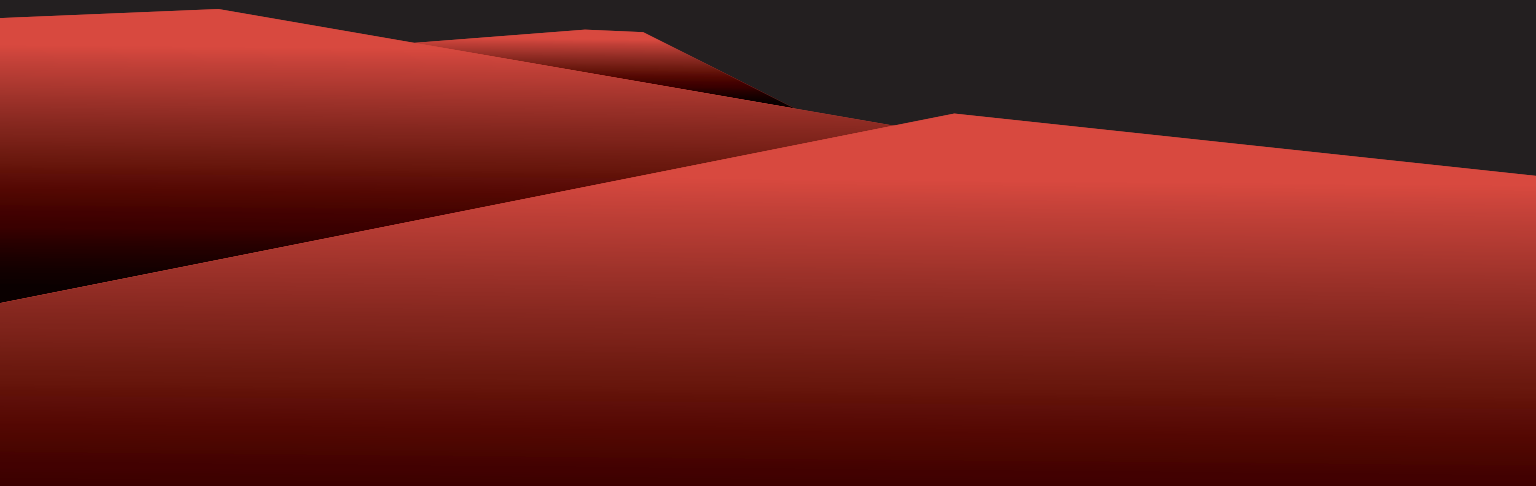


SUBLIME INTERVENTION

Emma Stone



APPROVAL

project chair

Mark R. Eischeid

committee

Chris Enright

submitted in partial fulfillment of the
Master of Landscape Architecture
Department of Landscape Architecture
College of Design
University of Oregon
June 14, 2019

ABSTRACT

Despite their remote location and green veneer, landfills, like many industrial sites, have become monuments to consumerism. Every day in Lane County, Oregon, the equivalent of six pounds of waste per resident joins the local wasteland. Destination: Short Mountain Landfill. Landfills generate many kinds of experiences and are capable of eliciting qualities of the sublime. The toxic sublime is characterized by five tensions: beauty and ugliness, magnitude and insignificance, known and unknown, inhabitation and desolation, and security and risk. These tensions are identified and illustrated by Jennifer Peeples through an analysis of Edward Burtynsky's photographs of toxic landscapes.

This project translates the toxic sublime from the analysis of two-dimensional media into the design of four-dimensional landscapes through critical practice. To do so, this project first analyzes the origins and changing contexts of the sublime as an aesthetic category, then synthesizes the history of waste and landfills in America. A case study analysis reveals how the toxic sublime is found in existing designed projects. This synthesis and analysis informs the next phase, a site-scale design of Short Mountain Landfill in Lane County, Oregon. The site-scale design demonstrates how Peeples' five tensions may be expressed in toxic landscapes, such as landfills.

TABLE OF CONTENTS

<i>List of Figures</i>	ix
<i>Acknowledgments</i>	xiii
I. Introduction	1
Significance	
Methodology	
II. The Sublime	5
Origins	
Burke's Sublime	
Kant's Sublime	
American Sublime	
American Technological Sublime	
Toxic Sublime	
Toxic Sublime in the Landscape	
III. Landfills	21
Waste in America	
Short Mountain Landfill	
IV. Design	31
Design Concept	
Precedent Analysis	
Goals + Strategies	
Landform	
Vegetation	
Sculpture	
Design Narrative + Analysis	
V. Closing	63
Conclusions	
<i>References</i>	65

LIST OF FIGURES

- 1.1 Diagram: Project Scope
- 1.2 Diagram: Cross-Disciplinary Translation of the Toxic Sublime
- 1.3 Diagram: Methodological Approach

- 2.1 Diagram: Connections within the Sublime
- 2.2 Diagram: Timeline of the Sublime
- 2.3 Image: *Niagara Falls*. Frederic Edwin Church.
- 2.4 Image: Crowds watching the nuclear bomb tests in Nevada.
- 2.5 Images: *Rock of Ages #4* | *Oil Sands # 14* | *Mines #43 Berkeley Pit* | *Uranium Tailings #12*. Edward Burtynsky.
- 2.6 Images: Quarry Garden, Shanghai, China.
- 2.7 Image: *Mines #22*. Edward Burtynsky.
- 2.8 Images: Freshkills Landfill, New York, USA.

- 3.1 Diagram: Waste stream
- 3.2 Diagram: Section of a Landfill Cell
- 3.3 Chart: Active Oregon Landfills.
- 3.4 Image: Lane County in Oregon
- 3.5 Image: Lane County Context Map
- 3.6 Image: Short Mountain Landfill Context
- 3.9 Diagram: Site Inventory
- 3.8 Diagram: Timeline of Cell Phasing
- 3.9 Diagram: Site Analysis

- 4.1 Diagram: Comparative Sizes of Short Mountain Landfill and Storm King Art Center
- 4.2 Image: Schunnemunk Fork
- 4.3 Diagram: Comparison of the Current Cell Phasing Plan to the Proposed Phasing Plan
- 4.4 Diagram: Sections of Phased Landform and Vegetation
- 4.5 Diagram: Sculpture 1
- 4.6 Diagram: Sculpture 2
- 4.7 Diagram: Sculpture 3
- 4.8 Diagram: Sculpture 4
- 4.9 Diagram: Sculpture 5
- 4.10 Diagram: Sculpture 6
- 4.11 Diagram: Sculpture 7

- 4.12 Diagram: Sculpture 8
- 4.13 Site Plan: 2050
- 4.14 Site Plan: 2080
- 4.15 Site Plan: 2110
- 4.16 Site Plan: 2140
- 4.17 Site Plan: 2170
- 4.18 Diptych: Sculpture 8
- 4.19 Diptych: Sculpture 1
- 4.20 Diptych: Sculpture 2
- 4.21 Diptych: Sculpture 3
- 4.22 Diptych: Sculpture 4
- 4.23 Diptych: Sculpture 5
- 4.24 Diptych: Sculpture 6
- 4.25 Diptych: Sculpture 7

ACKNOWLEDGMENTS

Thank you, Mark. The tension between your enthusiasm and attention to detail generated a new definition of the sublime.

Thank you, Chris. Your insights and ability to motivate are unmatched.

Thank you to everyone I've had the pleasure of engaging with during these past three years. You are sublime.

“Landfills are the city’s largest remaining open spaces,
not, like classic earthworks, splendid in desert isolation.”

— Mierle Laderman Ukeles.

“A Journey: Earth/City/Flow.”

Art Journal 51, no. 2 (1992): 12.

I. INTRODUCTION

Scope and Significance

As post-industrial and toxic sites, landfills represent an under-examined subject of analysis and design intervention that employs the toxic sublime. However, several high profile landfill-to-park projects, like Freshkills Park in Staten Island, New York, have garnered international attention and growing interest in the treatment of waste landscapes. This is heightened by the fact that there is currently a waste stream crisis in the United States due to China's sudden refusal to accept American recyclables coupled with the collapse of recycling infrastructure in American municipalities that are unable to handle the volume of waste generated by Americans. Not only do landfills risk the health of local watersheds, they also are a major contributor to global climate change. The anaerobic conditions of landfills produce methane, one of the greenhouse gases responsible for global warming. Landfills are also increasingly located further and further away from the urban centers where most of the garbage is sourced. This means that trucks expel more exhaust and toxins as they drive to deliver their loads. In addition, the rural and isolated locations of these sites place an undue burden on communities that already suffer from political and economic disenfranchisement in American society. As the stakes rise in this ecologically and socially irresponsible form of waste management, it is imperative that landscape architects address these hidden burial grounds of garbage.

As illustrated in *Figure 1.1*, this project broadly addresses post-industrial landscapes through the lens of the sublime with a focus on subsets of each category. There is already

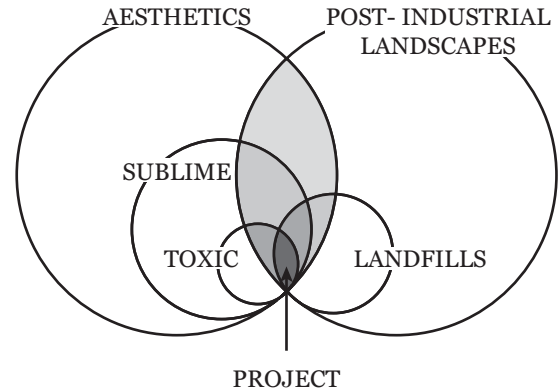


Figure 1.1. Project Scope



Figure 1.2. Cross-disciplinary translation of the toxic sublime.

a well-established discourse on the aesthetic category of the sublime from which this project intends to source its theoretical base. Of the many subsets of the sublime that have been discussed by scholars, this project has narrowed its focus to the *toxic sublime*, a term developed by Jennifer Peeples, a philosophy and environmental communications scholar at Utah State University. The other focus of this project involves post-industrial landscapes. These sites do not have as long of a history as the philosophy of the sublime but they have received increasing attention as technological advances have rendered earlier ones obsolete,

leading to the abandonment of those sites. The field of landscape architecture has taken the helm in the healing of these landscapes with the sublime as a lens or tool in their designs. This is evident in projects like Gas Works Park in Seattle, Washington, designed by Richard Haag. There are different types of post-industrial sites; this project will consider landfills as one of the categories of post-industrial landscapes.

The toxic sublime currently remains in the field of environmental communications with strong ties to the arts through photography. Peoples' analysis of landscape photographs by Edward Burtynsky provides a framework for studying toxic landscapes and subsequently, how this aesthetic category may be manipulated into design. *Figure 1.2* illustrates how the toxic sublime will be translated from an analysis of landscape photography, to an analysis of landscape, and finally to landscape design. This type of analysis and translation has not yet been done. Through critical practice, this project will test the parameters of the toxic sublime in the design of a landfill in Lane County, Oregon. The goals of the design include raising awareness and educating the public about the negative impacts of landfills and waste generation through the experience of the toxic sublime.

Methodology

Broadly, this project applies a theory toward the design of a site. As mentioned earlier, this project is focused on the sublime, and in particular, the toxic sublime, and its application in the site design of post-industrial landscapes. Landfills have been selected as a type of post-industrial landscape in part because they lack attention from the design community. *Figure 1.3* illustrates the three-part methodological approach employed in the process of this project. The methodological approach is broken into three parts: the literature review, the design, and the analysis. The literature review establishes the historical and theoretical base on which this project rests. The design phase

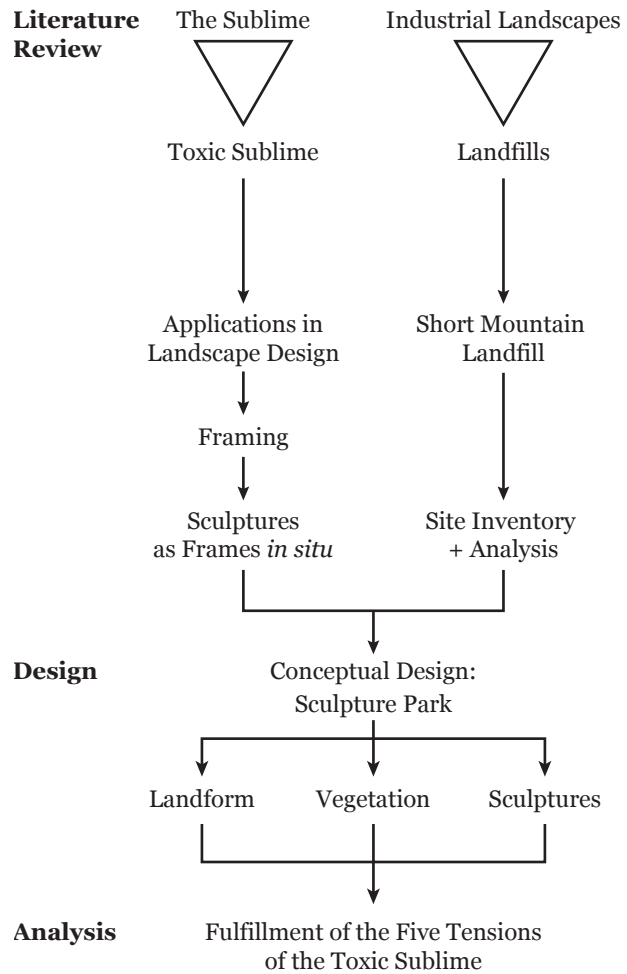


Figure 1.3. Project Methodological Approach.

stems from that base to test whether the theory is applicable in the landscape. This project will propose a design of Short Mountain Landfill in Lane County, Oregon. Finally, an analysis of the design through the lens of the toxic sublime, will review and assess the project's success.

Literature Review

The first methodological approach of this project is a literature review. The literature review covers the topics of the sublime and the history of landfills in America. This review is necessary before beginning the design phase of the project because it sets the theoretical stage and provides the cultural context in which the design rests.

The toxic sublime is the primary focus of this project and therefore, it requires an examination of its origins and argument. In order to understand the toxic sublime, the project delves into the history and shifting contexts of the sublime. The project first assesses Burke and Kant because of their significant influence on the topic of the sublime and on the development of the toxic sublime. The project then examines the American sublime and the American technological sublime. The American sublime is important because its characteristics adjust to the New World. From this, the American technological sublime emerges, which shifts the meaning of the sublime once again. The American technological sublime serves as a foil to the toxic sublime and, in fact, Peeples intended the toxic sublime to be a direct response to the American technological sublime. The literature review of the sublime situates the toxic sublime within its theoretical and cultural context and provides a thorough understanding of the topic.

The literature review then synthesizes and analyzes Peeples' presentation of the toxic sublime. By doing so, the project makes explicit connections between the toxic sublime and its predecessors and tests the strength of Peeples' argument. Peeples identifies five paradoxical characteristics, which she calls *tensions*, and each tension of the toxic sublime is examined through the lens of landscape architecture.

Following the analysis of the toxic sublime, the project presents two case studies and analyzes them through the lens of the toxic sublime. The case studies, Quarry Garden in Shanghai and Freshkills Park in New York, represent post-industrial sites similar to the subject of the design proposal. The case study analysis provides a means of exploring the toxic sublime in a post-industrial site before applying it in a design. Key lessons taken from the case study analysis are applied in a site-scale design of a landfill.

The literature review of the sublime sets a theoretical baseline from which the toxic sublime may be analyzed and applied. The next stage requires a thorough understanding of the site selected for the design intervention. The selected landfill is representative of an average landfill in Oregon. This ensures that lessons taken from this process may be applied to other landfills in the region. Short Mountain Landfill in Lane County, Oregon, rests within its own cultural context in the United States. A synthesis of the history of landfills in this country situates Short Mountain Landfill within its historical context. A historical understanding is followed by an analysis of Short Mountain Landfill's geographic context. This will inform design decisions that speak to its sense of place as it exhibits qualities of the toxic sublime. This project then takes an inventory of the site itself. This inventory is conducted through GIS, a site visit, publicly-available documents and printed media. Once the site is analyzed and inventoried, the design phase begins.

Design

A theoretical, historical, geographic and cultural context is established by the literature review which lays the groundwork for the design proposal. This is followed by the development of a design concept which unifies the site. The design concept prescribes the installation of a series of sculptures that frame the landscape. This project analyzes a precedent sculpture park to ensure that the proposed design of this project reflects and responds to its historical context. The precedent, Storm King Art Center, has been selected due to its comparative size to Short Mountain Landfill, as well as their shared rural and agricultural context. From the concept and precedent analysis, design goals emerge. The phased site design of Short Mountain Landfill follows, demonstrating the incorporation of the concept, goals and strategies to elicit the toxic sublime.

Analysis

Following the design phase, the proposal is analyzed to determine which qualities of the toxic sublime can be identified. Similar to the case studies conducted in the literature review, the proposed design will be assessed by its ability to fulfill the five tensions of the toxic sublime: beauty and ugliness, magnitude and insignificance, known and unknown, inhabitation and desolation, and security and risk. This examination will inform future design interventions of post-industrial sites that intend to elicit the toxic sublime.

Chapter Preview

Chapters II and II set the theoretical, geographical and cultural stage for this project. Chapter II presents a synthesis and analysis of the sublime from its origins to the narrowed topic of this project: the toxic sublime. Chapter III addresses the history of waste management in the United States, the composition and construction of landfills, and a site analysis of

the selected site, Short Mountain Landfill.

Chapters IV and V describe the design proposal and then analyze the project to determine whether the toxic sublime was successfully exhibited through the design. Chapter IV establishes the design concept, goals and strategies. Chapter V walks through the site with the reader to illustrate which tensions of the toxic sublime are found and where in the site they exist. The end of this chapter addresses potential for future research.

II. THE SUBLIME

The sublime is an aesthetic category with a degree of nuance, requiring special attention to understand its full meaning. As Malcolm Heath notes, “the pursuit of sublimity is at risk from false substitutes” (Heath 12). Its various subgenres and the contexts in which the sublime is found continue to shroud the meaning in more mystery. The word’s use spans areas of study from literature, visual arts and architecture to chemistry. Though the topic of the sublime is broad, this project will synthesize and analyze only five subgenres which include, Edmund Burke’s and Immanuel Kant’s treatises, the *American sublime*, the *American technological sublime* and the toxic sublime. The toxic sublime, mentioned in the first chapter, is the primary focus of this project. The toxic sublime does not exist in a vacuum, but rather, it is a response to the other four subgenres. Burke and Kant were not the only Enlightenment figures to form an opinion on the sublime but their contributions have made some of the greatest impacts on the discourse of the topic. They are each cited often by Jennifer Peeples in the development of the toxic sublime. The American sublime altered some of Burke

and Kant’s definitions to suit the terrain of North America. The three precursors set the stage for David Nye’s argument presented in his book, *The American Technological Sublime*, published in 1994. Nye’s argument is critical in the formation of the toxic sublime as it represents the other side of the same coin: an awe of technological advances. Nye’s

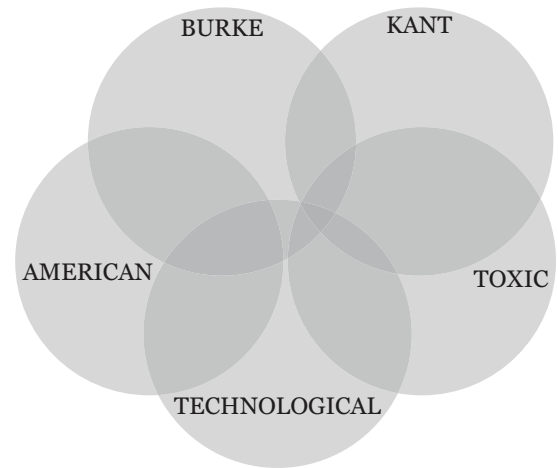


Figure 2.1. Connections between subsets of the sublime.

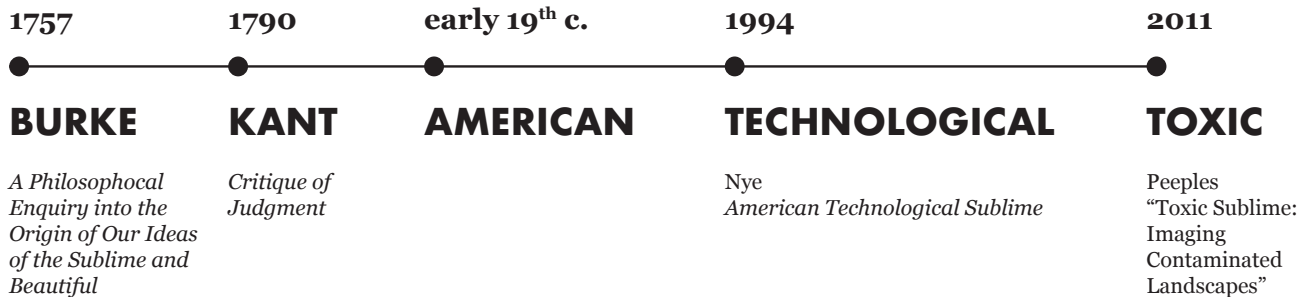


Figure 2.2. Timeline of the Sublime.

argument is based on the fact that technological feats inspire awe and nationalistic pride. Peeples, on the other hand, argues for the toxic sublime for which technological feats inspire awe but also horror in light of their ecological impacts. This project follows the history of the sublime that is most relevant to the toxic sublime.

Origins

The first notable use of the word *sublime* was possibly in the third century by a Greek philosopher, commonly referred to as “Longinus.” Longinus’ actual identity and the historical period in which he lived are uncertain but some of the first analyses of the sublime are attributed to him. In his treatise on the sublime, Longinus is also vague and fails to generate a specific definition for the word. Malcolm Heath illustrates that Longinus’ most definitive explanation includes that the sublime is

“‘a certain pinnacle and excellence of discourse.’ Second, it is the one thing that secures the preeminence and enduring fame of all the greatest writers of poetry and prose. Third, it can be recognized by its effect: it produces ecstasy; it astounds and does not (merely) persuade; it controls or irresistibly compels the audience. Fourth and finally, it is a local rather than a global effect: it comes at a single stroke, like lightning, and is not achieved by content or structure on a larger scale” (Heath 12).

The first element of the sublime that Longinus describes refers to the written word, which is why literary scholars, like Mary Arensberg, are interested in Longinus’ definition but it is otherwise vague and not particularly helpful (Heath 12). The second element, as Heath notes, “directs us to look for examples of sublimity in authors of acknowledged greatness, but one

might doubt whether any *single* quality is the shared source of enduring fame for authors who seem extremely diverse” (emphasis from the original, Heath 12). The third and fourth elements of Longinus’ sublime refer to the experience itself and how it can be identified. Unlike later definitions of the sublime, Longinus does not identify specific objects as inducers of a sublime experience and overall, “the Longinian sublime is essentially rhetorical and identified as the reader’s response to great utterance” (Arensberg 3). Subsequently, the translation of the sublime from a literary meaning to a physical or space-related experience took centuries.

Burke’s Sublime

The next iteration of the sublime was defined by Edmund Burke in his book, *A Philosophical Enquiry*, published in 1757. Here, Burke has fundamentally changed the meaning of Longinus’ sublime; it is no longer equated with the feeling of joy and exaltation but with that of terror (Burke 36). In doing so, Rodolphe Gasché writes, “the feeling of terror associated with the sublime brought to light a dark side, as it were, of the Enlightenment and its rationalist conception of the world” (Gasché 25). Gasché and David Nye emphasize the importance of historical and ideological context in the formation of Burke’s ideas. The mysterious dark ages faded as reason and science came to the forefront. The alchemical denotation of the sublime remained but interpretations of classical texts began to inform new ideas. In this context, “the reemergence of the sublime was part of a positive reevaluation of the natural world that by the eighteenth century had become a potential source of inspiration and education” (Nye 6). Though terror is the “ruling principle of the sublime” (Burke 53), Burke distinguishes that the experiencer cannot be in direct mortal danger. He writes, “for terror is a passion which always produces delight when it does not press too close” (Burke 42).

Burke lists the ways in which a sublime experience may be triggered including, obscurity, magnitude, smells, tastes, power, and color among other less powerful means. The first characteristic of Burke's sublime is obscurity. He states that "when we know the full extent of any danger, when we can accustom our eyes to it, a great deal of the apprehension vanishes" (54). This is reiterated later when he notes that "darkness is more productive of sublime ideas than light" (Burke 73). Both of these elicitors of the sublime hint at terror and the source of potential danger being difficult to identify. This theme is expanded in the section on sounds eliciting a sublime response: "a sudden beginning, or a sudden cessation of sound . . . has the same power" because "in everything sudden and unexpected, we are apt to start; that is, we have a perception of danger, and our nature rouses us to guard against it" (Burke 76). Unidentifiable threats induce terror and thus, a sublime experience.

Another important characteristic of Burke's sublime is a "greatness of dimension" (Burke 66). He describes the following types of magnitude: height, depth, length, and the impact of each on one's perception and ability to induce sublimity. He writes, "height is less grand than depth; and that we are more struck at looking down from a precipice, than at looking up at an object of equal height" (66). Vastness also feeds into another source of Burke's sublime: infinity. Like obscurity and magnitude, Burke believes that infinity eludes human capacity for understanding since reasoning cannot reduce infinity into understandable parts. Burke describes infinity as the "truest test of the sublime" (Burke 67). Burke continues to list smells, tastes, power, and color among other causes of the sublime but they are less reliable.

Once he has explored sublimity and reasoned his way to understanding the composition of the sublime, Burke takes time to emphasize how categorically different the beautiful is from the

sublime. He identifies beauty as "that quality or those qualities in bodies by which they cause love, or some passion similar to it" (83). If astonishment and terror are the defining terms of Burke's sublime, then love and admiration define beauty. Characteristics of the beautiful stand in contrast to those of the sublime: beautiful objects are small, smooth, polished, light, and delicate and ultimately, is founded on pleasure, rather than pain (Burke 113). Despite Burke's insistence that the beautiful and the sublime are separate categories, they are clearly closely related, as Burke uses one to describe what the other is not. In addition, both the beautiful and the sublime are induced by objects or features of nature. This understanding of the sublime changes in its next iteration.

Burke's concept of the sublime was widely read by other Enlightenment philosophers, of the period across the European continent. Rodolphe Gasché writes that "by hardening the distinctions and radically setting the sublime over against the beautiful, the *Enquiry* was able to develop a theory of the sublime whose extremism caught the immediate attention not only of his British but also of his French and German contemporaries" (Gasché 25). This, of course, has implications for another definition of the sublime developed by Immanuel Kant.

Kant's Sublime

Kant published his own interpretation of the sublime in his book, *Critique of Judgment*, in 1790. Kant's version of the sublime is notable for many reasons, with the most significant being that the sublime is no longer object-oriented, and that it is composed of two types. Kant's sublime differs from Burke's definition in a significant way in that the sublime is now subject-oriented. Kant writes, "instead, all we are entitled to say is that the object is suitable for exhibiting a sublimity that can be found in the mind" (Kant 99). This suggests that though an object can trigger a sublime response, that experience becomes disassociated with

that object and it is now the subject who is the focus of the sublime experience. Melissa McBay Merritt explains, “only a *state of mind* can truly be sublime” (emphasis from the original, Merritt 37). This is achieved when the subject is prompted by an object that exhibits an element of the sublime, such as a threat or something with great magnitude. Kant writes,

“the mind feels elevated in its own judgment of itself when it contemplates these without concern for their form and abandons itself to the imagination and to a reason that has to be connected with it — though quite without a determinate purpose, and merely expanding it — and finds all the might of the imagination still inadequate to reason’s ideas” (Kant 113).

As the subject shifts from struggling to comprehend to achieving an understanding, the power of reason overcomes the confusion and

thus, the subject returns to a homeostasis. This struggle to comprehend is the experience of the sublime, according to Kant.

Within Kant’s subject-oriented definition, he classifies two different kinds of sublime. Like Burke, Kant identifies vastness or magnitude as an attribute of what he calls the “mathematical sublime.” However, Kant states that what “we call *sublime . . . is absolutely large*” (emphasis from the original, Kant 103). That is, according to Kant, magnitude is absolute, rather than relative. This is similar to Burke’s theory in which infinity is an important part of the sublime; Kant believes the imagination is unable to grasp infinity and therefore, a sublime state of mind is reached. Of course, as David Nye illustrates, “since every phenomena in nature is measurable, and therefore great only in relation to other things, the infinity of the sublime ultimately is an idea, not a quality of the object itself” (Nye 7).



Figure 2.3. Frederic Edwin Church, *Niagara Falls*. 1857, Oil on canvas, 101.6 x 229.9 cm. National Gallery of Art, Washington, DC. From: National Gallery of Art, www.nga.gov (accessed June 10, 2019).

The second of Kant's sublime categories is the "dynamic sublime." The dynamic sublime is when "in an aesthetic judgment we consider nature as a might that has no dominance over us" (Kant 119). This is usually met when the subject "confronts a powerful and terrifying natural force" (Nye 7), such as a volcanic eruption or a tempest at sea. It is important to note that, like Burke, Kant also believed that the subject must not be in any direct mortal danger because "a person who is actually afraid . . . is not at all in the frame of mind [needed] to admire divine greatness" and thus achieve sublimity (Kant 122). By experiencing raw natural power but being assured of one's own safety allows the subject to "realize that nature can threaten only [their] physical being, leading [them] to feel superior to nature by virtue of [their] superior reason" (Nye 8). Kant's work continues to build on that of Burke's while contributing more complexity to the term.

American Sublime

Both Kant and Burke redefined what the sublime meant since Longinus' attempt in the third century. Their treatises laid the groundwork for many of the subgenres that followed. Ideas of the sublime that crossed the Atlantic Ocean to North America quickly evolved from an association with terror to that of nationalistic pride. Although the British colonies were well established in North America by the time Burke and Kant approached the subject, most of the settlers had little use for their theories. Though political and social elites were familiar with their work, "the dominant view of nature was that of farmers and pioneers, who were determined to subdue the land and the Native Americans. They regarded both as obstacles to be overcome" (Nye 17). However, after the American Revolution, a sense of urgency gripped the newborn nation as it sought to establish itself on the international stage. Chandos Michael Brown states that "the stakes were inordinately high, especially for the intellectuals and ideologues of the immediate

post-Revolutionary period, who confronted . . . the problem of creating a national identity as the *sine qua non* of the formation of the state itself, for they believed that nations must have a 'natural history' else they are simple inventions of the human intellect" (Brown 150). One way to legitimize the new United States included publishing articles on the country's many natural wonders. Jefferson published *Notes on the State of Virginia* in 1781 to establish the United States as a nation of exceptional character. As Brown explains, "Jefferson's vertiginous epiphany atop the natural bridge, where in the thrall of a near-blinding migraine he uttered a uniquely American testimony—this is 'the most sublime of Nature's works'—defined, in a sense, the American nationalist" (160). Nye supports this view, "lacking the usual rallying points (a royal family, a national church, a long history memorialized at the sites of important events), Americans turned to the landscape as the source of national character" (Nye 24). Indeed, Americans of the post-Revolutionary period had many prominent natural features to be proud of and "the marvelous ubiquity of such sublime sights ordained Americans as a special people" (Brown 157). Nye emphasizes this last point by stating, "it would be tempting to say that had the theory of the sublime not existed, Americans would have been forced to invent one" (Nye 1). Nye follows up by including, "in a sense, this is what happened, for by the middle of the nineteenth century the American sublime was no longer a copy of European theory" (Nye 1). Though the American sublime began with ideas about terror, it was continuously morphing into a more positive outlook, one that was associated with pride.

American Technological Sublime

Much like their celebration of natural features, citizens of the United States celebrated technological feats and great public works orchestrated by the new government. David Nye makes the case for this in *The American Technological Sublime*, published in 1994. Nye

argues that “the American public celebrated the fact that a spectacular sight was the biggest waterfall, the longest railway bridge, or the grandest canyon, and they did so with a touch of pride that Europe boasted no such wonders” (Nye 32). According to Nye, sublime technologies included the railroad, skyscrapers, electricity, the atomic bomb, landing on the moon and even the development of Las Vegas. These are all advances made by Americans in an effort to generate pride in the nation as well as to inspire awe in the achievements of mankind. Nye identifies four key differences between the American technological sublime and the natural sublime defined by Burke and Kant. The natural sublime emphasizes the personal experience of a subject faced with the sublime while the American technological sublime was “for all” and as in the case of the World’s Fairs, the sublime was “an experience organized for crowds of tourists” (43). Burke and, to some degree, Kant, both determine that the sublime can be reached primarily in nature whereas the

American technological sublime “embraced technology” (43). Finally, Kant emphasized the great sense of personal moral worth that could be felt when experiencing the sublime, while the American technological sublime “transformed the individual’s experience of immensity and awe into a belief in national greatness” (43). From this approach, it is clear to see how the sublime has evolved from the natural sublime of the Enlightenment era to the technological sublime of the Las Vegas strip. The two definitions hardly seem comparable despite the origins of the latter stemming from Burke and Kant themselves.

Toxic Sublime

Technological advances and great engineering feats made their impact on the American psyche, but the impacts on the landscape itself began to generate concern. Despite the continued growth of the U.S. economy throughout the latter half of the 20th century, anxieties about the environmental impact of increased militarization, mass production, and suburban sprawl began to rise. Peeples identifies a new form of the sublime that arises from the American technological sublime, which she calls the toxic sublime. To do so, she establishes the power of the natural sublime in landscape photography illustrated by the works of nature photographers like Ansel Adams and Carlton Watkins. Their work was used to alter the “perception (and eventually the politics) of land use and natural resources in the U.S. (Peeples 378). The next iteration of this kind of work, according to Peeples, is that of photographers, like Edward Burtynsky, who often photograph degraded sites. Edward Burtynsky is a Canadian photographer known for his depictions of highly polluted and dangerous landscapes. While his photographs starkly depict wastelands, his titles are minimal and typically only include the location of the landscape and, occasionally, the visible industry or pollution. As a result of the ambiguity and lack of judgment, Burtynsky’s



Figure 2.4. Technological sublime of nuclear testing. From: Pe4er Kuran. *How to Photograph an Atomic Bomb*. Santa Clarita, CA: VCE, 2006.

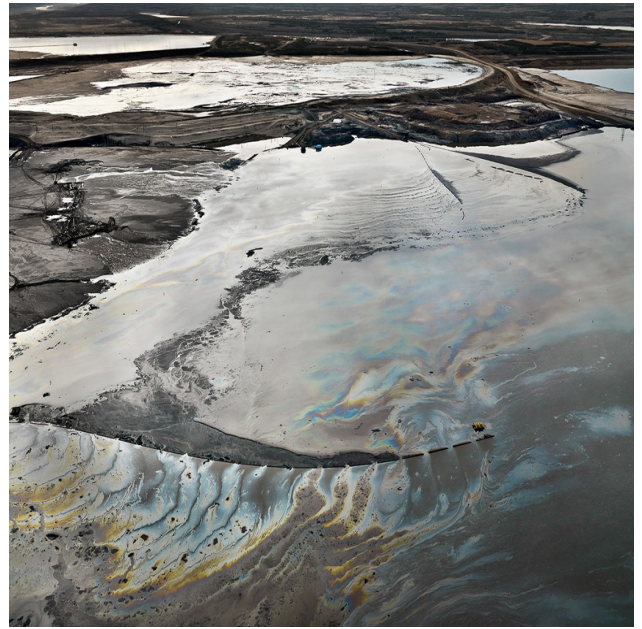


Figure 2.5 (Clockwise from top left).

Edward Burtynsky, *Rock of Ages #4*. 1991. From: Edward Burtynsky, www.edwardburtynsky.com (accessed June 10, 2019)

Edward Burtynsky, *Oil Sands #14*. 1996. From: Edward Burtynsky, www.edwardburtynsky.com (accessed June 10, 2019)

Edward Burtynsky, *Nickel Tailings #30*. 2007. From: Edward Burtynsky, www.edwardburtynsky.com (accessed June 10, 2019)

Edward Burtynsky, *Mines #43*. 1985. From: Edward Burtynsky, www.edwardburtynsky.com (accessed June 10, 2019)

work has been received with acclamation from some critics for exposing these polluted landscapes as well as with condemnation for, seemingly, glorifying them. Peeples responds to this ambiguity by situating her argument against that of David Nye's:

“for those who see Burtynsky's photographs as 'heroic tributes' to industry, their sublime response would fall within that of the technological sublime — pride and wonder in humans' ability to master their environment. For those who are awed and overwhelmed by the images, but made uncomfortable by their reflections of unchecked environmental degradation, another response is elicited—the toxic sublime” (Peeples 380).

Much like the natural, American and technological sublimes, Peeples argues, the toxic sublime is an “important indicator of the particular cultural [and] environmental moment” (Peeples 388). And much like her predecessors, Peeples seeks to identify the individual attributes that add up to create the toxic sublime. Peeples distinguishes five paradoxical attributes, or *tensions*, that define the toxic sublime: beauty and ugliness, magnitude and insignificance, known and unknown, inhabitation and desolation, and security and risk.

Peeples justifies the beauty and ugliness tension by stating that there is a “taboo against revealing the purposefully hidden [which requires] an elixir, something to aid in the digestion of the ugliness of the subject matter. Beauty functions as that aid” (Peeples 381-2). This dichotomous structure is similar to Burke's and Kant's belief that the subject of the sublime cannot be in true mortal danger because the pain of the experience would force the subject to avoid it. Peeples argues that in order to compel the observer to engage with Burtynsky's photographs and bear witness to

the ecological damage of industry, they must be simultaneously attracted and repelled by the media.

The next tension, magnitude and insignificance, is again, a reference to Burke and Kant. Peeples demonstrates that “it is unclear whether the landscape [depicted] is really so vast as to be wholly unrepresentable without losing recognizability, though the framing of Burtynsky's images leads the audience to question whether the destruction is just too massive to fit within the frame of his camera” (Peeples 383). Burtynsky achieves a sense of magnitude through framing and cropping of the images and then printing them at a large scale so that the photograph fills the field of vision of the observer and they cannot help but feel small and insignificant.

The third tension is that between the known and unknown and refers to what Burke would call obscurity. This is often demonstrated through Burtynsky's choice to limit. Rarely, he will mention the toxic substance that is depicted. The contrast of the given caption with the omission of more specific information creates the tension that Peeples identifies. The viewer may be able to determine that a substance is toxic but they do not know “what effect it has on the environment or the body, how dangerous it is, how long it has been there or how long it will stay, how deep it goes, or how far its contaminants have spread” (Peeples 384).

Peeples' fourth tension is inhabitation and desolation. This tension is illustrated by the fact that “while individuals are rarely included in Burtynsky's photographs, people are monstrously present in their absence. The physical evidence of their existence is the impetus for each image” (Peeples 384). The simultaneous absence and presence is paradoxical and creates a feeling of confusion for the observer. More importantly, much like the solitude required of the natural sublime, “excluding people from the image may allow for

a more compelling sublime response” (Peeples 384) This is because “the viewer does not compete with a subject for a connection to the sublime object” and the “viewer is left ‘alone’ to confront the object and compare it to one’s self” (Peeples 385). However with the toxic sublime, the subject does not benefit from a sense of moral superiority over nature and instead may feel a sense of obligation to effect positive change in the environment.

The final tension of the toxic sublime is security and risk. As in the example of magnitude and insignificance, Peeples examines Burtynsky’s lens position and the image format. Of course, the toxic subject matter “raises a feeling of anxiety through the mystery” which elicits concern for potential victims (Peeples 385). The true power in Burtynsky’s photographs lies in the position of the camera. In reference to *Mines #43 Berkeley Pit*, she writes,

“he uses an elevated perspective, one that allows the viewer to look down on the subject matter, and at the same time fills the photograph with the project he is capturing. The high vertical angle should call forth a feeling of power and mastery, as the viewer is positioned with an unrestricted panorama of the landscape. But Burtynsky denies a stable ground from which to make that assessment” (Peeples 386).

The perspective of looking down into the pit also recalls Burke’s description of vastness and his insistence that depth is more likely than height to generate a sublime response. The camera’s proximity to the edge of the precipice and the obscurity of the photographer’s own position in the landscape creates anxiety within the observer. However, as Peeples notes, “the audience is also in a position of relative security (potentially looking at the image from the comfort of their homes or museums)” (Peeples 386). This is also a reference to Burke and

Kant and their belief that the subject cannot experience pain without pleasure if they achieve sublimity.

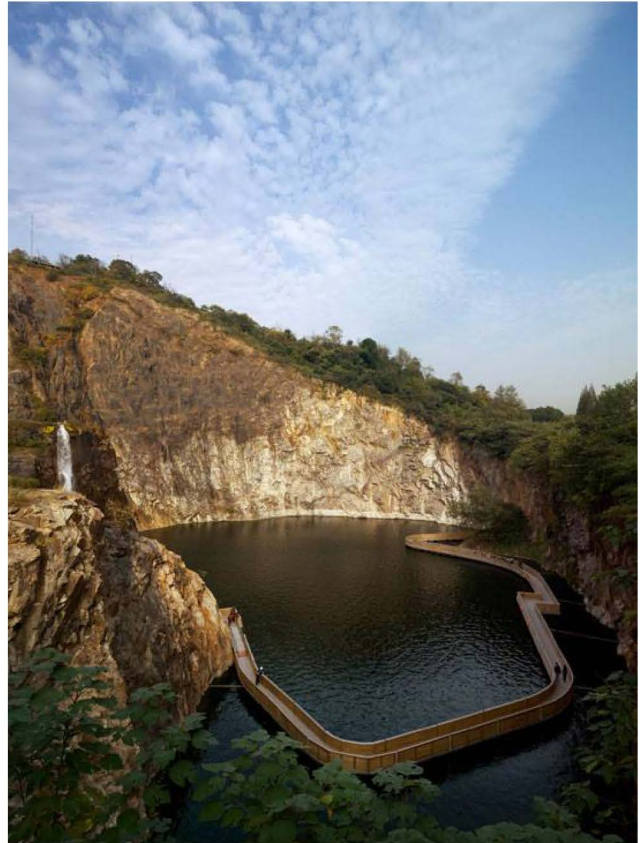
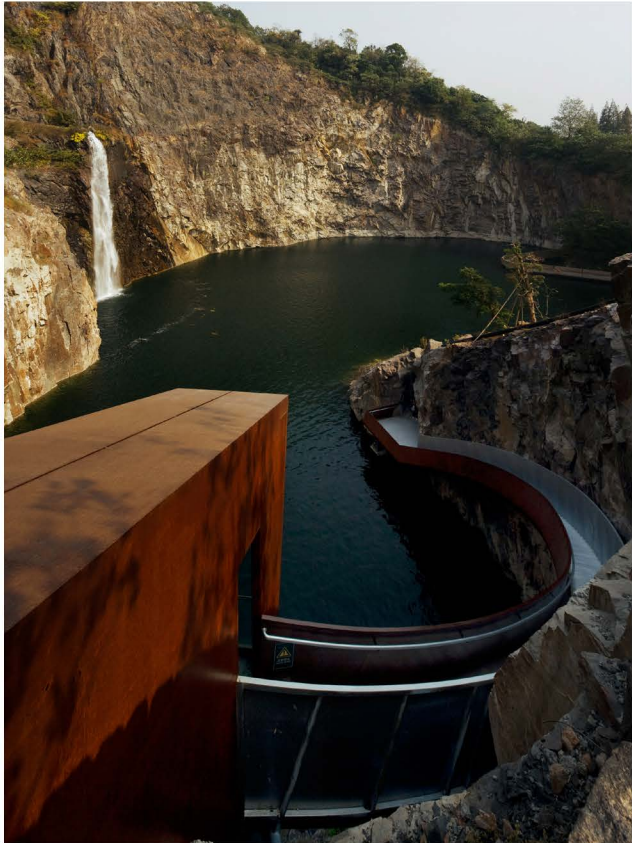
Overall, Peeples’ use of Burtynsky’s photographs to illustrate the toxic sublime is helpful and sets some parameters for this project. The toxic sublime has not yet been formally used in the design and analysis of a post-industrial landscape but its use of toxic landscape photographs provide opportunities to explore this translation. Peeples’ own concluding remark that “the tensions of the toxic sublime heighten the complexity and mystery of these places, creating the sublime responses of self-evaluation, deliberation, and irrationality from these altered landscapes where these responses would not otherwise exist” (Peeples 387-8) lends some urgency to the task of applying the toxic sublime in the design of these landscapes and, for this project in particular, landfills. An exploration of potential application will follow in the next section.

Toxic Sublime in the Landscape

Peeples has generated an illustrative exploration of the toxic sublime through an analysis of the five *tensions*. However, her focus has centered on communication through photographs and she does not explore how the toxic sublime may be experienced *in* the landscape. In order to learn how the toxic sublime may be amplified or manipulated in a design of a post-industrial landscape, this project will examine designed landscapes through the lens of the toxic sublime, using the five tensions as a measure. Two case studies will be examined: Quarry Garden in Shanghai, and Freshkills Park in New York. These two cases have been selected because they are both post-industrial sites and they possess an ability to foster a sublime experience.

Quarry Garden, Shanghai

Quarry Garden, designed by THUPDI and Tsinghua University, is located in the Shanghai



Opposite. Figure 2.6. (Clockwise from top) Quarry Garden Site Plan highlighting (A) The Deep Pool, (B) Mirror Lake, and (C) Platform “secret garden” | Perspective from the southwest side of the Deep Pool | Perspective from the northwest side of the Deep Pool.

THUPDI. 2010. From: ASLA, www.asla.org (accessed June 10, 2019).

Chenshan Mountain Botanical Garden, Shanghai, China. The site was used as a quarry from the 1950s to the end of the 1980s. At that point, the site had experienced significant environmental degradation, including a pit that cuts nearly 100 feet into the surface of the earth. Between the closure of the quarry and the opening of the garden, the site was closed to the public despite its location within the botanical garden. The primary goals of this design included, “the ecological restoration of [the] abandoned quarry and the recovery of five classic sights of the ‘Chen Mountain Eight Sights’ based on the site condition and traditional context” (THUPDI). Quarry Garden exhibits four tensions of the toxic sublime: beauty and ugliness, magnitude and insignificance, inhabitation and desolation, and security and risk.

According to Peeples, the tension between beauty and ugliness engages the observer through simultaneous attraction and repulsion. This is illustrated in the Quarry Garden through materiality. The industrial character of the site represents the ugly half of the tension; the area has been stripped of vegetation and the pit’s walls bear scars of machinery. Rather than masking the abuse, the designers have allowed these elements to remain exposed, visible to visitors. The effect of this treatment is heightened by the use of warm, natural-colored materials like corten steel, wood and stone. The intention is to invite people into a visibly uncomfortable space. For example, the wooden pathway that descends along the steep walls of the pit “offers multiple vantage points to admire cascading waterfalls and the dramatic surrounding cliff face,” (Land8). The observer

is able to examine the gabion walls closely on one side while admiring the view of a newly constructed waterfall cascade over the opposite end of the artificial Deep Pool. Here, the tension between the ugliness of industrial trauma and the beauty of designed interventions meet to create a sublime experience for visitors.

The Deep Pool is the primary source of tension between magnitude and insignificance in the Quarry Garden. The walls surrounding the artificial lake range in depth from 65 to 98 feet from the surface of the water to the top. The depth of the pool itself is not specified but the name, Deep Pool, lends a sense of magnitude to the body of water. Visitors first interact with the Deep Pool from above. This perspective grants



Figure 2.7. Edward Burtynsky, Mines #22, Kennecott Copper Mine, Bingham Valley Utah. 1983. From: Edward Burtynsky, www.edwardburtynsky.com (accessed June 10, 2019)

the viewer a sublime experience. In the chapter on vastness in *A Philosophical Enquiry*, Burke specifies that depth is a powerful cause of the sublime as “we are more struck at looking down from a precipice, than at looking up at an object of equal height” (66). This is similar to Peeples’ analysis of Burtynsky’s photograph, *Mines #22, Kennecott Copper Mine, Bingham Valley Utah* (Figure 2.7). The mine is “shown to be enormous” and the sense of scale “astonishes” viewers who search the photograph for something recognizable (383). This makes the viewer “feel insignificant in the face of human-made environmental destruction” (Peeples 383). Similarly, the Quarry Garden forces visitors to reckon with their own actions in relation to impacts in the landscape. However, unlike Peeples’ assumption that this kind of estimation “may cause bewilderment and inertia at the thought of rectifying a problem as massive as” this, the designers have offered a solution. The design not only integrates the site’s industrial history without masking it, it proposes a means of repair.

A third tension found in the Quarry Garden is inhabitation and desolation. As mentioned earlier, the quarry was in use for approximately 30 years before it was abandoned. The site’s history of intense and extractive use followed by abandonment and subsequent disrepair represents the inhabitation and desolation tension. Peeples notes that the “physical evidence of [human] existence is the impetus” for each of Burtynsky’s photographs even if they are rarely included. Peeples acknowledges Burtynsky’s critics who suggest that Burtynsky has erased or cleansed his images of victims (and perpetrators) but she offers another reading: “the audience is denied the certainty of knowing that the victims are someone else, someplace else” (385). Therefore, “the viewer does not compete with a subject for a connection to the sublime object . . . instead, the viewer is left ‘alone’ to confront the object and compare it to one’s self, the final stage of the sublime response” (Peeples 385). Similarly, renderings

and photographs of the Quarry Garden do not exhibit people in the space. Entry into the Deep Pool is also controlled so that visitors get a sense of being alone in the site, not only to appreciate the beauty but also to confront the site’s history.

In her discussion of the tension between security and risk, Peeples touches on the toxicity visible in Burtynsky’s photographs but her analysis primarily focuses on Burtynsky’s use of composition to illustrate this tension. As Peeples mentions, a viewer of Burtynsky’s photographs is secure in a museum or at home, away from the toxic sites that Burtynsky depicts and so Burtynsky must use the lens position and image cropping to engender a sublime response from the viewer. However, in the field, one is at risk of being exposed to toxins that may be present or one may actually be in a risky position, at the edge of a cliff. At the Quarry Garden, visitors are not at risk of exposure to toxins but instead are put in positions of apparent instability. THUPDI acknowledges that the Quarry Garden site used to be too dangerous for public access and they have successfully harnessed that feeling through the implementation of a corten steel tunnel and trestle bridge that descends into the Deep Pool. In order to enter the Deep Pool, visitors must enter a corten steel tunnel that dramatically tilts off the edge of the quarry pit and forces visitors to peer into the abyss. Visitors know that the tunnel is securely attached to the wall of the quarry but the angle at which visitors must walk to reach the end of the tunnel seems precarious. The tunnel then opens up and the floating bridge and staircase hugs the contours of the quarry’s walls as it descends to the water level at the bottom of the pit. At no point in this experience do visitors’ feet tread on the earth itself. Everything is suspended and visitors are not aware of how the tunnel and staircase are stabilized or supported. As the designers note, “now, you can experience a thrill but there will be no danger” (Green) which contributes to the tension between security and risk.

Figure 2.8. (Clockwise from top) Freshkills Park Site Plan | Image of a methane well head at Freshkills Park | Rendered perspective of strip-cropping.

From: Freshkills Park Alliance, www.Freshkills.org (accessed June 10, 2019)



Freshkills Park

The Quarry Garden in Shanghai presents a strong case for the toxic sublime in the landscape but unlike landfills, its primary industry consisted of extraction. In order to assess how the toxic sublime may be found in additive post-industrial sites, this project analyzes Freshkills Park. Freshkills Park is situated on the former Fresh Kills Landfill in Staten Island, New York, New York. Before 1948, the site was comprised of wetlands and a freshwater estuary but expanding development in New York City placed pressure on the city to reclaim the site for building construction. In 1948, the 450-acre site was designated as a short-term landfill. The intention was to fill in the estuary and marsh to provide a dry foundation for development. However, this plan was quickly abandoned in favor of minimizing the transportation costs of municipal waste. This not only kept the landfill open but also expanded its operations to 1200 acres. By 1991, Fresh Kills Landfill was receiving all municipal waste generated in New York City, which amounted to 29,000 tons per day. The site had expanded to 3,000 acres at that point, making it the largest landfill in the world. In the mid-1990s, mounting political pressure and changes in the waste management system made it feasible to set a closure date for 2001. The site was officially closed to municipal solid waste in March, 2001 but it briefly reopened to receive the debris of the September 11, 2001 terrorist attack. Despite the unexpected addition to the site, Freshkills remains a post-industrial site that “reveals ideas of contemporary urbanization, growth, and power. It is a ‘skyscraper’ made from the waste of generations and millions of people that introduces a new, uncanny type of topography” (Phillips 177). A competition was held just before the landfill’s closure and James Corner Field Operations won with the proposal, “Lifescape.” The proposal offers a phased transformation of the landfill site into a public park and functional ecosystem. Though the site inherently possesses qualities

of the toxic sublime, Field Operations also presents opportunities to manipulate and enhance that experience. At Freshkills Park, the toxic sublime is expressed through the tensions between beauty and ugliness, magnitude and insignificance, and inhabitation and desolation.

With 150 million tons of waste beneath the surface, finding beauty at Freshkills seems unexpected. Most landfills receive a generic treatment of six inches of soil and a layer of grass seed once they are capped which gives the illusion of a pastoral landscape. One of the primary goals of “Lifescape” is to establish a healthy ecological community. To do so requires working, literally, from the ground up. “Lifescape” intends to do by generating soil through strip-cropping. Importing soil to cover the mounds in 18 to 36 inches of soil, or enough growing medium for trees, is not economically feasible for a site of 2,200 acres. Strip-cropping, or planting in strips along the contours of the mounds, increases the organic content of the poor soils, increases soil depth, prevents the spread of invasive plant species, and aerates compacted soil (Field Operations 32). Through this technique, “fast-growing plants can be repeatedly grown and then plowed into the soil to create a green manure, adding organic matter and depth to the soil over time” (Field Operations 32). In addition to restoring soil health, “the distinctive visual and spatial qualities of large-scale strip cropping (particularly in the city) could be beautiful and experientially distinctive” (Field Operations 32). Here, Field Operations explicitly employs beauty as a means to attract visitors and to generate curiosity. However, a tension is created when visitors notice the relics of past industry, methane well-heads (*Figure 2.8*), which “have an intriguing industrial aesthetic that reminds visitors to consider the culture that has produced this remarkable terrain” (Bergelin). It is evident that the beautiful interventions work in tandem with the pre-existing conditions to create a sublime experience for visitors, even in the nascent stages of design implementation.

Freshkills Park also offers an opportunity to explore the tension between magnitude and insignificance. As Peeples states, “toxins may be measured in milligrams, but for the toxic sublime, size matters” (382). Corner echoes the importance of magnitude when he writes that “the aesthetic experience of the place will be vast in scale, spatially open and rugged in character, affording dramatic vistas, exposure to the elements, and huge open spaces unlike any other in the New York metropolitan region” (15). This experience essentially recalls the American sublime. However, unlike the scenery of the Hudson River Valley, Freshkills Park topography does not share the same geologic history. The “Landscape” proposal will manipulate the experience of visitors by incorporating larger than human-scale elements that overwhelm the imagination. This tension will be most felt in the monumental earthwork that Corner proposes to memorialize the lives lost on September 11th: “the same size and scale of the original twin towers” (Field Operations 9). The scale of these earthforms alone seems unimaginable but that is only a physical manifestation of magnitude. In addition, “the slow, simple durational experience of ascending the incline, open to the sky and vast prairie horizon, will allow people to reflect on the magnitude of loss” (Corner 20). Corner deliberately cites magnitude to elicit a sublime experience for visitors to the site in physical scale as well as in an emotional capacity. In this case, Field Operations relies on both a physical and cognitive sense of vastness to overwhelm visitors, making them feel insignificant in comparison.

Freshkills offers another opportunity to explore the tension between inhabitation and desolation. At almost three times the size of Central Park, Freshkills Park will be the largest public green space in the city of New York. In 2017, New York City was ranked as the most populous city in America at 8.63 million residents. This is more than double

the next most populous city, Los Angeles which claimed 4 million residents in the same year. The importance of Freshkills Park as a public amenity to New York citizens cannot be understated. So how, in a city of almost 9 million people, can one experience isolation, solitude, or in Peeples’ terms, desolation? Freshkills Park is, in some respects, like a cemetery. It is filled with the remains of generations of New Yorkers, including, in the case of the West Mound, actual human remains which could not be separated from the debris of the September 11, 2001 terrorist attacks. The presence of all of these people must be constantly felt as visitors experience the site, even if they find themselves alone. Of course, this cognitive awareness may escape some visitors and so, Field Operations offers some visual cues to care. For example, strip-cropping is relatively low maintenance so park staff may only be present a couple times per year to till and reseed. Despite the lack of a human presence, the deliberate formal quality of the planted strips is “consistent with the goal of staging implementation so the parkland is inhabited, understood and enjoyed in each stage of its transformation as a legible landscape-in-process” (Corner 18). In this way, Freshkills Park may not always be occupied by humans but it will not feel like an abandoned industrial wasteland.

Conclusion

The cases studied in this section present some options, designed and inherent, that can be manipulated in the design of an explicitly toxic sublime landscape. These case studies demonstrate that the toxic sublime may be experienced cognitively and spatially. Although most of Peeples’ tensions of the toxic sublime could be identified in these two examples, the tension between known and unknown was unable to be explored. This may be due to the fact that these sites, though toxic, do not exhibit many visual cues nor do they directly expose visitors to toxins. Because these places are open

to the public, enhanced safety measures have been implemented to minimize risk. At landfills in particular, leachate and methane continue to be the greatest risk to the public and so, they are carefully monitored. Field Operations addresses concerns by citing federal, state and local regulatory standards that must be met before any part of the site can be opened to the public. The designers of Quarry Garden in Shanghai mention that the site was “dangerous” before the intervention but otherwise does not specify whether the public should be concerned about contamination or exposure to chemicals. Given that the site was a stone quarry that likely employed mechanical extraction, there may be minimal toxins at the Quarry Garden that are a result of that industry. Overall, there may be too many known and not enough unknown entities to elicit the toxic sublime through that particular tension in these sites.

Some other conclusions that can be made from this analysis include: engaging with existing features; manipulating views and topography; and producing cognitive dissonance between consumption and impact. Peeples’ analysis suggests the importance of maintaining the toxic atmosphere of a post-industrial landscape. This may be achieved through an incorporation of relics of industry on the site. This is illustrated in the two case studies

presented earlier. At Quarry Garden, THUPDI and Tsinghua University chose not to regrade the slopes of the quarry pit; the steep slopes play an important part in the experience of the site. As visitors enter the steel tunnel, they become acutely aware of the dramatic impact of the quarry industry. Similarly, at Freshkills Park, the design proposes an ecological and cultural restoration of the site that recalls its history and the story of the landfill’s contents. Incorporating these relics of industry are key to expressing the toxic sublime but the manipulation of viewsheds and the landform itself may facilitate the experience. This is evident at Freshkills Park. While Field Operations is unable to reshape the form of the four mounds, the design proposal builds on the existing topography with vegetation and sculpture. Peeples speaks to the negative effect Burtynsky’s photographs have on the psyche. This is a fair assessment of how one may view a photograph of a toxic site. However, this may not necessarily describe the experience of an individual in a toxic landscape. Peeples addresses a cognitive and emotional reaction to viewing a toxic site but neglects the physical discomfort and how that influences the experience as a whole. The case studies provide some insight into how a full-body experience may affect how an individual feels about the subject matter.

III. LANDFILLS

Waste in America

Waste in the United States is not new but the way that garbage is currently handled is drastically different from the way it had been before industrialization. Before the rise of industrialization in this country, waste was a common sight in urban and rural contexts. The journalist, Heather Rogers, writes in her 2006 book, *Gone Tomorrow*, “even though colonial farms and cobblestone city alleys were cluttered with debris, the waste of preindustrial and early industrial societies was comparatively minimal and could for the most part be absorbed back into the earth” (31). This was largely due to the limited availability and thus the expense of manufactured goods. This meant that greater care was taken for these items and if they broke, they were repaired rather than disposed of. Therefore, items of waste tended to be organic and were often tossed out the window or back door to decompose or to be scavenged on by pigs. This was true even in urban areas. Kevin Lynch characterizes cities of the past as filthy in his book, *Wasting Away*, published in 1990. He states that “they sat in their own wastes, which gradually rose around them” (44). Lynch then idealizes the rural landscape as “relatively free of human waste, except in the immediate vicinity of dwellings” (44). Lynch does not explore how the availability of land and lack of infrastructure affected the treatment of waste at that time but Rogers addresses this effectively in *Gone Tomorrow*. She writes, “in the nineteenth century refuse was sorted, municipal waste was composted, and all kinds of materials that left the home as discards were extensively reused” (9). This statement offers a romanticized view of waste management that Rogers works to dispel later in her book as she describes wretched

conditions in low income neighborhoods of early American cities. In fact, it is these neighborhoods, according Rogers, that led to the change in waste management.

Waste handling began to change early in the 20th century as responsibility shifted from an individual level to that of municipalities. The City Beautiful movement also played a significant role in this change as garbage in urban areas started to be collected and disposed of on the outskirts of town in a landfill or in local waterways. As Rogers states, “the earliest sanitation engineers embarked on what has become an ongoing aim in the profession: disappearing garbage” (61). This new treatment of waste certainly sanitized urban areas but it also led to a disconnect between consumers and the products they used as well as the placement of more pressure on ecosystems outside urban areas to absorb the influx of human waste. As Kevin Lynch notes, “The filthy cities of history, which sat in a clean countryside, are succeeded by clean cities encircled at some distance by their wastes” (Lynch 45). The waste, however, was still primarily made up of the same processes: “most municipal waste took the form of coal ashes . . . and food scraps” (Leonard 192) which as noted by Rogers were less toxic and “traditionally, . . . did not stand in opposition to nature so much as they were nature temporarily out of place” (31). This, of course, changed with increasing industrialization and the lowering cost of manufactured goods.

Landfill was not the most common form of waste management before the Depression. Often, collected garbage was sorted and combed through for resource extraction and reuse. These methods became less popular

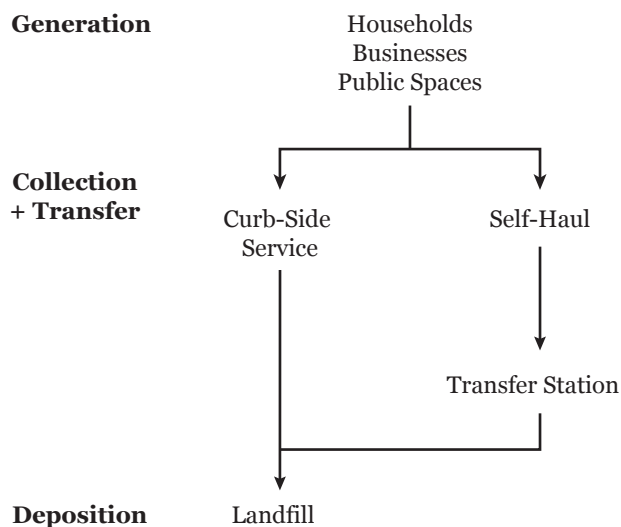


Figure 3.1. Diagram of a typical waste stream.

as the quality of life improved in the United States. Another convenient alternative for cities on waterways, like the Great Lakes, rivers and oceans, involved dumping trash into the water. This eventually fell out of favor as trash resurfaced downstream. Another common method was incineration but the resulting air pollution raised public opposition. To solidify the landfill's dominance in the industry of waste management, the Great Depression was squeezing local budgets and so, "cities switched from using expensive and complex treatment systems . . . to various forms of land dumping, the cheapest method available" (Rogers 79). Factors such as these led to the development of the "sanitary" landfill, the first one of which was built in 1934, in Fresno, California (Rogers 87). The "sanitary" landfill earned this designation because it differed from previous open-pit "dumps". Partly rebranding and partly engineering innovation, the "sanitary" landfill is characterized by compaction and covering thin layers of garbage with a layer of dirt which deterred pests from scavenging and reduced some of the stench (Rogers 88). In addition to the cheapness of land, this new system also kept labor costs to a minimum as mechanized draglines meant that one person could perform most of the necessary tasks. Municipal landfills

were then not only "sanitary" but cost-efficient.

The creation of the "sanitary" landfill and the collection of garbage by municipalities left one blank spot in the equation of the waste stream as it is known today: the waste itself. As mentioned previously, waste had traditionally been made up of organic material: ashes, food scraps, and excrement. This changed slowly with increased industrialization and then dramatically with the invention of plastics and the rise of consumerism in post-war America. As Rogers notes, "the golden era of consumption had arrived, bringing the full materialization of modern garbage as we know it: soft, toxic, ubiquitous" (103). After World War II, the cost of living index remained low and the quality of life improved. Members of the growing middle class were purchasing homes in newly developed suburbs and they filled these homes with cheaply manufactured goods. Manufacturers began to incorporate built-in obsolescence and disposables as part of their product lines. This only increased the levels of waste headed to the landfill. Rogers' statement also speaks to the growing toxicity of municipal garbage as chemicals and plastics entered the waste stream.

Though the "golden era" of consumerism has yet to reach its peak, the waste management industry hit a snag in the mid 1980s. The Resource Conservation and Recovery Act (RCRA) was signed into law in 1976, but it took almost ten years before the federal government began to strictly enforce it. Rogers notes that the "national average price for dumping trash in landfills remained consistent between the 1950s and the early 1980s, but between 1984 and 1988 the cost suddenly more than doubled" (155). A provision of the RCRA called Subtitle D "required safety standards for land disposal sites and was the first federal effort to regulate waste facilities" (Rogers 155). Subtitle D regulates "non-hazardous solid waste" and bans "open dumping of waste and set[s] minimum federal criteria for the operation of municipal landfills . . . including design criteria, location

restrictions, financial assurance, corrective action . . . and closure requirement” (“Resource Conservation and Recovery Act (RCRA) Overview”). Despite this new regulation and enforcement, the law does not apply to landfills that closed by 1991. This means that any municipal solid waste landfill that could not meet the regulations by 1991 were forced to close and were also not responsible for the ecological damage that they caused. As federal regulations pressured smaller, locally-owned

landfills, owners often opted to sell their operations to growing waste management corporations. Companies such as Waste Management, Inc., Browning-Ferris Industries, and USA Waste, were able to acquire much of the existing waste management infrastructure and could make a profit because they owned all segments of the waste stream (*Figure 3.1*), from the curb to the landfill.

Due to ongoing economic and social pressures,

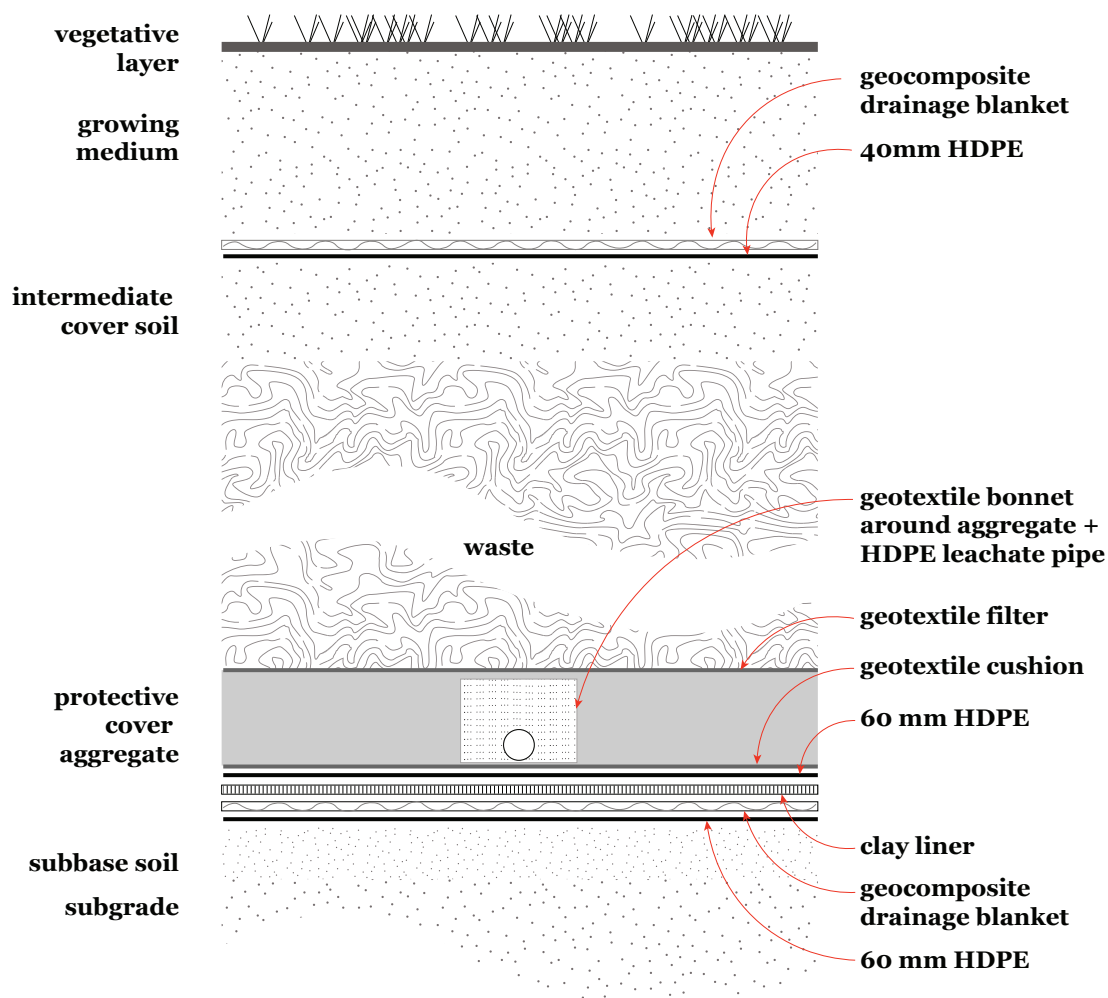


Figure 3.2. Section of a typical landfill cell and capping layers.

technological and engineering advances, and increased federal regulations, landfills have developed into what is seen today. Garbage is now encapsulated in “sealed underground plastic ‘cells’” which are expected to “hold their densely compacted trash in perpetuity” (Rogers 15). Landfills cost an average of “\$500,000 per acre for research, development, and construction” (Rogers 16) which can be cost-prohibitive for many municipalities and is another reason why waste management corporations have gained a significant foothold in the industry. It also explains why these corporations are investing in the development of “mega-fills,” super-sized landfills that “range in size from ten to one hundred acres across and up to one hundred feet deep” for an individual cell (Rogers 16). Even Rogers describes mega-fills as “awesome, eerie scenes” (16), a description that speaks to landfills’ inherently sublime character. Though increasingly popular as garbage depositories, not many exist. Indeed, none of the landfills in the Willamette Valley qualify as mega-fills. The mega-fills in this region are located in northeastern Oregon and southeastern Washington, on both sides of the Columbia River. Though they are located far away from many of the dense populations of the Pacific Northwest, these mega-fills receive waste from great distances because they are cheaper to operate than the mid-size landfills found in most municipalities.

The cells themselves generally follow the same criteria across the United States, as shown in *Figure 3.2*. Typically, at the bottom of the landfill, the ground is prepared by first excavating a pit where the garbage can rest and then compacting several feet of the native soil. It may be followed by a layer of structural fill, the thickness of which depends on the required elevation of the bottom of the cell. Then, a half-inch layer of bentonite clay padding (Claymax) is laid down. This is the first stop-gap measure to prevent leachate from entering the groundwater table. This is followed by 60-mil black plastic sheeting called, high-density

polyethylene (HDPE), and then another layer of bentonite clay and 60-mil HDPE. The bentonite clay is intended to expand and fill the gaps made by any punctures that could happen. The second layer of bentonite clay and HDPE will typically also hold the monitors that sense potential leaks in the bottom liner. These layers are covered by a half-inch thick synthetic felt fabric that cushions the layers below from anything that could puncture through the barrier that protects the soil, water table, and ecosystem downstream of the site. All of this is topped off with eighteen inches of gravel to facilitate drainage of future leachate which will be collected into perforated pipes to be drained into a leachate collection pool. The cell is then ready to be filled with garbage.

The treatment of garbage in the lined cell has not changed much since the 1930s. Garbage is dumped into the pit, at which point, the dragline smooths the garbage out into a shallow layer and compacts the garbage before, in the best cases, covering it with a thin, compacted layer of dirt to deter pests. Once the cell is filled, it can be capped. The capping process begins with covering the garbage in several feet of soil which is graded and compacted (Rogers 19) to facilitate drainage off of the landfill as quickly as possible to prevent any further infiltration and leachate generation. Once the soil is graded and compacted appropriately, “layers of Claymax, synthetic mesh, and plastic sheeting are draped across the top of the cell and joined with the bottom liner to fully encapsulate all those worn out shoes, dirty diapers, old TVs and discarded wrappers” (Rogers 19). In addition, wells are drilled through all of these layers and methane pumps are installed to harvest the gas which not only powers the operation of the landfill but is sold to the local electrical utility company. In this way, the landfill continues to provide a profit to the landfill operators even after a cell no longer accepts garbage.

Short Mountain Landfill

Short Mountain Landfill, in Lane County Oregon, has been selected because it is representative of landfills in the state of Oregon. *Figure 3.3* illustrates Short Mountain’s average capacity and waste-in-place in comparison to others in Oregon. This means that the processes made and the conclusions drawn from this site design may be applied to other sites in Oregon, or even within the Pacific Northwest.

Short Mountain Landfill is located in Lane County illustrated in *Figure 3.4*, in western Oregon. Lane County is notable because it is the only county in Oregon to traverse these three

ecoregions of Oregon: the coast and coastal range, the Willamette Valley, and the Cascade Mountains. The landfill has a central location (*Figure 3.5*) which allows easier access across the county and it is five miles south of the county seat and largest regional urban center, Eugene (*Figure 3.6*).

Short Mountain Landfill sits in the southern Willamette Valley. The Middle and Coast Forks of the Willamette River descend from their headwaters in the Cascade Mountains and merge just south of Springfield, Oregon. The landfill is sited on the western bank of the Coast Fork of the Willamette River. Prior to 1880, the land cover of the Willamette Valley was

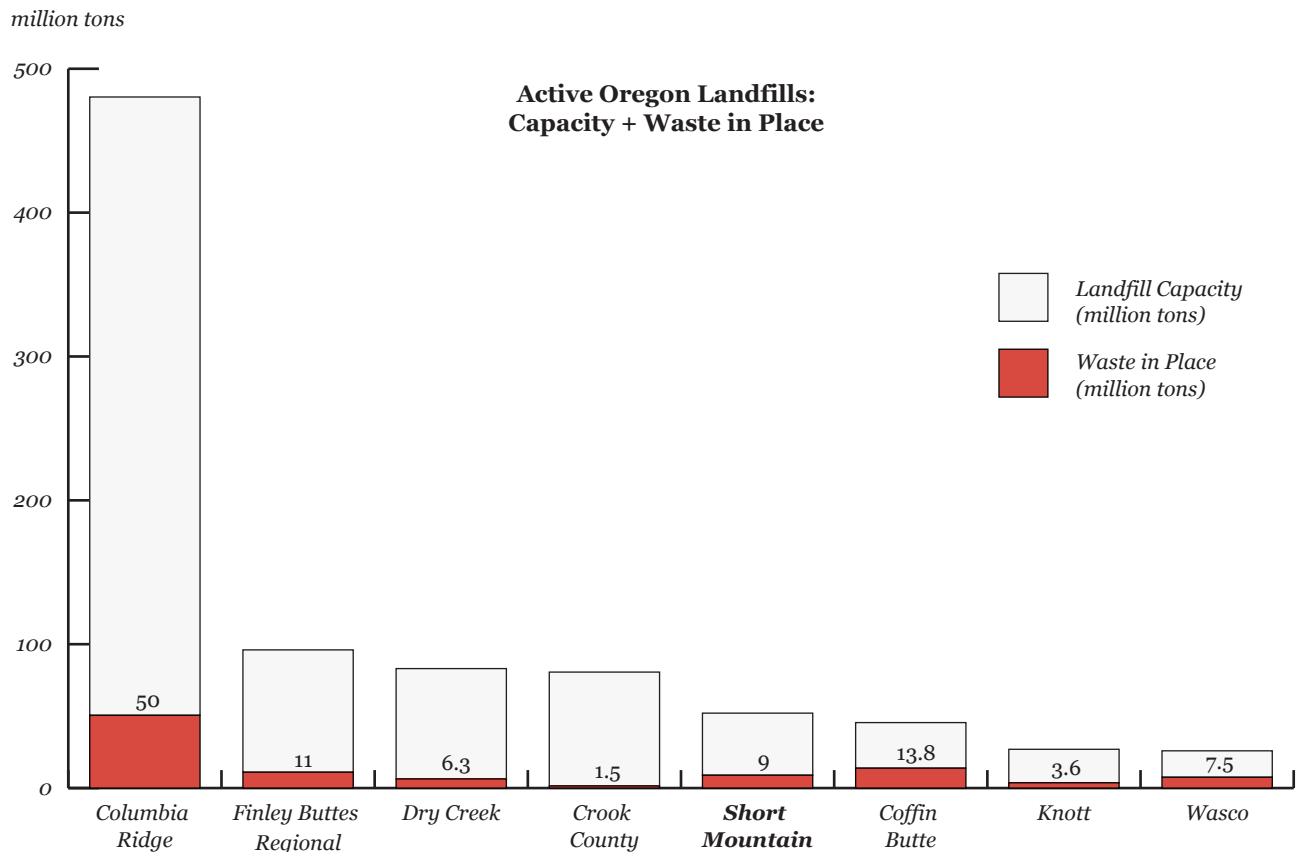


Figure 3.3. Active Oregon Landfills: Capacity + Waste in Place

characterized by a matrix of wetland, prairie, oak savanna, hardwood riparian forests and upland closed forests. Much of the prairie and oak savanna gave way to pasture and cropland as white settlement densified the valley. The Willamette Valley is well known for its rich alluvial soils and agriculture remains a key industry of the region. The soil on which the landfill sits has been classified as prime agricultural soil by the USDA and the adjacent properties are zoned for agriculture.

The 575-acre Short Mountain Landfill opened in 1976 as a public facility, owned by Lane County. As illustrated in *Figure 3.7*, the landfill is situated against the south-western slope of Short Mountain, for which it is named. The site's other bounding elements include Interstate 5 to the west, the Coast Fork of the Willamette River to the east, and Camas Swale on the southern edge which flows to the Coast Fork. Elevation of the site ranges from 500 feet above sea level at its lowest point to 950 feet above sea level

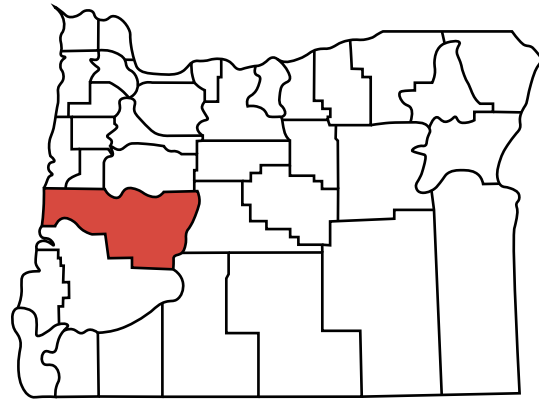


Figure 3.4. Lane County, Oregon

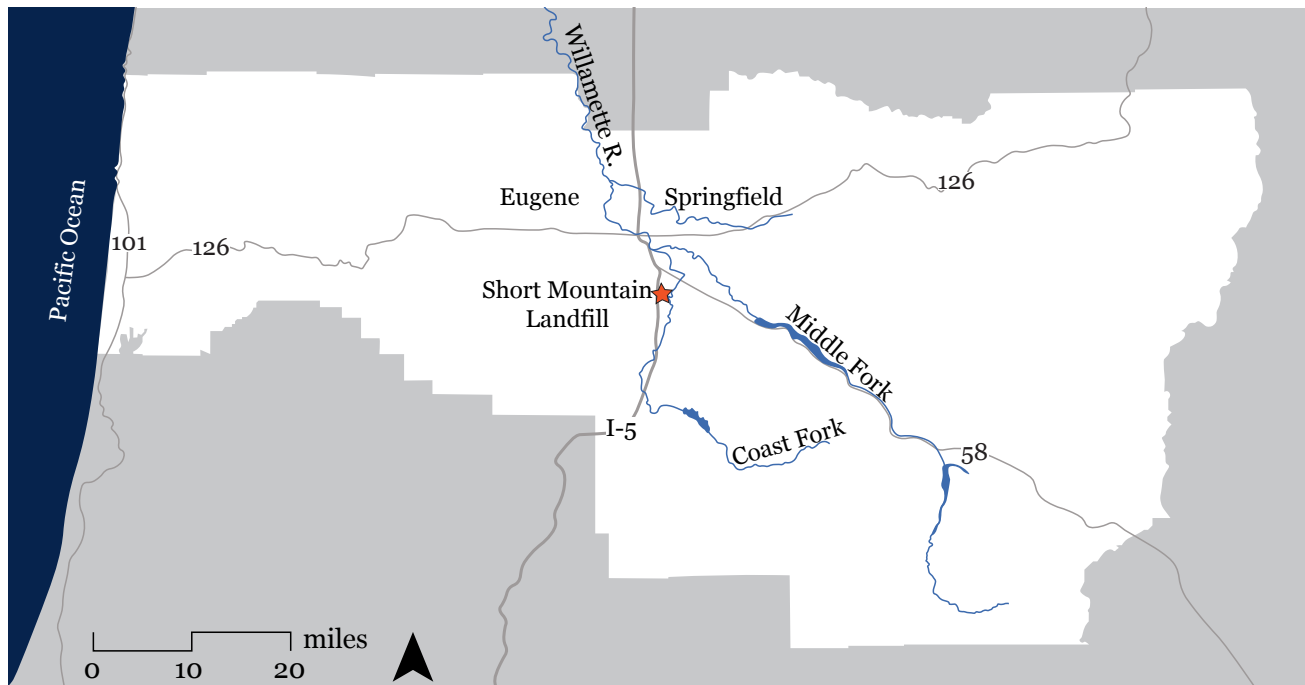


Figure 3.5. Lane County, Oregon

near the top of Short Mountain. Within the site, 78 acres are used for the landfill operation and capped cells occupy 38 acres. The projected development of the landfill will eventually cover 110 acres (Ferguson). The tallest mound, Phase II/III is 160 feet tall.

Short Mountain Landfill originally opened with eleven planned phases, each containing one lined cell. This plan has since expanded to include two more cells, extending its life for an additional 150 years but their location has not yet been made public. The landfills' capacity is at about 43 million tons of waste and

currently holds 9 million tons. It receives 800 tons of waste per day on average from across the county. The composition of waste received includes municipal solid waste, demolition and construction debris, asbestos-containing material, petroleum-contaminated soil, medical waste, and non-hazardous industrial waste. Most of the cells contain the liner system described earlier in this chapter but Phase I only has a clay liner which means that some leachate escapes and enters the groundwater. Excavation and preparation for a new cell begin before the old cell is filled, illustrated in *Figure 3.8*. Once an old cell is filled, garbage is deposited into a



Figure 3.6. Geographic context of Short Mountain Landfill.

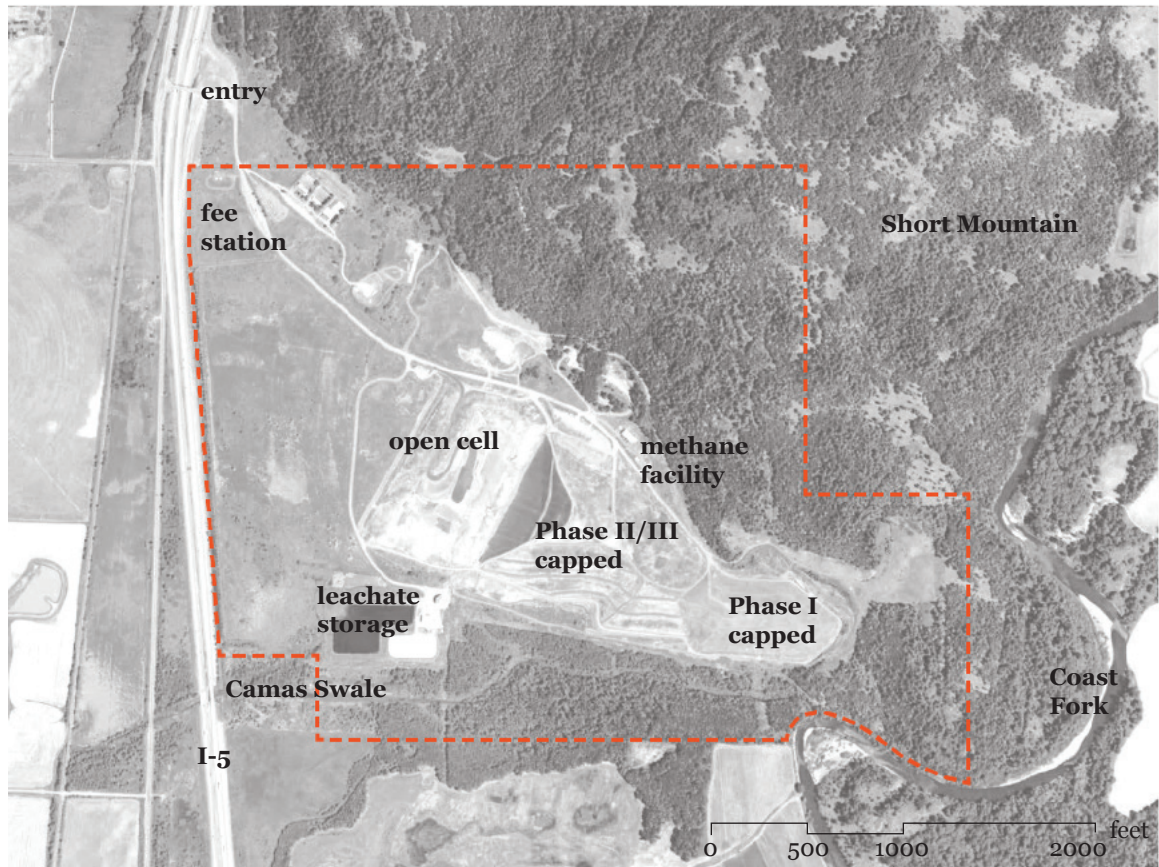


Figure 3.7. Site Inventory

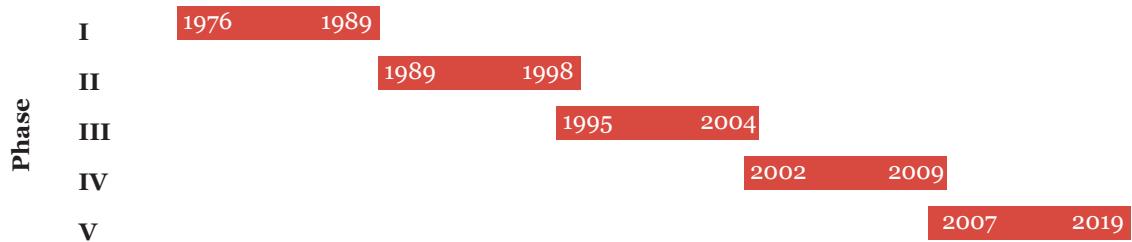


Figure 3.8. Cell Phasing Timeline

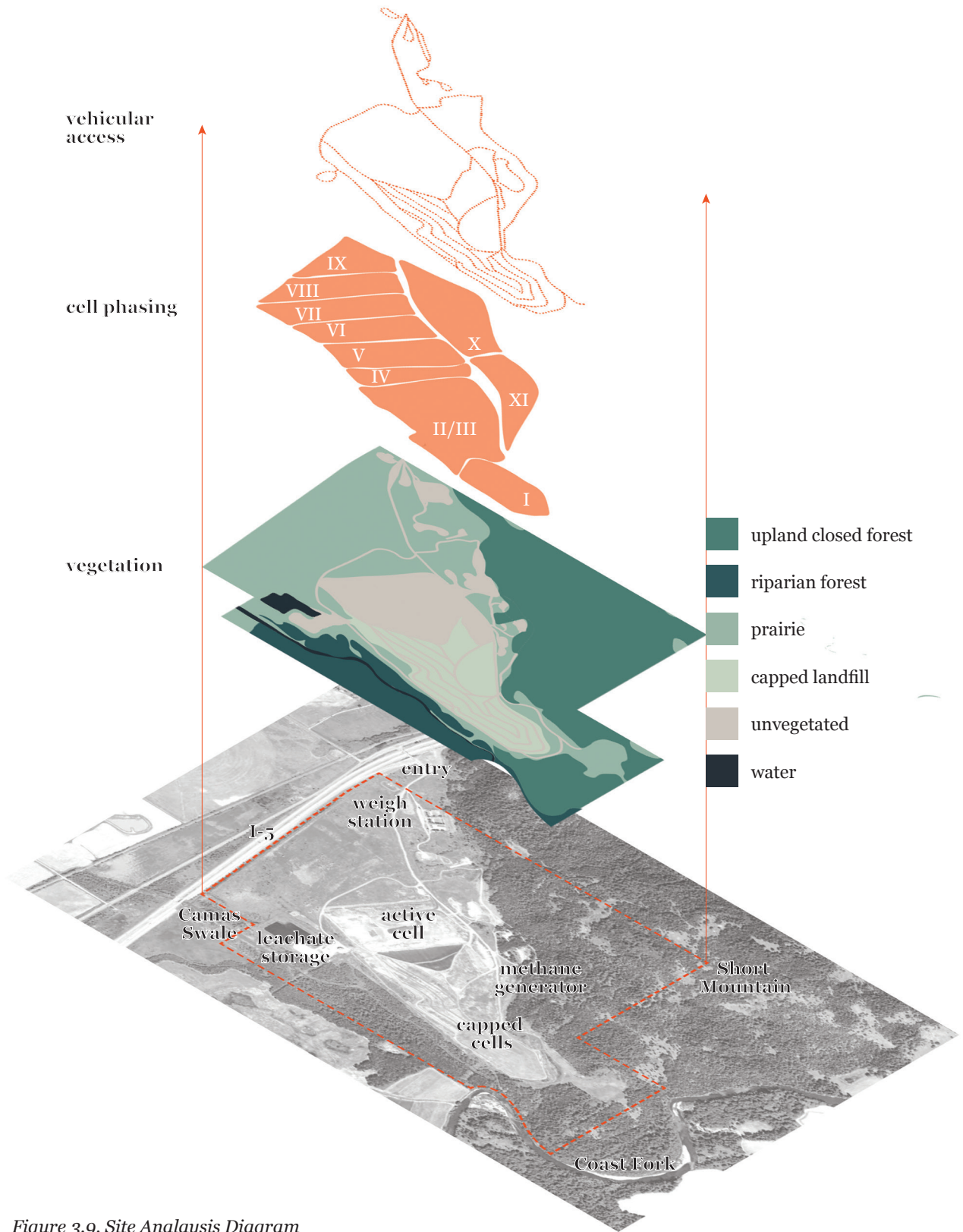


Figure 3.9. Site Analysis Diagram

new cell while the final capping layers are added to the old one.

The landfill produces 22 million gallons of leachate every year. With the exception of Phase I, leachate is collected and stored on the southern edge of the site. The first leachate lagoon has been decommissioned and remains uncovered. The newer lagoon holds 2.1 million gallons. The newest structure, a 46-foot-tall tank, holds an additional 1.3 million gallons, and is covered by an aluminum geodesic dome that can be seen from the highway. The leachate is composed of 75 percent organic waste and 25 percent material particles. Most of the leachate is generated during the winter, when Oregon receives most of its precipitation. This can be as much as 200,000 gallons per day. Trucks transport the leachate from the landfill, 7,000 gallons at a time, to a wastewater facility in Eugene (Schrock).

The site is accessed by Dillard Road which crosses Interstate 5 from the west and curves south to enter. A shooting range for emergency personnel is located near the entrance and has its own service road that stems from Dillard Road. A scale house and fee station limits access to the public and weighs garbage trucks as they enter to deliver loads. Past the fee station, the most frequently used road spirals to the top of the opened cell. Another road turns south towards the leachate storage facility while the main access road continues east, following the curve of Short Mountain's base. A methane gas conversion facility occupies a terrace north of the first three cells. Gravel roads stem off the main roads to wind up the capped mounds, providing access for maintenance vehicles and educational tours.

IV. DESIGN

Design Concept

A key factor in Peeples' analysis of the toxic sublime involved the framing and composition of photographs. This important element of the toxic sublime can be translated into the landscape through the use of sculptures that frame the landscape *in situ*. This project's design concept proposes a sculpture park design for Short Mountain Landfill that will elicit the toxic sublime through the use of framing. This design concept requires an analysis of a precedent to understand the history and design of sculpture parks. Storm King Art Center in upstate New York has been selected for the precedent analysis due to its comparative size, shared rural and agricultural context and industrial past.

There is a long tradition of collecting and placing sculptures in the landscape. However, the "museumization" of outdoor sculpture is a phenomenon of the 20th century. The first American sculpture garden, Brookgreen Gardens in South Carolina, opened in 1931 with the intention to preserve and exhibit sculpture, and native southeastern flora and fauna. Storm King Art Center opened in 1960 as "the first outdoor museum dedicated solely to the exhibition of sculpture" (Lehane 9). The sculpture park and garden then rose in popularity dramatically in the second half of the 20th century. The sculpture park's rise coincided, or perhaps correlated, with the rise of Modernism in architecture—as "the size of buildings increased, sculptors sought design balance by working larger" (Lehane 9). A subsequent response to the large-scale works of Picasso and Calder, was Land Art, which "explored the potential of landscape and environment as both material and site"

(Dempsey 8). These artistic traditions coupled with the "sensibility of experiencing a work of sculpture outdoors carried over into the sculpture park" (Lehane 9).

A consistent feature of sculpture parks is the relationship between viewer, object, and context. Landscape architect, Barbara Swift, identifies two organizational frameworks for sculpture gardens: a three-way relationship, as noted previously, between viewer, object and context, and a four-way relationship between viewer, object, context, and patron. The former tends to be more loosely structured and personal while the latter provides a structured sequence of rooms with a centralized focus (Swift 55). Regardless of type, Swift expresses that "the challenge is to build on the power and inherent nature of the place" (60). Once an organizing structure has been adopted, the designer analyzes the site itself: "the designer . . . begins with space, using flora, sky, light, and topography to create contrast, movement, shape, color, texture" (Lehane 10). Then, important design elements such as, "vistas, view corridors, landforms, and enclosures" (55) can be incorporated. These elements, "coupled with the kinesthetic experience of moving through the landscape, structure the experience" (Swift 55). They are enhanced by

"rich ecosystems and phenomenological characteristics of a specific landscape [which] inextricably link the act of seeing with movement, smell, temperature, weather, seasons, and memory, resulting in a full-body experience of a specific time and place in the context of cultural references. This is

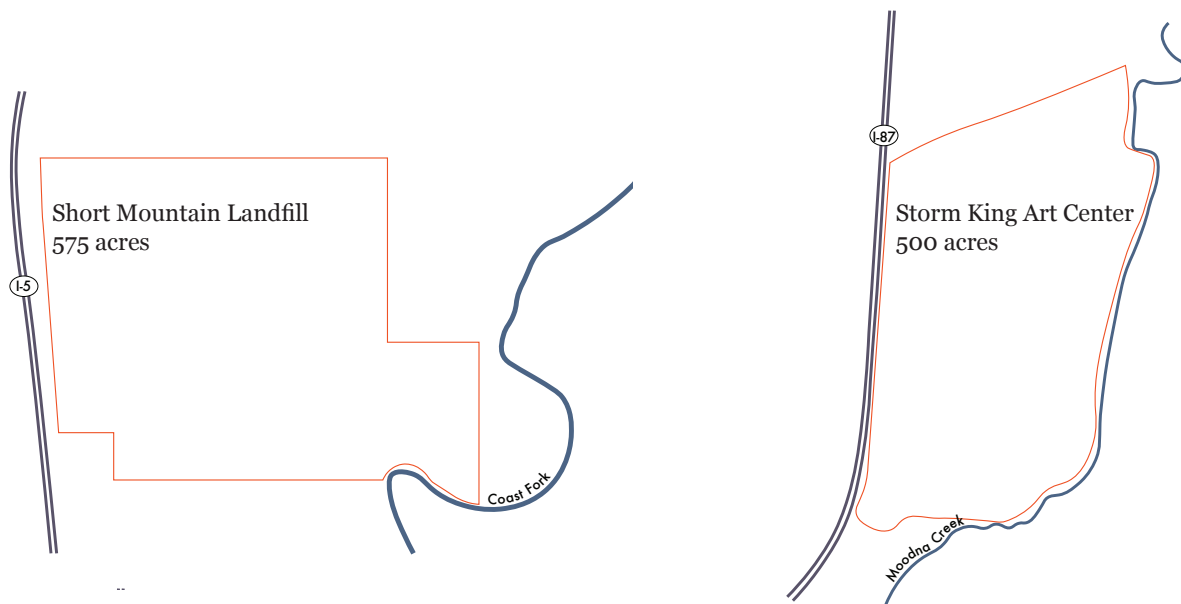


Figure 4.1. Comparative sizes + context of Short Mountain Landfill + Storm King Art Center.



Figure 4.2: Richard Serra, *Schunnemunk Fork*. 1990-1991. Weathering steel, Storm King Art Center, New York. From: Storm King Art Center, <https://stormking.org> (accessed June 10, 2019).

the beautiful coupling of the sublime and the rational, of culture and biology” (Swift 55).

There are many factors to consider in the design of a sculpture park with Swift’s suggestions outlying a minimum level of sensitivity required to do so. Marc Treib, scholar of landscape architecture, offers one more piece of advice: designers tend to “create support walls and bases as objects in themselves, in competition with the sculpture garden,” which “undermines a clear viewing of the works” (Treib 53-54). Overall, this project intends to follow Swift’s three-way relationship framework and approach the site with sensitivity to the site’s history and surrounding context while creating a phenomenological experience that elicits the sublime.

Precedent Analysis

The history and design of sculpture parks is as long and populous as the list of existing sites but for the purpose of this project, just one will be analyzed as a precedent: Storm King Art Center. Founded in 1960 by Ralph E. Ogden and Peter Stern and designed by William A. Rutherford, “monumental art, picture-perfect vistas, and sculpted, engineered landscapes distinguish Storm King. In this giant play land, ideas and nature exchange energies” (Castro 68). The site consists of 500 acres of agricultural land, located in the Hudson River Valley, a beacon of the American sublime. The park plays host to over 230 works of art by more than 80 artists. Rutherford transformed the site from a gravel pit, used in the construction of a nearby highway, into “one that has grand, natural-looking vistas and a variety of terrains as homes for the sculptures,” and restored it to its previous agricultural setting (Dempsey 62).

Storm King’s designed, bucolic landscape provides the context for the art work at Storm King. Within the site, the work is located in a “spectrum of intimate and grand spaces”

(Swift 56). The organizational structure of the park follows Swift’s three-way relationship framework. This means that visitors can create their own experiences, “without an overtly controlled landscape structure defining the nature of the experience or determining what one should conclude” (Swift 57). That is, the experience is personal. Visitors have a range of options to choose from: different types of paths (mown, paved, none), speed of travel (walking or tram), and vegetation type (woodland, farm field, meadow, lawn, wetland) among others. These options, “coupled with the scale of the landscape and the extensive collection, gives the visitor a sense of freedom and generosity” (Swift 57). By structuring the park in this way, visitors have the full-body experience that links them to the objects they see and the ephemeral qualities surrounding them.

Design Goals + Strategies

The goal of this design is to raise awareness of the negative social and ecological impacts of landfills through the experience of the sublime. The organizational framework of the design follows Swift’s three-way relationship structure. As mentioned earlier, this framework follows a loose structure in which the visitor can customize their experience to their personal preference.

From this goal, three design strategies are set: landform, vegetation and sculptures. The first strategy alters the pattern of landfill landform to be more dramatic, calling attention to the artificiality of the mounds in comparison to the backdrop of Short Mountain. The second strategy is to use vegetation that similarly emphasizes the landscape’s artificiality while building the profile and health of the soil on the landfill mounds. The third strategy involves the use of sculptures which will objectify the landscape and express the tensions of the toxic sublime. Each of the strategies are achieved through an iterative process that explores viewsheds, human comfort, materiality, form,

and placement of design elements in the site through a phased plan that projects over the next 150 years.

To decide on a new landfill landform, the project assessed the cell phasing and construction plan as well as the pre-existing topography. Then the theoretical background informed the formal qualities of the new mounds. The strategy involves altering the pattern of landform of the landfill to be more dramatic, calling attention to the artificiality of the mounds in comparison to the backdrop of Short Mountain.

The theoretical background and case studies aided in the decision-making process to achieve the second strategy, vegetation. A phased plan for planting includes strip-cropping, a poplar farm, and gridded willows. The vegetation brings attention to the existence of the landfill while building the profile and health of soil on the mounds of the landfill.

Finally, the project proposes eight interactive sculptures that frame views of the site. This is a translation of the toxic sublime from landscape photography into landscape design. In both

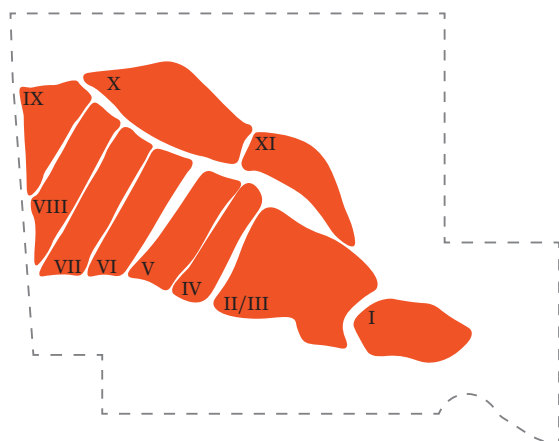
cases, the landscape is objectified through framing and decisions are made regarding the composition of the visible landscape to elicit the toxic sublime. However, in the case of this project, users have some flexibility to change the perspective of the frame. This prevents feelings of inertia and powerlessness that prevent action from being taken regarding ecological degradation.

These three strategies unite to serve the design goals of creating a toxic sublime experience for park visitors which will then motivate them to consider the repercussions of their consumption and waste generation. These strategies also represent the chronology of the design process and will be discussed in greater detail going forward.

Landform

Landfills have a distinct topography that is indicative of its purpose and construction. The mounds are created through the dumping and compaction of garbage in layers. This means that the top of the mound will always be flat. Additionally, to prevent erosion the slope of

County Cell Phasing Plan



Proposed Cell Phasing Plan

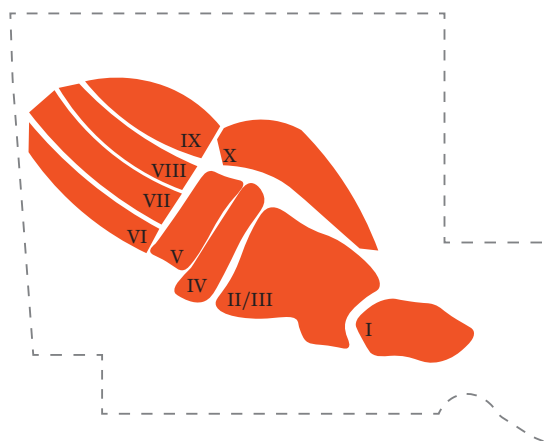


Figure 4.3. Comparison between the current cell phasing plan and this project's proposed phasing plan.

the landfill can never exceed 3:1. These factors give landfills a trapezoidal form. *Figure 4.3* illustrates the county's plan for the construction of other cells. Generally, the cells ignore the existing topography in favor of aligning new cells parallel to old ones. This project instead, proposes a new alignment that responds to both, the old alignment, as well as the pre-

existing topography. For the cell in Phase VI, the formal language of the topography responds to Phase V—it maintains the trapezoidal shape of its neighbor. However, the orientation of Phase VI responds to the pre-existing topography. The slope of Phase VI is also considerably steeper than that of Phase V but does not exceed 3:1. This achieves the objective of dramatizing

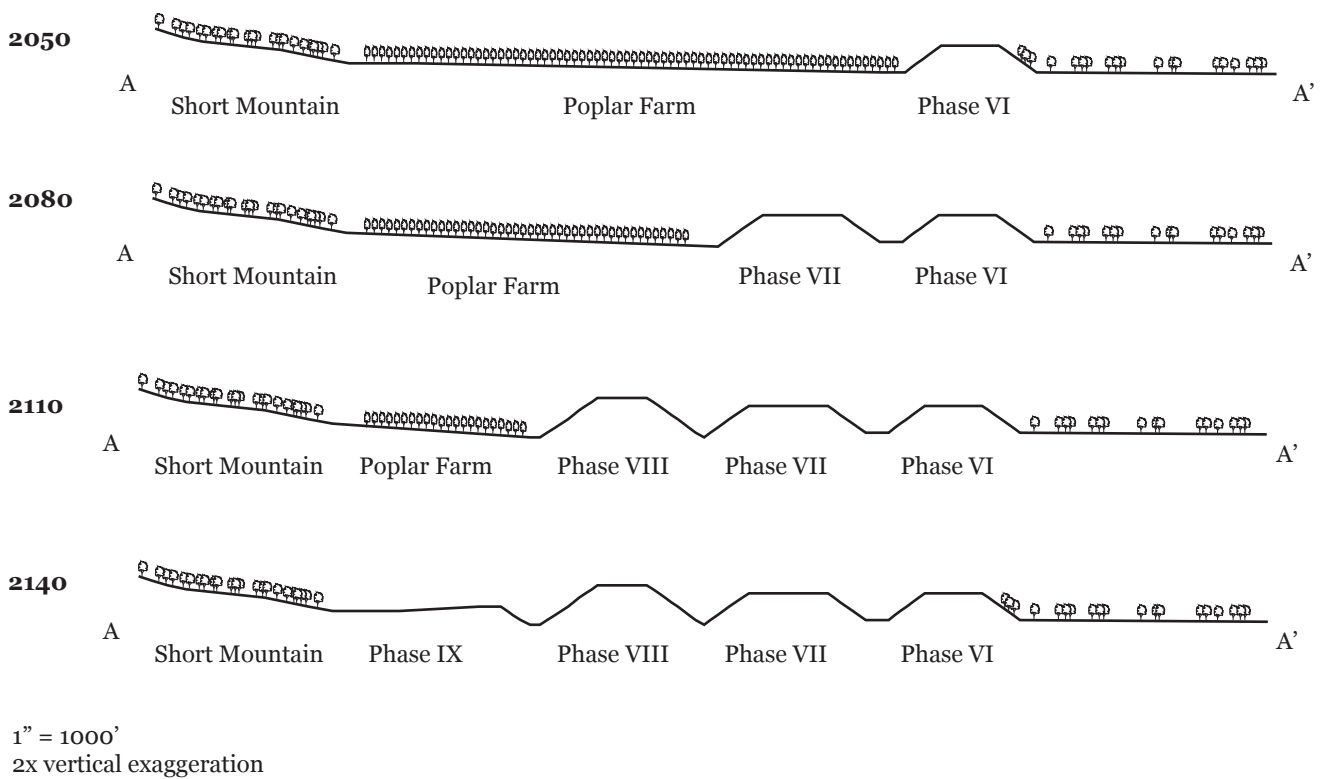


Figure 4.4. Cross-Section of phased development across Phases VI, VII, VIII + IX.

the landform while responding to its context. Phases VII and VIII follow the positioning of Phase VI but they respond to the rising elevation by sloping more gently on the western ends. Likewise, Phase IX follows Phase VIII's form but its northern edge abuts Short Mountain. Finally, Phase X wraps itself around Phases I-V and nestles against the southern slope of Short Mountain. As demonstrated, each mound responds to its neighbors as well as the existing topography while emphasizing its own artificiality through the geometry of its form.

Vegetation

Short Mountain is located in the Willamette Valley, which was historically dominated by prairie and oak savanna. Much of this historic vegetation has been replaced by agricultural crops. Agriculture is a leading industry in Lane County and the land surrounding Short Mountain Landfill has been zoned for farming. Additionally, the USDA has classified the soil on the site as prime agricultural soil. Much like its precedent, Storm King, this project proposes a restoration of agricultural land to this industrial site. The standard vegetative cover involves 6-12 inches of soil which is seeded with grass to prevent erosion. As illustrated by the case study analysis of Freshkills Park, strip-cropping builds the profile and health of soil on the mounds. This project proposes a phased restoration of agricultural and native landscapes of Short Mountain Landfill through the use of strip-cropping, a poplar farm, and a gridded willow planting.

As each mound is capped, the south-facing slope will be seeded with clover and ryegrass in alternating strips. These crops have been selected because they are low-growing and commonly grown in the Willamette Valley. Each species also has an additional role: the clover will fix nitrogen and the root system of the ryegrass will stabilize the slope and prevent erosion, even when the plants are dormant in the winter. Neither of these crops will be

harvested but, instead, will be allowed to reseed. This means that the structure of the strip-cropping will dissipate over time. The crops are planted on the south-facing slope only because the aspect is suitable for growing crops and because their visibility from the highway will be greatest. As the soil conditions improve, it is expected that larger shrubs and trees can begin to populate the older mounds. This satisfies the second strategy of improving the soil conditions on the mound while raising awareness of the existence of the landfill.

Another indicator of an agricultural landscape is the poplar farm. The poplar farm is a nod to the Eugene Wastewater Management facility's poplar farm north of Eugene. There, biosolids from the wastewater management plant are sent to the farm and the poplars, which are fast-growing phytoremediators, take up the excess nutrients from the sludge. The poplars are then harvested and the lumber is sold on the market. The poplar farm at Short Mountain Landfill will be grown in phases, covering the ground on which future cells will be constructed. The poplars will be harvested as excavation for the next cell begins. The height, density and order of the poplars also contribute to a sense of enclosure that will be felt once the cells are filled. The phased planting of the poplars call attention to the phased construction of landfill cells and their growth and subsequent harvest are cues to the rate of consumption that leads to waste burial.

Once all of the cells have been constructed and filled, the poplars and the language of the orchard will be gone. Therefore, this project proposes a gridded willow planting in the last phase of the design. The gridded arrangement will not only facilitate in the restoration of the riparian corridor but will also be a reference to the poplars that have since been harvested to make room for the newest landfill cells.

Another key area of interest is the Maple Grove at the southern end of Phase V. This

pocket in the landform was created by a ramp that ascends Phase IV. To take advantage of this micro-climate, this project proposes the planting native maples in this pocket. In addition to providing some much-needed shade on the site, the grove calls attention to this remnant of industry. This pocket is mirrored in the space between Phases IX and X. In this case, however, the higher elevation lends itself to being populated by the encroaching upland closed forest of Short Mountain.

Sculpture

The final strategy is achieved through the design and placement of eight sculptures. These translate the method of framing a photo into framing the landscape. Doing so objectifies the landscape which is used to elicit the toxic sublime. The materiality across the sculptures is minimal and consistent: each sculpture will be made of weathering steel which has been selected because of its strength, long-life and warm, naturalistic color.

Sculpture 1, illustrated in *Figure 4.5*, rests between Phases IV and II/III. This short tunnel tapers down in height to the end where there is an small viewing window. An adult visitor would not be able to reach the end without crawling on their hands and knees. This claustrophobia-inducing sculpture forces the viewer to maintain some distance from the end of the tunnel but still able to see the landscape through it. Since the frame is at a fixed distance from the viewer, the view is also fixed, cropped to the edges of the window. The form of the sculpture mimics the trapezoidal shape of landfill mounds.

Sculpture 2, illustrated in *Figure 4.6*, is situated near the top of the largest mound (Phase II/III). It consists of two concentric, open-top cylinders with a single opening in each cylinder that is wide enough for an adult to walk through. Two aligning peepholes have been cut into the walls of the sculpture so that a viewer can look through to see a framed view of the landscape.

Like Sculpture 1, the view from the sculpture is fixed. The viewer is forced to observe a particular view of the landscape without the benefit of seeing its context. In this case, viewers see a framed view of the leachate storage facility—only the geodesic roof of the tank and the orange cover of the leachate lagoon are visible.

Sculpture 3, illustrated in *Figure 4.7*, faces the Coast Fork of the Willamette River on the

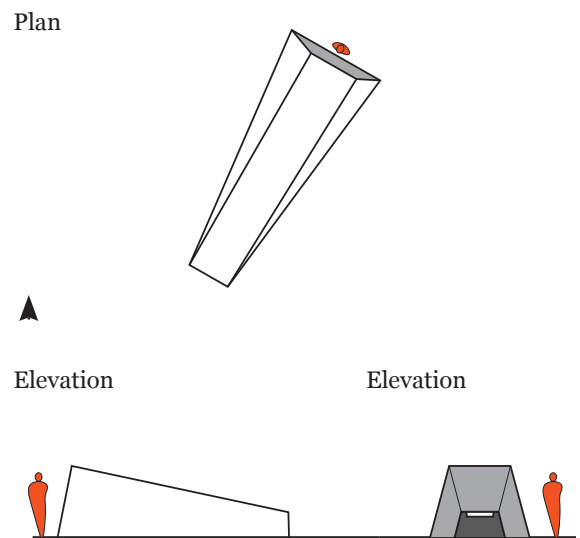


Figure 4.5: Sculpture 1 Diagram

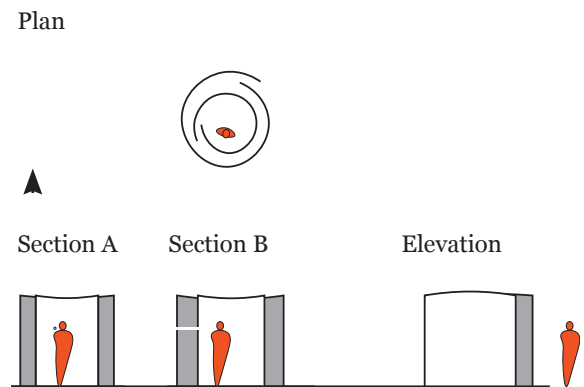


Figure 4.6: Sculpture 2 Diagram

river-view meadow, northeast of Phase I. This sculpture is comprised of two walls, parallel but offset from one another. Unlike Sculptures 1 and 2, this sculpture offers a variety of frames as the viewer can walk around and through it. Visitors have the option to look through to the surrounding pastoral landscape, or back to the constructed mounds.

Sculpture 4, illustrated in *Figure 4.8*, resembles Sculpture 3 in form but its context in the riparian forest changes the experience. This sculpture is made of three walls that tilt laterally and vertically. From elevation, the sculpture resembles the trapezoidal form of the landfill. Like Sculpture 3, the viewer can choose which views are framed, including the abutting Phase I and the surrounding forest.

Sculpture 5, illustrated in *Figure 4.9*, is located between the decommissioned leachate lagoon and the current leachate lagoon. It is comprised of a single wall that folds outward to create a small pocket. Long, narrow windows have been cut into the wall at incremental heights to frame views of the leachate lagoons, gridded willows, and the landfill mounds at a distance.

Sculpture 6, illustrated in *Figure 4.10*, is the largest of the sculptures and is intended to call attention to the site from Interstate 5. Drivers' views are framed by a monumental, trapezoidal structure that mimics the landforms behind.

Sculpture 7, illustrated in *Figure 4.11*, stands at the end of a long view corridor. Sheets of weathering steel emerge out of the earth

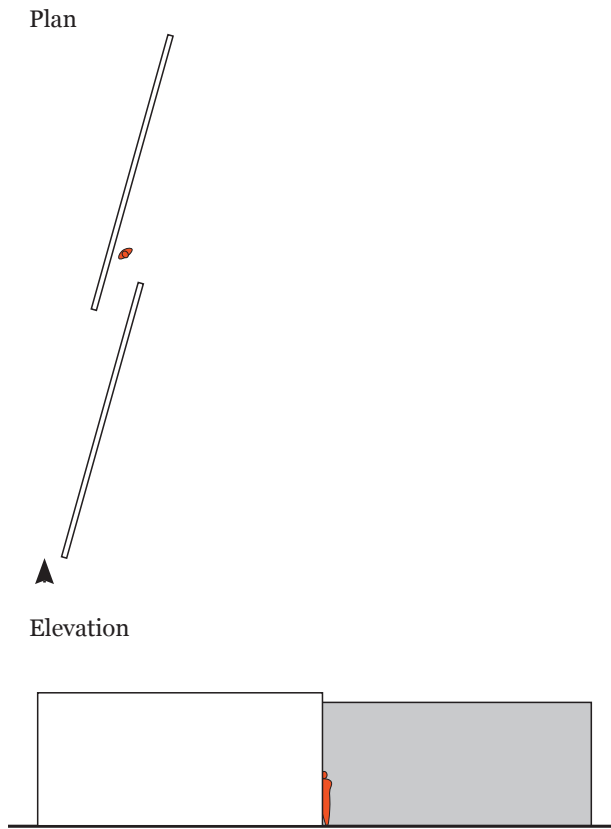


Figure 4.7: Sculpture 3 Diagram

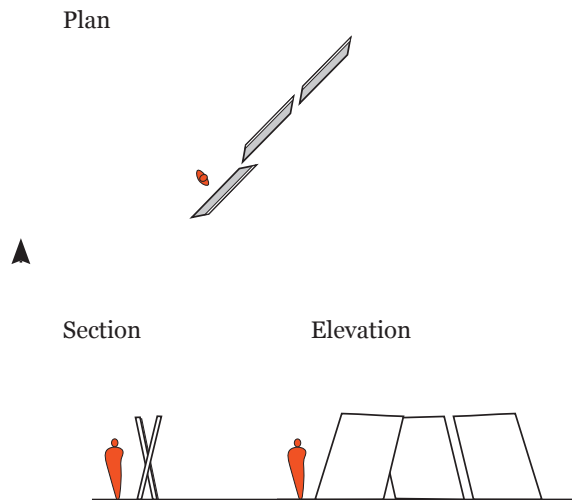
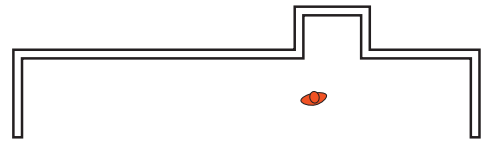


Figure 4.8: Sculpture 4 Diagram

at various angles, suggesting the layers of compacted deposition used to create the landforms. Through the sculpture, viewers get an open but fragmented frame of the landforms.

The final piece, Sculpture 8, illustrated in *Figure 4.12*, is situated within the pocket between Phases IX and X. A view corridor between Sculptures 7 and 8 connects them visually. Sculpture 8 consists of a single wall of weathering steel with peepholes of varying sizes at different heights. The number of peepholes dissipates from west to east, creating a disintegrating landscape from either side.

Plan



Elevation

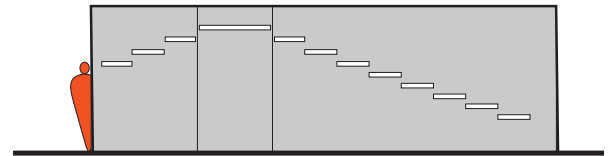


Figure 4.9: Sculpture 5 Diagram

Plan

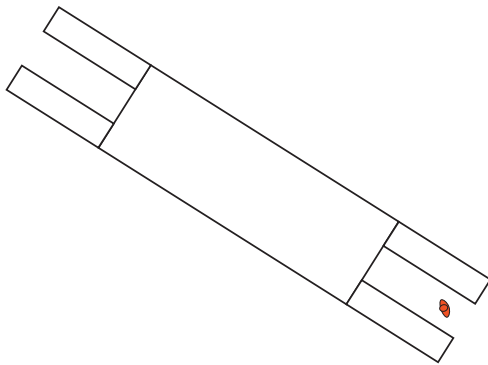
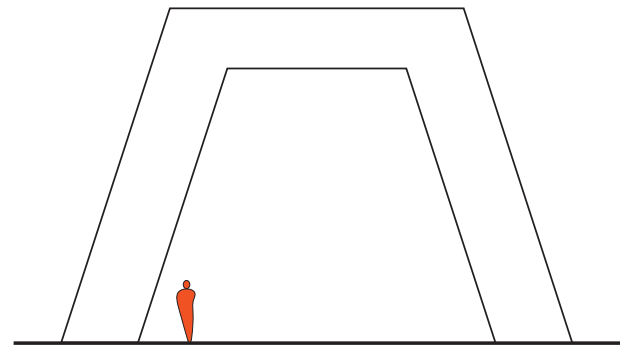


Figure 4.10: Sculpture 6 Diagram

Elevation



Plan

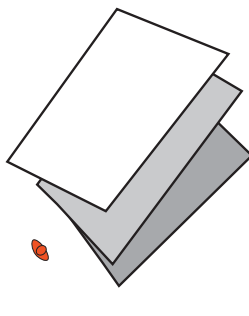
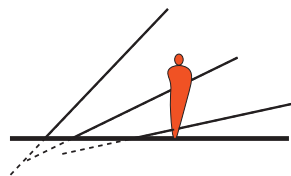
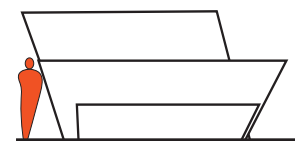


Figure 4.11: Sculpture 7 Diagram

Section



Elevation



Plan



Elevation

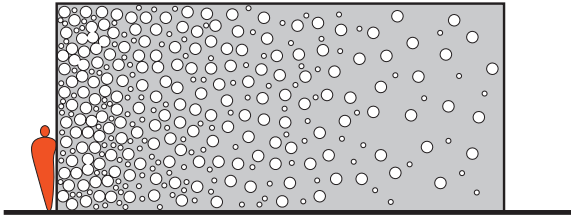


Figure 4.12: Sculpture 6 Diagram

Design Narrative + Analysis

Other elements of the design—furniture, paths, amenities—contribute to personal comfort, grant flexibility in the experience and support the sculptures by blending into the landscape. Overall, the key components of this project’s design proposal allow the relationship between viewer, object and context to become the focus of the experience.

The site design follows Barbara Swift’s directive to “build on the power and inherent nature of the place”(55). The following narrative describes the experience of an average visitor to the site once the landfill closes in 2170. Before this point, the landfill will likely not be open to the general public due for safety reasons. The following site plans (*Figures 4.13 to 4.17*) illustrate the phased development of the park in 30 year increments from 2050 to 2170. Each site plan roughly aligns with the anticipated closure of each cell.

The entrance to the site provides a sense of enclosure. Visitors enter the site through a wooded area before the path opens at the base of Phase VII and IX mounds. Visitors then feel themselves sinking into the ground as the grade of the path remains relatively level in comparison to the mounds slowly rising on either side. The visitor experiences some relief from the enclosure at the end of these mounds: a path stems off and veers south, creating a view corridor to Sculpture 7 and to the north, a pocket between Phases IX and X invites visitors in with a promise of some respite after what feels like a descent. In this pocket, visitors interact with Sculpture 8 (*Figure 4.18*) which aims to slowly dissolve the view before it. Peeking through the perforations in the steel, visitors receive a fragmented view of the landscape beyond: a steep slope of a nearby landfill cell, a riparian forest in the distance, the sky. The long view hints at human interference but only traces remain, pulling on the tension between inhabitation and desolation.

Past the landfill pocket between Phases IX and X, the path slowly climbs, edging the southern slope of Phase X with neat alternating rows of clover and ryegrass. The low-growing groundcover does not mask the trapezoidal character of the mound. Off the path to the south sits Sculpture 1 (*Figure 4.19*) in the valley between Phases IV/V and II/III. A pinhole of light draws the visitor closer but the tapering height of the sculpture prevents the visitor from drawing too near to the window at the end of the sculpture. The frame from this position points to the leachate storage facility, Sculpture 5 and Camas Swale beyond. The grid of willows provides a series of secondary frames, guiding the eye to the horizon. The visitor experiences some discomfort in this position; their back is exposed, the way forward is dark and constricted. These qualities amplify the tension between security and risk.

The visitor continues their detour off of the main path to ascend the tallest mound, Phase II/III. A hot, exposed climb provides views from the top to the rest of the site and the surrounding landscape. From here, the visitor notices that the closest sculpture sits just on the other side of the ridge and they approach Sculpture 2 (*Figure 4.20*). The visitor walks past a methane wellhead which raises some anxiety. A narrow opening into the sculpture grants the visitor some shade as they wind around to find an opening to the inner chamber. Inside, the visitor's first framed view is that of the sky. They then notice a peephole on the south side. Looking through, the visitor perceives an almost abstract view of the landscape where only the geodesic domed roof of the leachate tank and the leachate lagoon's orange cover fill the frame. The direct view to the leachate facility coupled with the sculpture's form resembling a methane wellhead raise awareness of the dangerous and toxic qualities of the site, eliciting the tension between security and risk.

Exiting Sculpture 2, the visitor finds a trail leading them back to the main path heading

east. The path makes a quick climb between Phases I and X and then the visitor enters a meadow and is rewarded with a view of the Coast Fork and the surrounding agricultural landscape. Standing in the meadow is Sculpture 3 (*Figure 4.21*). At a distance, the sculpture divides the landscape in two, like a dividing line between riparian and upland forest. The view between the two offset steel walls faces the river. Looking back, the eastern slope of Phase I noses into the frame. The rigid and vertical steel walls coupled with views to both the landfill and the surrounding landscape generate the tension between beauty and ugliness.

Turning south and a short descent into the forest reveals Sculpture 4 (*Figure 4.22*). At the base of Phase I's nose, the sculpture already begins to frame the landscape behind. The visitor approaches and notices that the walls tilt laterally and vertically. Between two of the panels and facing Phase I, the walls form an X, creating four framed views, three of which open to the adjacent landscape. The quiet, wooded location lends intimacy to the visitor's experience. Evidence of industry noses into the frame in the form of Phase I. Visitors experience seclusion and but human traces left in the landscape highlight the tension between inhabitation and desolation.

The path then exits the riparian forest and hugs the southern slope of Phases I and II/III. A mown path diverts away from the mounds towards the leachate tank. The path then transitions into a raised grate made of weathering steel that sits above the wet prairie. The steel boardwalk meanders to Sculpture 5 (*Figure 4.23*). The gridded willow restoration planting provides a backdrop to the sculpture which faces the monolithic mounds to the north. The windows cut into the sculpture provide views for a variety of heights while fragmenting the view so that the site cannot be seen in its entirety. In each frame, only a fragment of the mounds can be viewed. By cropping the view, the mounds seem to occupy even more space,

eliciting the toxic sublime through the tension between magnitude and insignificance.

The visitor then continues west on the steel grate, crossing over the decommissioned leachate lagoon and enclosed by the rows of willows. This experience abruptly changes, exposing the visitor to the sounds of Interstate 5 and the overwhelming size of Sculpture 6 (*Figure 2.24*). The sculpture's large size and trapezoidal form are reminiscent of the mounds behind it which leads to a cognitive awareness of the repercussions of consumerism in the death of objects. This may lead the visitor to feel powerless in the face of systemic and corporatized waste-handling processes. In this way, the tension between magnitude and insignificance is expressed.

The visitor reenters the shelter of the willow restoration and follows the path to Sculpture 7 (*Figure 4.25*), the last of this walk. A view corridor back to Sculpture 8 informs the visitor that they are near the end. The sculpture is made of three tilting panels of weathering steel.

Views are framed between each of the panels, segmenting the landscape into wedges that are deposited one on top of the other. Between the panels, the visitor has views to Short Mountain, the steep slopes of the newest mounds, and the gradient of strip-cropping that has faded with time. The contrast between the sharp edges of the mounds, the soft curve of the mountain and the borrowed agricultural aesthetic of strip-cropping pull on the tension between beauty and ugliness.

Past Sculpture 7, the visitor follows the path north. Some respite is offered in the Maple Grove at the southern end of Phase IV/V. The microclimate provided by this remnant of industry facilitates a cool environment for the visitor to reflect on the visit. The path then takes the visitor to the corridor between Phases IV/V and VI through VIII. The visitor is able to turn onto an another, shadier, path between Phases VII and VIII that will bring them back to the parking lot.

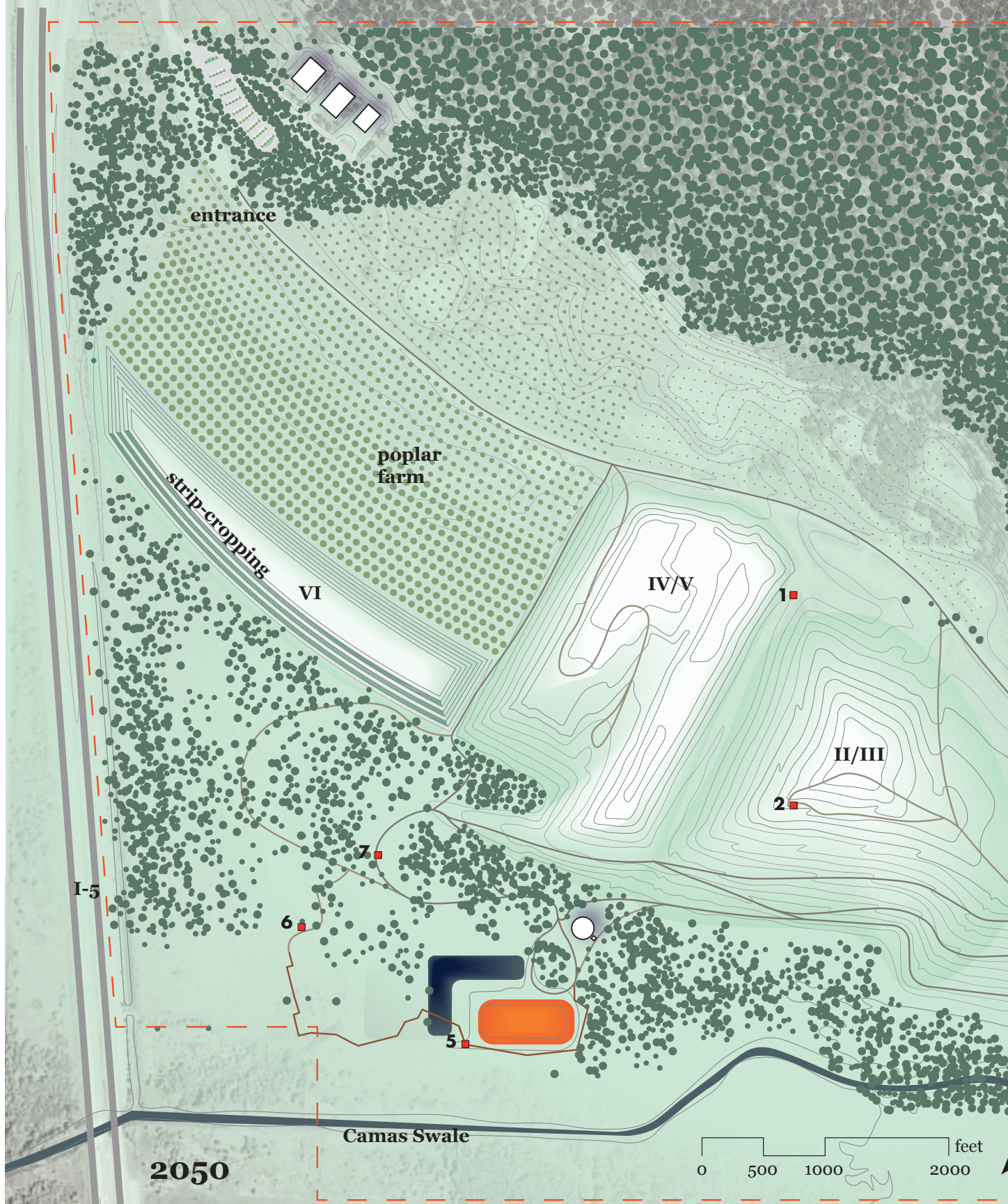


Figure 4.13: Site Plan of Short Mountain Landfill, 2050.



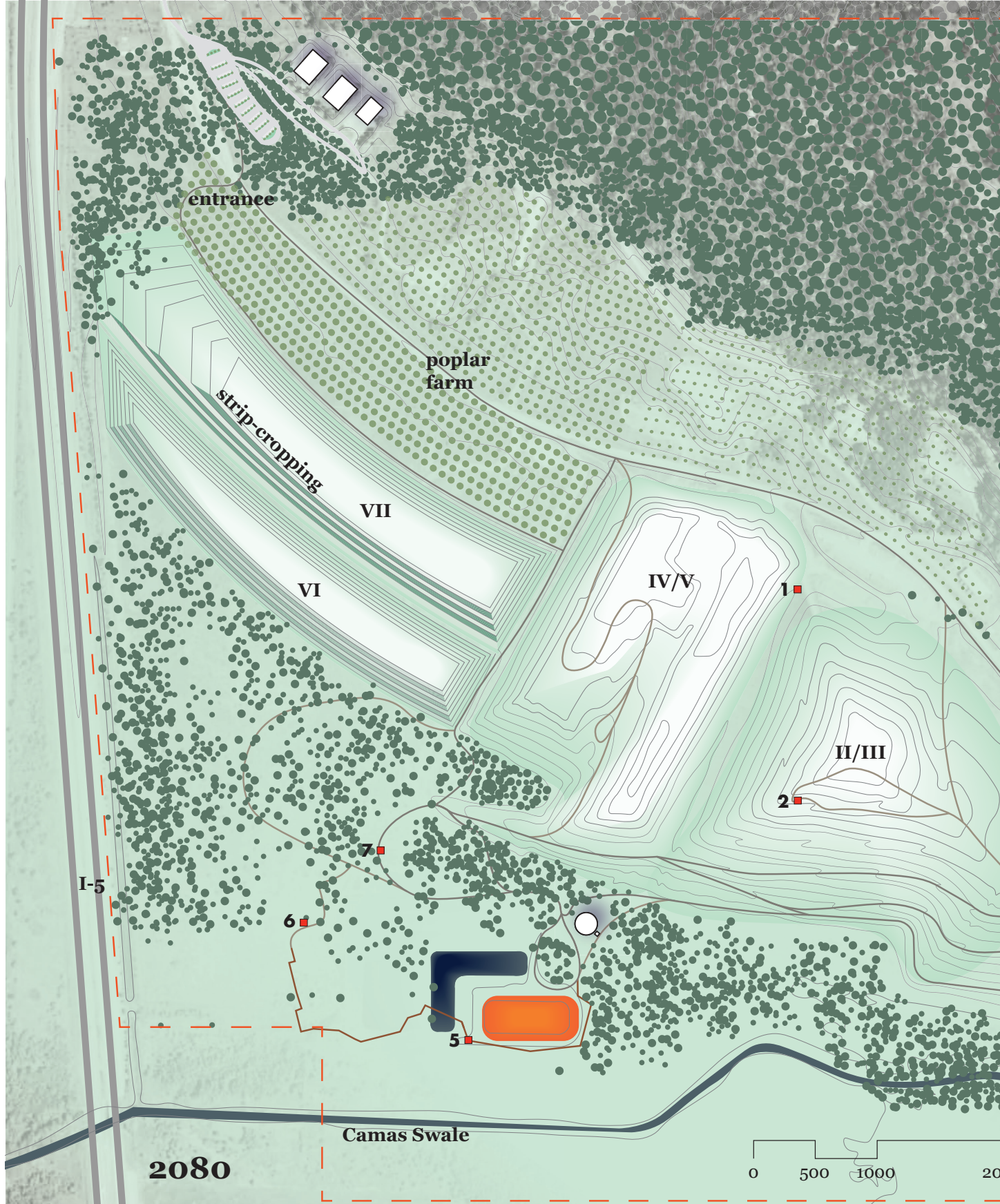
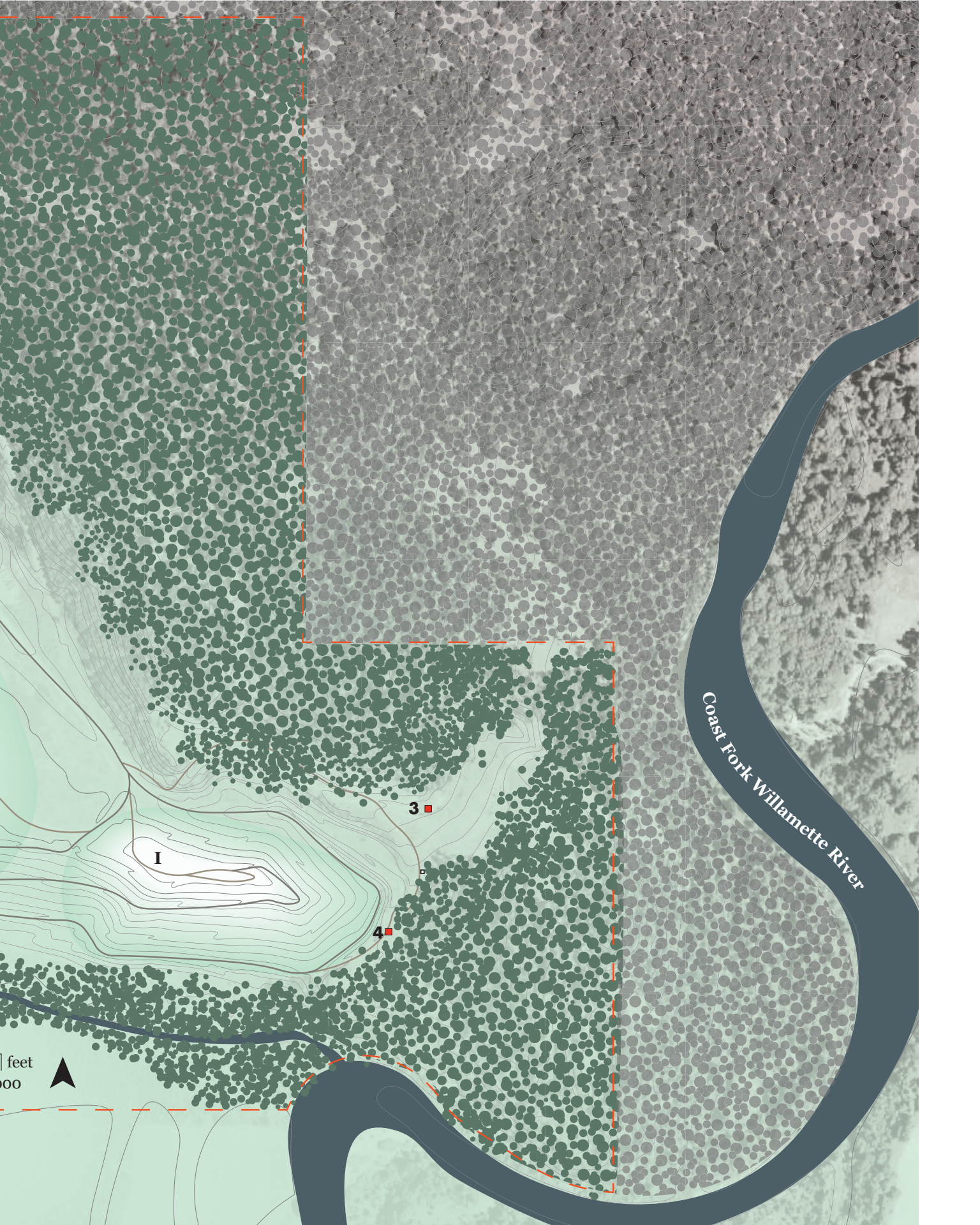


Figure 4.14: Site Plan of Short Mountain Landfill, 2080.



Coast Fork Willamette River

I

3

4

feet
000



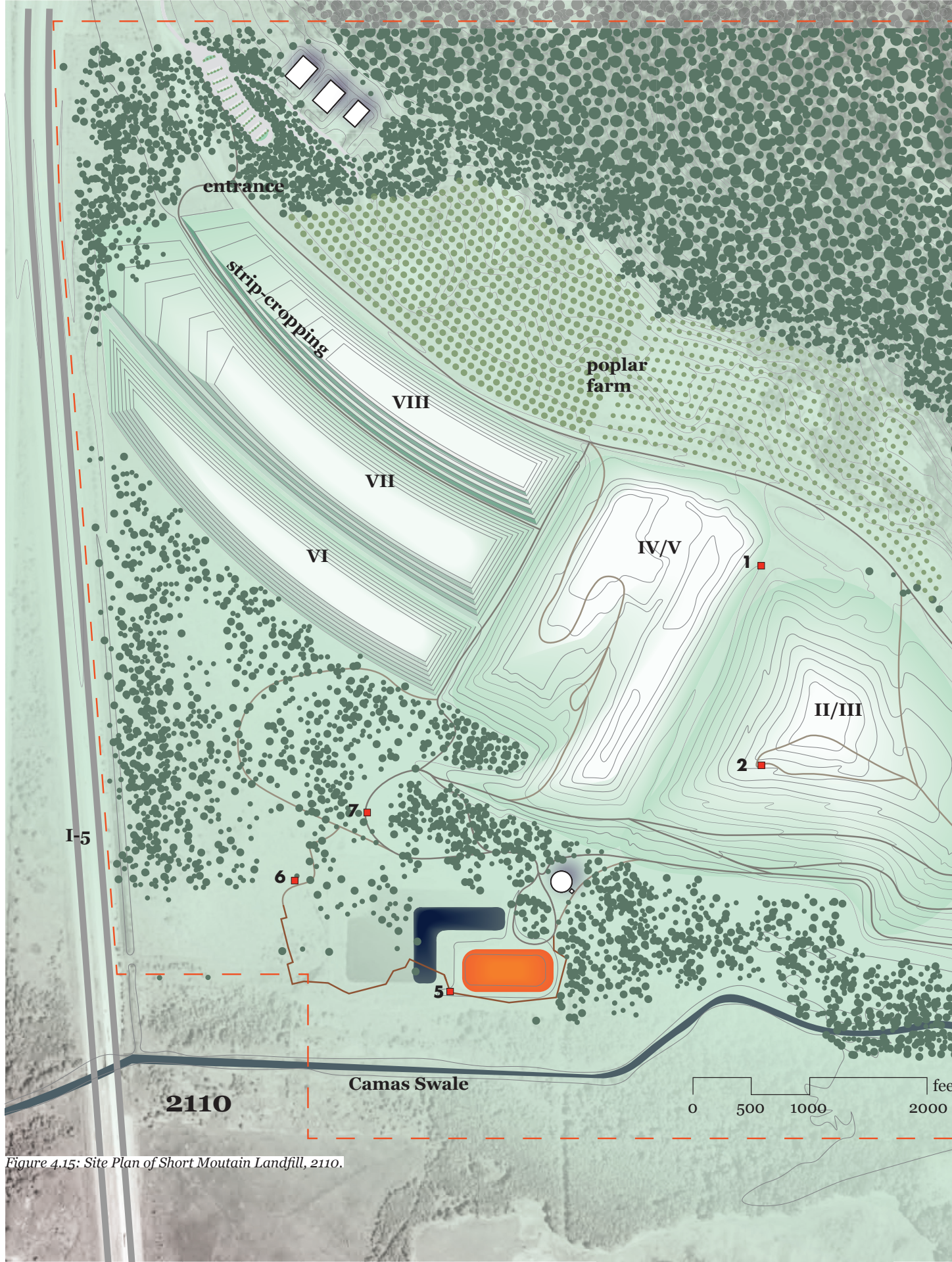
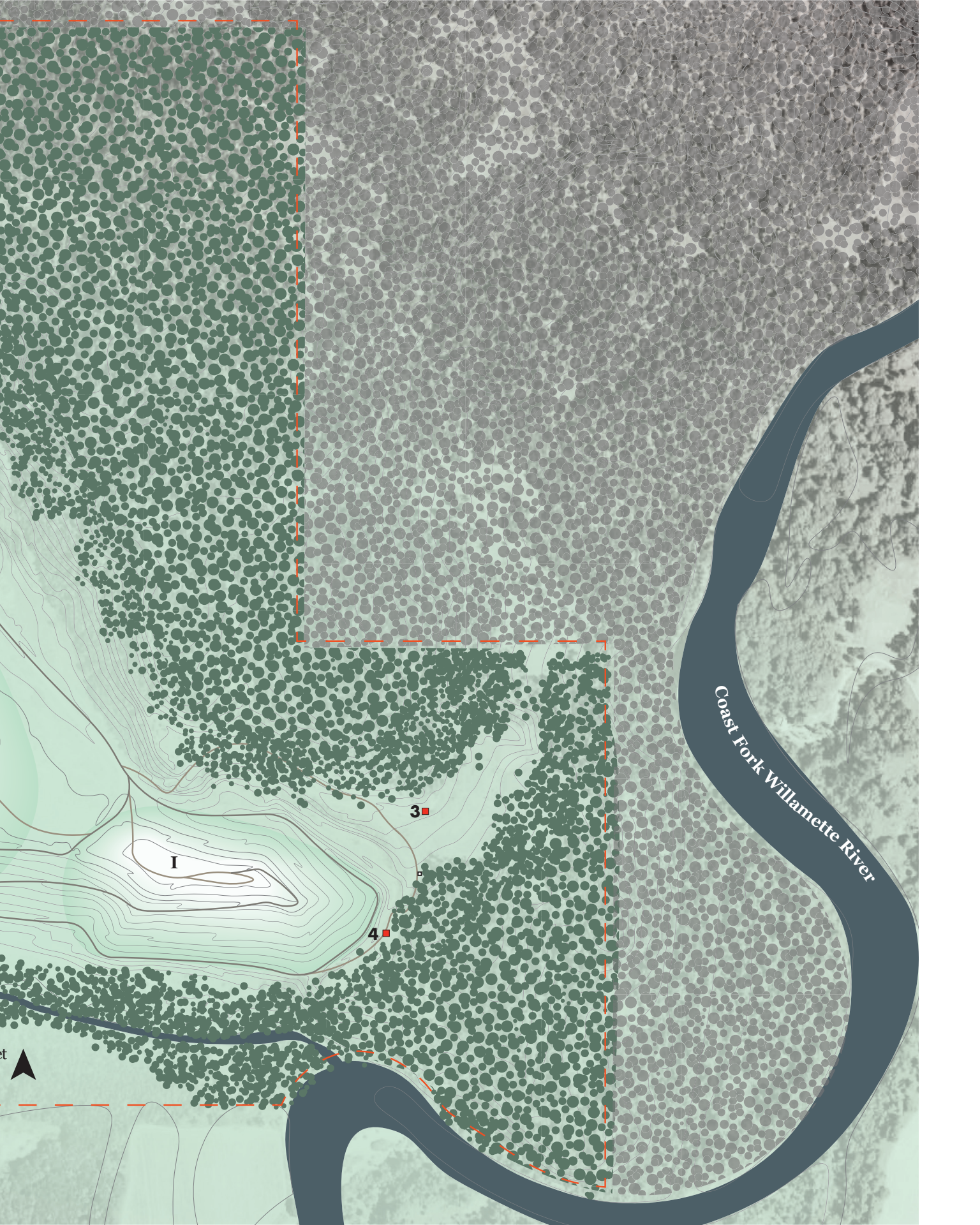


Figure 4.15: Site Plan of Short Mountain Landfill, 2110.



Coast Fork Willamette River

1

3

4

et

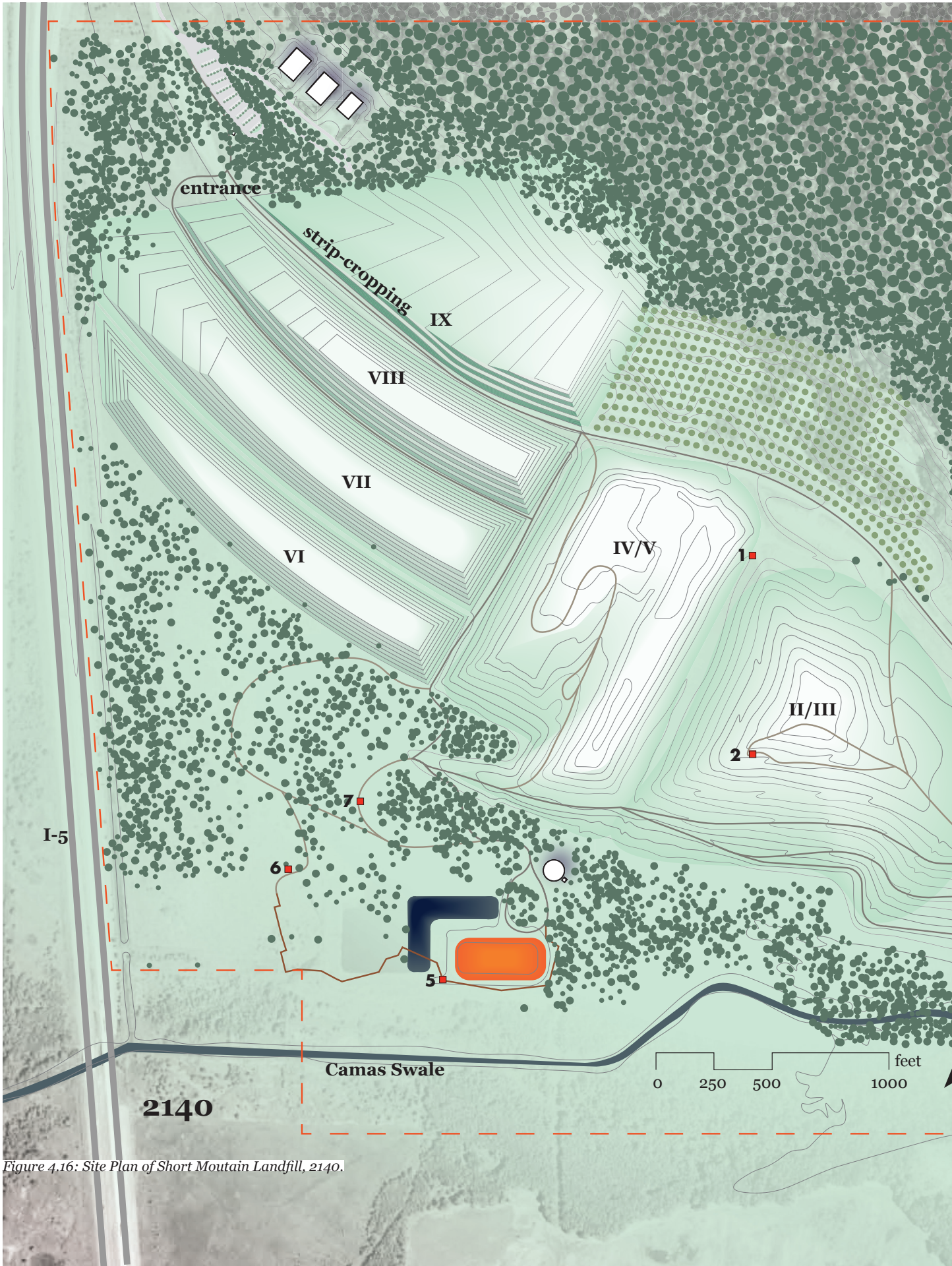


Figure 4.16: Site Plan of Short Mountain Landfill, 2140.

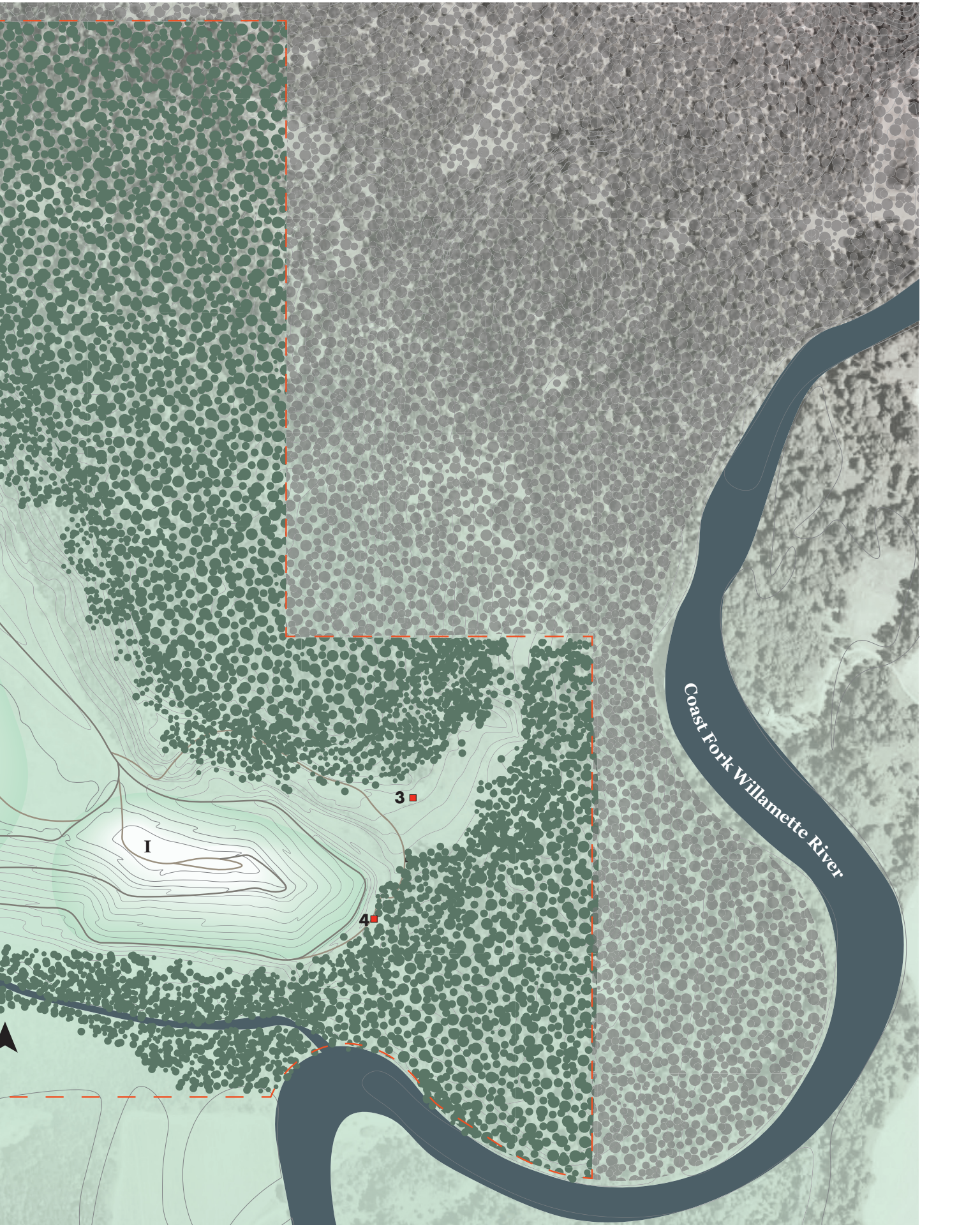
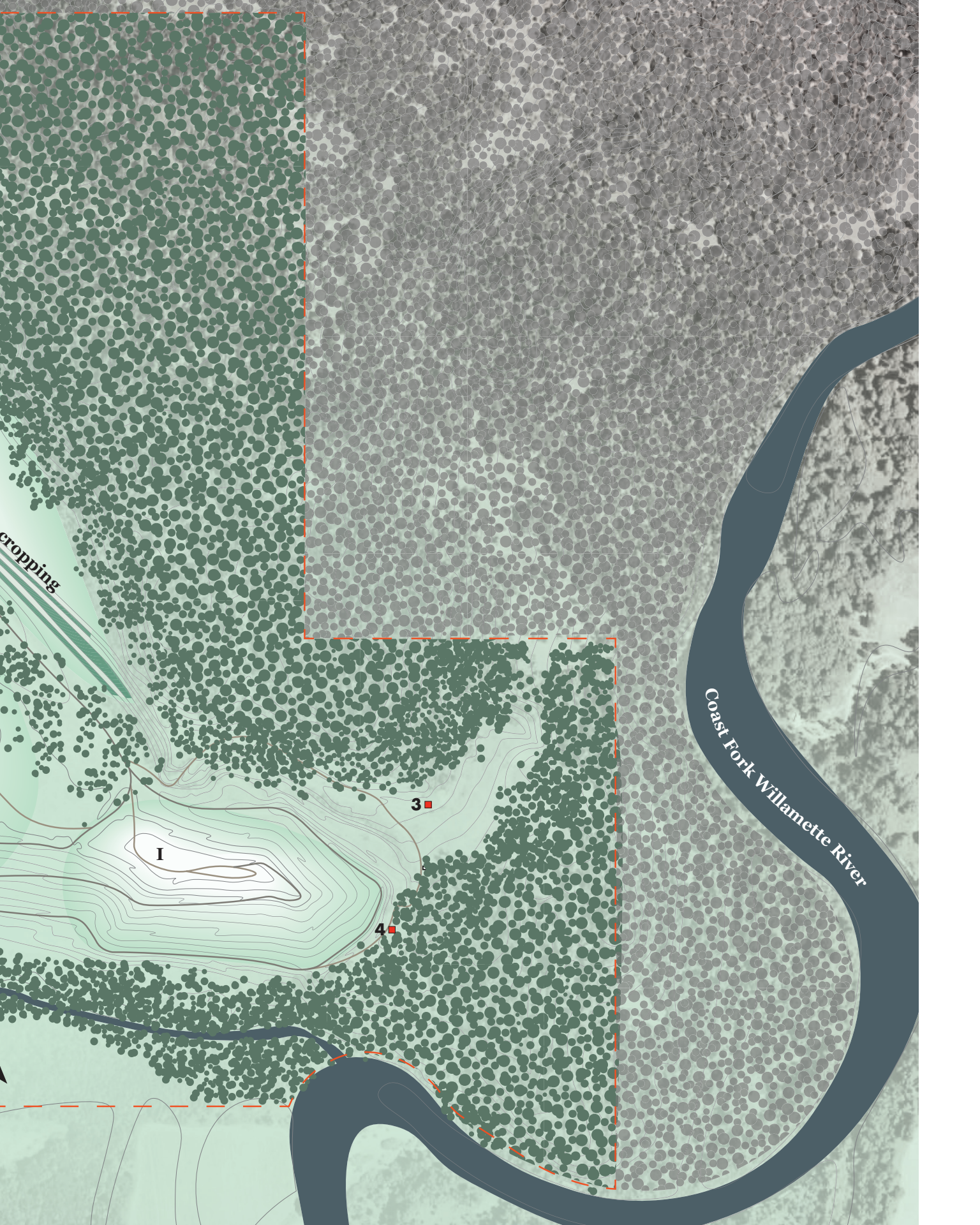




Figure 4.17: Site Plan of Short Mountain Landfill, 2170.



cropping

Coast Fork Willamette River

I

3

4



Figure 4.18. Sculpture 8 Diptych.

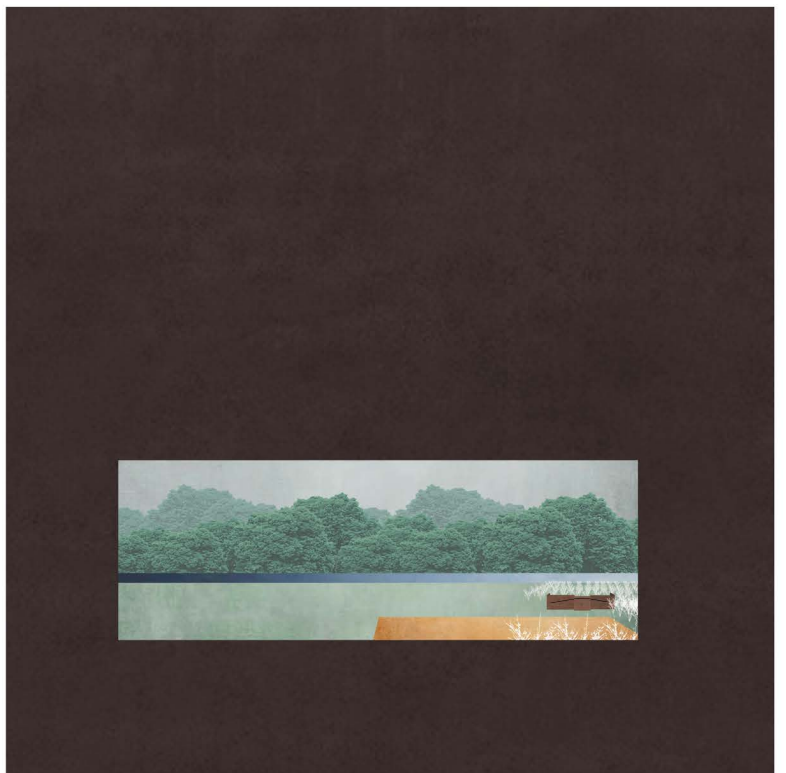
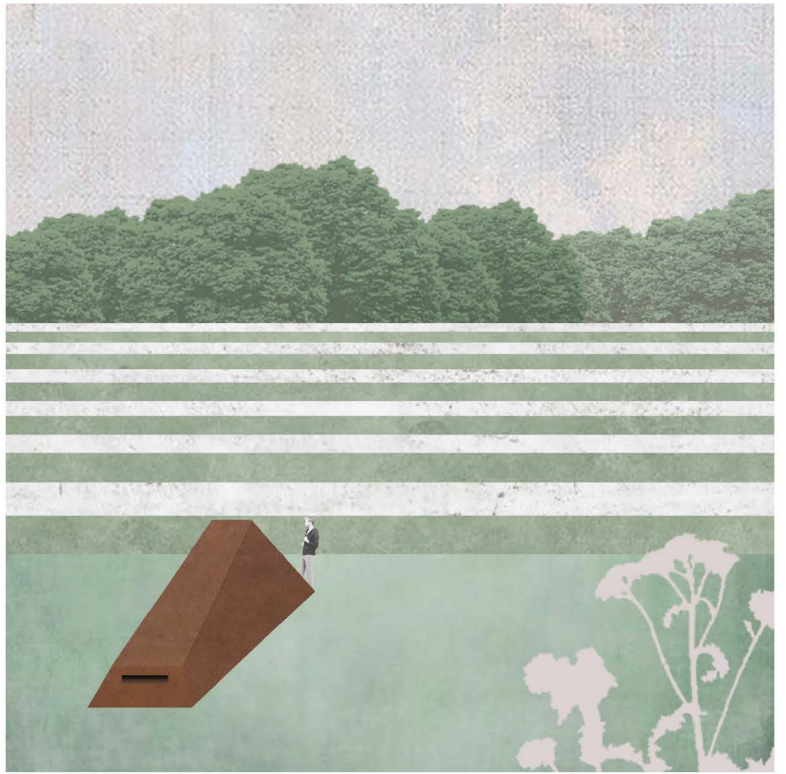


Figure 4.19. Sculpture 1 Diptych.



Figure 4.20. Sculpture 2 Diptych.



Figure 4.21. Sculpture 3 Diptych.



Figure 4.22. Sculpture 4 Diptych.



Figure 4.23. Sculpture 5 Diptych.

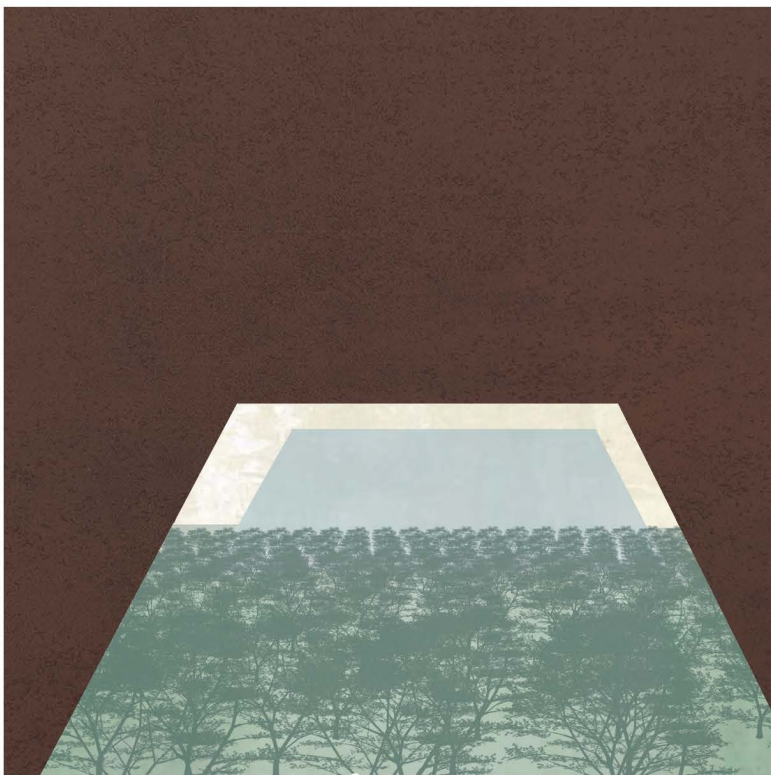


Figure 4.24. Sculpture 6 Diptych.



Figure 4.25. Sculpture 7 Diptych.

V. CLOSING

Overall, the design represents a first attempt at translating Peeples' five tensions of the toxic sublime into the design of a toxic landscape. The concept behind the site design is strong as it shifts the framed views from the camera lens to a physical structure *in situ*. The goals and strategies supported one another as well as the concept.

A challenge in the translation was determining the difference between a cognitive dissonance and physical discomfort. Peeples does not address this aspect likely because viewing a photograph will likely not create discomfort experienced through the senses. Like the case studies analyzed earlier, the tension between known and unknown remains unexplored. This is likely because there are too many known factors and not enough unknown factors in the development of the landfill.

As a sculpture park, this design cannot compare to the quantity and variety of sculptures available at other sculpture parks. For example, Storm King has over 200 sculptures across 500 acres. Eight sculptures may not be quite enough to attract visitors who are interested in sculpture alone. The managers of the site may have to procure many more pieces before it earns the designation of sculpture park. Or perhaps, the eight sculptures represent the permanent collection while temporary exhibits augment the experience for visitors who want to experience art in the landscape. Though the intended program is a sculpture park, the purpose of this project was to elicit the toxic sublime in the landscape itself through intentional design decisions. Therefore, eight sculptures may be enough to fulfill the purpose. Future research into this topic may include the development

and placement of more sculptures that frame particular views of the site.

As stated at the beginning of this project, landfills are an important, and often overlooked, subject of the study in relationship to the sublime. This project is intended to represent interventions that may be taken at any landfill or, any toxic sites to elicit the toxic sublime. The advantage of a site like Short Mountain Landfill is that it is publicly-owned and, with the spread of urbanization, may one day provide important greenspace and habitat for residents of Lane County. In contrast, landfills are increasingly getting larger and more remote. This could provide an interesting area of research in the future and could test the application of the toxic sublime as the scale of landfills grows.

REFERENCES

- “Active Permitted Facilities in Oregon.” State of Oregon: Department of Environmental Quality. Accessed October 27, 2018. <https://www.deq.state.or.us/lq/sw/disposal/permittedfacilities.htm>.
- Arensberg, Mary. *The American Sublime*. Albany: State University of New York Press, 1986.
- Barrie, Brooke. “Sculpture Parks as Outdoor Museums.” In *Landscapes for Art: Contemporary Sculpture Parks*, edited by Glenn Harper and Twylene Moyer, 14-21. Seattle, WA: University of Washington Press, 2008.
- Brown, Chandos Michael. “The First American Sublime.” In *The Sublime: From Antiquity to the Present*, edited by Timothy Costelloe, 147-170. Cambridge: Cambridge University Press, 2012.
- Burke, Edmund. *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful: With an Introductory Discourse concerning Taste ; and Several Other Additions*. Cambridge, United Kingdom: Cambridge University Press, 2014.
- Castro, Jan Garden. “Made for Each Other: Storm King’s Vistas and Sculpture.” In *Landscapes for Art: Contemporary Sculpture Parks*, edited by Glenn Harper and Twylene Moyer, 68-71. Seattle, WA: University of Washington Press, 2008.
- Costelloe, Timothy M. *The Sublime: From Antiquity to the Present*. Cambridge: Cambridge University Press, 2012.
- Dempsey, Amy. *Destination Art*. London: Thames & Hudson, 2006.
- Ferguson, Amanda. “Lane County Solid Waste Management Plan.” 2002.
- Field Operations. “Freshkills Park: Lifescape. Draft Master Plan.” The Freshkills Park Alliance. March 2006. Accessed May 1, 2019. <https://freshkillspark.org/wp-content/uploads/2013/07/Fresh-Kills-Park-Draft-Master-Plan.pdf>.
- Gasché, Rodolphe. “...And the Beautiful? Revisiting Edmund Burke’s ‘Double Aesthetics.’” In *The Sublime: From Antiquity to the Present*, edited by Timothy Costelloe, 24-36. Cambridge: Cambridge University Press, 2012.
- Green, Jared. “China’s Landscape Architects Undo the Damage.” THE DIRT. May 25, 2012. Accessed March 13, 2019. <https://dirt.asla.org/2012/05/24/chinas-landscape-architects-undo-the-damage-of-development/>.

- Harper, Glenn, and Twylene Moyer. *Landscapes for Art: Contemporary Sculpture Parks*. Seattle: University of Washington Press, 2008.
- Heath, Malcolm. "Longinus and the Ancient Sublime." In *The Sublime: From Antiquity to the Present*, edited by Timothy Costelloe, 11-23. Cambridge: Cambridge University Press, 2012.
- Kant, Immanuel, and Werner S. Pluhar. *Critique of Judgment*. Indianapolis, Ind: Hackett, 2010.
- "Landfill Liner Installation Steps." Seneca Landfill. Accessed March 14, 2019. <https://www.senecalandfill.com/landfill-liner-installation>.
- Land8: Landscape Architects. "The Award Winning Quarry Garden Breathes Life Back into Abandoned Site." Land8. June 25, 2015. Accessed March 13, 2019. <https://land8.com/the-award-winning-quarry-garden-breathes-life-back-into-abandoned-site/>.
- Lehane, Debra N. "Art, Nature, People: The Sculpture Park Experience." In *Landscapes for Art: Contemporary Sculpture Parks*, edited by Glenn Harper and Twylene Moyer, 8-13. Seattle, WA: University of Washington Press, 2008.
- Leonard, Annie, and Ariane Conrad. *The Story of Stuff: The Impact of Overconsumption on the Planet, Our Communities, and Our Health--and How We Can Make It Better*. New York: Free Press, 2010.
- Lynch, Kevin. *Wasting Away*. Edited by Michael Southworth. San Francisco: Sierra Club Books, 1990.
- Mason, Bill, ed. Record of Decision for Short Mountain Landfill Report. January 2009. Accessed February 8, 2019. [https://www.deq.state.or.us/Webdocs/Controls/Output/PdfHandler.ashx?p=32a8437e-f58b-4e38-892a-eb73ce3037b7.pdf&s=ShortMtnLFROD\(1-09\).pdf](https://www.deq.state.or.us/Webdocs/Controls/Output/PdfHandler.ashx?p=32a8437e-f58b-4e38-892a-eb73ce3037b7.pdf&s=ShortMtnLFROD(1-09).pdf).
- McKinsey, Elizabeth. *Niagara Falls: Icon of the American Sublime*. London: Cambridge University Press, 1985.
- Melosi, Martin V. "Fresh Kills: The Making and Unmaking of a Wastescape." *RCC Perspectives*, 2016, 59-66.
- Merritt, Melissa McBay. "The Moral Source of the Kantian Sublime." In *The Sublime: From Antiquity to the Present*, edited by Timothy Costelloe, 37-49. Cambridge: Cambridge University Press, 2012.
- "Niagara." Art Object Page. Accessed October 27, 2018. <https://www.nga.gov/collection/art-object-page.166436.html>.
- Nye, David E. *American Technological Sublime*. Cambridge, MA: MIT Press, 2007.

- “Part 258—Criteria for Municipal Solid Waste Landfills.” ECFR - Code of Federal Regulations. Accessed March 11, 2019. https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=c94567294dff611654af7a3944a91d69&mc=true&r=PART&n=pt40.27.258#se40.27.258_140.
- Peeples, Jennifer. “Toxic Sublime: Imaging Contaminated Landscapes.” *Environmental Communication* 5, no. 4 (2011): 373-92. doi:10.1080/17524032.2011.616516.
- Phillips, Patricia C., Tom Finkelpearl, Larissa Harris, and Lucy R. Lippard. *Mierle Laderman Ukeles Maintenance Art*. Munich: Prestel, 2016.
- Pollak, Linda. “Sublime Matters: Fresh Kills.” *PRAXIS: Journal of Writing Building*, no. 4 (2002): 58-63. Accessed October 10, 2018.
- “Project and Landfill Data by State.” EPA. October 05, 2018. Accessed October 27, 2018. <https://www.epa.gov/lmop/project-and-landfill-data-state>.
- THUPDI. “Quarry Garden in Shanghai Botanical Garden Songjiang District, Shanghai, China.” ASLA 2012 Professional Awards | Quarry Garden in Shanghai Botanical Garden. Accessed March 14, 2019. <https://www.asla.org/2012awards/139.html>.
- “Resource Conservation and Recovery Act (RCRA) Overview.” EPA. February 06, 2019. Accessed March 11, 2019. <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview#subtitled>.
- Rogers, Heather. *Gone Tomorrow: The Hidden Life of Garbage*. New York: New Press, 2006.
- Rubinstein, Dana. “Landscape as Palimpsest: The Designer of Fresh Kills Speaks.” *Observer*. November 28, 2008. Accessed March 14, 2019. <https://observer.com/2008/11/landscape-as-palimpsest-the-designer-of-fresh-kills-speaks/>.
- Schrock, Lillian. “Overflow Controls.” *Register Guard*. March 06, 2017. Accessed May 08, 2019. <https://www.registerguard.com/rg/news/local/35328471-75/new-metal-tank-at-short-mountain-landfill-will-hold-wastewater-produced-by-garage.html.csp>.
- Swift, Barbara. “Designing Sculpture Parks: The Full Body Experience.” In *Landscapes for Art: Contemporary Sculpture Parks*, edited by Glenn Harper and Twylene Moyer, 55-60. Seattle, WA: University of Washington Press, 2008.
- Treib, Marc. “Sculpture and Garden A Historical Overview.” *Design Quarterly*, no. 141 (1988): 43-54. doi:10.2307/4091201.

