional definitions of heritage. The difficulties posed by modern heritage thus further reveal the

gap between predominant approaches to heritage and realities at the turn of the millennium.

In the 1990s, amid critiques of dominant approaches to heritage, architects and architectural historians formed an organization, DoCoMoMo,[1] that specifically focused on the historic and aesthetic value of modern architecture. This growing interest in modern heritage occurred just as many modern buildings aged past fifty years, an emerging threshold of historicity. Adopting an approach similar to the conventional monument-based perspective laid out in the last chapter, DoCoMoMo, as well as some international heritage entities such as ICOMOS and UNESCO World Heritage, attempted to identify individual buildings of noteworthy artistic and historic value and protect them from modification. This chapter will examine this patrimonialization of modern architecture and the different definitions of heritage these organizations use. It will then address the problems that the built environment of the twentieth century poses, questioning if the term "heritage" is even useful for dealing with it.

2.1 A Brief History of the Modern Movement

Before analysing the phenomenon of modern heritage, this section will provide a concise outline of modern architecture and its history. The term modern poses certain problems, as scholars use it to refer to different time periods and settings depending on the context. In architecture, the term is often a direct reference to a specific movement of

[1] An acronym for the International Committee for Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement.

simplified forms with origins in the late nineteenth and early twentieth centuries, initially a reaction to the revivalist tendencies and perceived visual disorderliness and clutter that defined the built environment earlier in the nineteenth century (fig. 13 & 14). Kenneth Frampton, a leading architectural historian who focuses on modern architecture, characterizes it by its relationship to technological innovation, arguing that

> In its well-intentioned but sometimes misguided concern to assimilate the technical and processal realities of the 20th century, architecture has adopted a language in which expression resides almost entirely in processal, secondary components, such as ramps, walkways, lifts, staircases, escalators, chimneys, ducts and garbage chutes.[2]

These structural and functional elements take on meaning in modern architecture. The parts of a building that are seen and interpreted are those that are used. Modern architectural language emphasized or celebrated that which was once hidden, a complete reversal or subversion of conventional approaches to architecture. This language took form in, for instance, the strategically placed stairways and radiators in the iconic Villa Savoye (1931), French-Swiss architect Le Corbusier's illustration of his foundational principles of modern architecture (fig. 15). Yet it is also tangible in the design of supermarkets which often accentuated both structural and functional elements, as can be observed in the massive arches and steel beams of Schwegmann's Giant Supermarket (1951) in the suburbs of New Orleans (fig. 16).

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[2] Kenneth Frampton, *Modern Architecture: A Critical History* (London: Thames and Hudson Ltd, 1980), 9-10.

Furthermore, this architectural language also expressed itself though the design of automotive infrastructure, a direct reflection of emerging technologies in the era of the automobile and reinforced concrete. Just as other time periods and civilizations developed signature styles and architectural vocabulary expressive of their accomplishments and values, the architects that initiated the modern movement sought, in the words of architectural historian William Curtis, "to rediscover the true path of architecture, to unearth forms suited to the needs and aspirations of modern, industrial societies, and to create images capable of embodying the ideals of a supposedly distinct 'modern age.'"[3] These needs and aspirations were met not only with new building typologies, but also with the development of new forms of spatial organization and a new vision for the city in which infrastructures were a vital component.

While disparate modern movements developed in the early twentieth century in Germany, the United States, and France, there was little consensus as to the governing aesthetic principles of modern architecture until the late 1920s in Europe, where the International Style, characterized by simple, geometric volumes and lack of ornament, took centre stage. This prominence was solidified by an exhibition at the Museum of Modern Art in New York in 1932 entitled "Modern Architecture: International Exhibition" where the International Style, exemplified in the buildings of star architects like Le Corbusier, Mies Van der Rohe, and Walter Gropius, was presented to the public as the standard and reference point for what was modern in architecture (fig. 17). Through this

[3] William J. R. Curtis, *Modern Architecture since 1900,* (London: Phaidon Press Ltd., 1996), 11.

dissemination, a few iconic residential and institutional works in Europe came to influence the vocabulary and structure of the works of architects around the globe for the next fifty years and beyond. Thus, as the influence of the International Style spread, the modern movement inspired a plethora of other movements that would shape much of the built environment of the twentieth century.[4]

World War II dramatically impacted the development and diffusion of modern architecture, planning, and design. While emerging styles like those mentioned above were already widely-known in intellectual and design circles during the interwar years, it was during the postwar period that the movement broadly influenced new standards for construction. New methods allowed for simple replicability and mass-production of architectural forms; easy access to energy and materials allowed for vast windows and tall buildings; and technological advances made rapid construction more affordable. In North America, modern architectural vocabulary began to guide residential developments (fig. 18) and new building types, like the shopping malls (fig. 19) that were constructed at a staggering rate thanks to a prosperous postwar economy. In Europe, architects employed simple geometric forms and innovative materials and techniques for the reconstruction of cities and towns destroyed during the war (fig. 20) and as a response to widespread housing shortages for those whom the violence had displaced (fig. 21).

The focus on mechanical efficiency and social optimism at the core of architectural modernism was a perfect match for the need for cost-effective and easily replicable construction at a vast scale that pervaded postwar societies. For example, in the late

[4] Curtis, *Modern Architecture*, 11.

1960s, Brutalism developed as another vein of modern architecture, often used in the construction of government institutions to communicate responsible spending and technological efficiency through the use of reinforced concrete as the dominant structural and visual component (fig. 22). Architects hoped its visual simplicity and low cost would reassure the public of the egalitarian aims they hoped to embody. Yet much of their agenda and the ideals they wished to convey remained unknown to the general public. In spite of the forward-looking sense of optimism and opportunity emphasized in architects' works, public perception often reduced the modern built environment to a general sign of progress. This symbol of progress also took the form of transportation infrastructure like the high-speed motorways and airports that developed and expanded contemporaneously (fig. 23). These infrastructures often enjoyed widespread support at their inception, and along with changes in architecture, transformed modes of living on a massive scale.

Heralded by new styles and aesthetic qualities, these dramatic changes in residential and commercial space and in transportation changed the daily lives of many people across the globe. In the short fifty years between 1920 and 1970, architects, planners, and policy-makers radically transformed the built environment to an almost unrecognizable state. In North America especially, older neighborhoods in large cities were bulldozed through a combination of local and federal initiatives to make way for the construction of freeways, office towers, and high-rise residences (fig. 24). Modern suburbs replaced farms and wilderness in sprawling rings around cities, especially in the United States and Canada (fig. 25). Drive-thrus and roadway architecture reflected new organizations of space and an economy centred on the automobile. In Europe, large

swathes of cities destroyed or damaged during the war gave way to vast districts of hastily-constructed modern buildings (fig. 26).

The ubiquity of modern architecture by the 1970s provoked a widespread critique and growing negative sentiment. Modern architectural vocabulary had grown so commonplace that it no longer appeared innovative or meaningful.[5] A famous example of the rapidity with which modern architecture fell out of favor is the demolition of the Pruit-Igoe housing project in St Louis in 1972, not twenty years after opening. Completed in 1954 and deteriorating rapidly thereafter, it reflected the tendencies of neglect in public housing complexes across the globe that would colour associations with modern architecture for years to come. While less due to architecture than to policy, this illustrative example of disillusionment following so quickly after construction spoke to the fate of much of the modern built environment.[6] By the late 1970s, modern architecture had cemented a reputation both as a component of failed utopian schemes and as an architecture of experts: austere and elitist. At the close of the century, modern architecture as a whole was deteriorating and understood or appreciated only by a minuscule portion of the population. This gap between the perceptions of experts and of the public, and the widespread monotony of the modern built environment aside from rare iconic works would pose unique problems for its conservation.

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[5] Theodore H. M. Prudon, *Preservation of modern architecture*, (Hoboken, N.J.: Wiley, 2008), 4-5.
[6] Katherine G. Bristol, "The Pruitt-Igoe Myth," *Journal of Architectural Education* 44, no. 3 (May 1991): 163-171.

2.2 Emergence and Conservation of Modern Heritage

The first modern buildings to be considered and promoted as heritage were among the most iconic works constructed before the Second World War in Europe. These were isolated buildings linked to famous and influential architects. The 1950s and 1960s saw the first attempts to better understand and protect seminal works such as Le Corbusier's Villa Savoie in France (1929-31), the Dessau Bauhaus designed by Walter Gropius in East Germany (1925-26), and the Zonnestraal sanatorium designed by Jan Duiker, Bernard Bijovet, and Jan Gerko Wiebenga in the Netherlands (1926-28) (fig. 27). Architects, scholars and enthusiasts associated these structures with exceptional artistic value. The first two examples were recognized with protected status at the local level during the 1960s in the face of the threat of neglect and obsolescence.[7]

These structures can be conceived of as the monuments of the modern movement, recalling the appropriation of Gothic cathedrals as monuments of the Middle Ages by conservators in the nineteenth century. However, much less time had elapsed between construction and listing of these modern architectural icons. Construction methods and materials used in the twentieth century deteriorated more quickly than Gothic stone, and threats of neglect and demolition were consequently more immediate. Architects and architectural historians thus developed a movement at the end of the twentieth century in Europe and North America to conserve modern architecture in a way that prioritized the artistic and emerging historical values of the twentieth century's emerging monuments. This approach, with its emphases on expertise, conservation (limiting

[7] Prudon, *Preservation*, 7-9.

modification), artistic and historical values, and monuments, represents a continuity of the conventional approaches described in the first chapter.

DoCoMoMo

By the 1990s, many modern buildings were already over fifty years old, a fact that could be used as a tool to attest to their historic value.[8] This historicity threshold allowed scholars and practitioners with an interest in modern architecture to revert to a conventional two-fold argument for the conservation of monuments of modern architecture based on a pairing of artistic and historical values. The 1980s and 1990s thus saw the development and strengthening of a number of organizations sharing a goal to conserve and valorize works from the recent past, including the Fondation Le Corbusier, Britain's Twentieth Century Society, and Spain's Fundació Mies van der Rohe. These groups focused on iconic works of modern architecture by very famous architects. In 1989, they joined forces to contribute to the restoration of the Zonnestraal sanatorium at the behest of architects in the Netherlands. This convergence led to the foundation of DoCoMoMo, an international organization devoted to preservation of modern heritage.[9] As evoked by the name, the group adopted conventional tactics of documentation and conservation and applied to them specifically to modern architecture.

On September 12-14, 1990 in Eindhoven, the Netherlands, DoCoMoMo held its first conference, drawing heritage practitioners—mostly architects—from around the

[8] John H. Sprinkle, "'Of Exceptional Importance': The Origins of the 'Fifty-Year Rule' in Historic Preservation," *The Public Historian* 29, no. 2 (2007): 81.
[9] Prudon, *Preservation.,* 10-11.

world. The organization introduces the *Book of Abstracts* from the conference by affirming the reason for its founding and its objectives:

> The foundation of the Working Party is meant to advance an effective inventory, as well as documentation and conservation of the most important modernist buildings, sites and neighbourhoods of that period. The aims of the Working Party are to come to a network for exchange of experience and know-how and to draw the attention of the general public to the significance of this part of the cultural heritage.[10]

This statement acknowledges an explicit concentration on "the most important modernist buildings,"[11] etc.—the monuments of twentieth-century architecture. It also mentions the goal of familiarizing with the importance of modern heritage. In it, DoCoMoMo is thus recognizing that modern heritage remains appreciated mostly, indeed almost exclusively, by those with an education and expertise in architecture and architectural history. Their recommended way of changing this imbalance is via the dissemination of knowledge about the most iconic examples of the modern movement from experts to the public, and not by the widespread appreciation of more frequently elements of the Modern Movement's built legacy like strip malls or highway infrastructure. DoCoMoMo emphasized the aesthetic and architectural values of the modern built legacy, which it saw as residing primarily in iconic works of architecture.

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[10] DoCoMoMo, *Book of Abstracts: First International DOCOMOMO Conference September 12-15, 1990*", (Eindhoven: DocoMoMo, 1990), 3.
[11] DoCoMoMo, *International Conference,* 3.

The next subsection will address how DoCoMoMo's understanding of modern heritage was reflected by the actions of international organizations and government bodies.

Incorporation of Modern Architecture into the Existing Heritage Framework

Modern Heritage in National Registers

In 1970, English Heritage included Sir Owen Williams's Nottingham Boots Pharmaceutical Factory (1932) on its list of structures of architectural, cultural, or historical significance (fig. 28). This gesture of interest at the national level for preserving a work of modern architecture incited a shift in the criteria of eligibility for inclusion on the list, changing the cut-off year of construction from 1840 to 1939.[12] England thus expanded its definition of heritage to include monuments from the early years of modern architecture, even those with just 30 years of age. This motion emphasizes the artistic value of buildings in the specific instance in which they cannot possess age or historic value. English Heritage's change does not represent the inclusion of a new value in the evaluation process, but rather the prioritization of the artistic value that was already predominant in the practice of heritage conservation.

In the United States, postwar modern architecture was officially recognized as heritage with a similarly short period between construction and listing. In 1982, the Lever House, an early and influential modern skyscraper designed by Gordon Bunshaft just thirty years earlier, was listed by the Historic Landmarks Commission in New York City as

[12] Prudon, *Preservation.,* 8-10.

a response to threats of demolition (fig. 29).[13] The following year, it was listed on the National Register of Historic Places. A few other seminal works of postwar modernism in North America were given special and protected heritage status during the 1990s. Philip Johnson's Glass House (1949), an exceptional project designed by an architect of renown, was added to the United States' National Register of Historic Places. These listings demonstrate an interest in modern heritage on the national level, limited, nonetheless, to buildings associated with famous architects and specific feats of architectural engineering. The Canadian Register of Historic Places similarly developed expanded criteria for the designation of modern buildings in 1997. This inclusion stipulated that modern properties "must be an outstanding illustration of the changing social, political and/or economic conditions, involve rapid technological advances or represent new expressions and/or responses to unique functional demands of the era" in order to be listed on the register.[14]

Like DoCoMoMo, these criteria focus on values that fit neatly into conventional heritage approaches. They apply to monuments, but fail to provide a viable toolkit for dealing with monotonous and uniform sectors of the modern built environment such as subdivisions and parking lots. Public entities charged with recognition and conservation in Canada, the United States, and Britain, when faced with the task of recognizing modern heritage, perpetuated a system in which experts identified monuments or icons

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[13] Landmarks Preservation Commission, *Recommendation for Lever House, 390 Park Ave, Borough of Manhattan* (New York: New York City Landmarks Preservation Commission, 1982).
[14] "Built Heritage of the Modern Era," Canada's Historic Places, accessed Jun. 18, 2018, https://www.historicplaces.ca/en/pages/5_modern_heritage-patrimoine_moderne.aspx?pid=2391&h=modern.

to protect for posterity. This model was also taken up by non-governmental international organizations like UNESCO World Heritage and the International Council on Monuments and Sites (ICOMOS) as they started to address modern heritage.

2.3 Modern Heritage as World Heritage

World heritage status is given to a site of value that surpasses local and regional significance and has the power to resonate deeply with people from all corners of the globe. Indeed, UNESCO World Heritage is explicitly dedicated to the most rare and exceptional sites, with the goal "to encourage the identification, protection, and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity."[15] Like at the national level in Britain, the United States and Canada, modern architecture classed as World Heritage sites most often takes the form of influential works by the most famous architects of the twentieth century, like Walter Gropius's Bauhaus School in Dessau (1926) and Le Corbusier's Villa Savoye (1931). These isolated sites are well suited to a monument-based conservation approach, as prescribed by the 1964 Charter of Venice summarized in the last chapter.

In 1987, Brazil's modernist capital Brasilia, the combined effort of architect Oscar Niemeyer and urban planner Lucio Costa, became the first modern site on the World Heritage List (fig. 30).[16] The city, designed and built in the 1950s, included government

[15] UN Educational, Scientific and Cultural Organization, Convention Concerning the Protection of the World's Cultural and Natural Heritage, (Nov. 16, 1972), https://whc.unesco.org/archive/convention-en.pdf.
[16] International Council on Monuments and Sites, "World Heritage Site Recommendation: Brasilia," ICOMOS, Recommendation for site designation, Paris, 1986. https://whc.unesco.org/document/153496.

buildings and cathedrals, but also housing blocs and highways. While certainly monumental in its importance—an entire capital city designed by some of the most famous architects in the twentieth century—Brasilia demonstrated the difficulty of managing modern heritage with an antiquated system of listing and modifying change. While feasible at the scale of buildings and even groups of buildings, how could conservation principles apply to an entire city? What elements were valued? Just the iconic buildings or also the housing and the roadways? If one hundred buildings looked exactly alike, did they all have to be preserved? The plan and aerial view of the city, resembling a bird or airplane seen from above, was also associated with an aesthetic value. How could these attributes be transmitted to future generations?

Brasilia, a monument on the scale of a metropolis, is the exception that proves the rule. Approaches to modern heritage function on the scale of isolated and extraordinary monuments. Brasilia's world heritage designation does not illustrate a strategy for managing non-iconic or ordinary heritage; rather, it elevates infrastructure and urban form to the status of monument. Modern planning principles are, in the case of Brasilia, outstanding and exceptional because of their unique context as part of a new capital of one of the world's most populous nations, rising from a savannah.

These same structures of modern planning, the vast highways and parking lots—a new world redesigned for the car—are not as easily monumentalized when taken out of this context. Elevated highways in the center of Kansas City, housing-estates on the periphery of Nottingham, and suburbs on the west side of Santiago, Chile are all products of the same technological and socio-spatial innovations that are on display in Brasilia.

Stack interchanges, fast food restaurants, business parks, landfills, strip malls, airports, and parking garages void of any exceptional features make up the lion's share of the built environment inherited from the twentieth century. Yet definitions and approaches from DoCoMoMo, ICOMOS, and the United States' and Canadian Register of Historic Places reveal that by the new millennium, heritage conservation did not yet offer tools or strategies for dealing with this wider body of modern structures. Reproduced in great number so that they have few unique qualities, modern buildings that appear monotonous and mundane nevertheless continue to shape lifestyles and development patterns today. If heritage practitioners wish to have a wider impact than conserving isolated monuments—a question to be explored further in the next chapter—they will have to expand their focus beyond iconic works to the broader and more challenging remnants of the twentieth century.

Analyzing Definitions of Modern Heritage

Despite the dramatic differences between the built environment constructed in the twentieth century and that of earlier eras, conservation entities continued to employ a definition of heritage that reflected little to no change from standard definitions. DoCoMoMo referred to the "part of cultural heritage" with which their organization was concerned as "the most important modernist buildings, sites and neighbourhoods."[17] According to DoCoMoMo in 1989, the meaningful contribution of modern architecture is limited to its most important built vestiges. The Canadian Historic Sites and Monuments

[17] DoCoMoMo, *International Conference,* 3.

board reaffirmed this connection between modern heritage and exceptionality in its 1997 provision for "built heritage of the modern era."[18] Their main criterion is that the "The building, ensemble or site must be an outstanding illustration of" one of several phenomena. [19] Yet most pertinent to this analysis is the uniting factor that it be outstanding.

ICOMOS and UNESCO World Heritage also vocalized increasing concern for modern heritage toward the dawn of the new millennium, explicitly referencing it in their 2000 "Heritage at Risk" report:

> Recent heritage, particularly that associated with the classical modern styles, is an important part of our common heritage, expressing major developments in architecture and society. It is suffering from a lack of recognition and protection as compared to "older" or more traditional heritage. In addition, sophisticated designs and often experimental technology give it additional vulnerability. Simple changes to meet more current needs, can alter the subtle architectural qualities of the buildings.[20]

ICOMOS' statement begins with a clear insinuation that modern heritage is a term that refers first and foremost to "that associated with classical modern styles."[21] This stipulation implies an emphasis on iconic buildings or monuments, and evokes the

[18] "Built Heritage of the Modern Era."
[19] "Built Heritage of the Modern Era."
[20] ICOMOS, *ICOMOS World Report 2000 on Monuments and Sites in Danger: Trends, Threats & Risks*, 2000, accessed February 14, 2019, https://www.icomos.org/risk/world_report/2000/trends_eng.htm.
[21] ICOMOS, *World Report*.

exceptionality prioritized in DoCoMoMo's and the Canadian Monuments Board's definitions of heritage.

However, the reference to "our common heritage" in the next clause opens the door to a paradox.[22] For whom exactly do classical modern styles constitute a common heritage? Furthermore, this declaration claims that modern heritage "expresses major developments in architecture and society."[23] The changes to the built environment in the twentieth century were indeed colossal. So how can "classical modern styles"[24] and "subtle architectural qualities"[25] convey the magnitude and significance of the modern movement if they can be compromised through "simple changes to meet more current needs"[26]?

ICOMOS appears somewhat cognizant of this incompatibility of a monument-based approach with the ubiquitous built legacy of the modern movement in the final phrase of their commentary on modern heritage, stipulating, "In addition, the large quantity of such buildings or urban complexes creates a problem in establishing protection and conservation priorities."[27] This addendum partially recognizes that modern heritage evades a focus on the exceptional and the outstanding. Especially in North America, the "major developments in architecture and society" took the form of new architectural typologies like gas stations, suburban bungalows, shopping malls, supermarkets, and drive-thru restaurants that for millions revolutionized daily life and

[22] ICOMOS, *World Report*.
[23] ICOMOS, *World Report*.
[24] ICOMOS, *World Report*.
[25] ICOMOS, *World Report*.
[26] ICOMOS, *World Report*.
[27] ICOMOS, *World Report*.

relationships with space. Arguably, these new building-types often exhibited "classical modern styles" (fig. 31).

Additionally, these new developments were made possible because of innovations in infrastructure like expressways, airports, and electrical transmission lines. Yet none of these developments figure in the definitions of modern heritage provided by DoCoMoMo, ICOMOS, or the national registers. Despite recognizing the vast swathes of built fabric to which conceptions of modern heritage open the door, the primary role of ICOMOS remains the submission of recommendations for World Heritage sites of "outstanding universal value."[28]

ISC20C's Madrid Document

Eventually, organizations interested in modern architecture came to the conclusion that a more open approach could be advantageous. Twenty years after the foundation of DoCoMoMo and ten years after the formation of an international scientific committee dedicated to twentieth-century heritage at ICOMOS, in 2011 this very committee, the ISC20C, drafted a document attempting to put forward an updated definition of modern heritage. They also hoped to provide heritage practitioners with a theoretical and methodological framework for managing and interpreting modern sites beyond those of exceptional artistic value. The "Madrid Document,"[29] named for the host city of the conference, responded to the lack of attention given to unexceptional modern

[28] UNESCO. "Convention" 1972., 1.
[29] International Scientific Committee on the 20th Century, *Approaches to the Conservation of Twentieth-Century Architectural Heritage: Madrid Document* (Madrid: ICOMOS, 2011), 1.

buildings and sites. The conception of twentieth-century heritage evoked in this document is limited primarily to architectural heritage, traditionally the realm favoured by scholars and professionals, yet its authors offer the concession that "many of its concepts may equally apply to other types of twentieth-century heritage."[30] The document represents persisting biases shared by many heritage practitioners while also acknowledging the opportunity and necessity to expand and diversify the approach.

ISC20C adopted a revised edition of the document in 2014 at the ICOMOS General Assembly in Florence, yet the modifications could not keep pace with the rapidly evolving discourse in the field.[31] In October of 2017, ISC20C convened in New Delhi, where a heavily-modified third version of the document was presented that reflected expanding conceptions of heritage and an expanded set of values, including those linked to ecological sustainability.[32] In this third version of the document, the title was changed from "Approaches to the Conservation of Twentieth-Century *Architectural* Heritage" to "Approaches to the Conservation of Twentieth-Century *Cultural* Heritage," suggesting a move away from an understanding of heritage limited to buildings designed by architects. The 2017 edition includes eleven articles as opposed to nine, and the glossary has been expanded to include twenty-nine terms, as opposed to just nine in 2011.[33] This expansion reflects a broader definition of heritage and the recognition of a wider range of potential values.

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[30] ISC20C, *Madrid*, 2011.
[31] International Scientific Committee on the 20th Century, *Approaches to the Conservation of Twentieth-Century Architectural Heritage: Madrid Document*, 2nd ed. (Paris: ICOMOS, 2014).
[32] International Scientific Committee on the 20th Century, *Approaches to the Conservation of Twentieth-Century Cultural Heritage: Madrid-New Delhi Document* (New Delhi: ICOMOS, 2017).
[33] ISC20C, *New Delhi*.

In the New Delhi Document, ISC20C illustrates a shift from a focus on the artistic and historical values of individual structures or buildings to one that encompasses systems and relationships. The built legacy of the twentieth century demands a landscape-oriented approach because its tendency toward monotony and repetition evades a focus on isolated monuments. ISC20C explicitly addresses this important relationship:

> to understand the heritage of the twentieth century it is important to identify and assess all its elements, groups of related or connected places or associated cultural and historic urban landscapes, including the interrelationships between people, the environment and the site or place that contribute to its significance.[34]

This statement demonstrates a shift from the tone of publications about modern heritage at the end of the twentieth century that focused on individual buildings and sites.

Another important modification to the 2011 document in 2017 was the emphasis on planning and infrastructure as an important part of twentieth-century heritage. These elements were included in 2011, but mentioned more explicitly and given far more attention in the 2017 edition. For example, ISC20C added a section to the New Delhi document entitled "1.6: Identify and assess significant planning concepts and infrastructure."[35] By casting planning and infrastructure in a spotlight, ISC20C included them in a definition of modern heritage. This definition could thus include parking garages, elevated freeways, subway lines, etc. Assuming that suburban neighborhoods

[34] ISC20C, *New Delhi*.
[35] ISC20C, *New Delhi*.

also constitute a planning concept, they, too, fall under ISC20C's new definition of modern heritage. Innovations in infrastructure and planning allowed the built environment of the twentieth century to take shape, and continue to form and influence much of the built environment today. Once again, however, a gap persists between discourse and implementation. Infrastructure is the domain of civil engineers and urban planners and has remained unnoticed by heritage practitioners aside from certain bridges noted for their aesthetic or historical value. ISC20C concludes that elements of modern infrastructure "should be identified and their significance acknowledged, managed, and conserved,"[36] yet provides no further guidance on how this objective is to be achieved.

Conclusion

The McDonald's, strip malls, and freeways that distinguished life in the 1960s from life in the 1860s in North America look a lot alike from one town to the next. They do not jump out as candidates for the next World Heritage site. This is of course an extreme example—World Heritage operates at a different scale from national and local entities entrusted with heritage conservation, seeking universal value. But as the Canadian Monuments Board indicated with a definition of heritage as exclusively that which is rare, outstanding, or exceptional and with its very name, this type of definition pervades across all levels. This definition is the product of a system or infrastructure of heritage conservation that operates through the awarding of special protective status that limits or even prohibits modification. This status must apply to a select quantity of sites in order to

[36] ISC20C, *New Delhi*.

maintain its prestige, and the forbidding of change is only feasible at a small and isolated scale. The built environment of the twentieth century thus poses an existential threat to conventional approaches to heritage conservation by prompting a re-evaluation of the definition of heritage. The consequent overhaul of both theory and practice will guide the development and analysis of the chapter to follow.

Images

Figure 13. Rietveld, Gerrit Thomas. 1924. Schroder-Schrader House. From Artstor. https://library.artstor.org/asset/AWSS35953_35953_29400179.

Figure 14. "Victorian Interior," Antoine François Jean Claudet, 1855, Artstor. https://library.artstor.org/asset/ARTSTOR_103_41822001209145.

Figure 15. Living room of Villa Savoie with functional elements like radiators visible and integrated into minimalist design. Photo taken by Brooks C Piper, September 2015, Poissy, France.

Figure 16. Schwegmann Bros. Giant Super Market, revealing accentuated structural and functional elements, Airline Highway, New Orleans. Photo taken May 1954. From Times-Picayune Photo Archive. https://expo.advance.net/img/3b71a26af6/width960/0a2_schwegmann30.jpeg

Figure 17. International Exhibition of Modern Architecture, MoMA, 1932, From Artstor, https://library.artstor.org/#/asset/AWSS35953_35953_34610340.

Figure 18. Postwar housing, aerial view, Levittown, NY. Burt Glinn, 1957. From Artstor. https://library.artstor.org/#/asset/AMAGNUMIG_10311524665

Figure 19. Northland Shopping Center, Gruen Associates, 1952-54, Southfield, Michigan. Photo by York Photographic Studios, 1954. From Detroit Historical Society. https://detroithistorical.pastperfectonline.com/photo/C53D0960-95DF-43E0-9C1E-422989956384

Figure 20. Reconstructed city center of Le Havre, France, Auguste Perret, 1947, from Artstor. https://library.artstor.org/#/asset/ASAHARAIG_111212446639

Figure 21. Park Hill Estate, 1961, Sheffield, UK. Photo by Henk Snoek. Photo by Paolo Margari, 2007. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Park_Hill,_half-abandoned_council_housing_estate,_Sheffield,_England.jpg

Figure 22. Boston City Hall (Brutalism), Kallmann, McKinell & Knowles, 1968, Artstor. https://library.artstor.org/#/asset/ARTSTOR_103_41822000073096

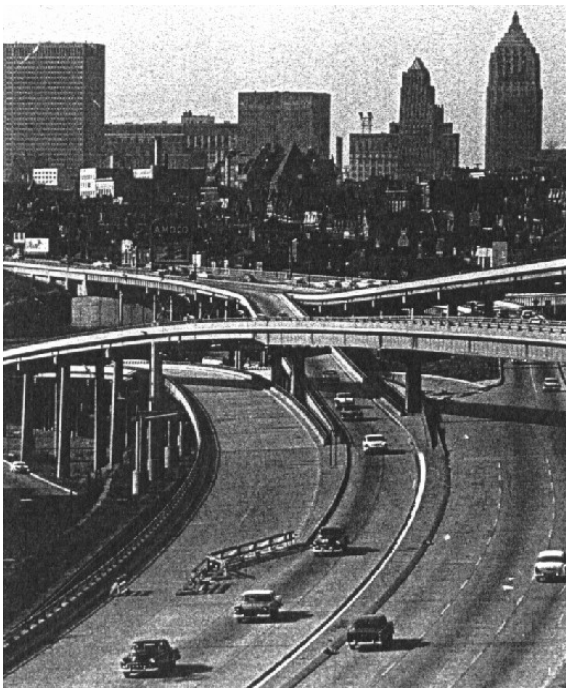

Figure 23. Penn-Lincoln Parkway, Pittsburgh, (Interstate 376) circa. 1959. Photo by Clyde Hare. From Pennsylvania Highways. http://www.pahighways.com/interstates/I376.html

Figure 24. Demolition of a historical neighborhood in Detroit as part of the mid-century slum-clearance campaigns. Photo from Walter P. Reuther Library, accessed on Curbed Detroit. https://wdet.org/media/daguerre/2015/10/18/b6533dbc1ee32eb51abd.jpeg

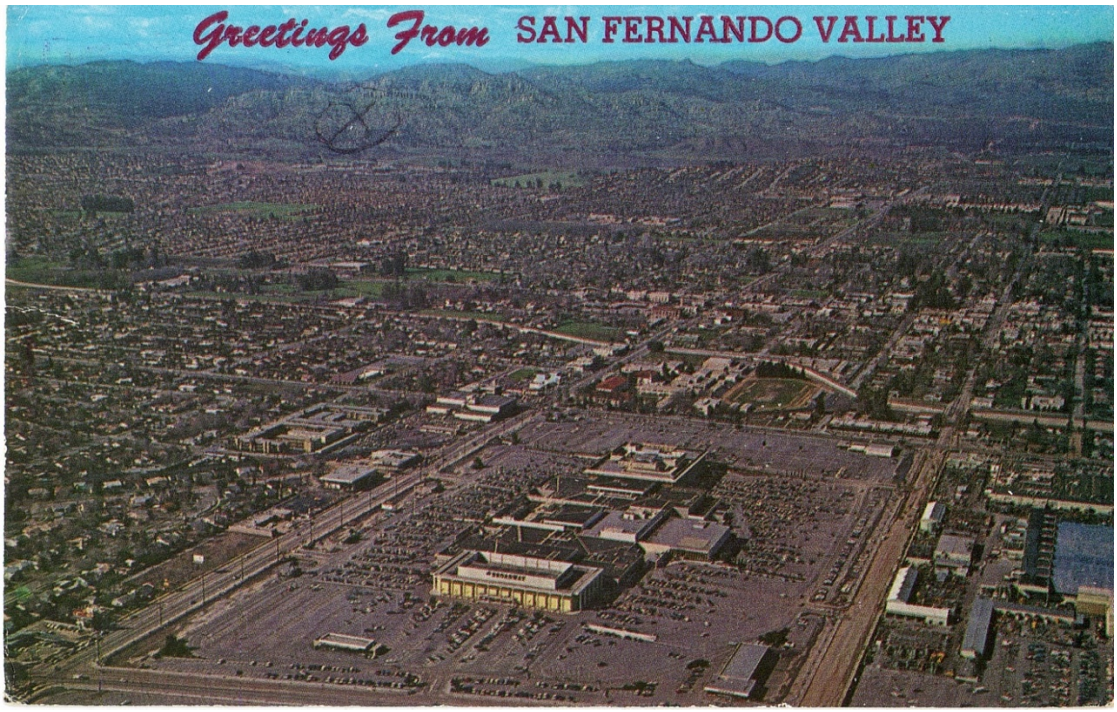

Figure 25. Aerial view of the San Fernando Valley, a booming suburb of Los Angeles, showing the prominent new kinds of commercial and residential urban development in postwar North America. Image taken from San Fernando Valley Blog, June 3, 2013. http://4.bp.blogspot.com/-XSA0YlAV0kM/UaussL3TgBI/AAAAAAAAJdQ/qlqKb5wosBk/s400/Topanga_Mall_Aerial.jpg

Figure 26. Hermann Henselmann, Haus des Lehrers and other postwar construction in heavily damaged Berlin. Photo by Gisela Dutschmann, 1965. Berlinische Galerie. From Goethe Institute. https://www.goethe.de/en/kul/arc/20668421.html

Figure 27. Zonnestraal Sanatorium, Johannes Duiker, 1928, Hilversum, Netherlands. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Rijksmonument_46771_Sanatorium_Zonnestraal_Hilversum_19.JPG

Figure 28. Factory for Boots Pure Drug Comany, Sir Evan Owen Williams, 1932, Beeston, England. Photo by Allan Murray, Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Boots,_Beeston_-_D6_building_-_geograph.org.uk_-_680837.jpg

Figure 29. Lever House, Skidmore, Owings, & Merrill, 1952, New York. Photo by Beyond my Ken. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Lever_House_390_Park_Avenue.jpg

Figure 30. Brasilia, a UNESCO World Heritage site with special attention given to its planning and infrastructure. 24 December 2016. From pxhere. https://c.pxhere.com/photos/73/24/photo-1655.jpg!d

Figure 31. "Classical modern styles" take the form of a now abandoned Sears department store in Dayton, Ohio. Photo by Nicholas Eckhart, March, 2014. From Wikimedia Commons. https://en.wikipedia.org/wiki/Salem_Mall#/media/File:Former_Sears_Department_store_at_Salem_Mall,_Trotwood,_Ohio.jpg

Chapter 3: New Values, New Approaches, New Paradigm

The new millennium brought with it dramatic new developments in heritage discourse. As established in the first two chapters, heritage conservation had developed a system of identification and protection of monuments based on historical and artistic value. By the 1990s, scholars and practitioners were critiquing this infrastructure through documents like UNESCO's Nara document (1994)[1], which proposed a new definition of authenticity independent from materials, and English Heritage's "Sustaining the Historic Environment" (1997),[2] which asserted the significant ecological value of maintaining existing buildings. Movements to conserve modern architecture in the 1990s failed to reconcile a conventional monument-based approach to heritage with the monotony and repetition emblematic of much of the modern built environment. Conventional strategies based on artistic and historic value fell short of people's expectations. Increasingly, rather than working to protect heritage, people wanted heritage that would work for them. By the 2000s, this critique had evolved into a more fully-fledged recognition of a wider array of values that could be attributed to a given structure.

Drawing from Aloïs Riegl's theoretical framework for a values-based approach to heritage as described in his 1903 text *The Modern Cult of Monuments*,[3] heritage specialists in the first two decades of the new millennium increasingly identified new values beyond

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[1] International Council on Monuments and Sites, "Nara Document on Authenticity." Nara Conference on Authenticity in Relation to the World Heritage Convention, Nara, Japan, 1993. https://www.icomos.org/charters/nara-e.pdf.
[2] English Heritage, "Sustaining the Historic Environment: Perspectives on the Future," in *The Heritage Reader*, ed. Graham Fairclough, Rodney Harrison, John H. Jameson Jr., and John Shofield (New York: Routledge, 2008), 313-321.
[3] Aloïs Riegl, *Le Culte Moderne des Monuments,* trans. Mattieu Dumont & Arthur Lochmann (Paris: Éditions Allia, 1903).

those emphasized by art historians. Practitioners in heritage conservation distanced themselves from fields like museum studies and aligned themselves increasingly with urbanists and landscape architects. Social and ecological values gained prominence. Many of these practitioners acknowledged that normal citizens, and not just teams of experts, could help to identify and manage heritage, and that their public participation was essential in determining social value. Additionally, as more diverse cultures with a broader variety of transmission of values gained official recognition, the notion of "intangible" heritage gained respect, becoming the subject of a UNESCO recommendation in 2003.[4] Trends of increased community involvement and participation, in tandem with increasing environmental concerns, mirrored similar movements in urban planning. The popularity of "green" development exerted pressure on heritage specialists to assess and enhance the ecological values of heritage.

The Faro Document,[5] adopted at a meeting of the Council of Europe in 2005, affirmed the centrality of social and ecological values in emerging heritage discourse. The move away from the prevention of change as the primary objective for heritage specialists incited some scholars and professionals, including ICOMOS president Gustavo Araoz, to declare a paradigm shift. Araoz made this shift explicit in a speech in Malta in 2008, arguing that "change management" was a more apt description of current approaches to heritage.[6] Rooted in this idea of sensitive and incremental change to heritage, UNESCO's

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[4] UN Educational, Scientific and Cultural Organization, "Convention for the Safeguarding of the Intangible Cultural Heritage," Paris, 29 September to 17 October 2003.
[5] Council of Europe, "Council of Europe Framework Convention on the Value of Cultural Heritage for Society," Council of Europe Treaty Series No. 199, Faro, Portugal, 2005.
[6] Gustavo Araoz, "Preserving Heritage Places under a New Paradigm," *Journal of Cultural Heritage Management and Sustainable Development* 1, no. 1 (2011): 58. DOI: 10.1108/20441261111129933.

Recommendation on the Historic Urban Landscape (HUL) in 2011 proposed a new definition of heritage that nevertheless recalled Giovannoni's writings a century earlier. The new paradigm, laid out in this chapter with sections focusing on each of these milestones, imagines new approaches that are both rooted in older theory and look forward to a more synergistic, interdisciplinary future for heritage management by recognizing a multitude of values.

3.1 Affirmation of New Set of Values by Getty Conservation Institute (2000, 2002)

The growing emphasis on the social, economic and ecological aspects of heritage conservation could not be smoothly integrated into a "business as usual" approach. Responding to these shifts, the Getty Conservation Institute held a meeting in 1998 to launch a multi-year research initiative focusing on the role of values and value assessment in heritage conservation. This initiative led to the publishing of two seminal reports, “Values and Heritage” in 2000, and “Assessing the Values of Cultural Heritage” in 2002.[7] These reports concretized the flurry of questions, changes, and reflections confronting heritage specialists at the time into a logical progression of tenets and explanations. After a period of widespread and far-reaching change, the Getty research reports sought to provide heritage professionals with a blueprint for a new way to identify, interpret, and manage heritage. At the centre of this new approach is the notion of cultural significance

[7] Erica C. Avrami, Randall Mason, and Marta de la Torre, *Values and Heritage Conservation: Research Report* (Los Angeles: Getty Conservation Institute, 2000), 9.

established through a set of values.[8] The research reports feature introductory texts that speak to the larger condition of heritage conservation, and articles by scholars that focus on specific dimensions of the shifts in the field. The editors of these reports aimed to define the changes that had taken place in theory and practice since the 1964 Venice Charter and to define and evaluate the different values attributed to heritage. In turn, these values offered practitioners a new basis for decision-making.

In the 2000 report, "Values and Heritage," editors Erica Avrami, Marta de la Torre, and Randall Mason concede that the physical condition of heritage structures is consistently prioritized above the more complex questions of meaning and significance. This phenomenon is partially the by-product of the tendency of conservation to fall under the banners of two disciplines—art history and architectural restoration—that had traditionally assigned significance almost exclusively to material forms. "Conservation" is in this context a question of ensuring that these forms resemble a certain state, determined by experts, in which their artistic and historic significance would be readily apparent.

In contrast, Avrami, Mason, and de la Torre emphasize that “cultural significance” is or should be “an issue negotiated among many professionals, academics, and community members who value the object or place.”[9] The first Getty report calls for those responsible for the processes of the identification, interpretation, and conservation of heritage to open the door to professionals with a broad range of expertise: not only

[8] In the Getty Conservation’s second Research Report in 2002, values are defined as “a set of positive characteristics or qualities perceived in cultural objects or sites by certain individuals or groups.”
[9] Avrami, Mason, and de la Torre, *Values*, 2000, 9.

architects and art historians, but also economists, sociologists, community leaders, and long-time residents of a neighbourhood. In order to integrate the perspectives of these various actors into the conservation process, Avrami, Mason, and de la Torre argue for a new conceptual framework in heritage conservation. The articles that constitute the body of the 2000 report suggest questions about the overall value of heritage in the world, beyond an outdoor museum exhibit, as a living entity that actively contributes to the world in which we live.

In 2002, the Getty published its second research report about values and heritage. This report focused on dissecting the different values that heritage could embody. Mason introduces the report by classifying different heritage values into types. He first illustrates the evolution of values at play in heritage conservation from Riegl to the new millennium, then proposes a set of values divided into sociocultural and economic categories. Sociocultural values include historic, spiritual, and aesthetic values, all of which emerge from reflections about culture, meaning, and function that are rooted in the approach of art historians, sociologists, anthropologists, and historians. The economic category echoes the economist's approach: in addition to purely "economic" value such as revenue gained through tourism, it also includes the role heritage plays as a common good, a term borrowed from the economist's lexicon. This division further emphasizes the role of multiple disciplines in determining heritage value.[10] Unlike works of art in a museum, heritage participates directly in the human environment, and the way it is valued is thus

[10] Randall Mason, "Assessing Values in Conservation Planning: Methodological Issues and Choices," In *Assessing the Values of Cultural Heritage: Research Report*, ed. Marta de la Torre (Los Angeles: Getty Conservation Institute, 2002), 10-13.

necessarily a product of this environment. Seen in this way, a shared goal of an improved urban environment between heritage practitioners and urbanists becomes more apparent.

As new values enter the picture, the decision-making process can shift to accommodate them. In the 2002 report, there was pressure to emphasize the economic, social, and ecological benefits of heritage, pressure that has only intensified today. Urban designers and transit planners have been under similar pressure as they, too, enhance and reconfigure space. As Mason reiterates, values and the way they are interpreted and hierarchized depends on the specific context of a conservation project. But he also argues that, while values are not wholly intrinsic, neither are they wholly projected.[11] Deciding what counts as heritage is never an objective process. Specialists are charged with sifting through subjective narratives and associations to isolate and enhance different values.

The following sections of the report focus on some of the emerging heritage values Mason identifies, notably in the economic, social, and ecological categories, and the way they are reflected in current theory and practice. This report marks a milestone in the development of a new set of values and strategies in heritage conservation, proposing an alternative to the practices and priorities that had become entrenched in twentieth-century heritage discourse. This fundamental shift also participated in an ongoing expansion of the definition of heritage which would be advanced and affirmed through other charters and documents in the two following decades.

[11] Mason, "Assessing Values," 10-13.

3.2 Convention for the Safeguarding of Intangible Heritage (2003)

As concepts of value and authenticity have expanded to include new objectives and perspectives from different cultures, specialists have increasingly used the term "cultural heritage" to refer to more than buildings and sites. An increasing emphasis on heritage as a human right has reinforced the drive to recognize different manifestations of heritage belonging to minority groups and cultures from all corners of the globe. In many indigenous and nomadic communities, for example, permanent structures, which are the basis of Western approaches to heritage, either do not exist or are not culturally significant. These communities often conceive of their heritage first and foremost in terms of language, traditions, skills, and practices passed down from generation to generation. For example, members of the Kwanlin Dün First Nation in Canada's Yukon Territory feel a connection to their past and their ancestors through practices of fishing and buffalo hunting that go back thousands of years.[12] These culturally significant practices demand a different protection strategy than brick-and-mortar heritage. The term specialists use for such practices is "intangible heritage."

In 2003, UNESCO responded to the lack of legal or practical infrastructure for recognizing this kind with the “Convention for the Safeguarding of Intangible Cultural Heritage”. In the resolution reached during this convention, UNESCO officials define intangible cultural heritage as “practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated

[12] "About Kwanlin Dün," Kwanlin Dün First Nation, accessed November 9, 2018, http://www.kwanlindun.com/index.php/about.

therewith."[13] This definition recognizes the performing arts, oral traditions, craftsmanship, and other forms of heritage not acknowledged by monument-centred approaches. The UNESCO convention also favours the term "safeguarding" over "conservation" with regards to intangible heritage. "Safeguarding" implies a crucial role for members of the communities possessing intangible heritage: it is their responsibility to identify and transmit their most significant practices and knowledge. The role of state and international actors is to support these communities and ensure that they have the resources needed to safeguard their intangible heritage. Most of the UNESCO convention is centered around developing tools for entities charged with thus supporting the communities imbued with safeguarding. The document as a whole represents a significant movement in heritage conservation more broadly: as notions of heritage evolve and include more perspectives, heritage specialists are charged with developing new frameworks and terminologies that incorporate them into an ever-expanding toolbox of approaches to heritage.

3.3 Faro Convention (2005)

A convention held by the Council of Europe in Faro, Portugal in 2005, officially the "Council of Europe Framework Convention on the Value of Cultural Heritage for Society," further recognized the shifting focus in heritage conservation. The convention affirmed many of the currents in the field that had been growing in influence since the

[13] UN Educational, Scientific and Cultural Organization, "Convention for the Safeguarding of the Intangible Cultural Heritage," Paris, 29 September to 17 October 2003, https://unesdoc.unesco.org/ark:/48223/pf0000132540.

1990s. Early in its preamble, the declaration includes "emphasizing the value and potential of cultural heritage wisely used as a resource for sustainable development and quality of life in a constantly evolving society."[14] This statement explicitly characterizes the relationship between heritage and sustainable development: the former is understood as a "resource" for the latter. It implies a broader objective of this union. Heritage and its conservation is here a tool to construct a desired inheritance for future generations: an environment that exudes equity, meaning, and quality of life and can continue to be passed down to successive generations. By employing the term *sustainable development*, this proclamation also implies that the economic, social, and ecological pillars of the latter should dictate the objectives and practices of heritage conservation. In this phrasing, value is directly derived from the wise use of heritage, reinforcing the previously-discussed notion of heritage's responsibility to serve society. Here, value emanates from this service rather than from inherent properties of the heritage itself.

The body of text within the declaration affirms these tenets. Articles eight through ten are entitled "Environment, heritage, and quality of life," "Sustainable use of cultural heritage," and "Cultural heritage and economic activity" respectively, each article containing suggestions for the conservation of heritage given the recent shifts in theory and approach. Much of the remainder of the document focuses on democratization of practices in heritage conservation and the increased emphasis on the participation of community members and professionals beyond the conventional coterie of experts.

[14] Council of Europe, "Council of Europe Framework Convention on the Value of Cultural Heritage for Society," Council of Europe Treaty Series No. 199, Faro, Portugal, 2005.

Section three encompasses this goal under the title, “Shared responsibility for cultural heritage and public participation.”[15] If heritage aspires to serve the public at large, the declaration suggests, that same public has a vital role in communicating its needs and aiding professionals to generate ways in which heritage can be used to meet those needs. A sustainable approach to heritage thus relies upon more widespread public input and participation. Adopting a comprehensive view of the built and natural environment, such as that espoused by the notions of sustainable development held as a key objective in urbanism, this participation includes all members of the global community, with their different perspectives and different forms of heritage.

Yet this document specifically represents the viewpoint of the Council of Europe, an entity that is limited both in geographic scope and legislative power. Representing only Europe, the organization cannot reflect the reality of heritage conservation in all contexts across the globe. As a non-governmental organization focused on human rights, the council is also removed from the state agencies and more local organizations that are directly responsible for conserving heritage. Many states in Europe have state organisms that continue to function based on a dominant understanding of the value and role of heritage in spite of Faro convention. Discourse advances rapidly, but practices do not.

3.4 Malta Address, Gustavo Araoz, & The New Paradigm (2008)

In 2008, newly elected ICOMOS president Gustavo Araoz made a landmark address to a crowd in Malta, highlighting a "new paradigm" in the field. This “paradigm”

[15] Council of Europe, Faro.

implied a more dramatic change than simply the addition of new concepts, suggesting the necessity for a complete restructuring of the discipline. At the core, of this shift was the turn from conservation to “change management.” Conservation and change may appear fundamentally opposed, yet Gustavo Araoz contended that the relationship between the two concepts generates an aim vital to the future of heritage conservation, describing the end goal as "the paradox, or perhaps oxymoron, of preserving the ability to change."[16] An "oxymoron," even more strongly than a paradox, suggests the deliberate pairing of contradictory concepts to emphasize their irreconcilability. Returning to the notion of process rather than product as objective, Araoz proffered an ideal toward which involved parties could strive without ever producing a determinate product.

Araoz pragmatically defined values as “an vaguely shared set of intangible concepts that simply emerge from and exist in the ether of communal public consciousness.”[17] Consequently, these values and the extent to which they are shared are subject to constant change. If aesthetic, age, and contextual value were, for a time, widely shared and esteemed in public consciousness, their relevance at the current moment must be reassessed. Given these constraints, defining, seeking, and identifying values appears a futile task. No such intangible concept can be eternal or universally shared. Yet Araoz asserted the importance of these reflections, arguing that "what is really crucial for and at the very core of conservation is understanding where those values rest, for that is what we are called to preserve and protect. These are what I call the vessels of value and

[16] Araoz, "New Paradigm,” 58.
[17] Araoz, "New Paradigm," 58.

significance."[18] “Values” thus constitute ideals and meaning that a given generation transmits to future generations, and “vessels of significance” are the vehicle that communicates these ideals.

While, conventionally, preservationists interpreted only a limited set of values as worthy of transmission and only material heritage in the form of buildings as vessels of significance, Araoz's understanding is flexible and adaptable to the current reality. A much larger set of values can be, and in fact always has been, transmitted through a broad spectrum of vehicles. Legends and lore passed down orally, cultural values expressed through dress and cuisine, and distinctive landscapes formed through vernacular traditions all exemplify this more comprehensive conception of heritage and its transmission. Just as the Colosseum is imbued with architectural values passed down from Ancient Rome and thus functions as a structure that represents the aesthetic ideals of Roman society, conservationists under the new paradigm seek to identify vessels of other values that can enrich the environment and the lives of both present and future generations. For instance, vessels for the ecological value of a historic home could be windows that open and shut, allowing for cross-ventilation that reduces reliance on air conditioning.

Quality of life also finds itself at the center of conversations about heritage under the new paradigm. Sense of place is an essential component of a high quality of life, and the inherited built environment is one of its foundations. "Place" evokes the relationship between people and buildings, sites, or landscape, and a strong sense of place leads to

[18] Araoz, "New Paradigm," 59.

long term benefits socially, economically, and environmentally. These values emerge not from materials but from people's associations and behaviors. A shared connection to place fosters social cohesion by affording a common sense of both ownership and belonging to all people that share a space, from all walks of life and schools of thought. This same sense of belonging can drive a community to invest in local businesses and work toward the economic prosperity of the place they love and with which they identify.

Scholar Graham Fairclough distills the role of heritage under the new paradigm: "to be one of the most potent ways, alongside landscape, in which people connect themselves with their past, imbue the present with their memories, and create high quality places that are distinguished one from another by their history as much as by any other single factor."[19] This kind of heritage relies on a comprehensive understanding of all elements of the built environment and operating at all time scales, not just their physical qualities but also how they are used and how people feel about them. Under this framework, heritage conservationists work alongside professionals from all disciplines who strive to improve the environment in which we live—the landscape, broadly understood—with the specific focus of developing an interaction with history and the past. Urban planners also share the goal of creating meaning for or in public spaces, a topic that the next chapter will discuss further.

[19] Graham Fairclough, "New Heritage Frontiers," in *Heritage and Beyond,* Daniel Therond and Anna Trigona ed. *(*Strasbourg: Council of Europe Press, 2009), 39.

3.5 Recommendation on the Historic Urban Landscape (HUL) (2011)

In November 2011, UNESCO convened once again for a convention at which it identified shortcomings of current approaches to heritage conservation and attempted to innovate and articulate new strategies. This time, UNESCO specifically addressed the matter of urban heritage. Urban populations had ballooned across the globe and consequent fragmentation and deterioration threatened not only the historical urban fabric of cities but also that of the regions surrounding them. Development and expansion within urban areas often manifested through the construction of monotonous buildings at the expense of public spaces. Severe weather patterns fueled by climate change, from more frequent wildfires to stronger hurricanes, also exacerbated risk for historic cities.

These problems forced heritage specialists to reconsider what constitutes "urban heritage" and what can be done to protect it. Mass-tourism poses further threats to urban heritage in places like Venice where visitors often outnumber residents, undermining local customs and stressing infrastructures that contribute to the broader historic urban landscape. In the face of such risks, no element of the inherited city is safe, and conventional tools have failed to address the full scope of current struggles. The text generated at the convention, the "Recommendation on the Historic Urban Landscape,"[20] viewed these myriad challenges as opportunities—ways to use heritage conservation as an integral step toward broader objectives of sustainable development. Maximizing the

[20] UN Educational, Scientific and Cultural Organization, "Recommendation on the Historic Urban Landscape," Paris, (Nov. 10, 2011) https://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf.

potential of existing structures could balance growth in urban areas by reducing the demand for resources linked to construction, while creating a better-functioning space.

Increasingly, *all* elements of the urban environment are interpreted as having some sort of heritage value, be it social, ecological, economic, or the dominant aesthetic or historic values. The UNESCO recommendation cited a "shift from an emphasis on architectural monuments primarily towards a broader recognition of the importance of the social, cultural, and economic processes in the conservation of urban values."[21] This statement reflected the "new paradigm" identified at the end of the 2000s by Araoz, Fairclough, and other scholars. It expanded the focus of heritage specialists beyond individual buildings and affirmed the conservation of "values," which can exist in any building or space, regardless of age or aesthetic, rather than that of materials.

The HUL approach integrates urban conservation with other strategies in urban development, with the common objective of improving the human environment. This approach is steered by a more widespread inclusion of stakeholders. Differing from former terms like "historic districts" or "ensembles," UNESCO defines the "historic urban landscape" as "a result of a historic layering of cultural and natural values."[22] This vision recalls approaches to cultural landscapes discussed at the end of chapter one, here applied to predominantly urban rather than rural settings. In this approach, each layer represents value, and certain layers are not prioritized over others. A city with one hundred years of history has valuable layers just as a thousand-year-old metropolis does.

[21] UNESCO, Historic Urban Landscape.
[22] UNESCO, Historic Urban Landscape.

HUL also extends to "the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization."[23] Conceiving of an historic urban landscape pushes one to imagine heritage at the broadest and most comprehensive scale, incorporating all of the spaces that humans create and pass down. This way of thinking could present an especially useful framework for dealing with the unexceptional twentieth-century structures that make up much of today's built environment.

The historic urban landscape, broadly conceived, cannot be frozen in time. It is dynamic: always evolving, adding new layers to its historic fabric. The HUL approach seeks to integrate new forms and patterns of development sensitively and meaningfully within the existing urban environment. As elucidated in the recommendations, strategies are "aimed at preserving the quality of the human environment, enhancing the productive and sustainable use of urban spaces, while recognizing their dynamic character and promoting social and functional diversity."[24] The HUL approach is essentially a strategy to manage changes in urban environments, evoking the concept of "change management" that Araoz highlighted in the Malta address as a fundamental tactic under the new paradigm.

The recommendation divides this strategy into four "tools." "Civic engagement," the first tool, refers to the role of heritage specialists in involving local stakeholders in the

[23] UNESCO, Historic Urban Landscape.
[24]UNESCO, Historic Urban Landscape.

identification and management of urban heritage. Residents of a neighborhood, for example, have a pool of knowledge about the value and function of their environment, and are instrumental in envisioning its future. It is also the responsibility of heritage specialists to negotiate and resolve conflicts in value within the urban landscape. The second tool, "knowledge and planning," refers to actors' identification of cultural significance and their plans to enhance and promote it. Heritage specialists are encouraged to expand their knowledge of a diverse array of values present across the HUL and to innovate ways to make these values contribute to the urban environment. The third tool, "regulatory systems," refers to ways that communities can adapt legislative approaches to the specific context of their historic environments. Municipal and neighborhood bodies are often charged with management at the level of much of the HUL, and the steps that they take are at the core of this approach. "Financial mechanisms" are the fourth instrument for ensuring the sustainable integration of new development within the HUL. Finance, such as tax breaks in the United States for historic properties, can present a flexible incentive to incorporate existing buildings into contemporary functions.[25] These tools translate some of the theory and concepts outlined in discourse surrounding the new paradigm into tangible actions that heritage professionals can undertake in the real world. These efforts make heritage concepts more accessible to those not in the field, helping to bridge gaps and create cohesion between different disciplines that work with the built environment.

[25] UNESCO, Historic Urban Landscape.

In 2013, two years after the HUL recommendation, UNESCO published a document entitled “New Life for Historic Cities: The historic urban landscape approach explained.” This document outlines case studies, from cities around the world, of HUL in action, explicitly referencing the tools from the approach that were used in different projects. In Istanbul, in an initiative called “Play the City,” city-dwellers are invited to participate in a game in which they "play" the mayor and show how they would use design to accommodate the large numbers of newcomers in the city's historic fabric. This program employs the tools of both civic engagement and knowledge and planning. In Paramaribo, Suriname, a local bank and the city's organization charged with overseeing the historic inner city, a UNESCO world heritage site, partnered to create Stadsherstel Suriname, which works to maintain and redevelop built heritage through strategic investment in restoration projects. This initiative illustrates the use of both financial mechanisms and regulatory systems to fulfill HUL objectives.

Another example of a project illustrating the HUL approach is New York's High Line, where a defunct elevated railway was transformed into an elevated park. Evolving out of a community activist organization and funded mostly from private sources, the park demonstrates both civic engagement and financial mechanisms as tools of the HUL approach.[26] Furthermore, it shows how infrastructure can play a part in creating a richer urban environment through creative redevelopment. This particular notion will be explored in depth in chapters four and five. The HUL approach may not always resemble

[26] UN Educational, Scientific and Cultural Organization, New Life for Historic Cities: Historic Urban Landscape Explained (2013).

dominant approaches to conservation, yet it shows how pragmatism in the current era can help to safeguard an urban environment charged with historical meaning and a diverse set of values through a willingness to take a second look at existing structures of all shapes and sizes. The HUL approach provides a distinct contrast with its parent organization UNESCO World Heritage's conventional concentration on monuments.

Conclusion

Heritage shares a Latin root with *inherit* and *heir*. At its purest sense, heritage, like inheritance, is simply a noun formed by the verb *inherit* meaning, "that which has been or may be inherited."[27] To inherit means "to take or receive as an heir to a former predecessor."[28] The heir does not select what he or she receives. It is the predecessor who decides what to pass down. Inheritance is thus a reflection of the values of the predecessor and not those of the heir. For example, one can inherit the belongings of a deceased relative, and these belongings, this heritage, reflect the tastes and choices of the relative. Whether this inheritance is valued by the heir does not affect its classification as heritage, which as a term is value neutral.

These reflections were inspired in large part by the words of Graham Fairclough, in his essay "New Heritage Frontiers" in *Heritage and Beyond* (2009), who describes the current state of the term "heritage" thusly, "the word "heritage" is used in two separate ways – descriptively to signify those objects that we worry about preserving, but also in an active sense (almost as if it were a verb, which one day it might become) for the process (and philosophy) of looking after and exploiting those objects. Thus, heritage is object and action, product and process. It means not only the things ("goods", properties, immobilier – "stuff" (and the perceptions or ideas)) that we inherit, irrespective of whether we want to keep them; it can also be taken to mean the processes by which we understand, contextualize (physically and intellectually), perceive, manage, modify, destroy and transform the inherited world."

[27] *Oxford English Dictionary Online,* s.v. "Heritage," accessed June 24, 2018, http://www.oed.com/view/Entry/86230?rskey=MYJ4XK&result=1#eid.
[28] *Oxford English Dictionary Online,* s.v."inherit, v.", accessed February 15, 2019, http://www.oed.com/view/Entry/95948?redirectedFrom=inherit.

Graham Fairclough, in his essay "New Heritage Frontiers" in *Heritage and Beyond* offers a definition of heritage that acknowledges conflicting values:

> the word "heritage" is used in two separate ways – descriptively to signify those objects that we worry about preserving, but also in an active sense (almost as if it were a verb, which one day it might become) for the process (and philosophy) of looking after and exploiting those objects. Thus, heritage is object and action, product and process. It means not only the things ("goods", properties, immobilier – "stuff" (and the perceptions or ideas)) that we inherit, irrespective of whether we want to keep them; it can also be taken to mean the processes by which we understand, contextualize (physically and intellectually), perceive, manage, modify, destroy and transform the inherited world.[29]

The openness of this definition, especially in the second, more participatory sense, reflects the diverse range of values discussed in this chapter. The understanding, contextualization, perception, etc. of heritage takes far more into account than aesthetics and historical facts. The associations that drive these processes often reflect social, cultural, economic, or ecological values. Which values are emphasized depends on which associations are the most important relative to a structure, space, or context. This multiple-values-based definition is explored at length in Marie-André Thiffaut's master's thesis also under the supervision of Claudine Déom, "Vers une nouvelle définition du patrimoine : l'intégration du développement durable dans l'évaluation patrimoniale,"

[29] Graham Fairclough, in his essay "New Heritage Frontiers" in *Heritage and Beyond* (2009)

which focuses especially on the growing significance of ecological value in emerging and expanding conceptions of heritage. [30]

For all of the monuments, palaces, and great works of architecture each society inherits from generations prior, it is also the heir to a built environment composed mostly of ordinary structures with very little uniqueness or distinction and to problematic elements of the built environment constructed by previous generations. This cycle drives contemporary architects to deliberately reject their built heritage and reconstruct their surroundings in opposition to it. Such was the case when Louis XIV, Haussmann, and Le Corbusier reimagined Paris each in their turn in a way that renounced inherited flaws and superimposed solutions thought to be better-suited to their contemporary societies. Could HUL provide an alternative to this trend? The next chapter will examine how the inherited built environment of the twentieth century comes into conflict with the values of its heirs in the twenty-first century, before the final chapter examines potential resolutions to this conflict.

[30] Marie-André Thiffaut, "Vers une nouvelle définition du patrimoine : l'intégration du développement durable dans l'évaluation patrimoniale," Master's Thesis at the Université de Montréal, supervised by Claudine Déom, Dec. 2011, http://hdl.handle.net/1866/7010.

Chapter 4: Infrastructure in the City

The definition of heritage is in flux. The preceding chapters discussed new conceptions of heritage in UNESCO's HUL Recommendation (2011) that were extended to incorporate all of the inherited built environment—mundane architecture, landscapes, even infrastructure.[1] These new conceptions aim to conserve the relationships between people and places rather than merely the material aspects of buildings and/or sites. As a result of this expansion, there has been a shift in approach from conservation—prohibiting or limiting modifications to heritage—to change management. Under this new paradigm, the heritage specialist's objective in turn shifts from maintaining or enhancing physical structures to improving and enriching the lives and experiences of the people that live among them. Amid the many built and intangible elements falling under new definitions of heritage, this chapter will narrow focus to infrastructure in the form of the street, used throughout history by pedestrians, ox-carts, carriages, and, more recently, the automobile.

Chapter Two demonstrated that the massive infrastructure created for the car has been excluded from most definitions of modern heritage, while Chapter Three offered an alternative view that recognized a wider range of possible values. The inclusion of social, ecological, and economic values and the potential expansion of the definition of heritage to include transportation infrastructure recalls the research question of the thesis: in view of this newly emergent paradigm, what is the role of a values-based heritage perspective in the transformation transportation infrastructure in cities? Can the new values

[1] UNESCO, "Recommendation on the Historic Urban Landscape," Recommendation, Paris, 10 Nov. 2011

attributed to heritage allow for existing components of the built environment to be viewed in a new light and therefore contribute to the improvement of cities? This chapter will follow the evolution of the values associated with the urban street and its twentieth-century manifestation, the intra-urban highway, in order to suggest different values that could be identified or enhanced through a heritage approach.

The street has played a vital role in patterns of human habitation. As a basic unit of the urban form, the street has informed the shape, function, and character of cities for millennia.[2] From the ancient alleyways of Rome treated in Giovannoni's writings on urban heritage to the superhighways that connected the subdivisions and shopping malls of the twentieth century, streets and infrastructure have organized space and informed our relationship with the built environment more broadly. Historically, the urban street served many functions and was imbued with social, cultural, and economic values as a meeting place, theatre, and marketplace. After the industrial revolution, these functions of the street were eclipsed by booming urban populations that dramatically increased crowding, disease, and pollution in cities.[3] The multi-functional urban street and the dense neighborhoods it supported grew to be associated with negative values and were perceived to be a culprit in problems with hygiene, circulation, and crime. In the late-nineteenth century, the growing popularity of the bicycle, which demanded smooth roads for safe function propelled the development of urban street conceived primarily for rapid

[2] Spyro Kostof, *The City Assembled: The Elements of Urban Form through History* (Boston: Bullfinch Press Books, 1992), 192.
[3] Moshe Safdie, *The City After the Automobile* (New York: HarperCollins Publishing, 1997), 3-9.

intraurban circulation.[4] Building off of this premise, the twentieth-century limited-access highway[5] offered a new way of organizing space made possible by the private automobile, wherein physical distances were greater and functions were segregated to different zones. Today, as the highways and urban forms of the twentieth century age and deteriorate, values attributed to freeways enter into conflict with contemporary needs and aspirations for cities based on evolving visions of urban lifestyles.

4.1 The Multi-Functional Urban Street as Public Space

The street as an organizing factor in cities goes back to ancient Cyprus, to a city called Khirokitia (6000 BCE) where a raised limestone platform linked houses together along a central corridor (fig. 32).[6] Since that time, city streets have served multiple functions and city-dwellers have imbued them with diverse values. Historian Di Wang employs these values to analyze "street culture," the result of the social, economic functions of the street. As Wang's studies focus on China at the turn of the twentieth century, this section will explore these functions and related values in the city of Chengdu during the late Qing dynasty.[7] This example is chosen to take advantage of Wang's compelling approach and scholarship. The many competing and simultaneous roles of the urban street in Chengdu around 1900 can be seen replicated in cities across the globe

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[4] Preston L. Schiller and Jeffrey R. Kenworthy, *An Introduction to Sustainable Transportation: Policy, Planning and Implementation,* 2nd ed. (New York: Routledge, 2018), 87-90.
[5] In this paper, "limited-access highway" refers to transportation infrastructure accessible only by on and off ramps designated for automobiles at high speeds. It will be used interchangeably with "freeway," "expressway," "high-speed motorways," and "superhighway."
[6] Kostof, *The City Assembled,* 189-191.
[7] Di Wang, "Street Culture: Public Space and Urban Commoners in Late-Qing Chengdu," (*Modern China* 24, no. 1 1998): 33-55.

before the advent of the car or, today, in cultural contexts where the automobile has not fully taken over the urban street. Across space, time, and culture, streets have stood out as ways not only of organizing space but also community and society.

Around the world, before the industrial revolution brought factories and unprecedented population growth to cities, and still today in many contexts, streets across the world shared their multi-functional identity as places of interaction, commerce, cultural spectacle, and circulation. The multi-functional street existed in cities across the globe before the car and had both positive and negative associations. Eventually, negative associations with the urban street as a place of congestion, disease, lewd entertainment, and crime led theorists in Europe and North America to imagine streets and other spaces totally separated by function, allowing for efficiency and rapid circulation. These theories would come to influence urban planning in cities around the globe in the twentieth century.

Social Values

Streets in Chengdu were public spaces, open to city-dwellers of all economic classes. They held a crucial social value as a place of meeting, exchange, and recreation for the city's citizenry. Those of all pedigrees could mingle in this space, contributing to the city's overall social cohesion. Non-elites in particular, lacking more exclusive alternatives for interaction and leisure, benefited from the social commons that the street provided (fig. 33). Chengdu's streets also connected a vast network of semi-public centers of social exchange, including teahouses, bathhouses, and barbershops. The interactions

and conversations fostered by these spaces spilled into the streets surrounding them. The multi-functional streets of Chengdu thus had value both as public spaces themselves, and as an infrastructure that provided access to other incubators of social exchange (fig. 34).[8]

While predominantly a space for men, the streets also offered a platform for women to interact and exchange ideas, playing *mahjong* (a popular game played with small tiles) or going for a walk. In a society that mostly confined women to the domestic sphere, the street was a rare and valuable social platform for those daring enough to walk through it. Children also found value in the street as a place of recreation and play. They flew kites in the square and paid small fees for glimpses of historic battles or scenes from far-away countries. Streets set the backdrop for children's games and social development, taking on value as a kind of kindergarten where they could learn about the outside world and about interaction with others.

Economic and Cultural Values

Business constituted one of the primary functions of Chengdu's streets, to the extent that some streets bore the name of the items sold there: Jewelry Street, Red Cloth Street, Summer Sock Street, and Cotton Street. While some of these goods could be found within shops, most stores expanded into the street with tables and stalls. Signs and banners advertising these goods dominated and defined the streetscape. Peddlers used the street in various ways, either setting up constant stalls or moving up and down the lanes to reach customers. Their cries and announcements filled the air, contributing to

[8] Di Wang, "Street Culture," 40-42.

the busyness and vitality of the street. Chengdu's economy relied on this commons as a mechanism for advertisement, exchange, and interaction. The street also served as a cultural theater, providing a point of contact between fortune tellers, witch doctors, magicians, geomancers, Buddhist and Daoist priests, and the city-dwellers who consulted them for service or spectacle. Festivals and ceremonies also brought people from both wealthy and poorer backgrounds together in the streets. Street festivals featured puppet shows, shadow plays, and operas open to those of all social classes.[9]

Aesthetic Values of the Urban Street

While Wang addresses several of the street's diverse values—social, cultural, economic, etc.—she devotes less attention to its aesthetic or visual values specifically. Yet, the urban street has historically been both an object and a facilitator of aesthetic value in the city. Across cultural and historical contexts, architects and planners have used the urban street as a tool to create deliberate and dramatic visual impressions. In sixteenth- and seventeenth-century Rome, wealthy popes and clergymen commissioned grandiose urban projects in the Baroque idiom, using streets to create dramatic perspectives and to direct foot traffic to the most outstanding architectural monuments and sites. The Piazza del Popolo, erected at the behest of Pope Sixtus V beginning in 1589, is an example of streets constructed for such an aesthetic purpose, with radiating alleyways channeling pedestrians in different directions from a central monumental plaza

[9] Di Wang, "Street Culture," 44-46.

(fig. 35).[10] The planned Russian imperial capital of St. Petersburg is another example of streets being used to create lasting visual impressions, with the most commanding, Nevsky Prospekt, traversing broad canals and housing a dazzling array of cathedrals and palaces (fig. 36).[11] In London, architect and planner John Nash designed Regent Street as a grand boulevard with deliberate architectural unity along its sides in 1825, forming a dramatic intersection at Piccadilly Circus. These urban thoroughfares continue to evoke value as emblems of London's visual identity (fig 37).[12] Countless other examples, including Haussmann's boulevards in nineteenth-century Paris and the monumental avenues of the City Beautiful movement in North American cities at the turn of the twentieth century, attest to the aesthetic value and power of the urban street across time and cultures.

Problems with the street

Throughout history in cities around the world from Beijing to London, Buenos Aires, or Chicago, the urban street, in its openness and accessibility, permitted people from all levels of society to engage in a broad variety of activities. While this reality had many positive ramifications for the function of the city, streets, in some instances more than others, also welcomed characters and practices that earned them a negative connotation among many city-dwellers. Especially after dark, streets were favored sites

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[10] Paul Zucker, "Space and Movement in High Baroque City Planning," *Journal of the Society of Architectural Historians* 14, no. 1 (1955): 9.
[11] *Britannica Academic*, s.v. "St. Petersburg," accessed May 24, 2019, https://academic.eb.com/levels/collegiate/article/St-Petersburg/109512.
[12] *Britannica Academic*, s.v. "John Nash," accessed May 24, 2019, https://academic.eb.com/levels/collegiate/article/John-Nash/54899.

for sex work, gambling, drug use, and crime. Deviance and urban public space developed a strong association.[13] This association also pervades the role of the street as a performative space. In Chengdu, popular peep shows gave perambulators access to pornographic imagery for a small fee. Beggars, as a stratum of society with limited access to private spaces, relied on the street not only as a place to make their living but also as the sole space in which they could live, eat, and sleep. Criminals also took advantage of the street's position as a frequented public space to thieve and make illicit transactions.[14] While consistent street lighting helped to dispel some concerns about street security, unease persisted, especially for the upper and middle class. Urban planning at the end of the nineteenth century contained a deeply moralistic element, and planners sought to create new spaces to solve the problems of the multi-functional urban street.[15] Segregation of spaces based on function and class would offer an increasingly popular remedy to the perceived ills of the traditional urban street.

The diversity of logistical functions of streets created further problems. In addition to transporting people and goods, streets often had the job of transporting, distributing, and collecting waste. Streets accumulated household wastes, refuse from butchers and slaughterhouses, animal corpses, and excrement. The narrower the street, the more concentrated the impact of these wastes. Broader boulevards offered some respite, yet even those in wealthier districts fell victim to the constant outbreaks of disease—bubonic

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[13] Fabrizio Nevola, "Review Essay: Street Life in Early Modern Europe," *Renaissance Quarterly* 66, no. 4 (2013): 1337-1338.
[14] Di Wang, "Street Culture," 35-36.
[15] Angela Jain and Massimo Moraglio, "Struggling for the Use of Urban Streets: Preliminary (historical) Comparison between European and Indian Cities," *International Journal of the Commons* 8, no. 2 (2014): 519.

plague, cholera, yellow fever—that afflicted urban centers into the twentieth century. This very negative aspect of the urban street led planners to divert channels of waste beneath the ground. Paving the streets reinforced this barrier, further limiting unpleasant odors.[16] Hygiene has long been a motor for the hierarchizing of streets and for the division of their functions.

The last of the urban street's problematic elements to be discussed, and one of the most important vectors of its transformation, is the circulation of people and especially vehicles. For most of human history, city streets were shared by pedestrians and carts, carriages, and wagons pulled by animals. Even before the advent of the automobile, the sharing of street space could lead to congestion. When streetcars arrived in major cities across the world, competition for space between users of city streets grew all the fiercer (fig. 38).[17] The invention of the safety bicycle in 1885 made cycling an increasingly competitive option of urban transportation, expanding upon its already widespread popularity. Bicycles relied upon smooth roads for efficient travel, leading groups of cylists in Britain and the United States to form the Good Roads movement and Road Improvements Association respectively to advocate for improved roads. Urban networks of level roads created for the bike would eventually lay the groundwork for the automobile's path to urban commuting.[18] Simultaneously, the entrance of the locomotive into the city, in tunnels or on elevated tracks, represented the potential for separating

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[16] Alain Corbin, "L'hygiène publique et les « excreta » de la ville préhaussmannienne," *Ethnologie française* 12, no. 2 (1982): 127-129.
[17] Jain and Moraglio, "Use of Urban Streets," 519.
[18] Preston L. Schiller and Jeffrey R. Kenworthy, *An Introduction to Sustainable Transportation: Policy, Planning and Implementation,* 2nd ed. (New York: Routledge, 2018), 88-90.

corridors of transportation infrastructure based on speed. By the end of the nineteenth century, urban streets were generally associated with vice, disease, crowding, and congestion. Increasingly, planners, architects, and scholars perceived this traditional street as a problem to be solved. They sought to harness rapidly-developing technology to maximize speed and efficiency, contributing to the dramatic transformation of the urban form, in order to improve both cities and day-to-day life.

4.2 The Limited Access Highway and Twentieth-Century Values

In the twentieth century, a new set of values and aspirations informed the shape and function of urban streets. After the industrial revolution, congestion of people, vehicles, and goods in urban streets rose to new extremes as populations soared to unprecedented levels. Between 1800 and 1900, London grew in population from just over 1 million to 6.5 million, and Chicago, founded only in 1833, had a population of 1.7 million by the turn of the century.[19] These shifts were coupled in the twentieth century with the advent of the automobile. The United States' first automobile manufacturer, the Duryea Motor Wagon Company, began producing in 1896, with Ford Motor Company becoming Canada's first producer in 1904.[20] The private car became increasingly popular and

[19] "Greater London, Inner London & Outer London Population & Density History," Demographia, Wendell-Cox Consultancy, ccessed 20 March 2019. http://www.demographia.com/dm-lon31.htm;
Campbell Gibson, "Population of the 100 Largest Cities and Other Urban Places in The United States: 1790 to 1990" (United States Census Working Papers Series POP-WP027, June 1998), https://www.census.gov/library/working-papers/1998/demo/POP-twps0027.html.

[20] Mary Bellis, "The Duryea Brothers of Automobile History," *ThoughtCo*, last modified September 6, 2017. https://www.thoughtco.com/duryea-brothers-automobile-history-1991577;
The Canadian Encyclopedia Online, s.v. "Automobile," by K. M. Ruppenthal and Laura Neilson Bonikowsky, February 7, 2007, last modified January 28, 2014, https://www.thecanadianencyclopedia.ca/en/article/automobile.

accessible to the middle class as manufacturers found more efficient ways to produce more vehicles. By 1930, there were almost 23 million vehicles registered in the United States, and over one million in Canada—countries that would become some of the world's most car-dependent.[21]

The invention of the automobile promised to revolutionize transportation, commerce, and urban forms. Private cars provided a convenient way for families and individuals to travel greater distances in much less time than possible by conventional means of displacement like walking or biking, and with more autonomy than on public transit alternatives like streetcars. Yet private automobiles quickly exceeded the capacity of existing urban infrastructure (fig. 39). For the private motor vehicle to smoothly function as the dominant mode of transportation, dramatic changes were needed to the ways cities looked and operated. Three prominent urban theorists and planners, Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier (and many others) used the promise and potential of emerging transportation technology to create entirely new urban forms that separated function in order to maximize speed and efficiency and resolve the problems of the crowded city street.

[21] Federal Highway Administration, *State Motor Vehicle Registrations by years, 1900-1995*, April 1997.; "In Search of the Canadian Car, History Timeline, 1920s." Canada Science and Technology Museum, accessed March 20, 2019, http://canadiancar.technomuses.ca/eng/frise_chronologique-timeline/1920/index.html.

Utopian Underpinnings of the Highway

A glance at English stenographer Ebenezer Howard's diagrams of the Garden City reveals the importance of mobility as a tool to combat the ills of the traditional city. In his utopian plan, Howard depicted a group of seven cities, six satellite towns surrounding a larger central city, in a diagram entitled “Group of slumless and smokeless cities” (fig. 40). A slum connotes an area of squalor and poor hygiene, with a lack of access to clean air and water. Howard proposed through this vision a new form of city that ensures and promotes through its design a cleaner and more livable urban landscape. Slums were also associated with high density, and one of the ways in which Howard hoped to improve urban livability was strategically reducing density and spreading the population over a greater distance. Greater distances between residents, commerce, and industry could only be viable with rapid and efficient circulation. In the diagram, the six outlying towns are aligned along and connected by an outer circular rail line. Within this circle, rail arteries connect each satellite town to the central city, like spokes in a wheel. This form allows fluid travel between each of the satellite towns and the central city. Canals between the cities further divide uses and functions between separate sectors, permitting even greater efficiency. This diagram suggests a rationalized and systematic form of suburbanization, which could be easily modified to suit automotive traffic.[22]

Another of Howard's diagrams is entitled "Ward and Centre—Garden City" (fig. 41) and illustrates the strategy for dividing uses and maximizing efficiency within the central city. Here, industry, including a “jam factory,” “boot factory,” and “clothing

[22] "Group of slumless and smokeless cities." Ebenezer Howard, *Garden Cities of Tomorrow,* 1902.

factory," is limited to the outermost concentric ring. At the center of the circular form is a garden surrounded by cultural institutions such as a theatre and a library. Roads are arranged in a distinct hierarchy, with wider boulevards as spokes and a ring midway between the center and the outermost circle designated as the "grand avenue."[23] Howard's diagrams represent an intermediate zone between earlier cities and the kind of planning that would eventually dominate in the twentieth century. Trains still serve as the dominant form of speedy transit, and the automobile is not yet a significant factor in the urban form. Yet the building blocks of a new type of city are clearly discernible: reduced density, separation of function, and fluid circulation as the guiding principles of the urban form.

Outlining his vision for Broadacre City, a utopian settlement set in the vast North American plains, American architect Frank Lloyd Wright cast the automobile as the lifeblood of faster circulation and consequent social restructuring. As alluded to in the name, the acre—rather than the house or street—was the principle unit of Wright's vision, in which each individual is allotted a minimum of an acre of land, with single-family detached homes distributed across the wide and expansive plots (fig. 42). Wright rejected traditional urban forms by attempting to incorporate their function into a rural landscape, establishing new patterns in human settlement within a city/country hybrid based on values attached to open space, privacy, and self-reliance. He viewed the centralized city with its multi-functional streets not as a present reality to overcome, but as already a relic of the past, superseded by the possibilities of existing technologies.

[23] "Ward and Centre." Plate No. 3 from Ebenezer Howard's *Garden Cities of Tomorrow,* 1902.

Environmental historian Mark Lapping summarizes Wright's attitude toward the existing urban form in contrast with his vision for the future:

> Since a lack of power, transportation, and communications facilities prompted the development of the 'historical city,' Wright's Broadacre City plans, utilizing these same elements, moved beyond the traditional structure and design of cities to produce a new landscape.[24]

As an architect dealing primarily in single-family detached homes often in rural and suburban settings, decentralization was based not only on Wright's dream, but also on his observations of American tastes and aspirations.

Yet Wright's Broadacre City went several steps further than observing and advocating for housing types and lot sizes. Wright also tackled the complexities of replacing urban function within his prescribed landscape, reflecting a profound shift in values away from those embedded in the multi-functional street. Many services—healthcare, education, commerce—relied on a centralized location for access and distribution, an advantage of denser cities. Wright argued that these services could still be accessible to a populace spread across much greater distances with the help of the automobile and the new mentality it permitted.[25] Key to the realization of the Broadacre scheme and its unprecedented sense of scale was a vast network of superhighways, uniting people and services the way the historic street had previously. For Broadacre's

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[24] Mark B. Lapping, "Toward A Social Theory of the Built Environment: Frank Lloyd Wright and Broadacre City," *Environmental Review: ER* 3, no. 3 (1979): 13.
[25] Lapping, "Frank Lloyd Wright," 17.

success, it was not only the automobile that was necessary, but the fluid, high-speed circulation thereof promised by ample and unobstructed infrastructure.

Wright and Howard each harnessed technological advancement as an agent for decentralization. Le Corbusier, in his 1922 plan for *La ville contemporaine* [The Contemporary City] and his later plans for *La ville radieuse*, [The Radiant City] aimed to accomplish just the opposite. Combining the potential of modern advancements in transportation with that of the high-rise building, he drafted a densely-concentrated metropolis. His cities not only matched current urban populations but also welcomed future expansion. Though Le Corbusier proposed high population density, he orchestrated it in a way that bore very little resemblance to the densely-packed nineteenth-century city. His plans were anchored in a symmetrical grid. Twenty-four cruciform skyscrapers sixty stories in height housing business and administration occupied a central district of the *Ville Contemporaine* (fig. 43). The buildings' height allowed for more space at the interior with a smaller footprint on the ground, freeing up land for parks at their base. This idea was crucial to Le Corbusier's exploitation of technology. Historically, high population density and green space had been mutually exclusive; technology provided a solution in which space could be used with maximum efficiency, combining the advantages of urban concentration and natural respite. Le Corbusier envisioned the elevator as the replacement of the urban street, linking vertically instead of spreading outward.[26]

[26] Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier* (Cambridge, MA: MIT Press, 1977), 189-192.

A preoccupation with attaining maximum efficiency similarly governed transportation infrastructure in Le Corbusier's plans. If soaring towers and sweeping park space symbolized modernity for buildings, it was speed that marked a transformation of the circulation of people and goods. Urban historian Robert Fishman asserts that "Le Corbusier realized, the health of the city is its capacity for speed. Speed is freedom, the freedom to exchange, to meet, to trade, to coordinate."[27] These freedoms represent the potential of centralized cities that Le Corbusier hoped would be fully exploited through a fluid and logical network of modes of transportation. He established this fluidity by relegating each mode to its own specific corridor with its own distinct speed (fig. 44). Separating pedestrian, bicycles, subways, freight and intercity rail, and automobiles insured that no mode would be interrupted by the conflicting requirements of any other. Thus, cars on the north-south and east-west freeways that cut across the city could zoom from skyscraper to skyscraper, slowing down only on the access roads.

Segregation of function was Le Corbusier's key to speed and efficiency. As if composing a monument to this efficiency, he represented the central point of the city with the multi-leveled convergence of each transportation network: the central subway station topped by the intersecting freeways topped by the train station with a rooftop landing strip, with pedestrians circulating up and down to access each mode. This transportation infrastructure constituted a twentieth-century point of exchange, similar to a central market square in earlier cities.

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[27] Fishman, *Urban Utopias,* 191.

These utopian cities and the cities created or dramatically altered during periods of highway construction share a common set of values and aspirations: efficiency, decentralization, and new lifestyles made possible through technological advancement. In each case, corridors of high-speed transportation functioned as a solution to the logistical, hygienic, and cultural problems posed by the traditional street. Howard, Wright, and Le Corbusier composed new urban forms from a blank canvas: as planners of utopias, they did not have to confront existing urban fabric. Their plans, models, and writings did not prescribe feasible strategies for implementation in the real world. It would be another thirty years before, in 1963 British urbanist Collin Buchanan published *Traffic in Towns*, an influential planning document that specifically prescribed solutions for automobile circulation within existing urban fabric.[28] Decision-makers drawing inspiration from utopian urban plans often resorted to a *tabula rasa* approach toward existing neighborhoods and structures in order to insert new forms of development like superhighways and housing towers into extant cities. The gap between utopian plans and pragmatic applications persisted as more entities began to take on large-scale modification of the built environment after the Second World War.

Building the Highway

Throughout the twentieth century, new types of streets were designed specifically for the circulation of automobiles. Decision-makers built upon the segregation of spaces and functions prominent in the utopian designs of Howard, Wright, and Le Corbusier.

[28] Collin Buchanan, *Traffic in Towns,* (Middlesex, England: Penguin Books Ltd., 1964).

Circulation had been just one of the functions of the traditional urban street, but in newly constructed highways, it became the only function: moving people and goods—in cars—from point A to point B as quickly as possible, both in and between cities. Car owners were an increasingly significant portion of the United States' population in particular, as the nation was home to a concentration of automobile manufacturing and to great distances made shorter through higher travel speeds. Car owners began to value the rapid circulation of automobiles more than the diverse functions of earlier streets. After World War II, the United States government implemented transformative policies aimed at constructing a new system of infrastructure for the automobile under the premise that rapid circulation was a matter of national defense. Between 1945 and 1947, officials within the Bureau of Public Roads established routes for 37,700 miles of highway within the new interstate system, of which around 2,900 miles ran through urban areas.[29]

Establishing these routes was a rushed and often erratic process, relying on limited data about existing traffic patterns, "engineering experience," and "common sense."[30] The Bureau, run mostly by highway engineers, adopted in 1945 a strict code of design standards for urban highways stipulating minimum widths, maximum curvatures, and a limited set of typologies. Engineers valued efficient circulation over the aesthetic qualities of design or integration with the inherited built environment. Ever-worsening congestion in postwar North America propelled highway engineers to undertake massive

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[29] Joseph F. C. DiMento and Cliff Ellis, *Changing Lanes: Visions and Histories of Urban Freeways* (Cambridge, MA: MIT Press, 2013), 33-39.
[30] Robert Warren, review of *The City Planning Process: A Political Analysis* by Alan Altshuler, in National Resources Journal 4, fall 1967, 666-668. https://digitalrepository.unm.edu/nrj/vol7/iss4/9.

transformations. Urban freeways were often planned to traverse neighborhoods identified as "slums," taking advantage of the lower cost of the land.[31] In these cases, the anticipated value of the new highways superseded the social and cultural values of existing urban fabric.

In 1955 the Bureau of Public Roads published the "Yellow Book" (with the official title, *General Location of National System of Interstate Highways*), which included maps of urban interstate highways in cities across the United States (fig. 45).[32] Plans relied heavily on the hub and wheel template, in which cities were encircled by beltways and major roads converged at the centre (fig. 46). In 1956, the National Interstate and Defense Highway Act catapulted these plans into the realm of feasibility, with the federal government offering to cover 90% of costs incurred by state highway-building agencies.[33] Highway engineers had established authority, drawn the plans, obtained the funding, and would soon enter construction phase in what has been coined the largest public works project in history, institutionalizing an approach that ignored existing structures and prioritized new infrastructure regardless of the social and cultural costs.

Implementation of the plans laid out in the Yellow Book was swift. On the eve of the 1956 legislation, only 480 miles (772 km) of urban limited-access highways existed or were under construction in the United States, and New York, Chicago, and Los Angeles were responsible for over half of this mileage. The 1956 plans for the interstate system

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[31] DiMento and Ellis, *Changing Lanes*, 33-39.
[32] US Bureau of Public Roads, *General location of routes of the National System of Interstate Highways*, (Washington, DC: US Government Printing Office, 1955).
[33] DiMento and Ellis, *Changing Lanes*, 74-78.

provided for over 8,600 miles (13,840 km) of urban freeway in areas across the United States, with little to no regard for the social or cultural value embedded in existing urban fabric. Historic neighbourhoods were razed, often regardless of the values they represented to their inhabitants (fig. 47). Returning to Aloïs Riegl's proposed set of values, the use value of the new infrastructure superseded other values of existing structures.

The growing popularity of the automobile subsidized the construction of its infrastructure. Elevated taxes on gas, tires, and federal highway usage channeled money into a "Highway Trust Fund" that was made available for further highway spending. The United States Government of the interwar years clearly valued a new and efficient infrastructure for the automobile. Planned roads were designed not only to accommodate current populations, but also to welcome speculative growth. Another Rieglian concept, the newness value, reigned in the postwar construction boom, during which people flocked to newly built homes, shopping malls, and roadside restaurants all connected by the highway, adding even more traffic to congested corridors. In spite of studies suggesting that more lanes did not necessarily lead to a reduction in traffic, highway engineers employed wider highways as a strategy to relieve congestion.[34] In order to minimize land costs, unused land in urban centers such as waterfronts and wetlands was often favored for freeway construction. In the mid-twentieth century, these spaces were

[34] Robert B. Noland, "Relationships between Highway Capacity and Induced Vehicle Travel," University of London Centre for Transportation Studies, 1999.Accessed May 15, 2019. https://www.academia.edu/19090756/Relationships_between_highway_capacity_and_induced_vehicle_travel.

not widely valued for their ecological functions nor for their potential as public space. Across urban cores, elevated highways blocked light and created blighted space beneath them, while sunken expressways created formidable barriers between neighborhoods. Promises to construct replacement housing for displaced residents were seldom fulfilled.[35] The social, cultural, artistic, and economic values embedded in the centre city, while increasingly recognized today, were not widely considered in the process of highway construction in the United States. The construction of the Interstate Highway System in the 1950s and 1960s led to dramatic changes in lifestyles and urban forms in the United States and inspired the construction of similar infrastructure networks in countries all over the world in the twentieth century.

By the end of the twentieth century, government, market, and social forces had forged a built environment in North America and much of the world where the highway and its byproducts—the shopping centre, strip mall, and fast-food restaurant—constituted an integral part of everyday life (fig. 48). Scale had changed dramatically since the pre-automobile city, with supermarkets, megastadiums, and amusement parks, all surrounded by vast stretches of parking lots, replacing earlier typologies. The highway and the development it spurred are in the process of becoming a unique body of heritage, albeit more in the sense of an inheritance or legacy than in the conventional sense of heritage as a collection of cherished monuments. Nevertheless, highways, subdivisions, and drive-in theaters illustrate popular values and aspirations of the mid-twentieth century.

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[35] DiMento and Ellis, *Changing Lanes*, 106-107.

As these buildings and infrastructures age, they will be increasingly associated with the value system of another time. Yet the fact remains that

> It is hard for us to imagine today the existence in the industrial cities of one hundred years ago, of millions of urban dwellers who were obliged to endure cramped and unsanitary tenements, traffic and pollution-choked streets and deadly factories. Today by comparison, most residents of affluent metropolitan areas live in relatively low-density suburbs, areas that are much cleaner, greener, and safer than the neighborhoods their great-grandparents inhabited. They also have a great deal more affluence, privacy, mobility, and choice.[36]

The twentieth century produced transportation infrastructure that made these relatively luxurious lifestyles possible for many, especially in North America. Yet the highway is not immediately associated with luxury. That which revolutionized lifestyles in the mid-twentieth century can easily be taken for granted today. Initially, the highway and suburb were a reaction against the cities of tenements and industry. They formed cities that exhibit value through the lifestyles they can create: convenience, safety, relative ease. Highways are indeed heritage, yet not one that fits into current definitions or conservation approaches.

4.3 Perception of Intraurban Highways Today

Many of the advantages of the modern highway-centred city were coupled with problems that have risen increasingly to the surface in recent years. Far from resolving

[36] Robert Bruegman, *Sprawl: A Compact History* (Chicago: University of Chicago Press, 2005), 12-13.

problems of urban circulations, intraurban highways have become themselves clogged with traffic in many cities, calling their contemporary use value into question. An emphasis on planning and building for the automobile in the twentieth century has left pedestrian and transit networks deficient in the twenty-first. Development of "exburbs" in recent years has compounded the negative impacts of postwar development patterns at an even more vast scale.[37] Movement to these suburbs and a shrinking tax base has left a concentration of challenges in city centres that often do not have the resources to respond effectively. Furthermore, the automobile has continued its dominance in car-dependent countries like the United States and Canada, to the point where there is almost one car per adult. Older urban environments struggle to keep up with this growth by inserting new infrastructures like multi-level parking garages into older downtowns. Simultaneously, zoning codes for new construction often have steep requirements for the number of parking spaces created to accompany new construction.[38] Most urban development in the twenty-first century would suggest the inheritance not only of the built forms of the twentieth but also of its strategies and systems for city-building.

Trends and patterns of automobile-centred outward expansion continue just as calls to reinvest in communities, neighborhoods, and walkability grow in number and support. Concerns about climate change and sustainability have also renewed a focus on the environmental impact of urban living, and driven many to enact strategies for

[37] Raffaella Nanetti, "Which future? Strategic Visions for American Cities," *Emerging Issues in Management,* no. 2 (2011): 23-33. http://dx.doi.org/10.4468/2011.2.03nanetti
[38] Moshe Safdie, *The City after the Automobile: An Architect's Vision* (Toronto: Stottart Books, 1997), 3-9.

reducing point-source emissions while trying to preserve stretches of natural spaces.[39] These new emphases indicate that, at least among considerable portions of the population, including a large number proportion of specialists in the urban design and planning, there exists today a system of values quite different from that which drove city-building in the twentieth century. In addition, and sometimes in opposition to the emphasis on convenience and efficiency that governed twentieth-century approaches, values in twenty-first century are often concentrated on the 1987 Brundtland Report's triple bottom line of social, economic, and ecological sustainability.[40]

This notion of sustainability was constructed on the principle that today's society should be able to meet their needs without jeopardizing the ability of future generations to do the same, and in the field of urban development and city-building these goals have had ramifications for social, economic, and ecological systems. Since the 1987 report, attitudes toward sustainability have grown increasingly complex, but at their most basic level, they come into conflict with car-oriented development and the values that underlie it. The resources that fuel most cars today are non-renewable, the need to have a car to participate in society perpetuates a deeply unequal social system, and most highway-centred development tends to favor strip centres and franchises, making it difficult for local and more resilient businesses to compete. The remainder of this section will examine more closely conflict in values between the built inheritance of the twentieth

[39] Safdie, *After the Automobile*, 3-9.
[40] Gro H. Brundtland, *Our Common Future: Report of the World Commission on Environment and Development* (Oslo: United Nations Commission on Environment and Development, 1987).

century and predominant sustainability-minded discourse in urban planning today, proposing the heritage specialist as a potential arbiter between the opposing sides.

Values of the Creative Class

One of the greatest differences between the mid-twentieth century and today is between their respective emphases on uniformity and distinctiveness. In the 1950s and 1960s in North America, and later in other parts of the world, each city sought to construct infrastructure that could equal that of any city. An aspiration for speedy motorways, expansive airports, and tall buildings in a central business district transcended any one specific place. Even the term "international style" assigned to many of the straightforward rectangular skyscrapers of the time hints at an overarching goal of homogeneity across the built environment. More recently, values have shifted to the opposite end of the spectrum, with uniqueness now thought to be key to a city's success.

Writer and urbanist Richard Florida is one of the principal commentators on this transformation in North America. The new set of values, Florida argues, is rooted in the "creative class," the mix of young professionals in the tech industry, the restaurant industry, the arts, etc.: young people coming of age in the new millennium and choosing the places and societies in which they want to live and work. Members of this class seek stimulus in order to create, and settle in places where they can find inspiration and meaning.[41] They care less about infrastructure and more about lifestyle and livability.

[41] Richard Florida, *The Rise of the Creative Class* (New York: Basic Books, 2002), 3-17.

Florida describes the creative class's attitude toward twentieth-century infrastructures as oppositional:

> "The physical attractions that most cities focus on building—sports stadiums, freeways, urban malls and tourism-and-entertainment districts that resemble theme parks—are irrelevant, insufficient, or actually unattractive to many creative class people.[42]

The creative class, with its new and different values, constitutes not just a segment of population, but a growing and influential one. The recent competition for Amazon's new headquarters, with cities across North America investing considerable time and resources to lure the company in with incentives or testimonies to the city's uniqueness, is proof of the class's continued force.

Members of the creative class want options, vibrancy, diversity, and autonomy, and these values leave a mark on the built fabric, especially through public spaces and pedestrian networks (fig. 49). Some cities began the new millennium already suited to these demands, while others have arrived there only after heavy modification. The series of waterfronts revamped into mixed-use developments in the 1980s and 90s (Canary Wharf in London, Battery Park in New York, and Queen's Quay in Toronto) are all example of modifications intended to attract the creative class by emphasizing uniqueness and different choices of lifestyle (fig. 50). Cities in the twenty-first century have to compete with each other by proving and conveying their uniqueness to attract young professionals.

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[42] Florida, *Creative Class,* 218.

Millennial Values

Often closely associated with the creative class, the millennial generation includes those born between the year 1980 and 2000, with a few years to either side depending on the definition. This demographic has been responsible for shifting the conversation about how and why cities are valued. Born into a world shaped by the highway, the subdivision, and the shopping mall, they came of age in the midst of more widespread concerns about climate change and the global recession of 2008. For many millennials, the suburban ideals of the twentieth century fall flat. Large cars and larger homes are not the success symbols they were in 1960 or even 1980. Instead, the walkable inner-city districts with spontaneous interaction made possible by the multi-functional urban street hold great appeal for millennials who can afford a slice of a historic property close to a transit line.

The social, economic, and cultural values of the traditional street speak to millennials who seek large and lively populations of young people, locally distinctive commerce, and shows and spectacles to which they can walk to in their free time. Of course, there are large portions of the millennial generation who still prefer to live in smaller towns and suburbs.[43] A 2015 study, however, reflected a notable difference between the attitudes of millennials and those of other generations toward large cities. According to this study, millennials are happiest in large cities. Millennials' happiness increases with the population of their environs, whereas this trend is reversed in other

[43] Valérie Simard, "Pour en finir avec les milléniaux," La Presse, Montreal, May 4 2019, accessed May 16, 2019, http://plus.lapresse.ca/screens/877aa2ed-8e95-4b1c-a296-bb3784f24f27__7C___0.html?utm_medium=Email&utm_campaign=Internal+Share&utm_content=Screen.

generations, with happiness increasing as population size decreases.[44] This contrast suggests that millennials are finding value in the traditional urban fabric, and by and large rejecting many of the values espoused in the period of highway building. Millennials' value-systems are crucial to the future of city-building not only because of the generation's influence today, but also because of the roles they will play in the future. What will their cities look like, and what will they do with the elements of the inherited built environment that do not correspond to their vision?

These dramatic shifts since the postwar era have roots going back earlier than the millennial generation. Concerns about pollution and the deterioration of the environment were increasingly linked to modes of consumption beginning in the 1960s. These preoccupations contributed to an expansion of green or eco-friendly products between 1980 and 1990 that has continued to gain ground into the 21st century. Gradually, efforts to make consumption more ecologically responsible have been joined by those toward more socially and ethically responsible patterns. "Fair trade" has become a commonly sought-after addendum to coffee and chocolate, for example.[45] These economic changes illustrate broader trends in societal values leading into the first decades of the twenty-first century, in which lifestyle and habits are increasingly seen as directly linked to questions of environmental and social justice. This connection between

[44] Richard Florida, "Millennials are Happiest in Cities," *CityLab,* June 29, 2018, https://www.citylab.com/life/2018/06/millennials-are-happiest-in-cities/563999/

[45] Jonathan Deschênes and JoAnne Labrecque, "Des consommateurs en évolution dans un monde en changement," in *L'économie circulaire : une transition incontournable*, ed. Sébastien Sauvé, Daniel Normandin and Mélanie McDonald, (Montréal: Presses de l'Université de Montréal, 2016), 116-120.

day-to-day choices and wide-reaching impact has translated to shifts not only in consumption but also, as discussed above, in urban planning.

Ecological Values

Firmly at the centre of a twenty-first century values-system for both building and distinguishing cities is the matter of ecological responsibility. If in the 1960s, "modern" cities differentiated themselves by massive infrastructure in reinforced concrete that allowed cars to zoom from the hinterlands into the central business district, cities of the 2010s show that they are on the cutting edge of innovation by demonstrating a commitment to "green" or sustainable technology. For millennials choosing to live in a city or trying to improve the built environment, concerns with sustainability often manifest themselves as an interest in alternatives to the private automobile.

Cars are not only performing poorly environmentally, they are also an enormous investment. Many millennials prefer the lifestyles they can have without the car and without the car payment. A 2014 poll released by the American Planning Association in the US suggests that not only millennials but also Baby Boomers reported preferring to live in a walkable environment (49%) with over three-fourths proclaiming the importance of reliable transit, versus just seven percent of respondents who preferred to live somewhere where most services are only available by car.[46]

[46] Anthony Flint, "What Millennials Want—And Why Cities Are Right to Pay Them So Much Attention," *CityLab*, May 5, 2014, https://www.citylab.com/equity/2014/05/what-millennials-wantand-why-cities-are-right-pay-them-so-much-attention/9032/

People value public transportation for its reduced impact on the natural environment and for the relationships it allows both with people and with space. These advantages come into direct conflict with the infrastructure of the twentieth century, which was usually designed only for use by the automobile. In many cities, this reconfiguration led to the exclusion and disenfranchisement of those segments of the population that could not afford a car. Public transportation is seen to have the potential to emerge not just as an ecologically viable alternative to the car, but also one that is socially and economically sustainable, connecting vulnerable populations to expanded opportunities for employment and commerce.

Other modes of transportation, not public per se, yet still distinguished from the private automobile, are also gaining in popularity with today's city-dwellers. Increasingly popular rideshare services like Uber and Lyft use smartphone applications to connect willing drivers with paying customers, who input their current location and desired destination. While these systems rely on the sharing of privately-owned vehicles, their users benefit from denser urban environments, where shorter distances allow for cheaper fares. In some cities, options like UberPool allow users to access even cheaper fares if they are willing to go a bit out of the way and share their ride with other users. Rideshare services can also act in tandem with public transit modes, connecting users from their homes or workplaces to more centralized stations out of walking distance.[47]

[47] Preston L. Schiller and Jeffrey R. Kenworthy, *An Introduction to Sustainable Transportation: Policy, Planning and Implementation,* 2nd ed. (New York: Routledge, 2018), 185.

Smartphones also facilitate other share-based systems like bike-share and car-share, where users can pick up a bike or car at one location and then drop it off at another by their destination. Applications can inform users about available stock at a given location, and these sites are often well-integrated within the broader transportation network.[48] With the growth of the sharing economy, millennials have a growing list of alternatives to purchasing and maintaining a private motor vehicle. If twentieth-century infrastructure was conceived to accommodate private cars with maximum efficiency, what would a built environment resemble if it were modified to support contemporary trends in transportation modes and tastes?

The Problematic Legacy of the Highway

In addition to the new values and attitudes toward cities in the twenty-first century and how they favour alternative forms of development, negative associations with highways and their ongoing impacts on urban communities are also fueling popular demand to expand other modes of transportation. In Oakland, California in 1990, an earthquake irreparably damaged the Interstate 805 freeway. The surrounding communities watched as the structure that had led to the demolition of their homes and the closing of their local businesses was built a second time. Residents of West Oakland frequently cited noise and air pollution as tangible impacts that the freeway's construction had on their lives. Medical professionals in the area identified “cancer clusters” at various points along the freeway's path, a phenomenon that occurred within

[48] Schiller and Kenworthy, *Sustainable Transportation,* 113.

communities already vulnerable and less likely to have private health insurance. Where once people could easily walk to purchase fresh groceries, the freeway created a scenario in which residents would have to drive for several miles for the same task. In the case of Oakland, the freeway created a barrier between neighborhoods where those to its east enjoyed an increasing concentration of resources and gave way to eventual gentrification, while those to its west saw investment drain from their community as crime rose. The demolition of the 805 following the earthquake ushered in a time of intense noise and air pollution that was permitted under a suspension of environmental regulations agreed to by the governor.[49]

Poorer communities pay the external costs of freeway construction meant to serve an often-distant population. Further studies in Orange County, California identified a strong correlation between a close proximity to limited-access highways and respiratory problems in children. Those living within 300 m showed higher rates of repeat hospitalization for respiratory problems and increased severity of asthma. Children living within 500 m presented deficits in lung function development. Impacts such as these called into question the validity of an urban structure that inserted such harmful corridors into the urban environment. Planners, architects, and landscape architects needed a new model; the high-speed utopias had proven ill-matched for existing urban fabric.[50] Today, highways suffer from the social and ecological problems they engender, and from the attractiveness of alternate modes of transit and urban development that

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[49] Gar Smith, "Freeways, Community and "Environmental Racism," *Race, Poverty & the Environment* 1, no. 1 (1990): 7-14.
[50] J. Chang at el., "Repeated Respiratory Hospital Encounters among Children with Asthma and Residential Proximity to Traffic," *Occupational and Environmental Medicine* 66, no. 2 (2009): 90-98.

offer more equitable and more environmentally-sound solutions. The mid-twentieth century's and early twenty-first's visions of urban development seem diametrically opposed. The earlier model relied mostly on top-down decision-making to create a homogenous and streamlined built environment dedicated to facilitating a suburban lifestyle for the nuclear family, while the current model seeks citizen involvement, local distinctiveness, and the possibility of choice between many different lifestyles.

Conclusion

The values of many city-dwellers today are in direct opposition to the principles and aspirations that guided construction in the 1950s-1970s. Older parts of cities, dating to times before the car, often fuse seamlessly with millennial lifestyles and values, as evidenced in central San Francisco, Boston, Chicago, etc. This urban fabric can support dense residential districts and adaptive reuse of businesses. But adapting or re-appropriating postwar heritage based on new sets of values can present more of a challenge, especially in the case of automotive infrastructure. Highways and parking lots often take up large portions of urban environments, yet some go vastly underutilized for much of the year or during much of the day. As these structures age and millennials increasingly make the decisions about what cities should look like and how they should function, actors will need to find ways to reconcile their values with the built environment they have inherited. The next chapter will look more specifically at ways of accomplishing this goal, seeing the infrastructure of the private car as a catalyst for tomorrow's public transit and public space solutions.

Images

Figure 32. Ruins of Khirokitia, Neolithic settlement arranged around a central corridor. Photo by Thomas Sagory, 13 April 2011. From flickr.com. https://www.flickr.com/photos/du-ciel/14847889294.

Figure 33. Street as public space in turn-of-the-century Chengdu. Photo by Thomas Chrowder Chamberlain. Grand East Street, Chengdu. April, 1909. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Grand_East_Street,_Chengdu.png.

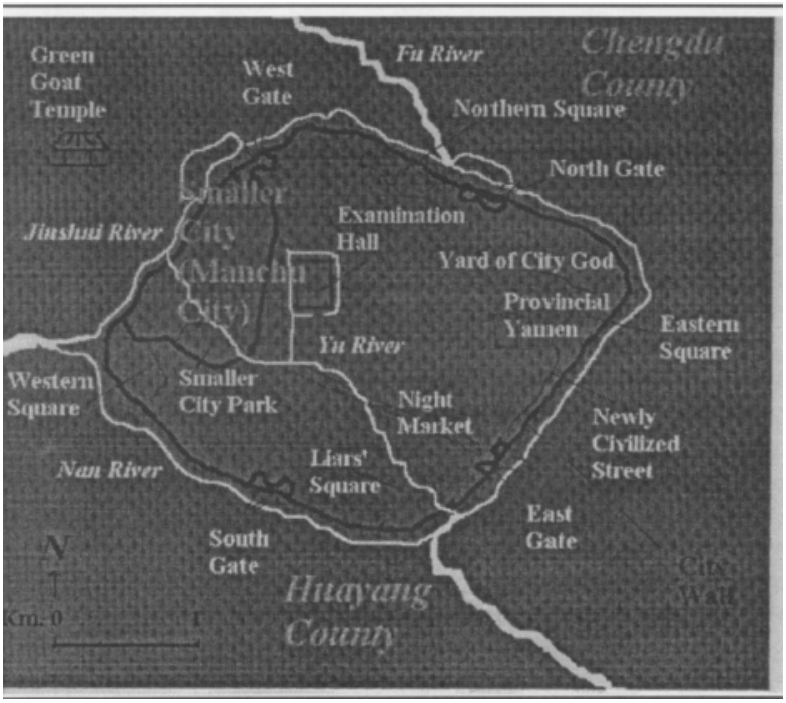

Figure 34. Map of late-Qing Chengu showing different public spaces presumably connected by a dense network of streets. Image taken from Di Wang, "Street Culture: Public Space and Urban Commoners in late-Qing Chengdu".

Figure 35. Piazza del Popolo, Rome, showing monumental plaza serviced by alleyways that form deliberate perspectives and views. From "Space and Movement in High Baroque City Planning," by Paul Zucker, *Journal of the Society of Architectural Historians*, Vol. 14, No. 1 (Mar., 1955), pp. 8-13. DOI: 10.2307/987716.

Figure 36. Nevsky Prospekt, monumental street featuring aristocratic palaces and cathedrals, Saint Petersburg, 1799. Benjamin Patersen, watercolor. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Nevsky_prospect_in_1800.jpg.

Figure 37. Piccadilly Circus, London. Laid out by John Nash, the major intersection remains an emblem of London's visual and aesthetic identity. Photo by Benh Lieu Song, April, 2007. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Piccadilly_Circus_Dawn_BLS.jpg.

Figure 38. Streetcars, pedestrians, and horse-carts competing for space at the intersection of Dearborn and Randolph in Chicago, 1909. Photo from Illinois Institute of Technology College of Architecture. https://arch.iit.edu/life/traffic-on-dearborn-and-randolph.

Figure 39. Streets filled with motorcars in 1930s Chicago. Photo provided by Alden Jewell. From flickr. https://www.flickr.com/photos/autohistorian/39824707871.

Figure 40. Plan of Frank Lloyd Wright's Broadacre City, a utopian community governed by the scale of automotive travel. From B. Pfeiffer, *Frank Lloyd Wright 1943–1959: The Complete Works* [Vol. 3], edited by Peter Gössel, published by Taschen, 2009. Accessed on MoMA.org. https://moma.org/wp/inside_out/wp-content/uploads/2014/01/Image-13-643x480.jpg

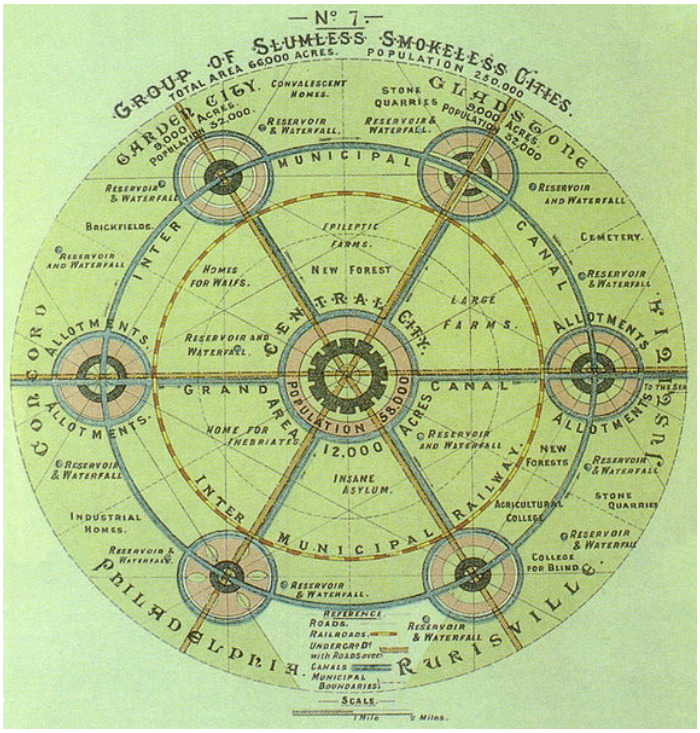

Figure 41. "Group of slumless and smokeless cities." Ebenezer Howard, *Garden Cities of Tomorrow,* 1902. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Garden_City_Concept_by_Howard.jpg

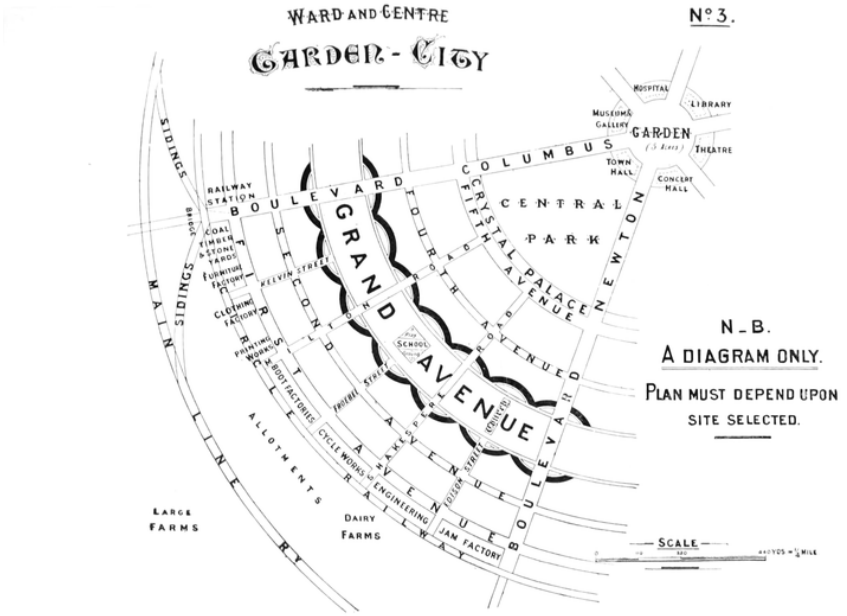

Figure 42, "Ward and Centre." Plate No. 3 from Ebenezer Howard's *Garden Cities of Tomorrow,* 1902. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Garden_Cities_of_Tomorrow,_No._3.png

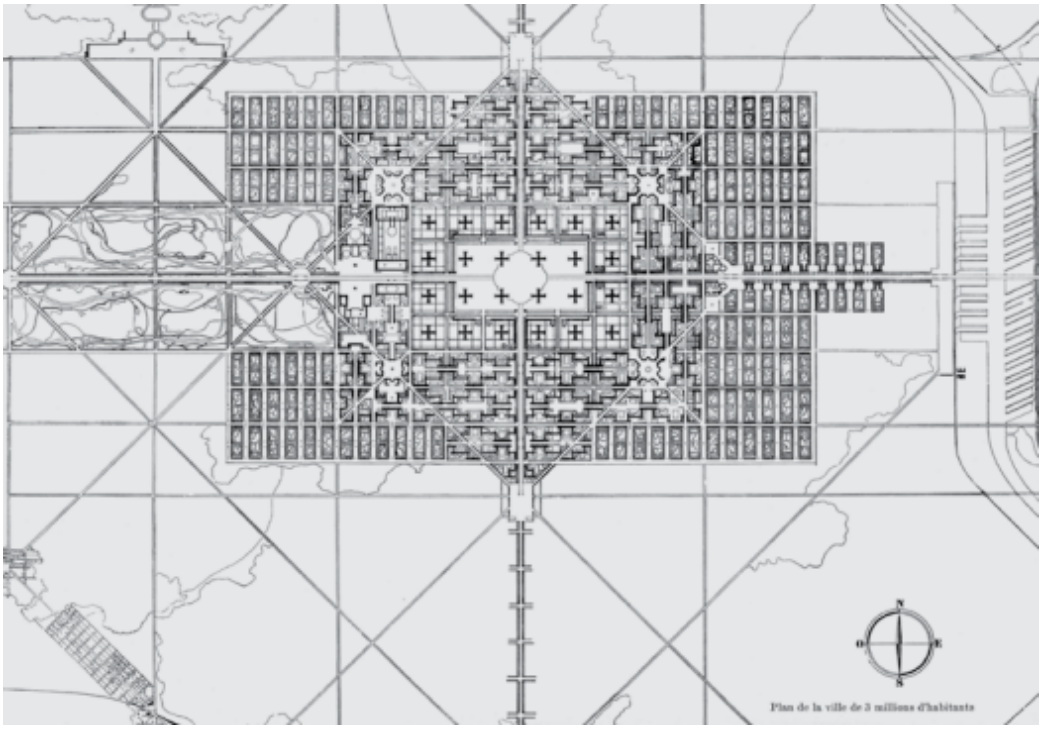

Figure 43. Plan for Le Corbusier's 1922 *Ville Contemporaine* for 3 million inhabitants. From “La Ville Radieuse de Le Corbusier: les paradoxes d'une utopie de la société machiniste," by Bruno Marchand. http://www.unil.ch/files/live//sites/ouvdd/files/shared/URBIA/urbia_19/partie_4.pdf.

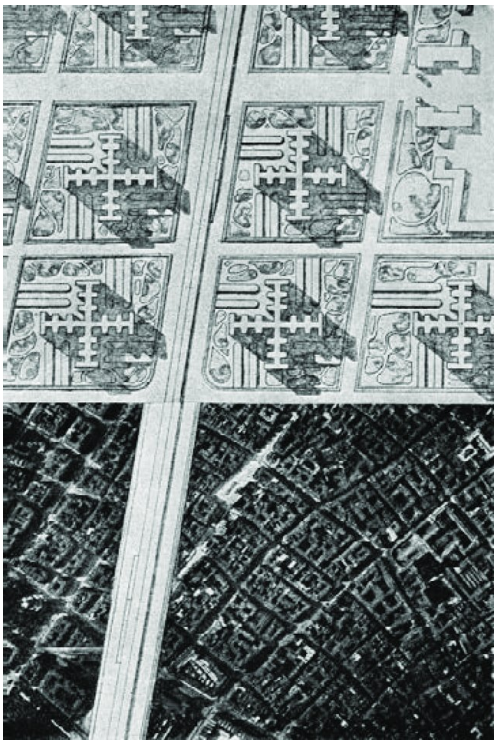

Figure 44. Illustration from Le Corbusier's 1925 *Plan Voisin* showing a superhighway cutting through existing and imagined portions of Paris, with different road corridors reserved for different speeds. Image from Vuja, Aleksandru & Damjanović, Vesna, « Instant City: Architectural Experiments / Instant grad: Arhitektonski ogledi, 2012.

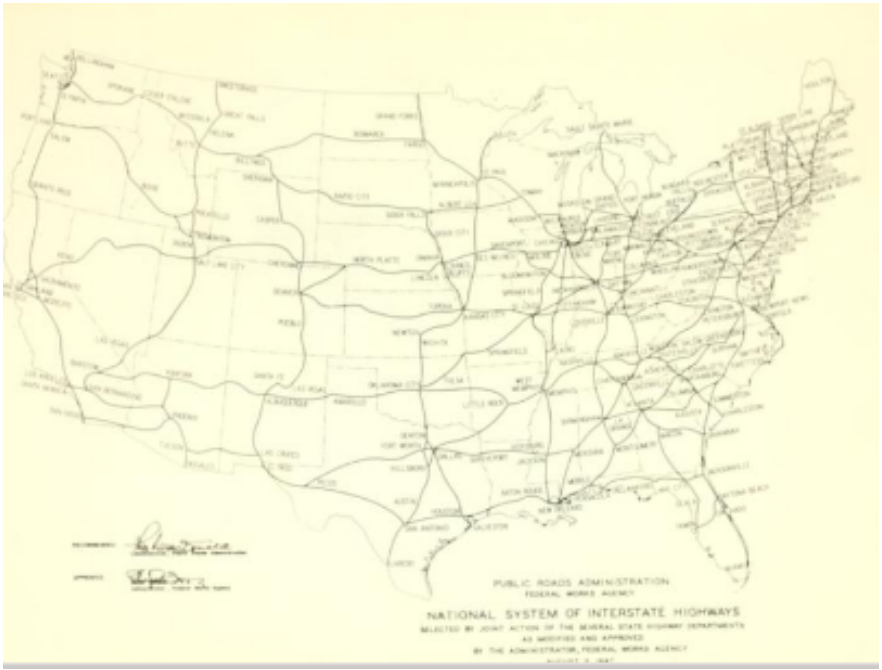

Figure 45. Map of planned highways in the United States from "The Yellow Book," (1955), US Bureau of Public Roads, *General location of routes of the National System of Interstate Highways*, (Washigton, DC: US Government Printing Office, 1955).

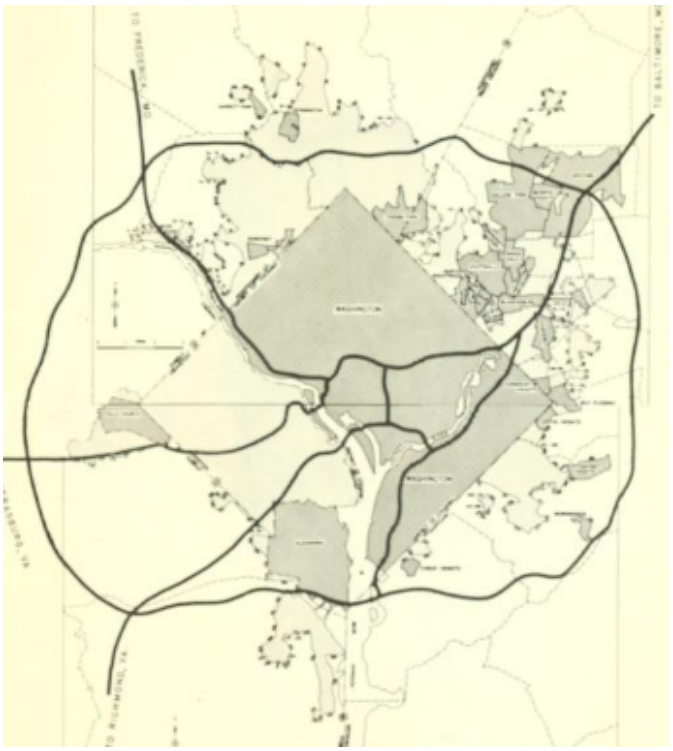

Figure 46. Map of planned highways surrounding Washington, DC in typical spoke and wheel pattern. From "The Yellow Book," (1955), US Bureau of Public Roads, *General location of routes of the National System of Interstate Highways*, (Washigton, DC: US Government Printing Office, 1955).

Figure 47. Construction of Interstate 81 in Syracuse, NY in 1960s amid the destruction of existing neighborhoods. Image courtesy of Save 81.org. http://www.savei81.org/i-81-history/.

Figure 48. Much of the twentieth century's built legacy in North America takes the form of nondescript strip malls and parking lots. Photo by Matt Wade 14 June 2009. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Strip_Mall_Troy.jpg

Figure 49. District in San Francisco, a city popular with millennials, with strong pedestrian and public transit networks. From pxhere. https://pxhere.com/en/photo/653110.

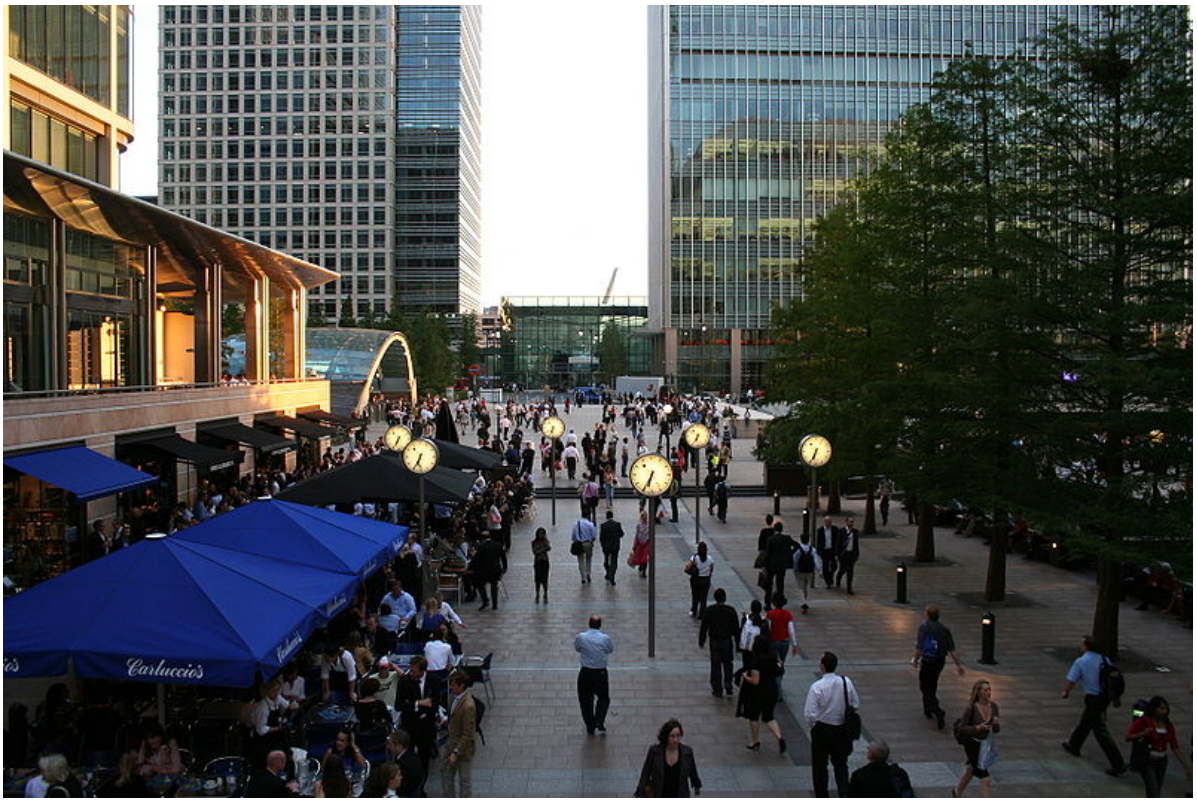

Figure 50. Reuters Plaza at Canary Wharf, London, a multi-use public space for pedestrians. Photo by The Lud, 21 September 2006. From Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Reuters_Plaza.jpg.

Chapter 5: Case Studies of Intraurban Freeways as Heritage

The vast automotive infrastructure of the twentieth century can serve as a platform for adaptive reuse based on contemporary aspirations in cities, where citizens seek expanded and accessible public space, reduced auto-dependency, and enhanced sense of place. This chapter will present three case studies that speak to the potential and limits of an interpretation of elevated freeways as built heritage. Since the opening of New York's High Line in 2009, creative infrastructure reuse has grown as a trend across the globe. This reuse, as was the case in New York, often utilizes obsolete railway infrastructure. Urban highways, on the other hand, continue to function in their original capacity, channeling millions of vehicles through urban areas, and are not obvious candidates for adaptive reuse. Continued use as auto traffic corridors precludes any reuse or re-appropriation of automotive infrastructures, and each of the three case studies to be explored in this chapter is consequently defined by legislative responses to structural, rather than functional, obsolescence or other undesirability.

Automotive infrastructure is aging and in some cases falling apart, but continues to play a crucial role in urban mobility. It is often left in the hands of municipal governments to decide how to respond to highways' structural obsolescence while preserving circulation, either by replacing this infrastructure or by finding creative means to ensure continued mobility with less reliance on the private car. This decision-making process calls the role of these massive infrastructures—no longer capable of supporting automotive traffic—into question. What are the potential values of an elevated freeway, free of cars, in an urban context?

In Seoul, the municipal government closed a length of viaduct entirely following reports of its instability. They then surprised the world by reopening it as a public park, called Seoullo 7017, after stabilizing the structure for pedestrian use and imbuing the structure with new values as built heritage adapted into public space. In São Paulo, officials barred the urban expressway dubbed the "Minhocão" to vehicles during night hours due to noise concerns given its proximity to residences—recognizing the potential values of a car-free freeway. In Seattle, the Alaskan Way viaduct was long slated for removal due to damage from an earthquake and the risk of recurrence, and ultimately was removed. Here, heritage values were outweighed by the risk of collapse.

The decision-makers in each case had to weigh the potential value of reuse of this built heritage against the impact of closing existing traffic corridors. In Seoul and São Paulo, supporters of reuse argue that existing networks will easily absorb the rerouted traffic, while critics reject this claim. Recognizing and navigating this conflict in values between the freeway's emerging potential as a public space in a less car-dependent city and its conventional function as a vector of urban mobility is the crucial first step toward automotive infrastructure's inclusion as built heritage and its eventual adaptive reuse. As with any conflict in values surrounding heritage, it is necessary to examine those values and associations within site-specific cultural, political, and economic contexts.

5.1 Seoul: Seoullo 7017

Seoul, the capital of South Korea, is home to over ten million residents within its city limits and almost twenty-six million within the greater metropolitan area.[1] The city has earned a reputation globally as an economic powerhouse and an innovator in sustainability. At its center is the Seoul Skygarden or *Seoullo 7017—Seoullo* translating to "Seoul Street" and 7017 evoking the construction of the roadway in 1970 and its opening as a pedestrian linear park in 2017. It is the most straightforward example of twenty-first-century decision-makers interpreting twentieth-century road infrastructure as an element of built heritage with its potential value realized through adaptive reuse.

The overpass's new function as a park reflects twenty-first century values and concerns surrounding environmental impact, sense of place, and public space. The pedestrian walkway occupies an elevated highway across multi-laned roadways and rail yards connecting the Jungnim-dong and Hoehyeon-dong neighborhoods in downtown Seoul (fig. 51). It also provides access to the city's main train station and several metro stations (fig. 52). Along its length are plantings of trees, shrubs, and flowers native to the Korean peninsula arranged according to the Korean alphabet, creating scenes and spaces with thought given to the changing of the seasons. The viaduct also hosts kiosques selling local cuisine, coffee, and trinkets. [2] The new space emphasizes the improved social, ecological, and economic values of the park space as compared to the highway. The

[1] World Population Review, "Seoul Population 2019," accessed May 12, 2019, http://worldpopulationreview.com/world-cities/seoul-population/

[2] Gerard Reinmuth, "Seoullo is no High Line but it is of Equal Importance," Dezeen, last modified October 2, 2017, https://www.dezeen.com/2017/10/02/gerard-reinmuth-opinion-seoullo-7017-high-line-equal-importance/.

structure retains a use value, though its targeted users have shifted from drivers to walkers. By prioritizing these values, the Seoul Municipal Government created Seoullo 7017 as a deliberate and carefully-crafted statement that drew criticism from motorists that relied most heavily on the overpass, who were consequently forced to adopt a less convenient traffic pattern (fig. 53).[3] The following pages will focus on the context of its initial construction, transformation, and reception.

History of the Seoul Station Overpass

In South Korea, the twentieth century was marked by a double blow: Japanese occupation from 1910 to 1945 and the Korean War from 1950 to 1953. These two back-to-back traumas left in their wake destruction, instability and uncertainty regarding the identity of the new nation of South Korea. In 1961, Park Chung Hee came into power through a military coup, remaining in control of the nation until 1979. His government emphasized economic reconstruction programs to return a sense of normalcy to daily life in the country after the tumult. His government also took a rigorous approach to heritage, awarding special status to sites and objects that complied with a calculated historical narrative that aimed to reinstate a sense of national identity. Key to this identity was the construction of high-rise buildings and high-speed freeways that attested to South Korea's modernization, progress, and autonomy. As in other countries across the

[3] Ben Jackson, "Seoullo 7017: Urban Asset or Vanity Project?" Korea Exposé, last modified May 20, 2017, https://www.koreaexpose.com/seoullo-urban-asset-vanity-project/.

globe at this time, these initiatives came from central governing agencies and dramatically reshaped the landscape, especially in urban areas.

These modernization efforts were most visible in the historic capital city of Seoul. Its existing urban fabric testified to the city's 500 years as the centre of the Joseon Dynasty with city-planning governed by Daoist and Confucian principles. The city's mayor Kim Hyun Ok, later to be known as "the bulldozer mayor," dramatically altered the city's appearance during the 1970, destroying many historic structures and superimposing a network of bank towers, apartment blocs, and freeways.[4] Part of this network was the Seoul Station overpass, an elevated highway that spanned a rail yard dividing the districts of Hoehyeon-dong, Jungnim-dong, and Cheongpa-dong (fig. 54). Its construction, with tall pylons in reinforced concrete, provided a symbol of the city's modernization and centrality and a vital corridor linking clothing factories in Cheongpa-dong and Malli-dong with the Namdaemun Market, where traders brought their goods.[5] The overpass thus was both functionally and symbolically tied to South Korea and to Seoul's identity as a centre of commerce and progress.

Catalyst for Transformation & Options Considered

With years of heavy use, the Seoul Station overpass deteriorated structurally as well as symbolically. In 1998, due to structural concerns, the viaduct was restricted to

[4] Marieke Schmidt, "Shaping Seoul: Employing Heritage in Urban Regeneration Projects Seoullo 7017 and Again Sewoon" (master's thesis, Leiden University, 2018), 8-10, URL.
[5] "History by Periods" Seoullo since 7017, Seoul Metropolitan Government, accessed January 20, 2019, http://seoullo7017.seoul.go.kr/SSF/ENG/H/ARC/010/02010.do.

vehicles weighing less than 13 tonnes. Eight years later, despite this precaution, precision safety diagnosis officials assigned the structure a “D” ranking, signifying that it required “urgent repair, reinforcement, and decision as to the limit of its use.”[6] This dangerously low score made it clear that those in authority had to take further, more drastic action, and that the overpass could not continue in its current capacity. As it reached the end of its structural life, the highway was losing its most important asset, its use value.

City authorities' first impulse was to demolish and replace it with another, narrower overpass further north. In December 2008, officials decided on plans to demolish the overpass in 2015, as a part of a broader revitalization scheme for the surrounding neighborhood. In 2009, the road's use was further confined to exclude twelve bus lines that had previously operated on it, and in 2012 a further study revealed that it could only sustain its function as a highway for three more years. As various boards in the city were notified of these results, officials pushed for the viaduct's immediate demolition to ensure safety and avoid catastrophes such as those seen in Minneapolis and Genoa. In January of 2014, the discovery of a detached base plate complicated the demolition and reconstruction process. The following month, the demolition was put under review, given the deterioration at multiple levels of the structure.[7]

In the years since the overpass's construction, popular associations with urban highways had changed dramatically. Initially a beacon of modernity and efficiency—a

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[6] "Current state of Seoul Station Overpass and administration progress," Seoullo since 7017, Seoul Metropolitan Government, accessed January 20, 2019, http://seoullo7017.seoul.go.kr/SSF/ENG/H/ARC/010/03010.do.

[7] "Humanities and Social Sciences Significance," Seoullo since 7017, Seoul Metropolitan Government, accessed January 20, 2019, http://seoullo7017.seoul.go.kr/SSF/ENG/H/ARC/020/01010.do.

solution to urban problems—elevated highways in Seoul quickly lost their appeal. The Transportation Research Institute released a study in 1980 revealing that ten of the city's freeways, rather than facilitating circulation, had either neutral or detrimental effects on traffic, funneling commuters who had once been more evenly dispersed into fewer, more bottlenecked corridors. The freeways had thus failed to live up to their original purpose. Furthermore, the soaring, monumental structures themselves often obstructed views and brought increased noise and air pollution into historic parts of the city. Locals increasingly perceived the highways as an eyesore in the urban landscape. Coupled with widespread safety concerns and repairs in the 1980s and 1990s, Seoul's elevated expressways entered the new millennium having aged just thirty years and already being seen as relics of a different time with different values.[8]

Cheonggyecheon

Lee Myungback, Seoul's first conservative mayor, held the office from 2002 to 2006. During his four years in office, he hoped to forge a new identity for the city based on socially- and ecologically-conscious development, such that Seoul would become a better place for its residents to live and more attractive to outsiders. His hallmark project was the restoration of the Cheonggyecheon stream in 2005, which involved demolishing an elevated highway and exposing and reconfiguring a long-defunct channel of water to create a new and dynamic public space. The new park was sunken below street level, hugging the reconstructed stream and winding through some of the city's densest and

[8] "Humanities and Social Sciences Significance."

most central districts for eleven kilometres (fig. 55). The transformation of this highway was as much a statement about Seoul's values and vision for the future as it was a response to the global shift in the urban development paradigm in the new millennium.

Whereas modernity, efficiency, and the capacity to reproduce and replicate basically identical infrastructures in cities across the globe dictated the urban aspirations of the 1960s and 1970s, the twenty-first century dawned in an emerging climate of global cities competing to be unique and attractive to both businesses and young professionals.[9] These parties favored cities that could demonstrate livability and meaning over consistency and formula. In the case of the Cheonggyecheon reconstruction, Lee altered the fabric representative of twentieth-century values to replace it with a space catering to contemporary tastes and needs, adding public space and thereby improving environmental quality in the dense urban sectors around it. Despite exorbitant expenditures, most considered the development a success. Lee's popularity as mayor eventually launched him to the South Korean presidency in 2008.[10] Cheonggyecheon demonstrates a preference for the social and ecological values of park space in former highway corridors, but raises questions about the economic and ecological impacts of highway demolition given its large monetary costs and the quantities of waste it produced. Today, along with *Seoullo 7017*, Cheonggyecheon demonstrates how different elements of Seoul's aging highway network have met different fates according to shifting values and different political figures' aspirations.

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[9] Jong Youl Lee and Chad David Anderson, "The Restored Cheonggyecheon and the Quality of Life in Seoul," *Journal of Urban Technology* 20, no. 4 (2013): 3-22.
[10] Lee and Anderson, "Cheonggyecheon," 3-22.

Actors and Decision-Makers

In 2011, Park Won-soon of Korea's centre/centre left democratic party began his term as mayor of Seoul. By this time, the city had grown to assume a position as a model of sustainable urban development on the global stage. Just two years earlier, the High Line had opened in New York, enjoying much recognition in the global press, attracting droves of tourists, and expanding with new segments opening in 2012 and 2014. As New York reveled in the international attention derived from this project and its symbolic commitment to livability and sustainability, it drew Park's curiosity. He visited the site in 2014 and called a press conference where he vowed Seoul would be creating its own version of the High Line—defunct infrastructure transformed into linear park. Seoul, however, would draw upon more recent heritage: the Seoul Station overpass recently dubbed unsafe for automotive use and slated for demolition. Seoul's adaptive reuse of a defunct freeway thus has its roots in a context far beyond the city of Seoul and its own considerations of heritage and livability. Both the city and its mayor were competing for recognition and prominence. Seoul faced pressure to compete with other cities on a global scale and to appear unique, progressive, prosperous, and accommodating for international business and tourism. Park faced pressure to leave a signature as mayor of Seoul in order to secure his political aspirations.[11] The High Line model provided a convenient template for achieving these goals.[12]

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[11] Hattie Hartman, "Seoullo Performance: Seoullo 7017 skygarden, Seoul, South Korea by MVRDV," Architectural Review, last modified January 15, 2018, https://www.architectural-review.com/buildings/seoullo-performance-seoullo-7017-skygarden-seoul-south-korea-by-mvrdv/10027027.article.

[12] Reinmuth, "Seoullo is no High Line."

The city of Seoul, when Park took control of its municipal government, was suffering from high debt and aging infrastructure. Park needed to find solutions that could address infrastructural problems and put the city firmly on the map, all the while refraining from exorbitant expenditures. Lee gave the city the Cheonggyecheon stream and its adjoining public spaces, yet not without paying as large a sum. Another mayor, Oh Se-Hoon, also famously drained the city's finances by commissioning the Dongdaemun Design Plaza, which opened the same year Park called for the city's own High Line (fig. 56). Seoullo 7017 allowed Park to create a unique project that generated international renown while addressing a piece of problematic infrastructure and spending only a fraction of the budgets of Cheonggyecheon or Dongdaemun (fig. 57). Seoullo's success draws from several crucial differences from the other projects. Its structure—an elevated automotive freeway—was already there. Costs for stabilization and transformation were minimal when compared to costs of demolition and construction from the ground up.[13] Its budget was 4.3 billion South Korean won compared to 386 billion for the Cheonggyecheon stream transformation and 484 billion for the Dongdaemun Design Plaza.[14] The proposed project thus demonstrated advantageous economic and social values.

Upon the decision not to demolish the overpass in 2014, Park launched an international competition for its transformation. The same year, he created the position

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[13] Hattie Hartman, "Seoullo Performance."
[14] John Dunbar, "Seoullo 7017, Mayor Park's Cheonggyecheon Stream?" *The Korea Times*, May 11, 2017, https://www.koreatimes.co.kr/www/opinion/2017/05/197_229179.html;
"Dongdaemun Design Plaza (DDP), Seoul," Design Build Network, accessed January 11, 2019, https://www.designbuild-network.com/projects/dongdaemun-design-plaza-ddp-seoul/.

of Seoul City architect, and awarded it to Seung H-Sang, founder of the firm PRO JE Architects and Planners. Seung brought a new perspective and focus to architecture and planning in the city, emphasizing the value of heritage and reuse over flashier construction projects. He called for a systematic approach to the management of the city's architecture in order to reinforce a distinct visual and cultural identity for the city. In an interview with Dezeen shortly after his appointment as city architect, Seung laid out this vision: "I wish to establish Seoul's architectural identity [...] I want to raise awareness of what public interest values architecture should embody. I want to change the concept of what a city is, away from the old one-dimensional growth and expansion story."[15] According to Seung's vision, architectural identity emerged from all elements of the landscape and built environment, especially those considered ordinary and insignificant. His perspective is reflected in the municipal government's choice to adapt the existing structure of the overpass.

This transformation is just one illustration of an alternative to the "one-dimensional growth" paradigm that Seung mentioned, an example of the "regeneration" of the built environment in which adding value to existing structures though adaptation is favored over their demolition and replacement. Seung oversaw the competition for the overpass project, and selected the Dutch firm MVRDV, describing their proposal as "like a living thing that can adapt to changing conditions," which fit into his own vision of urban heritage as adaptable and resilient. From the announcement of the competition in 2014, it

[15] Anna Winston, "Seoul names Seung H-sang as first city architect," Dezeen, last modified September 8, 2014, https://www.dezeen.com/2014/09/08/seung-h-sang-first-city-architect-seoul-south-korea/.

was just three years until Seoullo 7017 opened to the public. The result was a combination of the vision of mayor Park, city architect Seung and his team, and the contribution of different citizen stakeholders consulted in the progress. Far from an isolated project, Seoullo was representative of a new vision of urban heritage adopted at all levels of Seoul's municipal government.[16] With his understanding of the potential of the inherited built environment, Seung demonstrated how a values-based approach to heritage can be incorporated into urban decision-making processes.

Perception/Reception

The winning design included minimal alteration to the concrete overpass, emphasizing plantings and smaller structures atop it (fig. 58). Structural integrity and appreciation of the overpass's wear and tear through the years dictated much of the design (fig. 59). Windows were added so that pedestrians could look directly at areas where the concrete showed signs of aging or deterioration. Seoullo's design focused on the overpass as a layer of the city's built heritage and on its new function of connecting various pedestrian networks. This uniqueness coupled with the site's central location in Seoul helped bring the project into the spotlight, riding the wave of well-loved green infrastructure city-building projects set off by the High Line. In Seoullo's first six months, it attracted 6.8 million visitors, compared to the High Line's 5 million annual visitors. This foot traffic has also benefited the surrounding area, with regeneration projects for nearby buildings and neighborhoods awaiting approval.

[16] Winston, "Seung H-sang."

Opening just before the Seoul Biennial, when design professionals converged on the city, Seoullo 7017 was met with praise in architectural circles. Reviews focused less on details of design and aesthetics and more on the uniqueness of the program and its potential as a model of a new kind urban development.[17] Many locals, too, admired Seoullo for bringing green pedestrian space into an area that is otherwise void of such a resource.[18] By adding value to an existing structure, the approach demonstrated a tangible application of the regenerative sustainability principles outlined in the last chapter. While Seoullo 7017 is a unique project, given Seoul's distinct position within its nation and within the world, many of the factors that led to its development can be found in cities all over the world. Cities with defunct or under-performing infrastructure can look to Seoul's example to see how comparatively small investment in regeneration and transformation can create meaningful spaces and contribute to local identity by recognizing potential value.

Of course, Seoullo 7017 is not without its flaws and critics. Completed in less than three years, the project rushed to open in time for the Venice Biennale. Gentrification is a primary concern among Seoullo's impacts on the surrounding area. While, unlike the Cheonggyecheon project, no residents or businesses were evicted or displaced for the construction of Seoullo, a rise in surrounding property values will undoubtedly have long-term effects that will not favour all neighbouring residents and businesses.[19] Further

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[17] Hartman, "Seoullo Performance."
[18] Baek Byung-yeul, "Seoul's overpass park: new landmark or eyesore?" *The Korea Times*, last modified June 9, 2017, http://www.koreatimes.co.kr/www/culture/2017/06/135_230835.html.
[19] John Dunbar, "Seoullo 7017, Mayor Park's Cheonggyeon Stream?" *The Korea Times*, last modified May 11, 2017, https://www.koreatimes.co.kr/www/opinion/2017/05/197_229179.html.

projects for developing the area have currently stalled, making it difficult for the people who live there to see the benefits of the project. Factories and workshops that once relied on the overpass are being forced to find alternatives that can greatly increase travel times (see fig. 53). Higher rents make it more difficult for local businesses not connected to the tourist/leisure economy promoted by Seoullo to survive.[20] The project, like any transformation at the urban scale, brings its own combination of opportunities and challenges, and even if its reception is generally positive in Seoul and abroad, not all conflicts in values have been resolved.

The Role of Heritage

Among Seoul's recent grandiosities like Lee's transformation of the Cheonggyecheon stream and Oh's commission of the Dongdaemun Design Plaza, Seoullo 7017 stands out not only as a project that improves urban life and contributes to the city's identity, but as one that does so through heritage. Both those responsible for its conception and those who analyze its impact acknowledge its role as a historical structure adapted for a new use that better meets the needs of a twenty-first century city.[21] Furthermore, the interpretation of the overpass as built heritage pervades all levels of decision-making involved in its transformation: Mayor Park, city architect Seung and his team, and the architectural firm MVRDV all saw the project as adaptive reuse of heritage

[20] Ben Jackson, "Seoullo 7017: Urban Asset or Vanity Project?" Korea Exposé. Last modified May 20, 2017. https://www.koreaexpose.com/seoullo-urban-asset-vanity-project/.
[21] Reinmuth, “Equal Importance.”

and have stated this opinion when interviewed.[22] The project functioned within Park's and Seung's broader view that a similar approach, informed by reflections about heritage—even the most ordinary heritage—should be applied to Seoul's urban fabric in its totality. Park emphasized the contrast between this approach, which he refers to as "regeneration," and the "redevelopment" exemplified by earlier mayors' platforms. Under Park's regeneration paradigm, elements of the built environment like the Seoul Station overpass are modified—rather than removed—to better contribute to the city and its broader visual and cultural identity.

The "regeneration" approach accepts heritage as a process rather than product and endorses a meaning of heritage that incorporates the city's future in addition to its past and present. The spaces a city creates and maintains will indeed become the built environment that future generations inherit. A placard dedicated to the prospect of future heritage is emblazoned on Seoullo's balustrade and this principle guided the philosophy and actions of Park's administration. Describing his approach to Seoullo and expanding it to the city as a whole, Park has suggested the implementation of a new paradigm in urban development:

> Instead of tearing it down and building new things, as we had in the past, we are planning on creating new value that will add to the lives of the people through urban renewal. We will pursue this renewal project of the elevated road near Seoul

[22] Bak Se-Hwan, "How Seoul's Urban Generation Pays Off," *The Korea Herald*, last modified March 7, 2018, accessed January 20, 2019, http://www.koreaherald.com/view.php?ud=20180307000675;
Winston, "Seung H-sang.";
Yang Shen, "Seoullo 7017: The Skygarden for Seoul," *Decoded Magazine*, last modified November 7, 2017, accessed January 20, 2019. https://www.decodedmagazine.com/seoullo-7017-skygarden-seoul/

> Station, along with our citizens, so that it can become a symbolic example of the changed paradigm for development in Seoul.[23]

By speaking of "added value," Park plants Seoullo 7017 firmly within the heritage discussion. The "new paradigm" he spells out for Seoul through Seoullo 7017 also illustrates the new paradigm in heritage conservation manifesting itself through the writings of scholars and through declarations like UNESCO's 2011 recommendation for the Historic Urban Landscape approach. Seoullo 7017 pushed the definition of heritage to include an overpass, an inclusion alluded to in the HUL recommendation that defined infrastructure as part of the historic urban landscape. Furthermore, Seoullo demonstrates the kind of pragmatism stressed in conversations about the new paradigm in heritage conservation, with its cheaper costs making it both competitive with new-build urban projects and attractive in a world where public sector budgets are shrinking.

Finally, to consider Seoullo in terms of heritage is to consider it in terms of values. Descriptions of the project often emphasize its historical, cultural, and aesthetic values—those most conventionally associated with heritage conservation discourse. These values may have existed prior to Park's intervention, but they were further emphasized by the project's design, through the interpretive placards along its length, and through the narrative presented on the project's website. These values exist alongside the "added" values mentioned by Park. These added values could include Seoullo's social value as a public space and a connection between neighborhoods, its ecological value as a vector for

[23] "Seoul Station 7017 Project: Announcement of the Seoul Station 7017 Project," Seoul Metropolitan Government, last modified February 8, 2017, http://seoul-e.lhsoft.co.kr/policy-information/urban-planning/seoul-station-7017-project/2-announcement-seoul-station-7017-project/.

the development of pedestrian networks and the insertion of plant life, and its economic value as a catalyst for local businesses and a draw for tourism. The ability to combine these values within a heritage framework constitues a new way that the heritage perspective can inform sustainable development in twenty-first-century cities.

5.2 Seattle: Alaskan Way Viaduct

Across the Pacific, Seattle is another city known for its burgeoning tech industry and its penchant for sustainable development. While Seoullo 7017 demonstrates that decision-makers' exploitation of an elevated roadway as built heritage can create a successful and culturally significant space, with economic and ecological advantages, the case of the Alaskan Way Viaduct reveals that the consideration of automotive infrastructure as heritage does not always lead to such a result. On January 11th 2019, after almost seventy years of use, Highway 99 along Seattle's Alaskan Way Viaduct was officially closed to traffic. Headlines in local news outlets concurrently mentioned the "big squeeze" as traffic patterns adjusted to removal of the downtown bypass that will go three weeks before being replaced by a new tunnel. These concerns reflect the continued use value of the structure for drivers. On February 2nd and 3rd of 2019, just before the new traffic pattern took over and crews began to demolish the viaduct, a festival took place on it (fig. 60).

Like the development of Seoullo, the demolition of the Alaskan Way Viaduct illustrates a conflict in values. The elevated highway Seattleites once valued for its modernity and efficiency grew to be resented for its noisiness and obstruction of the

waterfront. After a 2001 earthquake damaged the structure and raised questions about its integrity, the value of user safety took precedence over all other values. With the unknown impact and severity of future earthquakes looming, reuse of the structure in any capacity was difficult to defend. Consequent debate about how to manage traffic and how to redevelop the waterfront after the viaduct's removal illustrates current values in urban planning, while the heritage study of the viaduct required by the United States Historic Preservation Act affirms that consideration of heritage values does not always lead to solutions of adaptive reuse.

Construction

Downtown Seattle is located at the narrowest part of an isthmus lying between Puget Sound to the west and Lake Washington to the east (fig. 61). This geographical feature has long been responsible for traffic and circulation issues, as all traffic travelling north or south has been forced to contend with near-constant congestion downtown on narrow city streets. In the 1910s and 1920s, as car ownership expanded, the idea of a bypass road grew increasingly attractive. In 1935, amid ever-worsening congestion, State Emergency Relief funding allowed for the construction of a new four-lane road along the waterfront, known as Alaskan Way. This new road quickly became an appealing alternative to clogged downtown streets. The waterfront, however, remained an important resource for the shipping industry, which now had to compete with automobile traffic bypassing downtown to use the Alaskan Way corridor (fig. 62).

An elevated expressway emerged as a viable solution that could separate through traffic from local circulation between the central business district and the waterfront's docks and wharfs. The Federal Aid Highway Act of 1944 came forward as a source of funding, which Senator Warren G. Magnuson allotted to the construction of the Alaskan Way Viaduct in 1947. Paired with another north-south limited-access highway, the Seattle Freeway to the east of downtown, the newly-constructed viaduct would separate traffic and ease the congestion plaguing the city's waterfont and central business district.[24] At this time, the waterfront was valued in terms of its logistical and industrial function. Adding more efficient transportation infrastructure thus only further imbued the site with use value.

The first phase of the viaduct's construction took place from 1950 to 1953. This span of road between Royal Brougham Way to the south and Battery Street to the north was to become the city's first limited-access highway. The opening was met with pomp and anticipation, as Seattleites envisioned a future with less traffic, graced by the innovative structure of the state's first double-decker elevated roadway. A ribbon-cutting ceremony involved Iris Adams, the 1953 Seafair Queen,[25] riding a dogsled led by champion Alaskan musher Leonard Sappala to cut the ribbon with giant scissors.

In an interview with Washington State's “People's History” program, Mike Peringer, a reporter at the 1953 opening, recalls, “Seattle hadn't seen anything like this [...]

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[24] Jennifer Ott, "Alaskan Way Viaduct, Part 1: Early Transportation Planning," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified September 13, 2011, http://www.historylink.org/File/9925.

[25] The “Seafair” queen is selected each year at a local festival.

you know people today complain about it being an eyesore and all that sort of thing, but then it was a piece of beauty. It was a brand new construction, it had never been built before--nothing *like* this had ever been built before in Seattle."[26] A photo caption in the *Post-Intelligencer* referred to the viaduct as "a royal necklace across the bosom of the Queen City of the Northwest,"[27] while the newsletter of the Washington State Department of Transportation bragged that "this double-deck structure allows traffic to soar over the maze of railroads along the waterfront and bypass the congested streets of Seattle's business section."[28]

The bypass grew increasingly popular: in its first year it carried 19,000 vehicles per day, a number that would rise to 88,000 per day before the Interstate 5 bypass freeway presented Seattleites with an alternate route in the late 1960s.[29] Before its final closure in 2019, it was carrying over 110,000 vehicles per day.[30] The Alaskan Way viaduct initially symbolized both efficiency and novelty, capitalizing on new technology to create a futuristic structure and a faster trip around downtown (fig. 63). Seattleites valued the structure for its utilitarian efficiency, the convenience it offered them, and at least initially for the sense of modernity embodied in its structure. These values would come to create the built environment inherited by later generations with different values.

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[26] Dominic Black, "Alaskan Way Viaduct: Interview with Mike Peringer," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified February 23, 2012, http://historylink.org/File/10039.
[27] Fergus Hoffman, "Colorful Ceremonies at Snipping of Ribbon," *Seattle Post-Intelligencer*, April 5, 1953, p. 1, 19.
[28] Kay Conger, "Alaskan Way Viaduct Opened to Traffic," Department of Highways News, May 1953, pp. 2-4.
[29] Jennifer Ott, "First section of Seattle's Alaskan Way Viaduct opens on April 4, 1953," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified December 19, 2011, http://historylink.org/File/9982.
[30] "Viaduct Beginnings: Alaskan Way Viaduct Trivia," Viaduct History, accessed January 13, 2019, http://www.viaducthistory.com/history.html.

A Shift in Values and Growing Resentment of the Viaduct

Already by the early 1970s, a new generation had arrived and was prepared to vocalize its own values. As Seattle's central business district declined, concerned citizens hoping to revitalize it focused their efforts on the potential of the city's waterfront as a public space. The idea that the space would exhibit this sort of social value conflicted with earlier understandings of the waterfront and its functions. In the century since the 1860s, when Seattle had experienced a transformation from trading post to metropolis, the waterfront had been the site of facilities for industry, shipping, and transportation, not for leisure. If the waterfront had value in local consciousness, it was for its utility, not its beauty.

The Alaskan Way Viaduct was thus a logical outgrowth of the site's centrality as a transport hub, yet one that ultimately isolated it from downtown. By the 1960s, industry and port facilities had relocated to the north and south, and the waterfront no longer maintained its historical function. As the site was unsuited for modern shipping, planners and community members envisioned a future tied to revitalization based on a change of function and appearance emerging from stronger connections to the central business district. Plans put forward at the time varied in details of design and configuration, but all emphasized a new identity for the waterfront as a place of leisure and tourism, and a catalyst for the revitalization of the city centre more broadly.

In 1969, downtown's new identity began to take shape, driven by the formation of the Pioneer Square Historic District followed by the Pike Place Market Historical Commission in 1971, both separated from the waterfront by the formidable form of the

double-deck Alaskan Way Viaduct. In 1971, a San Francisco firm hired by the city, Rockrise & Associates, revealed their plans for a waterfront park that included the eventual removal of the elevated roadway. In 1974, the city realized parts of the plan in the form of a dedicated space between several piers, with concrete barriers erected in an effort to isolate it from the noise of the highway. 1977 marked the opening of the Seattle Aquarium just beside waterfront park and a pedestrian connection between the waterfront and Pike Place Market (figs. 64 & 65).

As waterfront's new identity as a contributor to a network of tourist and leisure sites in downtown developed, a debate ensued about what the waterfront should be, and what it should symbolize, going forward. The Friends of the Working Waterfront argued to restore the industrial legacy of the site by developing facilities for fish processing and industrial use. The Seattle Shorelines Commission envisioned it as a space for recreation and a way to give city-dwellers access to the water. In the years since the Alaskan Way Viaduct's construction, Seattle's waterfront had acquired new meanings and a profound cultural significance. The structure that Seattleites so admired at its opening increasingly conflicted with their vision of and aspirations for the waterfront it overshadowed.[31] By the time the city experienced growth in the technology sector in the 1990s, it was especially clear that the waterfront was in need of dramatic improvements.

[31] Jennifer Ott, "Shaping Seattle's Central Waterfront, Part 2: From 'Back Alley' to 'Front Porch'," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified November 13, 2013, http://www.historylink.org/File/10666.

Shake it up: Seismic Scares and a New Debate

Concerns about the structure's integrity and the dangers posed by potential collapse reinforced negative associations. In 1989, the San Francisco Bay Area was struck by the 7.1-magnitude Loma Prieta earthquake. The worst and most deadly catastrophe connected to it was the collapse of a 1.4-kilometre section of the double-decked Cypress Street Viaduct in Oakland, which claimed 35 of the 64 lives lost due to the earthquake. Slabs of concrete from the upper level fell onto drivers, and ultimately the entire upper level fell to rest on the lanes below (fig. 66). Seattleites watched it horror, thinking of their own double-decked elevated highway, built around the same time as the Cypress Street viaduct.[32] Seattle, like San Francisco, was built in a seismically-active zone prone to destructive earthquakes. In the following years, the Washington State Transportation Center at the University of Washington launched a study of the Alaskan Way Viaduct's structure and its vulnerability to earthquake damage.

The team published a report in 1995, stating that the viaduct was especially susceptible to movement and displacement of its foundations due to liquefaction of the loose soil beneath. This phenomenon occurs when soil integrity is weakened during an earthquake by water filling the spaces between individual soil particles, and, the report concluded, could effectively damage large sections of the viaduct and even lead to collapse. Constructed long before the 1971 San Fernando earthquake led to stricter regulations for construction in seismic zones, the Alaskan Way Viaduct lacked the

[32]Phillip A. James et al, "Cypress Street Viaducts," Engineering.com, last modified October 16, 2006. https://www.engineering.com/Blogs/tabid/3207/ArticleID/73/Cypress-Street-Viaducts.aspx.

transverse reinforcement structure that had since been developed for earthquake resistance. The study referenced a 1965 earthquake that had impacted the viaduct, remarking that the structure remained strong, and that liquefaction was more serious than direct impact from shaking. Nevertheless, future seismic activity could bring about more severe shaking and loss of soil strength, potentially leading to disaster as in Oakland.[33] In the 1990s, pressure mounted for authorities to make changes to the viaduct, whether through reinforcement or demolition.

The deciding factor came in 2001, when the 6.8-magnitude Nisqually earthquake shook the ground beneath the Seattle area for forty seconds. During the months after the quake, the roadway was closed at different intervals as teams surveyed and assessed the damage.[34] A post-earthquake structural study published following an independent evaluation from the firm T.Y. Lin International cited inadequate reinforcement, cracking at joints, and damaged concrete. Furthermore, the study identified the soil beneath the structure as poor and prone to liquefaction, making efforts to repair the viaduct problematic given the potential for future earthquakes (fig. 67). The study concluded that "the viaduct is near the end of its useful life, and has many structural and functional problems that make retrofit of the viaduct a questionable investment."[35]

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[33] S.L. Kramer and M.O. Eberhard, *Seismic Vulnerability of the Alaskan Way Viaduct* (Seattle, WA: Washington State Transportation Center, 1995), http://depts.washington.edu/trac/bulkdisk/pdf/363.4.pdf.
[34]Jennifer Ott, "Alaskan Way Viaduct, Part Four: Replacing the Viaduct," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified July 27, 2017, http://historylink.org/File/9983.
[35] Jugesh Kapur1, David Goodyear and Tim J. Ingham. “Post Earthquake Evaluation of the Alaskan Way Viaduct.” T. Y. Lin International, 2001. https://www.pwri.go.jp/eng/ujnr/tc/g/pdf/22/22-7-5goodyear.pdf.

Seattle decision-makers were now forced to reassess the value of an elevated expressway along their waterfront that by this time carried 110,000 vehicles per day. Whatever solution they chose to pursue would have to contend with conflicting pressures to maintain traffic flow and to use the viaduct's demolition as an opportunity to create a public space on the waterfront that reflected the city's contemporary values. More than a decade of debate would follow the earthquake, as Seattleites squabbled over what form—if any—the viaduct's replacement should take and how this change would impact the surrounding neighborhoods and potentially transform the waterfront.

Structural Obsolescence: A Push in which Direction?

Following the general acceptance that the damaged viaduct necessitated dramatic and immediate action, city and state authorities drafted seventy-six alternate proposals to reconfigure traffic patterns and land use in downtown Seattle to meet the city's expectations while minimizing the risks of catastrophe of the type suffered in Oakland. By March 2007, transportation authorities had distilled these proposals into two options that they brought before the people of Seattle in a vote. Voters could check yes or no for a replacement elevated structure and for a cut and cover tunnel (figs. 68 & 69). In both cases, a majority voted no, sending the viaduct project team back to the drawing board. This element of public decision-making distinguishes Seattle from the other two case studies, where municipal governments experienced more direct power. In the case of values-based heritage conservation, this kind of public involvement is crucial to ensuring that the values prioritized in reuse projects reflect those of the people.

Building on an idea suggested in 2004 by the People's Waterfront Coalition, viaduct project authorities next suggested a scenario in which the Interstate 5 freeway would absorb all through traffic, and improvements to public transit and city streets downtown would go the rest of the way to meet needs once met by the viaduct. This scenario would of course require Seattleites to change their transportation strategies, but had the most benefit from a sustainability perspective. A bored tunnel, the least visible and least obtrusive option for preserving the viaduct's traffic flow, was shelved due to high costs. Stakeholders continued to push for this option, however (fig. 70).[36]

In 2008, Tayloe Washburn, representing the Seattle Chamber of Commerce on the stakeholder committee, came forward with an alternate bored tunnel plan with significantly reduced costs, making it a more feasible option than initially thought. The plan relied on recent technological innovations and design that made it easier and cheaper to bore larger tunnels, so that just one rather than two tunnels had to be excavated (fig. 71). Twenty-two out of the twenty-five members of the stakeholder group came together in favor of this option, signing a letter to the governor for its official proposal. In early 2009, after review by the Washington State Department of Transportation, this option was selected to replace the Alaskan Way Viaduct. Drawing upon state-, county-, city-, and port-based monetary sources, this replacement included stipulations for the construction of a streetcar line downtown as well as a newly designed street along the waterfront (fig. 72).

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[36] Dominic Black, "Alaskan Way Viaduct: Interview with Ron Paananen," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified February 23, 2012, http://www.historylink.org/File/10041.

In 2011, after being subjected the requisite environmental-impact studies, the Federal Highway Administration (FHA) officially approved the implementation of the hybrid deep-bore tunnel replacement for the Alaskan Way Viaduct. While favoured by the stakeholder committee, this proposal continued to face opposition in Seattle, with the major critiques being its expense and the lack of emphasis on public transit development. Manifesting these concerns, Project Seattle Now put the tunnel's construction to the vote in a referendum, which passed on August 16 2011, with 58% of voters in favor of the bored tunnel plan; it would go forward, and the damaged sixty-year-old viaduct would come down. After running into a delay in 2013, when the boring machine locally famous as "Bertha" overheated and struggled to advance, the project slowly progressed, with the new tunnel opening in February of 2019, four years later than initially scheduled.[37]

The long, drawn-out process of selecting and implementing the viaduct's replacement reveals certain facets of people's values today, how they shape the urban landscape, and how they differ from those of the mid-twentieth century when the Alaskan Way Viaduct was constructed. In this case, safety and security took precedence over all other values. After the Nisqually earthquake in 2001, officials determined that the Alaskan Way Viaduct was unsafe, and that—unlike the Seoul Station Overpass—it was not feasible to make it safe through repair and retrofit. Transportation authorities and the people of Seattle were thus forced to decide what they valued most and what form of infrastructure reflected these values. Since the 1970s, community members had

[37] Jennifer Ott, "Alaskan Way Viaduct, Part Four: Replacing the Viaduct," HistoryLink.org, The Free Encyclopedia of Washington State History, last modified July 27, 2017, http://historylink.org/File/9983.

recognized and advocated for the value of the waterfront as a public space, a value that was precluded by the noise and physical barrier that the viaduct imposed. Seattleites' rejection of a replacement elevated structure in the 2007 vote attests to this widely-held value. The other rejected proposal for a cut-and-cover tunnel reflects a reluctance to accept a scenario that would disrupt both transport networks and urban life for an extended period.

However, the failure of stakeholders to unite behind the proposal to reroute traffic through city streets and invest heavily in public transit demonstrates Seattleites still value the convenience offered by high-speed automotive infrastructure, and that the ecological value of the replacement was not the priority of the majority. The deep-bore tunnel's popularity suggests that in Seattle, while the visible structures of urban freeways are not valued or accepted the way they were in the 1950s, their function and utility are. Their use value thus remains of primary importance. Of course, the opening of the Alaskan Way Viaduct in 1953 did not represent the same kind of democratic approach employed in the bored tunnel's selection. A comparison of the two projects would thoroughly illustrate the shift from a technocratic to more democratic approach to urban planning. Yet the crowds at the 1953 ribbon-cutting seem to associate the utilitarian *value* of the highway with the *physical structure* of the elevated freeway, in a way that is no longer prominent in the way people view or interpret urban infrastructure.

Alaskan Way Viaduct: A Heritage Highway?

When the FHA prepared an Environmental Impact Statement for the proposed bored tunnel project, it was governed by the National Environmental Policy Act, legislation enacted to protect both natural and cultural resources. As a part of this process, the FHA was responsible for ensuring compliance with the National Historic Preservation Act, particularly article 106.[38] This legislation mandates that projects respectfully manage and consider any historic properties affected by their implementation. These properties include not only those listed on the National Register of Historic Places but also any property considered eligible for listing. Criteria for eligibility include a minimum of fifty years of age and one of the following: association with significant events or with significant individuals from the past; visual or physical testimony to a particular time period, construction method, architectural style, or architect; or potential contribution to knowledge about a historical period. A report issued in 2010 by the FHA in partnership with the Washington State Department of Transportation and the City of Seattle details how the Alaskan Way Viaduct replacement project undertook measures to comply with Article 106.

The historic property that stood to sustain the most dramatic adverse impact from the project was none other than the Alaskan Way Viaduct, up for demolition. While other properties were affected by the proposal, no others were slated for certain demolition. At

[38] US Department of the Interior. "National Historic Preservation Act, Section 106 A Quick Guide for Preserving Native American Cultural Resources," Washington, DC, White paper, 2012. https://www.nps.gov/history/tribes/Documents/106.pdf.

an age of almost sixty years at the time of the study, and complying with eligibility criteria for the National Register, the Alaskan Way Viaduct was officially recognized as a historical property under Article 106 of the National Historic Preservation Act. While this recognition did not save the structure from the wrecking ball, the legislation did demand mitigation efforts to recognize promote its significance. These included a range of interpretive initiatives, including educational materials about the viaduct's history made available online. Mitigation efforts centered on a Historic American Engineering Record (HAER), detailing the viaduct's story through text and historical images, submitted to the National Parks Service.[39]

The HAER acknowledges the historical values and conflict embodied in the Alaskan Way Viaduct in a way that speaks both to its local significance and to the evolution of the perception of urban freeways in cities across the globe. The introduction to the report begins with the claim that "The Alaskan Way Viaduct may evoke the strongest emotions--both positive and negative--of any roadway in the country." It then proceeds to describe the stunning view of the local landscape's most significant natural and cultural features: the Puget Sound and Olympic Mountains, the skyscrapers of downtown Seattle, the waterfront's historic piers, and the heart of Seattle—Pike Place Market. Speeding along the viaduct, the report explains, gave the driver a unique vantage point from which to appreciate all of these sights. However, it continues, the viaduct's charms were lost on pedestrians at the waterfront, who contended with the structure's

[39] *Alaskan Way Viaduct Replacement Project, 2010 Supplemental Draft Environmental Impact Statement* (Seattle, WA: Parsons Brinckerhoff, Seattle, 2010).

presence as a formidable barrier to downtown, and with the noises and fumes of the cars whizzing along its two levels of roadway.

The introduction concludes with a nod to the structure's evolution from a widely-appreciated technological marvel to an impediment to waterfront development and ultimately to the damage in the 2001 earthquake. The next thirty pages offer a detailed portrait of the viaduct's origins, design, construction, and evolving persona over the span of its sixty-odd year life.[40] As the last tangible remnants of the viaduct disappear over the coming years, this detailed account will remain accessible as a testament to and recognition of the Alaskan Way Viaduct as built heritage, and as a crucial element of Seattle's urban landscape in the late-twentieth and early twenty-first century. The report cites “seismic instability” as the primary catalyst for the viaduct's demolition, thereby affirming that the structure is not coming down due to a lack of heritage value, but rather due to the priority placed on user safety.

In the decision-making process that surrounding the Alaskan Way Viaduct, different values and perspectives came into contact as Seattleites tried to envision the future of their urban landscape. Desires for public space and waterfront development weighed heavily. At the time of writing, it is unknown what exact form the new waterfront will take or how it will be perceived. The Alaskan Way Viaduct demonstrates the limitations of a heritage approach and perspective in dealing with aging automotive infrastructure. Recognizing a structure as having different values—historic, social,

[40] Mimi Sheridan, *Alaskan Way Viaduct and Battery Street Tunne*l (Washington, D.C.: US Department of the Interior, 2008), http://lcweb2.loc.gov/master/pnp/habshaer/wa/wa0800/wa0830/data/wa0830data.pdf.

cultural, etc.—does not always make it a viable candidate for reuse. Even with heritage status, the Alaskan Way Viaduct had to contend with other, more powerful forces that could not be managed while still preserving the built structure. Its legacy will continue, not through built fabric, but through the memories of the Seattleites who drove along it, and through the extensive documentation of its life.

5.3 São Paulo: Minhocão

In Seattle, structural risks rendered any reuse of the Alaskan Way Viaduct unfeasible. Seoullo 7017, on the other hand, demonstrated a complete transformation of infrastructure once given over to the car. The third and final case study, a portion of elevated highway officially named the Via Elevado Presidente João Goulart and commonly referred to as the Minhocão (meaning earthworm) illustrates a middle ground, sustaining use as both an expressway and a pedestrian walkway, depending on the time of day and day of the week. On weekdays from 8 pm to 7 am, as well as on weekends and holidays, the elevated roadway is closed to automobile traffic, and Paulistanos reclaim and reappropriate the space, using it for jogging, impromptu soccer matches, outdoor yoga classes, and even organized cultural events and festivals (fig. 73).[41] In a gargantuan city with very little public space to serve its vast population of high-rise dwellers, the Minhocão represents an especially dear resource that has successfully served Paulistanos across class divides.

[41] "Minhocão passa a fechar aos sábados e 1h30 mais cedo durante a semana" G1, Globo.com, last modified February 8, 2018. https://g1.globo.com/sp/sao-paulo/noticia/prefeitura-decreta-criacao-do-parque-minhocao-restricao-de-veiculos-sera-gradativa.ghtml.

However, given that it was built in the early 1970s at the behest of an infamous and trauma-inflicting military dictatorship, and shrouds one of the historic city's most vibrant boulevards, the expressway remains charged with deeply negative associations. In the first years of the twenty-first century, as the Minhocão existed in limbo between park and expressway, opposing social movements emerged advocating either for its demolition or for its complete transformation. Today, drawing inspiration from successful transformations such as the High Line and Seoullo 7017, the city's administration increasingly favors the structure's adaptive reuse as a park, especially concerning its potential to contribute to the city's identity and global competitiveness. The following study will analyze the conflicting values at play over the course of the Minhocão's evolution, its probable future, and the examples it can offer to other cities as it balances problematic associations with the pressing need for public space.

A Troublesome History

Today, Paulistanos sit through a daily average of two hours and forty-two minutes of traffic. This long wait is the product of a series of decisions and actions taken by officials and the consequent socio-spatial phenomena throughout the twentieth century. In the 1930s, a civil engineer named Prestes Maia proposed what became known as the "Avenues Plan," which structured the city within a network of broad avenues forming grids and beltways that facilitated outward expansion without imposing limitations on this growth (fig. 74). This expansion was serviced by buses, which were more flexible than the streetcars whose routes were set by in-ground rail. These developments also grew to

favour private cars and consequently higher-income residents, giving them access to newer parts of town and gradually taking them out of the city's historic centre. Lower-income segments of the population, in contrast, were granted access to cheaper real estate on the fringes of the city by expanding bus services.

Thus, in 1949 when São Paulo's municipal government recruited auto-loving planner Robert Moses to draw a plan for the city's development, the city had already established a trend of widespread outward expansion and decentralization. Moses's proposal emphasized a network of urban superhighways that would further facilitate and reinforce the outward expansion and mobility central to the Avenues Plan. These superhighways were not immediately constructed, yet the 1960s and 1970s would prove the ideal political moment for their construction, which would put into motion a series of acute transformations of the urban environment that continue to shape and plague the city in the twenty-first century.[42]

In 1964, a swift military coup that enjoyed support from large numbers of civilians, clergymen, and the United States government took power in Brazil, replacing standing president João Goulart with the Marshall Humberto de Alencar Castelo Branco, the new regime's President-General. In the following years, elected legislators were replaced by military technocrats, appointed through a centralized authoritarian system that concentrated power in the presidency—a position invariably filled by a high-ranking military official. The regime was unified not around nationalism and the adoration of

[42] Raquel Rolnik and Danielle Klintowitz, "(Im)Mobility in the city of São Paulo," *Estudos Avançados* 25, no. 71 (2011): 89-108.

individual leaders but on a platform of anti-communism and the suppression of social movements of any kind that encouraged mass participation.

Through a set of "Institutional Acts," the military regime rapidly abolished citizens' rights and freedoms. The first gave the president unmitigated power to pass laws and restrict citizens. The second abolished political parties and elections for the presidency and gave the president power to close congress, in addition to giving the regime the far-reaching authority to arrest any citizen for "crimes against national security." A third Institutional Act removed voters from the process of determining governors and mayors of larger cities. Through the late 1960s, the regime continued on its authoritarian course, eradicating the freedom and rights of its citizenry by censoring the press and facilitating the seizure of political dissidents. The fifth Institutional Act, passed in 1968, ignited the most repressive and violent period of the regime, which lasted until 1978, by strengthening centralized powers and denying habeas corpus to political prisoners.[43]

Concurrently, from 1968 to 1973, Brazilians witnessed what came to be known as the country's “economic miracle.” During this time, the repressive military apparatus pushed for aggressive expansion of industry and agriculture, delivering widespread benefits to middle-class wage-earners. Amid consistent economic growth of more than ten percent per year and large flows of money coming in from abroad, the government made sweeping investments in infrastructure and waves of workers from rural regions

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[43] *Oxford Research Encyclopedia of Latin American History*, s.v. "The Brazilian Military Regime, 1964–1985," by Marcos Napolitano, accessed Jan. 20, 2019, http://oxfordre.com/latinamericanhistory/view/10.1093/acrefore/9780199366439.001.0001/acrefore-9780199366439-e-413.

were drawn to Brazil's booming industrial cities.[44] Hence, São Paulo at this time had both a motor and a mechanism for massive expansion. Economic prosperity increased the population and funded the effort to allow their mobility through the construction of roadways. Moses's 1949 plan now served as an ideal template for the regime-appointed municipal government of São Paulo as they set about reconfiguring the sprawling metropolis.

Between 1965 and 1970, road-building accounted for twenty-seven percent of the city's budget, and by 1980 the city's high-speed road network had increased tenfold from 1960 figures, with 690 kilometres of expressways and 890 kilometres of arterial roads.[45] The Minhocão was one of these infrastructure projects, constructed through the historic centre to connect districts to the east and west before the 1973 world oil crisis slowed both economic growth and road-building in Brazil. The 3.4-kilometre-long elevated expressway was built over a major thoroughfare in the historic centre with no consultation and with no environmental assessments (figs. 75 & 76). At the time of its opening in 1971, it was named the Elevado Costa e Silva for the military regime's president from 1967 to 1969.[46]

The Changing Identity of the Minhocão & its Environs

The highway had many deleterious effects on the dense surrounding neighborhoods, including extreme noise and air pollution that kept local residents from

[44] *Oxford Research, "*Brazilian Military Regime," Napolitano.
[45] Rolnik and Klintowitz, "(Im)Mobility," 89-108.
[46] *Oxford Research, "*Brazilian Military Regime," Napolitano.

sleeping. In 1976, this led officials to close the roadway to motor traffic between midnight and 5 am so that those in neighboring apartments might have a respite from the constant drone and fumes. In addition to these direct and immediate impacts, the elevated roadway also participated in longer-term demographic shifts in the city by contributing to the more widespread decline of central historic neighborhoods. The rough and noisy presence of the Minhocão caused rents to drop, businesses to close, and those with means to move away (fig. 77). These changes transformed the character of the area, though had the advantage of creating a space accessible to lower-income families that was well-serviced by employment opportunities and amenities. It also became a haven for crime and drug-dealing, with some linking the decline it spurred to an open-air market for crack cocaine known as "Crackland" nearby. Furthermore, a recent study suggests that the 70,000+ vehicles that frequented the Minhocão led to levels of fine particulates 79% higher than in other parts of the city, posing enormous health risks to those living nearby.[47] In 1989, the restriction on automobiles expanded to 9:30 pm to 6 am on weekdays, and then to the entire day on Sundays and holidays in 1990.

By the twenty-first century, Paulistanos were beginning to take advantage of the Minhocão's closure to automobiles, increasingly using the empty freeway as a space to jog, walk, catch up with friends, etc. (fig. 78). Yet this compromise was not the permanent solution desired by the municipal government. It continued to be perceived as a problematic but necessary structure, in need of further management. A 2004 regional

[47]Nick Van Mead, "Taming the Worm: How the Minhocão is São Paulo's Soul," *The Guardian*, last modified December 1, 2017, https://www.theguardian.com/cities/2017/dec/01/taming-worm-minhocao-elevated-highway-sao-paulo.

plan included strategies to improve spaces along the Minhocão's corridor and even to conceive of other street systems to absorb its traffic flow in the event that it were to be removed or permanently closed to traffic.

In 2006, the municipality launched a competition to imagine a future for the Minhocão. The response generated forty-six different proposals on how to manage the elevated roadway. Four of these designs were granted honorable mention, and one was selected as the winner and displayed at the Venice Biennale that same year.[48] This design, submitted by local firm Frentes Arquitetura, maintained the structure and function of the motorway, while incorporating its informal use as a park by constructing another level atop the automobile traffic (fig. 79). This design included trees, shrubs, flowers and designated park space.[49] While the municipal government never implemented the winning proposal, its selection demonstrates a desire for the roadway to continue in its function as a high-speed corridor but in a less visible way, with attention given to the designed park space.

Battle of the Minhocão

In the years that followed, social movements developed around arguments to demolish the Minhocão and to keep the structure and convert it entirely into a pedestrian park space. Those arguing the former, a movement known as the "Movimento Desmonte

[48] Debora Sotto, "Parque Minhocão, São Paulo – Brazil: A Case Study on Urban Rehabilitation, Place-making, and Gentrification," *Revista de Direito da Cidade* 10, no. 3 (2018): 1899.
[49] Eliana Barbosa, "Minhocão Multiples Interpretations," ResearchGate (2012), https://www.researchgate.net/publication/258440179_Minhocao_Multiples_Interpretations/citations.

do Minhocão," established their position on the grounds that demolition would contribute to a higher quality of life for local residents while a High Line-style park would lead to gentrification of the neighborhood and ultimately displace low-income residents. It is worth noting that their desired course of action includes not only demolition of the structure but also the implementation of mechanisms to ensure that residents could stay where they live, acknowledging that creating an open boulevard would also be likely to raise rents.[50] Further support for razing the elevated roadway has come from Paulistanos who feel it is a tangible reminder of a traumatic period in their city's past of which they would like to be free.[51] Tearing down the highway would symbolize liberation from this memory, whereas keeping the structure—in any form—allows its darker legacy to continue to loom over the city.

Those wishing to convert the Minhocão into a full-time park look to examples like the High Line for inspiration, modelling their group, "Associação Amigos do Parque Minhocão," off of the "Friends of the High Line"—the group that ultimately succeeded in gathering funds and support for New York's paragon of creative infrastructural reuse. This group sees enormous value in the site as a public resource for cyclists, pedestrians, and myriad other social uses, as it already demonstrates on nights and weekends. Yet the approach to the "heritage" of the structure is different from that of New Yorkers or Seoulites. Both the High Line and Seoul Station Overpass could be interpreted as positive

[50] Sotto, "Parque Minhocão," 1901.
[51] Alice Bucknell, "São Paulo's Clogged Major Highway Becomes a Pedestrian Wonderland," *Architectural Digest*, last modified October 6, 2017, https://www.architecturaldigest.com/story/sao-paulo-clogged-major-highway-becomes-pedestrian-wonderland.

symbols of prosperity or modernization whose meanings had been lost or replaced over time. The Minhocão as a relic from history had an unambiguously negative connotation as the product of an authoritarian regime. Positive associations with the viaduct have emerged from its more recent vocation as a public space that attracts Paulistanos from all walks of life, unique in a city normally defined by deep division and segregation based on race and income, with a tradition for prioritizing private rather than public space.[52]

Felipe Morozini, a photographer who has lived adjacent to the Minhocão and is a member of its supporting organization, reminisces fondly on a typical scene, "I have never seen so many people from other neighborhoods around here as now. Rich people, poor people, it is a mixture. I see the rise of bicycles and children. If São Paulo is lacking in leisure spaces, here is one. Just you come and see."[53] The structure has taken on a new life, and added a new layer of meaning. Unlike Seoul, which features plaques of the site's historic significance, the Minhocão emphasizes its recent function as a development wholly distinct and separate from its origins. The form remains, a testament to the city's history, yet the meaning has fundamentally changed. Historical and aesthetic values are clearly superseded in the case of the Minhocão by the emerging social and ecological values of the new public space.

[52] Van Mead, "Taming the Worm."
[53] Daniel Boa Nova, "Who are the people who are already using the Minhocão as if it were a park," Hypeness, accessed January 20, 2019, https://www.hypeness.com.br/2015/07/quem-sao-as-pessoas-que-ja-estao-usando-o-minhocao-como-se-fosse-um-parque/.

The End of the Compromise: Conflicting Values of the Minhocão

São Paulo's mayors have been the most influential actors in setting the course for the Minhocão, as it has grown into a prominent and divisive issue in city politics. Current mayor João Doria favors the expressway's full conversion into a park space for pedestrians and cyclists, and since his election in early 2019 has led initiatives to expand the hours of its closure to motorists and officially name the site "Parque do Minhocão"—laying a path to integrate it into the park system and ensure that the structure will not be demolished. Doria aspires to make São Paulo stand out as a green and smart city. So far, the pedestrians and bicycles lining the viaduct, the vertical plant walls, and works by local artists covering neighboring buildings have all contributed to this identity. A master plan for the city approved during the term of previous mayor Fernando Haddad scheduled the Minhocão's final closure to automobiles and permanent transformation for the year 2030.

The ultimate fate of the Minhocão will be decided in the coming years, perhaps in 2030, perhaps earlier or later. At the moment, the Minhocão stands and exemplifies a compromise as a solution to a conflict in values. During the day, the roadway continues to demonstrate value for the over 70,000 vehicles that use it to navigate the dense central neighborhoods of São Paulo. Yet during nights, weekends, and holidays, Paulsitanos appreciate the social and ecological values of a unique public space that contributes to the livability and character of their city. Heritage is a word that requires even more nuance than usual when discussing the Minhocão. The structure still has the power to evoke painful memories, though by changing its function and its relationship with the people who use it as a park, it has the potential to transmit a very different legacy to

future generations. Furthermore, there can be value in this contradiction. The Minhocão transcends its role as a testament to the authoritarian regime and becomes a testament to Paulistanos' resilience in taking a structure that had been imposed upon them and subverting its meaning to reflect contemporary values.

5.4 Discussion: Highways as Urban Heritage

As reflected in UNESCO's Recommendation for the HUL (2011), urban infrastructures constitute an element of the historic urban landscape. Through this lens, they participate in a network of structures, the built environment, that is constantly aging, changing, and adapting to new uses and values. One can consider this environment itself as a multi-layered record of a place's past. What makes this record, and what does each layer signify? To say that the structures constructed in a given place and time period reflect that society's values is certainly true, yet, perhaps more accurately, they reflect that society's solutions to conflict between values. In the 1960s, the values of efficiency and modernity embedded in newly-developed highways conflicted with the social and cultural values of the neighborhoods they traversed.

Decision-makers “resolved” these conflicts by displacing local residents, razing neighborhoods, and asserting the priority of perceived efficiency over the quality of life of those living nearby. Cities today, like Seoul, Seattle, and São Paulo, contain a built, layered record of these strategies to resolve conflicting values. Today, decision-makers are in a position to craft the next layers in this record, demonstrating contemporary answers to today's particular set of conflicting values. They can decide which layers to keep, how

to manage them, and how to transmit them to future generations. The work of recognizing a multitude of values imbued in urban structures and attempting to resolve conflicts between them in a sensitive and nuanced manner can be understood as a "heritage approach," borrowing from both HUL and the recent discourse in the field of heritage conservation more broadly explained in chapter three.[54]

Decision-makers employed this heritage approach to urban elevated freeways in each of the three case studies. In each case, actors, working with stakeholders, acknowledged the conflicting values of past layers within urban environments and, in deciding how to manage them, crafted new layers for those to come. Freeways and automotive infrastructure more broadly are particular in the way that their use value—as channels for the circulation of cars and trucks—conflicts with ecological values tied to lowering emissions in light of climate change, one of the most pressing dilemmas of our age. Additionally, as automotive infrastructure ages, its use value is lost through structural deterioration. The elevated roadways in Seoul and Seattle both lost their use value when the structures were deemed unsafe for continued function in their traditional capacities. In Seoul and São Paulo, decision-makers have been able to add new values to the Seoul Station Overpass and to the Minhocão respectively by imbuing them with a new function as a public space for pedestrians rather than automobiles.

While each case study demonstrates the application of the heritage approach in acknowledging conflicting values, the actions taken in each city directly reflect the

[54] UNESCO, "Recommendation on the Historic Urban Landscape," Recommendation, Paris, 10 Nov. 2011; Erica C. Avrami, Randall Mason, and Marta De la Torre, *Values and Heritage Conservation: Research Report* (Los Angeles: Getty Conservation Institute, 2000).

specific context of each site and the values that decision-makers there prioritize. In Seoul, Mayor Park prioritized the city's image as a model for sustainable development, an improved network for pedestrians, and the reduced cost of a project that incorporated an existing structure—ecological, cultural, and economic values. In Seattle, transportation authorities prioritized user safety, waterfront development, and the replacement scheme's minimal intrusion in city life, questions of social, aesthetic, and economic values. In São Paulo, the municipal government has been weighing the negative impacts of the Minhocão against its function as a traffic corridor, and has increasingly prioritized the positive effects of its closure against its continued traditional function, thus taking into account the social, ecological, and economic values on both sides.

In contrast to dominant approaches to heritage conservation, the historical and aesthetic values of the sites, while sometimes referenced or incorporated into the broader scheme, are not the focus of any of the three case studies. Managing these freeways through a heritage approach, social, economic, and ecological values emerge as the dominant guiding forces in the decision-making process. Quality of life is the uniting factor between these three values, potentially establishing itself as a new guiding principle within heritage conservation. Moreover, quality of life is deeply linked to Aroaz's concept of change management highlighted in Chapter Three.[55] The three case studies illustrate this relationship as it is manifest in the implementation of innovative approaches to heritage. Employing a broader definition of what constitutes built heritage,

[55] Gustavo Araoz, "Preserving Heritage Places under a New Paradigm," *Journal of Cultural Heritage Management and Sustainable Development* 1, no. 1 (2011): 58. DOI: 10.1108/20441261111129933.

decision-makers in Seoul, Seattle, and São Paulo each assessed the values of automotive infrastructure in their cities to generate a plan to manage change in a way that maximized the potential value of each structure and space. In Seoul and São Paulo, change was managed by taking measures to alter the function of the raised highways while retaining the physical forms. In Seattle, the change was more dramatic—the physical form was demolished, as this solution was preferred after a heritage value assessment. Nevertheless, Seattle decision-makers managed this change by making information about the Alaskan Way Viaduct accessible through a public forum.[56] The three case studies show how a heritage perspective can be used as a tool to create solutions that prioritize quality of life as a product of diverse values, managing change to renew and enhance the built environment.

Seoullo 7017, the Alaskan Way Viaduct, and the Minhocão also invite a return to the notion of cultural significance as presented in Avrami, Mason, and de la Torre's 2000 Research Report.[57] As discussed in Chapter Three, they prescribe a role for a broad range of professionals and community members in determining the cultural significance of a structure or space above and beyond heritage practitioners. These case studies demonstrate the forms that such an approach can take. In Seoul, a multidisciplinary team working under city architect Seung H-Sang and relying on public consultation was responsible for determining cultural significance and conserving or enhancing it through

[56] Viaduct Beginnings: Alaskan Way Viaduct Trivia," Viaduct History, accessed January 13, 2019, http://www.viaducthistory.com/history.html.
[57] Erica C. Avrami, Randall Mason, and Marta de la Torre, *Values and Heritage Conservation: Research Report* (Los Angeles: Getty Conservation Institute, 2000), 9.

a variety of projects.[58] In Seattle, the cultural significance of the viaduct was conveyed independently of material conservation, as the inclusion community members' voices and seismic specialists conveyed that the structure was unsafe. Finally, in São Paulo, different actors continue to weigh perspectives to determine the cultural significance of the Minhocão. For some community members and decision-makers, the structure has greater value and significance as a unique public space than as a functioning motorway, and if these voices prevail it will transition to this sole function in the years to come. In all three cases, cultural significance emerges from multiple axes—especially economic, ecological, social—rather than from aesthetic and historic expertise exclusively.

This chapter has illustrated how decision makers can capitalize on the recent evolution in approaches to heritage conservation to create meaningful urban spaces not only from aging automotive infrastructure but also from previously-overlooked elements of the inherited built environment more broadly. A conception of urban heritage borrowed from UNESCO's HUL recommendation and Graham Fairclough's definition of heritage opens the door to a wider body of built heritage based on a variety of values. Aroaz's notion of change management expands strategies employed for the transmission from material conservation to more nuanced case-by-case responses. Finally, the Getty research reports' understanding of cultural significance as established from a range of actors and perspectives charges all those in a community with the work of identifying and transmitting the values of the urban environment. This formula, actualized in each of the

[58] Anna Winston, "Seoul names Seung H-sang as first city architect," Dezeen, last modified September 8, 2014, https://www.dezeen.com/2014/09/08/seung-h-sang-first-city-architect-seoul-south-korea/.

three case studies in the form of intraurban highways, has potential to be applied to structures and spaces of all ages, shapes, and sizes across cultural contexts.

Images

Figure 51. Seoullo 7017, an elevated freeway turned linear park connecting neighborhoods, crossing over many lanes of roads and railroads. Created by Youngjin, 5 June, 2017. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Seoullo_7017_02.jpg.

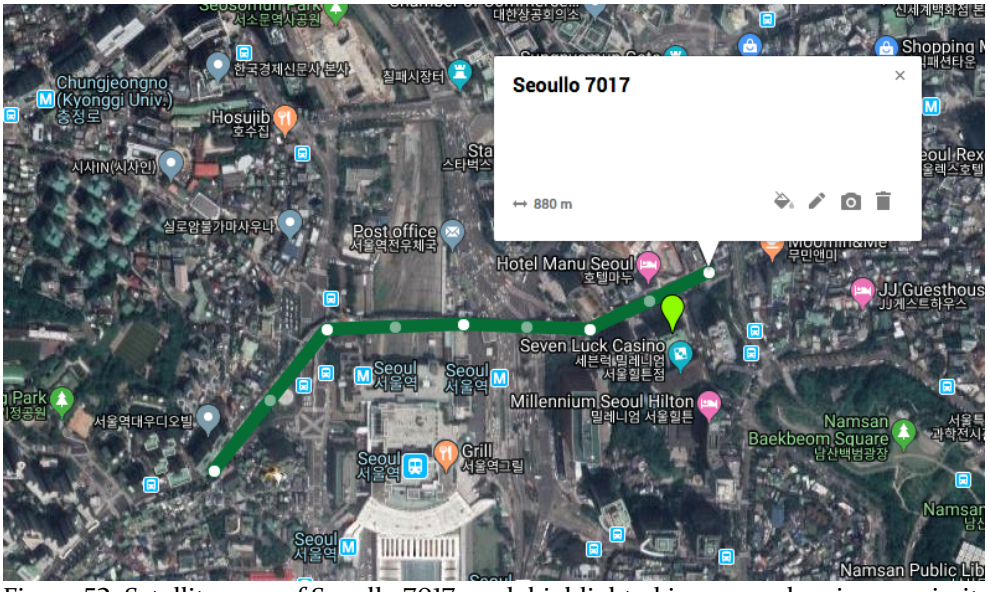

Figure 52. Satellite map of Seoullo 7017, park highlighted in green, showing proximity to metro and rail stations. Created by Brooks Piper, 6 March 2019 on Google Maps, My Maps. https://www.google.com/maps/d/u/0/edit?mid=lgNl7TwxK1nO68XmWvXtUPZ29fbDDSDb1&ll=37.557570933872874%2C126.96867253675191&z=16

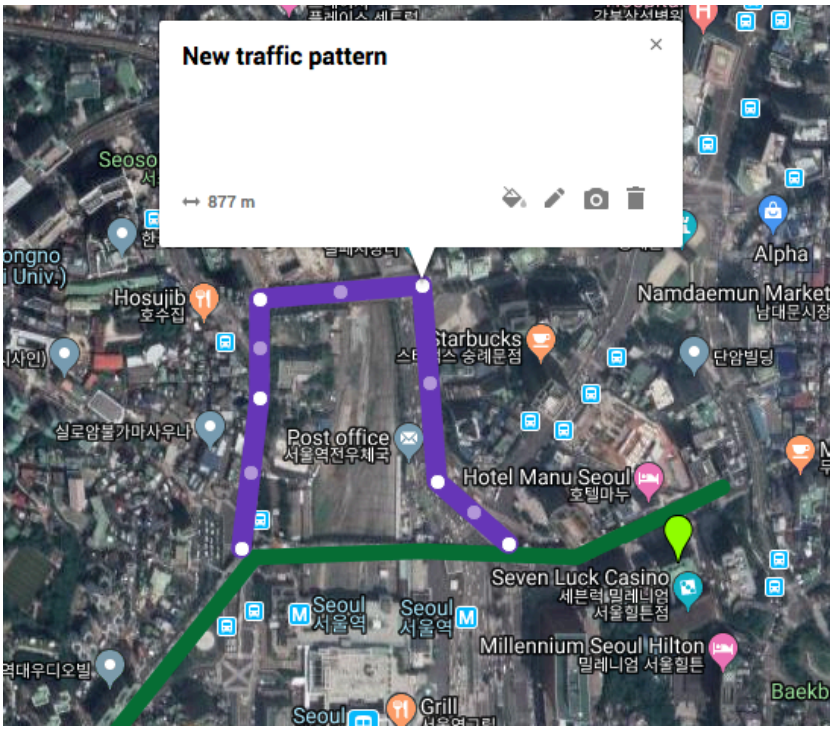

Figure 53. Map showing new (longer) traffic pattern in purple, compared to original overpass. Created by Brooks Piper, 6 March 2019 on Google Maps, My Maps. https://www.google.com/maps/d/u/0/edit?mid=1gNl7TwxK1nO68XmWvXtUPZ29fbDDSDb1&ll=37.559102800222 37%2C126.9676637004062&z=16

Figure 54. Seoul Station Overpass and surrounding area in the 1970s. Created by 대한민국 정부, 1976. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:%EC%84%9C%EC%9A%B8%EC%97%AD_%EC%95%9E_%EB%8C%80%EC%9A%B0%EB%B9%8C%EB%94%A9_%EC%A0%84%EA%B2%BD.jpg

Figure 55. Cheonggyecheon Stream, after highway demolition and construction of park. Created by Francisco Anzola, 29 August 2007. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Cheonggyecheon_stream_(1510072356).jpg

Figure 56. Dongdaemun Design Plaza, expensive project of Seoul Mayor (2006-2011) O Se-Hoon. Created by Ken Eckert, April 2014. From Wikimedia Commons. https://fr.m.wikipedia.org/wiki/Fichier:Dongdaemun_Design_Plaza_(DDP)_at_Night,_Seoul.jpg

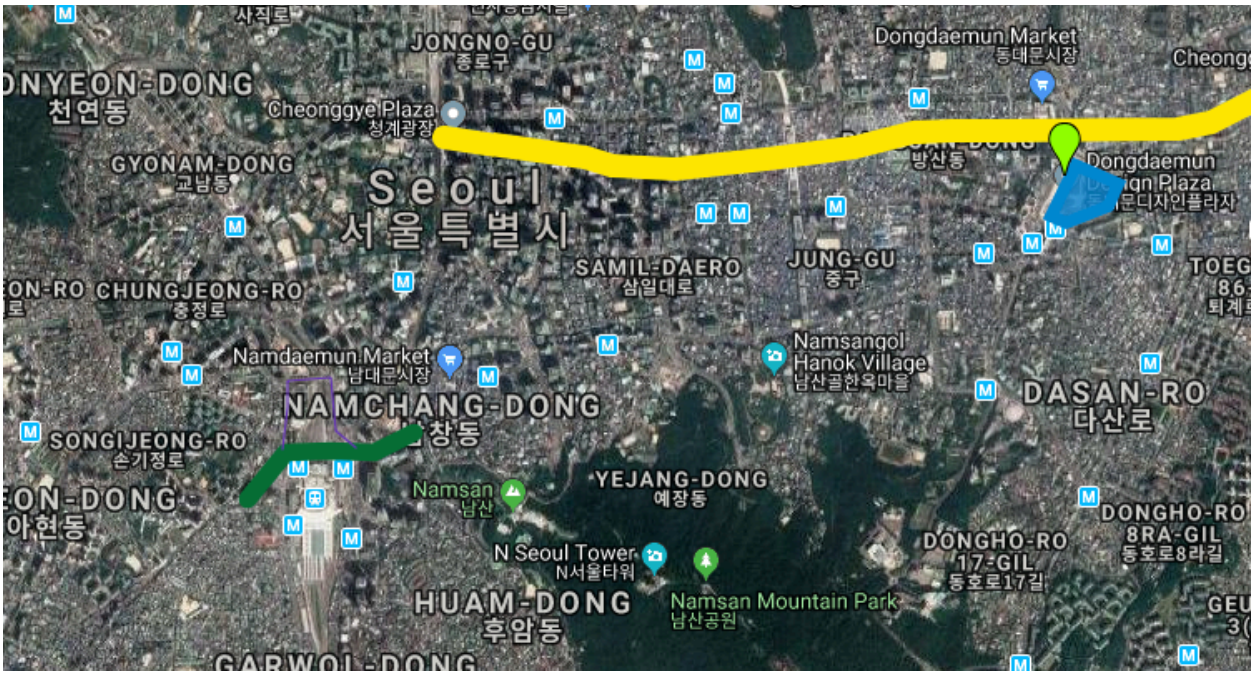

Figure 57. Map of downtown Seoul showing projects of 3 Seoul Mayors: Park's Seoullo 7017 (green), Oh's Dongdaemun Design Plaza (blue) and Lee's Cheonggyecheon Stream (yellow). Created by Brooks Piper, 6 March 2019 on Google Maps, My Maps.

Figure 58. View of Seoullo 7017 emphasizing plantings and minimal additions. Created by Youngjin Ko, 6 July 2017. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Seoullo_7017_05.jpg

Figure 59. View of windows revealing the visible signs of age in Seoullo's reinforced concrete structure. Created by Ossip van Duivenbode, 7 October 2019. https://www.archdaily.com/882382/seoullo-skygarden-mvrdv.

Figure 60. Artists take over the Alaskan Way Viaduct as a part of farewell festivities just before its demolition in early 2019. From the Associated Press. https://www.columbian.com/news/2019/feb/02/thousands-celebrate-new-traffic-tunnel-in-seattle-with-race/.

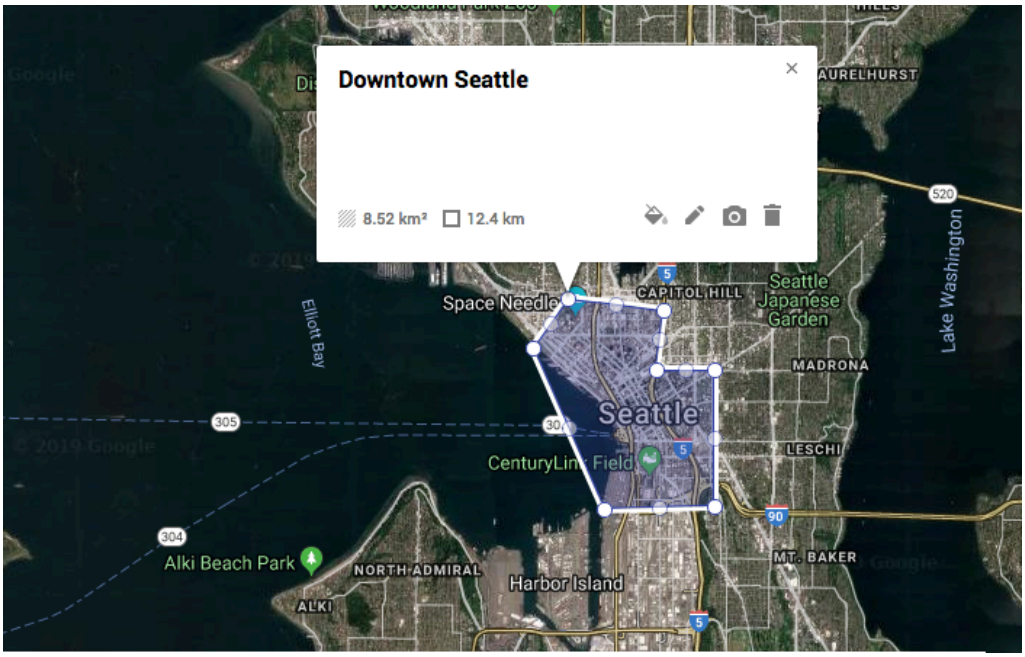

Figure 61. Map of Seattle showing downtown's location on an isthmus.). Created by Brooks Piper, 7 March 2019 on Google Maps, My Maps.

Figure 62. Seattle Waterfront before the construction of the Alaskan Way Viaduct. From History Link online Encyclopedia of Washington State History, courtesy of Seattle Municipal Archives. https://www.historylink.org/File/9983

Figure 63. Postcard view of newly completed Alaskan Way Viaduct in the 1950s. From History Link online Encyclopedia of Washington State History, courtesy of Seattle Municipal Archives. http://historylink.org/File/9982

Figure 64. "Hill Climb" constructed in 1977 to link the waterfront to Pike Place Market. From History Link online Encyclopedia of Washington State History, courtesy of Seattle Municipal Archives. http://historylink.org/File/10666

Figure 65. Seattle Aquarium in 2001, separated from downtown by the Alaskan Way Viaduct. Photo taken by David Wilma. From History Link online Encyclopedia of Washington State History. https://www.historylink.org/File/2175

Figure 66. Collapsed Cypress Street Viaduct in Oakland, California after the 1989 Loma Prieta Earthquake, a grim omen of what could happen in Seattle. Created by H.G. Wilshire, U.S. Geological Survey, 1989. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:022srUSGSCyprusVia.jpg

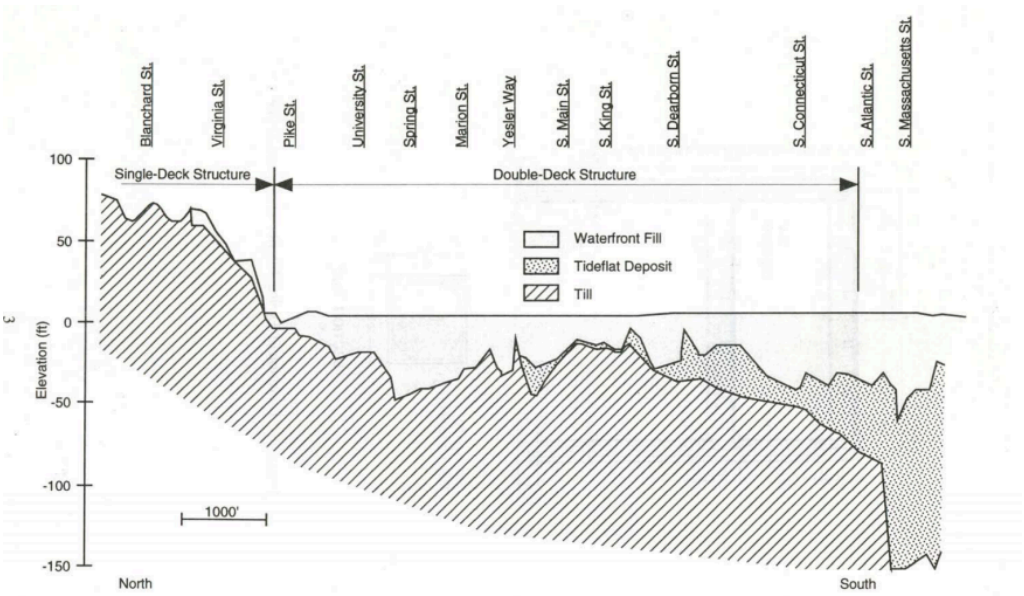

Figure 1. Soil Profile along the Length of the Alaskan Way Viaduct

Figure 67. Diagram showing profile of soils beneath the Alaskan Way Viaduct, showing Waterfront Fill and Tideflat deposits, especially vulnerable to liquefaction, making the structure susceptible to collapse in Earthquakes. From S.L. Kramer and M.O. Eberhard, "Seismic Vulnerability of the Alaskan Way Viaduct," Summary Report, Washington State Transportation Center, Seattle, WA, 1995, http://depts.washington.edu/trac/bulkdisk/pdf/363.4.pdf.

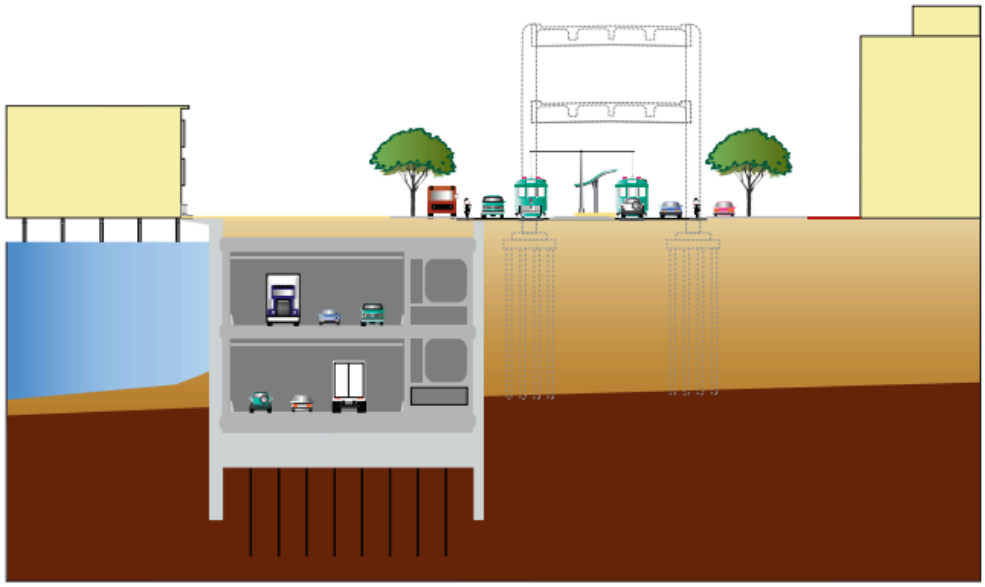

Figure 68. Diagram of cut and cover tunnel alternative following the viaduct's demolition. From Washington State Department of Transportation, "Alaskan Way Viaduct Replacement Project Final EIS Alternatives Description and Construction Methods Discipline Report," 2011. http://data.wsdot.wa.gov/publications/viaduct/AWVFEIS-AppendixB.pdf

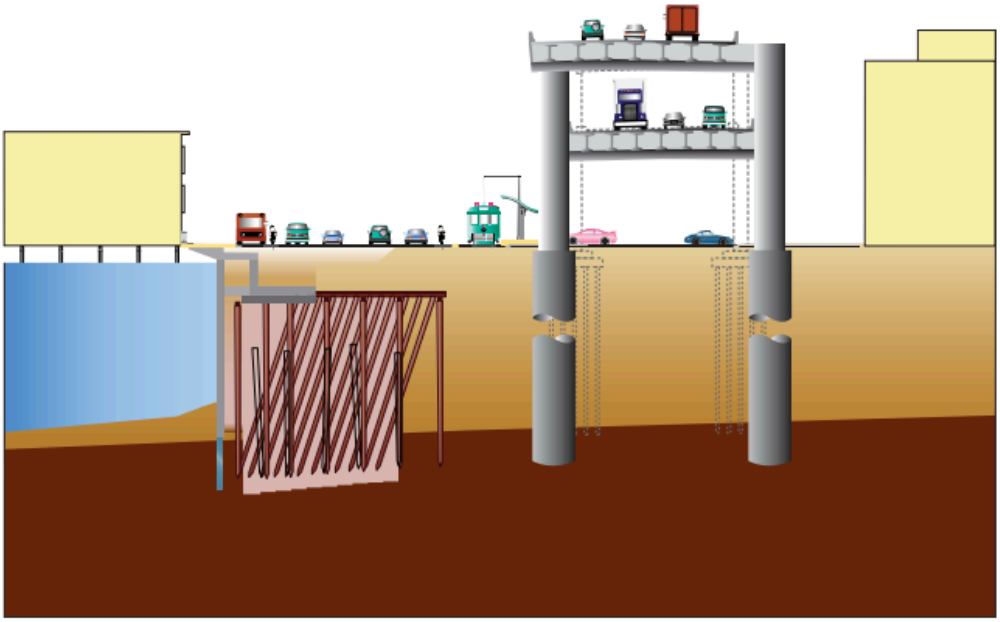

Figure 69. Diagram of elevated structure replacement alternative following viaduct's demolition. From Washington State Department of Transportation, "Alaskan Way Viaduct Replacement Project Final EIS Alternatives Description and Construction Methods Discipline Report," 2011. http://data.wsdot.wa.gov/publications/viaduct/AWVFEIS-AppendixB.pdf

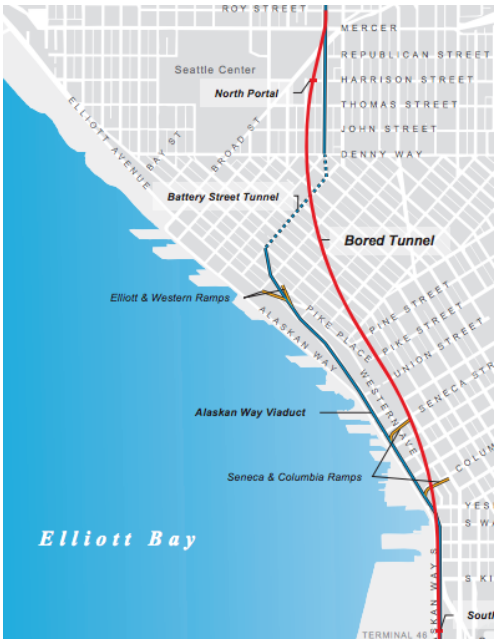

Figure 70. Map of downtown Seattle showing route of bored tunnel, with minimal obstruction to traffic flow and minimal visibility in the cityscape. . From Washington State Department of Transportation, "Alaskan Way Viaduct Replacement Project Final EIS Alternatives Description and Construction Methods Discipline Report," 2011. http://data.wsdot.wa.gov/publications/viaduct/AWVFEIS-AppendixB.pdf

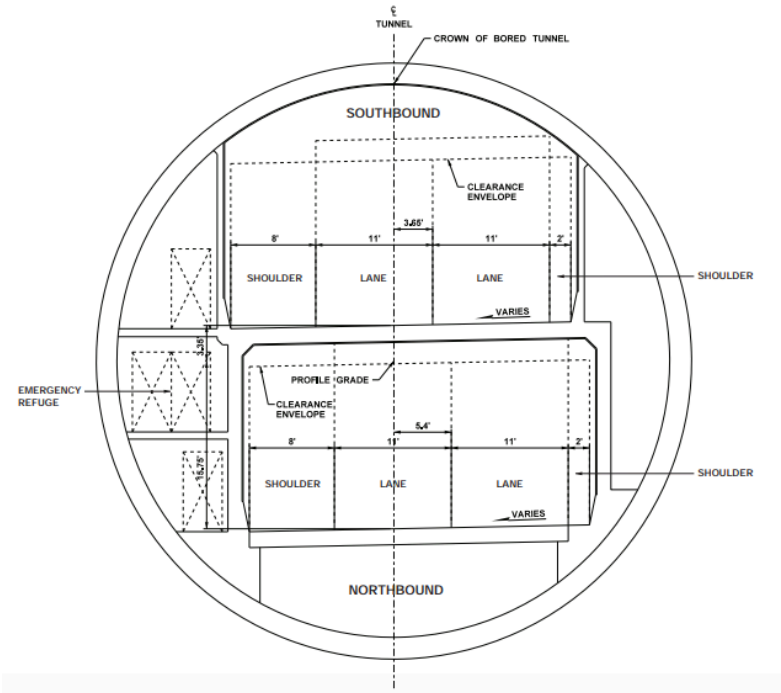

Figure 71. Cross-section of bored tunnel alternative, (entirely underground with least ground-level construction) From Washington State Department of Transportation, "Alaskan Way Viaduct Replacement Project Final EIS Alternatives Description and Construction Methods Discipline Report," 2011. http://data.wsdot.wa.gov/publications/viaduct/AWVFEIS-AppendixB.pdf

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Figure 72. Plans for redevelopment of waterfront land once shadowed by Alaskan Way Viaduct, from Waterfront Seattle's Public Presentation "Waterfront 2020," 5 March, 2014. https://waterfrontseattle.org/Media/Default/Library/March5_2014_PublicPresentationFINALweb.pdf

Figure 73. São Paulo's *Minhohcão* reappropriated as a public space for pedestrians, cyclists, and food trucks while closed to automotive traffic. Created by Giselle Carrozzi, 11 February, 2012. From Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Heran%C3%A7a_incerta.JPG

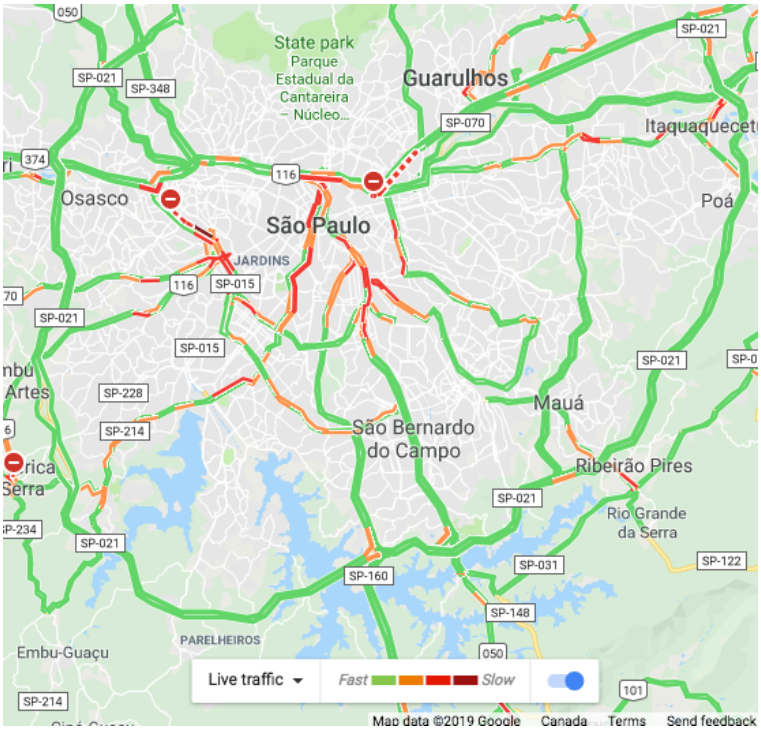

Figure 74. Map of São Paulo showing network of expanding ring roads and traffic congestion in city centre. From GoogleMaps. Accessed 12 March 2019. https://www.google.com/maps/@-23.6211976,-46.7757987,10.5z/data=!5m1!1e1.

Figure 75. Minhocão under construction during Brazil's military dictatorship, late 1960s. Photo by Douglas Nacimento/São Paulo Antiga. From Nick Van Mead, "Taming the Worm: How the Minhocão is São Paulo's Soul," The Guardian. Last modified December 1, 2017. https://www.theguardian.com/cities/2017/dec/01/taming-worm-minhocao-elevated-highway-sao-paulo.

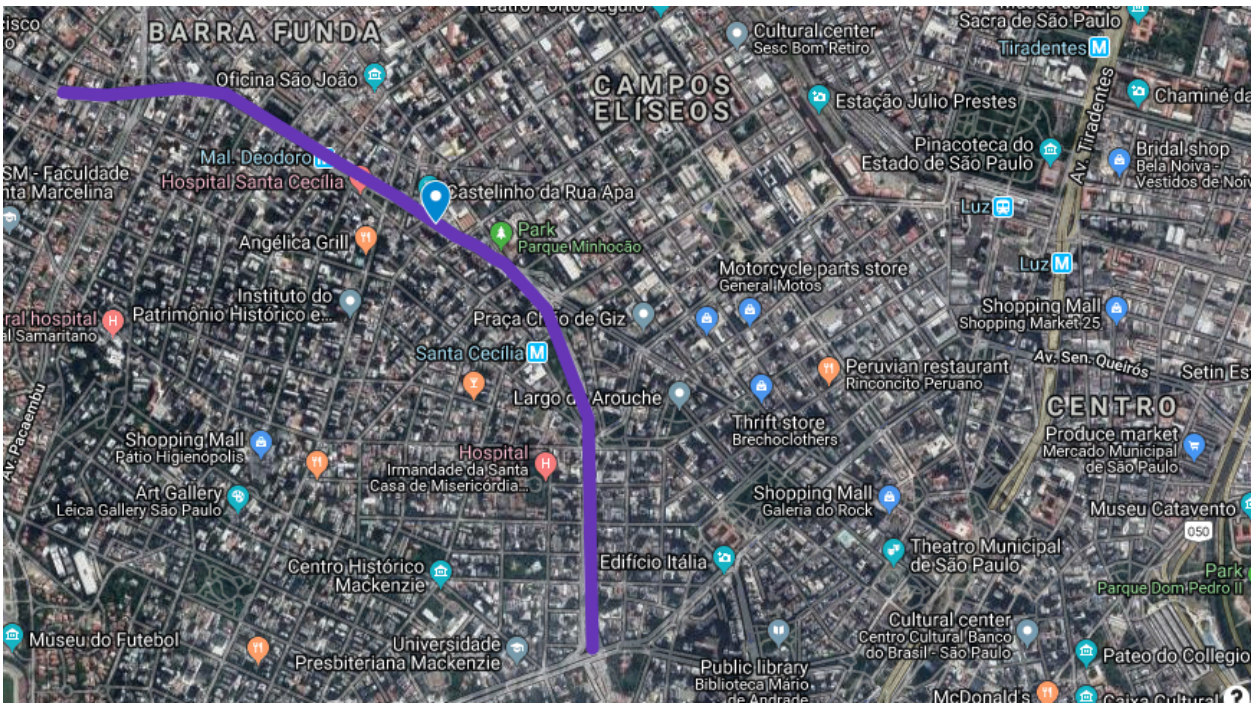

Figure 76. Path of the *Elevado Costa e Silva* through the historic centre of São Paulo, indicated by the purple line. Created by Brooks Piper, 6 March 2019 on Google Maps, My Maps.

Figure 77. Photo showing proximity of elevated freeway to deteriorating facades of historic residences, showing both decline of neighborhood and illustrating the issue of noise pollution with traffic so close to bedrooms. Photo taken by Mílton Jung, 4 April 2010. From Flickr. https://www.flickr.com/photos/cbnsp/4516297606

Figure 78. The Minhocão on a weekend afternoon in its new capacity as a public space. Photo by Felipe SS Rodrigues. From Nick Van Mead, "Taming the Worm: How the Minhocão is São Paulo's Soul," The Guardian. Last modified December 1, 2017. https://www.theguardian.com/cities/2017/dec/01/taming-worm-minhocao-elevated-highway-sao-paulo.

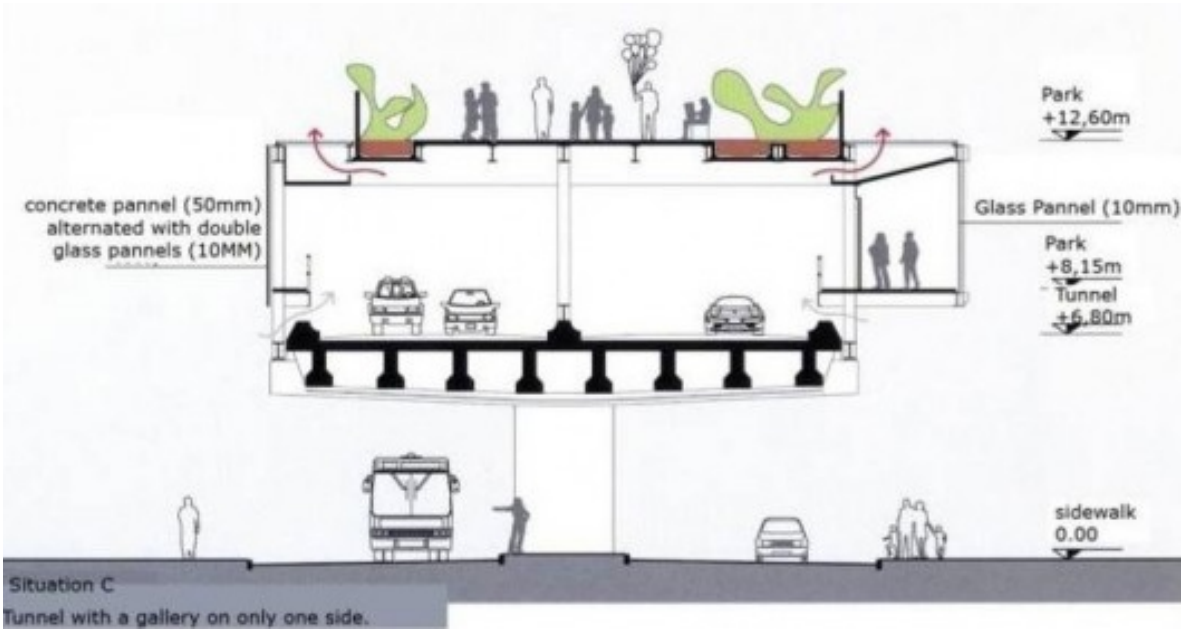

Figure 79. Frentes Arquitetura's winning proposal for the Minhocão, with public space above a continually functional traffic corridor. From Frentes Arquitetura. Accessed from Barbosa, Eliana. "Minhocão Multiples Interpretations." ResearchGate, 2012, https://www.researchgate.net/publication/258440179_Minhocao_Multiples_Interpretations/citation

Conclusion

Heritage conservation evolved in Europe and North America in the nineteenth and twentieth centuries as a response to threats of demolition and deterioration of iconic buildings, protecting material structures, which architects, scholars, and enthusiasts thought of as imbued with aesthetic and historic values. This practice was increasingly institutionalized in the twentieth century, with state actors creating policies that established boards of experts entrusted to identify the most outstanding buildings historically and aesthetically. These sites were then awarded a special status that limited any modification to their material form. By the end of the twentieth century, a global infrastructure had developed specifically to identify and protect heritage, which at this point still referred mostly to buildings associated with exceptional aesthetic or historical value. Practitioners in the field questioned the limitations of this definition, and of conservation as the sole means of ensuring value as the new millennium approached.

As Chapter Two demonstrated, modern architecture from the twentieth century was itself increasingly threatened with demolition. This threat led aficionados to argue for the inclusion of the most iconic works of the movement within the definition of heritage, needing to be conserved in light of their value. Modern heritage further revealed the limitations of existing conservation strategies, as iconic works of architecture comprise such a miniscule portion of the larger legacy of the twentieth century, which is largely composed of repetitive and mass-produced forms: roadside architecture, shopping malls, residential subdivisions, and expansive automotive infrastructure. This contrast fueled an existential crisis for heritage practitioners: was their role to curate a sliver of the inherited

built environment while all that was left over was laid to waste? This issue remains unresolved.

The twenty-first century has welcomed a shift to a new paradigm in heritage conservation as practitioners and scholars address the shortcomings of the conventional approach. As explored in Chapter Three, the core of this new paradigm was a recognition of a broader range of values and an emphasis on the relationship between people and place rather than on the physical materials themselves. Intangible heritage—practices, traditions, or beliefs with no material form—also gained recognition through this change. The conventional notion of conserving materials imbued with value was challenged by that of change management, whereby practitioners isolated values and sought strategies that transmitted them to future generations while embracing the certainty of change. In 2011, UNESCO produced the Recommendation for the Historic Urban Landscape (HUL),[1] proposing a novel way of thinking about heritage and value, affirming recent changes. Under this approach, *all* elements of the urban fabric, including buildings, infrastructures, and landscapes, are considered heritage which can be managed in such a way as to transmit or even enhance value. By integrating heritage into the economic and cultural development of a city, HUL aims to provide renewed tools for heritage practitioners. HUL offers a host of bold ideas, yet its implementation remains an obstacle

[1] UN Educational, Scientific and Cultural Organization, "Recommendation on the Historic Urban Landscape," Paris, (Nov. 10, 2011) https://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf.

as heritage conservation remains mostly isolated from other fields associated with city-building and a true inter-disciplinary dialogue has not yet taken shape.[2]

Broadening the scope of heritage to include these other components of the built environment invites a deeper reflection about transportation infrastructure in the city, its history, and its place in the landscape today. As Chapter Four illustrates, the street has long served as a conduit for the circulation of people and goods around cities. Historically, it has played many other roles as well: marketplace, stage, meeting place. These competing functions led to crippling congestion by the turn of the twentieth century, with the addition of streetcars, rudimentary motor cars, and huge populations swarming to industrialized cities. Clogged streets, coupled with unsanitary conditions, burgeoning crime, and frequent outbreaks of disease, led architects and theorists to harness emerging technologies to envision a new organizing structure for the cities. At the core of this movement was the limited-access high-speed motorway. Thanks to the automobile, transportation and circulation could be reserved for specific corridors, allowing other urban functions to be relegated in turn to their own distinct spaces.

Eliminating competition for the streets created cities that were efficient, rational, and broke ties with the past—the ideals of the modern movement in planning and architecture. After World War II, in North America especially, authorities incorporated these ideas into policy that was swiftly implemented in cities from San Diego to Halifax. With the objective of maximizing efficiency, civil engineers drew straight lines through

[2] UN Educational, Scientific and Cultural Organization, New Life for Historic Cities: Historic Urban Landscape Explained (2013).

existing urban fabric, often constructing elevated highways above city streets to connect central business districts to growing suburbs, razing and fragmenting inner-city neighborhoods in the process. Utopian schemes for the highway arose from a clean slate, but when realized only partially in the real world, they displaced communities and fragmented deeply engrained social and economic networks. Highways changed the way cities looked and worked, creating convenient and luxurious lifestyles for some and destroying long-treasured ways of life for others.

Today, society's values have shifted, especially in the millennial generation that includes many young professionals and budding decision-makers. What was once efficient and novel is today seen as heavily polluting, antiquated, and socially problematic. Many city-dwellers push for better transportation systems with more options including enhanced networks for pedestrians and cyclists, more public transit options, and rideshare and carshare programs. Some progressives even hope that these advancements could eventually make private car ownership obsolete in cities. Just as the role of the intra-city highway is called into question, many elevated freeways are nearing the end of their functional life. These intersecting trends prompt a decision-making process that must take into account factors heretofore not considered in city-building. Including these infrastructure elements as heritage recognizes that elevated highways can be associated with values other than their use value as automotive corridors. Through adaptive reuse, these insertions into the urban landscape can take on new social, ecological, and economic values as dynamic and distinctive public spaces. In this particular context, this new way of conceiving of heritage and value precipitate the

central research question: after the paradigm shift outlined in this thesis, what could be the role of a multiple-values-based heritage perspective in the twentieth-century's transportation infrastructure within an urban context?

As explored in chapter five, three recent examples of treatments of aging intra-urban highways show how a recognition of a wide range of values can lead to a variety of outcomes that respond to specific situations. In Seoul, the appointed city architect conceived of the inherited built environment as a whole as having potential for reuse. This mentality contributed to the complete transformation of an existing overpass in the centre-city as a public park with the addition of abundant trees and flowers. Historically, the use and economic values of transport infrastructure have predominated and served as the key argument for maintaining or rebuilding the structures so that they can maintain their function. Decision-makers in Seoul subverted this practice: acknowledging the loss of its use value as an automotive artery due to structural deterioration, their treatment allowed the overpass to be associated with new social and economic value. The project can also be tied to ecological value, as it expanded pedestrian networks linked to public transit and allowed the reinforced concrete structure to forego the landfill by remaining in place. Seoullo 7017 makes a deliberate statement that the dominant use and economic values of the urban highway conflict with the image and function of a twenty-first-century sustainable metropolis. Consequently, these values were superseded by new values of a new kind of highway.

A study of the Alaskan Way Viaduct, which traverses the Seattle's waterfront downtown, yielded a very different result. Despite being associated with historical value

as an older structure that played a formative role in the city's recent past, the aging viaduct showed weakness after a 2001 earthquake, leading to concerns about its structural integrity in future seismic events. These concerns eclipsed thoughts about its potential retrofit and endowment with new values. Thus, in spite of an applied heritage perspective, the viaduct was demolished and traffic was rerouted to an underground tunnel. The limited-access traffic corridor through downtown was maintained; it simply took another form.

In São Paulo, conflict between an elevated highway's use value for motorists and its social, economic, and environmental values as a space for pedestrians and cyclists resulted in a compromise. The city's Minhocão is used as traffic artery for commuters on weekdays, and is closed to motor vehicles on nights, weekends, and holidays, during which time it takes on new values as a space for jogs, bike rides, strolls, and even yoga classes. The group, "Friends of the Minhocão," advocating for its complete transformation as a park, leaning heavily on these values, as historically the structure is closely associated with a military dictatorship. It appears that in the coming years, plans for this complete reappropriation will come to fruition, and São Paulo will have a new layer of urban heritage.

New and potential values for an expanded body of heritage offer a new frontier for interested practitioners. Expanding the scope of heritage conservation beyond isolated monuments and widely-appreciated older structures to more problematic and ubiquitous elements of the built environment provides an opportunity to generate added relevance for the field of heritage studies in the twenty-first century. Furthermore, a triple emphasis

on enhancing the social, ecological and economic values of twentieth-century heritage advances a notion of conservation that allows for innovative approaches. In a socio-political climate in which practitioners are increasingly pushed to justify their projects in a broader context, these three values are powerful tools.

Aging elevated highways are found across nations, cultures, and municipalities. Their reuse illustrates how a values-based heritage perspective can lead to solutions that are economical, rooted in place, and adaptable to different contexts. Yet they also represent more broadly the potential of any structure that has amassed negative associations to take on new value through creative reuse. Widely-shared values of the 1950s and 1960s eviscerated inner-city neighborhoods and their entrenched social networks to facilitate the circulation of the private automobile. These values contrast with twenty-first-century emphases on local distinctiveness and reducing reliance on fossil fuels. This conflict invites concerned heritage practitioners to transform the modern movement's built legacy into spaces that can be associated with values more relevant to today's concerns. Expanding to a broader range of values for elevated freeways can push practitioners to apply similar creative vigor to structures like abandoned strip malls or factories and their vast parking lots, which can find new value, for example, as community centres and urban farms.[3]

[3] These trends in reuse are a growing topic of discourse across the disciplines that shape the built environment. For further reading consult:
Eran Ben-Joseph, *Rethinking a Lot: The Design and Culture of Parking*, (Cambridge, Mass: MIT Press, 2015);
Stephanie A. Maloney, "Putting Paradise in the Parking Lot: Using Zoning to Promote Urban Agriculture," 88 Notre Dame Law Review, 2551, 2013.https://scholarship.law.nd.edu/ndlr/vol88/iss5/16.

Specific examples of elevated highways evaluated for multiple values through a heritage lens can function as a template not only for the application of emerging approaches to elevated intra-urban highways, but also to aging twentieth-century heritage more broadly conceived. By demonstrating the impact of an evolving heritage perspective in the real world, these case studies take conversations out of conference halls and place them firmly in the city.

The case studies addressed in this paper offer an entry point into further reflections about a values-based approach to unloved and unconventional twentieth-century heritage, but further research could lead to results with greater applicability and potency. This research relied on secondary sources, attempting to distill and interpret coverage from a variety of news outlets in order to create a portrait of the heritage approach within the decision-making process. Direct interviews with key players in Seoul, Seattle and São Paulo would constitute an important next step. Further exploration of the topic could benefit immensely from this additional source. A set of questions targeting the role of values in the decision-making process, directed at individuals identifying as having a focus on heritage, would be vital in creating a more accurate model of how heritage can truly shape the adaptive reuse of elevated highways. As mentioned in this paper, these models can incite further reflection on a values-based approach to other components of the twentieth century's built legacy.

Another avenue that could be investigated further through direct interviews is the question of replicability. While this notion remains implicit in the current analysis, practitioners associated with the case studies could offer much deeper insight as to the

challenges and opportunities that others could face if they were to attempt similar approaches in other cities. Interviews could also be pursued in other cities beyond the three case studies both about the feasibility of similar reuse and the obstacles standing in the way. Clearly, the inclusion of interviews across a broad geographic spectrum would add substantial weight to the analysis presented in this thesis and also demand considerable time and money.

Aside from the global case studies selected for distinctive attributes and outcomes, the inquiry driving this paper arose at the local level in Montreal. In recent years, city officials have demolished a portion of the Bonaventure Expressway in the city centre, appropriated the Van Horne Viaduct as a temporary park space, and have begun to implement the massive demolition and reconstruction of the Turcot Interchange, the province's most important.[4] Montreal offers further opportunities to develop and apply the reflections developed here on transportation infrastructure as heritage and its potential reuse. A potential continuation of this research would apply the questions and lessons from this paper and the values-based and HUL approaches to existing sites in Montreal with the aim of constructing a proposal for future adaptive reuse. Returning to gaps between discourse and application, the long-term objective of this research is indeed more widespread implementation of heritage approaches that currently remain limited in scope.

[4] For an introduction to highway infrastructure in Montreal, consult Pierre Gauthier, Jason Prince, and Jochen A. G. Jaeger, *Montréal at the crossroads: super highways, Turcot and the environment*, (Montréal: Black Rose Books, 2009).

Glossary

Adaptive reuse: The conversion of outmoded or unused structures, such as buildings of historic value, and objects, such as software, to new uses or application in new contexts (Art & Architecture Thesaurus, Getty Research Institute).

Authenticity: A culturally contingent quality associated with a heritage place, practice, or object that conveys cultural value; is recognized as a meaningful expression of an evolving cultural tradition; and/or evokes among individuals the social and emotional resonance of group identity (Nara Plus 20, 2014).

Conservation: All actions or processes that are aimed at safeguarding the character-defining elements of a cultural resource so as to retain its heritage value and extend its physical life. This may involve "Preservation," "Rehabilitation," "Restoration," or a combination of these actions or processes (Canada's Historic Places, Standards and Guidelines, Second Edition, 2010).

Heritage: object and action, product and process. It means not only the things ("goods", properties, immobilier – "stuff" (and the perceptions or ideas)) that we inherit, irrespective of whether we want to keep them; it can also be taken to mean the processes by which we understand, contextualize (physically and intellectually), perceive, manage, modify, destroy and transform the inherited world"; those objects that we worry about preserving; the process (and philosophy) of looking after and exploiting those objects (Fairclough 2009).

Heritage, Cultural: The belief systems, values, philosophical systems, knowledge, behaviors, customs, arts, history, experience, languages, social relationships, institutions, and material goods and creations belonging to a group of people and transmitted from one generation to another. The group of people or society may be bound together by race, age, ethnicity, language, national origin, religion, or other social categories or groupings (Art & Architecture Thesaurus, Getty Research Institute); embraces any and every aspect of life that individuals, in their variously scaled social groups, consider explicitly or implicitly to be a part of their self-definition (Avrami, de la Torre, Mason, 2000).

Heritage, Intangible: practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith (Convention for the Safeguarding of the Intangible Cultural Heritage, 2003).

Landscape: Broadly used to describe portions of the earth's surface that share common repeating characteristics that can be comprehended at a glance. Landscapes are more than scenery or political units; they are systems of natural and cultural contexts (Art & Architecture Thesaurus, Getty Research Institute).

Landscape, Cultural: Combined works of nature and of man[…] illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal (UNESCO, "Cultural Landscapes," https://whc.unesco.org/en/culturallandscape/).

Landscape, Historic Urban: An urban area understood as the result of a historic layering of cultural and natural values and attributes including the broader urban context and its geographical setting. The context includes the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization, perceptions and visual relationships, as well as all other elements of the urban structure. It also includes social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity (UNESCO Recommendation on the Historic Urban Landscape, 2011).

Modern movement (architecture): The single most important new style or philosophy of architecture and design of the 20th century. It was associated with an analytical approach to the function of buildings, a strictly rational use of (often new) materials, structural innovation and the elimination of ornament (Royal Institute of British Architects, "Modernism in Architecture, https://www.architecture.com/explore-architecture/modernism).

Restoration: The action or process of accurately revealing, recovering or representing the state of a historic place or of an individual component, as it appeared at a particular period in its history, while protecting its heritage value (Canada's Historic Places, Standards and Guidelines, Second Edition, 2010).

Value: relative worth of a thing, idea, place, or person based on esteem and judged in terms of importance, usefulness, or desirability (Art & Architecture Thesaurus, Getty Research Institute); a set of positive characteristics or qualities perceived in cultural objects or sites by certain individuals or groups (Avrami, de la Torre, Mason, 2002)**.**

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