

U N E A R T H I N G
S E A T T L E ' S S U B T E R R A N E A N

a Proposal Dedicated to the History of the Queen City

by:

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A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in
partial fulfillment of the requirements for the degree of

Master of Architecture

Carleton University

Ottawa, Ontario

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A B S T R A C T

The land we occupy is not limited to what we see on the surface. Land, like time, accumulates in rich layers that blanket the past. Unearthing space and artifacts buried beneath these layers enables us to honour the past, understand the present and prepare for the future.

The thesis explores the *Seattle Underground*, a network of space beneath the city's historic Pioneer Square District. It proposes the unearthing and revitalization of a portion of this network to accommodate a museum and complementary facilities dedicated to Seattle, Washington's rich history.

Leveraging the unexploited qualities of the Underground, the proposal will create an important social and economic nexus for the stagnant neighbourhood. Through using design as a form of research, the thesis aims to inspire the city of Seattle to leverage this untapped, buried asset.



Figure 1: Pioneer Square, Seattle (1891)

ACKNOWLEDGEMENTS

I would like to express the deepest of gratitude towards the countless people in my life who have led me to achieve this great accomplishment.

I shall begin with expressing my appreciation towards my thesis advisor, Professor Benjamin Gianni. Thank you for your insightful knowledge, constructive critique, and thoughtful guidance. Your time and effort throughout this past year did not go unnoticed.

Greatest appreciation goes towards my family. Thank you for teaching me to believe in myself and that through determination, opportunities are endless. Mom, Dad, Kylie, Ryker, Nanny, Papa and Aunt Tracy: I am beyond grateful for your support. Thank you for being my cheerleaders.

Further thanks to my sister Kylie for accompanying me on my travels to the Pacific Northwest. I would not have wanted to explore Seattle and the Puget Sound region without you. I am fortunate to have a sister so interested in architecture and the many things I am passionate about.

Thank you to my best friends for always being present. Montana, Haley, Zoe and Jess you are all the very best. Whether it was to vent or forget, both were always needed. The many nights of listening and laughter were immensely refreshing amid all the chaos we call Graduate School.

Further thanks to not only my best friend, but my classmate and my roommate, Montana. I know for certain that I would not have made it through eight years of architectural madness without you. I am beyond grateful to have had you by my side throughout this complete journey.

Finally, I would like to express appreciation to the people of Building 22. Thank you to the Azrieli faculty for all that you taught me and thank you to my classmates for simply being present, many of which I am fortunate to call my friends. I will forever hold onto the memories we created.

Sincerest of thanks to every single one of you. I am beyond grateful and fortunate to have had your support. This accomplishment would not have been possible without you.

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PROLOGUE

Space is defined as “a continuous area or expanse which is free, available or unoccupied.”¹ Human habitation continues to push into new spaces despite the negative impacts of such expansion. Across the globe, humans have left behind numerous hidden, forgotten, and abandoned spaces. With such spaces available for habitation, why do we continue to expand into new ones? It is within these existing spaces that opportunities lie.

¹ Oxford Languages. The Oxford English Dictionary. Oxford: Oxford University Press, 2010.



Figure 2: Early Maynardstown

INTRODUCTION

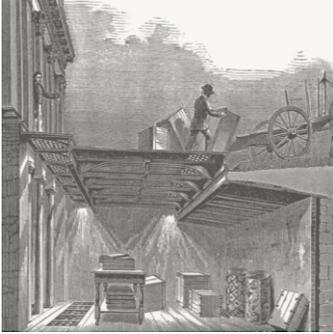


Figure 3: Underground Passages
Passages, otherwise known as areaways, lie beneath many of the sidewalks in Seattle's Pioneer Square. They will be discussed in greater detail throughout the thesis.

The thesis explores “the *forgotten city* which lies beneath Seattle’s modern streets”²: a network of spaces buried beneath the city’s Pioneer Square neighbourhood. By unearthing, expanding, and retrofitting this network to accommodate a multi-use cultural facility, my hope is to not only bring attention to this untapped asset, but to help revitalize the neighborhood.³ The goal is to produce an architectural proposal that inspires the citizens and leaders of Seattle to realize the potential latent in what is known as the Seattle Underground. Leveraging this untapped asset presents opportunities to honour the past, understand the present, and better prepare for the future.

The proposed facility, *Museum Seattle*⁴, will complement the ongoing regeneration of Seattle’s waterfront, which extends into the Pioneer Square neighbourhood.⁵ In addition

² Speidel, *Seattle Underground*, 2.

³ At surface level, special attention will be brought to the city’s controversial “Sinking Ship” site, a parking garage that now occupies the land where the infamous Hotel Seattle sat in the city’s earlier days.

⁴ *Museum Seattle* is named in honour and tribute to *Hotel Seattle*; a past landmark that occupied a portion of the project’s site during the earlier half of the 20th century.

⁵ The renovation project *Waterfront Seattle* runs along the city’s shoreline and spans a total of 17 blocks from Pioneer Square on the south to Belltown on the north.

to the museum’s exhibition space, the proposed program includes a series of complementary facilities: museum study/workshop space, performance venues, event spaces, galleries, a restaurant, and a café.



Figure 4: Yesler & James
Yesler Way and the blocks around Hotel Seattle (now the site of the “Sinking Ship”) were at the core of the city’s commercial life at the end of the 19th century.

The proposal is motivated by interest and honour. When considering what sort of project I might take on as a thesis, I took into account which elements of architectural design most captivated me. I found myself drawn to puzzles, labyrinths,⁶ and spaces of historical significance.⁷ With this in mind, I searched for a site that aligned with these interests and a project with the potential to have a positive impact on the surrounding community. Research led me to Seattle’s Underground, which is rife with architectural challenges and historical significance. Over the course of the past several months, I’ve formulated a proposal to inject life back into spaces that have been left to deteriorate, coupled with a strategy to reveal a key chapter in Seattle’s complex relationship with topography. In doing so, I aim to unearth a

⁶ Sites that hold a series of limitations that encourage designers to think outside of the box to provide great architecture that lies within the puzzled site.

⁷ Although subjective, spaces from which deserve to be seen.

portion of the city’s rich history that is begging to be exposed to citizens and visitors.⁸



Figure 5: Pioneer Square
Pioneer Square Park is located in the central core of Maynardstown and was the core of life in the city’s earlier days. (The pergola still stands there today.)

It was important to understand the history of the site as well as its relationship to the community it spawned. We should ask what made the place and what role it plays in the history of the city? As successful designers, we must investigate, document, and plan before creating.⁹ Research was undertaken through a review of writings on the history of Seattle, King County¹⁰ and the Puget Sound¹¹ region¹²: by visiting the city, touring the Seattle Underground, and by documenting the neighborhood above it. At the same time, I employed design as a form of research¹³, by way of determining what facilities to include and how best to

⁸ During my visit to Seattle, it was revealed through anecdotal that very few residents of the city are even aware of the Seattle Underground in the first place.

⁹ Mountain, Jim. “Importance of Community Engagement.” Lecture by Jim Mountain. November 25. 2021 19. Zoom Call.

¹⁰ King County lies on the north-west side of Washington state and against the Puget Sound Coast (see below); it makes up over 2,000 square miles of land bordering Snohomish, Kitsap, Kittitas and Pierce.

¹¹ The Puget Sound is a saltwater inlet that is connected to the Strait of Juan de Fuca, an outlet from which is connected to the Pacific Ocean

¹² The Puget Sound Region consists of a group of cities, towns and counties that lie along the coast of the Puget Sound inlet.

¹³ “Design as a form of research” means to research through design: sketching and concepts become design on there own.

accommodate them within the subterranean spaces and in the buildings that connect down into them.



Figure 6: 1878 Puget Sound
View of Seattle looking northeast
across Elliot Bay, taken at Alki Point.

Using the proposed facilities as a point of departure, the thesis can be understood as an initial step in a larger revitalization of the Seattle Underground, which extends beyond the blocks on which I've focused. It sets the stage for a future connection down to the waterfront, from which an increasing percentage of visitors will be entering Pioneer Square. On a personal level, the thesis presented an opportunity to explore a portion of North America that I knew little about. Immersing myself in an unfamiliar context provided an opportunity to create something with no preconceptions, knowledge, or prior understanding. It has been an enlightening journey.



Figure 7: Thriving Maynardstown

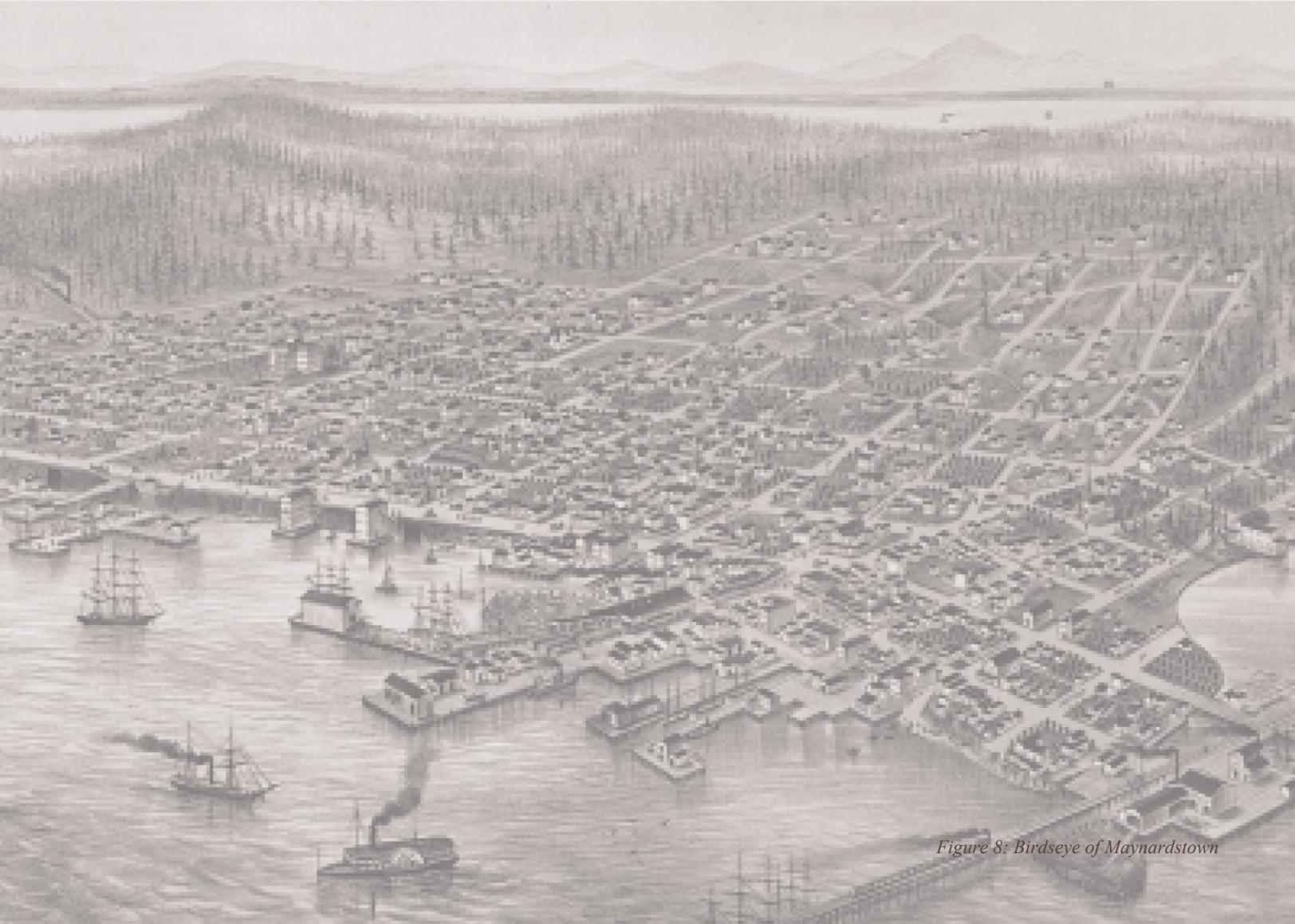


Figure 8: Birdseye of Maynardstown

1 | T H E S I S

C O N T E X T

In order to formulate a proposal for the revitalization and adaptive re-use of the Seattle Underground, it was necessary to understand the historical and the contemporary context.

The first portion of this document describes this context through outlining the thesis background, method and research that later contributed to its greater development.

1.1 | BACKGROUND

To begin the thesis, the following section outlines the history of Seattle and the Puget Sound Region through revealing a series of explanations of the past and what lead to what the city has since become.

“The Queen City of the Pacific Northwest¹⁴ and The Gateway to the Orient.^{15”}¹⁶



Figure 9: 1886 Maynardstown
Maynardstown during the time when the Central Business District was booming.

Seattle, Washington’s rich history dates to the last ice age. It is inextricably tied to the land and the way its settlers have chosen to shape it. The abandoned passageways that undergird its Pioneer Square neighborhood, originally known as *Maynardstown*¹⁷ are significantly tied to the history of the Queen City¹⁸ and the town that was once the city’s central business district.

¹⁴ The Pacific Northwest is a geographic region on the western side of North America. The region is bounded by the Pacific Ocean to the west and the Rocky Mountains to the east.

¹⁵ The city was labelled as The Gateway to the Orient because it was located at the gate of trade between Asia and Alaska.

¹⁶ Speidel, *Doc Maynard*, 2.

¹⁷ Maynardstown was the original name for the area that makes up the city’s current Pioneer Square Historic District, it was the root from which the city was built.

¹⁸ As Seattle rose from the ground it was coined as the future Queen City of the Pacific as it was acclaimed to be a popular and lively city in the near future.

1.1.1 | THE BEGINNING

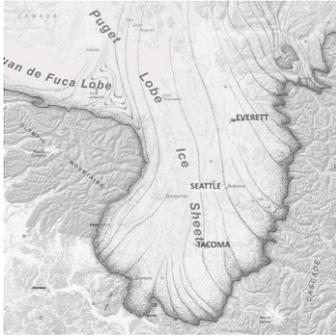


Figure 10: Puget Lobe Ice Sheet

Ice crept down from the north and engulfed the land now occupied by Seattle, whose location is labeled.



Figure 11: Seattle Fault

The fault line is shown in black. Seattle sits within the red portion of the subduction zone, making it extremely vulnerable to earthquakes.

“We also know subconsciously that we cannot escape these forces ... it is our past and it is our destiny.”¹⁹

Some 10,000 years ago, a glacier laid atop the Puget Lowland.²⁰ The Puget Lobe of the Concordia²¹ was the most significant factor in shaping the landscape of the Pacific Northwest. Shifting over the years, the ice carved the land into hills, ridges, and valleys and, as it melted, formed the region’s many bodies of water.^{22 23} Nearly 1,000 years ago, movement within an offshore fault²⁴ set off a catastrophic magnitude-seven earthquake, further sculpting the region’s topography.²⁵ The shifting fault lifted land more than twenty feet, redistributing water, forming the Duwamish

¹⁹ Williams, *Too High & Too Steep*, 28.

²⁰ The Puget Lowland is a region that lies between Washington State’s Cascade Range and the Olympic Mountains. It begins as far north as the San Juan Islands to the north, to land that surrounds the southern end of the Puget Sound.

²¹ The Puget Lobe of the Concordia is an ice sheet that is over 1,000 meters thick. An icesheet that crept down from Canada’s stable land mass and lied atop the Puget Lowlands.

²³ *Ibid.*, 15.

²⁴ The Seattle Fault consists of a series of east-west thrust faults that move from Bainbridge Island, through the Puget Sound, beneath Seattle (nearing the I-90) and across the Puget Sound Lowlands.

²⁵ *Ibid.*, 21.

River²⁶ tide flats²⁷ and creating Puget Sound's deep-water port that lies within Elliot Bay.^{28 29} When settlers arrived they saw the potential for industry and trade, leading to the largest city in the Pacific Northwest: Seattle.³⁰

“Native people dotted the landscape... they called themselves People of the Inside Place.” [3.P5]



Figure 12: Doc Maynard

In addition to being a doctor and a founder of the city, Maynard was an advocate for Native Americans, primarily those of the Duwamish Tribe.

Prior to the arrival of settlers, the region was occupied by the Duwamish People.^{31 32} When “the white men came they brought with them wonderful things,”³³ but along with it came the concept of private property: another name for stolen land.³⁴ When the land was overtaken by white folks, the native people were slow to outrage. By the time they realized their livelihoods were in danger, it was too late.³⁵

²⁶ The Duwamish River flows from Seattle's Elliot Bay southeast to the Green River nearing the middle of Tukwila.

²⁷ Williams, op. cit., 23.

²⁸ Elliot Bay is part of the Central Basin region of Puget Sound; it is the body of water that lies along Seattle's seawall.

²⁹ Ibid, 25.

³⁰ Same as 9

³¹ Duwamish People are the people of a Native American tribe that is central to western Washington. They make-up majority of the indigenous people living in the city of Seattle.

³² Ibid, 5.

³³ Morgan, *Skid Road*, 38.

³⁴ Ibid, 39.

³⁵ Ibid.



Figure 13: Chief Seattle

A leading figure for the Duwamish people and the man after which the city was named. He was a friend of Doc Maynard.

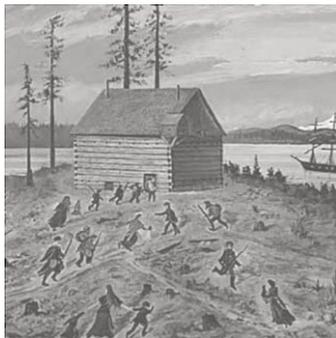


Figure 14: Battle of Seattle

“The weights row on The Sound in strength. In such a situation there were two things an Indian leader could do. He could fight or he could temporize.”

“98% of the population felt the most effective and economical method of solving the problem laid in the extermination of the aborigines.”³⁶ Doc Maynard³⁷ didn’t believe in killing, he opined that “the best way to avoid Indian trouble was to keep the Indians and the trouble” out of town.³⁸ He “*magoozled*”³⁹ land for the Chief⁴⁰ and the Duwamish west of Puget Sound,⁴¹ but not all Indians agreed to the shift. This led to the Battle of Seattle,^{42 43} which in response, had the town taking precautionary measures. The underbrush which the Duwamish crept through was burned and streets through the nascent business district were laid in an effort to facilitate communication, pre-attack.⁴⁴ As a result of the Indian Rebellion,⁴⁵ native peoples east of the

³⁶ Speidel. *Doc Maynard*, op cit., 167.

³⁷ Doc Maynard was Seattle’s most notable founder, a first founder and one of the city’s leaders who contributed most to its evolution in its early days.

³⁸ *Ibid.*, 168.

³⁹ *Magoozle* is defined as “a method by which we get things done in America. It’s neither legal or illegal, but it gets the job done.” It was coined by Doc Maynard himself.

⁴⁰ Chief Seattle stated, “my heart is good towards Mr. Maynard, I want always to get my medicine from him.”

⁴¹ *Ibid.*, 180.

⁴² The Battle of Seattle in January of 1856 was between the white settlers and the Duwamish Tribe. In total the battle had 28 casualties.

⁴³ *Ibid.*, 126.

⁴⁴ *Ibid.*, 128.

⁴⁵ The Indian Rebellion was the time from which the Duwamish People rebelled against the white settlers, leading to the Battle of Seattle.

sound were labelled unfriendly.⁴⁶ A proclamation was passed that “no Indian shall be permitted to reside or locate their residence... in the town of Seattle.”⁴⁷ With the successful suppression of the native population, the white man’s city was free to begin growing on stolen land.

1.1.2 | MAYNARDSTOWN & SEATTLE

“The first inkling of the disease ... lead to the invention of Seattle [and the] Pioneer Square Historic District.”⁴⁸

In 1849 an Ohio doctor set out, via rail, to help treat a country-wide Chorea⁴⁹ outbreak.⁵⁰ In the course of his travels he became enthused with the idea of settling a new city. When the train arrived in the Pacific Northwest, Doc Maynard set out to find the right location: “A good site at the mouth of a river that furnished transportation for the products of a rich hinterland.”⁵¹ Maynard discovered the

⁴⁶ Speidel, *Doc Maynard*, Op. cit., 134.

⁴⁷ Williams, Op. cit., 37.

⁴⁸ Speidel, *ibid.*, 22.

⁴⁹ Cholera is an acute illness caused by the infection of toxic bacteria found within the intestine. The outbreak was claimed to have killed approximately 150,000 Americans between 1832 and 1849.

⁵⁰ Speidel, *ibid.*

⁵¹ Speidel, *Doc Maynard*, op. cit., 15.



Figure 15: Arthur Denny

Arthur Denny was a pioneer, business owner, author, and politician. In addition to being one of Seattle's founders, he became the city's wealthiest citizen



Figure 16: Maynardstown

A view of Maynardstown (at the intersection of 1st and Yesler) when this area was full of life. (On the edge of the project site.)

harbour at the mouth of the Duwamish River around the same time it was discovered by the Denny Party, a group of American pioneers.⁵² ⁵³ The most important consideration in choosing the location was its adjacency to a deep-water port, suitable for a growing city. “So they planned a town; they planned it with the conviction that it would grow to be a great city.”⁵⁴

“Seattle lucked out on a lot of things, the most important... her geographic location on the centre of the sound.”⁵⁵

“Doc Maynard put Seattle where she is on purpose.”⁵⁶ He filed his plot⁵⁷ on land that soon became the city’s central business district. Maynardstown, now known as Pioneer Square, became the city’s heart for the next fifty years.⁵⁸ While Maynardstown had access to an abundance of timber

⁵² Led by Arthur Denny, a wagon party from Illinois settled on the land of Seattle. The party consisted of Arthur’s family, as well as his wife Mary Boren’s family.

⁵³ Ibid.

⁵⁴ Morgan, op. cit., 23.

⁵⁵ Speidel, *Sons of the Profits*, 1.

⁵⁶ Speidel, *Doc Maynard*, ibid., 1.

⁵⁷ Meaning he assumed and secured ownership of the land.

⁵⁸ Speidel, *Doc Maynard*, op. cit., 259.

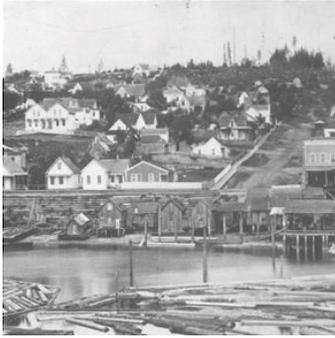


Figure 17: 1870 Seattle
View from the tidal flats and looking east towards Yesler Way.

and a deep harbour,⁵⁹ the site itself was far from ideal. It comprised 1500 acres of mudflats, ringed by a scant eight acres of partially dry land and 200-foot-high wet cliffs.⁶⁰ Moving east to west the land consisted of a series of cross-grained hills and hollows.⁶¹ While it was obvious that there was a “distinct lack of level land upon which to build the great city... the deep derived harbor was fixed in place and the settlers would have to adapt.”⁶² Knowing that the topography around them could be changed, the city of Seattle took root.⁶³

1.1.3 | FLOOD & MUD

“Right from the beginning we realized we had to lift ourselves out of the mud.”⁶⁴

“Much of what we know today was pretty swampy stuff when the folks first showed up.”⁶⁵ Prior to 1889, “not only

⁵⁹ Speidel, *Sons of the Profits*, op. cit., 60.

⁶⁰ Ibid., 214.

⁶¹ Ibid., 216.

⁶² Williams, op. cit., 3.

⁶³ Speidel, *Sons of the Profits*, ibid.

⁶⁴ Speidel, *Seattle Underground*, op. cit., 3.

⁶⁵ Speidel, *Sons of the Profits*, op. cit., 216.



Figure 18: Muddy First Avenue

Taken near Jackson Street, looking North. Doc Maynard's house is on the bottom right and the University of Washington is on the top left.



Figure 19: Tide-flats

Seattle's Pioneer Square neighbourhood sits on what were once the Duwamish River tidal flats. Seattle truly created "made-land."

were the streets at different levels than the sidewalks, but there was plenty of mud in them.”⁶⁶ Following a population increase in the later part of the 19th century and the introduction of the water-closet, the city's sewer system was operating at full capacity. Since the city sat so close to sea level, sewers flowed backwards each time the tide came in. Toilets flushed in reverse and became fountains twice each day.⁶⁷ The blunt truth was that “you had to climb a ladder to use the plumbing facilities...” and conditions “deteriorated rapidly in a town where the population was increasing.”⁶⁸ In addition to plumbing woes, “building owners and tenants will tell you another problem, basement flooding...” was an increasing concern. “High pressure would force water up through hairline fractures... in foundations, where it would shoot out like mini fountains.”⁶⁹

⁶⁶ Ibid., 225.

⁶⁷ Speidel, *Seattle Underground*, op. cit., 11.

⁶⁸ Speidel, *Sons of the Profits*, ibid., 238.

⁶⁹ Williams, op. cit., 59.

“The greatest changes to Seattle’s topography ... tide flats to made land.”⁷⁰



Figure 20: Henry Yesler

Henry Yesler was an entrepreneur and politician. Considered one of Seattle’s founders, he contributed significantly to the development of the city



Figure 21: Tide-flat Filling

The tidal flats were filled in through sluicing soil, as described on the following page.

Additional population growth in the last half of the 1800s further amplified the need for better (drier and flatter) land.⁷¹ Seattleites decided to fill in the 2,200-acre tide-flats, providing flat land away from the hills with close access to rail lines and at the same elevation as the deep-water port.⁷²

While the land was well-suited for industry and rail networks,⁷³ finding enough material with which to fill the wetlands proved to be a challenge. Waste from Henry Yesler’s⁷⁴ mill⁷⁵ was the first major method.⁷⁶ “Every cut log, sash, blind, shingle, molding and or product... the easiest way to dispose of it was simply to dump it on the tide flats... the city grew block by block expanding south on

⁷⁰ Williams, op. cit., 65.

⁷¹ Speidel, *Sons of the Profits*, op. cit., 175.

⁷² Williams, *ibid.*, 93.

⁷³ *Ibid.*, 4.

⁷⁴ Henry Yesler’s sawmill did great things for Seattle, beginning with providing numerous jobs upon the opening of his sawmill in 1852. In later contributing to the city’s history from which Yesler Way is named after, that being the infamous Skid Road.

⁷⁵ The first steam-powered sawmill of the Pacific Northwest, led to the development of the notable Skid Road.

⁷⁶ Speidel, *Seattle Underground*, op. cit., 3.



Figure 22: First Avenue

1st Avenue south of King Street, running along what were once tidal flats. Prior to the fill, 1st Ave ended around King St.

waves of waste.”⁷⁷ Next, the town applied the sluicing method to the surrounding hills and cliffs. “Denny hill went first, 5,000,000 cubic yards of earth were sliced down onto the tide flats.”⁷⁸ Additionally, “the town charged the ships that came up from San Francisco for logs and lumber five dollars a crock for dumping their ballast off the foot of Washington street.”⁷⁹ The tide-flats became the city’s dumping ground, where “anything else they could lay their hands on”⁸⁰ was tossed in. As the flats turned from wetland to reclaimed land, new industries quickly took root. The *made land*⁸¹ quickly became one of the city’s most epic complexes in history⁸² and soon became “a place where industry could grow.”⁸³

⁷⁷ Williams, op. cit., 77.

⁷⁸ Morgan, op. cit., 163.

⁷⁹ Speidel, *Seattle Underground*, op. cit.

⁸⁰ Doughton, *Full-Rip 9.0*, 199.

⁸¹ “Madeland” was the term Seattleites used to refer to new land.

⁸² Williams, *ibid.*, 68.

⁸³ *Ibid.*, 93.

1.1.4 | THE FIRE THEN THE RAISE

“Oh well it was the biggest fire we ever had ...and the timing was right.”⁸⁴



Figure 23: The Great Fire of 1889

Fortunately, the great fire only took one life, along with the lives of thousands of rats. The fire paved the way for new growth.

When it came to construction, the founders of Seattle did things as cheaply as possible. Over 90% of the buildings were wooden structures on wooden stilts. “Seattle was a fire waiting to happen.”⁸⁵ “No rain fell during the first week of June in 1889”⁸⁶ and then the fire happened. “The whole thing started four blocks north of pioneer square in a cabinet shop where some nut overturned a pot of burning glue which hit some shavings and then hit the roof.”⁸⁷ In minutes the fire was out of control and in twenty minutes it was all aflame.⁸⁸ The tide was out, and the water mains were too small. “When the fire touched the wooden tracks on the *Skid Road*⁸⁹ there

⁸⁴ Speidel, *Sons of the Profits*, op. cit. 239.

⁸⁵ Speidel, *Seattle Underground*, op. cit. 6.

⁸⁶ Morgan, op. cit., 103.

⁸⁷ Speidel, *ibid.*, 8.

⁸⁸ Morgan, *ibid.*

⁸⁹ The Skid Road was the path from which logs were sent down from the forest above to the mill below. It was the city’s dividing line, the demarcation between affluent citizens and the rowdy population. In time it became known as the deadline, anything and everything happened south of the deadline as there were no laws.



Figure 24: Fire Ruins

The fire left only small remnants of the building facades that were made of stone or brick. The rest was crumbles and ash.



Figure 25: Post Fire Rebuild

A boots and shoes store beginning to rebuild in the heart of Maynardstown.

was no hope of stopping it.”⁹⁰ It swept through over 120 acres. “66 blocks of the town’s prime business district laid in smoldering ruins... the fire had wiped out everything west of 2nd Ave, north of Yesler Way and as far as 4th Ave on the south side of Yesler Way.”⁹¹ Although the Great Seattle’s Fire of 1889⁹² “didn’t seem so hot to the world in general... it did great things for Seattle.”⁹³

“The fire provided the opportunity... but the sewer system gave us the motivation.”⁹⁴

The fire that “burned down the whole lower end of town was considered kind of a catastrophe in a lot of circles but not to the general public. To them it was a chance to correct this situation.”⁹⁵ “Building had started so soon after the fire that the building areas had to be kept flooded so the workmen wouldn’t burn their feet.”⁹⁶ Within three weeks the town

⁹⁰ Morgan, op. cit., 108.

⁹¹ Speidel, *Sons of the Profits*, op. cit. 241.

⁹² The Seattle Great Fire of 1889 destroyed over 90 acres of land/buildings and cost the city 20 million dollars, which is equivalent to over 500 million in present time.

⁹³ Speidel, *Seattle Underground*, op. cit. 8.

⁹⁴ Ibid., 11.

⁹⁵ Speidel, *Sons of the Profits*, ibid., 251.

⁹⁶ Ibid.



Figure 26: Retaining Walls

This photo illustrates the scale of the raise in some places. A building at the original street level is seen behind the retaining wall.

passed a new ordinance, raising the streets to fit the sewer system laid in response to tide and gravity.⁹⁷ “The streets were raised from curb to curb, using fill dirt from the surrounding hills and any [other] kind of debris the town fathers could lay their hands on.”⁹⁸ Stone retaining walls were built along the edges of streets, pipes were laid and the voids were filled in. The city was raised anywhere from ten to thirty-two feet higher than their original level.⁹⁹

1.1.5 | THE SEATTLE UNDERGROUND

“The Great Fire... was enormously important to the creation of the forgotten city.”¹⁰⁰



Figure 27: Street Raise

Building was underway and the streets began to be raised on the southern end of First Avenue. Notice the conspicuous absence of mud on the new streets.

“The city had attempted to raise the streets many times in the past and had not succeeded. There was no guarantee the city could get the streets raised this time. So, construction began at the lower level.”¹⁰¹ Since building owners were eager to rebuild as quickly as possible, construction began at the

⁹⁷ Speidel, *Seattle Underground*, op. cit. 11.

⁹⁸ Speidel, *Sons of the Profits*, op. cit. 252.

⁹⁹ *Ibid.* 252.

¹⁰⁰ Speidel, *Seattle Underground*, *ibid.*, 8.

¹⁰¹ Speidel, *Sons of the Profits*, op. cit. 245.

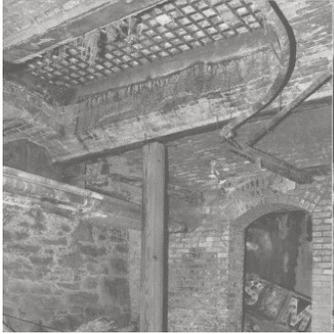


Figure 28: Areaway

To the left is a retaining wall used to raise the street. Above is the (raised) sidewalk, with prismatic glass cylinders. The arched opening through the brick support wall connects to the next portion of the areaway beyond.

original (lower) level. This time, however, regulations required that they be constructed of brick and stone on masonry foundations. As street raising was frequently out of synch with building construction, sunken areaways¹⁰² between streets and buildings were common.¹⁰³ “It didn't take too long for them to figure out that having their sidewalks and serve runways down there was not at all satisfactory.”¹⁰⁴ ¹⁰⁵ Many businesses moved their operations up to the new street level, turning the original ground floor into the basement. Businesses close to streets built steps down into the ground floor. Over time sidewalks were built at the raised level to connect buildings to streets. Glass prisms cast into these sidewalks creating light wells over the original sidewalks below. This is visible throughout Pioneer Square today where tours lead visitors through the neighbourhood's underground passages.¹⁰⁶

¹⁰² Areaways are corridors from which lie between the buildings and the street retaining walls: they are in most cases anywhere where the streets were raised.

¹⁰³ Williams, *op. cit.*, 54.

¹⁰⁴ Many people lost their lives falling off the street to the lowered sidewalk. Not to mention prior to stairs, citizens literally ascended and descended ladders to cross the street.

¹⁰⁵ Speidel, *Sons of the Profits*, *ibid.*, 252.

¹⁰⁶ Speidel, *Sons of the Profits*, *op. cit.* 253.

“Ours have an edge on Pompeii... we built another city right on top of it.”¹⁰⁷



Figure 29: Bill Speidel

Bill Speidel, seen here guiding visitors through the network, was the first to offer tours of the Seattle Underground.

Or so William Speidel¹⁰⁸ speculated, when news broke there were flocks of telephone calls from people interested in the possible rediscovery.¹⁰⁹ So Speidel searched and stumped and found out that “there really was a forgotten city which lies beneath Seattle’s modern streets.”¹¹⁰

1.1.6 | UNDERGROUND TODAY

“He scrounged around and found out how it got there and what it had to do with the growth of Seattle.”¹¹¹

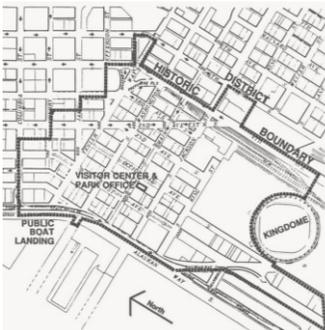


Figure 30: Pioneer Square District

Speidel championed the historic designation of the district, the boundaries of which are indicated on this map.

By 1970 it was determined that subsurface networks did indeed lay beneath a number of the city’s oldest blocks. Seattle subsequently declared sixteen blocks to be part of a

¹⁰⁷ Ibid., 213.

¹⁰⁸ William Speidel was a columnist and author who later became a self-made historian upon his interest with the history of Seattle.

¹⁰⁹ Speidel, *Seattle Underground*, op. cit. 2.

¹¹⁰ Ibid., 3.

¹¹¹ Ibid.

historic site,¹¹² now known as the Pioneer Square Historic/Preservation District.¹¹³

“When you get underground, you find humps and hollows that weren't erased in the general leveling process.”¹¹⁴



Figure 31: Glass Prisms

Glass prisms are seen on the sidewalk in front of Merrill's Place on First Ave. The presence of these prisms is usually an indication that a portion of the underground is running below.

As with many cities around the world, the history of Seattle lies buried; underground passages and chambers preserve elements that are key to its unique past.¹¹⁵ The city's early sidewalks and commercial spaces lie anywhere from 10 to 30 feet below our feet.¹¹⁶ One buildings floor could be 5 feet lower than the one next to it and some floors still flood at high-tide.¹¹⁷ Today the underground is mostly experienced through the glass inserts in the sidewalks. “Flat on top and prismatic below, the glass lets light into the subterranean canyons... [today]... there are still around 19,000 lights dotting the sidewalks of pioneer square.”¹¹⁸

¹¹² Speidel, *Seattle Underground*, op. cit. 3.

¹¹³ Seattle's Pioneer Square Historic District is a heritage area that was prior to the city's central business district and was earlier known as Maynardstown.

¹¹⁴ Speidel, *Sons of the Profits*, op. cit. 216.

¹¹⁵ *Ibid.*, 214.

¹¹⁶ *Ibid.*, 230.

¹¹⁷ *Ibid.*, 216.

¹¹⁸ Williams, op. cit., 54.

1.1.7 | DESTINY

“They would do whatever was necessary to make their new home succeed.”¹¹⁹



Figure 32: Denny Regrade
The remnants of what was left following the completion of Seattle’s Denny Hill Regrade.

If accommodating growth “meant changing their landscape than that’s what they would do.”¹²⁰ Seattle’s robust topography has affected “where we live, to where we play, from how we build infrastructure, to how we dissemble the land.”¹²¹ Its citizens have moved mountains. Since the arrival of its first settlers, Seattle’s land has been manipulated. “Reshaping the topography had changed Seattle from an isolated gathering of hopeful settlers who had in many ways not chosen the best spot to establish a town, to undisputedly the premier city of the state... landscape manipulation became part of the city’s collective DNA.”¹²²

¹¹⁹ Ibid., 12.

¹²⁰ Ibid.

¹²¹ Ibid., 28.

¹²² Williams, op. cit., 189.

“Everything always happens at once ... the Great Magoozle was coming to a head.”¹²³



Figure 33: Past Citizens

Citizen's of Maynardstown gather for a bike ride in the heart of the district. It is unknown where they are going.

Approaching the turn of the century, “dreams of half a century had been fulfilled... the city finally had come into its own... [and it became] slick as 5th Ave in New York.”¹²⁴

“In 1910 Seattle was a top dog for the whole Pacific Northwest with 237,000 [people]... and she's been a big city ever since.”¹²⁵

¹²³ Speidel, *Doc Maynard*, op. cit., 92.

¹²⁴ Speidel, *Sons of the Profits*, op. cit. 254.

¹²⁵ *Ibid.*, 338.

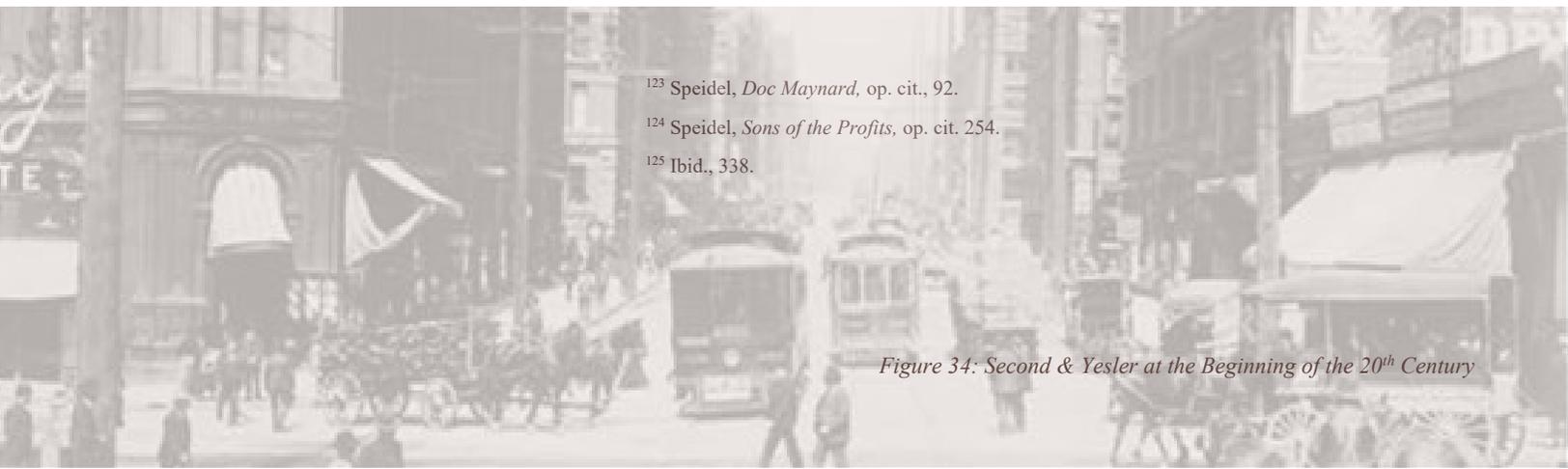


Figure 34: Second & Yesler at the Beginning of the 20th Century

1.2 | METHOD

The methods on which the thesis drew upon included a series of techniques. This section outlines its process, drivers, credibility, possibility and scope.

1.2.1 | PROCESS

Throughout the process, design and research occurred simultaneously and, in many cases, interchangeably. The process was iterative, designing to determine what issues to research, and researching through a variety of methods, including design.

DESIGN VS RESEARCH

The relationship between research and design was symbiotic. Embarking on the thesis, I researched in order to design. As the work progressed, I used design to assess what program to accommodate, how best to accommodate it, and where further research was necessary.

Familiarity with the history of Seattle, with a focus on the transformation of its topography, was key to developing a program for the Seattle Underground. While much of this

was done through a review of literature, a site visit, which included a tour of the Seattle Underground, was invaluable in understanding the context in which I would be working and the conditions to which I would be responding.

DESIGN AND RESEARCH

Most significantly, I must emphasize the importance of using design as a form of research. While this is what I have always done as a designer, it didn't occur to me that I was doing it until my advisor pointed it out.

I have been asked countless times to define architecture and have always struggled to define the word. While the dictionary states that architecture is “the art or practice of designing and constructing buildings,”¹²⁶ people within the discipline know it goes well beyond that.

Indeed, it is through design that I am able to understand what architecture is and what it has the possibility of becoming. As a designer I research through design and understand that design is its own form of research. The process of design is

¹²⁶ Oxford Languages. *The Oxford English Dictionary*. Oxford: Oxford University Press, 2010.

iterative and involves exploring concepts to determine which works better and which don't work. Design is a form of problem setting as well as problem solving.

1.2.2 | DRIVERS

Throughout this past year, my advisor routinely reminded me that three things are necessary for a successful thesis: a site, a program, and a set of ideas. Typically, one of these three drives the thesis forward. From the outset I was interested in working with a complex, challenging space for which design skills could be brought to bear to address constraints. Although I had no idea what that space might be, I knew I would recognize it when I saw it. As such, site was the starting point for the thesis.



Figure 35: Seattle Underground
Boardwalks within the Underground help visitors to navigate changes in grade.

After examining numerous sites across the globe, I discovered the Seattle Underground, with history of which led all the way back to the last ice age. At this point I knew my thesis would involve an exploration of history. I questioned why a city so constrained by topography would not use the subterranean spaces directly beneath its feet to better advantage. Given today's technologies and methods



Figure 36: Objects

Original building fixtures and materials can be found in the Underground. To the left are objects used by Seattle's earliest citizens.



Figure 37: Facades

Intact building facades are still visible throughout the Underground. Here we see brick walls and wooden window frames.



Figure 38: Signs

A relic of the past, "Teller's Cage" is written on the sign in the Underground.

the Underground should no longer be deemed as unviable. To address this question, and to better understand the city's complex relationship to the land on which it sits, it was necessary to research Seattle's history. The goal was to formulate an informed proposal on what programs and activities the Seattle Underground might support. Through this process it became apparent to me that the Underground might best be used to tell the history of Seattle, i.e., that stories were asking to be told. It was a point both of curiosity and concern that a city with so many museums lacked one dedicated to its history. It was at this point that the program began to take shape and to inform the exploration.

I now ask myself which was most significant in moving the thesis forward, ie site (the Underground), program (a museum), and set of ideas (the history of Seattle). In truth, I believe all three were equally important. Without the initial interest in a site, I would not have discovered the Seattle Underground, and without exploring the history of the site, I would not have arrived at the program I did. However, coming full circle, I believe program has now taken the front seat to the theses further development.

1.2.3 | CREDIBILITY

It is important that my work be credible in order to be taken seriously. To the greatest extent possible I relied on credible sources. In the absence of hard data, however, I had to make educated guesses and rely on anecdotal information. The following section outlines each.

RELIABLE DATA

I was fortunate to have access to numerous, reliable sources (books, etc.) on the history of Seattle. I was also fortunate to be able to contextualize and verify many of the things about which I read by visiting the city and the site. I used this visit to augment the documentation available in print and online. Case studies and precedents also helped me to make sense of what I was seeing, especially with respect to the accommodation of program. Site plan data was acquired through CAD Mapper,¹²⁷ which is used by many professionals. CAD Mapper draws on opensource data from

Open Street Map, NASA, USGS and others. To accurately locate the underground, I relied on Geo Data from the City of Seattle's GIS website.

ASSUMPTIONS

Unfortunately, accurate architectural data for the Seattle Underground was not available in any of the sources I consulted. As such, I had to rely on educated guesses based on the limited data available. While the locations and overall dimensions of buildings were available through CAD Mapper,^{128 129} I could not access architectural drawings for the buildings within my area of focus. Accordingly, it was necessarily making educated guesses about internal configuration and structural bays based on what I could glean from their facades. I made educated guesses on building systems and materials. Although the work presented in the thesis is not a dimensionally accurate reflection of the Seattle Underground, it is a likely

¹²⁸ Public Source Data

¹²⁹ Cad mapper, "Seattle".

representation of what exists. As such, it is a credible point of departure for ideas about what the space might become.

1.2.4 | POSSIBILITY

It might be relevant to question why a long-abandoned and forgotten space might be relevant and useful in the present. In other words, if subterranean spaces didn't work for the citizens of Seattle 'then', why would they work now?

Among the many reasons is that the infrastructure of the past is very different than it is now. Over the past century, building technologies have advanced considerably. For years geologists, seismologists, engineers, architects and building scientists have worked alongside one another to introduce innovative approaches to building structure, envelopes, vertical transportation systems, and systems that withstand natural disasters and hazards.

Throughout its history portions of Seattle have been susceptible to flooding, notably the low-lying Pioneer Square neighborhood.¹³⁰ The absence of effective flood

¹³⁰ This is described in greater detail in the above subsection 1.1.3 | Flood & Mud.

control measures contributed to the closing of the Underground. Current technologies, however, now permit us to build in areas with high water tables.

We now understand just how susceptible the Puget Sound Region is to earthquakes. Seattle is especially susceptible for the reasons described in Sandi Doughton's book *Full-Rip 9.0*.¹³¹ Advances in earthquake detection as well as those in seismic reinforcement now make it possible to mitigate building failure when disaster does strike.

1.2.5 | SCOPE

The primary goal of this thesis was to put an idea out there to demonstrate the potential latent in the Seattle Underground, including a strategy and blueprint for further expansion. While the focus is on a building-scale proposition for a portion of the Underground, it can be understood as the first phase in a larger project that expands to the urban scale.

It is obvious that the proposal that shall be revealed in the latter half of the thesis document will leave many questions

¹³¹ See Appendix D for information and detail on Seattle's earthquake susceptibility.

unanswered. Earlier it was discussed that for this project proposal to have the chance to be successful a lot must be solved with regards to flooding and earthquakes. A task that I believe, would be an engineered project on its own. In addition, such a project would face myriads of problems, not least among which are the cost to construct and operate, and the sources of funding on which to draw. In terms of cost, I would look to city funding and a great body of public and private donations.

As an aspiring architect, however, my focus was on the design of the facility and on inspiring others to explore the idea further. Through a proposition for the unearthing and transformation of the Seattle Underground, the thesis attempts to demonstrate the architectural possibilities inherent in a space deemed to be too awkward and unsuitable for habitation, and the potential of this space to transform the neighborhood under which it lies.



Figure 39: Gates & Passages

1.3 | RESEARCH

I employed three overlapping modes of research over the course of this thesis, namely a review of literature, a site visit, and an analysis of precedents. Each is described in greater detail below.

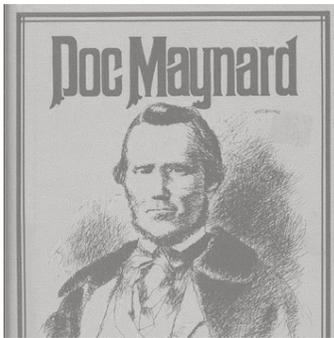


Figure 40: *Doc Maynard*

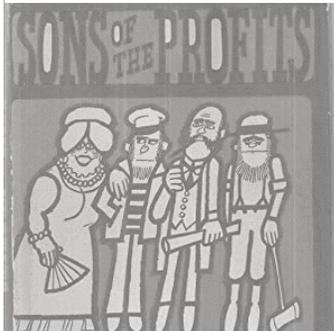


Figure 41: *Sons of the Profits*

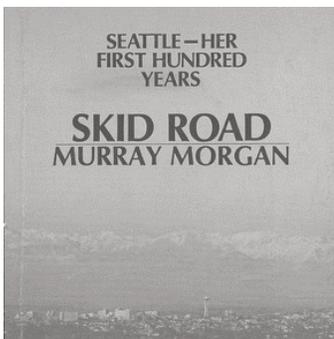


Figure 42: *Skid Road*

1.3.1 | LITERATURE

A large body of literature was explored throughout the duration of my thesis in order to develop an in-depth understanding of Seattle’s history. This included a detailed list of books, articles, and theses written by others, all of which influenced my work.

BOOKS

I began by reading two books on the history of Seattle by Bill Speidel, namely *Doc Maynard: The Man Who Invented Seattle* and *Sons of the Profits*, as well as *Skid Road* by Murray Morgan. Each book provided a background on the founding of the “Queen City” of the northwest.

Following these I read *Too High and Too Steep: Reshaping Seattle’s Topography* by D. Williams. This book provided

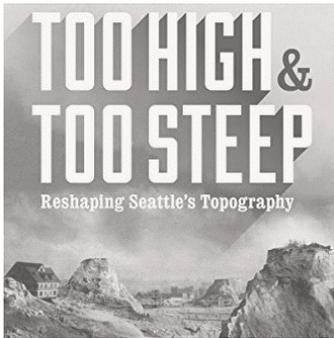


Figure 43: *Too High & Too Steep*

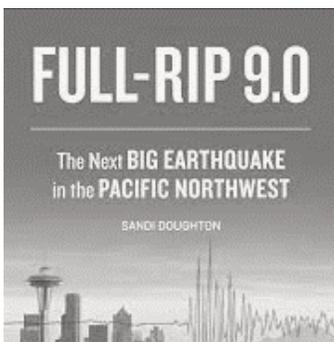


Figure 44: *Full-Rip 9.0*



Figure 45: *Seattle Cityscape #2*

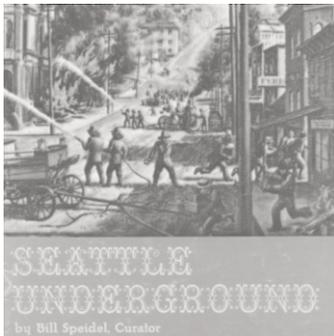


Figure 46: *Seattle Underground*

an in-depth review of things topographical, documenting the landscape manipulation that occurred throughout the city's evolution. As noted, S. Doughton's *Full-rip 9.0: The Next Big Earthquake in the Pacific Northwest* was useful in making me aware of the natural disasters to which Seattle is prone.

Apart from history and geology, V. Steinbrueck's *Seattle Cityscape #2* provided important insights on Seattle's architecture infrastructure, and culture.

ARTICLES

Further questions led me to a series of articles on the Seattle Underground. The most significant of these was "Seattle Underground" by B. Speidel inasmuch as it provided an in-depth explanation of how and why the underground was created and the circumstances leading to its rediscovery.

Articles on the internet were also a fruitful source of answers to the many questions I still had regarding Seattle's subterranean spaces.¹³²

¹³² Note: A list of articles that I investigated is found within the bibliography.

The website of the Pioneer Square Preservation Board was also extremely helpful, especially with respect to articles on the district's many heritage buildings. In addition to the Pioneer Square Historic District website for all things culture and environment related. Similarly, articles on the revitalization of the Seattle Waterfront strengthened my understanding of the districts evolving relationship to the Puget Sound region.

THESES & DISSERTATIONS

Academic theses and dissertations were significant sources of information.¹³³ Although I was unable to find any that focussed specifically on the Seattle Underground (including proposals for its revitalization), they were an important source of bibliographic information. Each led me in different ways and, together, contributed to the development of my work.

¹³³ A list of theses and dissertations that I investigated is found within the bibliography.

1.3.2 | SITE VISIT

I was fortunate to be able to travel to Seattle to experience, the topography, infrastructure, and culture of the city and surrounding territory. Visiting the site was crucial both in making sense of what I had read and gaining new insights.¹³⁴



Figure 47: Mount Rainier

An active stratovolcano in the Pacific Northwest, Rainier is the highest mountain in the Cascade Range and in the state of Washington.



Figure 48: Mount Ellinor

A peak located on the north-east side of the Olympic Range: Ellinor sits within the Mount Skokomish Wilderness.

REGION

As part of the visit, I explored the region's many hills, ridges, mountains, and valleys. This exploration deepened my understanding of the role of topography well beyond what I could glean from books and articles. I experienced Mount Rainer in the Cascade Range and Mount Ellinor in the Olympic Range.¹³⁵ These ranges lie on the east and west, respectively, of Puget Sound.

SEATTLE

In Seattle proper I immersed myself in the culture of the city and studied its infrastructure. This was extremely useful in understanding what the city might want and need in terms of

¹³⁴ See Appendix B | Site Visit for additional material on the site visit.

¹³⁵ I had the opportunity to climb the summit of Mount Ellinor, where I experienced Mount Rainer from an adjacent peak.



Figure 49: Viaduct
The Alaskan Way viaduct prior to its removal. Photo taken in 1967.



Figure 50: Building Facade
Taken at the corner of 2nd Ave & Cherry St looking south, the raised street blocks a portion of the original façade.

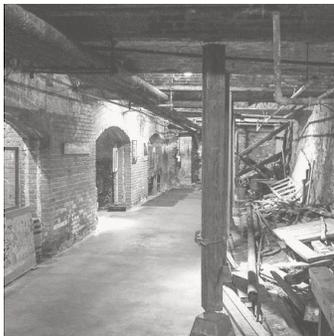


Figure 5: Seattle Underground
Photo taken in an areaway within the underground. To the left is the ground-floor façade of a building that predates the raising of the streets.

cultural infrastructure. First-hand experiences of the city's topography helped me to understand why and in what ways the landscape had been manipulated. This, in turn, helped me put the Underground in perspective and appreciate its complex relationship with the ground plane. Apart from the glass prisms, the Underground is visible in the unconventional relationship between facades and sidewalks.

UNDERGROUND

Finally, the site visit¹³⁶ afforded the opportunity to tour the Seattle Underground itself. Exploring the spaces, I began to understand the depths of the city's changing topography and the ways it affected the buildings within it. Moving through areaways from one building to the next, I experienced frequent grade shifts, something I was unprepared for based on the readings I'd done.

The first-hand exploration of Seattle Underground was invaluable in imagining what the subterranean network might become and what kinds of program it might support.

¹³⁶ Refer to the bibliography for reference to the two tours I partook on during my time in Seattle.

The visit also enabled me to study the various building materials, structure, and systems at play. This was crucial to developing an accurate and viable architectural proposal.

1.3.3 | PRECEDENTS

An analysis of precedents was crucial in developing a proposal for the transformation of the Seattle Underground. These precedents can be categorized into five different, but overlapping categories: 1) Lifted Cities, 2) Subterranean Networks, 3) Abandoned Underground Spaces, 4) Underground Exhibition and Venue, and 5) City History Museums. Examples in each category are briefly described below, however for a detailed description see Appendix C.

LIFTED CITIES

Numerous cities have adjusted their ground plane, often in reaction to flooding. For the purpose of the thesis, I focussed on three cities, namely Chicago, Atlanta, and Orlando. Like Seattle, each of these cities has attempted to preserve and inhabit the lower (underground) spaces associated with the

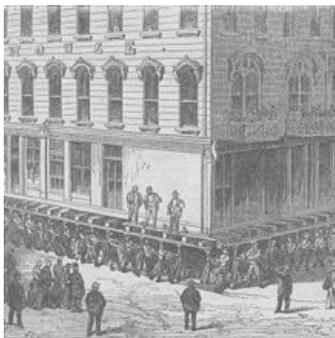


Figure 52: Chicago Raise
Workers lift a building with jacks and lifts.

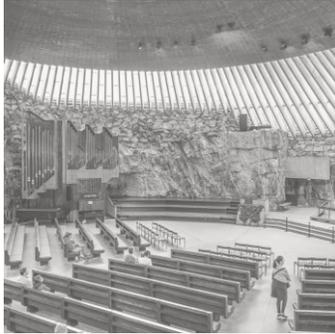


Figure 53: Helsinki Underground
An underground church located in Helsinki's Underground. Bedrock is revealed on the church walls.



Figure 54: Wieliczka Salt Mine
An open venue / reception space many meters below grade in what was once an active salt mine.



Figure 55: Amos Rex
Sculptural skylights above a portion of the Amos Rex Museum help connect the museum with the plaza above.

original ground plane. They provide useful examples of how subterranean spaces can be programmed.

SUBTERRANEAN NETWORKS

My research uncovered numerous examples of underground networks. For the purpose of the thesis, however, I focussed on three examples, two in Canada and one in Finland, the characteristics of which seemed especially applicable.

ABANDONED SUBTERRANEAN SPACES

In researching underground spaces, it became apparent how many have been abandoned over time as the cities above them evolved. With that in mind, I explored three examples where designers injected vitality into abandoned spaces beneath vibrant communities: including the US, Poland, and France, which have each significantly influenced my proposal for the Seattle Underground, in different ways.

UNDERGROUND EXHIBITION

Museums figured prominently in my investigation, which is logical when considering that daylight must be carefully controlled where artifacts are displayed. Underground

exhibition spaces are quite common in museums. Examples from three different countries were especially relevant to my proposal for Seattle, namely museums in Japan, Finland and China: all three allowed for some daylight to enter galleries.



Figure 56: The Vaults
Visitors in the vaulted street that leads to the event venue. Art and culture are truly captured in this image.

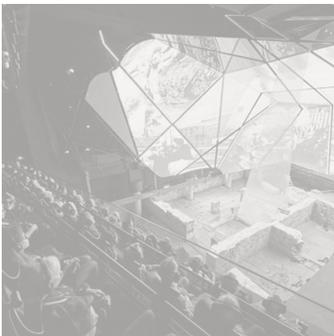


Figure 57: Point-A-Calliere
A complex backdrop around archeological ruins forms a stage and viewing center; an opportunity to showcase film in an interesting manner.

UNDERGROUND VENUE

A review of underground event venues was important in as much as they figure prominently in my proposal for the Seattle Underground. While many of the spaces I uncovered were intimate bars and small performance venues, three examples seemed especially relevant. Located in Canada, USA and Europe, each was informative in a different way.

CITY HISTORY MUSEUMS

It was important to research exhibition spaces to understand how to accommodate program for the Seattle Underground. Museums focussed on the history of cities were of particular interest. Among the precedents I explored were city museum in Quebec, Spain, California, and China.



Figure 58: Maynardstown prior to the 1889 Great Fire



Figure 59: Pioneer Square District Today

2 | A R C H I T E C T U R A L

P R O P O S A L

The second half of the thesis unveils the architectural proposals context and description, followed by an in-depth narrative and representation of the design development.

Through using design as a form of research on its own, the following drawings, ideas and concepts were curated for Seattle's abandoned subterranean spaces.

2.1 | CONTEXT & DESCRIPTION

This section provides a detailed explanation of the Pioneer Square District, the Seattle Underground and site selection. It then described the process by which I formulated a program, then presents concept diagrams for the architectural proposal that followed.

2.1.1 | PIONEER SQUARE DISTRICT

Seattle's Pioneer Square neighbourhood is bounded by the Elliot Bay waterfront to the west and Interstate 5 to the east. Classified as a national historic district as well as a local preservation district, the neighbourhood spans between Columbia Street to the north and King Street to the south.

Favorably located relative both to Seattle's downtown core (today's Central Business District) and the city's major sports stadia to the south, it is in a prime location for a flourishing community.

Notably it is one of the few Seattle neighborhoods to have direct, on-grade access to Elliot Bay. Commuter ferries from

Bremerton and Bainbridge Island arrive at the foot of Yesler Way – a few blocks from the project’s proposed location.

Pioneer Square is surrounded by Belltown to the northwest, First Hill to the northeast, the International District to the southeast and Sodo to the southwest. The unique nature of each of these neighborhoods complements the character and qualities of Pioneer Square.

D1 & D2 SITE | PLANS | 1:20,000 & 10,000

The following plans situate Pioneer Square within the downtown core of Seattle and in relation to Elliot Bay. The buildings that will be repurposed to support the program, which will be described in the following section, are shown in white, and are contained in three adjacent blocks.



BELTOWN

BUSINESS DISTRICT

PIONEER SQUARE

NORTH SODO

SOUTH SODO

CAPITAL HILLS

CENTRAL DISTRICT

BENTONVILLE DISTRICT

BEACON HILLS

N



PIONEER SQUARE
DISTRICT

2.1.2 | SEATTLE UNDERGROUND



Figure 60: Seattle Skyline Today

Taken from the southern end of Queen Anne at the popular Kerry Park, Pioneer Square lies just beyond this vibrant skyline.



Figure 61: Pioneer Square

What was once the center of the city is now all but deserted. The pavilion in the Park is bereft of visitors.

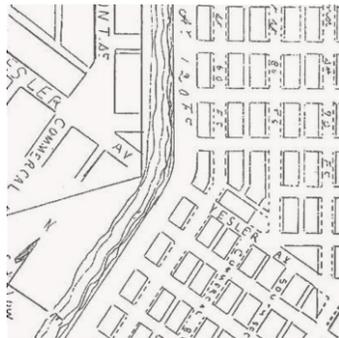


Figure 62: City Grids

The horizontal/vertical grid by Maynard and the diagonal grid by Denny. Yesler Way divides the two.

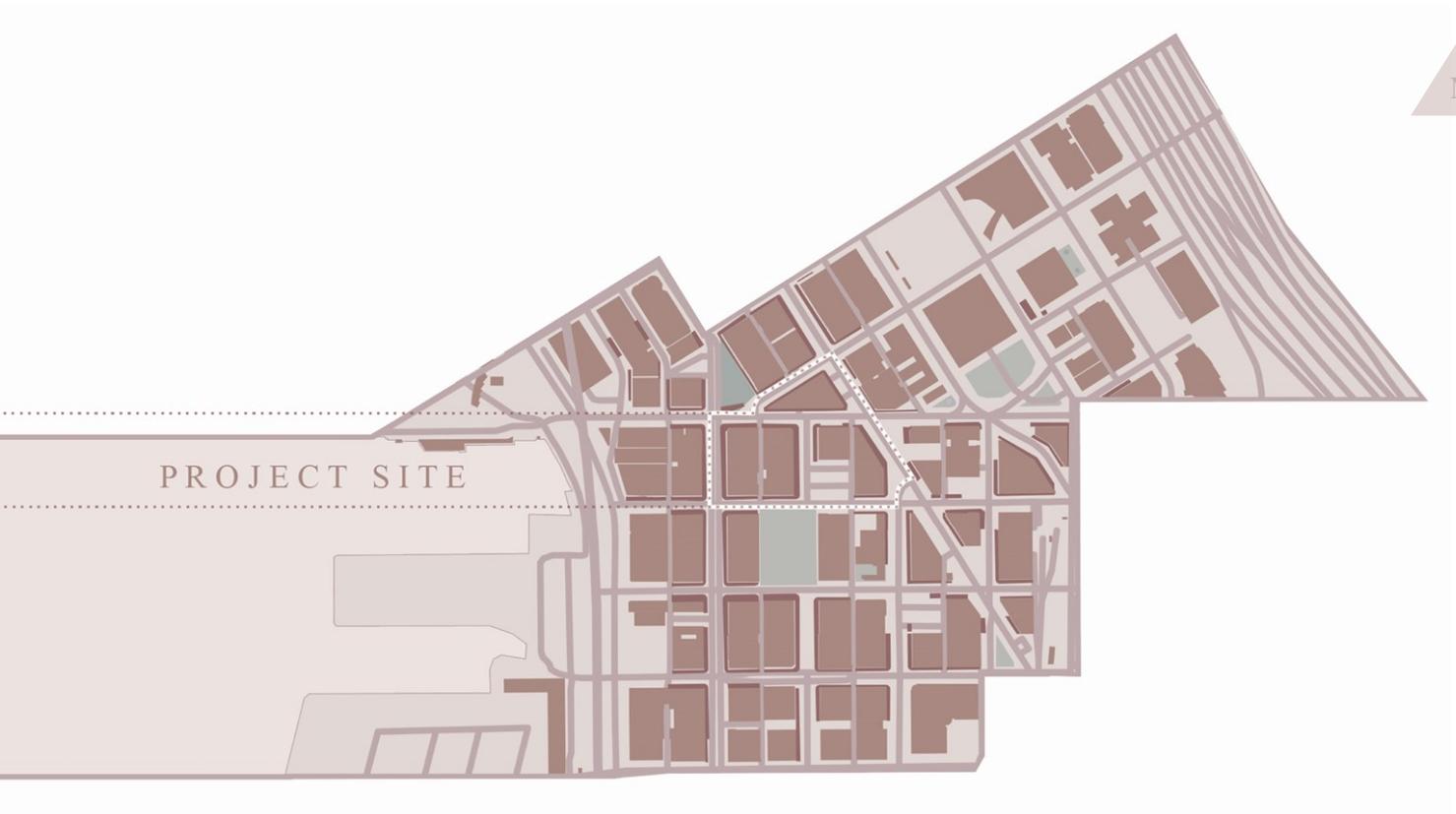
Pioneer Square is not nearly as lively as it was when it was known as Maynardstown. Having expanded to the north, city life is now most vibrant beyond the district. As such, the redevelopment of the Seattle Underground presents an opportunity to revivify Pioneer Square in tandem with other efforts the city is undertaking, e.g., the removal of the viaduct,¹³⁷ the redevelopment of the waterfront, and the construction of the sports stadia to the south.¹³⁸

The opportunity to (re)develop a portion of the Underground at the architectural scale is also an opportunity to make an impact at the urban scale. Moreover, the successful redevelopment of a portion of the Underground paves the way for an incremental redevelopment of the network as a whole. Initially designed at an architectural scale it can be noted as a prototype to further expansion throughout the city's complete underground spaces.

¹³⁷ Damaged during the Nisqually Quake – its removal lead to Waterfront Seattle.

¹³⁸ South of the Pioneer Square Historic District lies two major stadiums. Lumen Field – home of the NBA Seahawks and MLS Sounder. T Mobile Park – home of the MLB Mariners... 2nd Ave S and Occidental Ave (both line the project site to be later discuss) run directly from Pioneer Square to the stadium.

In the diagram of Pioneer Square below, the limits of the project site are indicated with a white dotted line. Existing areaways, i.e., areas under which subterranean sidewalks exist, are shown in dark red lines. Together these sunken passages line and comprise what we now know as Seattle's subterranean the *Seattle Underground*.



2.1.3 | SITE SELECTION



Figure 63: Sinking Ship

Taken from the corner of Yesler and James, the iconic Smith Tower rises behind the parking garage that sits on the site of the Hotel Seattle.



Figure 60: Hotel Seattle

An image of the elaborate hotel that was replaced by a parking structure. (Taken prior to the Smith Tower build.)

Having chosen the location, I needed to decide on which portion of the Underground on which to focus. Looking into the history of the neighborhood, I became interested in the seam along which the city's two grids meet, namely Yesler Way. The story behind this street starts with three of the city's founders: Maynard, Denny and Yesler.^{139 140}

Looking into the history of the abutting buildings, one in particular stood out, namely the shard-like parking garage on the triangular plot bounded by Yesler Way, 2nd Ave, and James St. Occupying the site of the former Hotel Seattle, "the triangular Sinking Ship garage... is aesthetically incompatible with its neighbors [and] it has been the subject of controversy since before it was built... hope remains that it will be removed."¹⁴¹ It is all the more unfortunate that it

¹³⁹ "With increase in population founders set out to survey the land... when Doc Maynard and Arthur Denny began surveying the land, Denny made comment that Maynard had to have been drunk when he staked out his land... when they tried to match up the two plots, there was a problem, the main streets didn't meet." "The truth is that, drunk or sober, Maynard was right." The law called for arranging grids on a north-south and east-west axis. "Although it was Doc who had been drinking... it was Denny's vision that was impaired."

¹⁴⁰ As mentioned earlier, Yesler Way was the street from which logs were sent down from the above forest to Henry Yesler's Sawmill on the waterfront. Trade workers populated the area and would hangout south of Yesler Way, which was known as the deadline. Therefore upper-class folks would not dare cross the line.

¹⁴¹ Steinbrueck, *Seattle Cityscape* #2, 18.



Figure 66: Occidental (1)

A streetcar waiting to depart along Occidental Ave, looking south onto Washington St. All of the buildings in the photo are still standing.



Figure 67: Occidental (2)

Citizens boarding a streetcar on Occidental Ave, which terminates on the triangular plot that the Hotel Seattle (still standing in this image) once occupied.

sits on the site of the former Hotel Seattle.¹⁴² The view down Occidental St., a pedestrianized street that cuts through Pioneer Square, terminates on the awkward structure.

Immediately adjacent to the “Sinking Ship” site the Smith Tower, which “dominates, as it was intended to do so since... 1914 when it was built to help anchor Seattle’s downtown.” The tower was once the tallest skyscraper in the United States.¹⁴³ On the corner of 1st and James, directly in front of Pioneer Square Park sits “the Pioneer Building, built in 1889... it is one of the best examples of Victorian Romanesque revival.”¹⁴⁴ On the corner of Yesler and Occidental sits the Interurban Building, formerly the Seattle National Bank.

In terms of public space, the triangular Pioneer Square Park, bounded by 1st Avenue and James Street, sits just northwest of the parking garage. This historically significant space once was the core of Maynardstown. A block south of the

¹⁴² An important landmark of Maynardstown during the earlier half of the 20th century. The space seen an overflow of citizens and visitors from day to day... Now all that the land sees is parked cars.

¹⁴³ *Ibid.*, 16.

¹⁴⁴ *Ibid.*, 15.

garage is Occidental Park, a cobble stoned plaza in the heart of the neighborhood, which was important to the history of logging in the city.¹⁴⁵

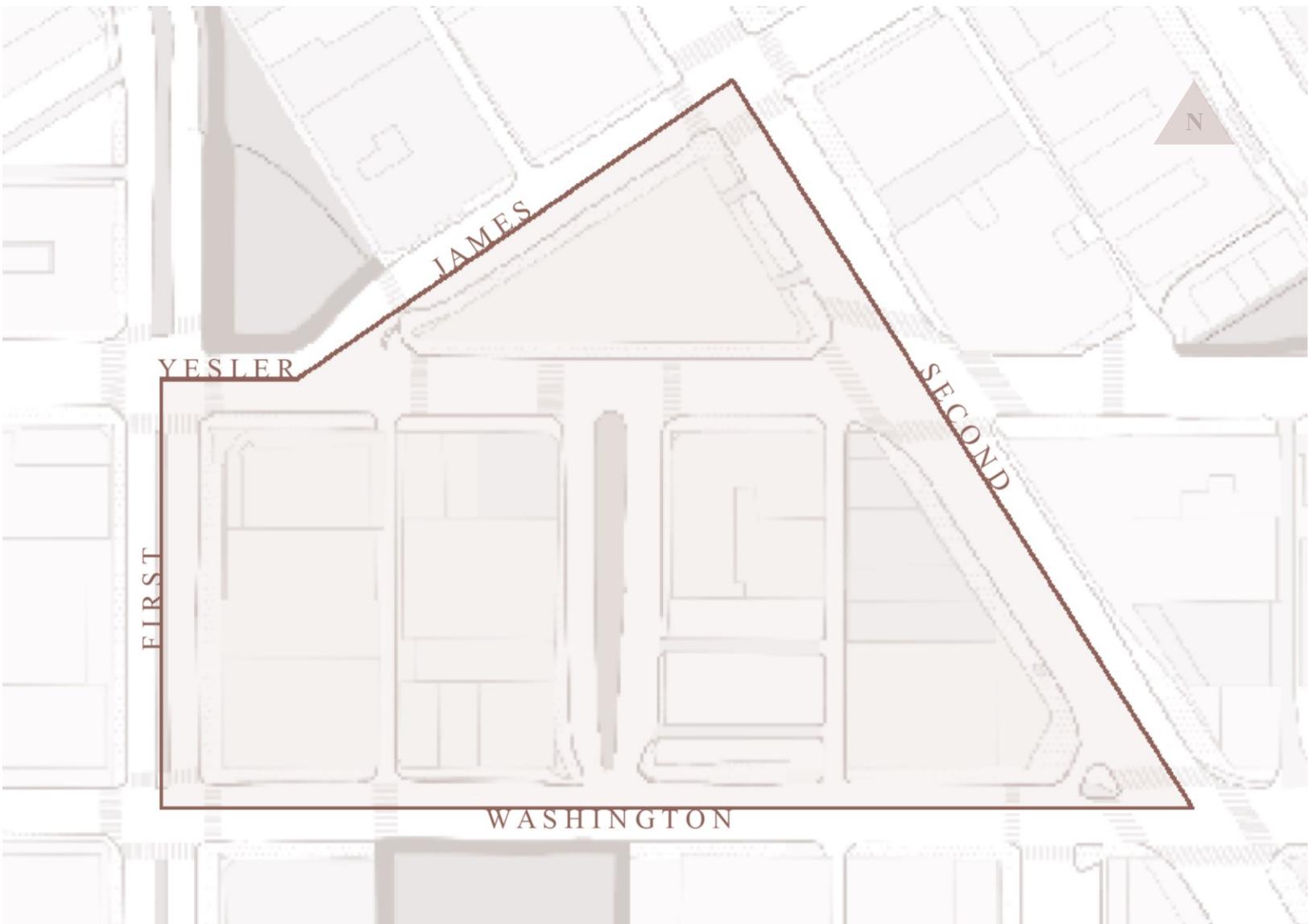
As noted, Pioneer Square faces on to the waterfront, which is undergoing a major revitalization. Leveraging this, the proposed project would contribute to the rejuvenation and reactivation of the city's urban shoreline. If successful, the project will draw people into the neighborhood from the waterfront – and draw them into the past.

With this in mind, I concluded that the project should be anchored by Yesler and Occidental. This historically significant location seemed to be the perfect spot to breathe life back into the once lively area.

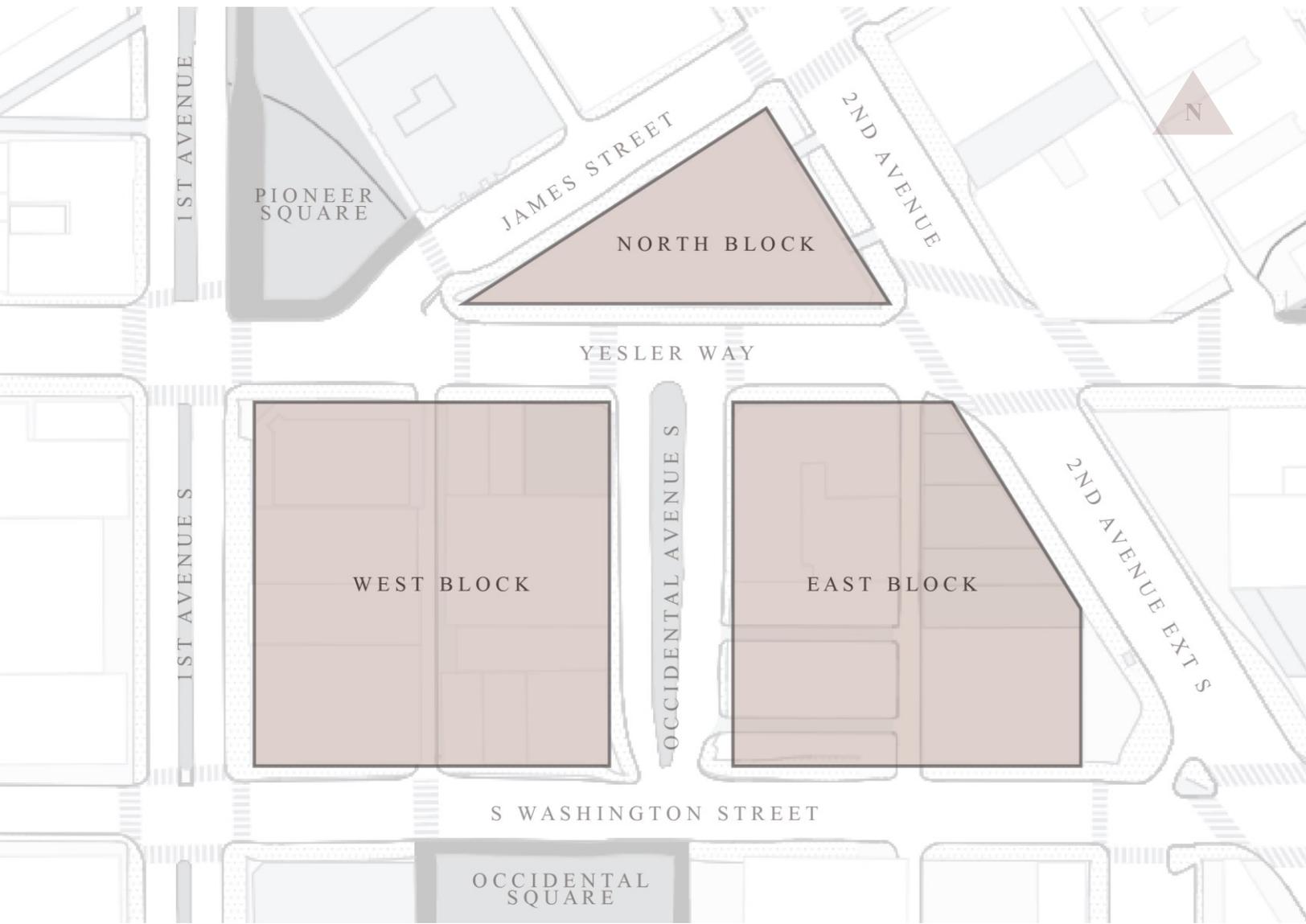
¹⁴⁵ During the time when Hotel Seattle still existed, and loggers occupied the deadline: an area from which people arrived and departed from the city. Occidental Ave was previously home to a series of street cars and the terminal lied straight in front of the Hotel.

| D4 | SITE EXTENTS | DIAGRAM | 1:1200

Bounded by James St, 2nd Ave, S Washington and 1st Ave S, the project site encompasses three blocks. The main route to the waterfront from the eastern side of the city, Yesler Way, cuts directly through it. The site consists of a triangular block north of Yesler Way and two blocks to the south, flanking Occidental Avenue.



It seemed appropriate to focus on the revitalization of the area that was once the heart of the city. Rather than taking on the entire network, I opted to focus on a three-block area adjacent to Yesler Way. The site includes the Sinking Ship and two blocks directly beneath.

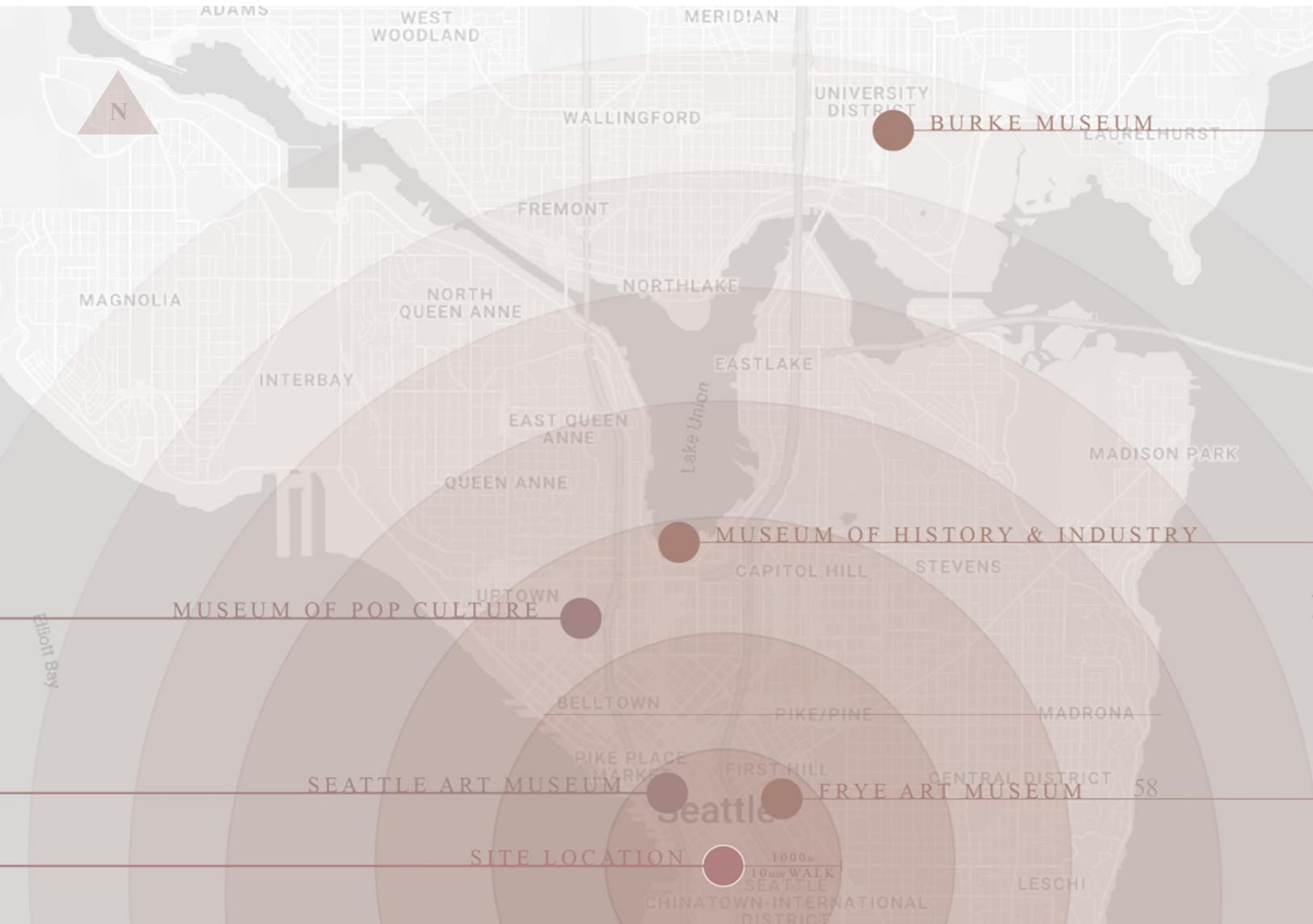


2.1.4 | BENEFITING PROGRAM

Exhibitions create spaces in which to gather, exchange ideas, confront preconceptions, and accrue cultural, artistic, and scientific knowledge. Exhibitions on the history of cities provide an opportunity to connect with the past, understand the present, and consider the future.

As noted, the city of Seattle and the surrounding King County are extremely rich in history, culture, and community. The Seattle Art Museum and Museum of Pop Culture are two of the most widely known museums in the city, but their focus is elsewhere. And while the Museum of History & Industry (MOHAI), the University of Washington's Burke Museum of Natural History & Culture, and the Frye Art Museum support programming on the history, industry, culture, and art of Seattle, the opportunity exists to amalgamate (and/or complement) these collections into a museum focused solely on Seattle and King County.

The diagram locates the museums mentioned above. The distance of Burke and MOHAI from the historical core of the city suggests an opportunity to relocate their collections. There is also a need to better document and celebrate the pre-colonial history of the area, focussing on the Duwamish people, the traditional stewards of the land from which is now occupied by the growing city.



2.1.5 | PROGRAM SELECTION

As such, the thesis proposes that facilities for Seattle’s first city/region history focused museum to be located in and among the passages running beneath Pioneer Square. The museum would include complementary facilities including exhibitions,¹⁴⁶ galleries,¹⁴⁷ venues,¹⁴⁸ workshops,¹⁴⁹ hospitality,¹⁵⁰ and ancillary.^{151 152}

It’s my intention that the museum presents history and culture through exhibitions and displays of artifacts gathered throughout the city and from museums. Beyond that. It will be a place that introduces in-depth history that honors the Duwamish People, Seattle’s earliest inhabitants. In addition

¹⁴⁶ A sequence of historic objects, artifacts and archives that relate to Seattle, King County, and the Puget Sound Region: permanent and temporary. Additionally, a private archive will be included that house museum artifacts not displayed.

¹⁴⁷ Permanent and temporary displays of visual art in the form of painting, sculpture, drawing, photography and film. An opportunity to display the artwork of artists native to the region, current and past settlers.

¹⁴⁸ A series of three theatre spaces consisting of an open-air amphitheatre, conventional end-stage and a multi-functional black-box. Additionally, crush space is placed for gathering visitors during and between performances.

¹⁴⁹ Workshops and classes that provide space for learning and activity that are catered towards the museums mission: that being honouring the history of the city and land.

¹⁵⁰ The project includes a restaurant, a café, reception, courtyards, souvenir, and a bookstore: each being a complementary addition to the museum itself.

¹⁵¹ It is evident that the project shall also include programming for washroom, storage and mechanical. Most importantly service programming in order to provide loading access allowing things to ascend and descend to and from the space.

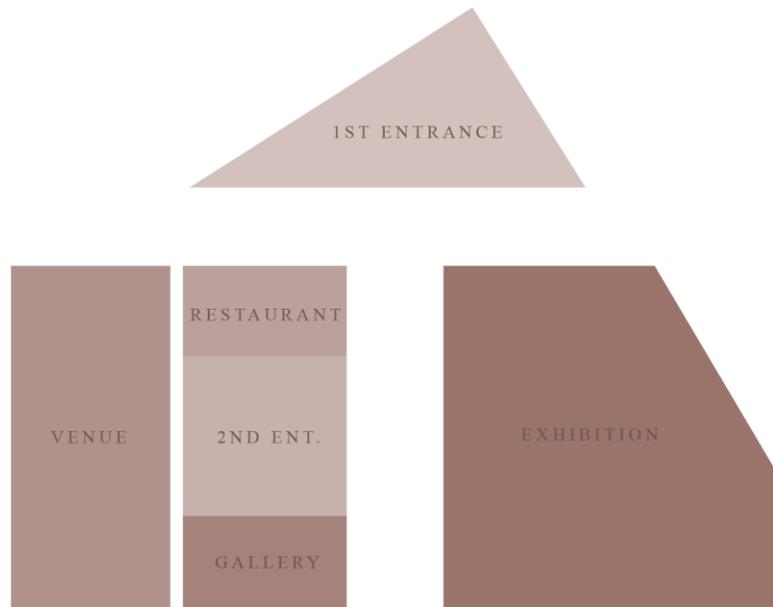
¹⁵² See Appendix A for a detailed list of program and size of spaces.

to the manipulation of landscape by the white settlers, the indigenous occupation of the land greatly informed the proposal. I envision *Museum Seattle* as a vehicle through which many stories can be told, importantly the Duwamish.

| D7 |

PROGRAM | DIAGRAM | NTS

While the focus of the program is on a new history museum, it includes a range of complementary facilities. The project divides into three sections, corresponding to three separate blocks, each housing different types of program. The complex has been designed to allow different facilities to be used both together and separately.



2.1.6 | PROJECT CONCEPT

| D8 | SITE STATUS | DIAGRAM | 1:5000

The historical status of each of the buildings in the area of focus played a key role in deciding on which to remove and which to retain. Removing buildings was necessary both for natural lighting and for circulation. The following diagram categorizes buildings based on their historical significance and indicates which lots are currently vacant.



| 09 | BLDG REMOVAL | DIAGRAM | 1:1200

The following diagram indicates which buildings I am proposing to remove to allow light to enter the underground and to augment site circulation.



2.2 | DESIGN DEVELOPMENT

The following section describes the overall design development of the architectural proposal through an in-depth narrative and graphic representations. It ends with a short, descriptive summary that ties the thesis and its proposal together.

2.2.1 | STREET SCHEME

| D10 |

SITE | PLAN | 1:1200

The projects site scheme is substantially a reflection of present context and past history. While most of the program is accommodated below grade, portions of the project reach upward. While primarily a proposal for the revitalization, renovation, and reuse of the Seattle Underground, the new, street-level entry pavilions are intended both to complement and contrast with the adjacent buildings. The “Sinking Ship” structure has been re-envisioned as the primary point of entry into the museum, while a pavilion along Occidental Avenue acts as a separate entrance for the project’s west block. As redesigned, the Sinking Ship can read as a lid that has been lifted to welcome people into the subterranean

world. Supplementary service entrances are located in buildings facing 1st and 2nd Avenue. The façade-like pavilion along Occidental drops into a sunken courtyard, one of several such spaces that invite light and views down into the Underground. Lightwells along sidewalks mimic the gaps that existed while the streets were being raised and offer pass-byers views of the long-buried lower floors of the historic buildings.

Finally, apart from the above, the bulk of the project lies within the abandoned portions of the Underground. Beneath the three-block area of buildings and streets lay a series of spaces that accommodate a range of programming.



JAMES ST

E1

YESTER WAY

21ST AVE

1ST AVE

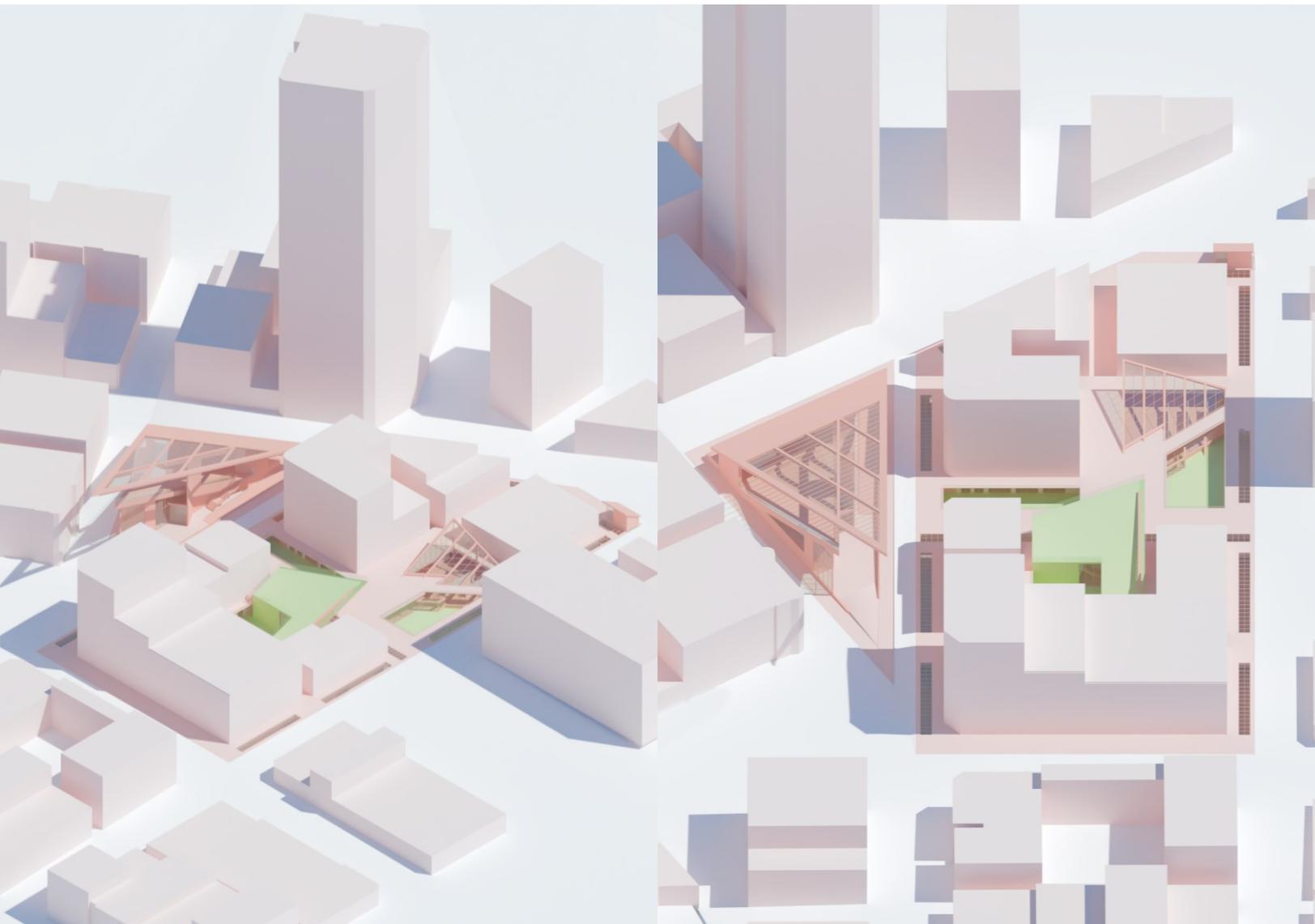
OCCIDENTAL AVE

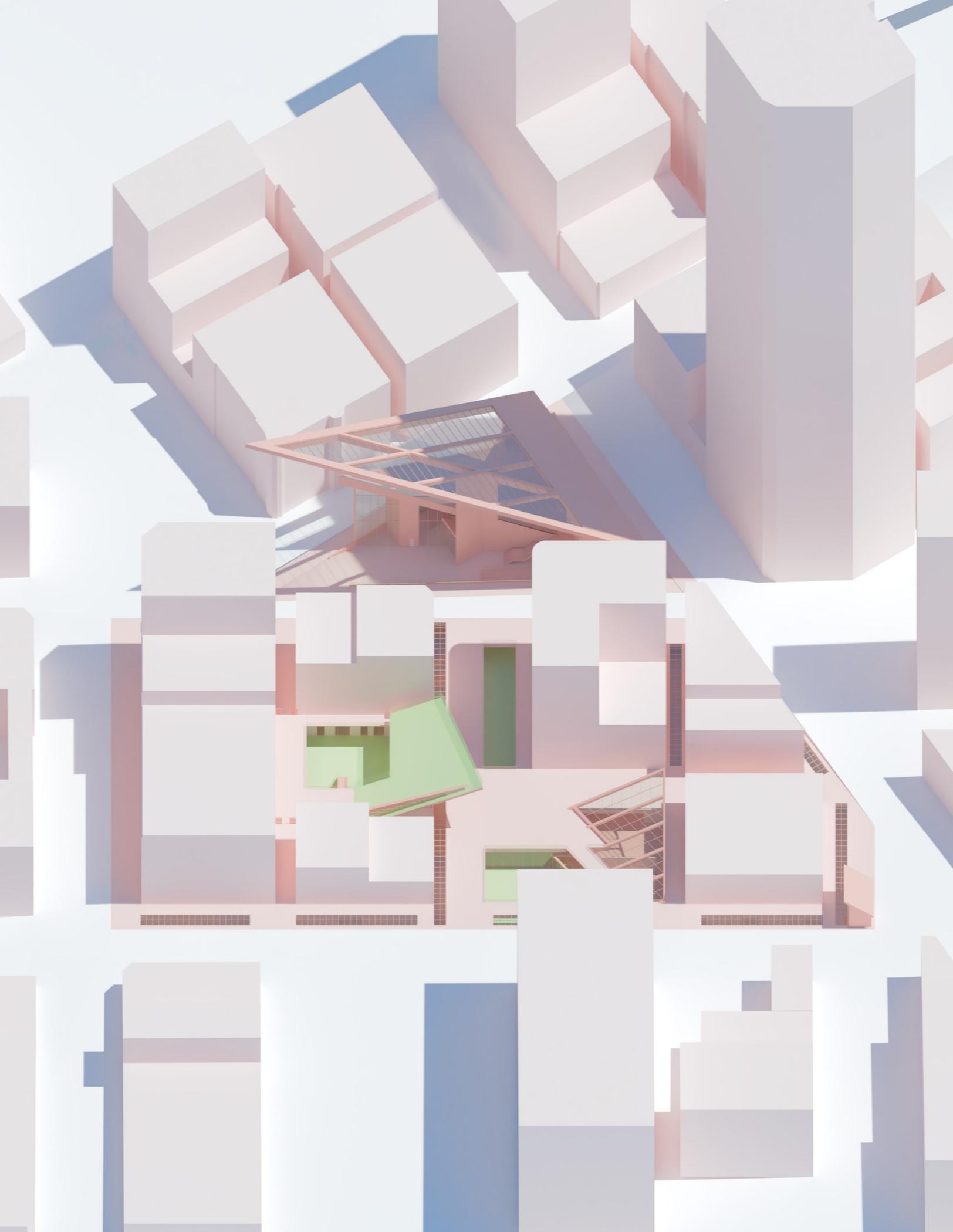
E2

WASHINGTON ST



The axonometric drawings below show the overall massing of the project. The image on the left shows the complex from the southwest while the one on the right is oriented east/west, with 1st Ave. to the bottom. The image on the following page is oriented north/south, with 1st Ave. to the left.





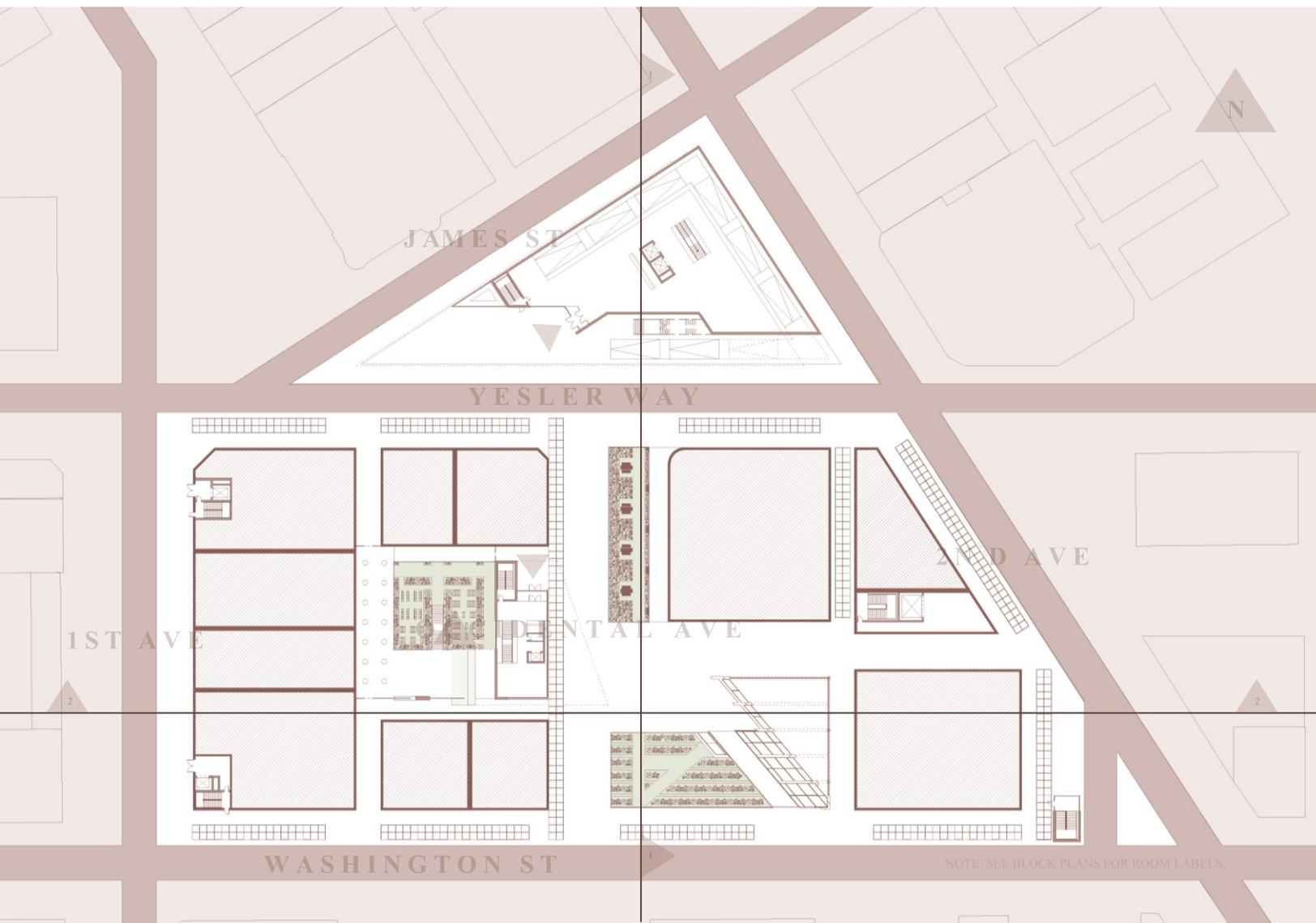
The main entrance pavilion, which sits on the triangular site currently occupied by the Sinking Ship, is intended to catch the eye of those moving through the district. Envisioned as a lid into the underground, and taking cues from the building it replaces, the new entry pavilion features a monumental, tilted projection providing shelter over a plaza. The rooftop amphitheatre is protected by a sloped glass canopy through which the Smith Tower is visible.

The image below depicts the entry pavilion as it would be seen looking east up Yesler Way from Elliot Bay. The majority of visitors will likely approach Museum Seattle from the revitalized waterfront.¹⁵³ The pavilion is designed to act as a landmark, drawing people to the museum and into Pioneer Square.

¹⁵³ As explained earlier in the thesis, the waterfront is undergoing great changes through reintroducing green space and public space to the waters edge. This will revitalize the asphalt streetways and man-made seawall into a space that provides for the walking citizen.



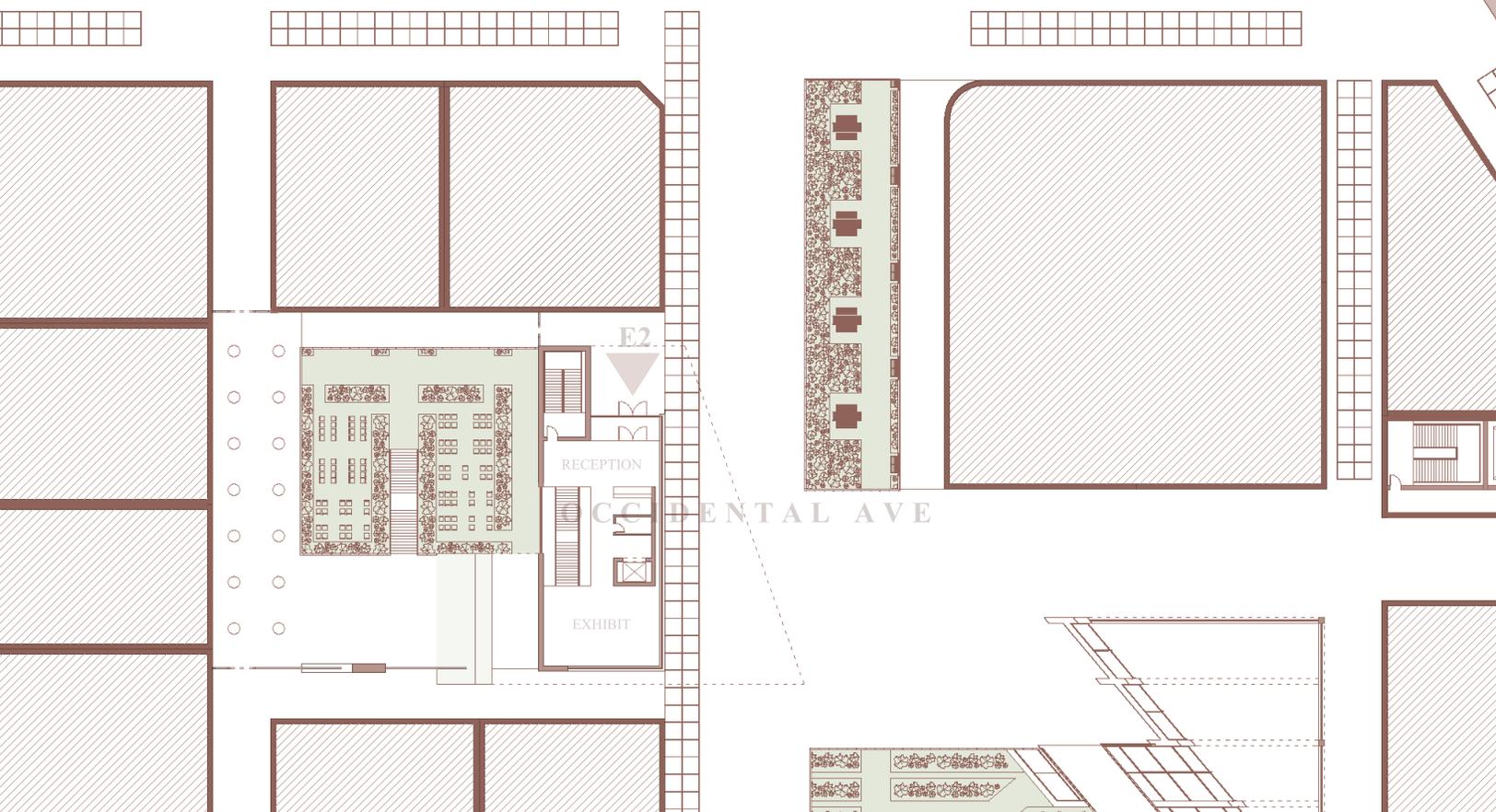
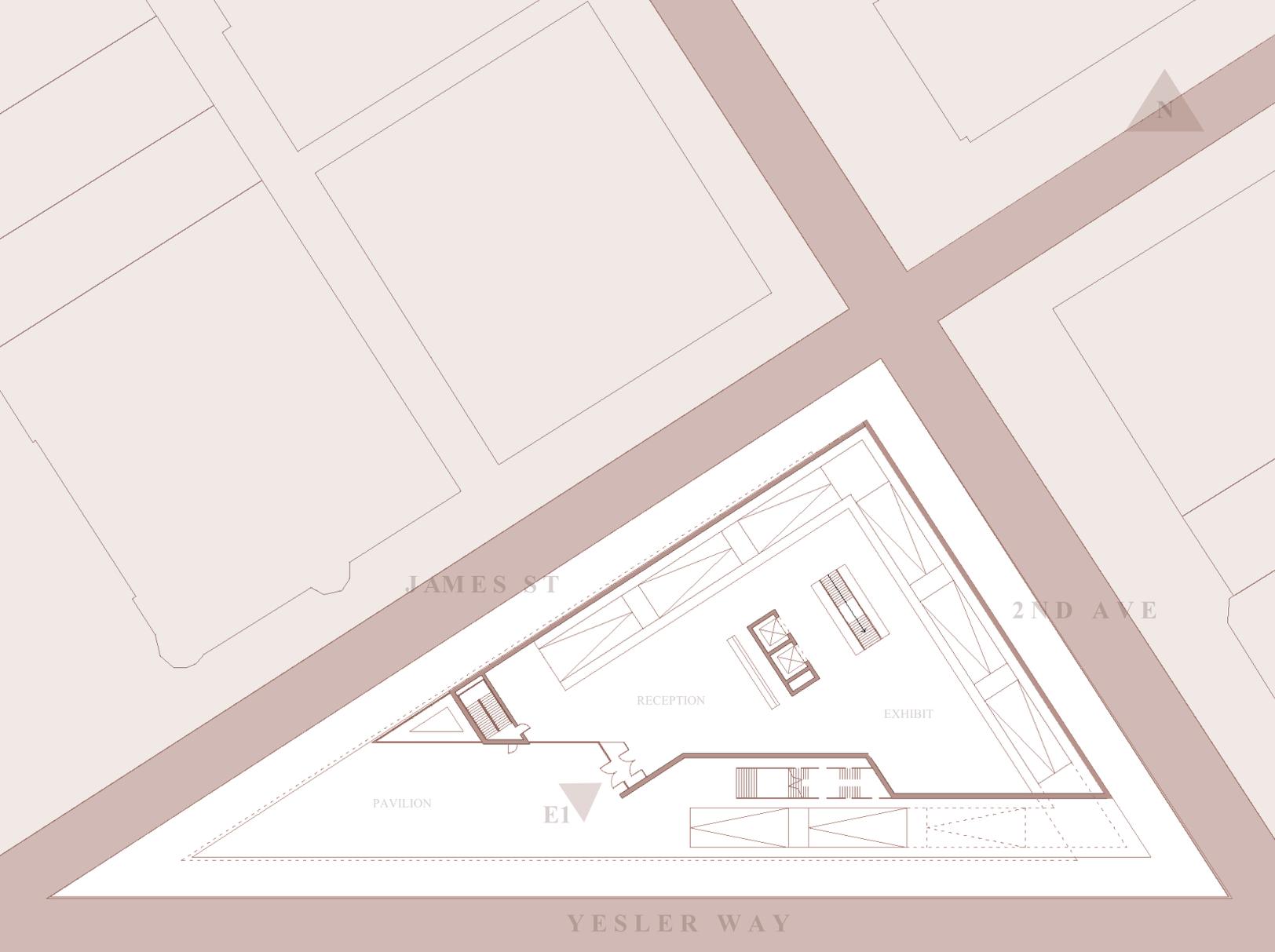
The street-level plan below shows the primary and secondary entrance pavilions, as well as means of egress and service access through existing buildings. While program for the museum will occupy the lower level of these buildings, it is expected that the ground floors of all existing building will continue to function as they currently do, i.e., with shops and restaurants opening onto adjacent sidewalks.



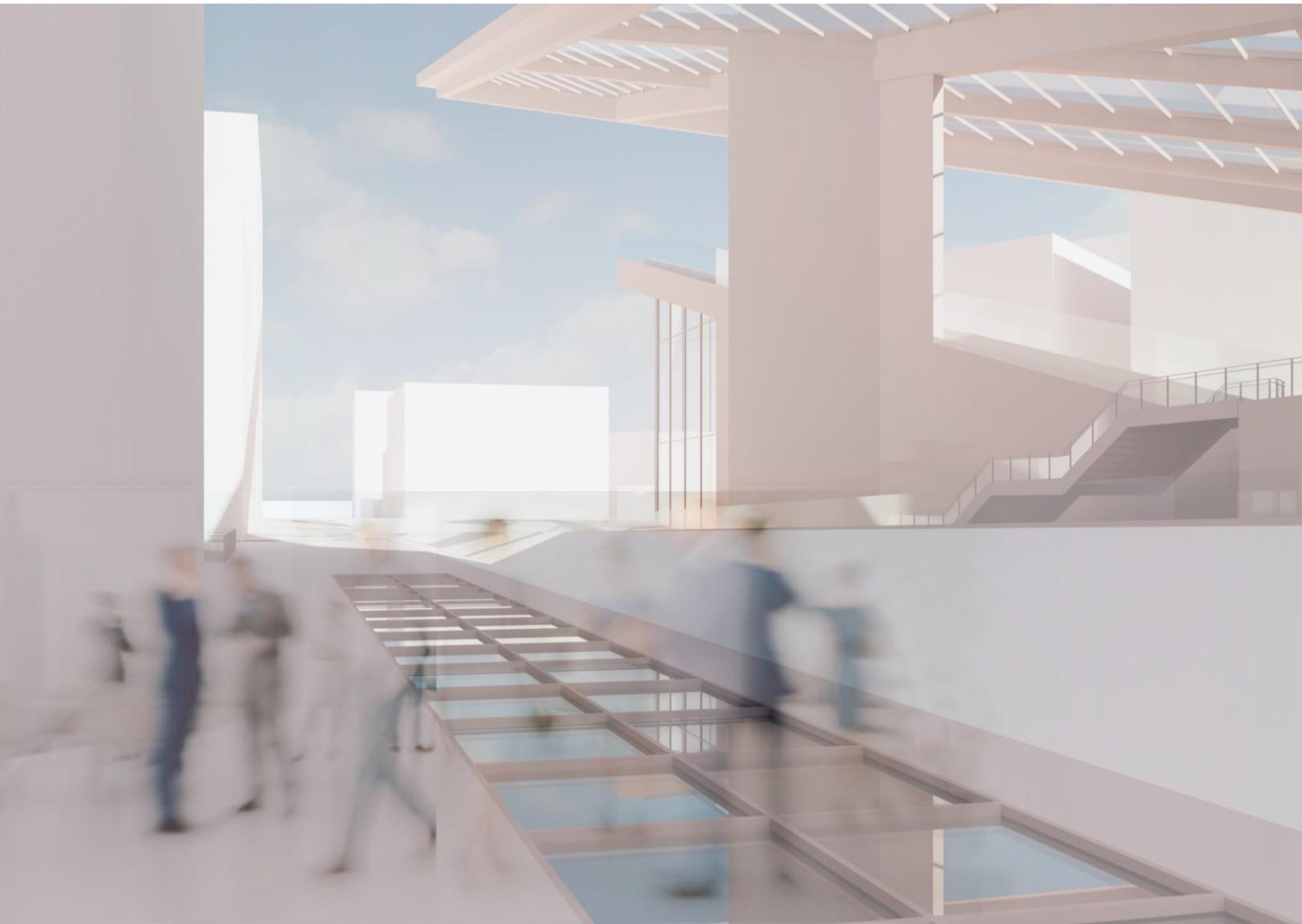
Prior to entering the museum, visitors have the opportunity to access the rooftop amphitheatre above the main entry pavilion on Yesler Way. The amphitheatre is accessed via a ramp that follows Yesler Way to 2nd Avenue. Along the way, visitors can take in views of the surrounding buildings, including the Interurban Building and the Smith Tower.

Upon entering the pavilion visitors are pulled into history, as the grade rises on either side. Inside, they are presented with several options for descending into the museum below: an elevator, a ramp and stairs.

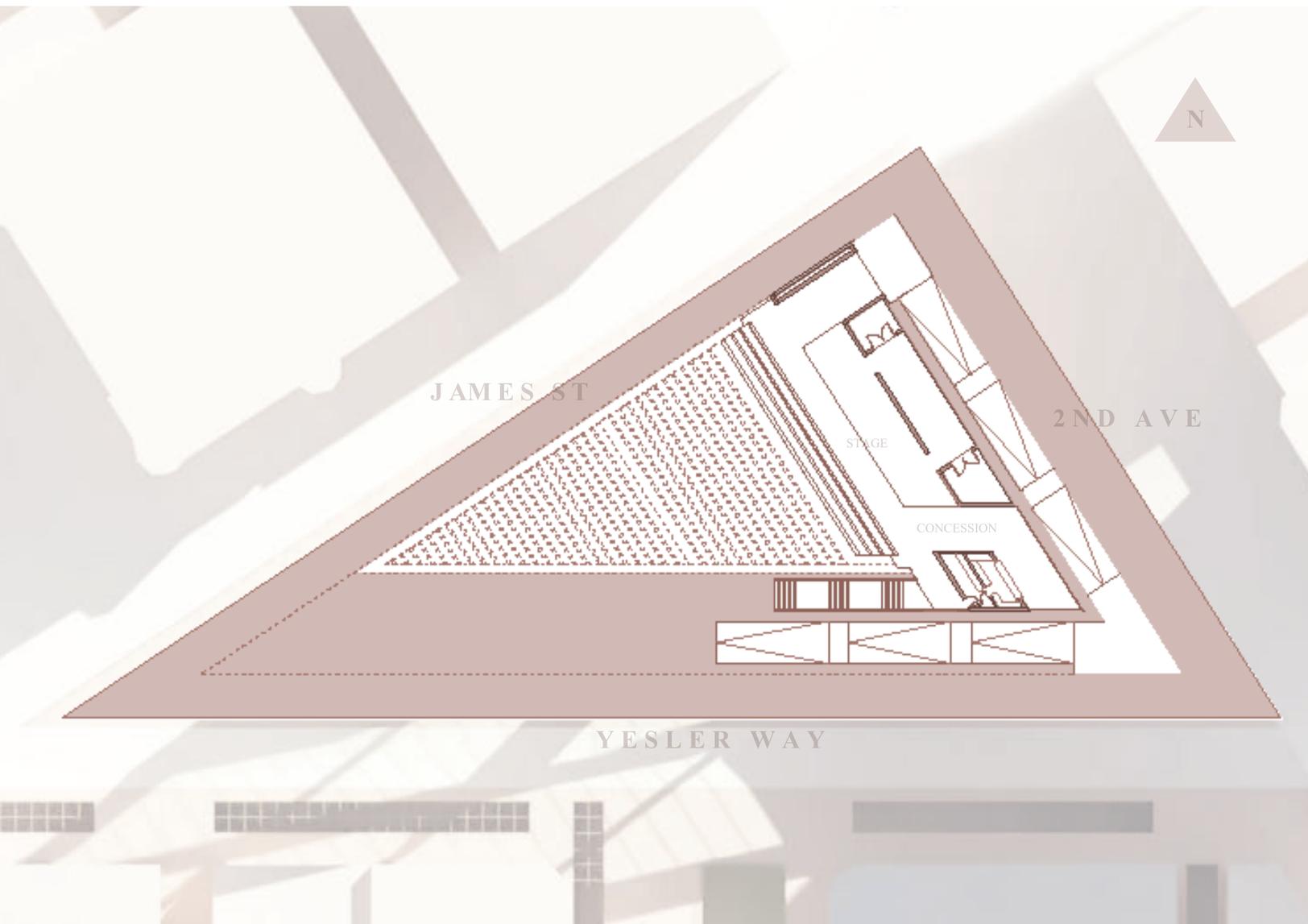
Those who opt to take the ramp will be fully immersed in history as displays are organized along its length. As they descend, visitors will experience the shifting the ground plane as they approach the original level of Maynardstown.



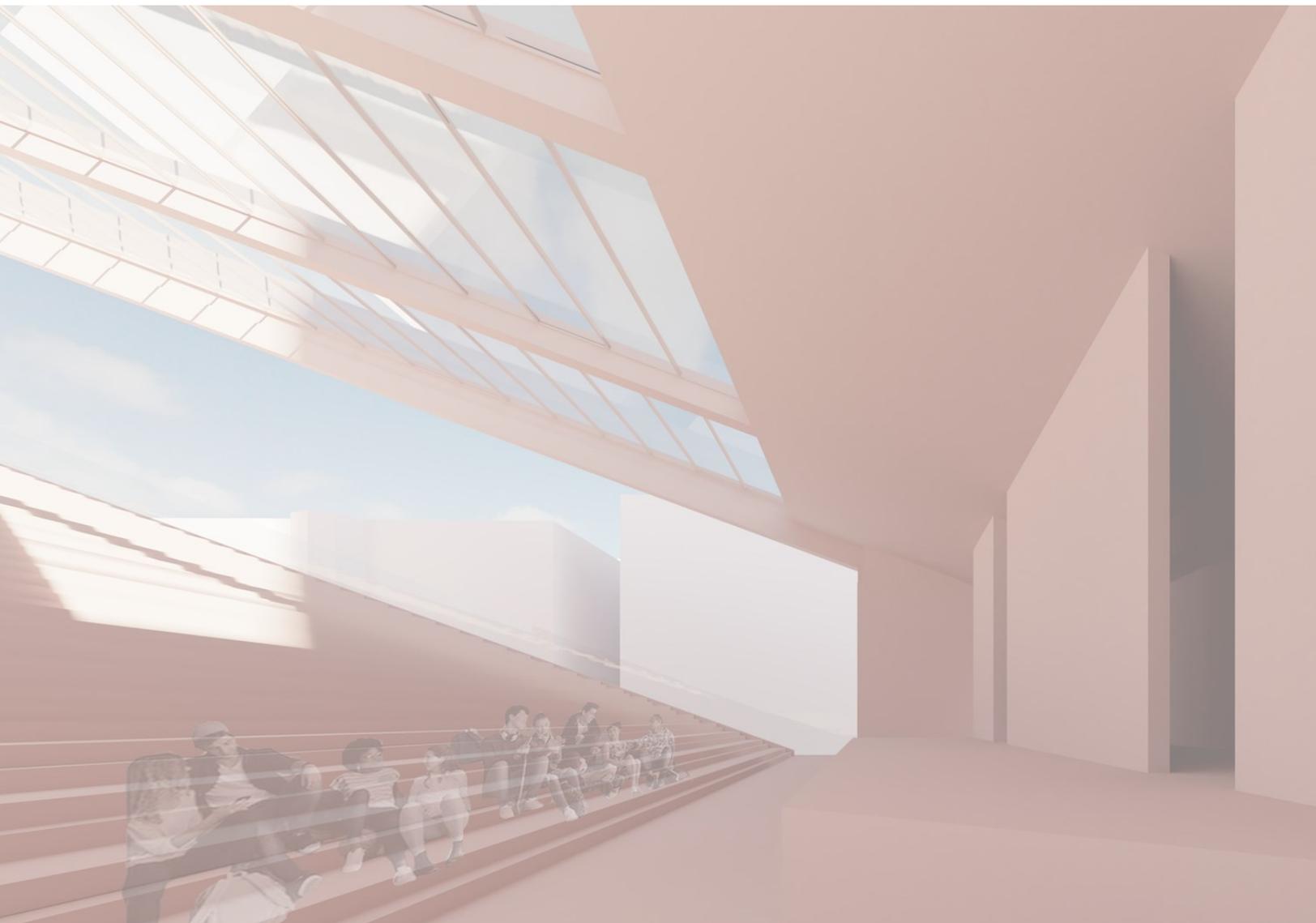
The street-level vignette below shows the entry pavilion looking northwest, across Yesler Way towards the waterfront. The glass canopy can be seen above the open-air amphitheatre, which is carved into the roof of the pavilion. Additionally, a significant sculpture, artifact and/or sign will be displayed in the triangular tip of the pavilion to grab the attention of passersby.



Bleachers on the rooftop amphitheatre step upwards to the west, such that visitors face performers against the backdrop of the Smith Tower. In addition to the ramp, the amphitheatre can be access via a grand stair.



Activities programmed in the community-oriented open-air amphitheatre carved into the roof of the pavilion can be heard throughout the surrounding community. The space is intended to accommodate mid-size concerts, performances and seminars focussed on the history, culture, and environment of the city and area. It can also be a starting point for tours of the area.



As described above, the bulk of Museum Seattle’s exhibition spaces are located below grade in the east block. The ground floors of the buildings shown in plan below continue to operate as they currently do, with retail and restaurants opening on to the surrounding sidewalks. In the future, the upper floors of these building may accommodate offices for the museum as well as ancillary exhibitions spaces.

Two large courtyards have been incorporated into the design of the east block: one along Occidental Avenue and the other in the corner lot at Occidental and S. Washington. In addition to providing natural light, these sunken courtyards accommodate private, outdoor gathering spaces within the museum and offer a break from the subterranean components. Natural light also enters the museum through glass prisms in the sidewalks along Yesler, 2nd Ave. and S. Washington St.

In addition, a building along 2nd Ave. has been removed to facilitate circulation through the site.

JAMES ST

2ND AVE

N

RECEPTION

EXHIBIT

E1

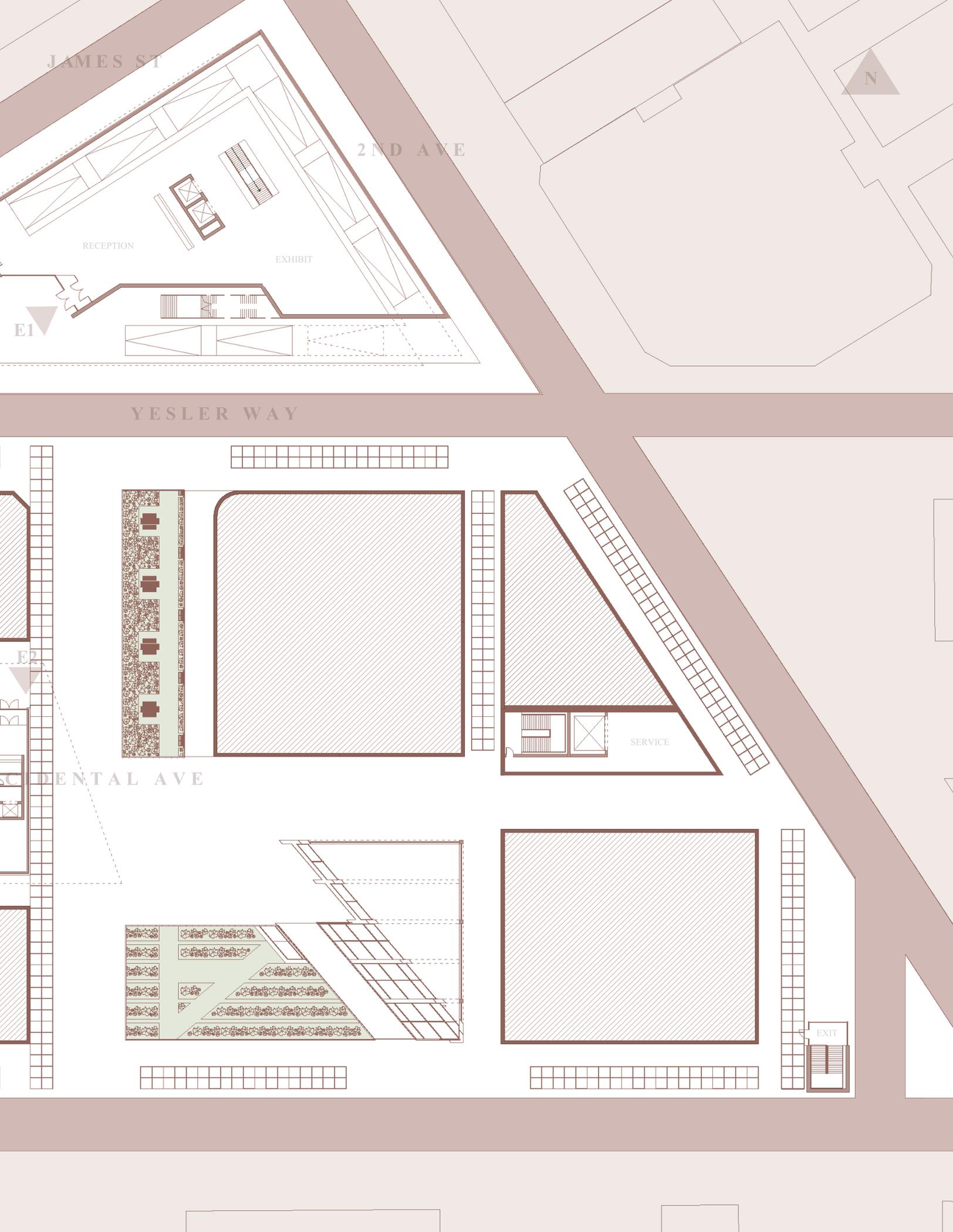
YESLER WAY

E2

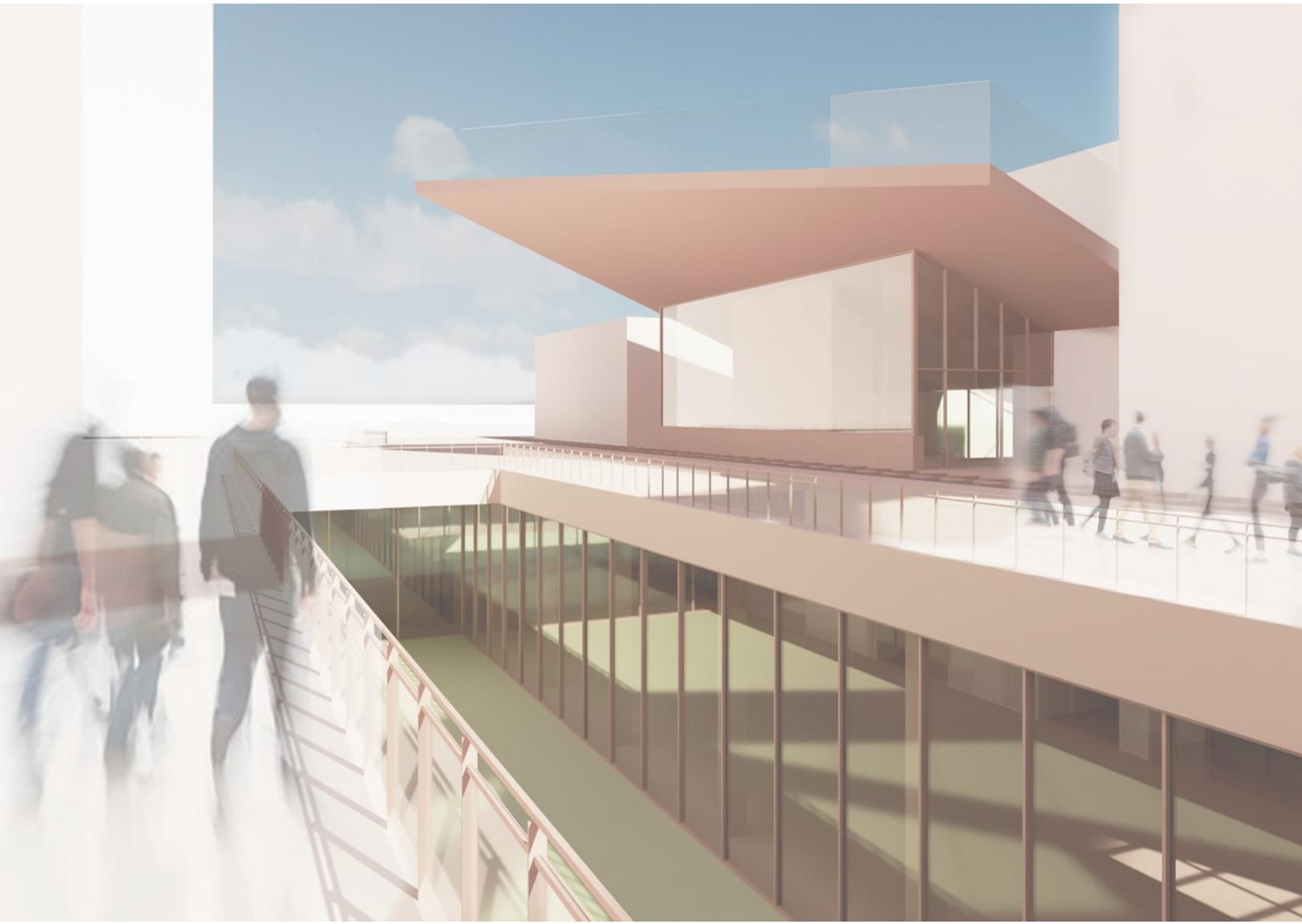
WESLEYAN AVE

SERVICE

EXIT



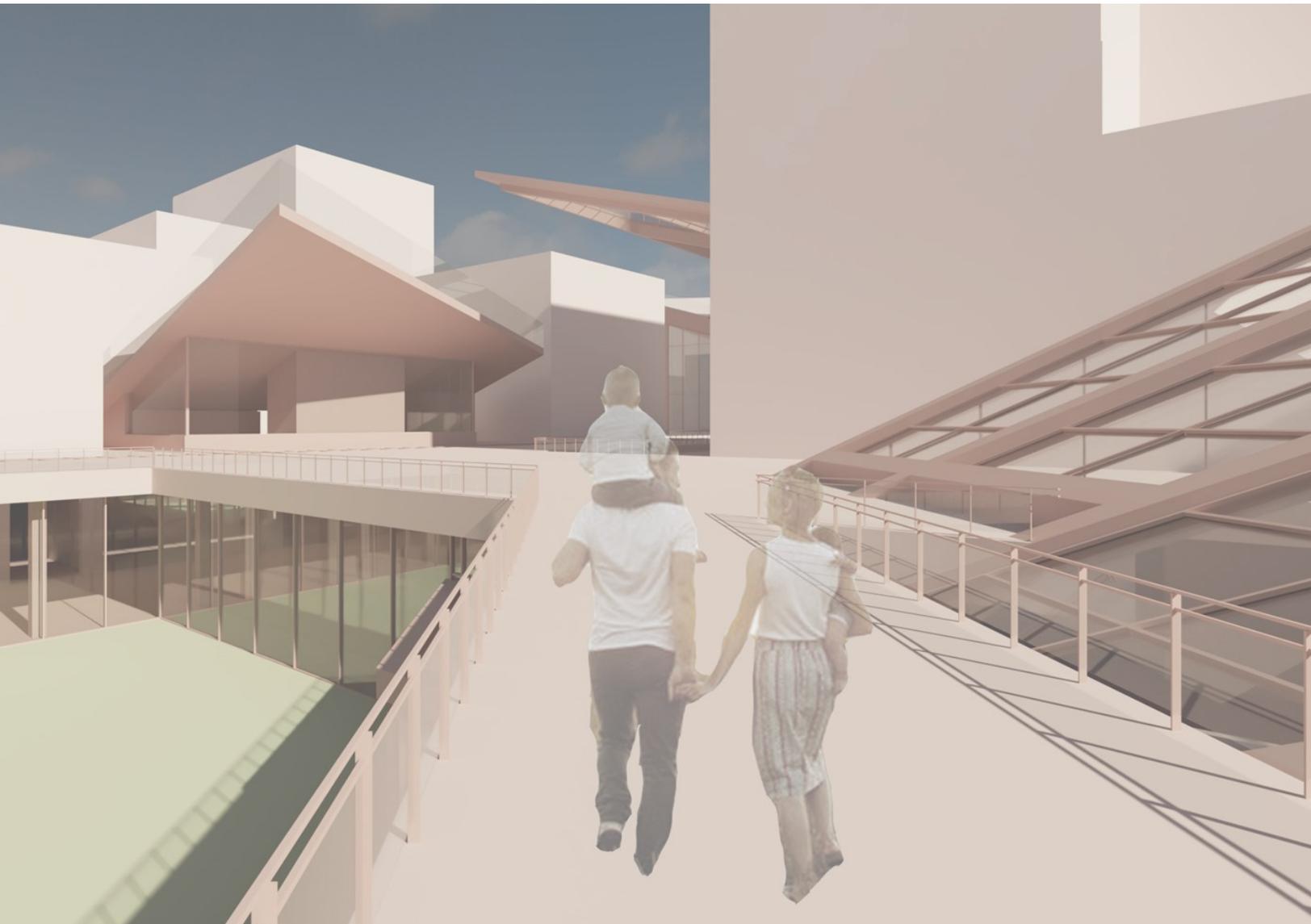
The vignette below shows the view down Occidental Ave., looking southwest. The street has been closed to vehicles as a continuation of the pedestrian path through Occidental Park to the south. The secondary entry pavilion is visible on the west side of Occidental Ave., as is the linear courtyard that has been cut into the street.



The vignette below shows the sunken courtyard along Occidental Ave. Notably, curing the courtyard into the street opens a view of the original, ground-level façade of the Interurban Building. From this courtyard, visitors can view the façade from the original street level. In addition, it also acts as a green buffer between the semi-autonomous programmatic elements in the east and west blocks.

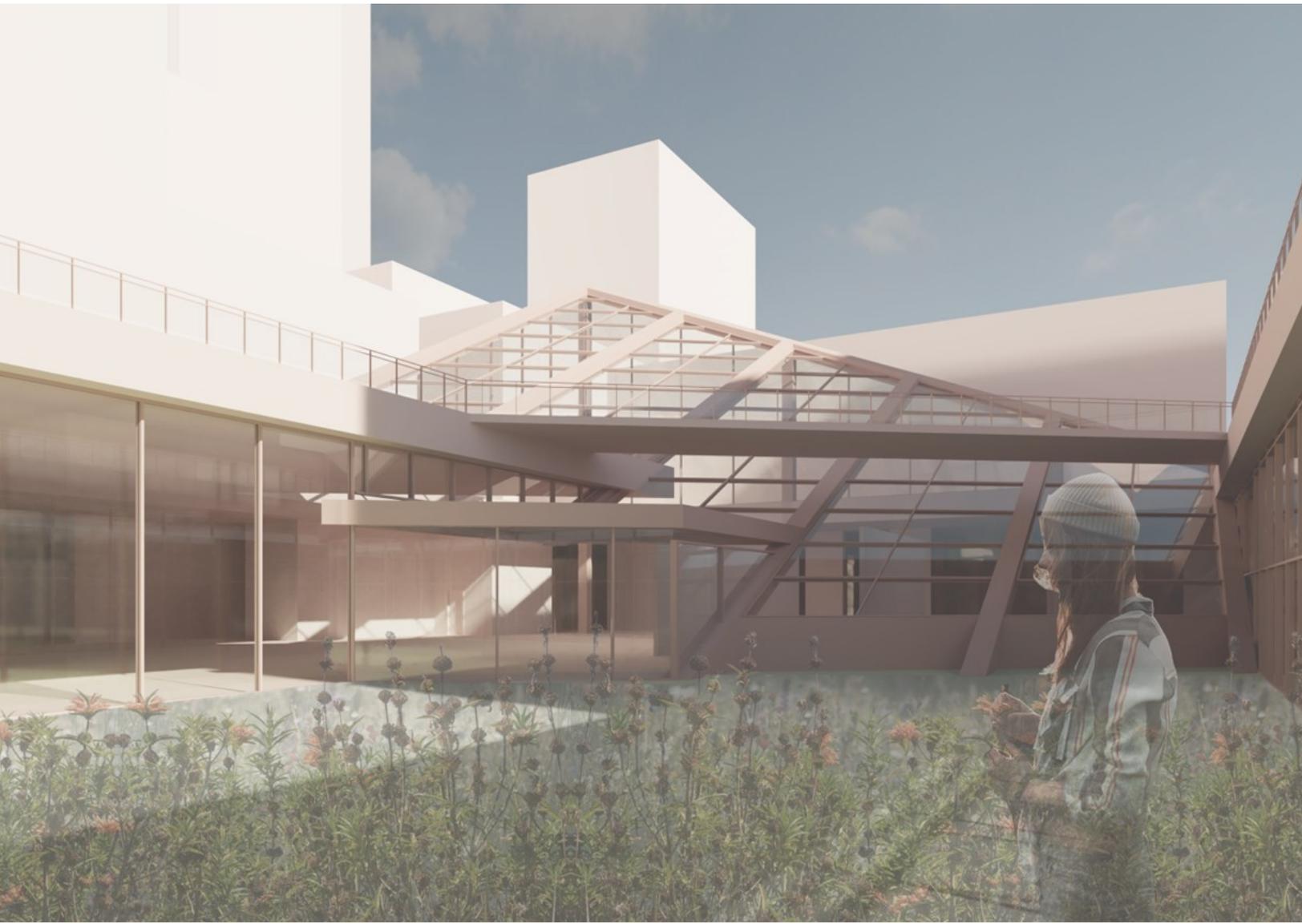


The vignette below shows the diagonal walkway cutting through the empty lot on the corner of Occidental and S. Main St., which acts as a bridge between the sunken courtyard and the skylight above the museum café below. The pathway aligns with the secondary entry pavilion on the opposite side of Occidental Ave.



| D24 | EAST COURTYARD | VIGNETTE | NTS

The courtyard spoke of in the prior vignette is revealed below. From this vantage point the connection between the courtyard and the sloped skylight that rises from it is more evident. As seen, the skylight moves from the courtyard and beyond the current street level breaching the sky to allow the benefit of natural lighting to enter the Underground.



As noted earlier in the document, the west block consists primarily of venue spaces, served by lobbies, a gallery, a restaurant, and a courtyard. All program is located at the level of the Underground, i.e., one level below the current street level. It is directly accessible via the secondary entry pavilion along Occidental Avenue.

The entry pavilion and courtyard replace a pair of dilapidated buildings on the western side of Occidental Ave. Like the primary pavilion, this pavilion includes a small exhibition at street level. The sunken, mid-block courtyard allows light into the west block and can be used in a variety of ways, e.g., for outdoor dining by the adjacent restaurant, as an outdoor lobby during intermissions for performances in the venue spaces, for the museum for private events, etc.



JAMES ST

N

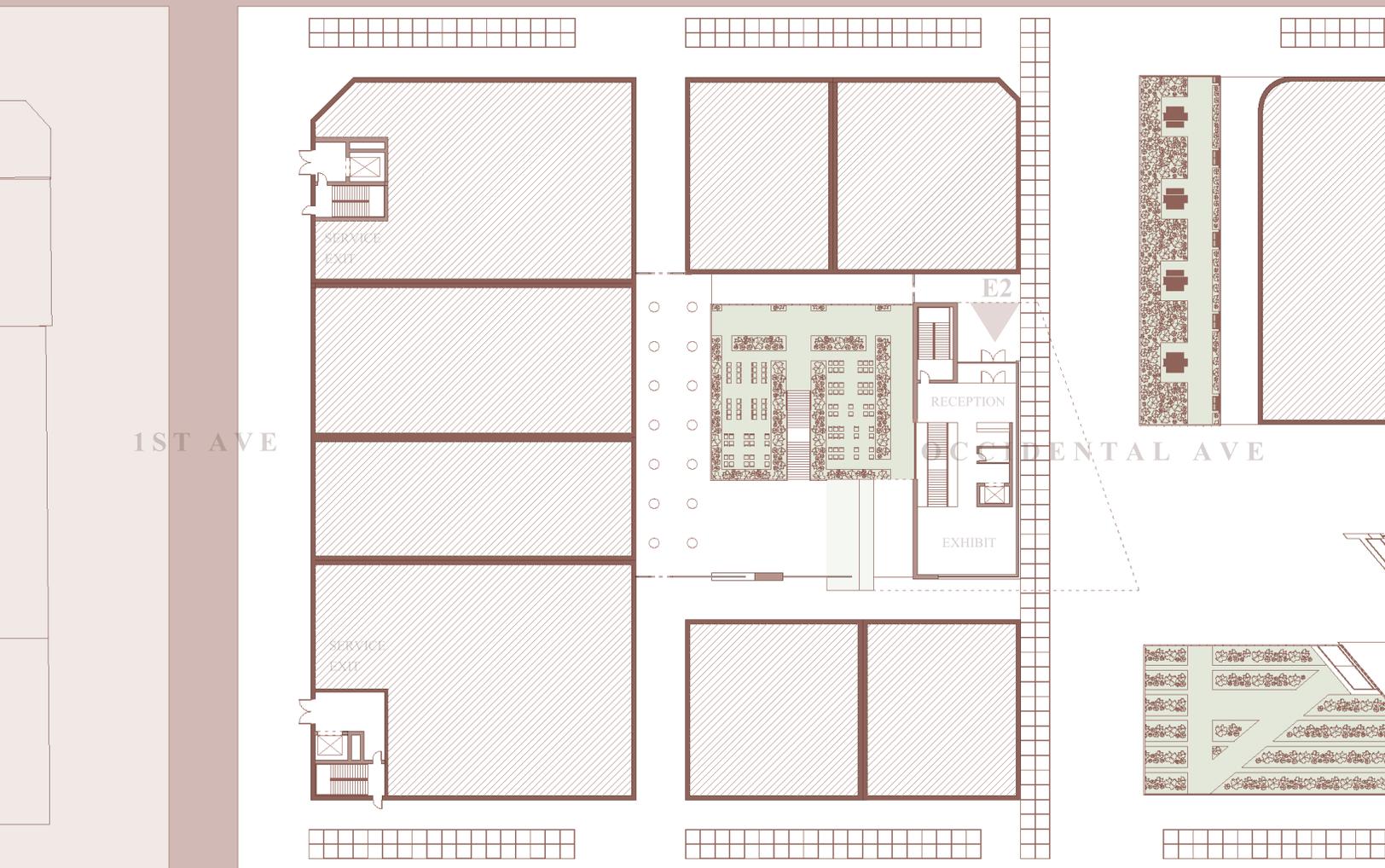
RECEPTION

EXHIBIT

PAVILION

E1

YESLER WAY



1ST AVE

OCCIDENTAL AVE

WASHINGTON ST

E2

SERVICE EXIT

RECEPTION

EXHIBIT

SERVICE EXIT

The following vignette shows the view into the sunken courtyard from the mid-block passages that cuts through the west block at street level. It shows the courtyard being used for business purposes, allowing the space to be rented for events when not being used by the museum. In addition, a sloped green roof is visible and accessible for visitors to have the chance to walk-up and experience the site and surrounding area from a unique vantage point.



| D27 | WEST COURTYARD | VIGNETTE | NTS

The vignette below shows the courtyard being used for the same purpose as the prior vignette. It is notable to mention the original façade on the northern side that moves from the original street level upwards. A delicate bridge hangs off the edge to provide circulation without obstructing views of the historic façade. In addition, a green wall is introduced on the east to provide greenery to the space.

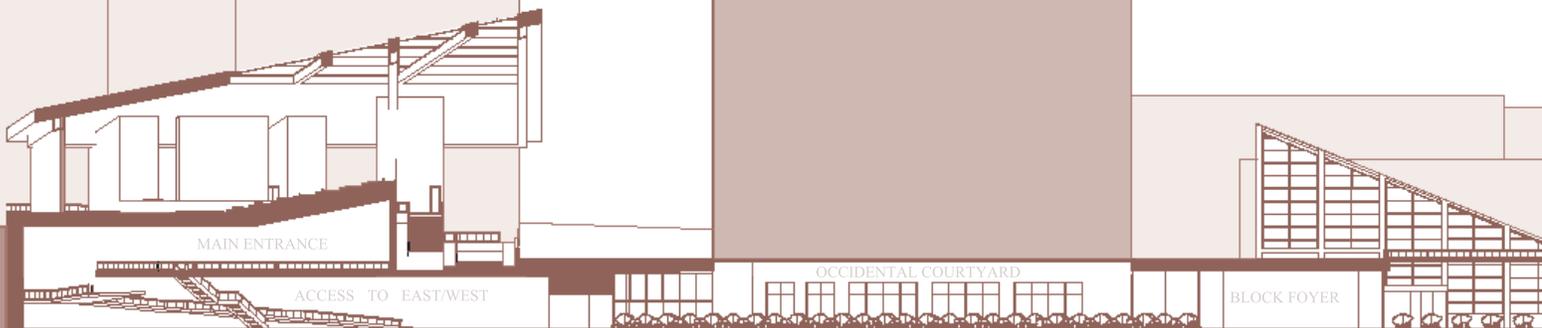


2.2.2 | UNDERGROUND SCHEME

As described above, the project occupies a portion of the Seattle Underground and presents numerous opportunities to showcase the history of Seattle and King County. It demonstrates that these previously inaccessible spaces – buried for over a century are able to accommodate exhibitions, galleries, displays and a range of complementary programming.

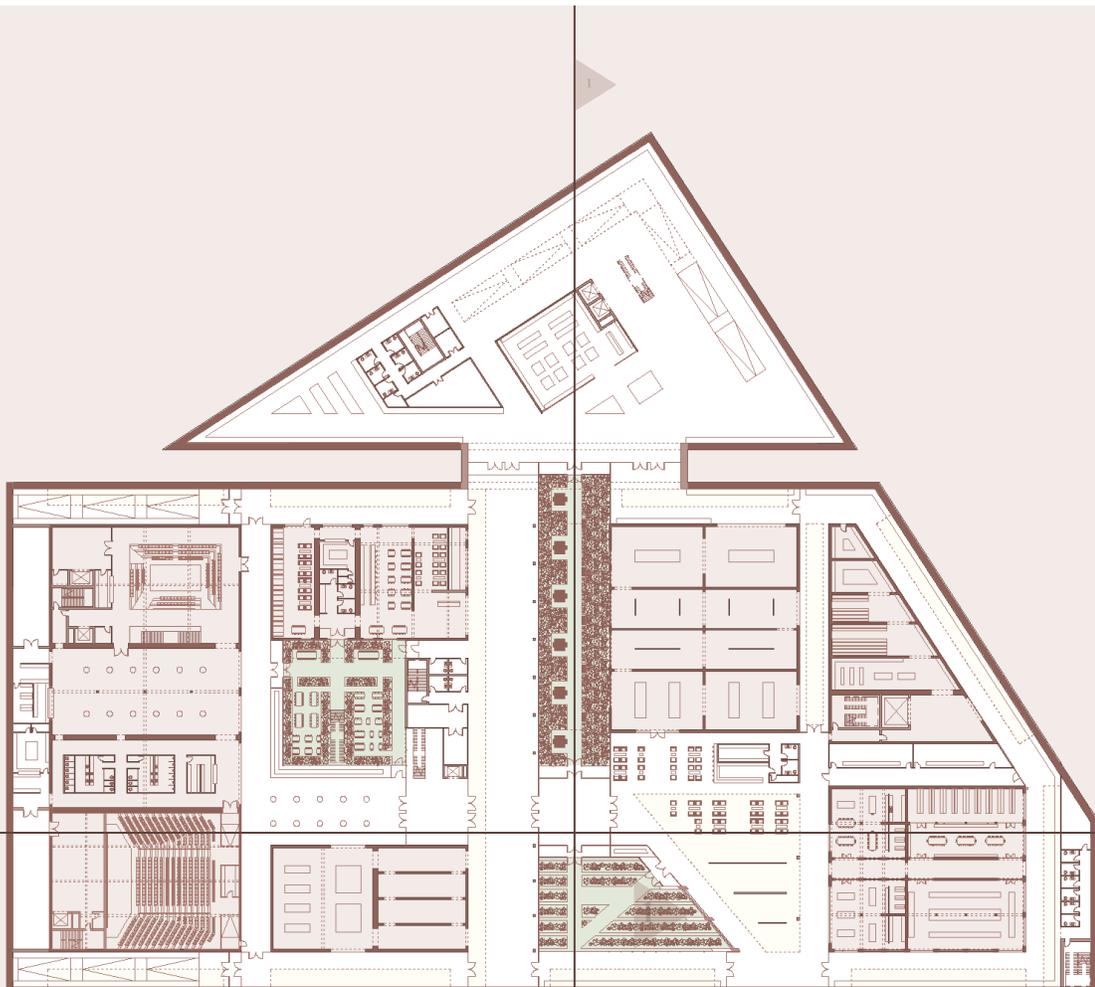
The plans, sections, and vignettes below are intended to help us to imagine how the Underground might support a range of activities. And above and beyond the artifacts on display, the walls, floors, and underground passageways can be considered artifacts in and of themselves. Space, materials, and atmosphere are key components of the vision for Museum Seattle.

Entering into the pavilion on Yesler Way, visitors are treated to an interactive journey into Seattle's past as they drop into the lower lobby. The ramp descends along the stone walls that were used to raise the city streets. The lower lobby includes a reception area, gift shop, washrooms, and changing exhibition space. From here visitors are guided beneath Yesler Way into the east and west blocks, where the exhibition and ancillary spaces are located.



| D29 | UNDERGROUND (-1) | PLAN | 1:1200

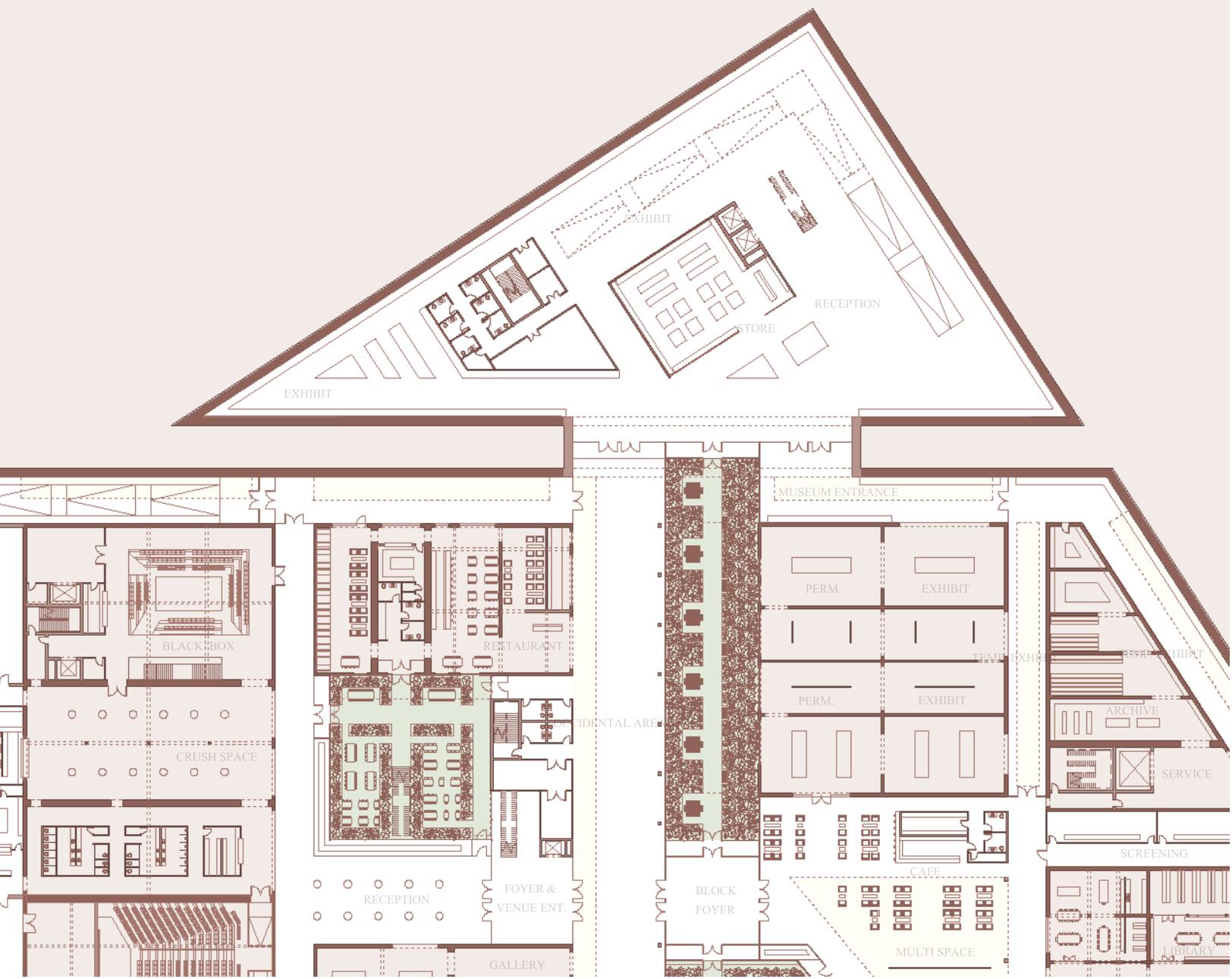
At this point in the thesis, we understand what the program consists of and have a brief idea of their locations. However, it is within the plan below that we truly begin to understand the arrangements and connections between the spaces and programmatic elements. Each of these is described in greater detail in the following pages.



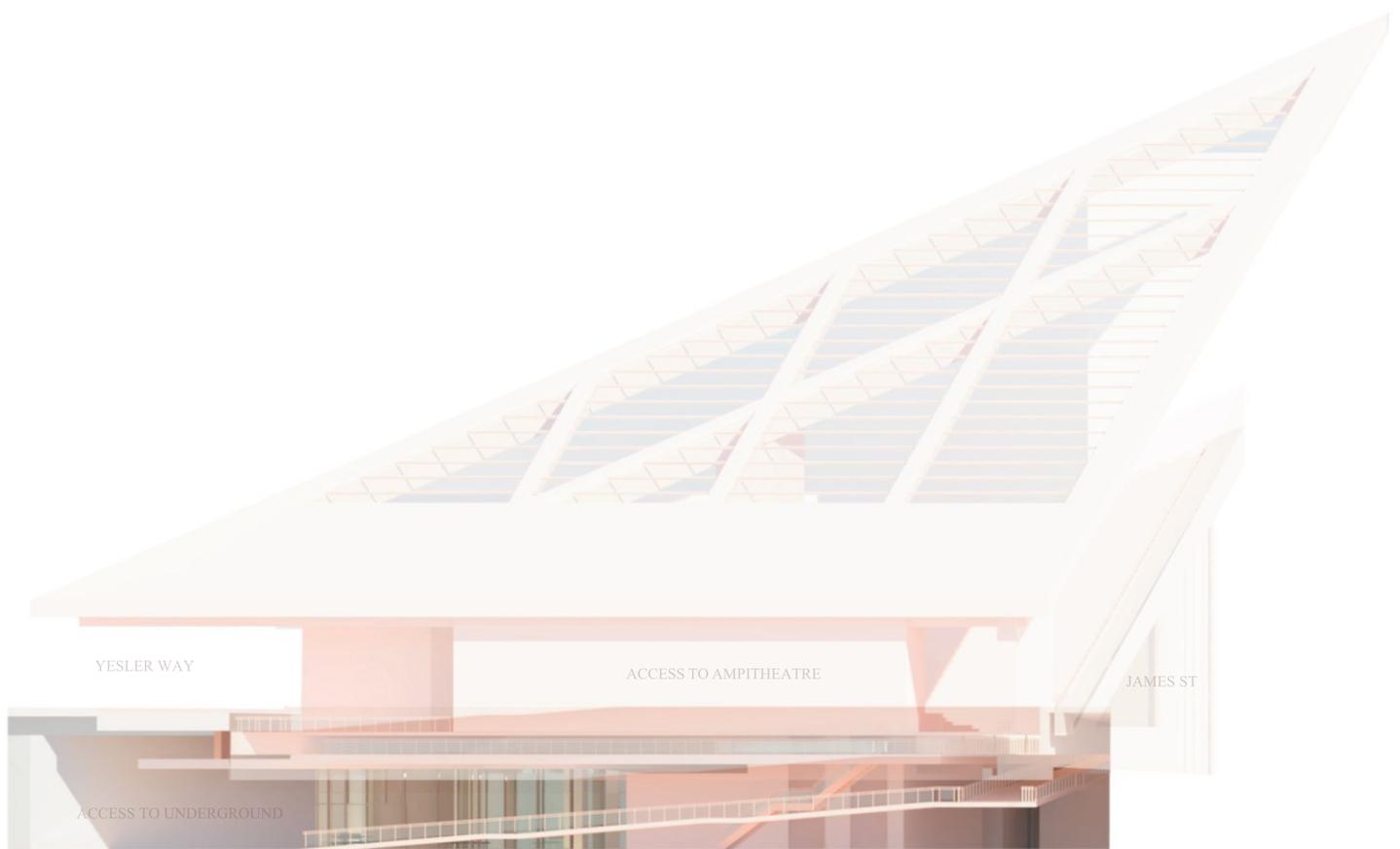
NOTE: SEE BLOCK PLANS FOR ROOM LABELS.

As explained above, the north block – or main entry pavilion acts as the primary portal and access point into Museum Seattle. The large lower lobby accommodates restrooms, a changing exhibition space, and a souvenir/gift shop where visitors can purchase a piece of the Underground.

From here visitors must travel beneath Yesler Way to access the primary programmatic spaces. As they do so, they are treated to a view into the courtyard that has been cut into Occidental Avenue. At this point visitors have three choices: they can 1) take the west entrance through the major areaway to west block, 2) access the courtyard, or 3) take the east entrance to Museum Seattle’s primary exhibition spaces.



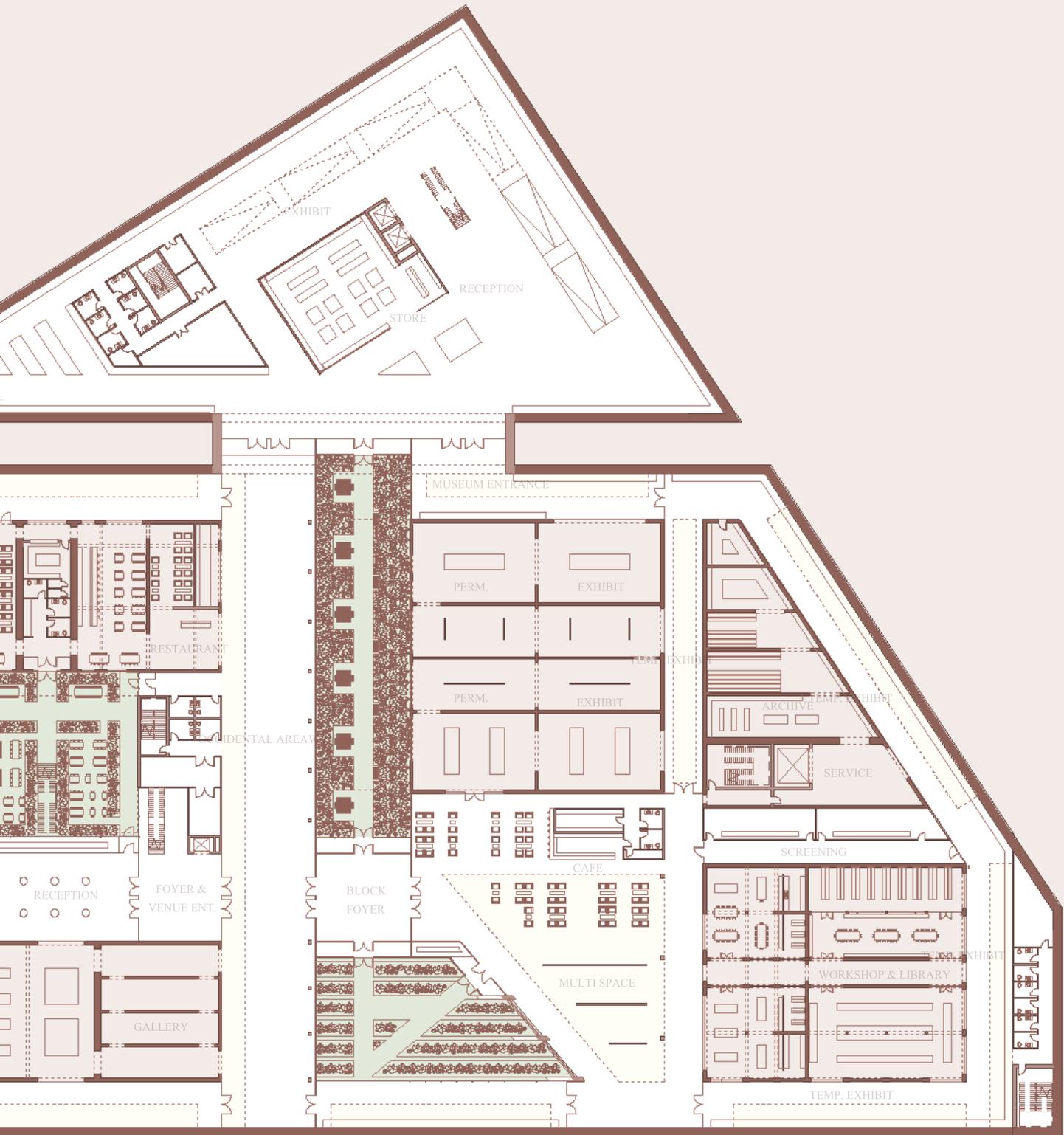
The section below is cut through north block looking west, showcasing two of the project's major ramps: the ramp to access the amphitheatre above, and most importantly, the ramp that descends into the underground.



The east block houses the majority of Museum Seattle's exhibition, display, support, and storage spaces. The museum's primary exhibition space is located below the Interurban Building on the corner of Yesler and Occidental.

Entering this space, visitors are immersed in an exhibition, the starting point for an interactive journey. From there they proceed through a series of areaways (passages located beneath the sidewalks above) lined with panels and displays.

Artifact storage is located in the northeast corner of the east block along with screening rooms. Having circulated through the areaways around these facilities where visitors can exit the museum journey. If they chose to continue, however, they circulate around the workshop and library in the southeast corner, which house resources on the history of the city and region. From here visitors are led into a multi-use area designed to support a range of activities. This area opens onto a large, skylit space which accommodates changing programs and a café, while looking onto a courtyard planted with greenery native to the area.



The vignette below shows the museum's primarily exhibition space. As noted, it is located in the ground floor of the Interurban Building, formerly known as the Seattle National Bank Building, taking advantage of the historical setting to display objects and artifacts. The spaces borders onto the courtyard cut into Occidental Avenue and benefits from natural light.



Exiting these galleries, visitors are guided along a former alleyway lined with displays. Visitors then continue through sky-lit areaways, following the path of the original sidewalks. Passing by the study areas, visitors move through a programable “learning and activity” area before being brought into a large, flexible, sky-lit space that highlights the building’s offset areaways.



Visitors exit the areaways, into the sky-lit activity area described above. It is designed to provide a sense of release from the darker, more constrained exhibition spaces and passages. Served by the café, this space is intended to be in a variety of ways and accommodate a range of programming.

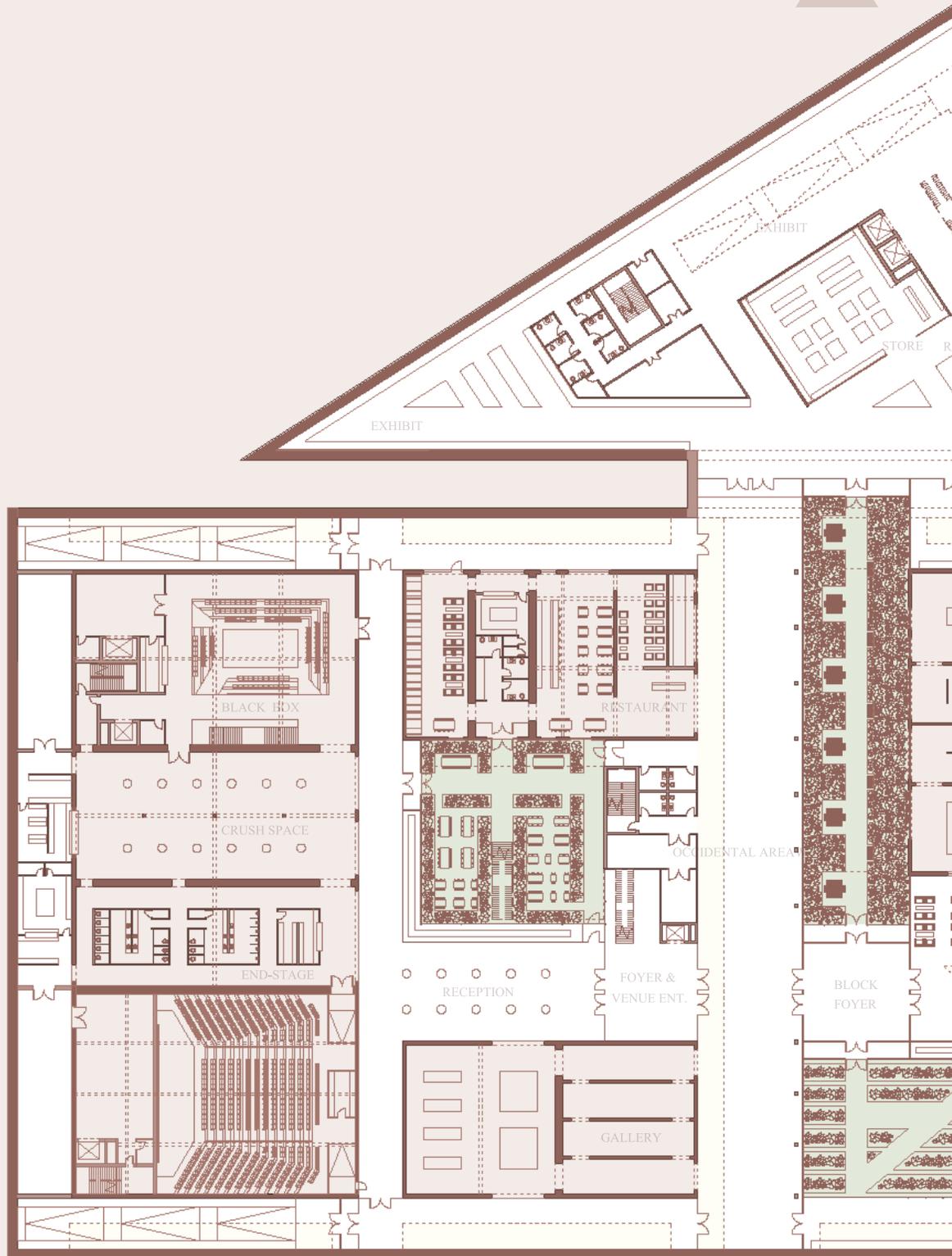


West Block can be accessed via the main entry pavilion on Yesler Way, by crossing under Occidental from the museum, or from the secondary entry pavilion on Occidental Ave. Each of these access points leads into the subsurface areaway; the former sidewalk that runs along Occidental.

The west block contains a restaurant in the northeast corner, which is housed in the ground floor of the existing historical building. Ideally it would feature dishes unique to the territory. The restaurant opens on to the courtyard which has been cut into the center of the block, just behind the secondary entry pavilion. In the southeast corner of the west block is a gallery that features artwork native to the area.

Visitors entering the west block move through a reception area to the south of the mid-block courtyard. This courtyard functions as an outdoor patio for the restaurant, an event space, and/or an outdoor crush space for the venues.

Performance spaces are located in the western portion of the west block: a black-box theatre in the northwest corner and an end-stage theatre at the southwest corner.



EXHIBIT

EXHIBIT

STORE

BLACK BOX

RESTAURANT

CRUSH SPACE

OCCIDENTAL AREA

END-STAGE

RECEPTION

FOYER &
VENUE ENT.

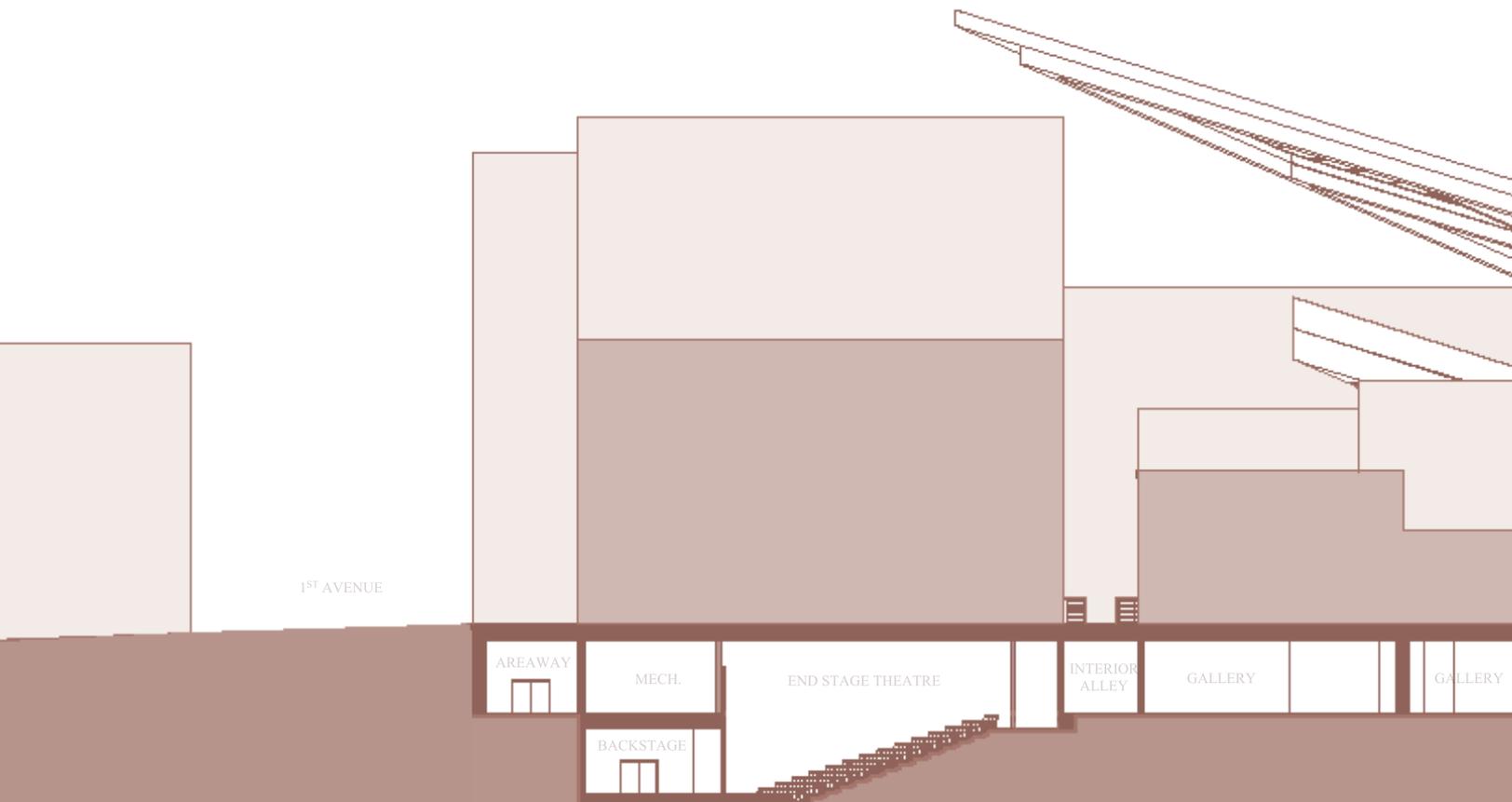
BLOCK
FOYER

GALLERY

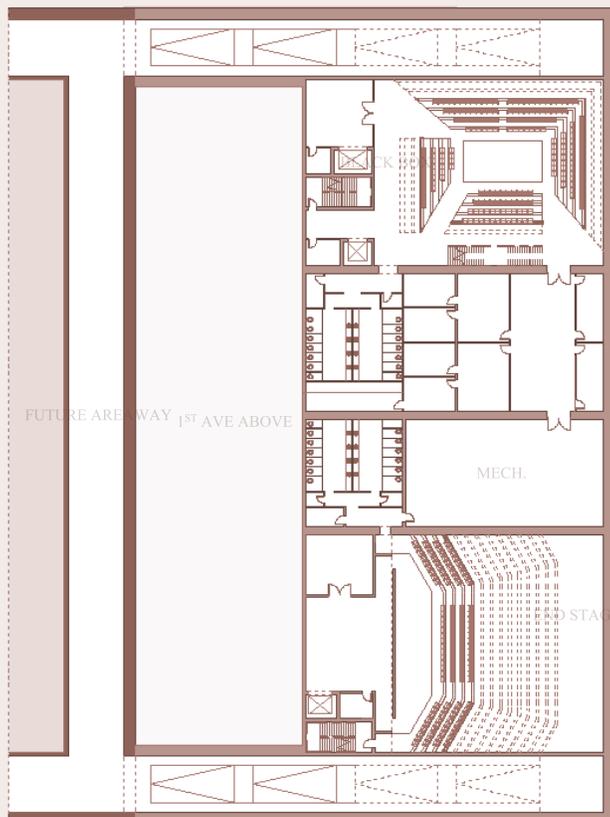
Following the areaway beneath Occidental Ave., visitors can access the courtyard cut into Occidental Ave. (to the left in the image below), the restaurant, the mid-block courtyard, the east/west lobby leading to the performance venues, and the gallery to the southeast. Moving through the areaway they have the chance to experience the long-buried facades of the buildings on either side of Occidental. Some of these facades are also visible in the mid-block courtyard.



Following the change in grade across the site, a portion of the west block is lower than the level of the Underground at Occidental Ave. It aligns with the level of the Underground level along 1st Avenue. As per the section through the raked theatre below, venue spaces in the western portion of the west block take advantage of this drop in grade to accommodate raked seating and fly space.



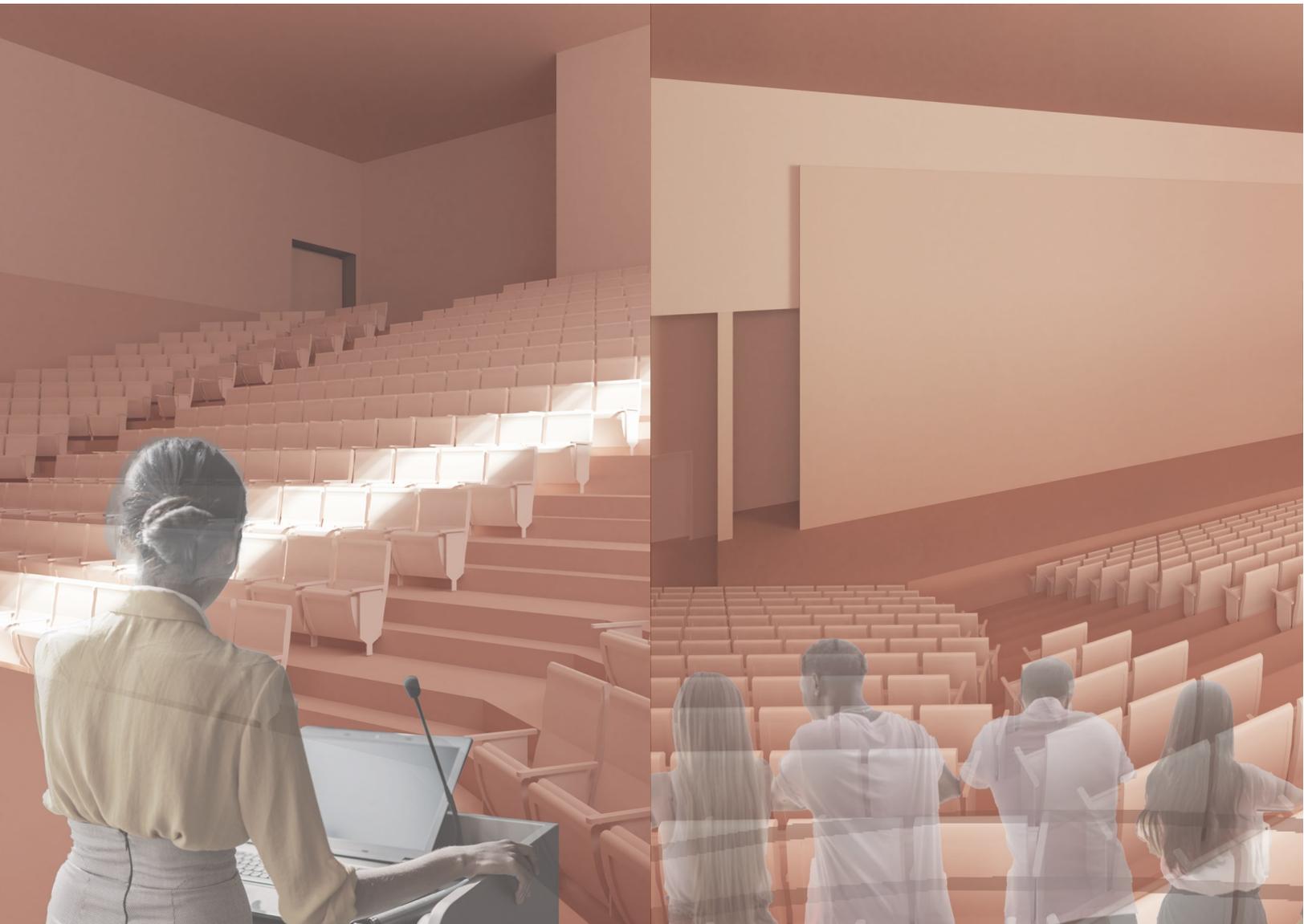
Deeper into the block (i.e., to the west) are two major venue spaces: an end stage theatre for performances and film screenings to the south and a black box theatre space for multi-disciplinary performances to the north. Although the project proposal ends at 1st Ave, ramps to the yet-to-be-redeveloped portions of the Underground are located to the north and south, i.e., beneath the sidewalks along Yesler Way and S. Washington Street.



The north/south section below is taken through the two theatre spaces, looking west. The black box theatre is located to the north (left), while the conventional theatre is located to the south (right). Restrooms and a crush space are located between the two theatres at the upper level. This crush space, along with the mid-block courtyard beyond is designed to accommodate intermissions for both performance spaces and includes a bar.



The vignettes below showcase the conventional (proscenium/end stage) theatre. Together they give a sense of the scale of the space and the kinds of events and performances it can accommodate. This space is intended to complement Museum Seattle's primary programming, namely exhibitions, but is also intended to be rented out to other organizations.



| D43 & D44 |

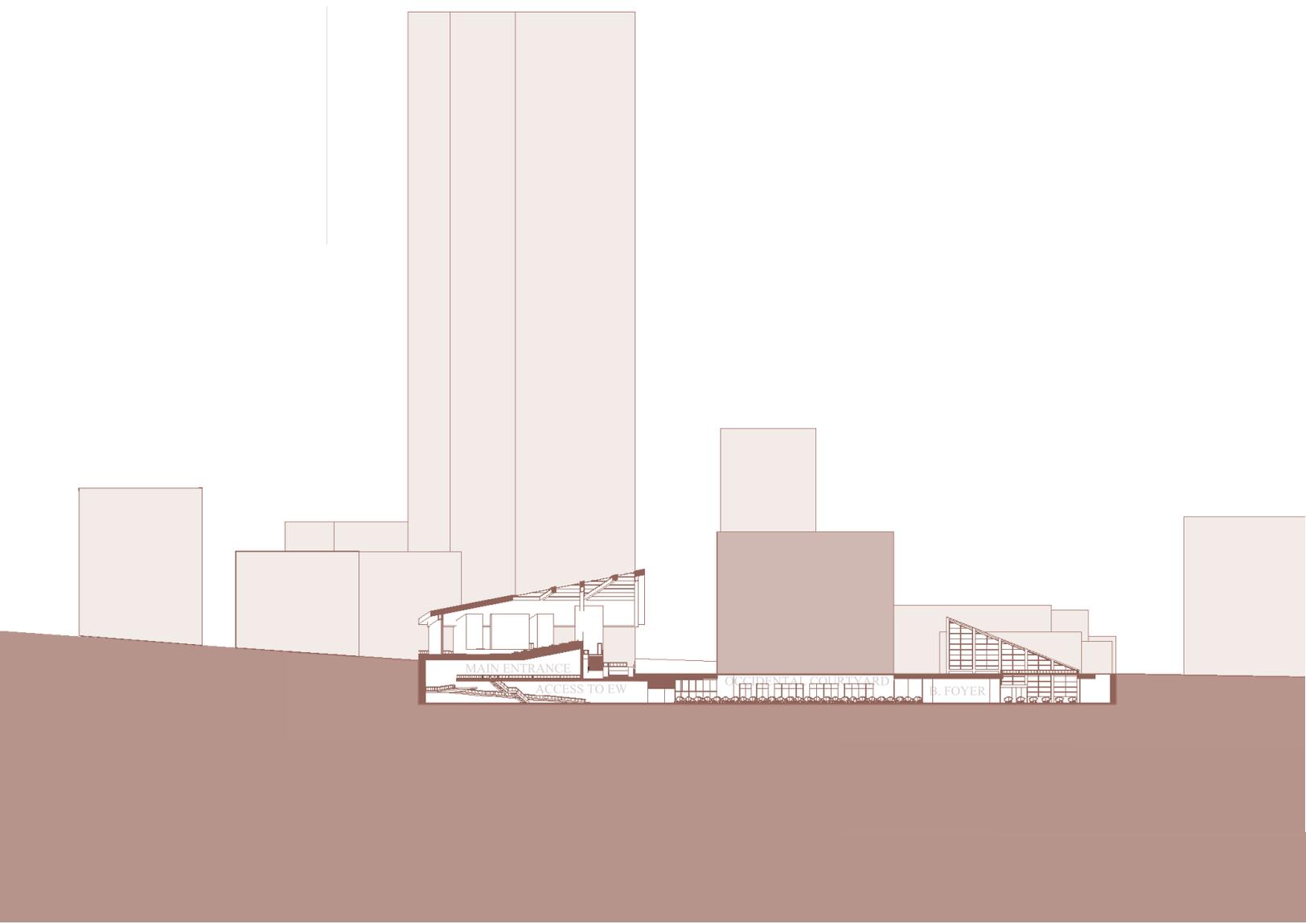
BLACK BOX | VIGNETTE | NTS

The vignettes below showcase the black-box theatre, from above (right) and below (left). The space is designed to enable it to be configured in a variety of ways depending on who is using it and how. It includes a hanging balcony for both performance and viewing purposes depending on the current event.



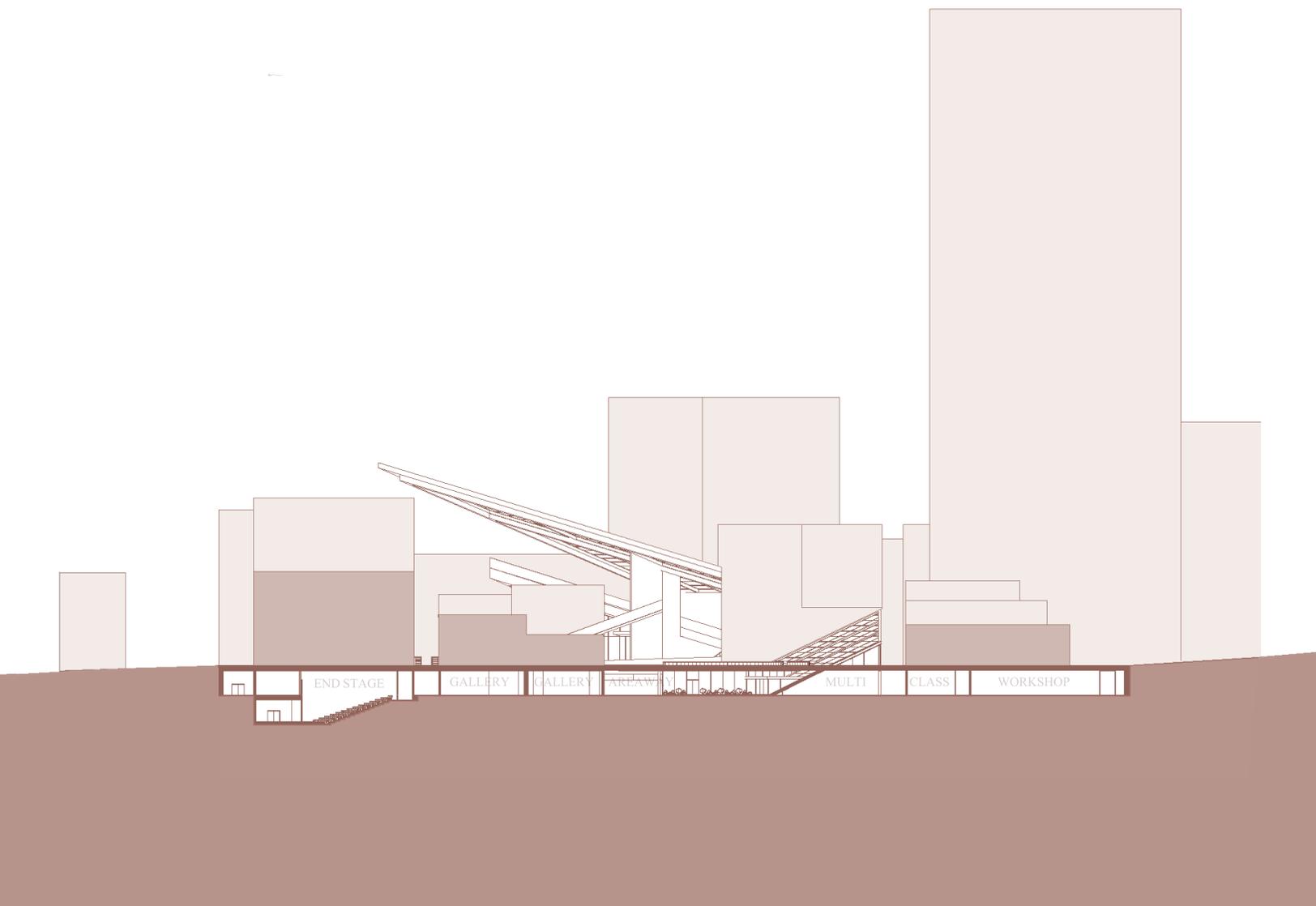
| D45 | EAST FACING | SECTION | 1:1200

The expanded north/south section below cuts through the main entry pavilion and the Occidental and East Block courtyards. It is intended to provide a better idea of how the various components relate to one another. The toned building shown in elevation in the center of the drawing is the Interurban building. The section also showcases the importance of the rooftop amphitheatre.



| D46 | NORTH FACING | SECTION | 1:1200

The section below cuts east /west through the conventional theatre, the gallery, the courtyard associated with the museum café, and the open space and workshop. It showcases the relationship between the skylight, the courtyard, and the program in east block. Additionally, it reveals the raking of the conventional theatre, the lower portion of which aligns with the Underground along 1st Avenue, leveraging the change in grade across the site.



2.2.3 | SCHEME SUMMARY

To summarize, the proposal for Museum Seattle is intended to demonstrate the possibilities latent in the Seattle Underground. While not intended to be conclusive or overly prescriptive, the design explores the panoply of possibilities that lie beneath the streets of Pioneer Square.

The drawings / vignettes are intended to encourage others to consider these possibilities and envision a new life both for the Underground and the neighborhood under which it runs. Although at a conceptual stage, they represent a point of departure for further study for the district and the city of Seattle, Washington as a whole.

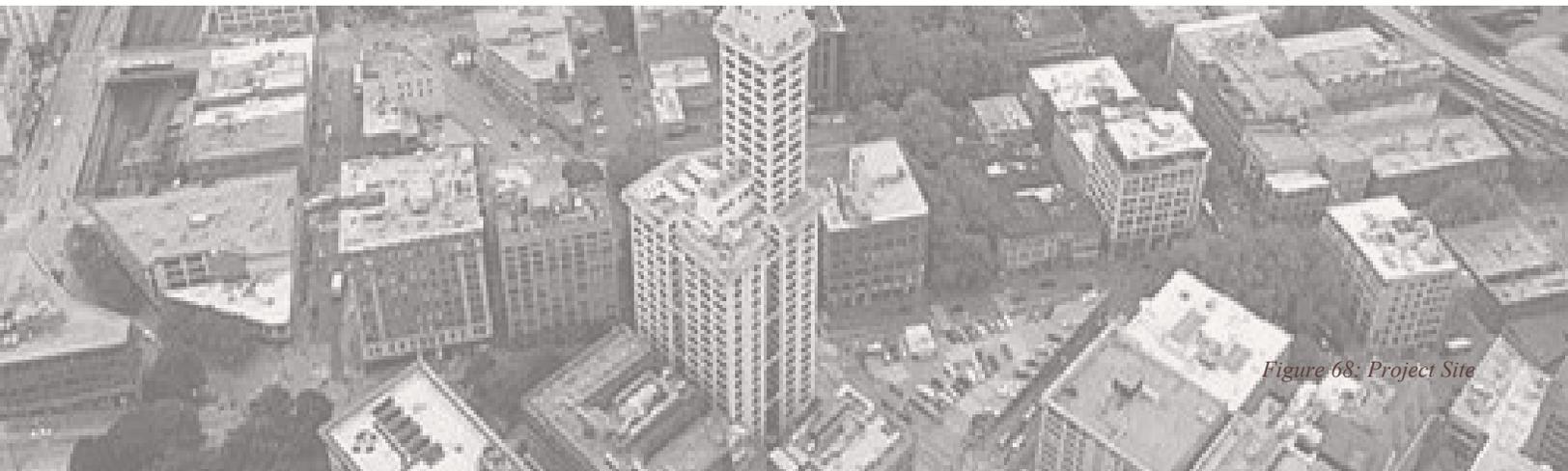


Figure 68: Project Site



Figure 69: City Streets

CONCLUSION

The following comments are intended as a reflection on the thesis, including the feedback I received at the defense.

FUTURE WORKS

However much has been accomplished to date, many questions remain to be addressed; logistical, structural, economic, and conceptual. Among the social issues to be explored are the current challenge of homelessness in Pioneer Square how best to honor the areas original inhabitants, namely the Duwamish People.

BUILDING SCIENCE & STRUCTURE

If I were to continue to work on this project, the next steps would include consultations with architects, engineers and other professionals who could provide insights on the many considerations that lie outside of my evolving area of expertise. Doing so would augment the credibility of the proposal and help to make the case that a project of this nature deserves to become part of Seattle's evolving history.

HOMELESSNESS

In recent years, the reputation of Pioneer Square neighborhood has suffered from, among other things, the rise in the number of homeless people who congregate in the area. The community of Seattle, including its public policy analysts and writers, must take action to address this crisis and, in so doing, help to breathe life back into a district that was once vibrant and lively. This project is a starting point in considering how we might bring citizens and visitors back into the area. A separate thesis, however, is required to address the problem of homelessness.

DUWAMISH PEOPLE

The thesis would have benefitted from a deeper investigation of the history of the Duwamish People, who once occupied the land that was stolen from them. It is intended that *Museum Seattle* address the history of these first peoples, but further investigation is required to determine in what ways this might inform the design of the building. I feel the topic is of great importance and is worthy of a separate thesis; ideally by someone other than an architecture student.

REFLECTION

ADVISE & CRITIQUE

Over the course of this thesis, I was fortunate enough to have received input from a number of professionals and faculty members.

To begin my thesis advisor, Professor Benjamin Gianni suggested many unique words to describe the project. The word unearthing was one with which I was not familiar. I not only stuck with me but now appears in the title. Unearthing means finding something through digging and/or discovering something: often hidden, lost, or secret.¹⁵⁴ In the context of this thesis it refers to the discovery of the city's obscure, subsurface spaces.

Early in the investigation I met with Ray Calabro, a principal in the Seattle office of Bohlin Cywinski Jackson Architects. This meeting provided great insights into Seattle and thoughts that informed the thesis. Something that stuck with me throughout the year was the way he described the idea of

creating something that would draw visitors to the area, e.g., a landmark for the larger city, something of an almost monumental quality that would not only draw visitors to the complex but make them remember it.

In addition to the final defense, thesis students are required to make formal presentations of their work three times throughout the year. At each of these presentations, Professor Suzanne Harris-Brandts offered helpful feedback that propelled the project forward. Most importantly, she reinforces the importance of presenting ideas through drawings and images that communicated the feel, and vibe of the atmosphere and the environment I was attempting to create. These drawings and vignettes are the best means through which to communicate to others.

At the final defence I received helpful feedback from the Associate Director for Graduate Studies, Professor Zachary Colbert. He reinforced the importance of understanding the surrounding site and draw attention to issues I might have overlooked. Using program to engage the community and address issues and individuals that have been overlooked by

the city would enhance the project's success. The "overlooked" include both the neighborhood's homeless population and the first people – the Duwamish People.

Defense committee member Mitchell Hall weighed in on the relationship between the east and west blocks, which he thought were successful in terms of how the underground was carefully unveiled. If time was not an issue, or had I had this feedback earlier, further attention would have been paid to the north block. Among the challenges are how to push into the underground and pull into the sky on an awkwardly shaped site.

Moving forward, it would be invaluable to receive feedback from key individuals in Seattle, including curators at MOHAI, Bill Speidel's Underground Tour, city staff, industry professionals, and other concerned individuals. Feedback on the proposal at it stands is crucial to developing it further. Moreover, getting the word out and planting a seed is key to the ultimate realization of any such project.

The research method I employed had a significant impact on the body of work I produced. The elements I researched and the ways I went about exploring things had a significant impact on the proposal as it stands. Reflecting on the journey and whether I would have gone about things differently if I'd known then what I know now, there are only a couple minor changes I would consider. While I believe my overall approach to the project was appropriate in terms of engaging something about which I was passionate, in retrospect I would have allocated time differently. I would also have chosen to visit the site midway through my research rather than at the beginning. Alternatively, I would have liked to have been able to return to Seattle at least once to verify assumptions and track down missing information.

As a designer and future professional, *Unearthing Seattle's Subterranean* gave me the opportunity to learn about the history of a new place and, in particular, the role that landscape manipulation played in the history of Seattle. Most importantly, however, it taught me the importance of

site and stories beneath that forever go untold. By taking the time to understand a site and stories that go with it, we unearth information that informs and enriches our architecture. In addition, for the first time in my post-secondary education I had the opportunity to work on a single topic for more than eight consecutive months. Spending an extended period of time on a single project provided the opportunity to truly allow myself to address something of importance to me. In doing so I learned the endless possibilities of what something can become with the right amount of time, patience and passion.

CLOSING COMMENTS

Unearthing Seattle's Subterranean explores opportunities to reveal and exploit the network of spaces that run beneath the city's Pioneer Square neighborhood. This exploration takes the form of an architectural proposal for a museum dedicated to the history of Seattle and the surrounding region.

The proposal explores an untapped opportunity to connect the past with the present and, in so doing, reinvigorate Seattle's historic core. It is also intended to challenge Seattle

and its citizens to envision what the future might hold. The transformation of the Seattle Underground, however, does not need to stop there. The proposal can be interpreted as a first phase and proof-of-concept for further expansion.

At the start of the thesis, I hypothesized that the program would be key to the success of proposal. I still firmly believe that a multi-disciplinary complex grounded by an institutional use, was both appropriate and necessary. As the project progressed it became evident that the anchoring institution should focus on the history of the city, with an emphasis on the land on which it sits. In many ways, the museum is the thesis itself; without it, too many questions would be left unanswered.

Upon the completion of this work, it is important to reflect, including how the work should be evaluated and what criteria might be brought to bear in determining its value. Here we need to distinguish between its value as an academic exercise (i.e., what I learned in the process and how the undertaking contributed to my formation as an architect) from its value as a proposition for the Seattle

Underground. And here again we might distinguish between the value of the general proposition, namely the adaptive reuse and transformation of the Seattle Underground into a museum of the history of Seattle, from the value of the particular decisions I made regarding program, how to organize it, how best to differentiate new from existing elements, where to locate entrances, etc.

Arguably some criteria apply to all architecture. For example, a building may be considered to be successful if it is elegant, useful, navigable, flexible, robust, durable and/or feasible. Such criteria can certainly be brought to bear in evaluating my proposal for the transformation of the Seattle Underground. Beyond this, however, I believe the success of my thesis lies in whether I achieved what I set out to achieve, namely an architectural proposal that honours the space it is attempting to revitalize (and vice versa) or as I have said many times before, to put an idea of inspiration out there for not only those in the industry, yet Seattle's growing citizens.



Figure 71: Seattle Waterfront

EPILOGUE

Unearthing Seattle's Subterranean explores the latent possibilities in abandoned spaces, including those that lie beneath Seattle and other cities around the world. I see tremendous opportunities if the world is ready to embrace them. If this is even partially true, I challenge us to consider what the next steps might be.

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APPENDIX A | LIST OF PROGRAM

Project areas and programming areas that lie within are recorded in the list below. Please note these values are approximate square meterage in accordance with the plans.

A.1 | PROJECT

FOOTPRINT		19,450 sq.m
TOTAL		35,750 sq.m
INTERIOR		24,000 sq.m
EXTERIOR		11,750 sq.m

Note: Footprint is gross, whereas total, interior and exterior are the usable floor area.

A.2 | EXHIBITION

PERMANENT DISPLAY		1,100 sq.m
TEMPORARY DISPLAY		1,800 sq.m
WORKSHOP		450 sq.m
LIBRARY		450 sq.m
ARCHIVE		600 sq.m

A.3 | GALLERY

PERMANENT DISPLAY		400 sq.m
TEMPORARY DISPLAY		400 sq.m

A.4 | VENUE

OPEN-AIR AMPITHEATRE		1,150 sq.m
END-STAGE THEATRE		750 sq.m
BLACK-BOX THEATRE		650 sq.m

A.5 | HOSPITALITY

RESTAURANT		630 sq.m
CAFÉ		280 sq.m
RECEPTION		2,050 sq.m
CRUSH		750 sq.m
COURTYARD		1,550 sq.m
SOUVENIR		175 sq.m
BOOK		75 sq.m

A.6 | ANCILLARY

CIRCULATION		<i>see below</i>
WASHROOM		<i>see below</i>
STORAGE		<i>see below</i>
MECHANICAL		<i>see below</i>

An added total of: 10,700 sq.m.

APPENDIX B | SITE VISIT

Beyond what was covered in the thesis body, the following section contains additional detailed information, gathered for preparation for my thesis study, during the site visit to Seattle, Washington on August 2021.

GENERAL

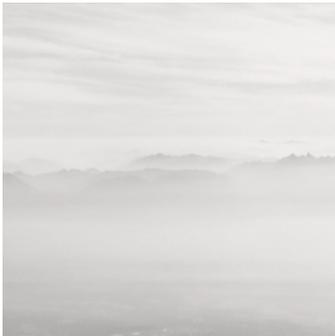


Figure 72: Clouds

Flying over the Pacific Northwest. Mountain's peak through the clouds in the sky and the built environment is visible on the land below.

Immediately upon entering Washington state by plane it was evident that past geological events including the melting and carving of the Puget Lobe and the last movement within the Seattle Fault made drastic impacts on the land.

The following appendix unveils a series of photographs that were taken during my time in the area. It begins with presenting region photographs, moves through city photographs, and then dives into the underground through presenting captured photographs with regards to reveals, areaways, spaces and rubble.

It is important to note the significant impact visiting the site, Seattle and its surrounding region held on my thesis and its architectural proposal. It informed my work tremendously and without it my thesis would have been impacted.

B.1 | REGION



Figure 73: Waterbed

Changing seabed floor with varying levels of water levels due to ground plane changes.



Figure 74: Mountains

When departing Seattle, the infamous Mount Rainer overpowers surrounding Mountains and the land below.



Figure 75: Seawall

Changing water depths is visible in the above a representation of what the deep-water port might look like in Seattle.



Figure 76: Merging

Taken while climbing the Olympic Mountains, Mount Ellinor. Clouds overtake the mountains and trees: an indication of elevations.



Figure 77: Summit

Reaching the summit of Mount Ellinor, it was evident how high the mountains and terrain were. The clouds are seen moving quickly below.



Figure 78: Flowing

A river or body of water likely connected to the Puget Sound, seen from the summit of Mount Ellinor.



Figure 79: Land

Driving along a highway that brings visitors near Mount Rainer. The changing terrain as you travel is an indication of the topography.



Figure 80: Trees

Walking around what was visible in the left photo. Tree heights are an indication of surrounding scales.



Figure 81: Rainer

Mount Rainer up close, covered with snow in August. An indication of the changing temperature caused by an increase in elevation.



Figure 82: Façade vs Street (1)

The street slope creates the need for adjacent buildings to have window wells as the building enters the manipulated topography.



Figure 83: Façade vs Street (2)

An indication and representation of the city's grade change across one block. Through referring to surrounding scales we can see the elevation change.



Figure 84: Model

A model from the Waterfront Seattle project flowing into Pioneer Square. Trees line Yesler Way and Washington street connecting the project to it.

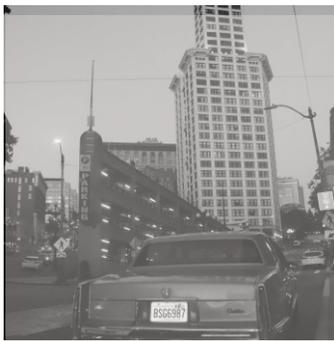


Figure 85: Sinking Ship

The obstructing parking garage caught my attention during my site visit to the area. Not adjacently compatible with its surrounding architecture.



Figure 86: Smith Tower

The city's original Smith Tower dominates all of Pioneer Square and looks over the project sites "Sinking Ship" Parking Garage.



Figure 87: Buildings

Surrounding heritage buildings taken from the highest point of the parking garage looking east uphill.



Figure 88: Pioneer

The Pioneer Building located on the northeast side of the Pioneer Square Park.



Figure 89: Interurban

The Interurban Building located on the corner of Yesler and Occidental; part of the project site.



Figure 90: Occidental

Occidental Avenue running into Yesler. The center location of the project site.

B.3 | REVEALS



Figure 91: Light Wells
An original lightwell casted into the street sidewalk.



Figure 92: Prisms
A closeup of each prism casted individually into the concrete.



Figure 93: Breaching
Taken from within the underground: light breaches from above entering the dark spaces below.



Figure 94: Window Wells
Window wells allow light to access the below through the façade.



Figure 95: Side stairs (1)
Original narrow steps that allow circulation to and from the underground.



Figure 96: Side stairs (2)
Underground access is now locked off and gated from the public



Figure 97: Occidental Access
Taken south of the project site at the Occidental Park large stairs descend below grade: one of the few cases in the area of Pioneer Square.



Figure 98: Entrance
The entrance staircase used to access the Underground and the tour held: photo taken prior to descending.



Figure 99: Stairs
Taken on the underground tour prior to accessing the subterranean space.

B.4 | AREAWAYS



Figure 100: Structure

On the left lies the above street retaining wall. The right stands the buildings outer façade. Above is the structure of the present sidewalk.



Figure 101: Metal

Throughout the tour objects from the past are set and displayed for viewing. Note: they were left in the Underground and not brought down.



Figure 102: Boardwalk

In areas where the ground slab is shifted, boardwalks were presently built for touring process.

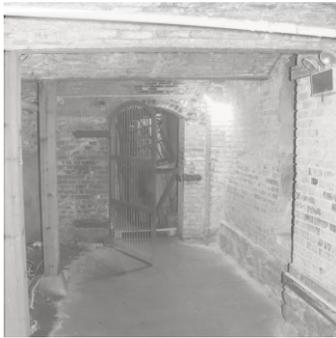


Figure 103: Chamber

An original chamber door to allow access between buildings and building areaways: doors provide security.



Figure 104: Openings

Certain opening created after the fact revealed through the chipping of original building or areaway walls.



Figure 105: Facade

An original wood façade reveals how the building used to be exposed to the elements.



Figure 106: Windows

Within the areaways some of the buildings original windows are still present even today.



Figure 107: Arches

Original stone and brick façade revealed in the arches. Urging the question: what was in the voids prior; windows, doors or openings.



Figure 108: Plumbing

Some areaways are obstructed by building utilities.



Figure 109: Slabs
Cracks and shifts within the slab floor reveal the effect of the land.



Figure 110: Frames
Many windows no longer have glass and all that is left is the frames.



Figure 111: Dark
Artificial light within the underground are only visible in areas accessed by the tour facilities.



Figure 112: Rubble
Wood piles from the past are still present and not cleaned up today.



Figure 113: Objects
Original objects are still present within the spaces today.



Figure 114: Bar
Corner of the photo reveals a bar of the past seen during the site tour.



Figure 115: Support
In many places, supports have been added to secure the above floor.



Figure 116: Entrance
Upon entering the tour facilities visitors are immediately brought into the underground.



Figure 117: Stories
Prior to starting the tour, guides tell stories of the underground while sitting within it.

B.6 | RUBBLE



Figure 118: Ashes

Piles of burned objects from the fire were left within the underground spaces: an indication of never being removed in the rebuild.



Figure 119: Rust

Most objects left are metal, yet full of a significant amount of rust: an indication of time.



Figure 120: Saws

Logging saws from the skid road have been left within the areaways.



Figure 121: Fixtures

An original bathtub and lightwell sits within a space.



Figure 122: Garbage

Some areaways are not accessible due to being full of rubble and garbage.



Figure 123: Metal

Original sheet metal for facades and/or roofing. On the right lies an exhaust fan for present purposes.



Figure 124: Couch

Original furniture from a restaurant and other facilities still occupies space.



Figure 125: Systems

On the wall an original plumbing pipe is on display. Prior to the fire, water was run through hollowed out logs.



Figure 126: Washrooms

A raised washroom with a sink and toilet: raised to combat backflow problems from the changing tide.

APPENDIX C | PROJECT PRECEDENTS

C.1 | LIFTED CITIES

DOWNTOWN WATERFRONT

CHICAGO, ILLINOIS



Figure 127: Chicago Raise

A complete city block being raised in order to combat flooding. Showcasing life continuing during the street raise, despite the construction.

Prior to the 1850s Chicago, Illinois sat at nearly the same elevation as Lake Michigan.¹⁵⁵ Frequent flooding coupled with impermeable clay and loam soil, made drainage next to impossible.¹⁵⁶ Prior to the introduction of sewer systems, as with most cities in times of flooding, Chicago's stormwater flowed throughout the streets alongside wastewater.¹⁵⁷ Stagnant, contaminated water led to frequent outbreaks of cholera, dysentery, and typhoid.¹⁵⁸ Plans for a sewer system presented an opportunity to rethink how the city addressed drainage. In the mid 1850s an ordinance was passed to raise central Chicago by between four and fourteen feet with

¹⁵⁵ Chicago History Society. "Encyclopedia of Chicago." Last modified 2005. <http://www.encyclopedia.chicagohistory.org/>

¹⁵⁶ Mike Ewing and Mike Lowe. "Chicago's 'sunken' homes are remnants of a bold effort to raise the city out of the mud." WGN 9, Last modified 2022. <https://wgntv.com/news/ask-wgn/chicagos-sunken-homes-are-remnants-of-a-bold-effort-to-raise-the-city-out-of-the-mud/>

¹⁵⁷ Alex Conde. "Building Chicago's Sewage System Meant Raising the Entire City." Insh, Last modified 2016. <https://insh.world/tech/building-chicagos-sewage-system-meant-raising-the-entire-city/>

¹⁵⁸ Ewing, Ibid.

sewers being laid under raised buildings. Costs associated with raising buildings were imposed on the owners,¹⁵⁹ prompting some owners to decide not to conform to the city's ordinance. As was the case in Seattle, odd buildings were left at the original level and connected to the raised streets by sidewalks or staircases. Although most of this work was undone by the Great Chicago Fire of 1871, surviving areas reveal remnants of the lower levels of buildings, similar to those in Seattle's Pioneer Square.¹⁶⁰ As noted in Section 1.2 above, Seattle explored the possibility of raising entire buildings, however, due to time and money involved, that idea was abandoned. Given the destruction associated with Chicago's great fire and the opportunity to start from scratch, much more of Seattle's underground network remains intact. That said, Chicago provides helpful examples on how to reveal underground spaces.

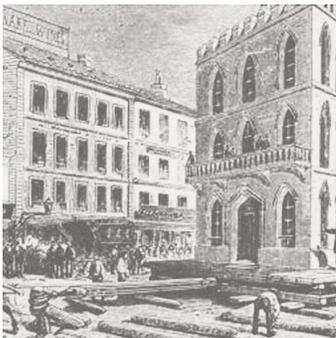


Figure 128: Relocating
Some building owners opted to relocate their buildings away from the flood zone, as opposed to raising them.

¹⁵⁹ Chicago History Society, op. cit.

¹⁶⁰ Ewing, op. cit.

ATLANTA UNDERGROUND

ATLANTA, GEORGIA



Figure 129: Atlanta Underground
Bridges were connected throughout higher points in the city to avoid citizens travelling through the busy areas below.

As it recovered from the Civil War in the late 1800s, Georgia's capital, Atlanta, experienced a population spike. This resulted in major congestion throughout the city's core, creating problems for pedestrian and vehicular traffic.¹⁶¹ To combat this problem, Atlanta upgraded the downtown infrastructure through a series of elevated walkways and grade-separated crossings as a means of improving circulation throughout the city. As the city expanded outward, however, pedestrian activity in the core diminished such that it could no longer support two-tiered retail. In 1930, following prohibition, Atlanta's lower level was abandoned, and the city raised its streets.¹⁶² Although the impetus was different than in Seattle, the effort resulted in a similar network of underground spaces that, over time, were abandoned. Seattle has much to learn from Atlanta's efforts in bringing vitality back into the city's original street level.

¹⁶¹ Atlanta Convention & Visitors Bureau. "Underground Atlanta: Historic district dates to early 20th century." Atlanta, Last modified 2022. <https://discoveratlanta.com/things-to-do/shopping/underground-atlanta/>

¹⁶² Underground ATL. "Underground Atlanta: Historic district dates to early 20th century." Last modified 2022. <https://undergroundatl.com/our-story/>



Figure 130: Travel
Lower-level Atlanta prior to the city moving up a level. Trains pass while pedestrians and cars travel in between.

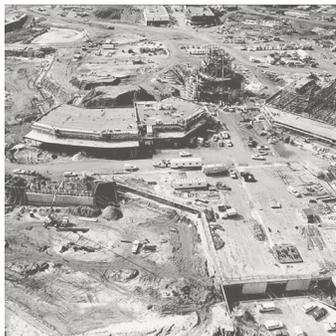


Figure 131: DW Magic Kingdom
Construction of the Kingdom's utilidors prior to the networks fill and cover that raised the kingdom up.

Today, the Underground Atlanta Historic District is undergoing a third phase of redevelopment.¹⁶³ In the midst of this, spaces that are still accessible to the public include a series of restaurants, stores, pop-up shops, markets, and venues. In addition, changing exhibitions are staged in the underground on a regular basis.¹⁶⁴ Underground Atlanta serves as an example for what Seattle's Underground might become. It demonstrates that abandoned subterranean spaces have the potential to be successful in the future.

D. W. MAGIC KINGDOM

ORLANDO, FLORIDA

Disney World's Magic Kingdom Theme Park is home to a secret underworld, uniquely native to the Kingdom itself and not the rest of Disney. So as not to distract from the visitor experience, a network of underground passages enables workers (so-called cast members) to move through the theme park without being seen. As a high-water table did not allow for excavating, designers opted to raise the grade of the park.

¹⁶³ Atlanta Convention & Visitors Bureau, op. cit.

¹⁶⁴ Underground ATL, op. cit.



Figure 132: Network
A map of the Magic Kingdom's network. A circle with branches and a central utilidor cut through the center.

The illusion of a magical world is maintained through this nine-acre subsurface network.¹⁶⁵ Cast member and employee services (rehearsal, grooming, dining, locker rooms and administration) and other ancillary programming (powerhouse, garbage disposal and delivery services) were placed below and out of view of visitors. Although portions of the underground are accessible to the general public, in-depth tours are only available to visitors 16 years-of-age and older, in effort to maintain the Kingdom's magic.¹⁶⁶ Although the utilitarian nature of this project cannot be compared to the Seattle Underground, it is similar inasmuch as the ground plane was raised in both cases. The Magic Kingdom serves as an example of how sub-grade programming can be used effectively to complement and support what goes on above.

¹⁶⁵ Marco Margaritoff. "The Inside Story Of Walt Disney's Secret Tunnels Beneath The Magic Kingdom." Ati, Last modified April 16, 2021. <https://allthatsinteresting.com/disney-underground-tunnels>

¹⁶⁶ Orlando Vactions. "The Secret Underworld of Walt Disney World." Orlando Blog & Guide. Last Modified 2021. <https://orlandoinsidervacations.com/the-secret-underworld-of-walt-disney-world/>

C.2 | SUBTRANNEAN NETWORKS

UNDERGROUND HELSINKI

HELSENKI, FINLAND | 1980; Helsinki Municipality; 10,000,000m2



Figure 133: Underground Helsinki
A partially connected network of spaces scattered beneath Finland's capital city, Helsinki.

Located on a peninsula in the Gulf of Finland, the growth of Helsinki is constrained by the sea. As high-rises would have compromised the city's historical character, Helsinki opted to expand by carving out spaces below grade.¹⁶⁷ Although Seattle's Underground did not evolve in this way, Helsinki's network demonstrates how cities can expand despite physical restrictions. Today, nearly 200 miles of tunnels lay beneath the city, providing a subterranean world for residents and visitors. Having begun in the 1960s to accommodate utilities, the underground quickly became populated by businesses and was seen as a place to shelter in case of warfare.¹⁶⁸ It is an example of how the same space can be used for different purposes at different times. Underground Helsinki comprises nearly 10 million square

¹⁶⁷ Lewis Martin. "Underground Helsinki and Underground Urbanism." Declad. Last Modified May 3, 2020. <https://declad.com/underground-helsinki-and-underground-urbanism/>

¹⁶⁸ Michael Hunt. "How Cold War Fears Helped Create Helsinki's Subterranean Paradise." Atlas Obscura, Last Modified March 22, 2021. <https://www.atlasobscura.com/articles/helsinki-underground-city-emergency-shelter>



Figure 134: Underground Pool
A public pool located within Helsinki's Underground, surrounded by the walls and roofs of the region's bedrock.

meters of space and is still growing. The network accommodates a variety of museums, churches, shops and recreation spaces (a swimming pool/go cart track/ice rink), demonstrating the range of programs that can be accommodated underground.¹⁶⁹ As Helsinki only receives a few hours of daylight during the winter months, the city's underground provides a bright, colourful, warm, and vibrant alternative to moving about above.

THE RESO

MONTREAL, QUEBEC | 1962; Vincent Ponte; 4,000,000m2



Figure 135: Montreal RESO
The Montreal Reso Network Map showcasing the visible links throughout the city's downtown.

Previously known as Montreal's Underground City, the Montreal Reso is a large pedestrian network located under the heart of the city.¹⁷⁰ The network began in 1962 with the construction of passageways in and under Place Ville-Marie. In the following years tunnels were built to connect Central Station with additional connections introduced over time. The network has been described as Montreal's busiest

¹⁶⁹ Hunt, op. cit.

¹⁷⁰ Isa Tousignant. "Guide to the underground city." MTL. Last Modified January 4, 2022. <https://www.mtl.org/en/experience/guide-underground-city-shopping>

“neighbourhood”¹⁷¹ and serves as a great example of how underground programming might be applied to the thesis. Known as one of the largest underground networks in the world, the 33-kilometer network links numerous metro stations, some 2,000 services, shops, markets and restaurants, nearly twenty museums, three entertainment facilities, and a variety of hotels, offices and schools. Its links to the Place des Arts and the Musée d’art contemporain de Montreal have enabled it to contribute to the cultural life of the city with its yearly *Art Souterrain* festival.¹⁷² Warm in the winter and cool in the summer, the RESO accommodates some 500,000 individuals each day, regardless of the weather. The RESO includes over 120 exterior access points¹⁷³ and is neither continuous, nor completely underground.¹⁷⁴ Although the proposal for Seattle’s Underground is limited to two city blocks, Montreal’s RESO demonstrates a potential for further expansion, especially



Figure 136: Descending
Escalators from each direction allow citizens and visitors to circulate freely to and from the Montreal RESO.

¹⁷¹ Go Montreal. “Guide to the underground city.” Go Montreal. Last Modified 2022. <https://montrealvisitorsguide.com/reso-underground-city-la-ville-souterraine/>

¹⁷² Tousignant, op. cit.

¹⁷³ Go Montreal. “Underground City (RESO).” Go Montreal. Last Modified 2022. <https://gotourismguides.com/montreal/underground-city-reso/>

¹⁷⁴ Go Montreal. Ibid.

inasmuch as the subterranean spaces are scattered block by block and are discontinuous.

THE PATH

TORONTO, ONTARIO | 1900; Matthew Lawson; 372,000m²



Figure 137: Toronto PATH

A map indicating the underground sections of the Toronto path including the buildings themselves and their connecting corridors.

Toronto, Ontario’s PATH System serves over 200,000 commuters daily. Extending from the waterfront to the city’s financial and entertainment districts, the continuous network of underground walkways links key destinations in the city’s busy downtown core. Not least among these is Toronto’s Union Station, which is a hub for subways, commuter trains and inter-city trains.¹⁷⁵ First appearing in 1900 (as a connection between Union Station and the Royal York Hotel), the PATH system expanded over the course of the 20th century, and especially after 1970 when large office complexes with underground parking (such as the TD Centre) began to replace some of the city’s finer-grained commercial fabric. The PATH system now consists of 30 kilometers of subterranean passageways. It connects over 80

¹⁷⁵ City of Toronto. “PATH – Toronto’s Downtown Pedestrian Walkway.” City of Toronto. Last Modified 2022. <https://www.toronto.ca/explore-enjoy/visitor-services/path-torontos-downtown-pedestrian-walkway/>

buildings, including restaurants, shops, department stores, entertainment venues, businesses, and accommodations. It is linked to six subway stations as well as Union Station. The PATH is currently undergoing further extension to connect additional nodes, especially to the northwest where a significant amount of new growth is occurring. The goal is to relieve congestion not only in the network but also on the city's crowded sidewalks.¹⁷⁶ Although my thesis does not propose a continuous linkage throughout Seattle's Pioneer Square, Toronto's PATH system demonstrates how different programs can be successfully connected, or even be imbedded on in another. In addition, the PATH and the above precedent the RESO are both directly above the primary commercial district of their city's and connect two transportation systems: subway and metro. The goal of the thesis is not to provide easy connections and circulation methods throughout the city, yet to provide a destination. However, in the future and at an urban scale there are possibilities to turn the underground into a network similar



Figure 138: Eaton Center
Toronto's Eaton Center Mall is one of the city's main features that connect directly to the subgrade PATH system.

¹⁷⁶ City of Toronto, op. cit.

to the RESO and PATH, with a key connection being the important nodes or destinations between ground.¹⁷⁷ Access to light became an important consideration and informed the way I approached the creation of subterranean spaces.

C.3 | ABANDONED SUBTERRANEANS

THE WIELICZKA SALT MINE

WIELICZKA, POLAND | 1945; Kopalnia Soli Turystyka; 65,000m²



Figure 139: Wieliczka Salt Mine
A mezzanine and balcony area looks over the large reception / event space that lies within the previous salt mine.

Much older than Seattle, Poland's Krakow dates to the Middle Ages and provides an example of how cities can preserve the past for generations to come. In the 13th century, Krakow was the largest salt producer in Poland. Salt was extracted from the famous Wieliczka Salt Mine for over seven centuries (until 1996), resulting in 9 million cubic meters of excavation.¹⁷⁸ In addition to illustrating evolving mining techniques in from the 13th to the 21st century, the mine is an excellent case study for adaptive re-use, for connecting the past with the future.¹⁷⁹ Although the

¹⁷⁷ UNESCO. "Wieliczka and Bochnia Royal Salt Mines." Last Modified 2022. <https://whc.unesco.org/en/list/32/>

¹⁷⁸ Wieliczka. "About the Wieliczka Salt Mine." Last Modified 2022. <https://www.wieliczka-saltmine.com/individual-tourist/about-the-mine>

¹⁷⁹ UNESCO, op. cit.

subterranean network was the result of geological extraction, it's an appropriate case study for Seattle's subsurface spaces. As a tourist destination, the Wieliczka mine has attracted some 45 million visitors. It has been designated as a Historic Monument and is recognized by UNESCO. It includes numerous statues, chapels, chambers, and event spaces. At present, tourists are able to access less than 1/6th of the salt mine. While portions of the network are still being mined, there is ample opportunity for expansion and further transformation. Likewise, as described in Section 2.1, additional portions of the Seattle Underground present opportunities to accommodate additional programs and to explore different approaches to adaptive re-use.¹⁸⁰



Figure 140: Tours
Wieliczka Salt Mine Tours bring visitors through a variety of different mining areas.



Figure 141: New York Lowline
A render indicating the proposal for the New York Lowlines abandoned trolley terminal below the city.

NEW YORK LOWLINE

NEW YORK, NEW YORK | 2011; James Ramsay; 5,600m2

In 1908, New York City's Williamsburg Bridge and Trolley Terminal opened as a means of transporting commuters from Manhattan's Lower East Side across the East River to Brooklyn. Falling revenues and new modes of

¹⁸⁰ Wieliczka, op. cit.

transportation, however, resulted in the permanent closure of the trolley terminal in the mid-20th century.¹⁸¹ While the bridge was reconstructed to serve vehicular traffic, access to the subsurface portion was blocked off.¹⁸² In 2011, architect James Ramsey and tech innovator Dan Barasch introduced a proposal to transform the abandoned space into an underground version of the city’s Highline, namely a linear garden and art park.¹⁸³ Located below one of the least green areas of the city, the proposal uses an innovative solar technology to illuminate the tunnel, with the goal of improving city life and demonstrating how technology can be leveraged to transform abandoned spaces. Although elected officials and community representatives were unable to secure funding and the project was put on hold in 2018, a future partnership with the city is still possible.¹⁸⁴ The concept inspired and informed my thoughts on the transformation of the Seattle Underground, which is similar



Figure 142: Prototype

A prototype on display indicating the possibility and success of underground living greenery.

¹⁸¹ Lowline. “About the Lowline.” Last Modified 2022. <http://thelowline.org/about/project/>

¹⁸² Joseph Brennan. “Williamsburg Bridge Railway terminal.” Abandoned Stations. Last Modified 2002. <http://www.columbia.edu/~brennan/abandoned/willb.html>

¹⁸³ Lowline, *ibid.*

¹⁸⁴ Lowline, *op. cit.*

in scale and would require significant funding from the city and other sources.

ARCHAEOLOGICAL CRYPT

PARIS, FRANCE | 1980; Île de la Cité; 4,000m²



Figure 143: Archaeological Crypt
Entrance into the Paris Crypt showcasing the proximity to the Notre Dam that looks over the site.

Beneath the forecourt of a Paris landmark lies a historic site. The Archaeological Crypt is located beneath the “parvis” facing the cathedral of Notre-Dame. Visitors are offered the chance to experience Paris as it was 2,000 years ago.¹⁸⁵ Excavation for a car park in 1965 unearthed significant archeological remains, providing the impetus for the museum. Visitors move through ruins ranging from the Roman era through the Middle Ages.¹⁸⁶ Included in the 200m chamber is a Gallo-Roman docking port, a public bath, and a portion of the historic city of Lutetia (the Roman name for Paris). In and among these are the basements/foundations of the medieval buildings that once occupied the plaza above, and traces of the sewers that were installed in the 19th

¹⁸⁵ Paris Region. “Archaeological Crypt of the île de la Cité.” Visit Paris Region. Last Modified 2022. <https://www.visitparisregion.com/en/archaeological-crypt-of-the-ile-de-la-cite>

¹⁸⁶ Paris. “Crypte archeologique de l’île de la Cite.” Histoire de Paris. Last Modified 2022. <https://www.crypte.paris.fr/en/node/771>.

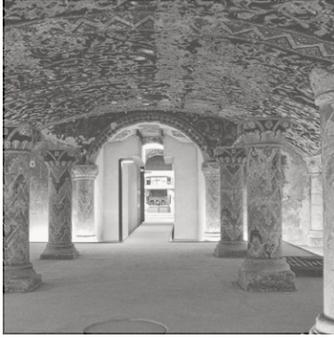


Figure 144: Architecture
Preserved architecture found below grade within the Crypt. A space for gathering or events.



Figure 145: Amos Rex
A child experiences the scale and feel of the large skylights that bring daylight into the subterranean museum.

century.¹⁸⁷ The crypt also hosts exhibitions devoted to preserving and teaching about the Roman and medieval roots of Paris. Over the years the museum has staged exhibitions highlighting different time periods, eras of material culture, building materials and construction techniques. An excellent example of an in-situ archeological museum, the Archeological Crypt greatly influenced my decision on the program (and programming) to inject Seattle’s Underground with, which is fundamentally archeological in nature.

C.4 | UNDERGROUND EXHIBITION

AMOS REX

HELSINKI, FINLAND | 2018; JKMM Architects; 22,000m²

Finland’s Amos Rex archive required a retrofit that catered to the 21st century.¹⁸⁸ As setback restrictions precluded at grade expansion, new facilities were added below grade where it was possible to expand under the adjacent square.¹⁸⁹

Acclaimed as one of Europe’s most innovative architectural

¹⁸⁷ Paris Region, op. cit.

¹⁸⁸ Maria Gonzalez. “Amos Rex / JKMM Architects.” Arch Daily. Last Modified April 23, 2020. <https://www.archdaily.com/900928/amos-rex-jkmm-architects>

¹⁸⁹ Martin, op. cit.

spaces, the expansion enabled the Amos Rex to connect into Helsinki's underground network (described above).¹⁹⁰ As such, the shops and amenities available below grade complement those located around the square above. Angled dome skylights hover over subgrade galleries, washing the interior with diffused sunlight.¹⁹¹ ¹⁹² Sunken courtyards provide additional space for outdoor events, which is an idea that informed my strategy for the Seattle Underground.¹⁹³ Included in the underground spaces is a column-free, domed structure that provides flexible space for events and changing exhibitions.¹⁹⁴ Although largely underground, the Amos Rex contributes to the life and vitality of the Helsinki neighbourhood under which it's located. Daylight, sunken courtyards, flexible exhibition and event spaces, and strong connections between the world below and the streets above are all key concepts for the proposal for Seattle.



Figure 146: Light

White checkered walls and one of the museums lightwells showcase the bright space and the opportunities that lie below surface level.

¹⁹⁰ Hunt, op. cit.

¹⁹¹ Gonzalez, *ibid.*

¹⁹² Martin, *ibid.*

¹⁹³ Hunt, op. cit.

¹⁹⁴ Martin, op. cit.



Figure 147: Chichu

A visual representation of how the art museum sits within the hill of its landscape: covered by surrounding nature and greenery.

The dynamic subterranean spaces of the Chichu Art Museum are in contrast with the minimalist quality of the above ground portions.¹⁹⁵ To avoid obstructing the horizon of the Seto Inland Sea, the building was built primarily underground.¹⁹⁶ Although the siting of this museum is quite different than my site in Seattle, it serves as an example of how programming can be added to a location without compromising the character of the place. It demonstrates how architecture can complement rather than compromising a site, a concept that was key to my proposal for Seattle. Although the bulk of the facilities are buried, the building is designed to allow natural light to penetrate, changing the character of spaces over the course of the day and year. The museum was purpose-built to display works by Claude Monet, Walter De Maria, and James Turrell. The connection with daylight and the overall site were important in relating

¹⁹⁵ Steven Karapetyan. "A Close Read on Chichu Art Museum in Naoshima Island in Japan." Medium. Last Modified April 23, 2020. <https://www.archdaily.com/900928/amos-rex-jkmm-architects>

¹⁹⁶ Chichu. "Benesse Art Site Naoshima." Chichu Art Museum. Last Modified 2022. <https://benesse-artsite.jp/en/art/chichu.html>

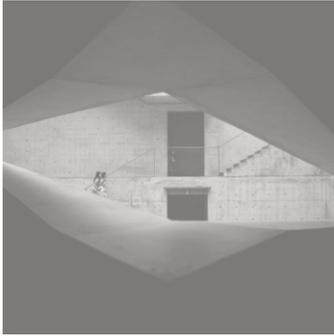


Figure 148: Space
Lines, shadows, walls and surfaces create unique moments and capture the light that is entering below spaces.

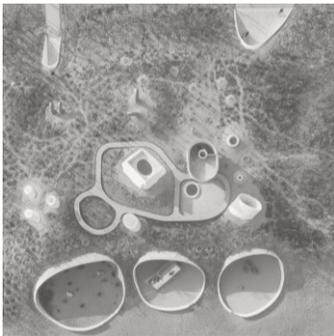


Figure 149: UCCA Dune
The museum from above showcasing how it sits within the surrounding sand dunes. Providing undisrupted space for nature and its habitats.

the works to their location, and to the air and sky. Designed to frame a view of the sea, the museum café functions as an ancillary exhibition space.¹⁹⁷ The strategies used in the Chichu Art Museum were useful in considering how light might be introduced into Seattle’s underground network. It inspired me to consider how the architectural forms I introduce might differ from and draw attention to the existing archaeology. Ando’s architecture balances a non-monumental approach with strong architectural forms through the use of a limited palette of concrete, steel, glass, and wood that play against each other:¹⁹⁸

UCCA DUNE

QINHUANGDAO, CHINA | 2018; OPEN Architecture; 930m2

Nestled into the sand on the quiet coast of China’s Bohai Bay lies the UCCA Dune Art Museum. Over the years wind has sculpted the sand into a series of rolling dunes. Taking its cues from its surroundings, the museum’s design features a series of interconnected, cave-like spaces that recall the

¹⁹⁷ Masud Rana. “The Chichu Art Museum by Tadao Ando.” Architect Boy. Last Modified 2020. <https://architectboy.com/chichu-art-museum-tadao-ando/>

¹⁹⁸ Chichu, op. cit.

primitive habitations and spaces of refuge in which the earliest art appeared.¹⁹⁹ Burrowing beneath the dunes, the design of the museum highlights the architects' connection to nature and their desire to protect the evolving ecosystem above. The museum consists of a variety of unique, multifunctional, skylit galleries and a viewport through which visitors can experience the sky, the sea, and the surrounding landscape. Each skylight is different in its size and orientation and is fitted with different filters throughout the year. Sand covering the roofs greatly reduces the summer heat load.²⁰⁰ Lastly, the placement of the building beneath the dunes has helped to both preserve and stabilize them.²⁰¹ Among the aspects of the Ucca Dune museum that informed my thinking about my proposal for Seattle was the use of skylights, the idea that what happens below grade could help stabilize the world above (i.e., counteract the decay that the



Figure 50: Caves

Walls mimic that of a pass cave and windows represent portals in and out of the cave like spaces: while allowing the penetration of light.

¹⁹⁹ Han Shuang. "UCCA Dune Art Museum / OPEN Architecture." Arch Daily. Last Modified Dec 13, 2018. <https://www.archdaily.com/907596/ucca-dune-art-museum-open-architecture>

²⁰⁰ Shuang, op. cit.

²⁰¹ Katie de Klee. "Open Architecture builds cave-like art gallery inside a sand dune." Dezeen. Last Modified Dec 12, 2018. <https://www.dezeen.com/2018/12/12/open-architecture-ucc-dune-art-museumarchitecturechina>

Pioneer Square neighborhood is experiencing), and the important roles of “place,” nature, and the nature of place.

C.5 | UNDERGROUND VENUE

THE VAULTS

LONDON, ENGLAND | 2008; The Vaults; 2,000 m2



Figure 151: The Vaults

Visitors occupy the subterranean street that lies within the vault before accessing the venue itself. Art and culture is truly captured in this image.

Home to alternative arts and immersive theatre, the mission of The Vaults is to embrace a diverse set of arts and provide a space in which to collaborate and conspire. The venue is set within a series of arches supporting a decommissioned unexpected, and prides itself on providing a space for every artistic vocation and for championing unsung voices, such as those in the LGBTQ+ community. Diversity and inclusivity are important when revitalizing vacant spaces, especially “alternative” ones, as is honoring the past. To date the Vaults have hosted concerts, theatrical performances, film screenings, fashion shows, installations, and dinner parties. The center includes multiple, interconnected spaces catering to different requirements. For the purpose of the precedent study I examined three of these. The *Smiths One* is a 320 sq m cabaret-style space that can accommodate between 250



Figure 152: Colour

Colour is introduced in underground spaces that don't include natural light as a way to bring brightness into the below spaces.



Figure 153: The Drake

Visitors watch an artist perform in one of Toronto's "hippest" venues: a space that provides a grungy feel with added contemporary vibes.

and 300 people depending on seating arrangements. The *Vaults Theatre* is used for film screenings and fixed theatrical performances. The space includes a 120-seat raked seating system and a 112 sq m stage. The 264 sq m *Big Black One* has a standing capacity of 600 and includes a mezzanine level and office space.²⁰² The adjacent Leake Street Arches, a space to “eat, drink, paint, and play,” and adjoins the city’s longest legal graffiti wall. Enriched with street-culture and home to community events, it complements The Vaults.²⁰³ Flexibility is paramount in assuring that programs will thrive in underground spaces where the boundaries are fixed.

DRAKE UNDERGROUND

TORONTO, ONTARIO | 2004; The Drake; 330m2; 150 capacity

A Toronto-based hospitality brand known as The Drake is passionate about the revitalisation of historic properties and neighbourhoods by creating spaces that support a diverse

²⁰² The Vaults. “The Vaults: London’s Home for Immersive Theatre and Alternative Arts.” Last Modified 2022. <https://www.thevaults.london/images>

²⁰³ London. “LeakStreetArches” Last Modified 2022. <https://www.leakestreetarches.london/>

range of arts, culture and hospitality programming. This mission resonates with my aspirations for the redevelopment of the Seattle Underground; providing space for emerging artists and voices is as inspiring to me as revealing and restoring the history of Seattle. To this end, the brand owns a series of businesses including accommodations, event spaces, restaurants, and stores. For the purpose of this study, I've homed in on an underground performance venue located beneath the Drake Hotel. The multifaceted performance space hosts local, emerging, and international performers. Hailed as "the basement that rarely sleeps," the 150-seat venue is particularly well-suited for intimate musical performances, dance parties, film screenings, poetry slams and comedy shows, all of which I'd like to accommodate in the proposal for Seattle. The venue also accommodates art installations. With over 200 artists performing at the Drake Underground each year, the venue greatly contributes to the vitality of the surrounding neighborhood.²⁰⁴ Following a flood in 2018, the redesigned venue rebounded by bringing a sleek quality to visitor experience with state-of-the-art



Figure 154: Bar

The Drake's underground bar lined with feature lighting underneath and above: no indication of being beneath the streets.

²⁰⁴ Drake Hotel Properties. "The Drake." Last Modified 2022. <https://www.thedrake.ca/>

sound and lighting systems and an updated bar. The space pushes boundaries, which I'm keen to do in Seattle.²⁰⁵

THE CAVERNS

PELHAM, TENNESSE | 2018; Todd Mayo; 330 LM; 850-1200 cap



Figure 155: The Caverns

People occupy the entirety of the natural cave with an end-stage at its back end. Showcasing how this project lies within the cave itself.

A continuous, 8,000-linear-foot network of caves beneath Tennessee's Cumberland Plateau has been occupied for over 25,000 years. It is now a home for art and culture. The world-renowned destination, historically known as the Big Mouth Cave, has been transformed into a venue for music and adventure. Within it lies a natural amphitheater. The subterranean venue offers guests the opportunity to experience outstanding acoustics while being immersed within the prehistoric beauty of the caves and landscape. Branded as the "Greatest Show Under Earth" the venue can accommodate between 850 - 1,200 people. Concrete floors make it accessible for all visitors. The notion that music has the power to bring people together is inscribed in Cherokee's Sequoyah script, which is carved into the entrance in tribute to the primitive people. Honouring earlier inhabitants must

²⁰⁵ Blog TO. "Drake Underground." Last Modified March 23, 2019. <https://www.blogto.com/bars/thedrakeunderground/>



Figure 156: Concert
A fan captures the vibe and atmosphere of the Cavern during performance: a surreal unique experience.

be considered when implementing a program on stolen land. In addition to hosting performances, the caverns offer adventure activities, including guided tours through the network of caves. Visitors learn about the geology and history behind the caverns and Grundy County, in which they are located. The venue also hosts a summer camp dedicated to growth, exploration, confidence- and character-building.²⁰⁶ Being able to support a multifaceted program, including history-oriented tours through the network, is an important aspiration for the Seattle Underground.

C.6 | CITY HISTORY MUSEUMS

POINT : A : CALLIERE

MONTREAL, QUEBEC | 1992; Point-A-Calliere; 4,000 m2



Figure 157: Point-A-Calliere
Exterior area of the Montreal Museum, a mixture of new and old buildings: blending heritage with contemporary.

Occupying a site that has been inhabited by human for over a thousand years, the Pointe-à-Callière museum is a designated national archaeological and historic site showcasing architectural ruins of the past. Inaugurated in 1992, it is the most-visited museum in Montreal. It consists

²⁰⁶ Caverns. “The Caverns: Music and Adventure.” Last Modified 2022. <https://www.thecaverns.com/>

of seven pavilions and structures that accommodate a series of permanent exhibitions focussing on the archaeological remains of Old Montreal. In the Where Montréal Began exhibit, visitors walk on a glass floor hovering over unearthed archaeological remains including an indigenous fire pit, a well, a cellar, a fort palisade and stone walls/foundations. The Memory Collector exhibit brings visitors through North America's first collector sewer, which dates to 1838. Traveling through a 110-meter-long decommissioned section of sewer, visitors are treated to a multisensory, emotion-packed light installation. The museum also includes exhibits honoring the history of Montreal, interactive/immersive exhibits highlighting archeology, and a series of temporary exhibits focussed on culture. In addition to exhibitions, the Pointe-à-Callière hosts events, family activities, and programming related to Canadian history and society.²⁰⁷ In 2021 the museum added



Figure 158: Corridor
An original tunnel corridor connects visitors between destinations and provides an interaction with the past.

²⁰⁷ PAC Musee. "Montreal Stories: Museum Stories on the History of Montreal Yesterday and Today." Last Modified 2022. <https://pacmusee.qc.ca/en/stories-of-montreal/>

an immersive multimedia show to its program that uses ancestors' stories to educate on Montreal's history.²⁰⁸

BARCELONA HISTORY MUSEUM

BARCELONA, SPAIN | 1943; MUHBA; 4,000m²



Figure 159: Barcelona History M.
The exterior of one of the museum's locations located within the gothic quarter. The space acts as a courtyard prior to entrance.

Described as a portal to discover the Catalonian city, the Barcelona History Museum focuses on heritage, history, and progress. Presenting a mirror of Barcelona from Roman times to the Industrial Revolution, the museum uses its extensive collections to reflect on the growth and transformation of the city across its 2,000-year history.²⁰⁹

The core museum was constructed in 1961 on the Plaça del Rei, which sits atop archaeological remains of the ancient and mediaeval city. Programming includes exhibition, tours, conferences, and classes. Today, the museum occupies multiple sites throughout Barcelona. By expanding to include various archaeological and historic sites, it includes a number of significant buildings and spaces.²¹⁰ Since 1998,

²⁰⁸ Quebec Attractions. "Pointe-à-Callière | Montréal Archaeology and History Comple." Last Modified 2021. <https://quebecattractions.ca/192-sheet-pointe-a-calliere-montreal-archaeology-and-history-complex.html>

²⁰⁹ MUI IBA. "Museum of the History of Barcelona." Last Modified 2022. <https://www.barcelona.cat/museuhistoria/en>

²¹⁰ MUI IBA, op. cit.



Figure 160: Ruins

Ancient ruins revealed in one of Barcelona's Museum locations. Visitors are brought along a path adjacent to the ruins.



Figure 161: San Mateo Museum

Front façade of the museum, showcasing the grand entrance and public space that lies directly in front of the museum for events.

following the inauguration of the city's Casa Padellas site, the museum has continued to grow. Casa Padellas holds the museum's permanent exhibition dedicated to regimes, guilds, industry, procession, imagery, and reform. The notion of taking stewardship of historically rich spaces throughout the city was a key consideration for the museum.

SAN MATEO MUSEUM

REDWOOD CITY, CALIFORNIA | 1935; SMCHA; 3,700m²

San Mateo County's historical association encourages discovery through education on the history and culture of the county. Since its inception, the museum's mission has been to preserve historical sites and archive significant artefacts.²¹¹ The San Mateo Museum features interactive, long-term exhibits that enable visitors to explore the peninsula's colourful and rich history, spanning from Native American inhabitation to the present day. In addition, the museum runs a series of programs that provide education through crafts, activities, and demonstrations. The square in front of the museum is used to host city events and

²¹¹ San Mateo County Historical Association. "San Mateo County History Museum." Last Modified 2020. <https://historysmc.org/san-mateo-county-history-museum/>



Figure 162: Material

Inside the museum original heritage architecture is revealed through space, mass, object, and material: immersing visitors in history immediately.

programming complementary to the exhibitions within. In addition to its exhibition spaces, the museum's event spaces accommodate a wide range of gatherings, including ceremonies, dinners, and receptions.²¹² Again, the incorporation of flexible spaces for use by both the museum and the community at large was of particular interest to me as it augments the impact of the institution on the community it serves. The San Mateo Museum's demonstrations and craft-related programming was of particular interest when considering what activities to accommodate in the proposal.

²¹² San Mateo County Historical Association, op. cit.

APPENDIX D | NATURAL DISASTERS

D.1 | SUBDUCTION ZONES

SEATTLE FAULT



Figure 163: Seattle Fault

Running from the west to the east the diagram traces the location of the Seattle Fault.

It has been mentioned earlier in the thesis that the Seattle Fault runs straight under Seattle’s downtown core including the Pioneer Square Historic District and this is how it happened. During the first year of the 18th century in the Puget Sound region, “the only sign of humanity were scattered native settlements.”²¹³ Elders felt the earth move before, but this time it was different. “The tribes of the Pacific Northwest fell to earth reshaping itself beneath their feet.”²¹⁴ “A 700 mile long gash on the ocean floor was shifting... jerking as if the planet were being torn apart.”²¹⁵ A great geologic plate shattered, ripped the full length of the fault and pulled west bringing the continent with it. Scientists today call an earthquake to that extent a magnitude 9 megaquake.²¹⁶ Although, “the Seattle fault has been

²¹³ Doughton. *Full-Rip 9.0*, IX.

²¹⁴ *Ibid*, VIII.

²¹⁵ *Ibid*.

²¹⁶ *Ibid*, IX.

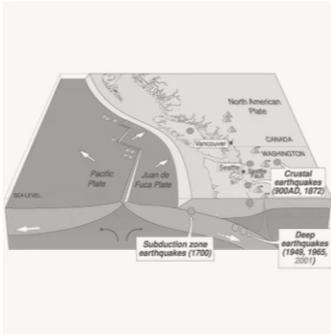


Figure 165: Plates

The diagram reveals the regions two plates: plates that contribute to the subduction.

floor in comparison to the north.²²³ Throughout the years the subduction zones begin to shatter, not slip, leading to what we now know as silent quakes. “Every 14 months when the subducting plate slipped a tiny bit deeper into the earth emotion ratchets up the strain on the lock portion. It's adding another straw to the camels back.”²²⁴ “The discovery was a watershed for earthquake scientists... harbinger that a big quake could be on the way.”²²⁵ Evidence was found that “some parts of the subduction zone snap much more frequently... every 250 years or so” meaning the next is expected within 50 years.²²⁶ Although it is predicted, it is unknown where it will rupture, “the closer it gets the more destructive it will be.”²²⁷ What we now know is the “next big one in the Pacific Northwest has the potential to be the most costly in destructive disaster in the history of the United States.”²²⁸

²²³ Doughton, op. cit., 133.

²²⁴ Ibid, 221.

²²⁵ Ibid, 222.

²²⁶ Ibid, 56.

²²⁷ Ibid, 225.

²²⁸ Ibid, X.

“For the first time now we're putting very sensitive instruments close to location where the earthquakes take place.”²²⁹ Creating a push for “a dense web of sensory to run the length and width of the subduction zone and take its post constantly.”²³⁰ In terms of structures, “soon we will experience an earthquake with the potential to change Seattle forever.”²³¹ However, “the new seawall is supposed to protect us from this feet.”²³² “The new modern concrete wall... allows water to percolate through like the old wall did... you can't stop Mother Nature, high tide and storm surges [they] will always be a factor and water will always need to infiltrate the seawall... as happens with old sea wall, the new one will allow groundwater and seawater to weep out of the wall... the new face of how modern Seattle addresses its landscape.”²³³ “The findings are both chilling and encouraging. Chilling in the extent of the damage and



Figure 166: Seawall
Seattle's new seawall showcasing the material used that allows water to infiltrate into the land.

²²⁹ Doughton, op. cit., 226.

²³⁰ Ibid, 227.

²³¹ Ibid, 200.

²³² Ibid.

²³³ Williams, op. cit., 50.

how long it could take to fix but encouraging in the way so many players have come to map a way forward.”²³⁴

D.2 | FLOODING

It was mentioned in the conclusions that one of the next steps shall include the implementation of building materials that will aid in stopping water from entering the underground spaces. Primarily speaking as a start this can be achieved through water resistant, waterproof and water repellent materials and systems depending on the application.



Figure 167: Enghaveparken

A precedent in Copenhagen that is designed to flood after the park experiences rainfall. Allowing opportunity for different programming.

Apart from that, a great critic mentioned earlier in the thesis that what if I was to consider allowing water to enter the space. Similar to the new seawall, it was mentioned that it will always enter eventually, the question is when? If I was to continue this work in the future, introducing this concept is something I would explore.

²³⁴ Doughton, op. cit., 227.



Figure 168: Pioneer Square Park

M		S
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UNEARTHING SEATTLE'S SUBTERRANEAN
Discovering Opportunities through Revitalization

by: Kirsten Ostrom

