

The Site and the Familiar : A Collaborative Outpost on South Georgia Island

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Figure 1.1. Aerial view showing clouds broken by the mountain ridge

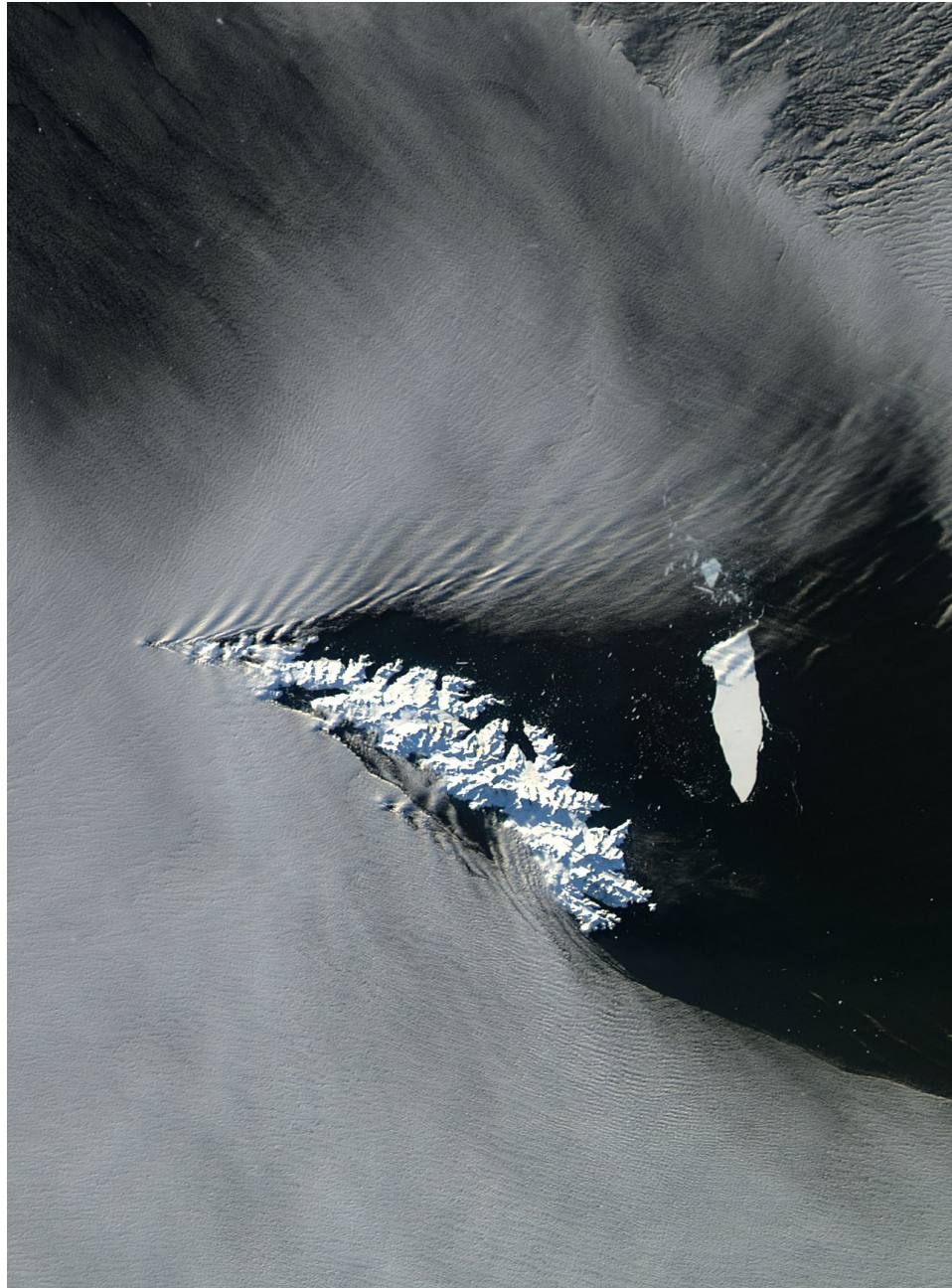


Figure 1.2. *Dawn after winter*,  
photograph by Frank Hurley,  
August, 1915



Figure 1.3. Rusting machinery at  
Grytviken, South Georgia Island



## INTRODUCTION

This thesis proposes that the scientists, artists and climbers already drawn to South Georgia Island need a place to live and work that is more intimately connected to the natural and cultural phenomena of the site. It draws from these elements explicitly and implicitly, exploring the site intensely to create architecture that responds to their collective understanding. The island is remote, nearly a thousand miles from the closest inhabited land. It was once the center of the whaling industry in the South Atlantic but is now home only to a small research contingent and a whaling museum for tourists en route to Antarctica. The whaling station has fallen to ruin, slowly merging into the landscape, and time has wiped away the whale blood from its empty surfaces.

The history of the whaling industry, which peaked in the early 20<sup>th</sup> century, represents the spirit of exploration that captured imaginations around the world (see Fig. 1.2). Although the whalers exploited the whales and nearly drove them from the island – and the planet – completely, their ingenuity and perseverance established a place within an otherwise inhospitable landscape. They only lived on the island for a short time, but they made several attempts to domesticate and humanize the whaling outpost. They built a church and a cinema, a ski jump and a butcher shop. They brought reindeer and pigs. They built the station with metal but brought wooden buildings to live in. The whalers were able to confine the killing to the sea and to understand the island as a factory and a workshop.



Figure 1.4. Snow fence structuring the landscape

The ruins at Grytviken, the first whaling station built on the island, offer the possibility for reinterpretation (see Fig. 1.3). While the site seems to be an artifact, the dramatic landscape could once again entice the expeditionary spirit. The memory of this spirit still exists in the ruins but it needs extraction. A new and different use could add another layer to the site and start to generate new conditions through the overlap. An artist could create an installation that would expose what de Sola-Morales describes as the “uncontaminated magic of the obsolete,”<sup>1</sup> or an ice climber could inscribe her story on the face of an abandoned oil tank. Although tourists now visit the island every summer they are simply observing the effects of time on the complicated history of South Georgia. Interaction with this history could provoke a new understanding of the

site and its possibilities.

While the history of cultural exploitation of the island is inescapable, the natural conditions also offer a basis for a new type of architecture. Strong Antarctic winds blow snow across the barren landscape and spring streams carve into the softened hills. Glaciers calve into the ocean, sending icebergs silently floating through the bays. Native tussock grass paints the uncovered terrain but slowly yellows as the summer wanes. Waddles of penguins blanket the beaches in early spring until the elephant seals crowd them out, and millions of wandering albatrosses nest on the hillside, returning every couple of years to mate. The natural rhythms of the island mark the passing time as the ruins dissolve.

The notions of utility and construction also

have the potential to be a powerful force in this remote site. While the memories stirred by the abandoned station certainly add a layer to the island's history, for the purposes of this project the site is considered an undefined landscape upon which a new mark of utility could be made. The first marks in the landscape of the American west were boundaries, fences or walls. They began to carve the land and divide it into properties. This project proposes a new kind of mark, a wall that becomes the architecture. It does not simply divide the landscape (see Fig. 1.4), but allows for inhabitation. It relates to the topography in a way that allows the program to find its place in relationship to the sky and the ground, but it also imposes a new datum about which the changes in the landscape can be measured.

(Endnotes)

- 1 De Sola-Morales, Ignasius (January 01, 1996). Terrain vague. *Quaderns Barcelona Col·legi D Arquitectes De Catalunya-*, 212, 41.

Figure 2.1. *astrid*, painted by Xavier Cortada, 2007.





Figure 2.2. glacial front in Antarctica

## USERS AND PLACE

Artists, Climbers and Scientists React to South Georgia Island

As a framework for discussion this thesis explores two broad topics in very specific ways: users and place. Users are defined by purpose. They are artists, climbers and scientists, all in search of the extreme and all drawn to the South Atlantic. Place is examined in terms of authenticity and the poetic relationship between cultural and natural systems. As the experience of architecture becomes globalized and increasingly media-driven, authenticity has become a commodity. Everything promises authenticity, leading to diluted and contrived experiences. On this island, nature and culture are set in diametrical opposition. Culture is the result of the exploitation of natural resources, and the brief settlement ended simply because of the exhaustion of these resources. These two elements, authenticity and the

relationship between nature and culture, set up a way to approach the site on South Georgia Island and take on the icy landscape.

### Diversity of Users

In his film about Antarctica, Werner Herzog describes how the center of the continent, the southernmost point in the world, becomes an inexplicable magnet. In one case he observes a penguin that leaves the group and wanders toward the mountains in central Antarctica, away from food and safety. In another case he interviews a snow-bus driver who used to drive a taxi in the United States. The man offers his view of the Antarctic population: "if you take everybody who's not tied down, they sort of all fall down to the bottom of the planet."<sup>1</sup>

Figure 2.3. Neville Gabie flying a kite in Antarctica



Drifting, they slowly move south until there is nowhere left to wander. South Georgia is situated to catch some of these wanderers and to allow creative people to explore ideas without the constraints of a familiar context.

South Georgia has a history of temporary inhabitation. Whalers, scientists, military personnel and explorers settled for various durations ranging from days to years, but the island has never had a permanent population. Now there is a whaling museum and a couple of research stations but the majority of visitors are tourists en route to Antarctica. They stop for a day to wander around the ruins in Grytviken and visit the grave of Ernest Shackelton, the British explorer famous for captaining the *Endurance*, but quickly depart; few spend a night on shore. This thesis explores the opportunity of bringing

new and diverse temporary users to Grytviken who could add another layer to the memory of the island and help re-imagine the scarred landscape. These users might be searching for isolation or seeking a physical challenge, but for some reason they are all drawn to South Georgia.

Artists often work to explain a phenomena or an idea through specific media. These ideas can be personal or collective, but the success of the work lies in their ability to translate these ideas into something that impacts whoever experiences it. Many artists have been drawn towards the Antarctic to explore the challenges of an unfamiliar environment as a new possibility for expression.

In his proposal for a working trip to Antarctica, the British artist Neville Gabie describes the contrast



Figure 2.4. British Antarctic crates

between the seriousness of the work done at the research stations and his proposal for flying kites (see Fig. 2.3). He suggests that kite flying as a common recreation offers a way to understand the otherwise foreign condition of the Antarctic, a landscape that society in England has no other grounds for understanding. He describes how even the British Antarctic Survey (BAS) crates have a mythic quality to an outsider (Fig. 2.4). In documenting this recreation Gabie hopes to translate the context into something comprehensible by the general public. He is still reliant on images but he uses the familiar to draw in other senses, the feel of the wind pulling and the sound of a flapping kite. Instead of transporting an established culture to South Georgia, art could be a way to help the public relate to such a foreign and dynamic landscape.<sup>2</sup>

The particular users on South Georgia might be artists, writers, inventors, climbers, or scientists depending on the situation, and the strength of the isolated condition of the island would create the potential for interaction and collaboration. An important factor for collaboration is proximity, an unavoidable circumstance on such a remote island. This condition could be further encouraged by the collection of these various uses into one common structure. Undoubtedly, the users would deposit something on the landscape, whether the manifestation is physical or not. The goal is to reform the image of the island from an artifact of environmental exploitation into a site for cultural exploration. Architecture could play a role in that reinterpretation by encouraging these very different user groups to investigate the site through specific

activities, by providing spaces for exploration, and by framing moments within the landscape that help to focus an understanding of the site.

### Place and Ruin

Isolated from the nearest land by nine hundred miles of ocean, South Georgia has a very specific boundary on a global scale (see Fig. 2.5). In terms of experience, however, the limit of the site is less precise. Tides rise and fall and the ocean slowly alters the topography of the shore. Sometimes the line between land and water is only a state change as glaciers calve into the sea or a blizzard covers the beach with snow. The experiential relationship between opposing natural forces, along with the whaling legacy survived by the ruins, provide a framework for

understanding the site.

The visitors' experience of the island begins from the sea. They arrive from the north side of the island and move into Cumberland Bay (see Fig. 2.7). Sailing closer to the shore, the outline of the whaling station emerges against the mountainous backdrop (see Fig. 2.6). An intentional reconnection with land happens either by anchor or by jetty, and the architecture of the site begins there. At this point, the threshold between the sea and the ground, the exploration of the site begins. As Maurici Pla expresses, the point of intersection between land and water generates excitement. The shore is the line between the "daring start of a drift and ancestral permanence,"<sup>3</sup> the solid foundations of civilization. On arrival in South Georgia, however, the shore reflects only the extension



Figure 2.5. Map of the South Atlantic

Figure 2.6. View of Grytviken whaling station from the water



Figure 2.7. Aerial view of Cumberland Bay, South Georgia Island (opposite)

of a drift. There is no “ancestral permanence” grounding the human presence on the island, as it has always been a temporary outpost.

The concept of place in architecture has an evolving definition. De Sola-Morales describes the development of place in modern architecture as having taken over from the concept of space. Conceptually, architects shifted from their definition of space as a pre-existing condition that architecture simply reinforced to the idea that architecture could actually create space.<sup>4</sup> The creation of space leads to the investigation of site, revealing the hidden structures and nuances that make a certain site remarkable. Architecture has moved away from the consideration of each structure as part of a larger continuum. This new realm of thought critiqued the

modern abstraction of space and demanded architecture that was particular to place and time. “Architecture was expected to interrupt the endless horizons of earth and sky, creating specifically determined, essentially defined qualities of place... revealing the richness and content of each place’s potential.”<sup>5</sup>

On South Georgia these qualities derive from its dual nature: a place of unmatched physical beauty and an uninhabitable wilderness exploited for its resources. Edward Casey describes architecture as a mediator of the environment, a “middle ground between nature and culture.”<sup>6</sup> In South Georgia, however, the balance leans toward culture, with many of the structures existing in a different place before being uprooted and relocated to the island.

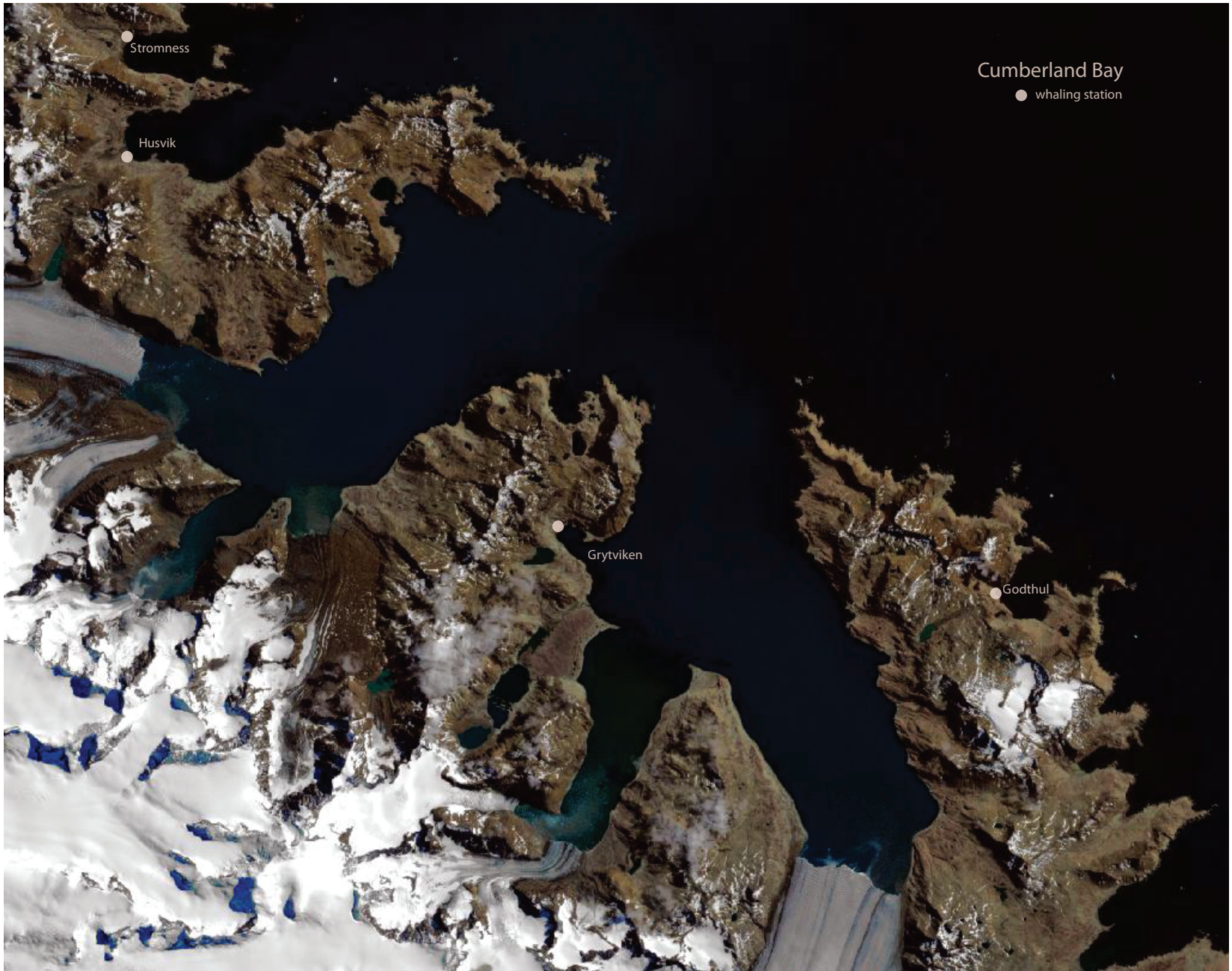




Figure 2.8. Old Bates Textile Mill in Lewiston, Maine

Although the discovery of place produces a more sympathetic architecture, de Sola-Morales argues that it is in fact the nihilistic work of a disenchanting generation, a reaction against progress and a negation of the modern. He believes that place is still relevant in this media age but not as the “revelation of something existing in permanence.”<sup>77</sup> Jefferson Cowie and Joseph Heathcott address permanence in a short introduction to a collection of essays. They observe that the “aura of permanence”<sup>8</sup> has caused deindustrialization to seem like the end of a historical era, but in fact industry was always changing. The architecture hinted at permanence but it was only a guise, a concoction by business owners that comforted their workers (see Fig. 2.8). The brick and mortar factories, the internalized social life generated by the massive industries,

and the marketing of the durable goods they produced led the workers and their families into complacency. However, economics, the same force that generated the factories and surrounding towns, quickly shifted much of the work to different parts of the world and left the factories to ruin. Time and nostalgia acted in unison to wipe away the reality, the grueling work, and the feeling of abandonment from the surfaces of the ruins. On South Georgia is a similar condition of the ruin, where the whale blood has been washed away and the bleached whalebones present as fossils rather than victims.

Although Russell Berman points out the distinction between ruins and landscape, this thesis posits that in order to begin another stage in the history of the whaling site, to generate a new mark of utility, the

site must be considered as a landscape. The ruins retain the memory of the whaling past and cannot lose their importance as such, but they have ceased to be utilitarian and as such have become a *terrain vague*. This landscape begins with the ocean, the fragile yet expansive *vague* that isolates the island, and the critical boundary of physical experience is the shoreline.

(Endnotes)

- 1 Herzog, W., Kaiser, H., Nelson, E., Zeitlinger, P., Bini, J., Lindley, D., Demme, J., ... Image Entertainment (Firm). (2008). *Encounters at the end of the world*. Silver Spring, MD: Discovery Communications.
- 2 [http://www.antarctica.ac.uk/living\\_and\\_working/artists\\_and\\_writers/gabie/index.php](http://www.antarctica.ac.uk/living_and_working/artists_and_writers/gabie/index.php)

- 3 Pla, Maurici, 1959-. (1996). Derivas, contenedores, tempestas, arquitecturas sin àncla = Drifts, containers, storms, architectures without anchor. *Quaderns d'arquitectura i urbanisme*, 75.
- 4 Solà-Morales, R. I., & Whiting, S. (1997). *Differences: Topographies of contemporary architecture*. Cambridge, Mass: MIT Press.
- 5 *Ibid*, 97.
- 6 Casey, E. S. (1993). *Getting back into place: Toward a renewed understanding of the place-world*. Bloomington: Indiana University Press, 112.
- 7 *Ibid*, 104.
- 8 Cowie, J., & Heathcott, J. (2003). *Beyond the ruins: The meanings of deindustrialization*. Ithaca: ILR Press, 4.

Figure 2.9. Svalbard Science Center  
from the tundra



## THREE APPROACHES IN THE ARCTIC

### Precedents in Cold Climate Architecture

The selection of case studies investigates three different spatial experiences within the arctic landscape. The Svalbard Science Center in Norway is a new construction that floats on the Arctic tundra, allowing snowdrifts to pass underneath. The Svalbard Seed Vault burrows into the permafrost to protect seeds harvested from around the world. Finally, the Knut Hamsun Museum, also in Norway, rises above the small town of Presteid, offering different glimpses of the landscape as the building registers a series of phenomenal occurrences. These examples present a variety of responses to harsh climates but they each maintain a very specific identity in the landscape.

## CASE STUDY 1

Svalbard Research Center – Svalbard, Norway

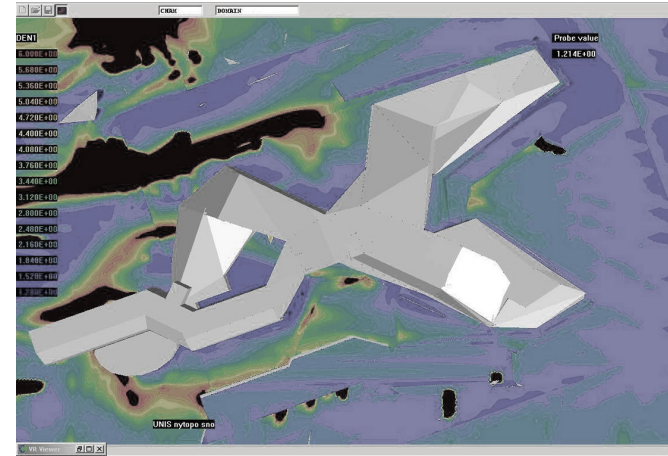
Jarmund / Vigsnaes AS Architects MNAL 2001 - 2005

Svalbard is an archipelago just north of Norway at 79 degrees above the equator. It has a brutal climate and yet, like South Georgia, it also has a history of human occupation. This research center glows in the dramatic landscape (see Fig 2.9). The reddish copper cladding sets the building off against the snow and seems to draw its inspiration from a rusting steel barn. The faceted shapes are hard to define against the mountains beyond. Their conception was driven by the “flows of snow and wind,” across the site. The timber structure is raised slightly above the ground on 250 steel stilts to prevent the permafrost from melting which would cause the building to slowly

Figure 2.10. Interior light well, Svalbard Science Center



Figure 2.11. Snow analysis of the Svalbard Science Center

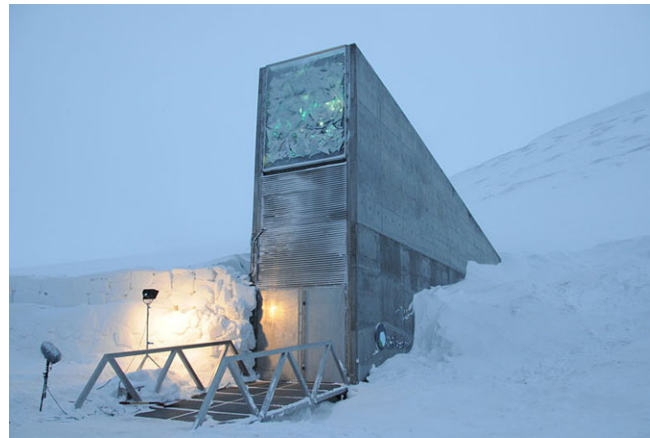


sink into the ground. The interior is almost entirely clad in spruce, other than the several large windows that peer out towards the arctic landscape. The unfinished wood and warm lighting enliven the interior spaces and provide a stark contrast to the cool, icy snowscape beyond the glass. The wood also ties the structure back to the Norwegian mainland, a country rich in timber. Svalbard is too cold for trees to survive so all the materials were shipped to the site.<sup>1</sup>

The building serves as a landmark for the small town of Longyearbyen. Its presence is unavoidable, especially during the snowiest days. In that respect the architecture slips into Pallasmaa's critique of design with an "ocular bias." The slick, copper-clad form seems at odds with many of the programmed spaces and while

the central circulation core relates the intersection of the multiple arms, the experience within the arms does not seem to vary. The spaces react to the form rather than the form reacting to the spaces (see Fig. 2.10). Ultimately, however, the form reacts to the natural conditions of the site, a force that far outweighs the arbitrary requirements for geometric proportion.

Figure 2.12. Svalbard Seed Vault entry



## CASE STUDY II

Svalbard Seed Vault – Svalbard, Norway

Peter W. Søderman 2006 - 2009

This project utilizes the hostile climate of the Arctic to ensure the safety and preservation of seed samples from around the world. With a subtle presence on the face of a snow-covered hill, the vault plunges into the sandstone that is at a constant minus 3 degrees Celsius. Its architectural presence is minimal but its impact is significant. It has three chambers blasted into the stone at the end of a one hundred-meter tunnel. Each chamber can hold one and a half million seed samples and the structure is built to last forever, even accounting for every known climate change scenario and sea level rise. The only architectural embellishment is the faint glow just above

the entry portal designed by the artist Dyveke Sanne (see Fig 2.12).<sup>2</sup>

## CASE STUDY III

Knut Hamsun Museum – Presteid of Hamarøy, Norway

Steven Holl 1994 - 2009

Steven Holl's museum, just north of the Arctic Circle in Norway, uses the metaphor of "Building as a Body: Battleground of Invisible Forces." At various moments are special phenomenal occurrences in the building that reference different actions, "hidden impulses piercing through the surface."<sup>3</sup> These occurrences are events. One balcony references an empty violin case while another is like a girl with rolled-up sleeves washing yellow windowpanes. The elevator core represents the spine

Figure 2.13. Interior of Holl's Knut Hamsun Museum

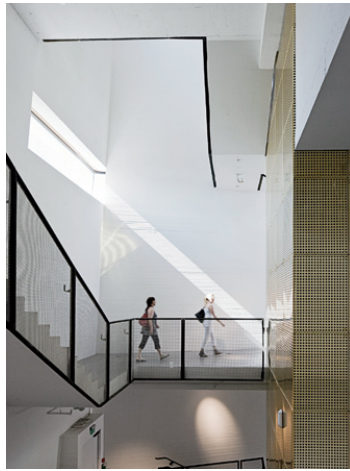
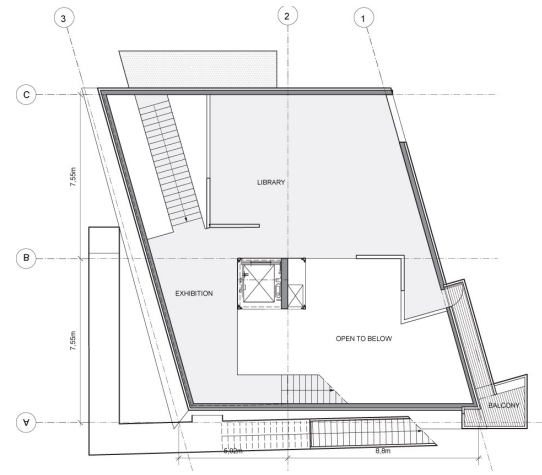


Figure 2.14. Plan of Holl's Knut Hamsun Museum



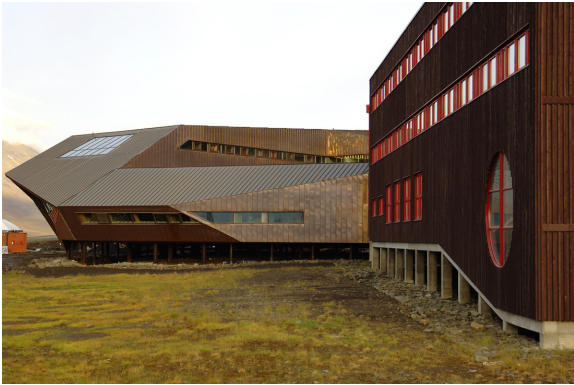
while the stair is a metaphor for bones. Conceptually there were other moments that did not make it into the final project, such as the “woman with two blue feathers in her hat.” The entire building, like a Knut Hamsun character, is a compressed and intensified personification. Even the light is considered in a way that it passes through the entire building only at certain times of the year (see Fig. 2.13). Light becomes an event that changes constantly and is intensified by the sheared plan (see Fig 2.14). The building always looks different depending on the perspective.<sup>4</sup>

## CONCLUSIONS

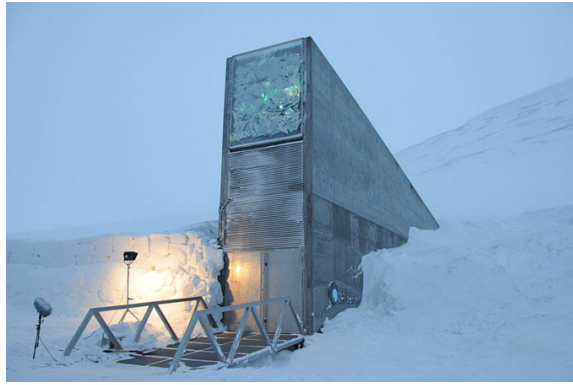
These three case studies illustrate the variety of responses possible even within an extreme climate (see Fig. 2.15). In the first two instances, the natural forces drive the architectural response, with program spaces reacting to those responses. In Steven Holl’s museum the concept drives the architecture. The building relates to a Knut Hamsun character, embracing metaphor as a way to generate form. It collects a series of moments into a wooden shell, nodding to the technology of vernacular buildings technologically rather than their form, which seems appropriate given the cultural nature of the program and the artist it represents.

(Endnotes)

- 1 MacKeith, P. (January 01, 2006). Projects – Svalbard Research Centre, Norway – An otherworldly building hunkers down in its arctic setting. *Architectural Record*, 194, 3, 112.
- 2 <http://www.architravel.com/architravel/building/Svalbard-global-seed-vault>
- 3 Steven Holl: Knut Hamsun Museum. (January 01, 1997). *Ga Document*, 51, 51, 36-9.
- 4 Ibid.



Svalbard Research Center  
Jarmund/ Vignsæs AS Architects

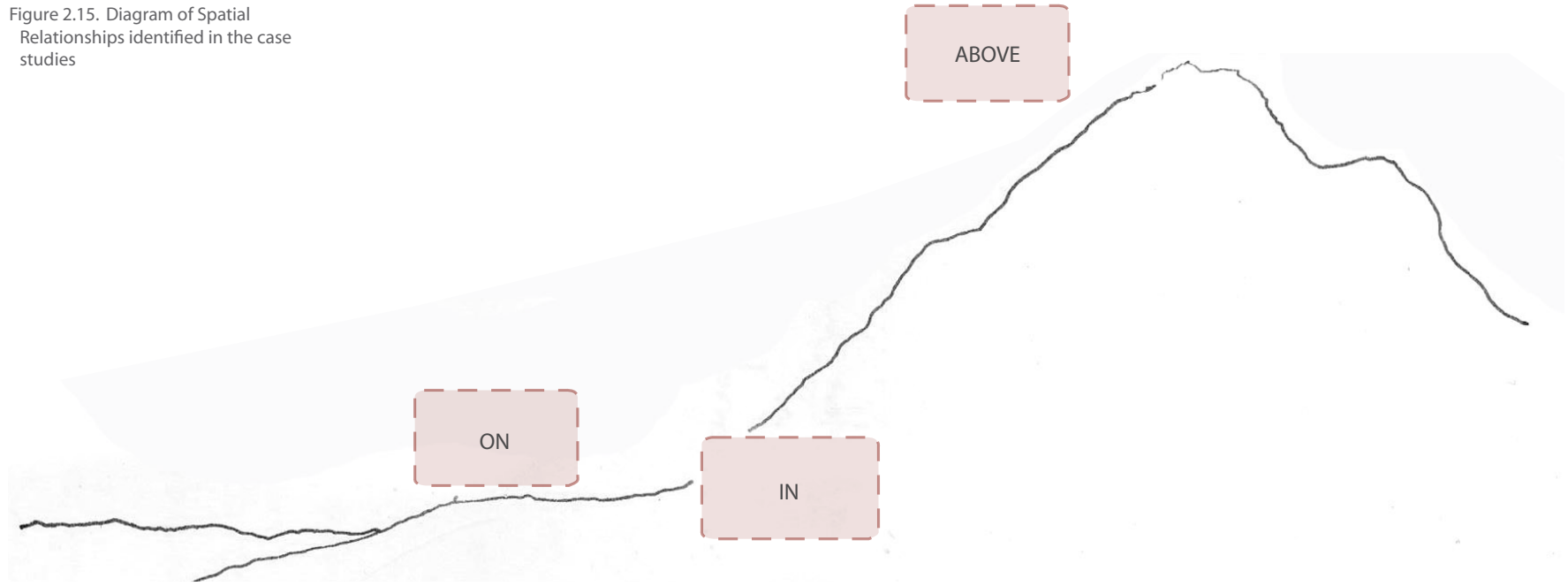


Svalbard Seed Bank  
Peter W. Soderman



Knut Hamsun Museum  
Steven Holl

Figure 2.15. Diagram of Spatial Relationships identified in the case studies



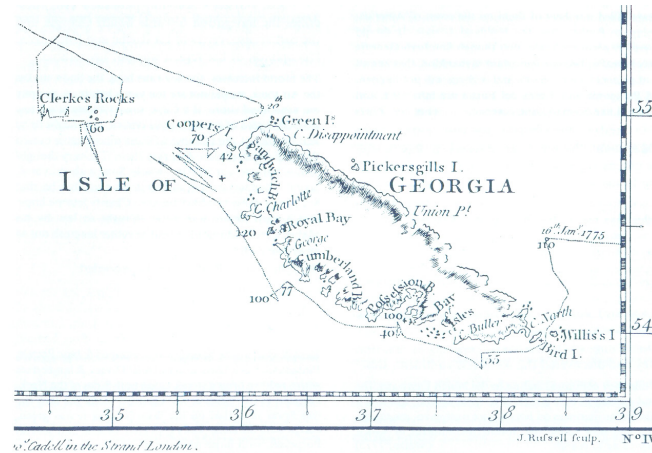


Figure 3.1. James Cook's first map of South Georgia Island

## NATURE AND CULTURE

### A Brief History South Georgia Island

*"Lands doomed by Nature to perpetual frigidness: never to feel the warmth of the sun's rays; whose horrible and savage aspect I have not words to describe."* –James Cook<sup>1</sup>

South Georgia Island has a brief but intense history of human occupation. Its harsh climate and rugged topography make it an undesirable place to settle but the abundance of whales and seals captured the attention of the whaling industry that had been banished from the North Atlantic. The explorers and whalers never lived there permanently so the island never really gained an independent culture, but the memories and artifacts the whalers left behind provide a rich context that this thesis will explore.

Although sighted twice before, the first published

information about South Georgia Island came by the hand of James Cook<sup>2</sup> (see Fig. 3.1). In 1777 his account of his crew's Antarctic voyage presented a chart and some engravings of the icy island. He noted the abundance of seals, penguins, and whales as he described the inhospitable environment. The attention brought on by his publication, however, quickly turned into exploitation. Many ship routes before Cook's Expedition passed nearby South Georgia on the way around Cape Horn.<sup>3</sup> They now paused at South America's southern ports to pick up seal furs and oil. One account marked the number of skins harvested during the 1800/1801 season at 112,000. Seals are easy to harvest; they are slow on land. As early as 1788 alarm was expressed at the rapid disappearance of seal colonies and the sealing industry soon faltered. In 1881

the first ordinances to protect seals appeared at the close of the season during the summer.<sup>4</sup>

The peak of the sealing epoch also saw the establishment of whaling on the island. South Georgia was one of “the most important places in the world for the whaling industry between 1904 and 1965.”<sup>5</sup> Carl Anton Larsen landed on the island in Grytviken on November 16, 1904. He came from Sandefjord, Norway with three ships and “three pre-fabricated wooden houses... for management, employees, and factory.”<sup>6</sup> One of the buildings had been the house of a fellow explorer in Norway. It was simply taken apart and reassembled in Grytviken. Sixty Norwegians worked for a month to prepare the station. They built barges for shuttling the supplies and heavy equipment to shore. They “constructed

the three buildings, prepared a slipway, and built a factory with twelve blubber cookers.”<sup>7</sup> They took the first whale on December 22 and produced the first oil on December 24. According to their accounts, production was only limited to the processing capacity of the factory. A relative “gold rush” of whaling emerged until its peak in 1916. A total of six shore whaling stations and 13 floating factories operated at various times along the shores of South Georgia, with 175,250 whales taken and 9,360,084 barrels of whale oil produced.<sup>8</sup>

The whaling process involved two basic steps: killing the whale at sea and processing the whale on a boat or on shore. First the whale was killed. Small, fast, steam-driven boats pursued the whales in the open ocean. They had strong steel masts with a lookout for

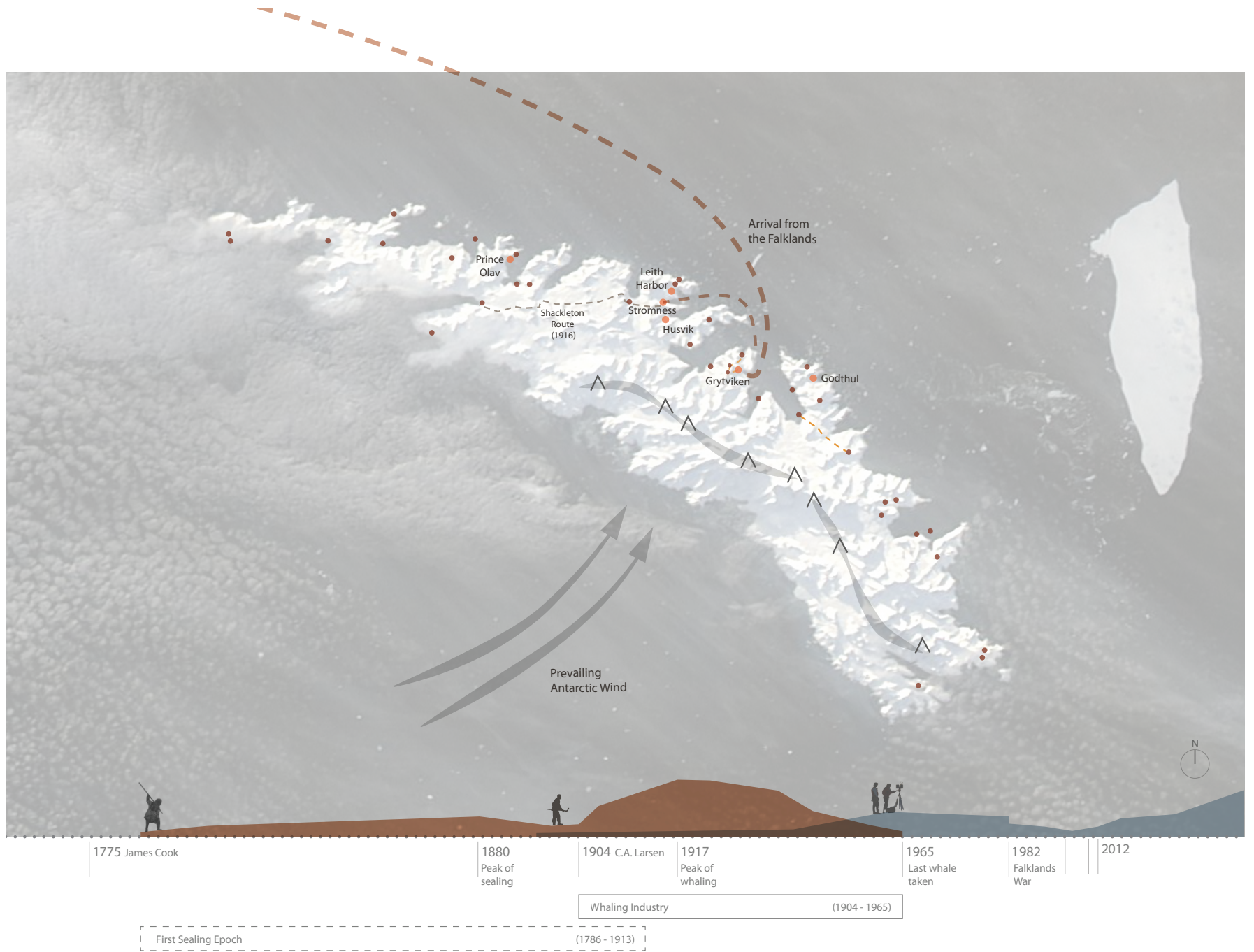


Figure 3.2. Map and Timeline of South Georgia Island (opposite)

Figure 3.3. Wreckage of two whaling ships on the Grytviken shore



whale spotting (see Fig. 3.3). “An experienced observer could distinguish the species of a whale from its blow and announced its detection with a cry of: ‘hvalblast.’”<sup>9</sup> The command of the ship was connected by catwalk with a harpoon cannon. The ship’s Master would steer the boat close, hand off control to the mate, and run across the catwalk to an explosive machine, the harpoon cannon. He fired at close range, quickly killing and securing the whale. The cannon was the only essential tool for whaling:

*The harpoon consisted of a grenade, about 11 kg of cast iron, in which about 500g of black powder was placed. This was screwed to a base, equipped with four pivoted flukes and a time fuse; which was in turn connected to a shaft of very high quality steel with a longitudinal slit. The whole was about 2 m long with a line attached to the shaft by a ring splice which was running free in the slit. The harpoon was mounted in the cannon with a wad to separate it from the charge. The flukes*

*were secured by light twine which was also connected and pulled the time fuse striker.*<sup>10</sup>

Many practices varied but the kill was consistent. The whales were inflated with compressed air and tied to a whaling buoy for later retrieval or towed directly back to shore. The inflated whale was then towed to a whaling station. While many of these stations were floating, the most productive were the shore stations. Workers could flense a small whale in thirty minutes. The shore station at Grytviken was the earliest and longest running on the island. It was sited because of its geographic location on the island. It is “on a bay within a bay, and so is very sheltered; there was sufficient flat land to build on... there was plenty of fresh water and the climate is probably the most benign on the island.”<sup>11</sup> Tall mountains to the west

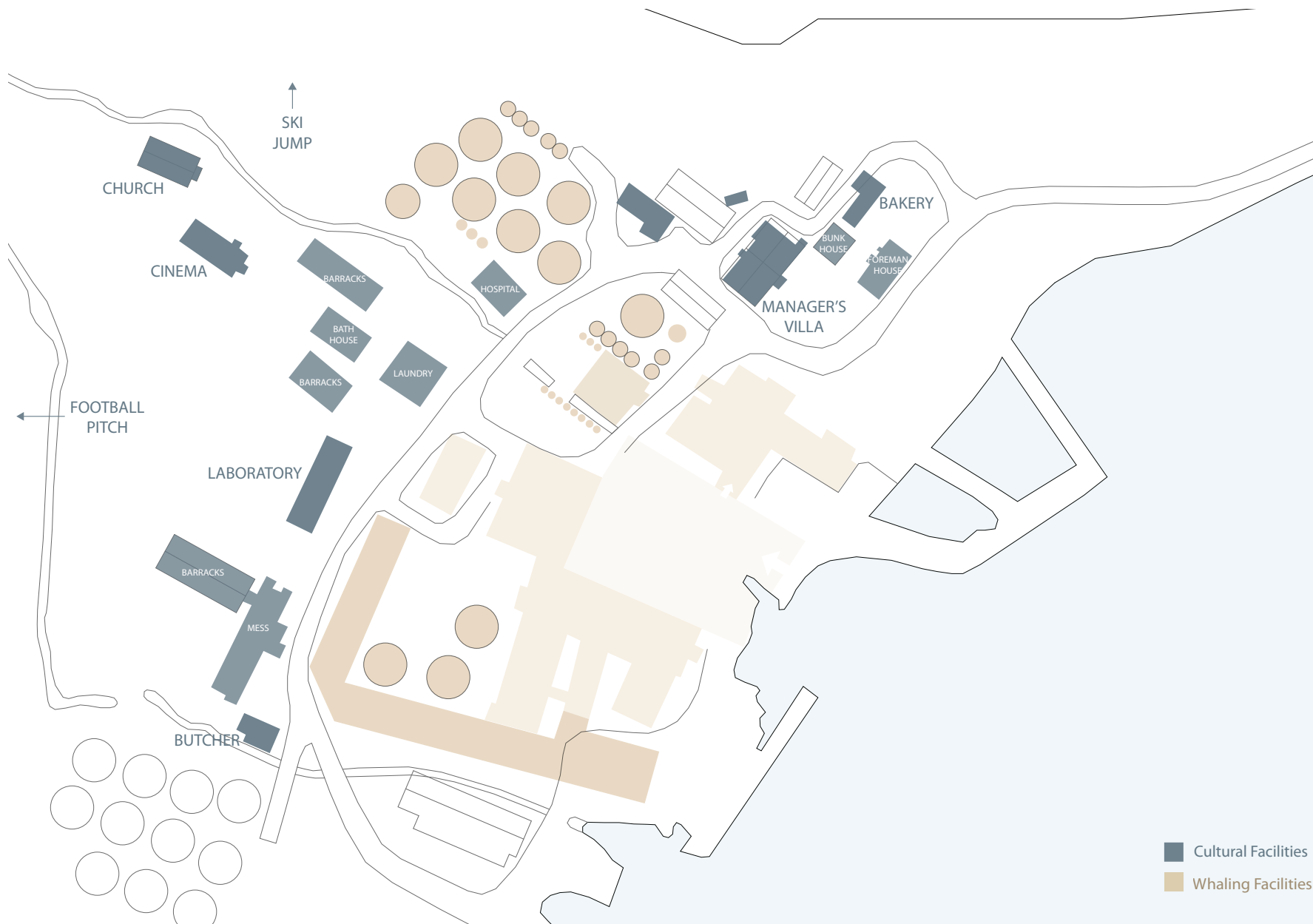


Figure 3.4. Map of Grytviken showing the whaling and cultural infrastructure (opposite)

block much of the harsh Antarctic wind (see Fig. 3.3).

The layout of the station clustered around the end of Cumberland Bay. Access to water was the only important factor in siting a whaling station so the entire complex was organized around the flensing plan that dipped into the bay on its eastern edge. The first factory built was the blubber cookery. The blubber contains most of the oil in a whale and was the easiest to process. Early in the station's history the bones and meat were discarded. In 1913 many more buildings were shipped from Norway and the station gradually accumulated a pig house, barracks, a cinema, bakeries and stores (see Fig. 3.4). Whaling was profitable and the station reflected it. The culture seemed to be a mixture of tradition and invention. Robert C. Murphy, an American visiting the island, commented

on the lives of the European whalers "who do things on a grand scale, have proud, upstanding men for crews, and live in a civilized and almost luxurious manner even though they are in a forgotten corner of the world."<sup>12</sup> The manger's villa had a billiards table, framed photographs on the walls, lace tablecloth and window treatments. Although it was a lucrative business, these efforts appeared to both celebrate and disguise their presence on the island. The whalers, seemingly proud to be working at the whaling station, also understood that their lives were not in South Georgia. Most were making money to return to Norway and enjoy their leisure time with families in familiar surroundings.

The whale arrived at the flensing plan and its tail was wrapped in a steel chain. As the steam winch

Figure 3.5. View of the flensing plan as it looks today



slowly pulled the whale onto the wooden platform the flensers began their work (see Fig. 3.5). The initial cuts separated the blubber from the rest of the whale and then the flensers would drag large slabs north to the blubber cookery. As large cutting wheels sliced the blubber, it fell onto a conveyor that took it up and deposited it into the cookers. Steam was blown into a large metal cylinder, which pushed the oil out of the blubber. From there the oil was conveyed to purifiers that included separator tanks, clearing tanks and horizontal centrifuges. The oil was refined several times to remove all of the particulates. The last step was storage. Initially, infrequency of shipments and complexity of infrastructure resulted in most of the oil being stored in small barrels. They were easy to transport and did not rely on shore stations, ships, and mainland

ports coordinating a more advanced distribution system. Eventually larger containers were assembled and ships were constructed with huge holding tanks that made the transport more convenient.

As the facilities at Grytviken were updated the whalers began to incorporate the use of the meat and bones of the whales. After the blubber was removed and pulled to the cookery, the carcass was moved to the lemmers. They cut away the meat and hooked up the skeleton to winches that pulled the bones up a ramp at the west end of the flensing plan, continuing the initial path of the whale. On the roof of the bone cookery were three steam-powered saws that cut the bones into pieces that could be dropped into the cylindrical pressure cookers below (see Fig. 3.6). One third of the whale's oil



Figure 3.6. View of rusting cylindrical cookers

Figure 3.7. Old bag of whale meat meal from South Georgia



came from the bones after a five hour cooking process. Again it was separated before moving into storage. The remaining solid was conveyed by light-gauge rail to the meal plant.<sup>13</sup>

The meat was hoisted onto the roof of the meat cookery on the southern edge of the flensing plan, which was the largest and most complicated of the facilities, rising over four floors tall. Conveyors and gravity were used to guide the meat through the cooking process.<sup>14</sup> The meat was first dropped into rotary cutters, and then distributed by conveyor to holes leading down to long horizontal treatment tubes. Forced through the length of these tubes, at high heat, the meat landed on a vibrating screen that allowed the oil to drip down and collect before it was blown into the separators. The remaining meat was

dropped another floor and pressed to extract the last bit of liquid. It was then moved into the adjacent room that served as the meal plant. Remains from the bone cookery were also collected in the room, where they combined with the meat and dried in 60-foot long rotating driers. The meal plant was the largest facility on the island. It occupied 32,000 square feet and enclosed ample storage for the bagged meal (called guano)<sup>15</sup> (see Fig. 3.7).

Culturally, Grytviken played two roles during the whaling epoch. While it seemed to represent an extreme banishment of the slaughterhouse from the heart of the city, it also took on the role of a frontier outpost. The Norwegians began exploring the South Atlantic once whaling was banned in the North Atlantic. In much the same way that pioneers moved westward in the United

States to mine for gold, the Norwegian sailors moved south to look for whales. They brought the memories and artifacts and even buildings from their lives in Norway, and mixed these artifacts and memories with the new conditions of the site.

Unlike the American West, however, they never settled on South Georgia, always making return trips to Norway. The only permanent marks were the buildings, but even those were not born from the site. The church at Grytviken previously stood in Strommen, Norway until it was dismantled and shipped to South Georgia in 1914 (see Fig. 3.8).<sup>16</sup> The only things built on the island were machines. Many of the winches and storage drums were made in the blacksmith shop and workshop at Grytviken. Really, the entire facility was a machine dictated by the

movement of the whales. Every building was placed based on its relationship to the processing of the whales.

As an outpost, the station took on many functions of a small town. The workers in a city slaughterhouse returned home in the evening or got out of town on the weekend, but like the railroad builders on the American frontier, the workers at a whaling station were bound to the site for an entire season or longer. The station had a football pitch, a ski jump, a cinema, the church, a coffee roasting house and a cemetery. The whalers' efforts seemed to be guided by the juxtaposition of whaling as an expeditionary profession and an attempt to make life on the island appear normal.

The structures today are mostly in disrepair (see Fig. 3.9 – 3.11). The church is still maintained and



Figure 3.8. The church still maintained in Grytviken



Figure 3.9. Grytviken barracks held up with cables

Figure 3.10. Grytviken cinema before being torn down

Figure 3.11. Grytviken ski jump in disrepair



the manager's villa has been converted into a whaling museum. Tim and Pauline Carr, former residents of the island and caretakers of the museum, offered this description of the station from 1992:

*The buildings of the whaling station spread all across the head of the cove; a combination of rust red iron, bleached gray, and faded ocher paintwork all blended smoothly together. The old whale oil tanks, blubber factory, chimneys, and stores looked as though they had all been spray-painted in one giant operation and from the distance the whole effect was surprisingly aesthetic.<sup>17</sup>*

And they offer their experience at night:

*Eddies of wind whistle through the deserted streets, sheets of corrugated iron flap and grate insistently, the windows of the manager's villa reflect moonlight and glow with an unearthly light. Doors open slowly on creaking hinges and then, caught by a gust, slam shut as though Olof the flenser or Karl the gunner has returned.<sup>18</sup>*

The workers' names give meaning and personality to the breezes. The Carrs understand the history of the place and the importance of whaling but they are also nostalgic. They seem to romanticize the tough work the whalers took on.

Dorothee Brantz described how "animal slaughter is entrenched in tradition, cultural determination, and historical specificity."<sup>19</sup> At Grytviken the culture and tradition did not belong to the specific place, but were imported from the whalers' homeland. Now the slaughter is gone, with only the dissolving buildings remaining, along with the memory of the Norwegian explorers and their work. They are reminders of the fragility and power of the Antarctic site. Whaling was once a respected profession but the collective understanding of the near

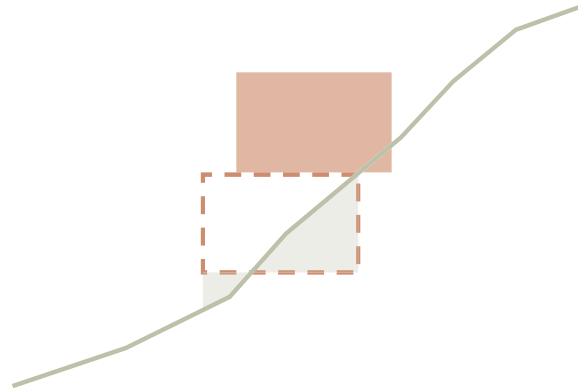
extermination of many whale species has created an aura of abandonment at Grytviken that is much deeper than the rusted buildings.

For sixty years humans controlled the bay and pushed nature to the edges of their small community. Now nature seems to have taken it back. The buildings are artifacts that remind of the fragility of industry. In a way the rusting buildings at Grytviken are more honest than the brick factories in America that Howie and Heathcott described in their introduction to a collection of essays on deindustrialization.<sup>1</sup> The structures at the whaling station never promised permanence. Many even stood in Norway before being dismantled and shipped down to South Georgia.

Smoke once belted from many smokestacks at Grytviken and the force of life was inescapable, but the materiality of thin steel and wood, even the seasonal nature of the work, never conveyed dominance over the landscape. Now penguins wander through the ruins and use the steel sheets as protection from the wind. Utility is gone from these structures and the island seems to be returning to a landscape.



Grytviken

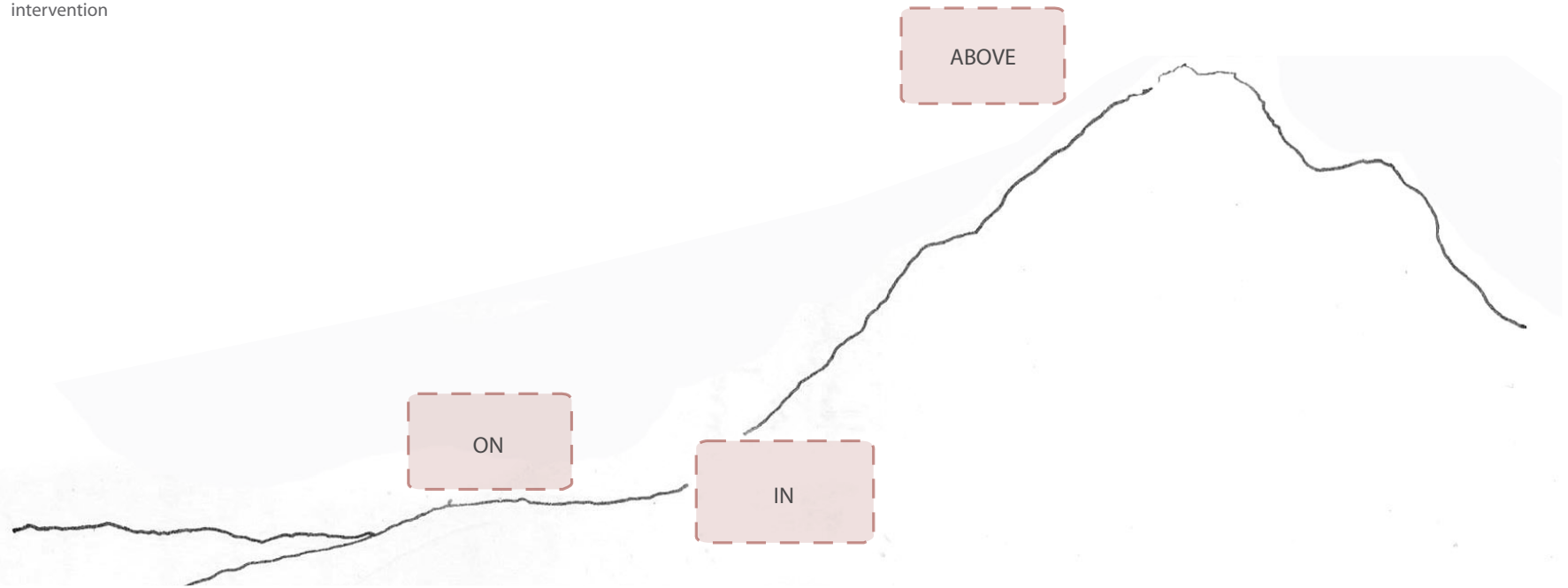


proposed intervention



view from Mt. Duse

Figure 3.12. Spatial Relationships within the existing site and proposed intervention



(Endnotes)

1 Headland, R. (1984). *The island of South Georgia*. Cambridge [Cambridgeshire: Cambridge University Press, 31.

2 *Ibid*, 30.

3 *Ibid*, 32.

4 *Ibid*, 48.

5 *Ibid*, 110.

6 *Ibid*, 111.

7 *Ibid*, 111.

8 *Ibid*, appdx. 2.

9 *Ibid*, 115.

10 *Ibid*, 116-117.

11 Wheeler, T. (2004). *The Falklands & South Georgia Island*. Footscray, Vic: Lonely Planet, 149.

12 Basberg, B. L., & South Georgia Industrial Archaeology Project. (2004). *The shore whaling stations at South Georgia: A study in Antarctic industrial archaeology*. Oslo: Novus Forlag, 35.

13 Headland, R (1984), 119.

14 *Ibid*, 131.

15 *Ibid*, 132.

16 *Ibid*, 99.

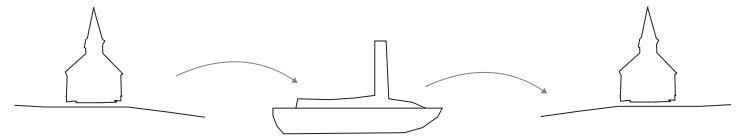
17 Carr, T., & Carr, P. (1998). *Antarctic oasis: Under the spell of South Georgia*. New York: W.W. Norton, 32-34.

18 *Ibid*, 40.

19 Brantz, D. (2001). Recollecting the Slaughterhouse. *Cabinet*, 4, 1.



Figure 3.13. Separation between the island and the imported buildings at the whaling station



## HAPTICITY AND USE

Relationships between the body and the site

The site, both culturally and physically, directs the architectural approach. The buildings that stand in the whaling station and at King Edward Point engage with the site as a two-dimensional surface but do not alter with the topography (see Fig. 3.13). Their organization was dictated by their use: the relationship to the water and specifically the movement of the whales. As a way to begin an architectural exploration of the island, this thesis investigates the spatial relationships between the new users (artist, climbers and scientists) and the way they inhabit the landscape. Through these investigations a series of programmatic relationships emerge and the way in which these program pieces relate to the physical site begins to take shape.

Although artists are not bound to one mode of

representation, their goals in approaching the site always seem to deal with re-presenting what they observe. In Neville Gabie's case, he attempts to humanize the Antarctic condition by allowing the public to empathize with the simple act of flying a kite. Xavier Cortada used the water and silt from different Antarctic glaciers to create site-specific paintings that reflect the character of each place. Their approach is both intuitive and theorized. They are both intimately connected with the site and disconnected, the same experience Frank Hurley captures with his view from Mt. Duse (see Fig. 3.12). The goal for the artist spaces became a connection to that experience, an abstraction of the artistic way of seeing the site.

Climbers set up a uniquely different spatial experience. Although they often have the goal of reaching



that high point, the thrill of climbing does not come from the end of the journey. Climbers are intensely aware of the landscape and the relationship of its features with their own bodies. They attach to the surfaces between land and sky, whether those surfaces are horizontal or vertical. They are also very temporary users, only using the area around the whaling station for a couple nights before taking off into the mountains or across the coastline. Their presence in the facility is a brief input of energy that should be accommodated but not hidden.

While climbers are concerned with the surface of the island, scientists investigate what is often unseen by the untrained or unaided eye. They work between the global scale and the microscopic, and they take readings from the sky and underground. South Georgia Island sits

in a critical location relative to global measurements, another byproduct of its isolation. Scientists there have just completed a magnetic observatory to monitor the slow shift of the earth's magnetic field and supplement data gathered around the world.<sup>1</sup> The geology of the volcanic formation and its effect on flora and fauna incited many studies ranging from one week to several years, with a need to often continue measurements through the cold winters. This more permanent use led to the embedment of the science labs into the topography and the reliance on the seasonal snowdrifts to improve the insulation of the labs during the winter.

While the body allows for being in place, out in the world, it does not give what Edward S Casey describes as a "place to stay."<sup>2</sup> This requires architecture.

Figure 3.14. Relationships between the users and the site



The consideration of the new users underscored the relationships established in the precedent analysis and the analysis of the existing conditions and led to the idea of the building as a microcosm of the larger context. The artist studios were assigned an 'above' relationship with the topography while the temporary climber accommodations were assigned 'on' and the science labs 'in' (see Fig. 3.14). These relationships could drive both the physical expression and the spatial experience of these program pieces, as well as their position relative to the other required program including a shared kitchen and workshop as well as a small library. The undefined program is the various spaces for informal collaboration and exchange between the three user groups and anyone who happens to visit. As Casey points out, buildings are for

dwelling, for "education, of contemplation, of conviviality, lingerings of many kinds and durations."<sup>3</sup>These spaces allow for this diversity of use, even for movement during the days when a journey outside is unlikely or even dangerous.

Ultimately these relationships drive the selection of a specific site within the island and the development of a methodology for design. The site selected maintains a connection to both the whaling station and the research station but also establishes place of its own, drawn to the south end of the bay by the topographic conditions and the presence of the hydroelectric dam, the source of energy and the only other structure that begins to physically shape the land (see Fig. 3.15). Coupled with a response to Juhani Palasmaa's call for hapticity

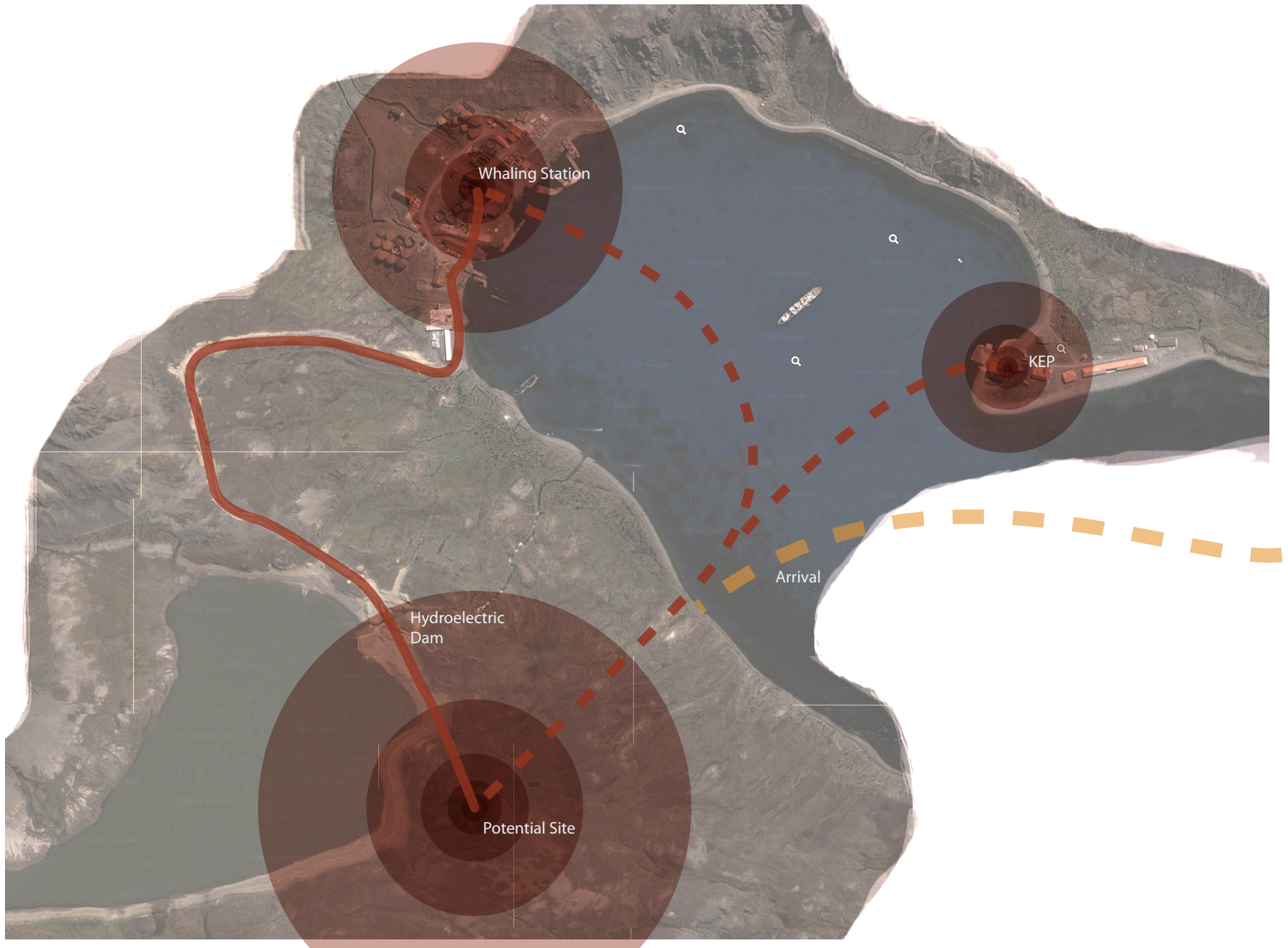


Figure 3.15. Diagram of the connections between the three sites  
(*opposite*)

in architecture, this thesis relies on the topographic irregularities to inform the architecture and accommodate the various program elements.

In his article on hapticity, Pallasmaa argued that architecture has turned into “an art form of instant visual image.”<sup>4</sup> He regretted that “our buildings have lost their opacity and their depth, sensory invitation and discovery, mystery and shadow,”<sup>5</sup> proposing that vision only allows a person to understand the present, whereas a haptic experience evokes the experience of a temporal continuum. This thesis posits that this has become the case of the ruins of the whaling stations at South Georgia. The isolated and protected condition of the fragile metal structures does not allow for any experience beyond the visual. This thesis will explore an architecture that engages

every sense and employs materiality and intimacy as a way of creating a complete experience that transgresses the boundary of the present. It speculates that any imperfection will mediate the temporal effects of aging because the architecture will be designed for haptic experience, an architecture “midway between oriented bodies and the wilderness.”<sup>6</sup>

This is an attempt to counter what Pallasmaa pointed out as the oversight of modern architecture:

*The ideals of perfection and completeness further detach the architectural object from the reality of time and the traces of use. Consequently, our buildings have become vulnerable to the effect of time, the revenge of time. Instead of offering the positive qualities of vintage and authority, time and use attack our buildings destructively.*<sup>7</sup>

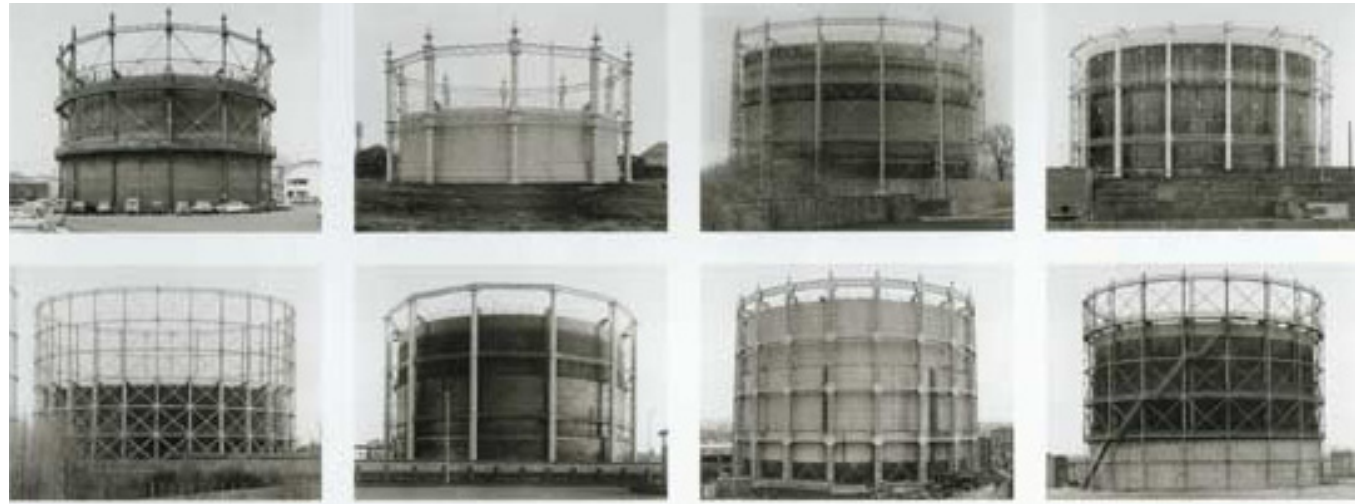


Figure 3.16. Series of water tower photographs by Bernd and Hilla Becher

The effects of time are well documented today. Photographers Bernd and Hilla Becher captured the nostalgic beauty of Germany's industrial ruins during the 1960s and 1970s (see Fig. 3.16). Their photographs critiqued the ruins – of water towers, oil refineries, barns, and so forth – as objects that together form historically significant collections worthy of preservation. And while the Bechers were instrumental in the movement to value industrial artifacts as art, their work also forces these artifacts into a linear and categorical history that removes them from their context. De Sola-Morales lamented the effects of photography on architectural experience, stating that: "even our direct experience of the built object cannot escape the mediation of photography."<sup>8</sup> De Sola-Morales believed that it is now impossible to set photography as

the "perverse adversary" to real experience.

Materiality would seem to be the most important component of architecture that deals with time in a pleasurable way. The materials are what show the signs of age and thus would seem to situate the experience within the larger continuum. For example, a piece of wood links to both the growth of a tree and the human intervention that manipulated the tree into a usable artifact. On South Georgia, where no trees can withstand the long winters and the depth of the permafrost, timber would also link the imagination to a different site, a site with a forest, even without knowing the wood's particular origin. Pallasmaa pointed to Gaston Bachelard's distinction between images that come from matter and images that arise from form in which he claimed that "matter evokes unconscious

images and emotions,”<sup>9</sup> and that the images project deeper than images arising from form. According to Bachelard, architecture developed to evoke images of matter does not evolve from an overarching concept but is held together by a consistent emotional atmosphere:

*Whereas the usual design process proceeds from a guiding conceptual image down to the detail, this architecture develops from the real experiential situations towards an architectural form.*<sup>10</sup>

Pallasmaa also pointed out the notion of weak, or fragile, architecture. He did not mean weak materiality and weak imagery but responsive and contextual designs that relate the spatial experience to the peculiarities of the site. In discussing ruins, Pallasmaa noted that weakness also tends to engage the inhabitants more completely. As the effects of time erode the utility and order of a structure the

“language of matter takes over from the visual and formal effect.”<sup>11</sup> The structures become useless and nostalgic.

“The arrogance of perfection is replaced by a humanizing vulnerability.”<sup>12</sup> That notion goes back to the issue of modern architecture discussed by Sola-Morales, who stated that:

*Pertaining to the very essence of architecture is its condition as instrument of organization, of rationalization, of productive efficiency capable of transforming the uncivilized into the cultivated, the fallow into the productive, the void into the built... they are incapable of doing anything other than introducing radical transformations... striving at all costs to dissolve away the uncontaminated magic of the obsolete in the realism of efficacy.*<sup>13</sup>

The effects of photography and representation on design have been both helpful in the widespread availability of work and harmful in the constrained

portrayal of the work. Architecture is still about experience and this thesis works to use representation as a way to convey this idea.

(Endnotes)

- 1 Harris, T., Flower, S., Swan, A., Turbitt, C., & Clarke, E. (2011, July). *South georgia magnetic observatory*. Poster from the laga div symposium a131, Melbourne, Australia. Retrieved from nora.nerc.ac.uk/15367/1/Harris\_etal\_IUGG2011\_SouthGeorgia.pdf
- 2 Casey, E. S. (1993). *Getting back into place: Toward a renewed understanding of the place-world*. Bloomington: Indiana University Press, 111.
- 3 Ibid, 112.
- 4 Pallasmaa, J. (2000). HAPTICITY AND TIME. *Architectural Review*, 207, 1239, 1.
- 5 Ibid.
- 6 Casey, E. S. (1993), 112.
- 7 Pallasmaa, J. (May 01, 2000), 2.
- 8 De, S.-M. I. (January 01, 1996). Terrain vague. *Quaderns Barcelona Col·legi D Arquitectes De Catalunya-*, 212, 35.
- 9 Pallasmaa, J. (2000), 3.
- 10 Ibid, 5.
- 11 Ibid, 6.
- 12 Ibid.
- 13 De, S.-M. I. (1996), 41.



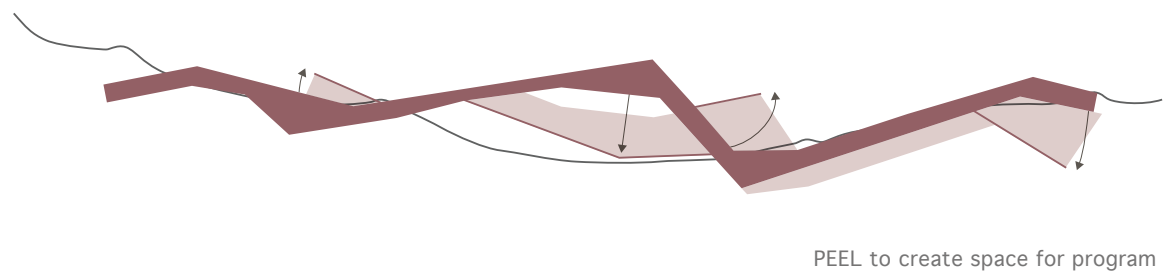
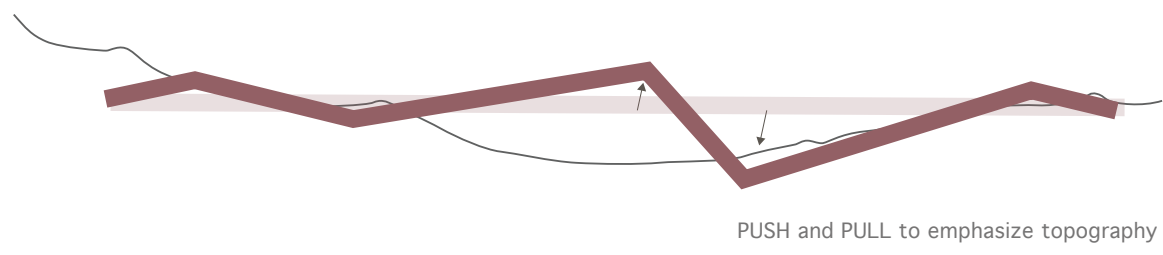
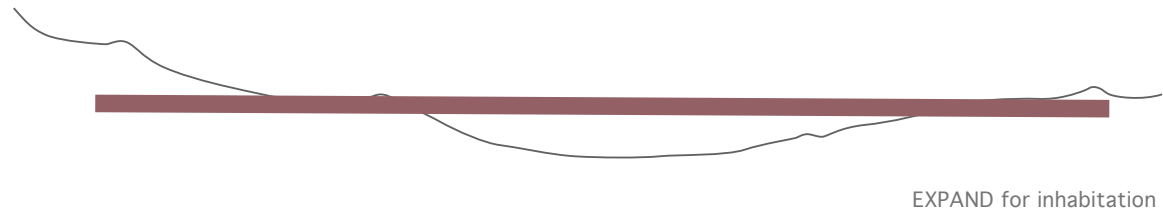
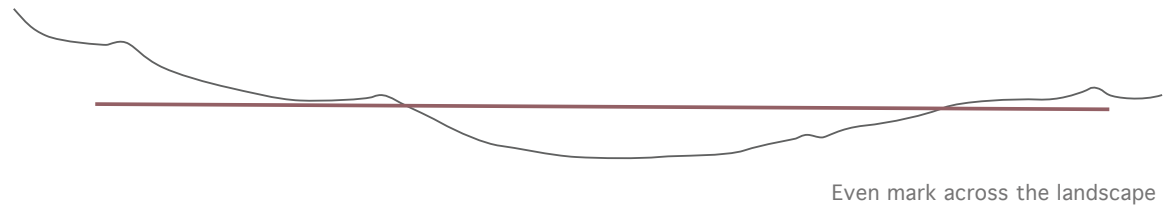


Figure 4.1. Diagram of the evolution of the wall

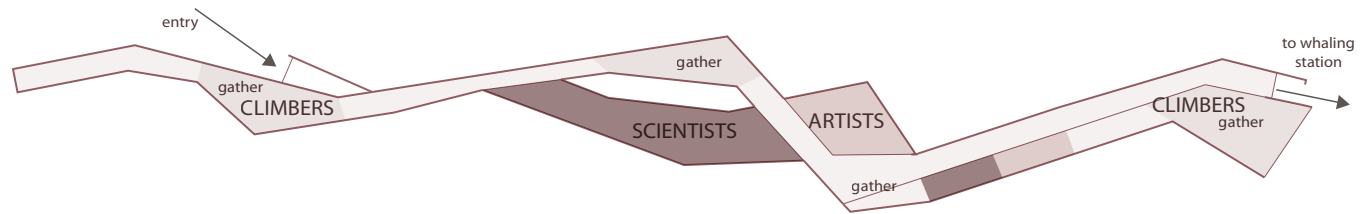


Figure 4.2. Plan diagram of the different programmed spaces

## A NEW MARK ON THE LANDSCAPE

### An Inhabitable Wall

This thesis proposes that the artists, climbers and scientists already drawn to South Georgia Island need a place to live and work that is more intimately connected to the natural and cultural phenomena of the site. Through a site investigation that responded to the various users and their spatial relationships with the landscape, an architectural language began to emerge for a proposed building that consisted of two parts: the site and the familiar. The site element responds to the topography while the familiar rests lightly above, expanding or contracting to accommodate program, views and light. Their relationship was developed from the relationship between the whaling structures and the flat shoreline, but it establishes a reciprocal condition where the space both floats above the ground and embeds within it.

The need to compete with the immensity of the landscape and the desire to span several of the small seasonal streams led to the development of the project as a long inhabited wall, a mark in the landscape that could register the changing seasons and the passage of time, embedded in the landscape yet sensitive to its character. The mark began as a simple line, expanded to allow for inhabitation, and then bent to break up the six hundred foot distance and to emphasize specific topographic conditions that began to arrange the program. Finally, specific segments peel away from the wall to accommodate program and create spaces for informal interaction (see Fig. 4.1).

The architectural experience begins with the approach. A visitor reaches a new dock, just south of the

Figure 4.3. View of the tower from the new dock

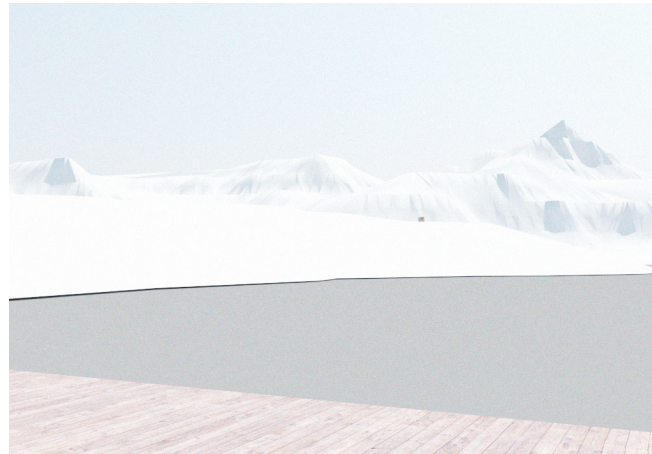


Figure 4.4. Approach to the project from the southeast



established jetty at King Edward Point, and reconnects with land. Only the top of a tower is visible (see Fig. 4.3). From there, they move up the hill towards Gull Lake in a slight valley, losing sight of the whaling station ruins along the way. The visitor arcs toward the west, cresting over a small peak before catching their second glimpse of the new structure (see Fig. 4.4), which blocks the view of the whaling station until the visitor is inside (see Fig. 4.5). The end of the structure appears, floating above a small seasonal stream and the light plays on the faceted wood frame that wraps the building. The visitor moves closer towards a small opening between the frame and a concrete wall, a piece of the site that reaches up from the ground to mark the entrance. The visitor is drawn in, moving down with the slope of the hill until they are under

the wall, a dark space for removing the layers necessitated by the cold winds sweeping over the barren landscape (see Fig. 4.13).

From there a staircase leads up into the building, the first of several informal gathering spaces, and the delicate frame structure is revealed (see Fig 4.6). A section through this space reveals the contrast between the entry sequence and the space inside the frame (see Fig. 4.10), where sliced openings offer controlled views of the sky and land without interrupting the rhythm of the structure. A strip of glazing overhead, lining the walkway on top of the enclosed space, bounces light down along the face of the wooden cladding, tinted blue when the snow drifts filter the light during the winter months. The heavy concrete walls mark the topography from within the enclosure,

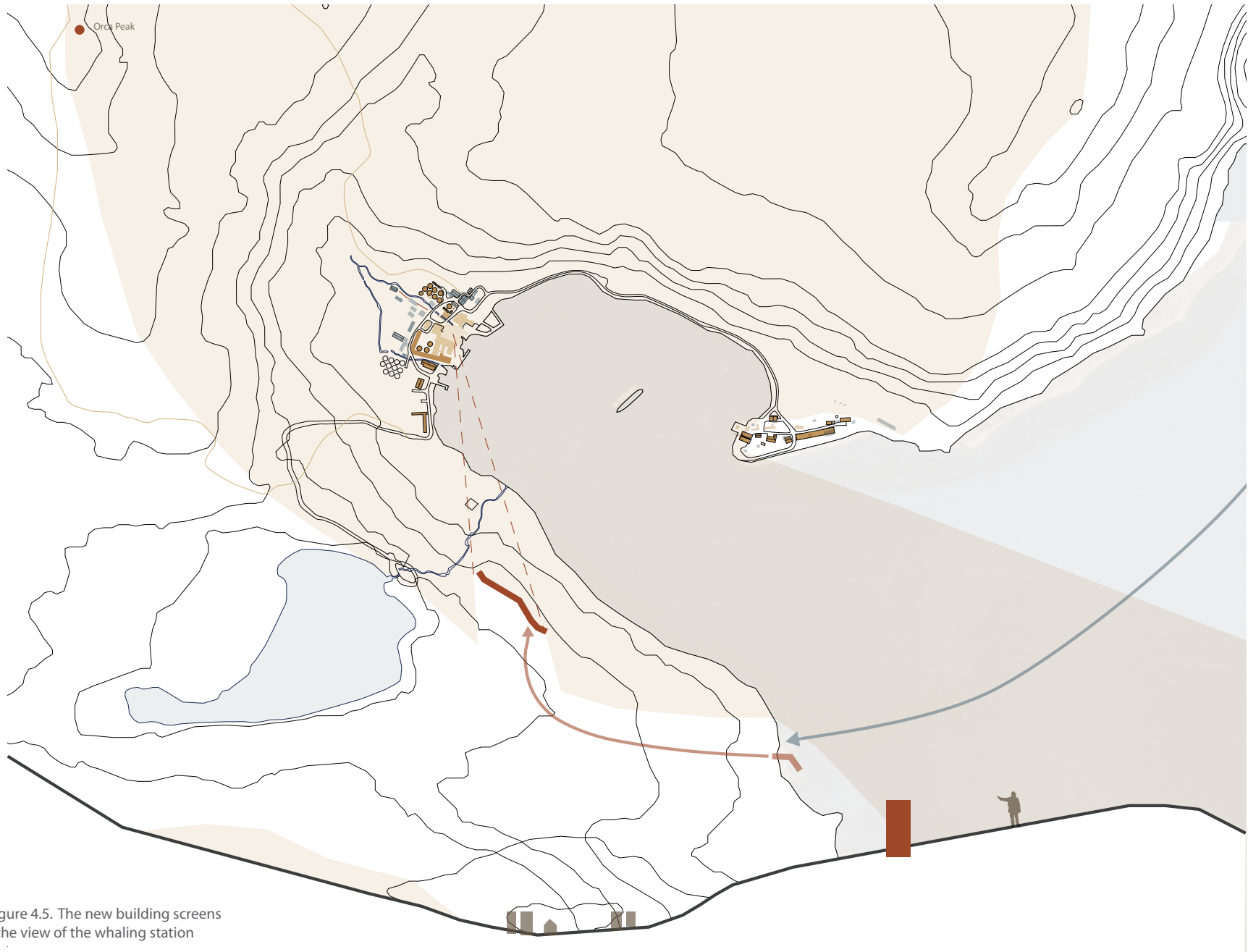


Figure 4.5. The new building screens the view of the whaling station



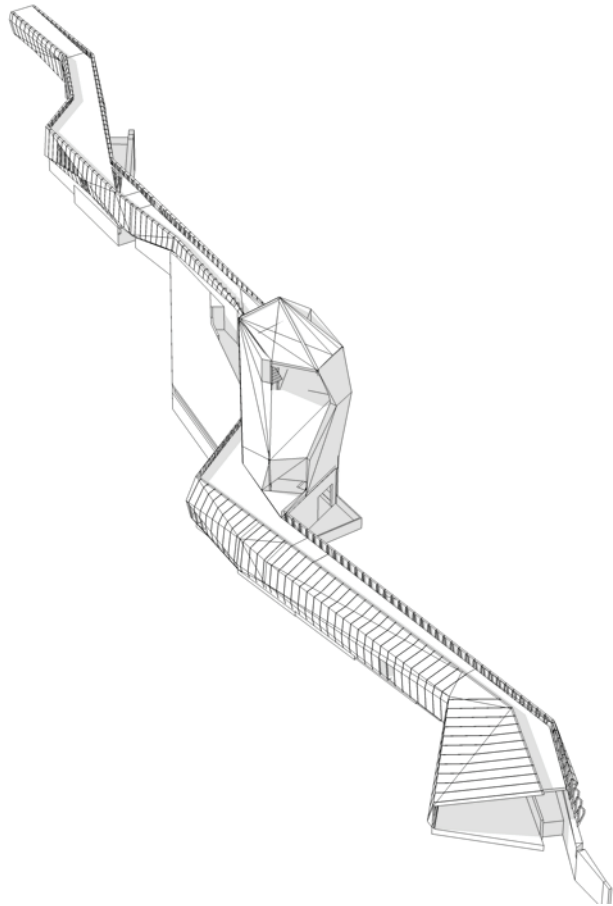


Figure 4.6. View of the informal gathering space above the entry stair (opposite)

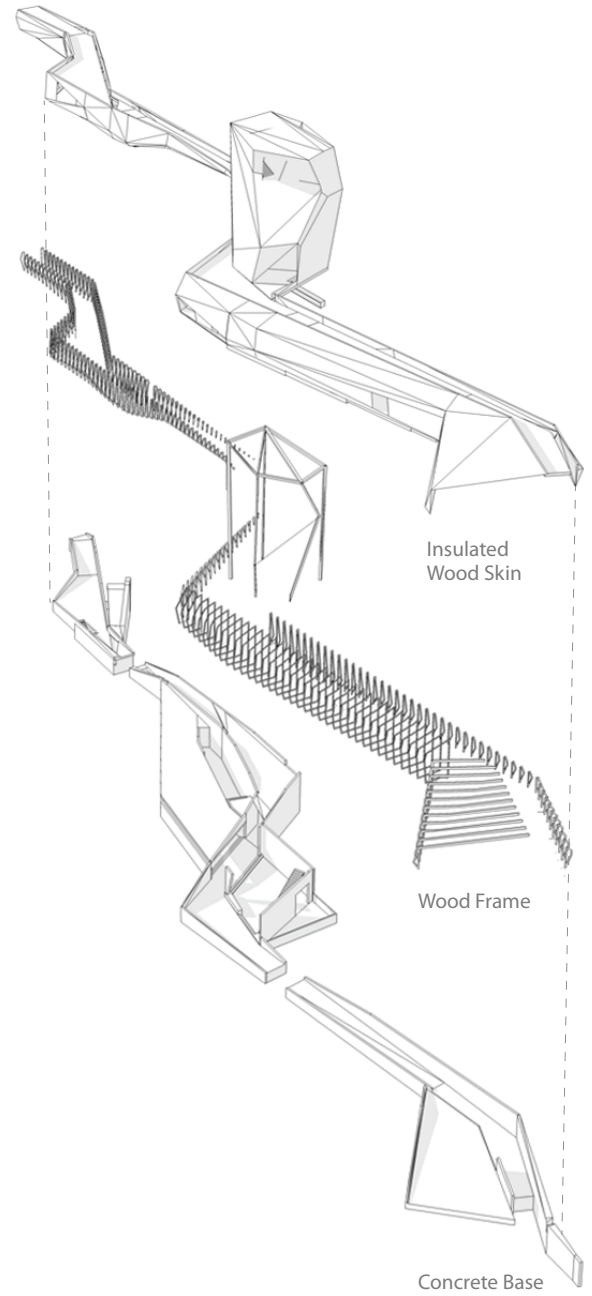


Figure 4.7. Axonometric showing the three different systems

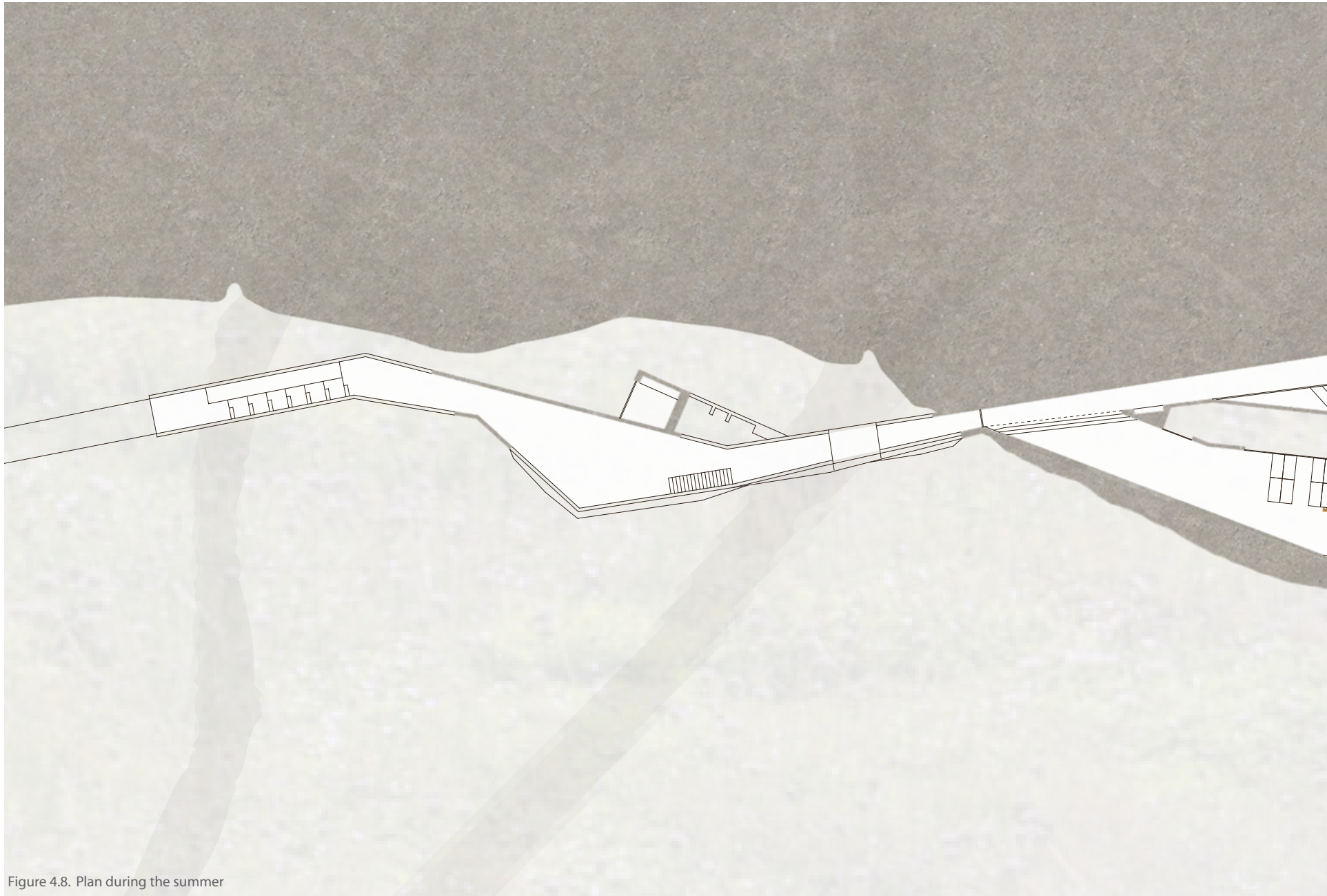
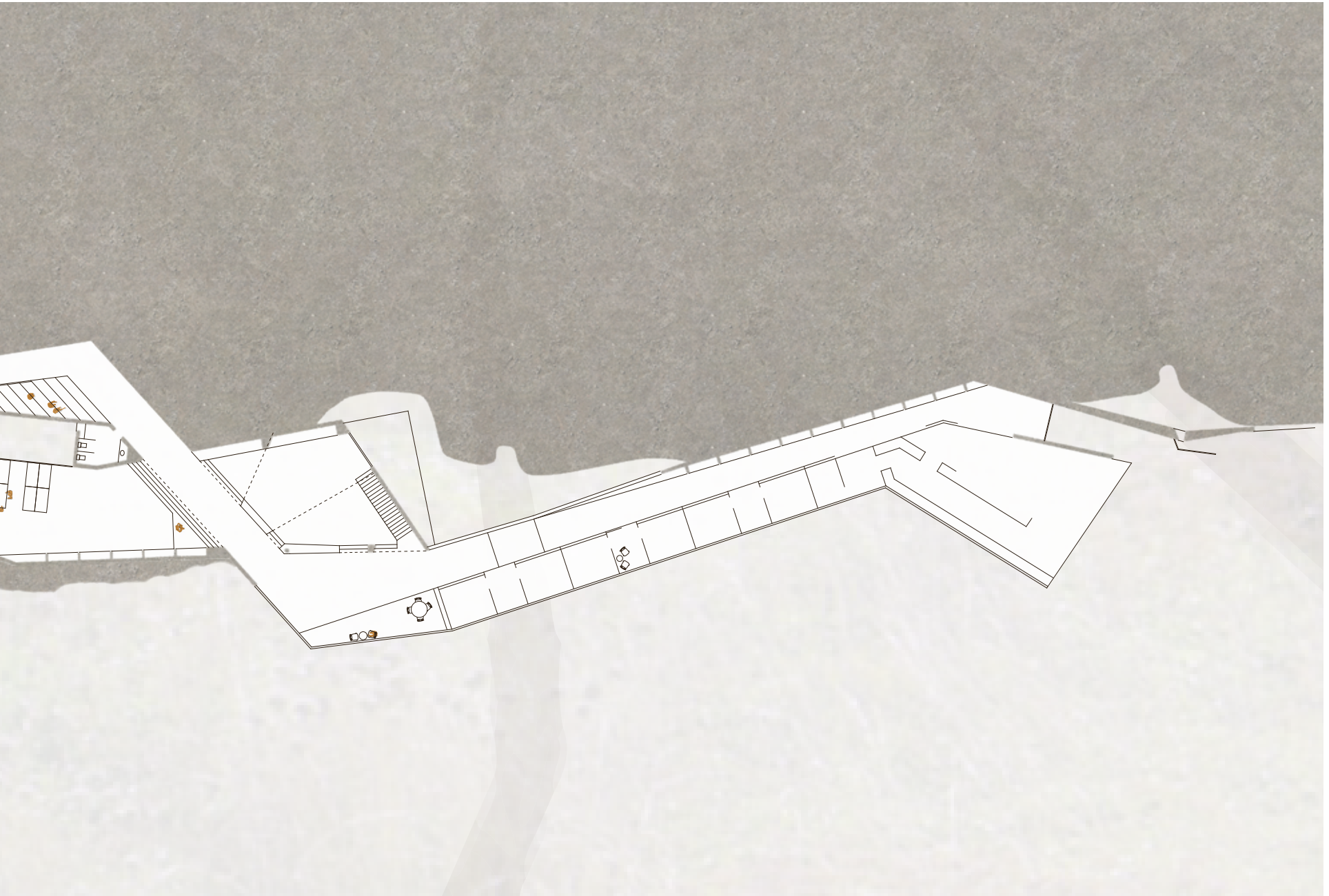


Figure 4.8. Plan during the summer



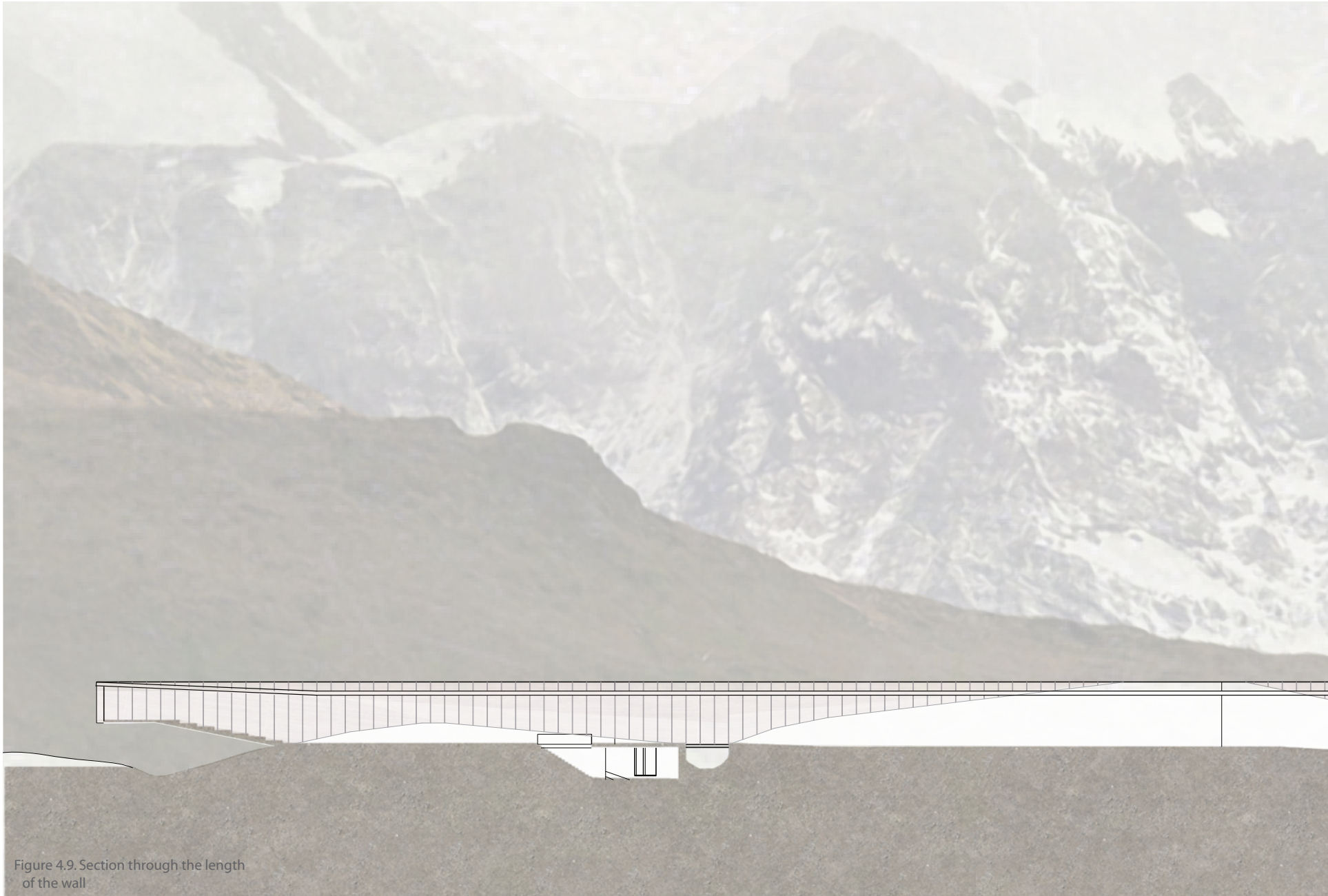
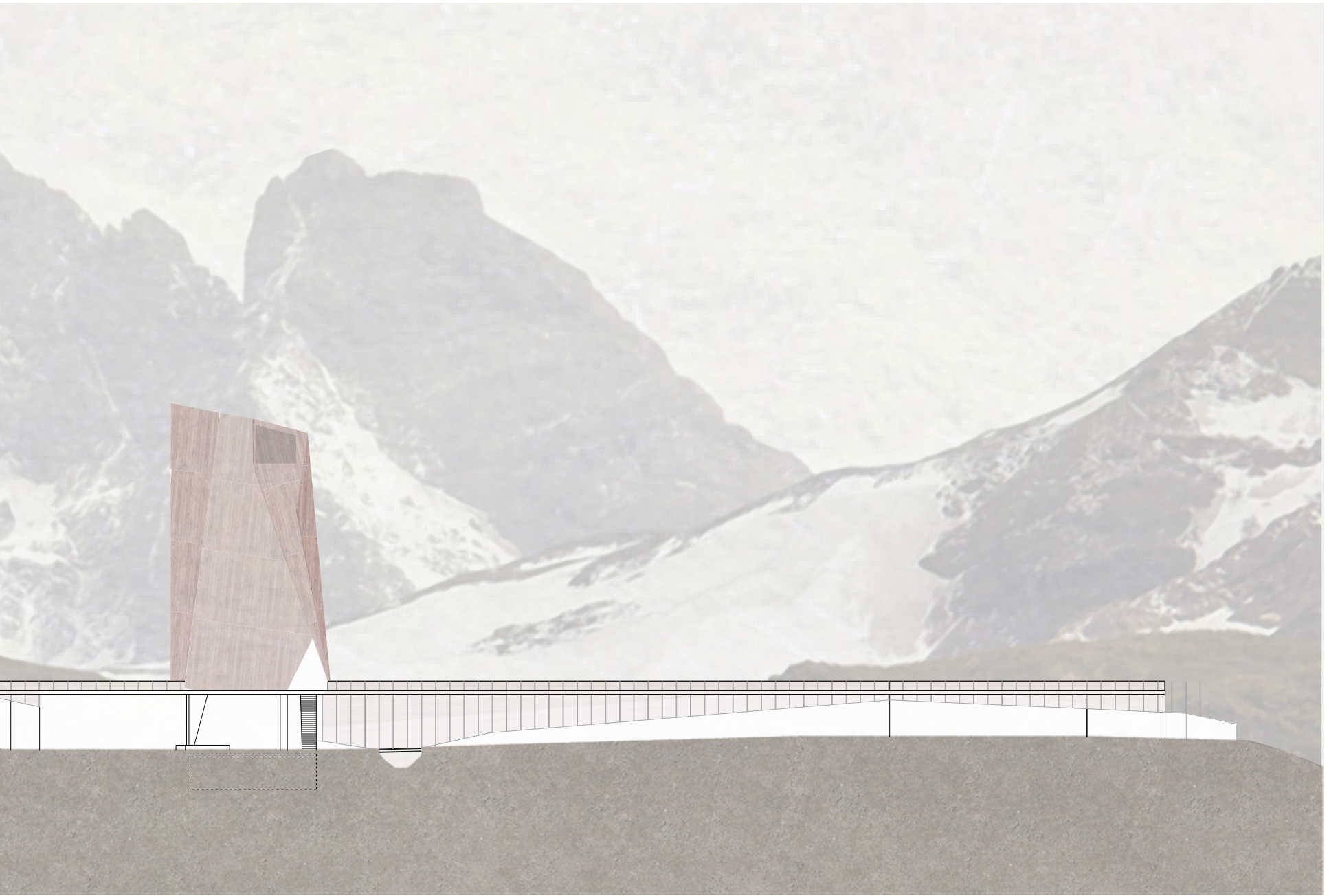
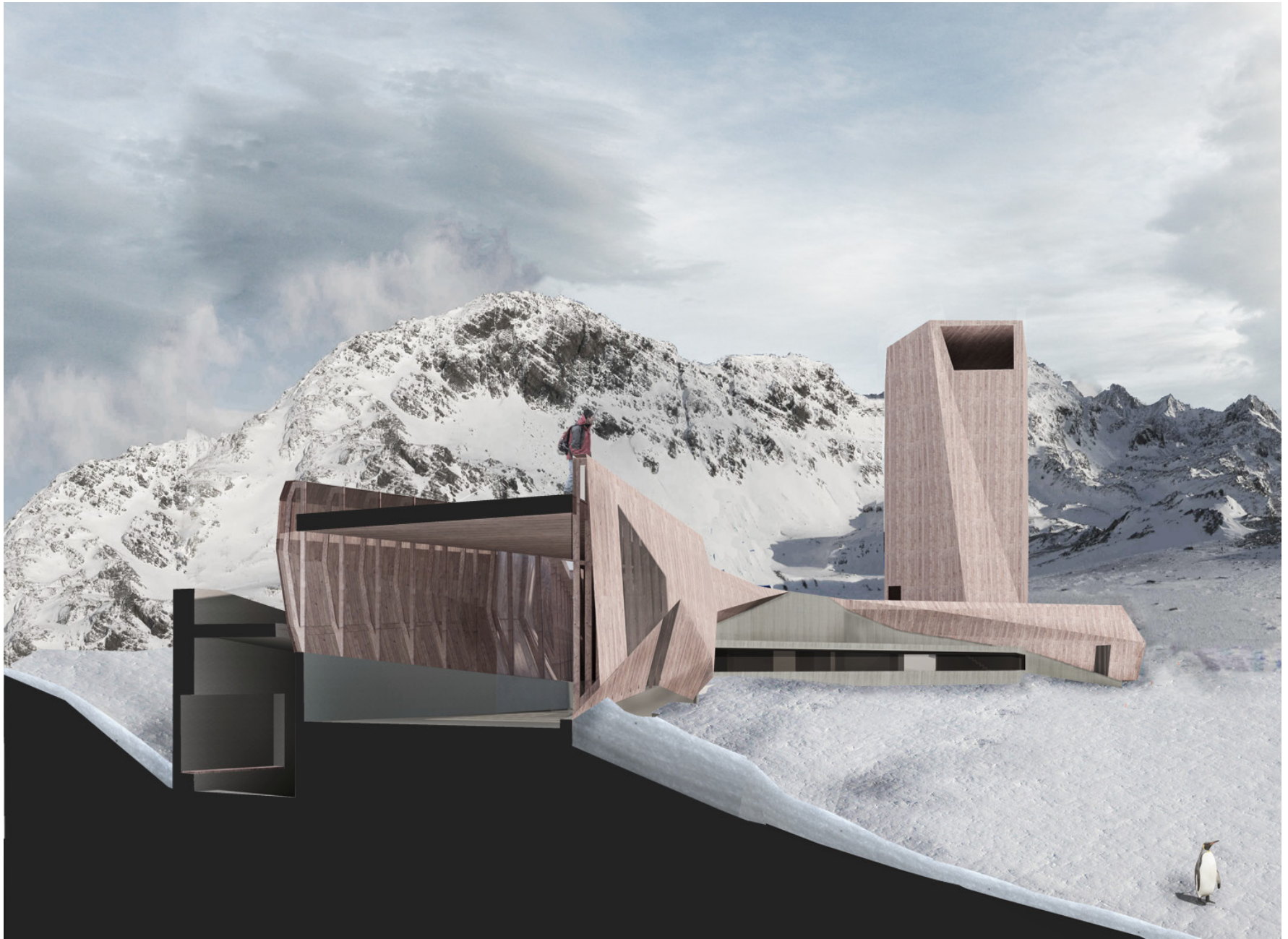


Figure 4.9. Section through the length of the wall





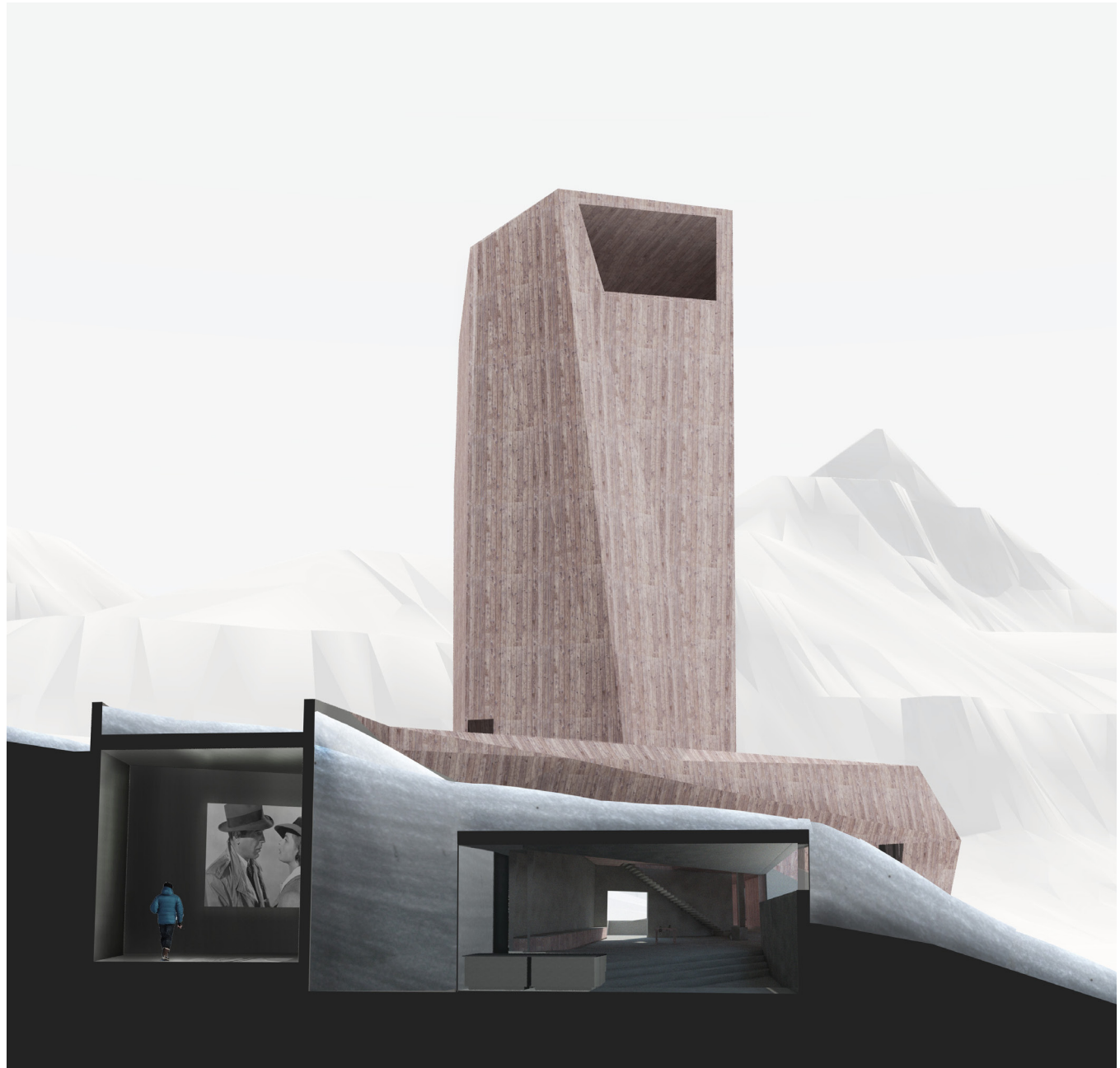


Figure 4.10. Section through the entry and informal gathering spaces  
*(opposite)*

Figure 4.11. Section through the lab during the winter



Figure 4.12. Section through the tower

Figure 4.13. View of the darkened entry



Figure 4.14. View into the workshop from the lab



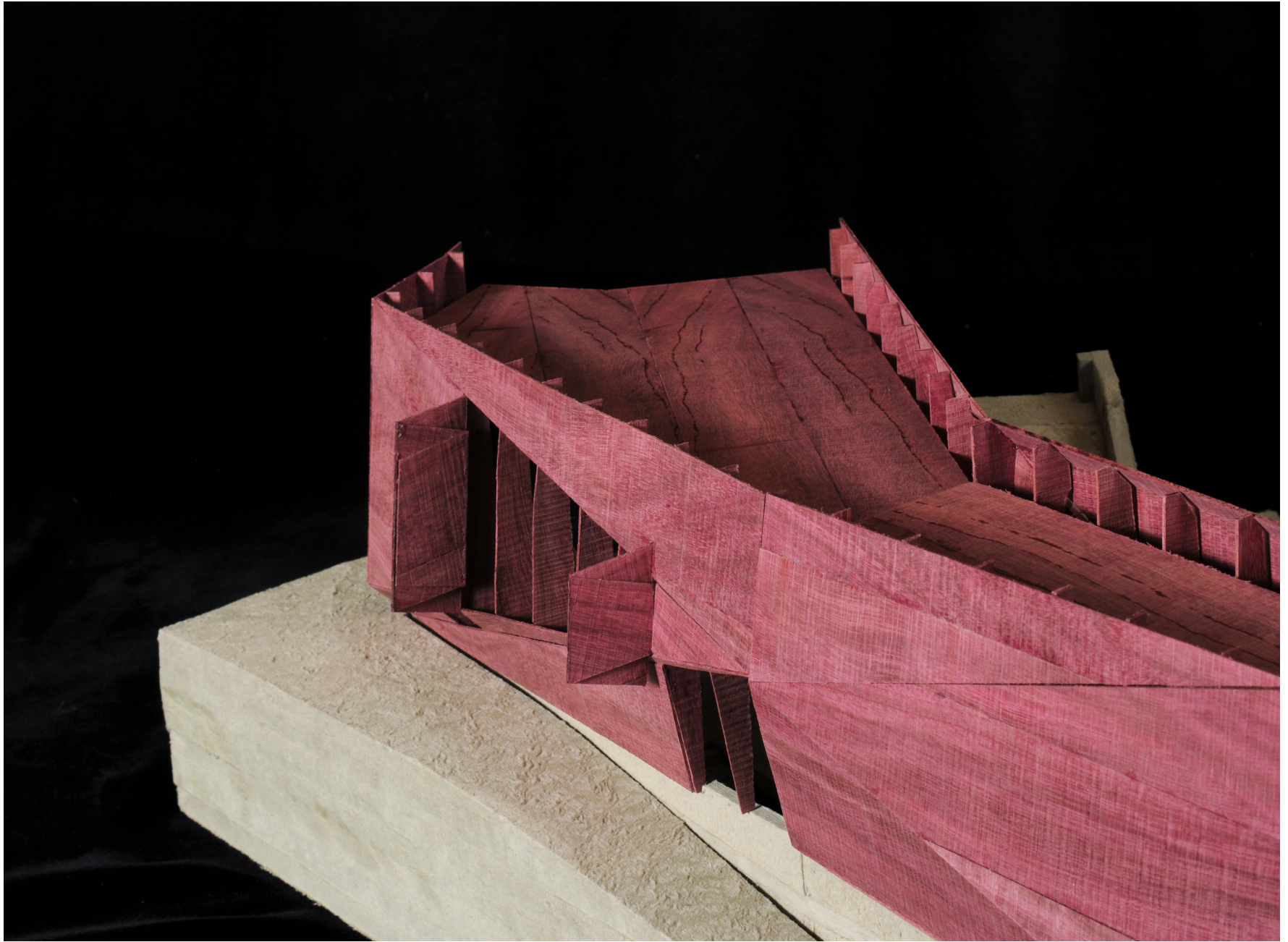
rising and falling with the hillside or disappearing when a stream carves through the plan (see Fig 4.8).

As the visitor moves further west, into the hillside, the concrete completely encloses the space, with a thin strip of glazing in the labs that reinforces the feeling of being submerged in the hill and the permanence associated with the ongoing research that deals with greater natural phenomena, some of which span centuries. A section through this space highlights the intensity of this experience during the winter, when snowdrifts could cover the structure entirely (see Fig. 4.11). From here the visitor moves up into another informal gathering space, with views into the workshop (see Fig. 4.14). The workshop sits at the base of the tower, which rises up sixty feet with artist studios and the library. A section through this space shows

the perch at the top of the tower, a point of reflection with views to the whaling station and back to the point of arrival (see Fig. 4.12).

At the far west end of the building, the concrete extends past the enclosure of the kitchen and dining area to dam one of the small seasonal streams, catching the water and storing it for use in the building. This point is also the continuation of the path to the whaling station that began with the arrival at the new dock. The visitor could walk down the hill, past the small graveyard, and enter the whaling station from its southern edge.

The experience of the building changes throughout the course of the year. During the summer, the arrival of artists and climbers could double or triple the number of inhabitants, spilling out of the structure and



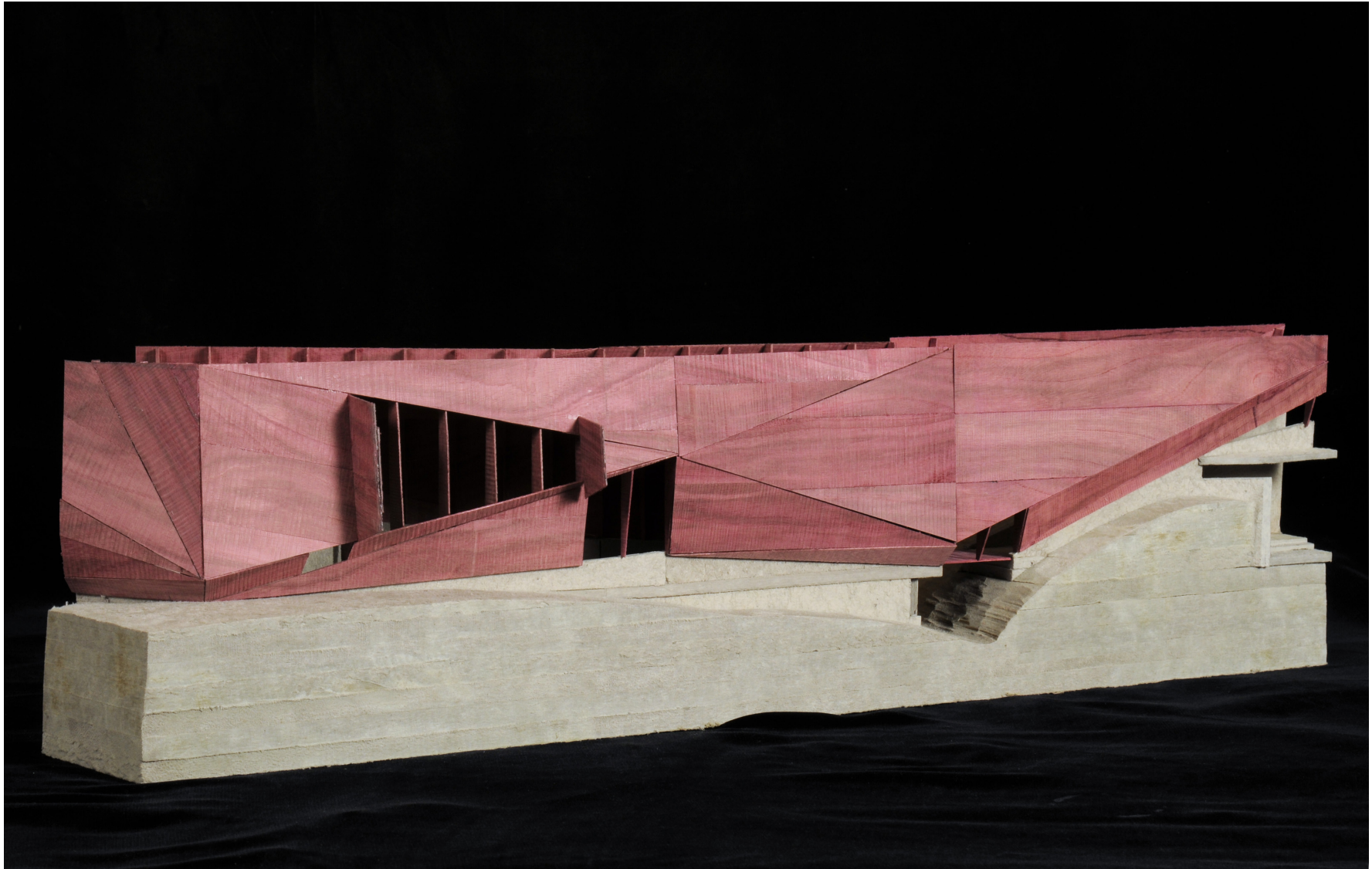


Figure 4.15. Section model detail,  
purple heart and homasote (*opposite*)

Figure 4.16. Section model showing  
north elevation



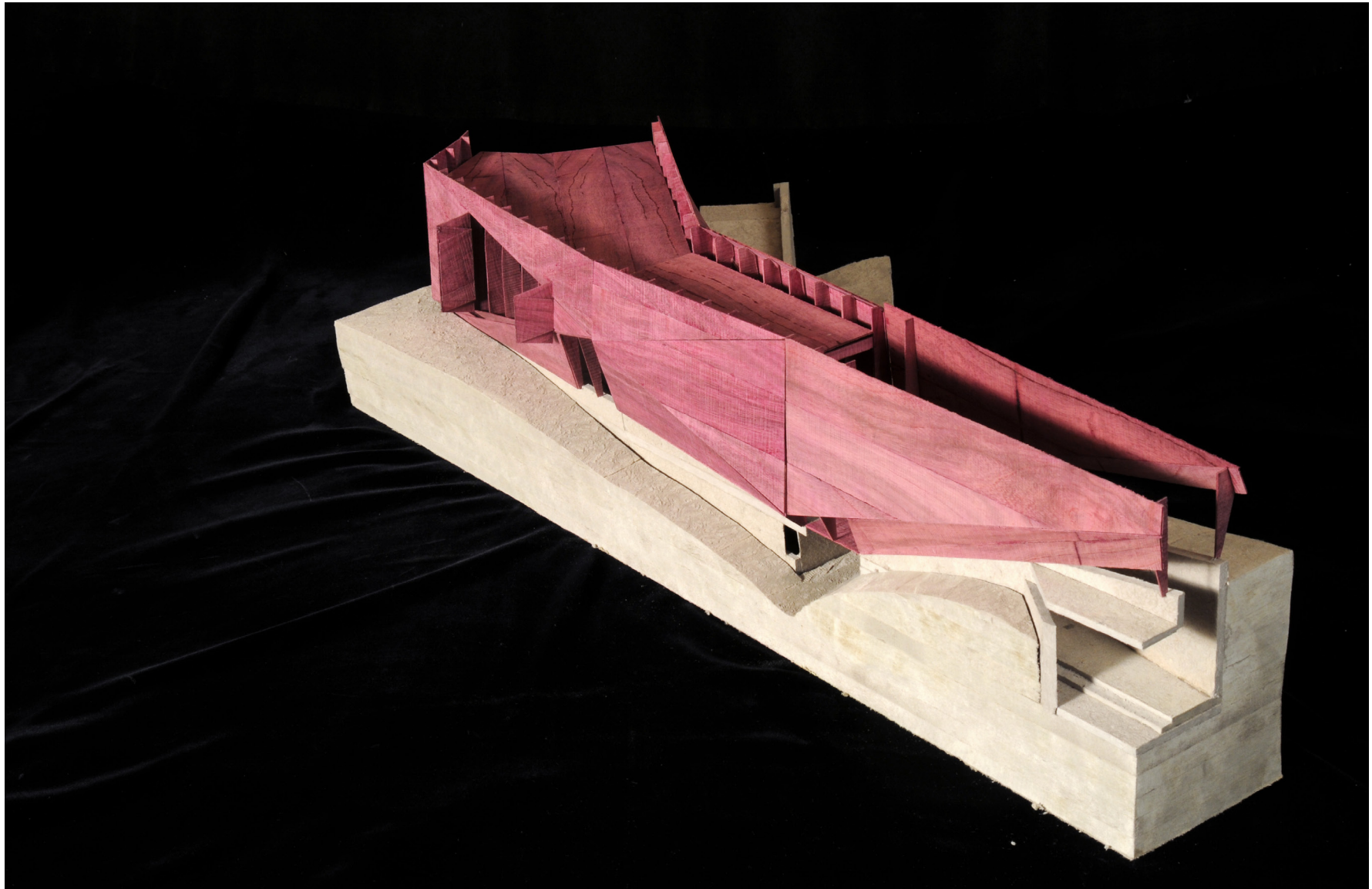


Figure 4.17. Section model showing entry (*opposite*)

Figure 4.18. Section model



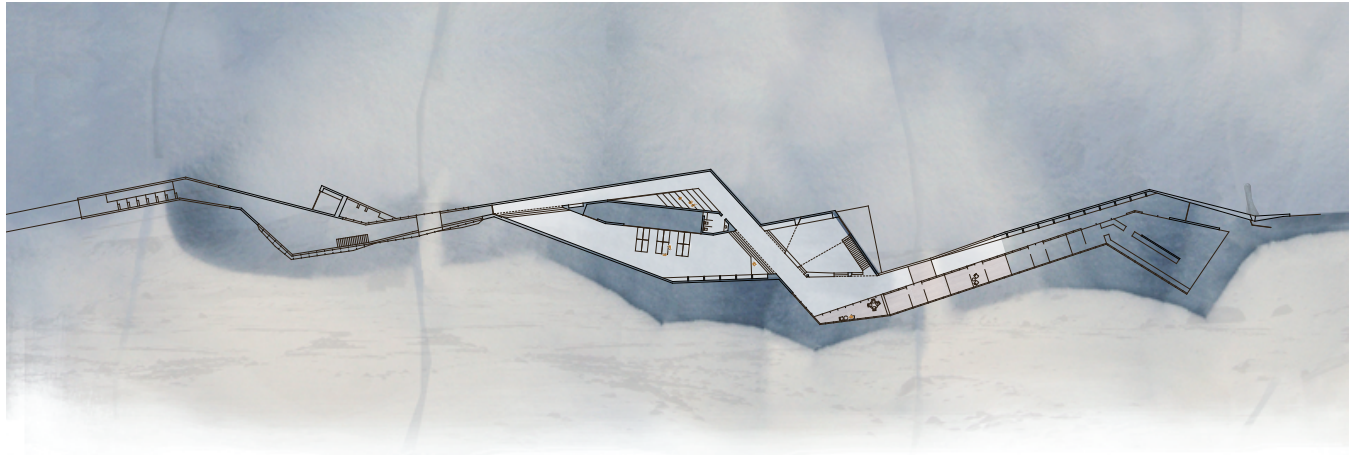


Figure 4.19. Decaying wall during the winter (*opposite*)

Figure 4.20. Plan during winter

onto the surrounding site. In winter, however, the building might only need to accommodate a few scientists who rely on continuous observation and an artist interested in drifting snow. In that case the core remains usable while the west and east wings could shut down to save power (see Fig. 4.20).

## POTENTIALS AND DRAWBACKS

### The Opportunities for Translation of the Approach

This thesis attempts to establish relationships between the users and the place that inform the development of an architectural expression. What emerged is a language of two parts, the site and the familiar, that respond to the topography to create space in a way that is both sympathetic to and forceful in the landscape. The building is a haptic mark in the landscape, a datum against which the seasons and passing time will register. The scientists, artists and climbers use the site in different ways, and were each considered regarding specific program elements. The artists were given studios raised above the site while the climbers were given informal spaces to gather that encouraged engagement with the artists and scientists. The scientists were provided with buried labs and an adjacent workshop, both of which

would run throughout the year.

The process for the design of this thesis relied on structured intuition, an assimilation of the site and its constraints translated into a formal expression. The success of the project lies in the controlled opposition with the immense landscape and a tectonic language that relates to the mountains and the whaling station ruins while avoiding direct reference. This approach has the potential to work on any site with unpredictable results, but it ensures that the specifics of users and place will inform the architecture and that an element of specificity is maintained.

One question that surfaced towards the end of this thesis is how designing in such a remote climate, with few if any architectural clues, could inform a similar process

in a more familiar context, a context with established architectural precedent. Further, the image of the project as a ruin (see Fig 4.19) begs the question of whether an architecture rooted in the site, with aspirations to permanence, can adequately deal with the fragility of human life in a hostile world.





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