Remaking Post-Industrial Aesthetics through Community Engagement

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A thesis
submitted in partial fulfillment of the
requirements for the degree of

Master of Landscape Architecture
University of Washington
2022

Committee:
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Program Authorized to Offer Degree:
Landscape Architecture

University of Washington

Abstract

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This thesis proposes the use of an aesthetic lens to understand the post-industrial landscape and public engagement on the site. Remediation is often the focused on the post-industrial landscape which rarely results in specific aesthetic quality attached to the site. Public engagement and their aesthetic experience with these sites are found to be less documented. This thesis aimed to bridge the gap between public engagement and the aesthetic decision made on the site from the traditional understanding of engagement during the design process, as well as the engagement during the everyday use of the park. Three case studies from the US and international context to understand the public engagement through the aesthetic experience to formulate the proposal. This thesis aims to further the awareness of aesthetic decisions during the design process and provide designers a channel to look at aesthetic education to the public on the disturbed site.

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Acknowledgments

I am truly thankful for being given this opportunity two years ago to start my academic journey at the University of Washington during the pandemic. In the past two years, I have been surrounded by the most outstanding faculties and cohorts at the College of Built Environments. Thank you for your company and for building this amazing learning experience in this community. Thanks to all of the faculty and cohorts for all of their supports.

I want to express my deepest appreciation to my committee members, who offered me unwavering patience and encouragement during this challenging process. My thesis chair Professor Jeffery Hou gave me unyielding support from the start of the project to the end. I can not be thankful enough for all the feedback on the thesis and for always being understanding and supportive when I need the most.

I am also extremely grateful to my committee member and chair of the department, Ken Yocom, who has given me immense guidance and vision on this project. Without your generous advice and brilliant mentorship, I would not be able to see this project coming to fruition.

I would also extend my gratitude to Professor Lynne Manzo, who is always generous on provides great feedback on my work. I am grateful for her time and input in allowing this project to happen, which I really appreciate that.

Besides my thesis committee, I would also like to thank my advisor Julie Parrett who always has the best interest of her students and always be there for me when I need help. Needless to say, I am extremely lucky to have her as my advisor throughout my study at UW.

Finally, I am extremely grateful to my parents, family members, and friends, who have been my strongest shield on this journey. Thanks to my parents for their love, prayers, caring, and sacrifices in educating and preparing me for my future. I would not make this far without your support!

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Chapter 1: Introduction

Post-industrial sites caught the public's attention in the late 1960s as society transitioned into postmodernism, which led to the dismantling of industrial zones. Postmodernism is a reflective stage of modernism celebrating industry and technology (Boyne and Rattansi, 1990). In this thesis, the definition of postmodernism is narrowed down to the view of landscape architecture that discloses the philosophical framework of narratives, indeterminacy, self-realization, pluralism, rhizome principle, and playfulness (Eplényi and Christian-Oláh, 2015).

This design research thesis is an exploration of the potential for landscape architecture as a discipline and field to build upon the increasing body of knowledge that is developing on community engagement and aesthetics in order to reevaluate to processes and practices that support the design and subsequent management of the post-industrial landscape. To better articulate the complexity of post-industrial sites, this research considers theory and design practices that examines the evolving definitions of urban post-industrial landscapes and how our individual and societal perception of and interaction with post-industrial landscapes have shifted over time. I utilized landscape theorist and critic Elizabeth Meyer's (2015) aesthetic framework from "*Sustaining Beauty: Musings on a Manifesto*" as a foundation for structuring and advancing this inquiry.

This work is framed through a set of specific questions. What aesthetic sensibilities have developed around post-industrial sites and how should designers and the community respond to that aesthetic? If an aesthetic can catalyze a positive societal response to rethink sustainability and resiliency regarding post-industrial sites, how do we cultivate an aesthetic appreciation of such sites through the design process? In particular, how can strategies of invested community development and life cycle analysis assist in forming a deeper connection and appreciation between people and post-industrial landscapes?

In addition to these questions, a critique of the paradigm shift of post-industrial site redevelopment can draw from the design process of these sites, which primarily forms a top-down approach. Through this thesis, I discovered that in order to respond to the beauty of post-industrial sites, we need to challenge the status quo of the design process that was used to engage such sites. This includes community engagement with an emphasis on experiential engagement, in which will provide a new lens to unveil the beauty of post-industrial sites.

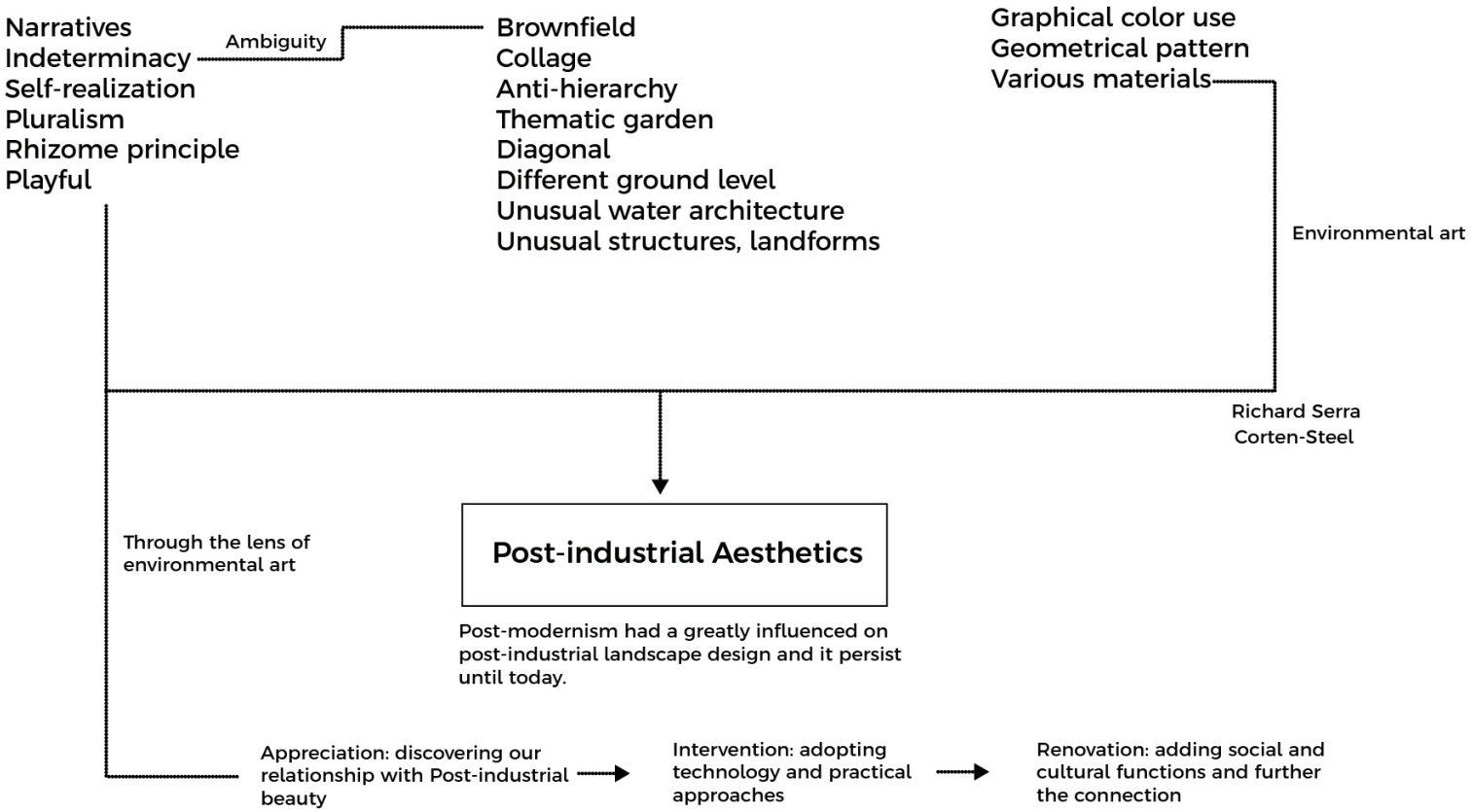
Figure 1: Post-industrial and Post Modernism Aesthetics

This thesis aims to provide a perspective on the post-industrial landscape from an engagement angle to offer a potential model for designers to foster appreciation and trust in the design process of post-industrial sites.

The Unique Nature of Post-Industrial Site

Post-industrial sites caught the public's attention in the late 1960s as society transitioned into postmodernism, which led to the dismantling of industrial zones. The aesthetic dimensions of post-industrial development are complex and evolving. In some ways they mirror Western evolutions on the framing of Nature. Nature was once considered the ‘wilderness’ prescribed with an unpredictable and dangerous connotation, distinct from human influence and beyond its control (Vining and Merrick, 2008). These perspectives slowly shifted as philosophers and artists began to unveil the beauty in the mystery of Nature, framing it as a sublime aesthetic, beautiful and mysterious built upon a foundation of the unknown (Stang, 2016). Similarly, post-industrial landscapes were long neglected by society due to the fear of the unknown conditions and potential harm they possessed. In the 1980s, these sites were rediscovered through an aesthetic and conceptual lens called the "toxic sublime" (Diehl, 2005). This term has been used to describe the work of photographers Edward Burtynsky and David Maisel, who have documented the effects of industrial damage on the environment. Their work unveils this toxicity's visual and temporal beauty, generating a more foundational and comprehensive aesthetic of the relationship between human actions and their environment (Bissonnette, 2016). The concept of the toxic sublime is often used to describe the aesthetics of post-industrial landscapes (Peeples, 2011). Scholars, artists, and designers have argued that these sites possess beauty and values significant to our society (Braae, 2015). Partly because of this advocacy and partly because of our ability to remediate contaminated areas, post-industrial sites have been reinterpreted as parks and public spaces, and seemingly, the beauty of post-industrial parks was formed.

Interest in post-industrial site redevelopment has also been largely influenced by the aesthetic value of land art from the 1970s, for example, work from Robert Smithson's Spiral Jetty (Krinke, 2011). As the post-industrial sites retain the aesthetic value of the postmodernist land art, the quality of beauty expands from a "human environment" perspective that brings awareness about the built environment through the experiential quality of the site (Maskit, 2007). I believe this is achieved through the experiential engagement of the artist's creative process by interacting with the site to produce the art and the experiential engagement of the visitors who went through the art itself that is informed by the beauty of the work. The theme of land art created by artist Robert Smithson often engaged with post-industrial character as a medium, whether the material or unique site dynamics. Smithson created a dialogue about our



Adapted from Eplényi, and Brigitta, 2015 & Maskit, 2007

Figure 2: Post-industrial and Postmodernism Aesthetics

relationship with these sites and rethought beauty from the angle of experience (Maskit, 2007). This approach is likely adaptable to the post-industrial sites as the spirit of the toxic condition is important to be acknowledged through the site visit. This acknowledgment would improve our awareness and eventually reposition the negative association with post-industrial sites through informed aesthetics.

Technology is certainly changing the approachability of post-industrial sites. It has a certain impact on how the public perceives beauty. But, this thesis is interested in exploring a variety of aesthetic qualities from a cultural value and the

community engagement aspect with aesthetics. The scientific approach consists of biological and non-biological methods to rehabilitate toxic conditions such as capping, soil remediation, air sparging, water filtration, and bioremediation during the site intervention will not be the focus for the interst of this thesis.

The complexity of post-industrial sites surrounds the physical dimensions of the site, particularly around issues of contamination. Such complexity is the perception associated with the site condition. This includes perceived threats from the industrial waste produced by industrial practices (Meyer, 2007). The natural decay process is often not on a timeline that an individual can conceive. Time will eventually neutralize the toxic condition of the site as its energy transgresses site boundaries. The contamination contributes to these sites' conditions that may have been built thousands of years ago and may create difficulties to keep track of, which cause the ambiguous and undefined characterize the post-industrial site. Therefore these qualities will lead the public impression of the post-industrial site to abandonment, which forms an aesthetic layer of ambiguity to be reinterpreted. In this case, I believe community engagement would be helpful to acknowledge the dynamic change of the post-industrial sites and reminding the community the about the necessarily timeline and process of breaking down the toxicity. The post-industrial site create opportunities for the community to activate their goals and visions when reintergating them back to their community. I believe this is imporantnt to go through the process of community engagement to gain such a critical shift to shift this notion of ambiguity.

Where to Ground the Exploration on Aesthetics

I base my exploration of the aesthetics of post-industrial sites on Elizabeth Meyer's (2015) aesthetic framework as outlined in "*Sustaining Beauty: Musings on a Manifesto.*" I also review other relevant literature on post-industrial sites and landscape aesthetics, especially around brownfields and the toxic sublime as well as the discourse on community engagement. To respond my questions on Aesthetics, I conduct a case study analysis of select post-industrial design projects that have been used for several decades as seminal works that have helped to frame our societal understanding of the potential for post-industrial sites to be designed and managed to serve the public interest and need for urban open space. The parks selected are Gas Works Park in Seattle, Washington, Duisburg-Nord in Ruhr District, Germany, and Carrie Blast Furnace in Pittsburgh, Pennsylvania US . The experiential quality of the site and community engagement processes are the primary characteristics for selecting these cases. The aesthetic of these sites is also largely reflected through each of the site designs, which would provide a source to draw the development of aesthetic sensibilities on the post-industrial landscape. In addition, each site has its emphasis on the relationship of experiential quality related to the topic of

community engagement and provides a unique perspective on different thinking in regards to the design process.

I then ground the theoretical work in case studies of three of the most influential post-industrial sites that have been transformed into vibrant public spaces through a redesign: Gas Works Park, Duisburg Nord, and the Carrie Blast Furnace. All three are also prominent for celebrating the aesthetic of the post-industrial landscape. In this thesis, I begin to introduce another layer of analysis by exploring these sites in terms of the way that they engage communities and how they can be seen as an asset to the community. These case studies demonstrate how post-industrial sites push the definition of beauty through the community engagement process and have made a breakthrough in park topology.

I will examine these cases in chronological order: Gas Works Park (1960), Duisburg Nord (1990), and Carrie Blast Furnace (2007). Exploring these in chronological order offers an understanding of changes in design strategy regarding the aesthetics, as well as the community engagement process that happened on the site. The first precedent, Gas Works Park in the Pacific Northwest of the US, is a good starting point for designers to gain an understanding of the design approach and public perception of the first redesign of a post-industrial site. The second precedent, Duisburg Nord Landschaftspark is in Germany provides a different lens for looking at community engagement outside of the context of the US that reinterpreted toxicity as an asset. The Carrie Blast Furnace located in the east of the United States takes a radical approach that deconstructs the traditional approach to community engagement.

Chapter 2: A Paradigm Shift From Brownfield, Terrain Vague, to Drosscape

While technology and the available natural resources have changed over time, our perception of post-industrial sites and so as our value of them has also changed. The aesthetic sensibility of the post-industrial site is relevant to such a shift as perception is updated when scholarly work and societal understanding expand the concept and definition of post-industrial sites.

A shared similarity is found that the selected words on brownfield, terrain vague, and drosscape in describing the nature of post-industrial sites, which mapped out a perception trajectory from the site, were once rejected by the consumerist social norm to see an opportunity for redesign. From the narrative of the origin of the words responding to the context of society at the time, these terms are useful to frame the aesthetic sensibility of contemporary post-industrial sites and changes around the relevance of post-industrial sites to community engagement.

The following sections include concepts that evolved to understand post-industrial sites: brownfield, vague terrain, and drosscape. Brownfield is the earliest term coined to describe post-industrial sites from environmental standards based on the EPA. Terrain vague is chosen to frame the political and planning value of the post-industrial site by Spanish scholar Ignasi de Solà-Morales. Dorsscape is defined by an associate professor of landscape architecture at Harvard University's Graduate school of Design in 2002 since the introduction of the brownfield by EPA. *Onwards from Drosscape* is the section that includes a more recent scholar's study by Ellen Braae (2015), a Danish landscape architecture professor at the University of Copenhagen.

Brownfield

The term brownfield was coined by the U.S. Environmental Protection Agency (EPA) in 1993 (Rey et al., 2021). Practitioners and researchers found that a regulatory framework was needed to ensure environmental protection and bridge the gap in inhibiting the redevelopment of vacant and abandoned sites

(Hollander et al., 2010). Brownfields express the presence of contamination found on the site and the opportunity for the site to be reused (Hollander et al., 2010). EPA defines brownfields as idle property, "the development or improvement of which is impaired by real or perceived contamination" (Hollander et al., 2010, p.1).

The federal response to brownfields includes Superfund sites identified through an environmental assessment that contains hazardous substances such as petroleum and coal byproducts that may endanger public health or the environment. More than 1,300 sites were listed as the most hazardous sites on the Superfund National Priorities List in 2019 (EPA, 2022). More than 450,000 brownfields are yet to be reclaimed (EPA, 2022).

Mira Engler (1995), a landscape architect and Iowa State Professor, categorized popular approaches as largely applied to historical examples such as Parc des Buttes Chaumont, designed by Adolphe Alphand from Paris in 1863 contemporary design strategies on landfills and sewage factories. The following era of post-industrial site redevelopment was concerned with technology application and experimentation with the developed theories. Contextualizing toxic sites that referred to classical landscape parks built from wasteland seems to be the focus on scholarly works (Engler, 1995).

In collaboration with scholars and practitioners, Niall Kirkwood, professor of landscape architecture at the Harvard Graduate School of Design, tried to bridge the gap between theoretical work and practices with his publication *Manufactured Sites: Rethinking the Post-Industrial Landscape*, released in 2001. In the preface of the book, Kirkwood (p.12) states:

> “A focus throughout this book is not whether these sites should be reclaimed, restored or redeveloped, but rather, the precise nature of how this is carried out, and the opportunities brought by these collaborative and integrative exchanges."

The book *Manufactured Sites* examines the redeveloping of brownfields in the professional field. It included surveys and case studies, and even selected popular remediation species on the technical level in response to the theoretical framework by scholars. Rebecca Krinke (2001), a professor from the University of Minnesota, included the adaptive approach in her overview that points out a new direction of this paradigm in the post-industrial redesign. As the claiming process begins on the brownfields and reaches the desired site condition for the redesign, a series of ecological processes are undertaken as the site continues to evolve under the intervention of technology.

Krinke (2001) points out that industrialization has changed our relationship with the earth. A technology-driven mindset and desire for progress implied that "the earth was a place to extract resources" and its "contemporary idea: that earth could absorb anything humankind asked of it" (p.128). Kirnke's proposition is

built on land artists Robert Smithson's "earthwork" and architect Peter Eiseman's idea of the site as a "palimpsest" that stress the natural and human engagement of the site (p.128). The design goal that she supports is to reveal the site history that has been through "the hand of the designer, underscoring human intervention in the site."

Kirnke (2001) concluded, "Manufacturer Sites renew a paradigm shift…land is seen not simply as inert matter or commodity, but as a dynamic web of living systems" (p.148). This dynamic process is also observed that many have believed the word brownfields shows a limitation that is incapable of describing this process and expanding the catalog of brownfields and its nature afterward. Other words such as wasteland and toxic sites were also created to provide a more accurate description of the meaning of post-industrial sites.

In her essay, “Uncertain Parks: Disturbed Sites, Citizens, and Risk Society”, Meyer (2007) uses the word "disturbed sites" to broaden the catalog of brownfields as it reveals the ecological succession of treating the sites with science (p.59). For dealing with disturbed sites, Meyer (2007) quotes Engler's work that cataloged the "camouflage approach," which has been commonly practiced by landscape architects (p.62). The camouflage approach can be found in the 19th century and "continues the traditional disguise of waste-related sites." The commonly applied technique uses "screening or cloaking" to conceal facilities and waste materials with planting (Engler, 1995, p.15).

Meyer (2007) argues that there is a limit to this approach with evidence from Lawrence Buell's writing that what landscape architects assume about their client's intention (mostly the public) with popular culture adopting camouflage approach "is not only disingenuous in the way it hides the processes at work. More disturbing, this approach fails to reinforce the nascent community that exists between citizens and their disturbed environment." (p.66) Meyer's critique provides a new lens to considering post-industrial sites, which looks through a process of redevelopment of brownfields and seeks meanings behind them in our society. In the context outside of America, Spanish architect Ignasi de Solà-Morales also attempted to recontextualize this type of space.

Terrain Vague

In his article “Terrain Vague”, Solà-Morales (2014) is interested in the space found in urban photography and film production. Through photographs of these spaces, Solà-Morales argues we can:

> “Accumulate of these kinds of space but also the affects, experiences that pass from the physical to the psychic, converting the vehicle of photographic image into the

medium through which we form value judgments about these seen or imagined places ”(p.25).

Terrain vague is a collective term that defines empty and abandoned spaces. Solà-Morales (2014) coined this type of space with the French expression to indicate “the most solvent sign with which to indicate what cities are and what our experience of them is” (p. 26). In French, *terrain* connotes more of an urban quality than the English word land. Additionally, the *terrain* is less defined but has an external meaning of territory.

The word *vague* derives from Latin and German vagus gives a sense of “empty, unoccupied” yet also “free, available, unengaged” (Solà-Morales , 2014, p.26). Solà-Morales (2014) suggested that none of these selected words were meant to imply a negative feeling, rather, *terrain vague* describes an unoccupied landscape that contains a sense of freedom. The second meaning of vague from French suggested “indeterminate, imprecise, blurred, uncertain.” which also similarly suggested the space is “absent of limit precisely containing the expectations of mobility, vagrant roving, free time, liberty”. The third meaning of vague does not indicate limited physical spaces but transcends into the aesthetic development of photography. *Vague* echoes the significance of “wave,” “vacant,” and vague that appear in photographic documentation (p.28).

Figure 3: David Plowden. Quinter, Kansas

Photography discovered terrain vague since the expansion of great cities. As Solà-Morales argued from John Davies to David Plowden, photographers captured these forgotten spaces as the outliers of the city’s productive cycles: spaces such as

previous industrial zones, infrastructures, unsafe residential neighborhoods, and disturbed sites. Terrain vague brings a reflective quality to the rest of occupied urban spaces which have been progressively taken over by the human footprint. One reflection is responding to the prioritized goal in the built environments is to fill up every single space that is vacant with programs or structures. Empty spaces are seen as inefficient and dominant as uncapitalized or unprogrammed within the urban fabric. However, I posit efficiency is not the only criterion to determine the value of the urban void, rather the void itself creates a pause in urban sprawl and reflection on other possibilities to use the land serving cultural value.

From community perspectives, empty space is the blank canvas to act on because the space is free from following any intentionally planned uses. To further support my argument why terrain vagueness is important as a space for free expression and urban utopianism, urban theorists Christoph Linder and Miriam Meissner use ‘urban imaginaries’ as means to address the complex issues of social, spatial, and material characteristics in urban design. Urban imaginaries encompass every aspect of life through visions from municipal planning on the smart cities to urban social equity and resilience to face the uncertainties. As a growing body of scholarly work gives attention to the social movement and activism, in this particular case, a space for urban imaginaries is crucial for urban activist interventions to express the future of the urban void and people’s needs within the local community. From Solar- Morales’ proposition, I second this belief that terrain vague including post-industrial sites would contribute as a stage for the citizen activists and voices that are unheard by the public.

Drosscape

In an effort to rethink post-industrial sites, a more recent term drosscape (Berger, 2007), is used to map out the historical and social relationship to the wasteland. MIT urban design professor Alan Berger used drosscape in his book to recontextualize the urban spaces with a stress on the material waste and spatial waste generated through urbanization. Drosscape is concerned with the in-between urban space under the American context of the horizontal development of sprawling. As the sprawling has accelerated in the past, there are leftovers of spaces on various scales, from local to regional, that is ubiquity found in Americans' everyday experiences, such as "vacant strips alongside roadways, seas of parking lots, unused land, surfaces awaiting development, dumping ground" (Berger, 2007, p.26). Berger's drosscape is an update on Solà-Morales' terrain vague that addresses the material engagement of how designers redeveloped the sites. He connects this type of space with Solà-Morales 's theory on terrain vagueness and agrees that these empty spaces pertain to architectural opportunities as "terrain vague recall the process evolutionary biologists call exaptation. In which a trait or capability, repeated with the context of

Figure 4: Car salvage and junkyard near Ayer, Massachusetts. (2003)

successful growth and adoption, becomes co-opted for unforeseen uses" (p.33). In addition to that, Berger uses the analogy of scrap from architectural design "spandrel" to explain the idea of corollary object which is a material byproduct to achieve design decisions though it has no function to serve the structural purpose (p.34).

Similarly, drosscape is a formerly planned functional industrial region defunct by the global trends of deindustrialization, post-Fordism, and technological development. The "dross" also, the waste, Berger (2007) argues, should be understood

as "a natural component to a very dynamically evolving city." In support of his belief, drosscape symbolizes a healthy and organic indicator of a properly functioning city. Berger quotes from Harvard University economist Joseph Schumpeter's "The process of Creative Destruction" that "innovation made by entrepreneurs began with this process[horizontal urbanization], which relegated old inventions, technologies, equipment and even craftsmen's skills to obsolescence." The implication of drosscape challenges the existing market structure and reflects uncontrolled urban development derived from the socioeconomic milieu (p.42). Adding to this quality of dross, Beger includes seven other tenets that he proposed to guide the design profession. He reframed that drosscape can be visually unsightly or pleasing, which shows a perception shift under the paradigm of drosscape. Most importantly, he posits that seeing the material value of waste from drosscape may be "productively reintegrated for higher social, cultural, and environmental benefits" (p.8).

Onwards from Drosscape

Ellen Braae, a landscape architecture professor at the University of Copenhagen, employs a different lens to look at the disturbed sites. Her proposition comes from the cultural heritage and historical value in her book *Beauty Redeemed,* published in 2015, in which she argues that post-industrial landscapes are "both mirrors of society and palace of remembrance" (p.12).

Continuing her argument that post-industrial sites not only experience physical-spatial abandonment as well as cultural isolation. Braae numerated examples such as Parc André Citroën, Parc de Bracy, IBA Emscher Park intuitive, and Gas Works Park as evidence of former culturally isolated urban spaces that are now successfully transformed into new parks built on the previous history of industrialization. Baare believes these parks represent a paradigm shift and have power, just like a landscape type was created back in the Enlightenment Era. She concludes with two factors that these parks hold great potential as cultural heritage because:

> "they include the historical foundations for projecting a new horizon on the ruins of the former, and second because they are not simply History with a capital H; they are embedded in our everyday culture and thus in our culture of remembrance" (p.13).

One social value of the park Braae forged is that these sites could offer social sustainability. She argues under the "A New Kind of Sustainability" section discovered on post-industrial sites. She considers the issue of gentrification and competition for space "a central aspect in any form of urban transformation" (p.12).

From my understanding, this social sustainability is more than a single principle. It is a collective and continuing idea of what Braae discussed as cultural value for the new paradigm. I

believe social sustainability expands beyond the "new kind of sustainability" as a proposed framework for fostering a cultural value that fights against spatial-related issues due to the scarcity of resources, the top-down planning approach, or gentrification. From Braae's perspective, I surmise that deindustrialization is more than demolishing ruinous structures that no longer serve the manufacturing purpose. But it is dissociating cultural identity from the local community with associated destinies. Neglecting the redevelopment of post-industrial sites is equal to avoid addressing the social and political issues and abandoning the cultural assets to society. As Braae emphasizes, "We must then develop our aesthetic view of these ruins if we are to build a future from them and on top of them. This is where we find the new sustainability" (p.12).

Overall, the select words of brownfield, terrain vague, and drosscape reviewed the paradigm shifts among the stages that the design profession understands and works with the post-industrial site. The following section investigates the character of the post-industrial site and defines the beauty of how it is experienced and perceived.

Source of Figures:
Figure 1: Author
Figure 2: Author
Figure 3: Plowden, D. (2010). Quinter, Kansas [Photography]. MoCP Museum of Contemporary Photography. https://www.mocp.org/detail.
Figure 4: Car salvage and junkyard near Ayer, Massachusetts. (2003). (2006). [Photograph]. https://landscapetheory1.wordpress.com/2006/01/01/dross/

Chapter 3: Framing: Post-industrial Sites, Beauty, and Experience

Defining Aesthetics

This section will discuss the literature on aesthetics related to the post-industrial sites to identify the aesthetic sensibility asked in my thesis questions. I need to acknowledge that beauty has specific cultural standards. In the field of landscape architecture of the western world, a beautiful landscape traditionally refers to what can be perceived as picturesque, derived from the 18th-century landscape painting that evokes a dramatic, natural-looking landscape. This picturesque quality is rooted in German Philosopher Immanuel Kant's theory of aesthetics which is "an object of representation (the landscape)" that is known as the sublime (Stang, 2016). In the next literature review on aesthetic followers, the map of the sublime from the traditional sense of beauty and a more contemporary definition of aesthetics derived from the postmodernist art form, land art, is also discussed.

Prior to this shift and to our ability to remediate them, post-industrial sites had previously been neglected due to our understanding of what is beautiful and acceptable. Post-industrial sites have been and can often still be considered wastelands. The cultural image of wasteland is that they are filthy and undesirable (Engler, 1995), and hence the concept of beauty seems to conflict with the very nature of a post-industrial site. The word beauty seems unrelated to post-industrial sites. As the paradigm of beauty has shifted after industrialization, questions arise on what lessons we can learn from the aftermath of industrialization to engage with beauty to produce a positive impact on such sites.

I base my exploration of the aesthetics of post-industrial sites on Elizabeth Meyer's (2015) aesthetic framework as outlined in "Sustaining Beauty: Musings on a Manifesto." I also review other relevant literature on post-industrial sites and landscape aesthetics, especially around brownfields and the toxic sublime and the discourse on environmental and aesthetics drawing from the land art.

I then ground the theoretical work in case studies of three of the most influential post-industrial sites that have been transformed

Figure 5: Toxic Sublime: Nickel Trailing #31. Sundbury, Ontario 1996

into vibrant public spaces through a redesign: Gas Works Park, Duisburg Nord, and the Carrie Blast Furnace. All three are also prominent for celebrating the aesthetic of the post-industrial landscape. These case studies demonstrate how post-industrial sites push the definition of beauty through the experiential community engagement process and have made a breakthrough in park topology.

What is the Beauty of Post-industrial Sites

In the article "Sustaining Beauty: Musings on a Manifesto" (2015), Meyer challenges the conception of Kantian beauty that can only be read from a sense of disinterestedness or objectivity. Instead, she argues that beauty is more than pleasurable feelings: it can be "conclusive, disturbing and challenging,", especially in the case of post-industrial landscapes (Meyer, 34). Pushing the definition of beauty, Jennifer Peeples (2011), a professor at Utah State University, analyzes the images of toxic landscapes and frames the images through the toxic sublime. Since the 1980s, Edward Burtynsky's photographs of the impact of industry on the landscape are a critical response to what has been recognized as the "toxic sublime" (p.357).

To understand the definition of toxic sublime, the original definition of sublime needs to be first discussed. The eighteenth-century German philosopher Immanuel Kant defined the sublime as an overwhelming sensation that individual experiences when exposed to incomprehensible nature, which produces feelings of lack of control, awe, and strangeness when comparing oneself with the grandeur of the object. One form of the sublime is the "technological sublime," defined by Davide E. Nye as a sense of awe prompted by technology that causes us to ponder the "potential omnipotence of humanity." The technological sublime conveys pride and "confidence of the manpower" juxtaposed with the "uncomfortableness and smallness of our human footprint in the universe" (p.379-380).

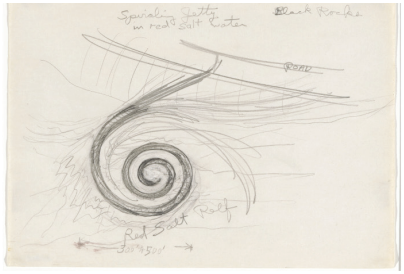
Photographs by Burtynsky achieve the quality of sublime. The visual representation by the artist helps to evoke aesthetic pleasure. As Diehl argues, "While always aware of the devastating nature of what we're viewing, we keep on looking because there's always some visual pleasure to engage us … (as cited in Peeples, 2007, p.382)." But this visual pleasure is only one aspect. Peeple defined the term "toxic sublime" as the tensions that "arise from recognizing the toxicity of a place, object or situation, while simultaneously appreciating its mystery, magnificence, and ability to inspire awe" Different from the sublime found in nature, toxic sublime reckons a social reflection on the environments and scarcity in resources. I postulate that the tension that Peeples describes when discussing the toxic sublime is what Meyer (2015) describes as beauty: "conclusive, disturbing, and challenging" (p.34). The beauty of the post-industrial site is complex and yet meaningful to individuals to reckon the society's relationship with the environment and

nature.

This beauty of post-industrial sites contains two layers of the sublime. One is the technological sublime that celebrates the heroic tributes to the industry's glorious past. The second is that the toxic sublime, on the top of the technical sublime, evokes fears and repulsion toward a polluted site. This tension in post-industrial sites creates a reflective opportunity and is more powerful to the visual experience of the toxic sublime through images, also potentially expanding the experience within site. I believe this aesthetic quality is not limited to two-dimensional images, and the site experience in a collective engagement process will create more tension. I surmise that the conflicting nature of the toxic sublime is one of the aesthetic qualities of post-industrial sites found on the site.

The other aspect of beauty is related to the high experiential quality of these sites that align with the environmental aesthetics of the land art (Maskit, 2007, p.324). Maskit (2007) argues that the beauty of these disturbed sites is represented by "the human environment." His definition of environmental aesthetics should include the human aspect rather than limiting the aesthetics only to the "environment" of nature (p.324). The aesthetic value of post-industrial sites is not solely based on the functions and histories but their very nature of experiential quality (p.327).

Maskit discloses his argument with the three-stage dialogue between the art and the post-industrial sites: "appreciation, intervention, and renovation." Appreciation represents the artist's subject matter to engage with their choice of materials. Intervention means the direct engagement of the artist with the sites. The renovation shows the collaboration with other like-minded professionals to transform the site more than the purpose of artistic production (p.327). Artists such as Robert Smithson, Nancy Holt, and Richard Long actively challenge society's relationship with natural processes and the public experience through time within the landscape. As argued by Maskit that a significant amount of work by land artists reflects such value (pp.323-337).



Appreciation

"In which the postindustrial is taken up as subject matter for artistic representation."

Adapted from Maskit, 2007

Intervention

"In which artists engage more directly with the postindustrial, either through their choice of materials or through the siting of their work."

Renovation

"If postindustrial sites are interesting, and our ability to see this is an effect of Postindustrial art, perhaps the best thing to do with such sites (or at least with some of them) is to preserve their interesting character while turning them to new uses. I term such a process of aesthetic engagement renovation"

Adapted from Maskit 2007

Figure 6: The Experiential Aesthetics of Land Art

Krinke (2001) also argues this postmodernist land art notion emerges through Smithsons work for integrating multiple perspectives and ambiguity as beauty. For example, Smithson's work challenges the disguise of the post-industrial nature of a site and advocates for acknowledging the industrial intervention. In Smithson's most well-known project Spiral Jetty, he chooses to build the spiral in Utah's Great Salt Lake near an abandoned oilfield with inspiration from an ancient monument. The site's entropy is represented by the accumulation of the salt growing on the spiral and various shades of red as the indigenous pink algae flourished. Smithson's work is also largely influenced by landscape architecture theory, especially the idea of picturesque from the eighteenth century. However, Smithson's interpretation of picturesque is not the direct visual result of the design technique of framing but as one's experience of landscape in time becoming picturesque (p.127). As an artist, Smithson raises the question of whether beauty is highly experiential.

Undoubtedly, Smithson's art expands on the definition of picturesque beauty. I connect Krinke's writing with Maskit's argument on the intervention aspect of the three-stage dialogue above to conclude the discovered aesthetic sensibility in land art and its implication for post-industrial sites. The theoretical work that Smithson built his work on had inspired much postmodernist landscape architecture that reflects the experiential quality of the site appreciation, which stretched along with the artist's intention to incorporate a social responsibility about place and ecology. This drives the beauty to thrive with a deeper understanding with the public through active process on-site design, engagement, and social understanding, which added a meaningful layer to the definition of beauty. Through the example of Spiral Jetty's spatial experience, a more thought-provoking message is distilled to the public with reflection on nature and industrialization by such aesthetic experience. I believe Maskit's expansion on the environmental and aesthetic quality signifies another layer of the beauty of the post-industrial site that could be discovered in the approach of community engagement.

Post-industrial Aesthetics through Experiential Engagement

Chinese American geographer Yi-Fu Tuan (2018) defined experience as a "compound of feeling and thought" (p.10). Meyer's works on "sustaining beauty" are proposed to challenge how we engage with aesthetics by building upon such experiences. Meyer (2015) suggested aesthetics is an opportunity to inform the public about sustainability by reshaping their aesthetic value. More importantly, engaging with the sites through the aesthetic forms a "collective identity" to face uncertainty and risk (p.66). She postulated that "A consumer-environmentalist citizen who perceives the environment through a toxic discourse and visits a large park undergoing remediation processes over the years will know her environment differently" (p.67).

Meyer (2015) argued that the beauty of the toxic landscape is an experiential process which she called an "aesthetic experience." Later in her manifesto, she forges eleven fundamental tenets that define such aesthetic experience. She stresses the importance that "aesthetic experience requires duration," and this experience is often delayed and "exists in the exchange between what one sees/experiences and what one knows" (as cited in Danto 1999 & Nehamas 2007, p. 35). I second Meyer's theories and would also connect them with Krtinke's argument in *Manufactured Sites* to support the goal of this thesis paper before discussing my proposal on practicing the aesthetics experience for the community engagement :

> "Remediating or enhancing the ecological function of the site, and making this process visible to the participant, is a new way of addressing the designed landscape…to build landscapes that question dualities of nature/ culture and past/ present, and engage those who participate in the sites with these questions" (p.148).

Krinke (2001) believes making the process of enhancing the disturbed sites visible is important in community participation, which discloses an engaging design process would encourage more reflections that shape our perception of current consumption patterns. Therefore, I believe Meyer's theory supports Krtinke's proposition and further upgrades how we theoretically create an engagement experience in post-industrial landscapes.

Source of Figures:
Figure 5: Burtynsky, E. (1996). Tailings #31 [Photography]. Edward Burtynsky. https://www.edwardburtynsky.com/projects/photographs/tailings
Figure 6: Author

Chapter 4: Case Studies: Lessons from Design Process

The literature work from Krinke, Solà-Morales, Berger, and Meyer suggests that an experiential engagement could be adopted on post-industrial sites to engage with their beauty. I offer a synthesized aesthetic experience-focused engagement model that reflects Meyer's proposition that a collective experience is fostered through aesthetics. These aesthetics are argued by (Haidt 2006; Nehamas 2007, 76, 132; Scarry 1999), could "draw us near and make us want to know more and to act. In the urges to create (as cited in Meyer, 2015 p.37)". So, I propose the aesthetic experience as an opportunity to pair with community engagement.

In response to my question, "How do we incorporate the aesthetic experience with community engagement on post-industrial sites?" I consider the following components from the previously articulated literature review: time, aesthetics, and engagement. Time is understood through a design process that includes pre-design, design process, post-design, and post-construction, which is based on phases. The aesthetic is considered based on the quality of the two aesthetic sensibilities discussed in the previous chapter: toxic sublime and environmental aesthetics. The engagement piece is determined by the community input and its influence on the design language and programming.

Hence, my focus on the next chapter is to investigate the collective experience of the locals on disturbed sites through cases. Another critical component that I draw from the aboveliterature review is understanding the timeframe of the aesthetic experience. As Meyer (2015) argued, the duration of time is a critical component in the aesthetic experience of the community engagement process because it impacts the effectiveness of the experience that would play a significant part in the outcome of the aesthetic experience. Close attention should be paid to the duration of time when the experience should start.

I will examine these cases in chronological order: Gas Works Park (1960), Duisburg Nord (1990), and Carrie Blast

Furnace (2007). Exploring these in chronological order offers an understanding of changes in design strategy regarding the aesthetics and the community engagement process that happened on the site. The first precedent, Gas Works Park in the Pacific Northwest of the US, is a good starting point for designers to understand the design approach and public perception of the first redesign of a post-industrial site. The second precedent, Duisburg Nord Landschaftspark, is in Germany and provides a different lens for looking at community engagement outside of the context of the US that reinterpreted toxicity as an asset. The Carrie Blast Furnace, located in the east of the United States, takes a radical approach that deconstructs the traditional approach to community engagement.

Gas Works Park

Compared to the time before the late twentieth century, waste landscapes have attracted designers and planners to introduce their visibility to the public in the urban landscape. One type of transformation is reclaiming the wasteland and turning it into an urban park. Seattle's Gas Works Park, designed by Richard Haag Associates, was an early example of this radical design of reusing the waste landscape to serve the public. Haag proposed to address the site's condition and features by learning from his post-industrial site experience. Before any of Haag's interventions at the site, the public had a different voice to his proposal and saw the site as a "black eyesore" (Way, 2013, p.31).

Figure 7: Gas Works Park, Seattle by Richard Hagg Associate

Figure 8: Gas Works Park as a concept, 1971

Figure 9: Kite hill and the view to the Seattle skyline

Thaisa Way (2013), professor and urban landscape historian from the University of Washington, composed a narrative on Haag's radical design process undertaking on the former gas manufactory site. According to Way (2013), the park's initial plan is to ameliorate the polluted land, demolish the industrial ruins, and transform it into an Olmstedian park under the advocacy of the public and committees at the beginning of the process. However, Haag Associates convinced the community to retain the industrial artifacts and provided them with opportunities to experiment with bioremediation science on post-industrial sites.

As soon as he arrived, Haag was fascinated by the factory towers and enjoyed seeing the toxic beauty juxtaposing with the Olympic Mountain views in the distance. At his very first attempt, a design experiment carried out by Haag was in the affiliation of UW design students in 1961 then, followed by a design competition in 1963 that looked for a new park topology engaging with the industrial history. However, to his frustration, out of 130 student submissions, none of it preserved the industrial structure or element.

Haag's goal as a landscape architect was to persuade the public to discover the site's potential and develop a new aesthetic appreciation of the old structure. Haag intended to work with the community to distill his vision of seeing the rusted industrial structure as an artful stroke on the Seattle landscape. After the

city committed him as part of the Seattle Park Board for planning a new park on the old landscape in 1969, evidence to Haag's aesthetic experience engaging with the sites by "setting his office in the abandoned blacksmith shops (Way 2009, p.12)." an unusual and radical stance is taken by Haag to engage himself on the genius loci of the site:

> "This simple move of positioning himself within the polluted landscape became evidence of his belief in the site's potential, indicating the site was not all one might see on the surface" (Way 2013, p.33).

Haag also took his colleague's suggestion from UW, Adrian Zeigler, a philosophy professor at the UW, to invite citizens and offer tours of the site for the public to learn about his vision, as well as brought in Mary Randlett, a photographer, and Victor Steinbrueck of Save the Pike Place Market frame to support his efforts to foster trust in public relation (Way 2015, p.155). After receiving the first acceptance from visitors on the walk, Haag gradually won his audience from "floating-boat residents to school groups, from kite enthusiasts to Seattle's business leaders (Way, 2013, p.30)". During his conversation with different community groups, Haag soon realized that the

Figure 10: The rolling mound of Kite Hill and the aesthetics language applied by Richard Haag

members of the public hope for the park include their favorite recreational activities.

A few ideas from his audiences include boat museums, playgrounds, kite flying, picnics, and music events. Haag carefully listened to their ideas of on-site programming and later reflected them in his rendering. For example, one of Hagg's community allies Bob Ashley, a leader, suggested creating a center for wooden boats and wanted to include a doc for historical boats. This idea is included in one of his drawings, and he worked with the head of state parks, a supporter of Save Our Ships, to develop a plan that included a dock for Wawona with a restaurant on board. There is also interest in preserving railway history, which is also included in Hagg's conceptual design. The realized vision that is still in use today includes Kite Hill, a playground, and the preserved structure of the gas tower. All of these adoptions were considered to highlight the industrial structure of the gasworks for its "historic, esthetic and utilitarian value" (p.33).

Implications:

The Gasworks park was an unprecedented case that was applauded by the design industry and the public. The park is more than a recognition of Haag's grand vision. But it is a success in transforming the public's thinking on disturbed sites (Way, 2013, p.34). Within almost a half-century of usage, the pollutant from the contaminated soil buried at Gas Works Park had slowly leached into the surrounding waterbody South Lake Union and is no longer as safe as it used to be compared when it was just constructed (Mackay, 3). But Gas Works Park is still a radical success in preserving the industrial structure, material recycles, and design language profoundly influenced post-industrial park typology in post-industrial parks worldwide. Technology adaptation and collaboration between different disciplines are many lessons that could be learned in professional practice. But I would like to emphasize the community engagement practice of the designer.

Moreover, I emphasize the aesthetic experience Haag incorporated as a part of his design leadership during this conversation to shift the public perceptions about the disturbed sites. Haag is recognized for engaging the site's toxic sublime as a site approach to form a collective identity that was key to realizing his vision of the Gas Work Park (Way, 2015). His studio collaboration with UW at the early idea distilling stage is his attempt to create a collective recognition through education. Onwards, a significant amount of time and effort was dedicated to developing the trust and fostering the aesthetic experience in the pre-design process. The aesthetic experience that Haag carried out during the design is not only towards his audience. Rather Haag started this practice as a tool for himself as a creative process. Haag chose to live on the site to gain a different perspective that would frame the aesthetic experience he envisioned for the public (Way, 2015).

I suspect that Haag had a similar aesthetic experience as Meyer (2015) framed hers in the Australian Garden at Cranbourne, Victoria, which she described as "an imaginative counter-tradition of sustainable socio-aesthetics that values the fluctuating, the particular, and the dense force field that waves together encounter and memory, event, and network, perception, and cognition, experience and action" (p.41). This experience to Haag may not be explicitly reflected in words but is indirectly represented through his design decisions afterward. The evidence uses the cleaned-up soil to create the Great Mound of Kite Hill, which "served as a microcosm of Seattle" (Way, 2013, p.36). His action implied the potential that the site was usable. The site serves as an idea incubator for the designer to perform his own aesthetic experience to shape his idea of sustaining post-industrial beauty by developing a design rationale with an ecological approach.

One of the many strategies of engaging the experiential process of the community that stands out the most is the tour of the site. As Haag began to offer tours to the public, the site became a place to form a collective identity. The site provides an effective structure to augment the experience quality during the conversation as they walk by the black tower of the gas work plant, tar spills, and oil leaks. The effectiveness of walking a site is significant to the design process in professional practice as it helps to gain a sense of place (Schultz, 2014, p.7). In a more recent study by Henrik Schultz, professor at the University of Applied Sciences Osnabrück, walking is an effective tool for the pre-design process for the professionals. He developed three modes: 'discovery mode,' the 'flow mode,' and the 'reflective mode.' Haag's tour is what Schultz described as a reflective mode that "recognizes and exchanges perspectives and ideas." Schultz (2014) argues that reflective mode is discussed with a designer or a group of designers on site. As one or more than one walks on the sites, the constant change of perspectives and viewpoints will help relate their findings and objectify ideas with each other (p.10).

Hagg's tour during this professional practice as they wave into a new aesthetic experience in the form of walking. The duration of the aesthetic experience is different from Meyer's experience at the Australian Garden. Haag extends the aesthetic experience before his site intervention. More importantly, he includes community engagement along with his aesthetic experience, which I believe contributes to the success of retaining the industrial ruins and soil.

Landscape Park Duisburg-Nord

The Ruhr River, a tributary to the Rhine River that passes through major cities Winterberg, Witten, Essen, and Mülheim to enter the Rhine between Ruhrort and Duisburg. Ruhr district, or Ruhrgebiet, is known as one of the world's largest single industrial regions (Encyclopedia Britannica, 2018). The geological features give Ruhr abundant coalfields and iron ore.

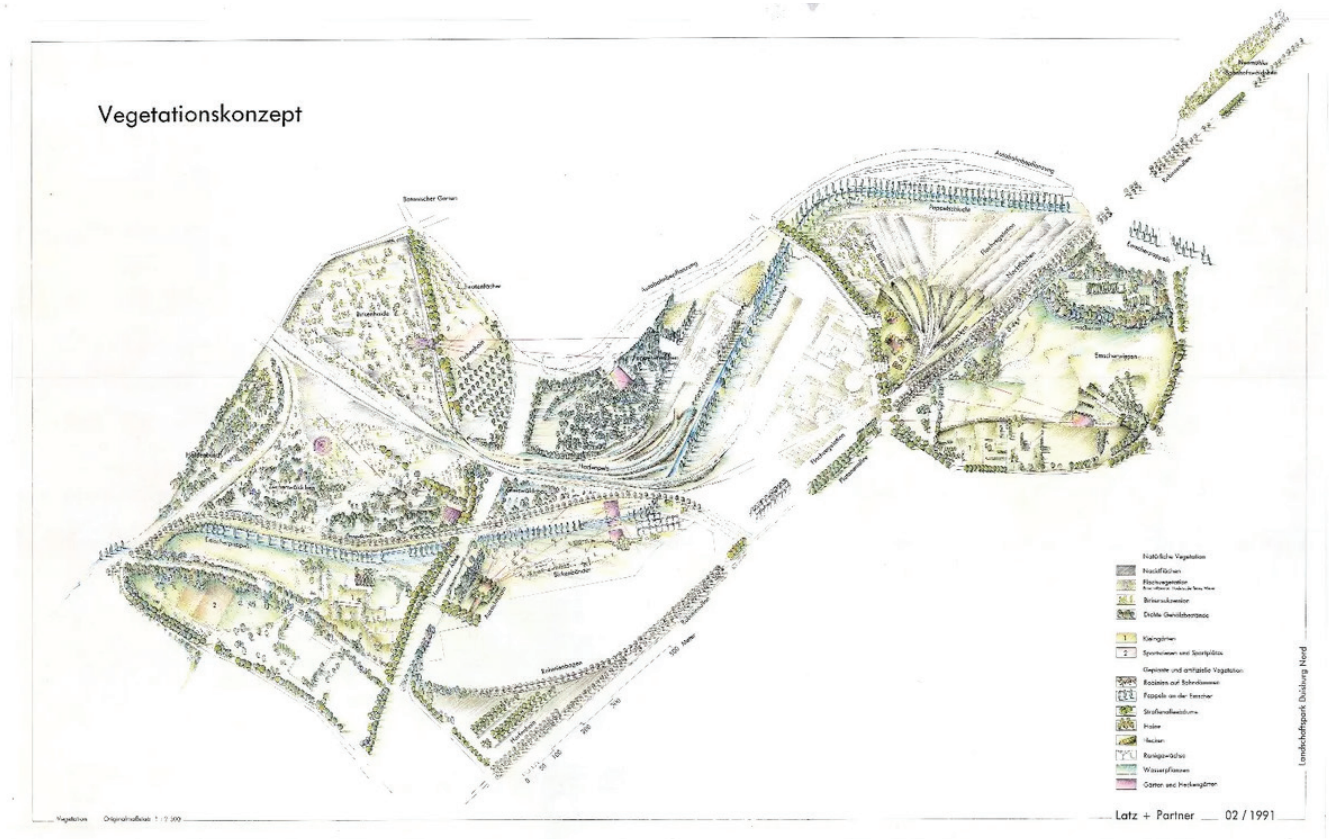


Figure 11: Landscape Park Duisburg Nord, Germany

Steel in the Ruhr region is also one of the major productions that serve the locomotive and automobile industry. Because of all these advantages, the Ruhr district naturally became the arsenal for the preparation for World War II. According to the "the Ruhr was a primary target for Allied bombing, and about 75 percent of the area was destroyed; more than one-third of the coal mines discontinued operations or suffered heavy damage (Encyclopedia Britannica, 2018)."

In the 20th century, Ruhr District faced deindustrialization with a high unemployment rate. The International Building Exhibition (IBA), established as a ten-year program between 1989 and 1999, is an initiative to revitalize the Ruhr District. Civil and district administrations, together with KVR (Association of Ruhr

Figure 12: Landscape Park Duisburg Nord, Germany

District Local Authorities), were responsible for developing the framework for the Emscher Landscape Park that connects the Corridor of the industrial ruins. Instead of directly dealing with the high unemployment rate, the IBA initiative took a holistic approach paired with the principles of sustainability that address the impact of deindustrialization (Shaw, 2001). According to Braae (2015), IBA Emscher Park is a top-down and bottom-up approach hybrid, while sub-projects are incorporated with bottom-up strategies based on the sites.

According to Peter Latz's narrative in *Manufactured Sites,* The Landscape Park Duisburg-Nord is a key project of IBA as it reflects IBA's overall goals and objectives. As Peter Latz, the German landscape architect and the founder of Latz + Partner that commissioned this project describes his intention for designing the park is to "integrate, shape, develop and interlink the existing patterns that were formed by its previous industrial use, and suggest a new interpretation with a new syntax" (Latz, 2011, p.150). So the park design is interesting in exploring

a new design language. Recycling and readaptation is the theme at Landscape Park Duisburg-Nord, quoting what Latz described for such a process as "a metamorphosis of industrial structures without destroying them." Hence, 49 recycled iron plates from the site became the Piazza Metallica, located at the park's center, as a gathering space. Latz's metamorphosis of the industrial ruins happens in two aspects. One is the material metamorphosis of engaging with the industrial scapes as a "physical nature" that becomes a symbolic thesis. The steel material will rust and erode since their existence and continues the natural metamorphosis through time. The other aspect is the metamorphosis of the place as a landscape of "utilization." Like Meyer discussed in her aesthetic experience, Latz's design experience with the site is also highly imaginative in his writing:

> "The blast furnace is not only an old furnace, it is a menacing dragon rising above frightened men, and it is also a mountain top used by climbers, rising above its surroundings (Muskit, 2008). The former bunkers become the rock face of mountain scenery or are transformed into enclosed gardens" (Latz, 2011, p.151).

Figure 13: Climbing wall that repurposed from bunker

Figure 14: Repurposed diving pool of the water tank

Latz described a recognition of the toxic sublime, which is the tension from the site's natural aesthetics. I would posit that Latz's approach to engaging with the site is what Meyer described as an aesthetic experience. The aesthetic experience manifested through his design aesthetics on preserving the physical qualities of the site "seek its justification exactly within the existing forms of demolition and exhaustion. (Maskit, 2008)"

Toxicity on the sites is not treated as a "nuisance that should be erased or camouflaged" (Stilgenbauer, 2005, p.7). The way Latz diffused his aesthetic experience to the conversion emphasis on Introducing the industrial ruins as a part of the community's life. For example, a larger structure recycled from a former gas tank transformed into an indoor diving center, concrete bunkers into training facilities for rock climbers, inviting the public to experience the park's genius loci, the spirit of the place (Stilgenbauer, 2005, p.8).

A major community engagement strategy on Landscape Park Duisburg Nord is through programming and re-programming. The ore bunker wall is repurposed for climbing because the eroded concrete provides a handgrip for climbers to practice. Latz and his group installed play facilities for younger climbers that they referred to as "ascent to the alpine pasture," which contains slides, sandboxes, and a climbing net on a slope of the bunker. The former dormitory of the miner is transformed into a pigeon loft. Under the bunker, groundwater accumulated into

Figure 15: Piazza Metallica that made out of recycled iron

an underground lake is utilized for the diving club. The removal of impurity and industrial crapes became a subterranean exploration for the divers (Latz, 2011, p.151). One example of the site gaining acceptance is the so-called Edward A. Cowper Place, which originated as part of the blast furnace plant.
The place initially is opposed by the public due to the fears of contamination. The site became a must-visit spot for an annual celebration with the planted flowering trees, with 5,000 people visiting in 1994. Additional programming includes the rail harp located above the site to enjoy the birdseye view of the whole site. The former electrical workshop located in the north is now a training center where the rest of the buildings are programmed for exhibitions, concerts, and other entertainment.

However, not the entire site is treated to have specific programming that only connects to the physical use. Some of the heavily contaminated sites are left to be untreated and operate individually. The strategies are chosen based on the contamination level, but all serve the preservation purpose.
In connecting these vertical layers of programming, from the uppermost is the "railway park," the lowest to be the "water park" Latz with his team use gardens, ramps, stairs, and terraces. These sites are separate systems from the rest of the park and are only revealed to the public eye through "specific visual, functional or merely imaginary linking elements" (Latz, 2011, p.153). One approach to differentiate these sites from programmed spaces safe to use by the public is through stone

chips made of dolomitic limestone with a high pH value to neutralize the site. Latz went with a minimalistic intervention through gas diffusion and reduced the site access to the public by cycling and walking instead of capping the contamination with clay and vegetation to preserve the color of contamination from the former coal mining site. Another strategy is using a catwalk constructed from recycled materials that circumvent the heavily contaminated sites but are still visually accessible to the public. The portion in front of the large bunker area where the ground is penetrated with polyaromatic hydrocarbons from the liquid and gaseous product of the coke plant is steeled with asphalt, earth, and plants to prevent leakage (Latz, 2011, p.156).

Implication:

In the case of Duisburg Nord, the aesthetic experience is highly individual and dependent on the design language of the designer. I believe the success of Landscape Park Duisburg Nord is manifested through Meyer's theory on aesthetic experience and Berger's standards for design professions. The first layer of the aesthetic experience began with Latz's cognitive and sensory perception of the space, where he recognized the industrial ruins as a sublime quality: "conclusive, disturbing, and challenging," which referred to Meyer's description of the aesthetic quality. The challenging experience also presented in dealing with the site identifying the adaptable space corresponding to the objectives set by IBA while integrating community engagement after the site is completed.

Overall, this case presents an ideal model for Meyer's theory due to another contributing factor: the timeframe that public participation begins after the site construction. Landscape Park Duisburg Nord's aesthetic experience is an upgraded model, while the industrial ruins are fenced in the Gas Works Park to prevent community engagement after the site is constructed. This will create more challenges if the community engagement is limited from the Gas Works Park use when further distillation of aesthetic experience is inaccessible to the public without proper guidance. In comparison to the aesthetic experience of Gas Works Park from shifting the public perception, Latz'z design philosophy is radically different from Haag's idea of remediating the sites for readoption applied to Gas Works Park. The Landscape Park Duisburg Nord pushed the initial park typology from Gas Works Park by expanding the aesthetic portion, designing it to live with toxicity. However, further research also needs to be conducted on the park as missing the perception pieces if the park influenced the public perception. Is the sustaining culture and behaviors cultivated after the community engagement on the site? According to the previous chapter on visibility and aesthetic experience, reading the site can be challenging for the public. This would apply to both parks when no advocates and programs on-site help to facilitate the public with activities to read the aesthetics of the landscape.

Bioremediation may not be Latz's focus on the site, but the IBA does include it as a part of the program. The IBA addresses severe contamination and residue in collaboration with Latz + Partners, but it is not the ultimate design solution. Rather, Latz + Partner creates an innovative response that reaches the IBA's overall goals and objectives (Stilgenbauer, 2005, p.8). According to Terra-toxic by Krinke and Daniel Winterbottom, a professor from the University of Washington, Landscape Park Duisburg Nord is recognized as successful as a cultural icon providing an activity amenity with community engagement and implies "the coexistence of poisons within the park" is possible (p.162).

This coexisting experience will continue to foster a new culture on the site over time, which is sustainable and inspiring for other brownfield projects in the world. In response to the Park Duisburg Nord, Krinke and Winterbottom (2011) concluded that "Duisburg-Nord offers a unique model since the intent has always been to use the entire site as a community park facility." The critical questions that Krinke and Winterbottom raised on the Park Duisburg-Nord are relevant to the public perception of the park: "if the park's aesthetics is read as a narrative, storytelling of the past, present, and future of the site? How well do the people reckon with the narrative, and what are the behavior changes associated with the site's interaction (p.163) ?" Another important question is if the Park Duisburg Nord model applies to the American context due to the difference between the state entities. "When the local codes and public trust create the difficulties along the way for carrying the top-down project like Duisburg Nord in the US is only using the aesthetic experience by the designers themself is enough (p.163)?" I will leave these questions for now, but in the next case in Pittsburg, the United States will answer these questions.

Referring to Krinke and Winterbottom's questions, at Duisburg Nord, recognition and support from the municipal and state level is vital to realize Latz's vision, while Gas Works Park very much relied on Haag's willpower to push the idea of post-industrial design. The top-down approach applied in Duisburg Nord reflected the ideology and difference between governmental will powers. If transplanting the model applied to Duisburg Nord to the US without any flexibility and freedom given to the public, the model will be extremely difficult to proceed without the process of collective identity that includes public trust and consensus.

Carrie Blast Furnace

The following case occurred on the American Rust Belt at the former Andrew Carnegie's U.S. Steel Corporation, Carrie at Pittsburg Philadelphia. Daniel Campo, Associate Professor from Morgan State University, created the narrative of this case of citizen activism at Pittsburg. According to Campo (2019), the Carrie factory provided the primary source of raw iron fed the corporations' Homestead Steel Works located across the Monongahela River, which cumulatively occupied over 400 acres. Carrie's deindustrialization happened in the early 80s as

Figure 16: Carrie Deer and the aesthetics of the site at Carrie Blast Furnace

the U.S. Steel Corporation made the strategic transition to invest in new industries. Carrie Blast Furnace went through a complex post-closure history and an attempt for redevelopment from private cooperation.

The former seven blast furnace on the site was demolished and sold for scrap before making the property transaction to the Parks Cooperation. Parks also had access to the former Homestead of the U.S. Steel company initialized to redevelop the site first due to the better potential for transportation connectivity. Meanwhile, Revier of Steel convinced the Parks Cooperation to dedicate a portion of the property to the seminal event in American labor history for preservation. River of Steel

also worked with state and federal elected leaders to purchase Carrie Blast Furnace. In 2005, Allegheny County purchased the site for $5.75 million and later designated it as a National Historic Landmark.

A transgressive approach happened to Carrie Blast Furnace when Parks Corporation attempted to redevelop the Homestead in the 1990s. The edge of two towns encompasses Carrie Blast Furnace, Swissvale, and Rankin, river and road racks secluded from the rest of the urban surroundings due to lack of paved road access. However, this impediment did not prevent gaining popularity from groups of "explorers, graffiti artists, photographers, naturalists, paintballers, crappers, and various teens and young adults, who sometimes consumed drugs or alcohol (p.168)."

In the mid-1990s, Carrie Blast Furnace attracted local art students from the Art Institute of Pittsburgh and engaged the site for temporal art installations of their work. These gestures became more involved with the sites over time and formed a grassroots art group known as the Industrial Arts Co-op, which built two iron-wired statues on site. The first one was an Owl statue that hung from the Carrie Blast Furnace Powerhouse

Figure 17: Using hand tools and found materials, members of the Industrial Arts Co-op built the Carrie Deer. Photo: Tim Kaulen (1998)

wall and soon was demolished by the Parks Cooperation. The discovery of the Owl ended up with the police chasing down two young adults and a teen through Carrie Blast Furnace, who got shot in the knee. Additionally, the Parks Corporation added more security patrols and fenced up the property (Campo, 2019, p.170).

The Carrie Deer was the second monument that remained at the site to prevent trespassing. Campo (2019) interviewed the two co-op members Time Kaulen, and Liz Hammond learned the story of the artists. They had to hike to the site discreetly for their creative construction. As Hammond described, "we built that deer head out of different piles [of materials] lying around, so it probably looked more like mangled piles of the same stuff." The Carrie Deer was made of found materials on-site: "half-inch diameter steel tubing, copper ties, metal wire and conduit and rubber hoses using simple hand tools, mainly Lineman's pliers and bolt cutters" (p.169).

Kaulen recalled his experience working on the Carrie Deer for a continuing year to completion while under the risk of encountering security guards: "50-odd Sundays working on the Deer, the most rewarding expenditure of time that I will ever experience." Apart from the hard work of constructing the Deer statue, the artists' experience also includes intersecting with the wildfires on the sites, installing a salt lick to attract Deer, and capturing their movements with film.

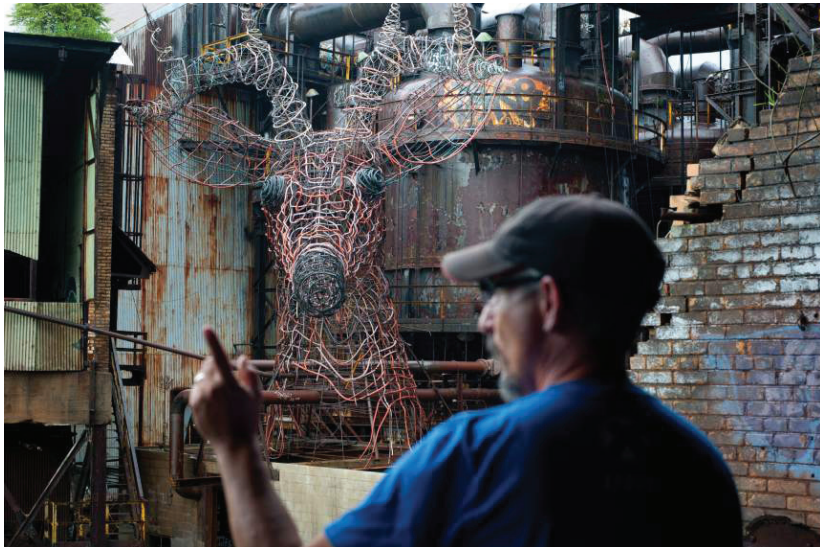


Figure 18: Carrie Deer up till today, Ronald Baraff, director of Museum Collection & Archives a Rivers of Steel National Heritage Area, talks about efforts to restore "The Carrie Deer" at the Carrie Furnace in Rankin

Figure 19: At the base of the blast furnace - Carrie Furnaces, Rankin PA

The artists see their insurgent action with more profound meaning as Kaulen noted the material used to make the Deer creates a dialogue between Pittsburgh's steel industrial past and its workers. The Carrier is seen as "'a placeholder' that calls attention to the region's 'unique geography,' which "allowed industry to boom and then crash" (p.169). It's interesting to note that Kaulen and Hammond worked for 20 years as employees on the site without any profit.

In the early 2000s, Carrie Deer gained great publicity, and Ron Baraff, a local in Pittsburgh, prepared Carrie Blast Furnace's National Register nomination. As the representatives from the Parks Corporation visit, Baraff unintentionally shows them the photographs of the Deer. To his surprise, the representatives reacted positively to the Carrie Deer and thought it was cool while curious to find its creators. Shortly after, Kaulen organized a bus tour of public art for a sculpture conference project that included a stop at the Carrie Blast Furnace under the chaperoned visit of Parks Corporation. The tour was a great success, and the local media and the cooperation were compelled by the international sculptural community's praise of the Carrie Deer.

Without an explicit agreement, the Carrie Deer remained on the site during the ownership of Parks Corporation. When the Carrie Blast Furnace is sold to Allegheny County to be managed under the Rivers of Steel, Campo (2019) discloses that Baraff

insists on convincing the board to keep the Deer sculpture and describes it as "historically significant" to the rest of the industrial structure. After a decade, the sculpture had sagged and required restoration. "A local documentary filmmaker organized the 'Save the Carrie Deer' fundraising campaign and made a film about the work to help pay for its conservation."

After restoring the Deer sculpture, Rivers of Steel renovated the pumphouse and made an indoor gallery. The sculpture and graffiti on the site inspired Rivers of Steel's reprogramming of Carrie Blast Furnace for concerts, martial arts competitions, and car shows. "The Carrie Deer brings people to the site," said Barraff, and since then, Carrie Deer brings more art events, including the graffiti workshop the Festival of Combustion and managed by the earlier creators of the Deer, which "enlarged the constitution interested in industrial history and made the core mission of telling the Carrie story more viable" (p.170).

Carrie Blast Furnace is not like any other brownfield redevelopment. Rivers of Steel President August Carlino noted that Carrie Blast Furnace was growing organically" and deriving from the conventional National Park Service administrative practices. His perception changed after creating the National Heritage Park plan in the 1990s.

Carlino is unsure about the future of Carrie Blast Furnace, but "We want to maintain flexibility outside of typical preservation programs. If N.P.S. owned the site, all of the [compelling] stuff at Carrie Blast Furnace would not be happening" (p.170). Baraff had a similar feeling, "We've realized that the standard historic preservation route doesn't always work…. We've enlarged our thinking and developed it into a new esthetic and organic approach." However, not all see Carrie Blast Furnace as a site full of potential among the selected leaders and community.

According to Baraff, "there are still those who see Carrie Blast Furnace as just another brownfield site awaiting profitable development and cannot 'see the broader scope and appeal' of Carrie Blast Furnace still evolving programs and landscape" (p.171). When the county purchased Carrie Blast Furnace, it also came with the financial support for economic development on the non-historic parcel of land, which takes 168 acres. The attempt for redevelopment continues to 2018 as Carrie Blast Furnace parcels are bid for Amazon Corporation's second headquarter and anticipated for a master plan. However, the board of River of Steel is not entirely impressed by the proposal and hopes to retain full control of the site and convert it into parkland. Most importantly, hoping for the new development to be compatible with the post-industrial heritage on the site and flexible with the programming.

Implication:

The Carrie Blast Furnace contained the definition of terrain vague defined by Solà-Morales. Carrie Blast Furnaces has an ambiguous quality that has invited people to the space for

reimagining the site even though it has liability issues. This case stands on Solà-Morales theory of terrain vagueness, which I believe adds a new layer to Mayer's aesthetic experience that aesthetic experience should also be a free expression from a political sense. First, the terrain vague is a place for free interpretation on the site, which is "empty, unoccupied" but "free, available, unengaged" that is open for the public to apply urban imaginaries (Solà-Morales , 2014, p.28).

On the other hand, Carrie Deer redefined the boundary between nature and humans. Humans are not the only living creatures in an undefined land like the Carrie Blast Furnace. Property lines are social and political demarcations. However, the boundary can not limit the free roam of wildlife. Nature continues to grow on the site with the continuum of time. As the artists encounter the wildlife during their exploration, they naturally choose to interact with them by instinct. I suspect the idea of creating animal statues is derived from their aesthetic experience related to the ecological dynamics at an abandoned steel factory. I see Carrie Deer as a social and environmental reflection that connects the past of industrial history with local ecological analog.

The Art Co-op transgressive approach has redefined the aesthetic of the post-industrial landscape, in which the reclaiming process can be organically and bottom-up with arts created from materials recycled. At Carrie Blast Furnace, the aesthetic experience is a "do-it-yourself" inspired by the site's insurgent nature. I would call out one vital quality of the post-industrial sites that is related to the recycled material used in the Art Co-op's creative process, referring back to the tenets developed by Berger from Drosscape:

> "The designer does not rely on the client-consultant relationship or the contractual agreement to begin work. In many cases, a client may not even exist but will need to be searched out and custom-fit to match the designer's research discoveries. In this way, the designer is the consummate spokesperson for the productive integration of waste landscape in the urban world" (p.239).

Carrie Blast Furnace exemplified a model that fits Berger's theory, but the case is a response that expands on the audience that Berger aimed for. The deer statue is a customized solution to the terrain vague that aligns with Berger's discovery of not relying on the conventional professional relationship. As Art Co-op grew, the artists and advocates gradually took on the site's ownership and became the spokesperson for the site's cultural value integrating the disturbed site with the rest of the community.

I believe such successful activism is beyond Berger's standard of professional practice on drosscape redevelopment that emphasizes the socioeconomic value of the site. Rather the

case expands to the public who are not armed with professional knowledge but capable of achieving the commensurate result based on Meyer's theory of aesthetic experience. In the case study of Carrie Deer, steel production was once flourishing at the waterfront of Pittsburgh. Using the iron found on the site is tied to the nature of the site's history. It is interesting to note that the artist on the site may not have been professionally trained as landscape architects, but material cycle engagement has naturally brought into their interaction with the site from the Owl to Carrie Deer. This is the evidence that having a shared aesthetic value on-site helps form solidarity among the community members. Creating the Carrie Deer is a collective experience from finding the material, hiding the disguising the working process from the property owners' eye for forming a collective identity, which is later responsible for pushing the transaction from private ownership to public. When the Carrie Deer sculpture received positive disclosure from the international sculpture tour, the recognition of the Deer is provided to be highly aesthetical and continues to catalyze a series of preservation and management on the sites.

The duration of the aesthetic experience at Carrie Blast Furnace is the most different from the other two cases. The process began very vaguely when everyday social engagement happened on the site. The aesthetic experience played a pivotal role in the public's site experience starting when the artist formalized as a grassroots organization, which raises the question that I would like to further discuss in the next chapter if the aesthetic experience should only happen after the post-construction? The Art Co-op continues with its activities on the site but without being fully exposed to invite the rest of the community to participate. The outer force created a pushback when the artist first hoisted their owl sculpture. The demolition of the owl fueled their ambition to create a second sculpture and grew solidarity against the Parks Cooperation.

The engagement with the rest of the community happened when the monumentally scaled deer sculpture. A smaller group of artists acted as opinion leaders to diffuse their aesthetic experience through Carrie Deer, which led to the latter helping to reclaim the property, which is dedicated as a historical monument. Undoubtedly, the artists are a part of local members and incorporate their local knowledge about the site and their social relationship with the rest of the community.

Trust gained from the public is more organic and stable as the process continues to formalize through a tactical approach. This changes the terrain vague to a national monument with disturbance and push back from the Parks Cooperation. From the professional practice perspective, this case study brought insight into cultivating aesthetic experience on-site through community engagement. This cultivation could maintain a steady social input and community leadership that continues to act on the site for future management after completing any design

project to sustain the proposed practice and design intention.

The selected cases are based on the literature review and thesis questions that reflect on the approach to community engagement, focusing on the experiential engagement of the sites' aesthetics. Gas Works Park was chosen because it is the first post-industrial site that defined the fundamental aesthetics of brownfield redevelopment and community engagement was a large part of the design process to determine the aesthetic. During the design process, Haag uses persuasion to include the community into the design process to expand his idea about the park design (Way, 2015).

Landscape Park Duisburg Nord is one of the most famous examples internationally and a unique approach of experiential engagement with the design aesthetic. Although the community engagement piece is not a focus, the aesthetic experience adopted was perceived through Latz's own experience and translated into his design language. The possibility of experiential engagement with the toxic material opens a new window of aesthetic sensibility that could apply to the concept of community engagement. Carrie Blast Furnace is chosen for the unusual way of community engagement on a post-industrial site. The activist group includes community engagement in its very organic nature, along with the group's experiential engagement of materials. The sculpture created by the group of activists translates their aesthetic value on the post-industrial site and further catalyzes a series of engagement activities associated with the aesthetic experience.

Cases Summaries and Discussion:

These case investigations offer insights in response to the key questions for this research: What aesthetic sensibilities have developed around post-industrial sites, and how should designers and the community respond to that aesthetic? If such an aesthetic can catalyze a positive way to rethink sustainability and resiliency regarding post-industrial sites, how do we cultivate an aesthetic appreciation of such sites through the design process?

Each case has its advantages and lessons that designers could learn when dealing with disturbed sites. At Gas Works Park, creating the shared knowledge is through Haag's site tour. The timeline of engagement at Gas Works Park began from the pre-design stage, where there was a significant obstacle pushing the idea of a post-industrial park from the public. After Haag offered tours to the local community and shared his knowledge and experience on the site, the persuasion sways the public perception and understanding of the disturbed site. Community engagement of aesthetic experience is strongly reflected in the design strategy that Hagg applied to the site.

In contrast, Landscape Park Duisburg Nord mostly relied on post-construction to cultivate the aesthetic experience. The

site's appearance is a projection of knowledge and feelings from Latz's aesthetic experience on the site. Latz achieved the shared knowledge by exposing the contamination to the park user to acknowledge the previous site condition. Through preservations, material recycles, and an emphasis on strategic programming, the park informs the park users their lifestyles are not a compromise to living with the contamination but are greatly enhanced. However, community engagement is unknown due to the lack of resources but is understood from a best-practice approach to include aesthetic experience after the site's construction.

In Pittsburg, the Art-Coop engaged the public through citizen activism and organic growth through informal activities to formalize activities. The Art-Coop may not necessarily be considered professional designers, but it implies that aesthetic experience is universal. Their design language of creating a landmark-sized sculpture from recycled material largely redefined the site. The Carrie Deer manifests the community's urban imaginaries adding the cultural value of the free expression to the disturbed site, adding a new layer of aesthetic sensibility from the literature review on terrain vague. The aesthetic experience aspect of community engagement could help to form a collective identity. Such experience played a critical role in the later success of the projects and changed the perception of brownfields. Aesthetic experience first begins with the designer's site visit and their musing from the site experience, manifested as an individual experience based on Meyer's aesthetic framework. Designers gained their knowledge and feelings on the site during deep research and were present because they approached the site with strong intention. Such intention is achieved through learning and training and could also possibly be achieved through community engagement which could be charrette and workshop or an informal walk such as Haag's site tour. The goal is to disclose the professional knowledge of site reading and aesthetic appreciation, creating a win-win situation for trust-building and collective identity.

The aesthetic experience relies on community engagement to seed. Community engagement is critical to forming the collective identity proposed in Meyer's theory. To recognize the cultural value of disturbed sites through the framework of aesthetic experience, it is critical to engage the community to create a shared knowledge about the site experience. I would also like to define the standards of aesthetic experience associated with the post-industrial sites to better understand how designers and the community should respond to them.

On post-industrial sites, aesthetic experience thrives on tension, such as the currently identified site aesthetics of the toxic sublime. Like Peeples (2011) argued in her article, the tension of gigantic man-made structures and the visual intensity of the rust and erosion of the ruins generate significant psychological satisfaction to look at. Such satisfaction is conflicting because

it also brings guilt when thinking of the planet and pollution. The tension also includes the fighting for redefining the space through community engagement. I argue the aesthetic experience perceived in Carrie Blast Furnace also represented the beauty of tension but from an engagement angle. A conflict between fighting the ownership of the site, who are responsible for the terrain vague, and who have the right to engage with the culturally undefined site creates another layer of aesthetic sensibility of disturbed sites. Which raised my question about the proposed aesthetic: how to engage this sensibility in the design process? I will address that in the proposed aesthetic experience model.

Aesthetic experience on post-industrial sites should also honor memories and stories acknowledging the previous industrialization. This includes two aspects, the site history of people and the history of materials. The case studies above documented the sites' narrative from the pre-construction perspective. However, a significant layer of people's history is yet to be documented. For example, the local community's socio-economic life is closely related to the rise and decay of post-industrial sites. Documenting the material history has two benefits. Material history acknowledges the history of industrialization that is part of the people's memories. On the other hand, the pollutants in the brownfield are highly dynamic. Material history would reference the environmental quality that could be used for park maintenance in the future.

Aesthetic experience duration is not limited to the post-construction stage. The aesthetic experience is critical to the engagement process, and it will vary based on the selected community and site. However, the aesthetic experience duration should always maximize the chance of community engagement. I believe having an engagement process at the pre-design stage is as important as the construction stage after. Each stage provides different opportunities for the public to engage in their site experience. For example, designers could lead the community to participate in the construction processes learn about material cycles.

Source of Figures:
Figure 7: An aerial view of Gas Works Park, Seattle, Washington, USA. Taken on September 5, 2011, from an altitude of about 1,800’ MSL. by Liesl Matthies
Figure 8:uthor Jorgensen, D. (1971). Gas works park as a concept, 1971. Rendering by dale Jorgensen. Collections of richard Haag. [Illustration]. University of Washington Press Blog. https://uwpressblog.com/2015/04/15/gas-works-park-a-brief-history-of-a-seattle-landmark/
Figure 9: Seattle Municipal ArchivesFollow Gas Works Park, 2015 from Flickr Pro
Figure 10:AFigure 10 Seattle, WA. September 17, 2018. Shot on a Hasselblad Xpan II and Kodak Portra 160. Developed and scanned by The Darkroom. by Travis Estell
Figure 11: NODU. (1991, February). [Drawing]. Latz + Partner. https://www.latzundpartner.de/en/projekte/postindustrielle-landschaften/landschaftspark-duisburg-nord-de/
Figure 12: Panoramic view (140°) of the Landschaftspark Duisburg-Nord, in Duisbourg, Germany by kaьstn Disk/Cat
Figure 13,14,15: Imprecisions. (n.d.). [Photography]. Landschaftspark Duisburg-Nord. https://www.landschaftspark.de/en/leisure-activities/tauchgasometer/
Figure 16: 1006_CarrieFurnace_45 by Devon Christopher Adams
Figure 17: Kaulen, T., & Campo, D. (2019). Using hand tools and found materials, members of the Industrial Arts Co-op built the Carrie Deer. Photo: Tim Kaulen (1998) [Photography]. Https://Doi.Org/10.1057/S41289-019-00089-3.:

Figure 18: Strasburg, S. (n.d.). [Ronald Baraff, director of Museum Collection & Archives a Rivers of Steel National Heritage Area, talks about efforts to restore “The Carrie Deer” at the Carrie Furnace in Rankin]. TRIB Live. https://archive.triblive.com/lifestyles/more-lifestyles/rankins-carrie-deer-sculpture-inspires-restoration-efforts-events/
Figure 19: At the base of the blast furnace - Carrie Furnaces, Rankin PA by Roy Luck

Chapter 5: Proposed Aesthetic Experience Model on Post-industrial Sites

In addition to these questions, a critique of the paradigm shift of post-industrial site redevelopment can draw from the design process of these sites, which primarily forms a top-down approach. Through this thesis, I discovered that to respond to the beauty of post-industrial sites, we need to challenge the status quo of the design process that was used to engage such sites. This includes community engagement, emphasizing experiential engagement, which will provide a new lens to unveil the beauty of post-industrial sites. This thesis aims to provide a perspective on the post-industrial landscape from an engagement angle to offer a potential model for designers to foster appreciation and trust in the design process of post-industrial sites.

Community Engagement of Post-Industrial Sites

Technologies and site intervention generate opportunities to reshape the public perception to encourage community engagement. Undoubtedly, many successful cases of site remediation exist around the world, including one of the most famous precedents, Gas Works Park in Seattle. Technology is certainly one of the determining factors of the site's usability. Remediation may only address public concerns and comfort level engaging with the contamination on-site to a certain extent. This thesis explores the chance to form a collective identity of the shared cultural value of agreeing on post-industrial aesthetic sites to help reach consensus during the development process. I believe community engagement plays a key role in determining these values through an aesthetic experience, as will be further explained in the chapter. To change the perceptions from a negative cultural connotation of such sites as brownfields to a positive connotation and even foster attachment to the place is important for the success of such sites as viable public resources.

Gas Works Park in Seattle, which was one of the first post-industrial sites to be redeveloped by a landscape architect and the designer, Richard Haag, used an extensive community engagement process. Gas Works Park is still a beloved city park by the locals and is visited by people all year long with

	Gas Works Park	Landscape Park Duisburg Nord	Carrie Blast Furnace
Time line of engagement	Pre-design engagement	Post-construction engagement	From pre-design to post-construction engagement
Methods of engagement	Site visit and visual exposure of site condition, Daily visit through programming	Daily visit through programming	Transgressive, grassroots, informal social activities evolve into formalized, community-lead engagement
Design approaches	Remediating the soil and reuse for land form to frame the surrounding view, gas tower preservation and include architectural structure as sculptural piece.	Design with passive and active uses considering the age groups usage when repurposing structure for community event Preserving the site's genus loci.	On-site guerrilla art through material recycles
Designer's role during engagement	Radical leadership, opinion leader during the idea distillation process	Using design language as a communication tool.	Using design language as a communication tool, leader of citizen activism replace the role of designer
Community's response since engagement	Aesthetic experience is actively practiced on the site and the perception on disturbed site has changed and seeing the park as a landmark on the city	Aesthetic experience is actively practiced the park system is integrated as a part of community life	Received a positive response in the majority, catalyze a series of community activism and the organization continue to influence the site management

Figure 20: Case studies matrix on the responses to aesthetic experience

community engagement such as firework watching, band rehearsal, and outdoor yoga. Since the beginning of the project, the cultural value distilled by landscape architect Richard Haag from a series of community engagement practices seems to build strong connections with the locals. Haag's process introduced the public through artistic and psychological experiences that are still meaningful for today's professional practice. I will articulate more on how Haag created the engagement process to shift the public perception in the following chapter within the case of Gas Works Park to substantiate the point.

The community engagement in post-industrial sites is context-specific and appears in the case of Landscape Park Duisburg Nord (Crawford, 2008, p795). At Landscape Park Duisburg Nord, community engagement may not be the factor contributing to the success of the park, but it has largely considered the rights of citizens through public participation and the best practice approach. As argued by Crawford (2009), engagement should be a part of the post-industrial site as they encourage a sense of "belonging to" and foster a "collective sense," which is important for the delivery of a concrete project (p.803). The park is loved by people from the Ruhr district of all ages, provides recreational activities, and is a hallmark of the IBA initiative. However, before any engagement happened on the site, the park received questions and concerns regarding contamination. In the example of Carrie Blast Furnace, the furnace is a fenced property belonging to the Parks Cooperation and underutilized in the community. The transgressive community engagement by a group of artists has changed cooperation, and locals think about this abundant site differently, which now has become a national monument.

In Response to Time

In the previous chapter, I argued that time plays an important role in cultivating the aesthetic experience. A defined timeframe for aesthetic experience should be divided according to the design process: site investigation, site intervention, and community-engaged aesthetic experience. As mentioned in the earlier chapter, time is an important component of the community experiential process. The duration of time directly influences how well the community responds to the aesthetic sensibilities. The timeframe in post-industrials sites needs a longer design process because it requires both the community and the designer to apprehend and develop a collective identity. I define this process as a slow but steady, incremental response to time through accumulated experiential engagement. Such accumulation of experiential engagement will form the collective identity that is ready to catalyze major changes in the community in response to the dynamics of post-industrial site conditions. The response to time could include the continuing need for the community to participate in the remediation process or organize informal social activities daily. After the community-engaged

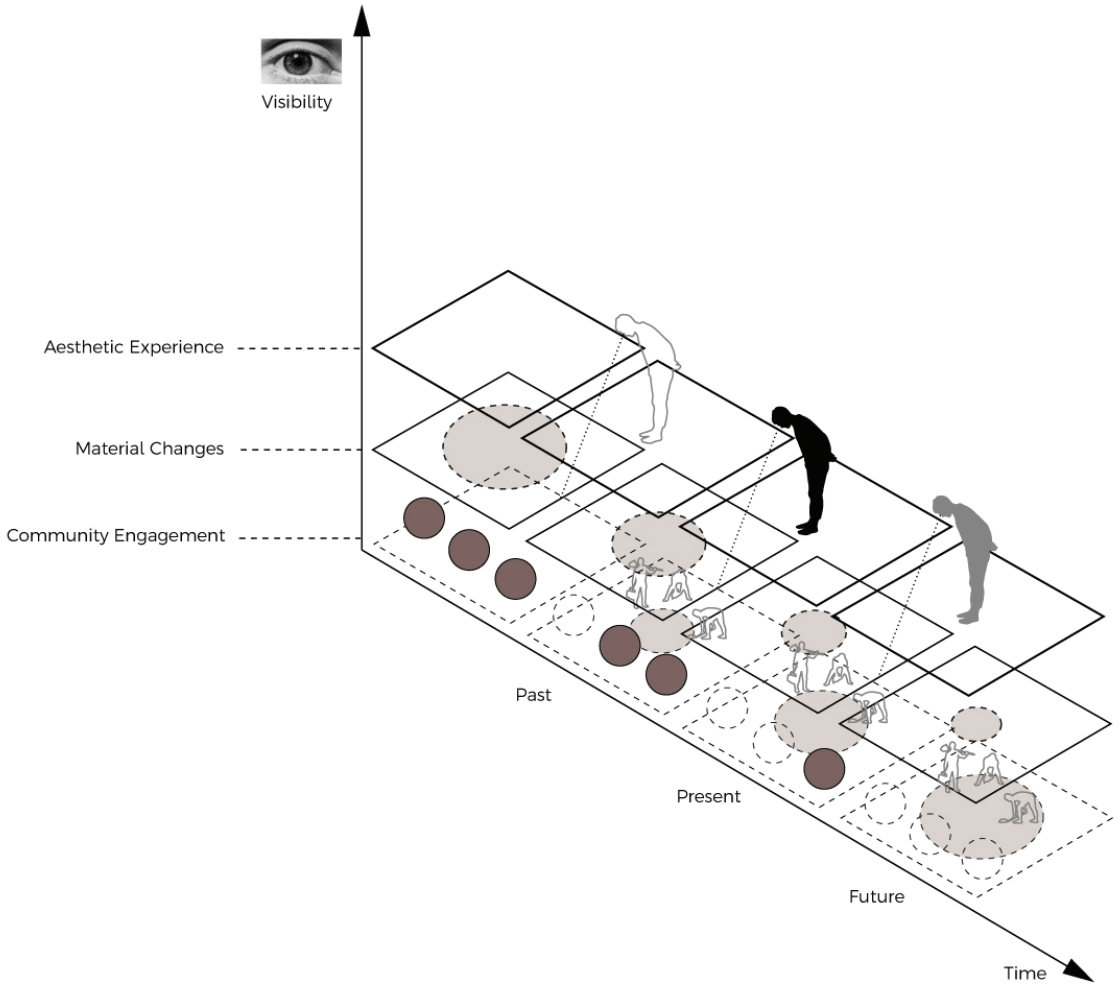


Figure 21: Individual aesthetic experience model

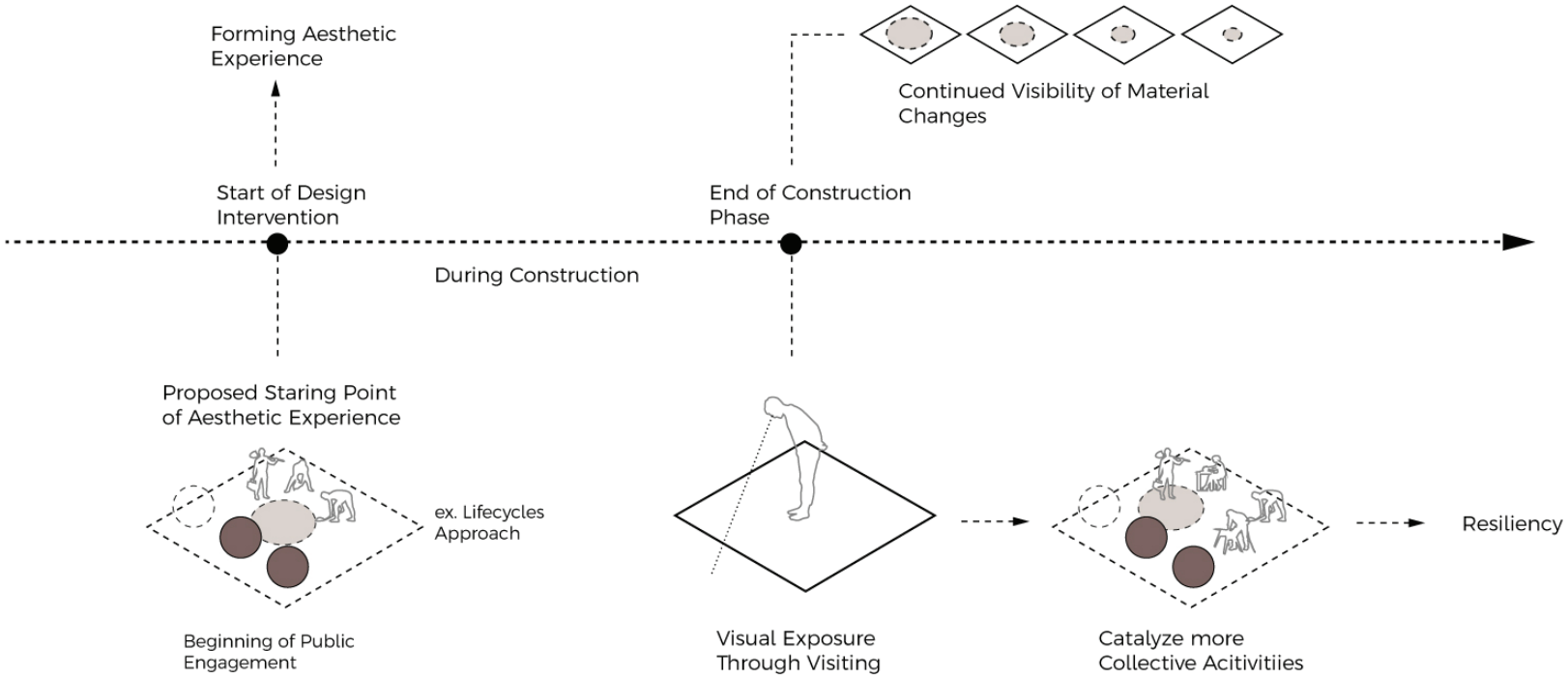


Figure 22: Aesthetic experience focused on community engagement on Post-industrial sites

time, more individualistic responses to an aesthetic experience formed through collectivity would happen. To form a collective identity in a shorter time frame, expanding on Meyer's theory of the beginning point of the aesthetic experience, which happens during the community-engaged process, I propose to begin the community-engaged experience by expanding the individual experiential process. The experiential engagement time frame should begin with the site investigation.

Community's response

The community response should be organized gestures meeting their comfort level. One possible response for a community to participate in the site investigation time with the designer is to acquire the aesthetic experience. Applying an informal type of walking and wondering for imagination on the site resembles the approach from Haag's Gas Works Park. I want to emphasize the organic response from the community that flows with their experience on the site when they are exposed to the toxic sublime. The community could also use the passive response to the site that resonates with their experience from a collective or individual reflection, including writing, storytelling, or drawing beginning in the site. But there should always be a network of shared knowledge and emotions about the site that the community voluntarily likes to engage. In Landscape Park Duisburg Nord. Therefore, the past worker's history or community anecdote and inform the next generation and their relationship to the post-industrial become crucial. This also includes a way of living or practice that developed on the site being told and taught about the post-industrial site. This engagement tool will help communities acknowledge post-industrial sites as a cultural heritage and community asset. An ideal community-engaged aesthetic experience should resemble the experience of Carrie Blast Furnace that derives from citizen activism which takes place organically and voluntarily in the community. This requires both individual input of self-reflection from the aesthetic experience and collective reflection as a group through formal and informal activities. Additionally, the spirit of "do it yourself" is welcomed. The free expression of engaging the site materials and spaces should be encouraged.

Designer's Response

Due to the nature of brownfields, government agencies are presented in the design process as major stakeholders. A designer's role should propose a strategy that is responsible for providing a structure and open resource channel for the community that encourages their inner activities to ensure organic growth. Designers could respond to the three-time fame mentioned above. For example, a designer could advocate for distilling ideas around the post-industrial aesthetics in the site investigation period. Designers could consider leading a tour that will facilitate the aesthetic experience, like how Haag led the tour in Gas Works Park but should consider the community's

response to the timeframe and how to put it into the familiar language to the community. During the site intervention time, a designer could expose their site-making process or create reflective quality that responds to the community. The shared aesthetic experience will consolidate the sustaining behaviors developed during the process and self-regulatory under uncertainties. This could include design spaces that consider the aesthetic engagement through the site experience from a collective space in the form of a memorial or disclose the site material dynamics change to the public during site intervention. In the community engaged period, the designer should evaluate and assess the aesthetic experience and workability of certain design languages. This also means continuing the relationship-building over time from the start of the aesthetic experience.

Community-Engaged Aesthetic Experience

From the case studies above, engaging the site material in all cases is a part of the aesthetic experience. In the case study of Gas Works Park, apart from the gas tower, the toxic soil is reclaimed and reused to create Kite Hill's aesthetic experience. The engagement of using the Kite Hill as a part of the site aesthetics creates an indirect experience of interacting with the toxic soil. In Duisburg Nord, the reprogramming of preserving contamination for its color as a part of the genius loci is reflected as a way of aesthetic experience with toxic material with a programmed design approach to balance off health concerns. In the example of Carrie Blast Furnace, the steel was reused to create the Carrie Deer as a way to bind the artists. The recycled site material or structure showed it is an inevitable approach for considering the cultural value of post-industrial as part of the design.

Inspired by Carrie Blast Furnace's case, I proposed synthesizing aesthetic sensibility from the case by adding the community engagement element. The ambiguity of the steel blast furnace and scattered steel create an aesthetic sensibility that naturally inspired the community to reinterpret the site. This indicates the chance to engage the local community in site recycling and material recycling as part of the aesthetic experience to deepen understanding of beauty. As a community-engaged aesthetic sensibility, informal activities and a guerrilla approach should be encouraged. In Carrie Blast Furnace's case, the beauty of the post-industrial landscape is redefined by combining the aesthetic with the community engagement.

Potential Engagement Activity that Links the Proposed Model

By drawing the theory from Meyer, the approach of engaging the community can be used along with the site experience visit and collective activities. Drawing from the existing community engagement process, there are chances to incorporate aesthetic experience as a framework to improve the way of getting community input. The proposed aesthetic experience could be

potentially based on the material recycled on the post-industrial sites. The selection is due to the founding of the aesthetic experience in the three case studies. This is the existing engagement process could be improved from a formalized and institutionalized engagement process to an informal, creative and inspiring experience between various stakeholders.

Community engagement in design has been applied to many studies because the framework is developed to create mutual benefits while including various stakeholders' interests. For example, community engagement is an urban intervention to promote social interaction in a blighted urban environment from a planning and municipal perspective (Semenza and March, 2008). Community engagement often pairs with higher design education to include children's voices in design and planning and other successful examples of community engagement in campus design partnerships (Derr, 2015). On Post-industrial redevelopment, likewise, community engagement can be beneficial. To name a few examples, reclaiming these sites could revitalize the local economy (Murrary, 2017), reduce the crime rate (Gong et al., 2010), and protect environmental justice caused by the spread of contamination (Hollander et al., 2010, p.5). The process of community engagement on such sites often requires a variety of stakeholders to be on board. I would also like to stress that the community is an important stakeholder as the changes made to their community are relevant to their very interest (Hollander et al., 2010, p.11).

Existing community engagement principles developed by Hollander et al. (2010) proposed a series of design process recommendations to inform designers on post-industrial project execution. This includes the process of a series of preparation for organizing the community outreach. The outreach is critical for such a process for getting input from the community and reaching an agreement to continue the step of remediation. This process can be challenging because the lack of shared knowledge and experience may cause barriers due to different values and interests related to the post-industrial field. As discussed in the previous section, Berger (2006) also argued the important role of engaging the various stakeholders. Hence the role of the designer should be adaptive to cooperate with community engagement and requires a different model to incorporate the community engagement process on post-industrial sites.

In Gas Works Park, the Kite Hill is the aesthetic reflection that combines the community's imagination and incorporates the post-industrial site's toxic soil quality. In Landscape Park Duisburg Nord, the aesthetic of the rusted plaza Piazza Metalica of recycling steel to create a public gathering space. In the Carrie Blast Furnace, the Art Co-op also recycled the steel on the site for creating their sculpture with aesthetic quality to the site and their engagement process. Referring to the literature review and case study findings, the site material can be considered a part of a post-industrial site that reflects the

side nature of the toxic sublime. Designers could incorporate recycling material collectively as a community outreach activity as a part of a design process found on post-industrial sites would provide an educational opportunity to further understand the aesthetic experience of the site. The community could use this opportunity to discuss their aesthetic understanding and goals with designers to build trust.

Source of Figures:
Figure 20: Author
Figure 21: Author
Figure 22: Author

Chapter 6: Conclusion

Above is my exploration of post-industrial landscape aesthetics paired with experiential engagement. The aesthetic sensibilities developed around the post-industrial site are based on land art's toxic beauty and environmental aesthetic. Another discovered post-industrial experiential quality that could also contribute to the community engagement to develop the aesthetic sensibility is the ambiguity for interpretation. The social and experiential quality enriches the definition of post-industrial beauty through engagement in site walking and site reprogramming, which is through acknowledging the spirit of the site and disclosure of professional practice. To cultivate this aesthetic appreciation through the design process, the proposed aesthetic experience model entails an idealized version of the lifestyle and values that could be fostered in a post-industrial community in the hope of reflecting designers who are also interested in incorporating community engagement when designing with disturbed sites.

Industrialization is a social and economic paradigm that shaped the landscape with toxicity and more than ingrained it into a lifestyle and mindset that required a psychological transformation. This social and economic paradigm also impacted the industry of landscape architecture as a practice that favors designer to client type of approach. The proposed aesthetic experience will address this issue by bringing the community into the conversation to deconstruct the top-down approach. Include the direct and indirect engagement with the materials for aesthetic experience.

The limitations of the proposed aesthetic experience model are very largely dependent on how designers structure it, and the effectiveness of this model is yet to be studied. One limitation of this model is aesthetic education will reflect the designer's value. It is important to note that aesthetics are also political. The proposed aesthetic experience attempts to deconstruct the top-down structure and blur the boundaries of traditional client-based practice. What values the most of the aesthetic experience is it should always be an open-ended question to the site and space to be determined for reinterpretation in the future. The aesthetic experience encourages tactical and urban acupuncture to keep the post-industrial sites vital as the disturbed sites' innate quality of indeterminacy.

Sharing professional knowledge has become a professional ethic in landscape architecture that continues to bring voices and cross-disciplinary knowledge into the practice for bringing

justice and equity to the design process. Aesthetic experience responds to the call of design sites of conflicting and complex nature. Developing an aesthetic experience is always a long-term goal and requires significant time. In addition, this duration requires overcoming the challenge of achieving balanced power dynamics among stakeholders such as governmental entities and community members. I believe that the reward from practicing aesthetic experience as a part of community engagement is meaningful for building more resilience in post-industrial communities.

The direction of the future work of aesthetic experience should be building on the experiment of testing the aesthetic framework and continue refining the engagement process in post-industrial sites. Community engagement can be difficult to monitor to meet certain quality, and the process may take a decade to see if the approach has been proved successful. Finding what would be a high-quality engagement process on the post-industrial sites would be critical. Another thing to consider is the perception of the brownfield after the aesthetic experience framework has been applied. This will help determine if aesthetic experience helps to facilitate the psychological change of living on the brownfields. Tracking the process and the long-term influence is also a direction that could determine if the aesthetic experience helps build resilience.

Limitations to this Study

Due to the choice of including the three cases, the quantity of cases selected to determine the engagement model in this research is not sufficient. The aesthetic sensibilities may have more examples and nuances based on the site context and community. Additionally, the engagement process would be reasoned differently from the aesthetic, which may lead to less success than presented above. Positivity and to what extent the positive influence is on the post-industrial site is also yet to be determined due to the lack of studies on the direct application of experience on post-industrial sites. Whether the aesthetic experience would have a definite influence on the positivity of community engagement would need additional data to consider the inefficiency of this proposed perspective. Failure of cases would be worthy of investigation as the cases currently show a positive influence.

In addition to that, the cases are based on secondary sources. From secondary sources, the description and narrative are structured to facilitate the original case's argument. Developing a case on top of the secondary sources may lose the quality and richness of the primary source, and many of the sources are not developed to service the aesthetic aspect of the case studies or the community engagement. Another limitation is unique to the example Landscape Park Duisburg Nord. As an international example developed from a top-down approach, there are limited

resources documenting the engagement process. Community engagement may not be best-fitting to the context in Germany at the given time. Due to its scale, the case study focuses on the community level while the Landscape Park Duisburg Nord is part of the regional planning.

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