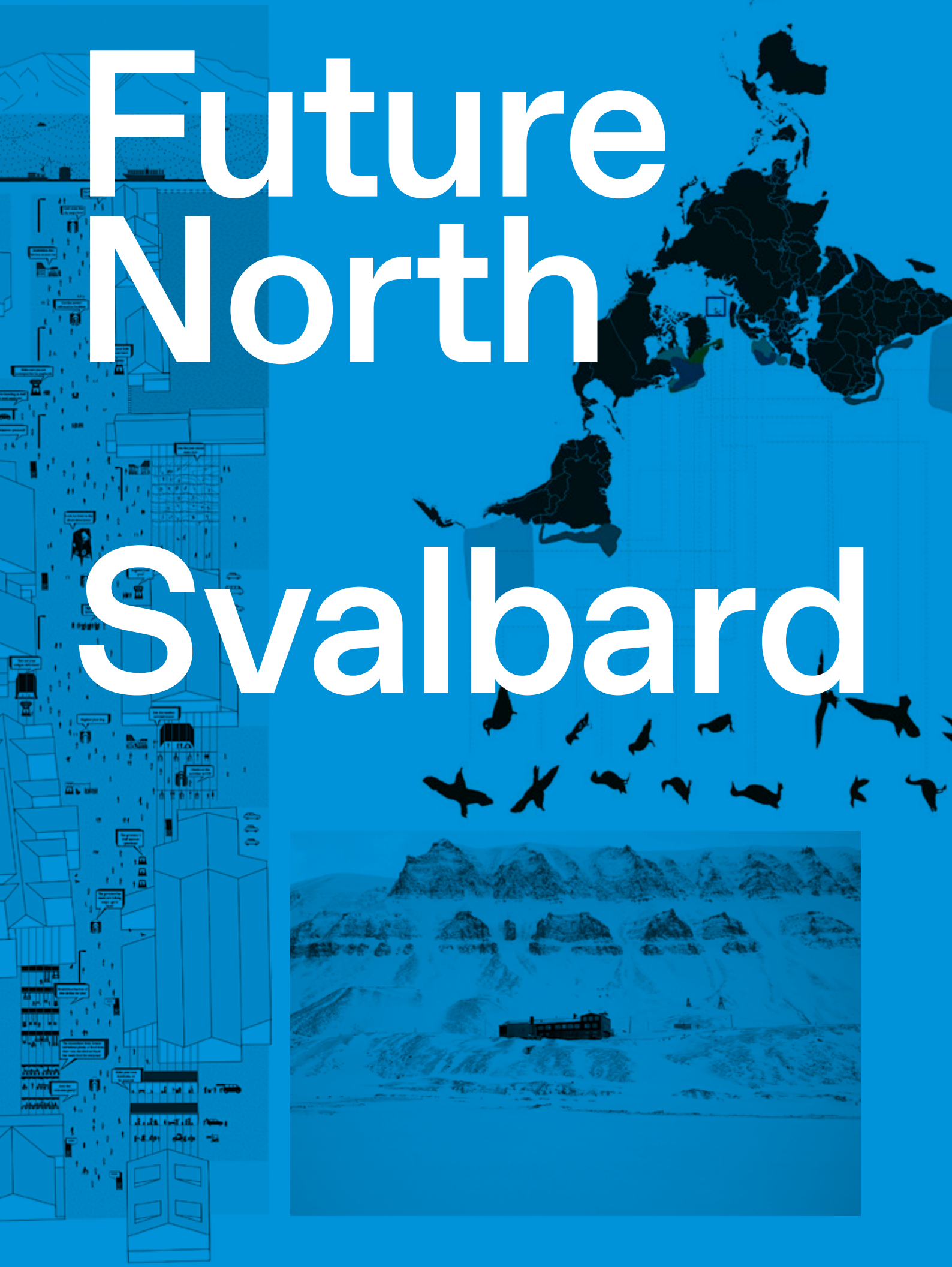
Future North

Svalbard



Future North

Svalbard

FUTURE NORTH — SVALBARD

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ON THE PAMPHLET SERIES

Future North — Kola
Future North — Svalbard
Future North — Vardø

This is one of three pamphlets that are outcomes of the *Future North* project at AHO. They are designed to complement more formal research outputs as well as present material from the territories and terrains the project team and adjunct members travelled and from where we were based. The pamphlets offer a mix of materialities and media, showing experimental writing, student projects and reflections on research.

On NODE Berlin Oslo:
NODE is a Berlin- and Oslo-based design studio founded in 2003 by Anders Hofgaard and Serge Rompza. The studio works collaboratively across various media for a diverse range of clients from individuals to institutions, focusing on print, identity, exhibition and interactive work. Besides studio projects, NODE gives lectures and holds workshops at art and design academies.

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←
Photo still from drone video by Riccardo Pravettoni, 2015

Introduction

Janike Kampevold Larsen & Peter Hemmersam

The Future North research project is studying the relationship between social development and landscape change in the Arctic. Main regions for research are the Kola Peninsula, The Norwegian Arctic town of Vardø, and Svalbard.

The project is funded under Research Council Norway's SAMKUL program, one that is particularly concerned with the prospective social impact of academic research. The project is placed at the Oslo School of Architecture and Design (AHO).

Central to the Future North project is to study places that are transforming as the Arctic region is under pressure from several transformative forces, amongst them climate change with subsequent intensified interest from the extraction and transportation industry as the significant drivers. As the polar ice cap is melting, and the summer sea ice extension diminishes, new areas for oil exploration and new sea routes are being planned. Some of the changes underway would have happened independently of climate change. As an example, tourism to the Norwegian Arctic region, such as the city of Tromsø, the county of Finnmark, and Svalbard are just as connected to the Aurora Borealis as to receding glaciers, and not all prospecting of minerals and carboniferous fuels can be ties to climate change.

Yet, Svalbard is one such place, in the European Arctic, that is experiencing a set of changes, and as a result everything appears to be in flux. None of the discrete material component of the territory seems to be unaffected by climate change: ice, snow, animal populations, salinity of the oceans, vegetation, and weather patterns and intensities. At the same time, one sees an increase in the number of tourists, and not least, the researchers such as ourselves. In Longyearbyen, the prospects of a larger permanent population, new harbor terminals, melting permafrost, and changing wind and weather conditions pose particular planning challenges for a small community.

The Future North project seeks to address the complex web of forces and changes that Svalbard and Longyearbyen is facing. Working with students it has also mapped the forces at play in the territory, as well as suggesting strategies for urban renewal and development in Longyearbyen.

This publication reflects two research trips to Svalbard in 2015. One was performed with a core group of researchers: Peter Hemmersam (AHO), Andrew Morrison (AHO), William L. Fox (Center for Art + Environment, Reno, Nevada), Kathleen John-Alder (Rutgers University), and Janike Kampevold Larsen (AHO). The second trip was undertaken with two groups of students, one from AHO and one from Tromsø Academy of Landscape and Territorial Studies, a joint master program between AHO and UiT, The Arctic University in Norway. Teachers included Lisbet Harboe (AHO), Kathleen John-Alder, Eimear Tynan (Tromsø), Mats Kemppe (Tromsø), and Riccardo Pravettoni (cartographer), as well as Peter Hemmesam and Janike Kampevold Larsen.

The two courses worked in parallel. The AHO course was called *Arctic Urban Design: Longyearbyen* and the Tromsø course was called *Arctic Territories: Svalbard as a Fluid Territory*. Work from the two studio courses is presented in this booklet, along with an introductory text to each course and essays from senior researchers on the project.

www.futurenorth.no

Mining as public art

1. Inventing and Reinventing Place Identity in Longyearbyen: Towards a Post-Mining City?

Aileen A. Espíritu

In 2014, while visiting the research town of Ny Ålesund on Svalbard, Christiana Figueres, Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), urged Norway to quit all coal mining on the Svalbard archipelago. She argued that there was a fundamental paradox between the climate change research being conducted in Arctic Norway and the mining of, arguably, the dirtiest of energy sources on the planet, coal.[1] It would not be Figueres' admonition that would lead to the decline and the temporary[2] closing of Norwegian[3] coal mining on Svalbard, however, but rather world market forces. Decreased demand from China, and thus the low coal market prices, would lead to loss of jobs and an uncertain future for Longyearbyen. In the face of incontrovertible global forces and of climate change, what are the strategies that local governments in the Arctic employ to create sustainable communities able to manage both boom and bust economies?

This short essay explores the possible futures of Longyearbyen as it redefines its identity from a mining town to post-mining urban place that foregrounds tourism and research as main drivers of its economy.

HISTORY IN BRIEF

Svalbard, the Norwegian archipelago that lies in the Arctic Ocean, just below the North Pole, has captured the imagination of self-professed explorers, scientists, adventurers, tourists, and the curious since the mid-sixteenth century. Economic activities began with whaling in 1611 dominated by the English and the Dutch, and then by Norwegians by the 19th century. Coal mining began on the archipelago in 1906 leading to the establishment of Longyear City. Longyear City and the mines were bought by the Norwegian company Store Norske and would nominally own it to this day. The Soviets/Russians would establish the coal mines in Barentsburg and Pyramiden in the 1920s.

Significantly, the Svalbard Treaty signed in 1920 and expanded to include more countries in 1925 was ratified, giving sovereignty of the archipelago to Norway within limits prescribed by the Treaty. Of the stipulated regulations, what has given Norway most power over Svalbard has been the strict environmental regulations placed on any development activities on Svalbard with the exception of coal mining, which again points to the inherent contradictions between environmental concerns and the global sale and the local use of coal.

Coal mining would form the backbone of industrialization on Svalbard, leading to the establishment of permanent mining settlements — two of which still exists today, the Norwegian town of Longyearbyen and the Russian town of Barentsburg. Both of these towns were built by revenues from and employment in the coal mining industry. It is this history and this deep-rooted mining identity of Longyearbyen, indeed of Svalbard, that has determined its path-dependence on coal mining. And it would be this identity that makes it difficult for the city and its mostly mining workforce from thinking and planning beyond the pursuit of coal, or another big resource industry. Hedging its bets then that when coal prices rise in a few years, the mining operations would start again means that there is no planning for a post-mining future in Longyearbyen.

INVENTING AND REINVENTING PLACE IDENTITY IN SECOND MODERNITY: A POST-MINING FUTURE?

Karl Benediktsson avers that the meaning of "place" in the midst of transformation to "second modernity" is "renegotiated within a framework of fluidity and ongoing changes."[4] Second modernity, simply put, means that "society is …characterized rather by fluid networking, mobility, and cosmopolitanism than by territorially bound and cohesive identities."[5] Within this context, it is difficult to categorically characterize Longyearbyen as developing a post-mining identity. Nevertheless, stakeholders, residents, and policy-makers have attempted to advance strat-

1 Elvind Molde, "FNs klimasjef: — Steng kullgruvene på Svalbard," NRK 5 May 2014, accessed 26 January 2016, http://www.nrk.no/klima/_-steng-kullgruvene-pa-svalbard-1.11744050.

2 Eirik Palm, "Krisen i Store Norske: Her er planen," Svalbardposten 11 September 2015, accessed 26 January 2016.

3 Russian coal mining in Barentsburg continues.

Mining as public art

Beautiful Svalbard

egies for sustaining the city as a viable and vibrant place. Besides mining (now severely decreased), tourism and research activities are meant to drive Longyearbyen, and indeed Svalbard, forward in its plans for a sustainable community. While the coal mining being done by Norwegians on Svalbard has been reduced only to providing coal for the power station in Longyearbyen — it is still a questionable adherence to dependence on a dirty source of energy.

TOURISM

It is easy to see why tourism has the potential to develop into one of the main industries on Svalbard. Endowed with natural beauty; the possibility of seeing Arctic flora and fauna: notably polar bears in their natural habitat; cruising towards the northernmost reaches of Norway; the Northern Lights; glaciers; seeing the heritage of mining, trapping, and exploration are but some of the tourist attractions on offer on Svalbard. In 2015, the number of overnight tourists to Svalbard rose by 11%,[6] selling Svalbard tourism as an "authentic" experience. Touring the old Mine 3 and the Svea mining community are also experiences unique to Svalbard and again shows the city's dependence on the infrastructures of mining. The building that previously housed the funicular bringing coal from the mine to the town is being turned into a museum/gallery. Pressure on tourism to succeed as a major industry on Svalbard is great. Lonyearbyen's policy-makers, stakeholders, and residents believe that the success of tourism could provide jobs to those who lost their positions when the mine closed, and thus offset the loss caused by the layoffs.

RESEARCH

Research as a driver of economic development on Svalbard is also distinctive. Founded on the Svalbard Treaty, and signatories' right to establish activities on Svalbard, many have established research stations in Ny Ålesund and conduct research throughout Svalbard, on land and on the sea. Leading the way is UNIS, The University Centre in Svalbard, which according to their webpages aims "to contribute to the development of Svalbard as an international research platform."[7] As of yet, research on Svalbard is dominated by the natural sciences with very little to no focus on the humanities and social sciences. Undoubtedly, the impact of research on the economy of Svalbard will be limited, especially since those who will be needing jobs may not be employable in fields of academic natural science research.

Nevertheless, the proposed growth of research as a resource for Svalbard should bring opportunities for social science scholars to study Svalbard and Longyearbyen from a social, economic, cultural, architectural, and political perspective. In so doing, multi-disciplinary research would have the potential to effect policies and to improve the quality of life of those who live in Lonyearbyen and the entire Svalbard archipelago.

CONCLUSIONS

The foregoing has outlined some of the challenges for Lonyearbyen as it attempts to change its identity from a mining to a post-mining town. Very much defined by its history and the major industry that built it, Longyearbyen will be tied to the identity of coal mining for generations to come. But signs in the crack may be appearing. It seems that the big industry answer for rescuing the Longyearbyen economy and community is to build a harbor that could accommodate the speculated transshipment of oil and gas from the Barents and Arctic Seas to markets in Europe and Asia. Although seeming to break from the path dependence on coal, the planned transshipment harbor would still depend on resource extraction —oil and gas, and therefore vulnerable to the vicissitudes of boom and bust economics.

Building a sustainable community in Longyearbyen will take a long time and will involve significant capacity-building and the ability to attract people to live and work there. The caution is that Longyearbyen and Svalbard should be seen for what identity it can build outside of the framework of coal mining. In a global context, using coal for energy will become even less acceptable. And gradually, all coal mining on Svalbard will have to stop. In the meantime, this is an opportune time for Svalbard and Norway to find sustainable energy solutions for Longyearbyen and to start building sustainable economies and communities.

4 Karl Benediktsson, "The Industrial Imperative and Second (hand) Modernity," in eds Torill Nyseth and Arvid Viken, Place Reinvention: Northern Perspectives (London: Ashgate, 2012).

5 Ibid.

6 Christine Karijord, "Svalbard hadde 60 000 turister i 2015 — flest utlendinger," High North News 15 January 2016, accessed 22 January 2015, http://www.highnorthnews.com/svalbard-hadde-60-000-turister-i-2015-flest-utlendinger/.

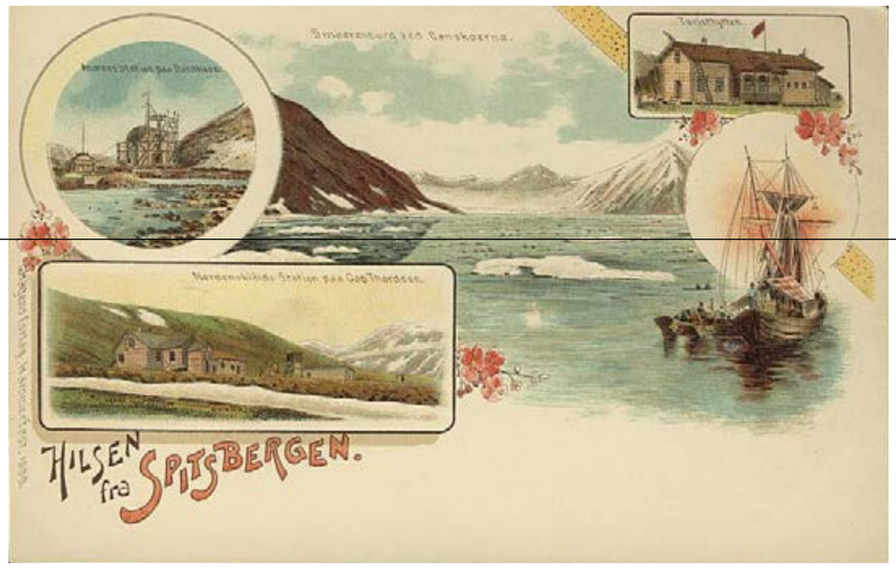
7 UNIS, "About UNIS," Accessed 26 January 2013

The future is in its past in Longyearbyen

The Art of Svalbard, May 23–June 1, 2015

Bill Fox, July 26, 2015

I was in Svalbard specifically to look at public art deployed around Longyearbyen — the statues of polar bears and miners, and the light works on the Global Seed Vault for example — as part of my examination of how a brandscape was being constructed in the Arctic. But I was also interested in the larger realm of art making in the archipelago. One of the first topics to research was 19th century tourism postcards, the earliest of which date from 1896 and tended to feature fjords, polar bears, glaciers, and the midnight sun.

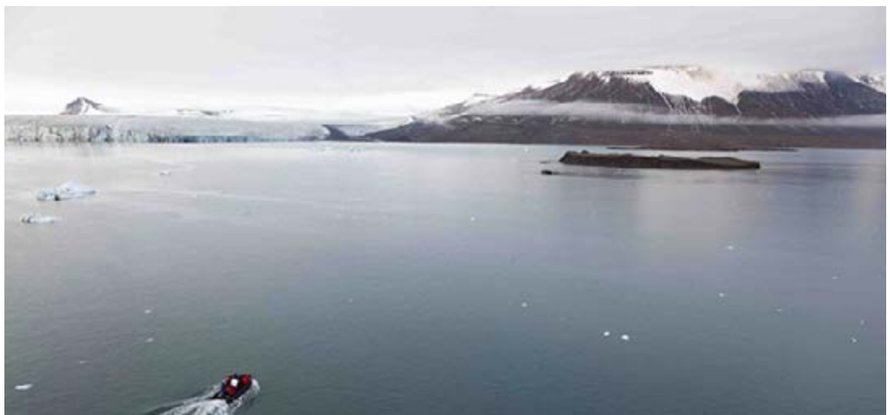


Hilsen fra Spitsbergen ("Greetings from Spitsbergen") printed by G. Hagens forlag in 1899.

Modern-day glossy color postcards focus mostly on promoting touristic views of polar bears and the auroral borealis, and most Svalbard art during the 20th century remained based on landscape painting traditions. This was in line with what I expected, comparable to the branding of the Swiss Alps, the Norwegian fjords, the Grand Canyon and so forth in the Euro-American tradition of the sublime.

But in 2003 the art of Svalbard went decidedly contemporary when David Buckland began taking major contemporary artists, such as Antony Gormley and Rachel Whiteread, to the archipelago in an effort to engage the public with climate change. He has since led eight art & science expeditions to the islands. The popular Arctic Circle program soon offered similar opportunities for a price, although now the best option for artists may be simply to book passage on the ship everyone uses, the ice-strengthened two-masted schooner Noorderlicht, which is stationed in Longyearbyen.

I want to focus on just one artwork arising from those voyages, Nowhereisland by British artist Alex Hartley, who sailed with Buckland in 2004. While circumnavigating Spitsbergen, Hartley found an island about the size of a football field that had recently emerged as a glacier was retreating. He was the first human being to set foot on the tiny patch of newly revealed land, which was eventually named Nyskjæret.



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- The urbanity of Longyearbyen and the fluid territory of Svalbard

Image of Nyskjæret when first discovered. Image courtesy of Alex Hartley.

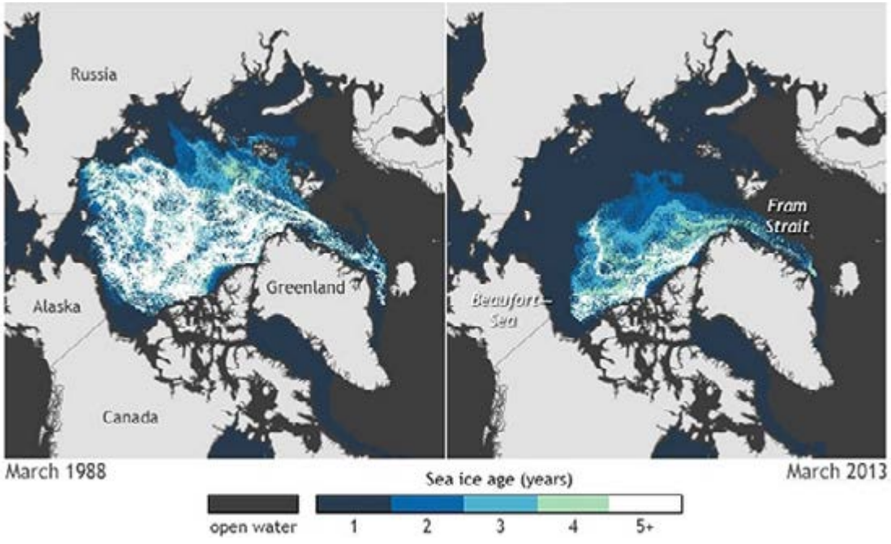
Hartley returned to the island in 2011 and moved some of its glacial till onto a barge. Once Nowhereisland was in international waters, Hartley declared it an independent nation. He then proceeded to have it tugged to Weymouth, England and then around the southeast coast to end in Bristol, a 2000-mile-long journey that ended when the island was dismantled and given away in pieces.

Nowhereisland under tow. Image courtesy of Alex Hartley.

The ice goes out, new lands are uncovered, territorial squabbles arise over national maritime boundaries ... Hartley's intervention is a self-aware land art performance, and he cites, among other works, the floating island barge envisioned by Robert Smithson, Tania Kovats' Meadow barge from 2007, and When Faith Moves Mountains, the Francis Alÿs performance piece of 2002. But it is also political theatre that highlights global warming, international competition for natural resources, and the fickle nature of national boundaries.

Svalbard, by virtue of its location at the limits of sustainable habitability, is like the Antarctic, its communities dependent on outside resources for survival. Unlike the Antarctic, however, it's relatively close to the developed world and thus able to host a range of artists seeking to engage the edge of civilization as an arena for their work. I use the word arena, as any art committed in such difficult locations has an element of performance to it, even just erecting a view camera or a painting easel, much less moving part of an island. Most of the contemporary art made in the archipelago is less about permanent installations, and, very unlike works on the Norwegian mainland that are commissioned in order to attract tourism. is more pointed at issues.

Before Nowhereisland was dispersed, it had attracted 23,003 people from 135 countries to sign up as citizens, who wrote the constitution for Nowhereisland, which in its first iteration consisted of one hundred principles and conditions. It remains online, a provocation about the nature of migration and global change. Nowhere island. Now here is land. No where is land.



Map of Arctic sea ice thickness and extent, March 1988 vs. March 2013. Svalbard is the star-shaped land halfway between the coast of Norway in the upper right and Greenland. Image courtesy of the NOAA Climate.gov team, based on data provided by Mark Tschudi, University of Colorado.

This post was also published at the Center for Art + Environment Blog.
Feature image: A David Buckland "Ice Text" from 2004–2005. Image courtesy of Cape Farewell.

2. A Fluid Landscape

Kathleen John-Alder

A fundamental requirement for individuals who study and design the land is a basic understanding of the term landscape — the medium of their endeavors. It is also a truism that the word landscape is the most discussed, dissected and defined word in their lexicon. For example, in its broadest sense, landscape refers to a physically distinct geographic area that includes both cultural and natural features. (Sauer, 1925) Then there is the fact that the structure, or physical pattern, of the landscape that arises from the interaction of terrain and climate with collective human activities is associated with the production and organization of agriculture, housing, resource extraction, and transportation infrastructures. (Jackson, 1984) These definitions have in turn supported the notion that each landscape has a unique identity and history resulting from the interaction of multiple physical and cultural processes, which raises the issue of documentation and how best to represent these processes as they adapt and evolve over time. (Forman, 1995) No singular method has been agreed upon in regard to this issue, but it is generally understood that the documentation of natural functions will vary depending upon the phenomena under consideration and the discipline undertaking the study. (Harvey, 1996) Thus, a landscape, both physically and conceptually, should never be considered hermetically sealed, or static. Instead, consensus favors the opinion that landscape is a territory best delimited by porous boundaries that are defined as much by dynamic open-ended processes as by location and material content, which, as already indicated, includes physical, social and economic interactions that change over time. (Harvey, 1996) However, the dominant position of the nation state, which is obviously intent on maintaining territorial imperatives and ideologies, upholds strict boundary limits, or at least territorial change that is in its own best interest. (Scott, 1998) Yet if we drop down to the scale of the individual, the conversation turns to experience and feeling. Here it is commonly noted that each landscape's unique sights, sounds and smells serve as physical reminders of a particular event or place. (Yi-Fu Tuan, 1974) These situated impressions, in turn, become intertwined with, and inseparable from identity and memory, and the intergenerational transmission of knowledge. (Said, 1994)

Histories of landscape design further complicate this already complex linguistic terrain. This discourse includes, but is not limited to perspectival space, taste, style, space, time, organic plasticity, the momentary glance, unconscious perception, psychogeography, and cognitive maps. From the mid 17th century through the 18th century, enlightenment rationalism ruled supreme until it was opposed in the 19th century by a romantic, picturesque rebellion. Early in the 20th century technology, speed, and mass-production presaged the rise of a stripped-down, functional modernity. Moving forward into the mid 20th century, computerization and systems thinking structured the debate, only to be superseded by a vision of the earth from space and the defining power and synoptic scope of the aerial view and its controlling, globalized discourse. Post-modern critical theory did nothing to clarify this state of affairs when it deconstructed these over-arching metanarrative into an infinite number of stories and indexes.

Perhaps the best way to summarize this brief discussion of landscape is to reference the following statement made by the cultural geographer J. B. Jackson in his study of the term: 'We think it refers to one thing only to discover that it means something else'. Nevertheless, Jackson was not deterred by this state of confusion, and in fact emphasized the combinatory potential of multiple definitions. When he delved into the etymological roots of the word he perceived a bundle of similar objects and ideas, exemplified by a collection of lands and composition of spaces. Refraining from a singular meaning, or an authoritative definition, he urged his colleagues to focus their

gaze upon overlooked landscapes, and the narratives that arise from everyday actions. This collective character, he further argued, is 'simply the by-product of people working and living, sometimes coming together, sometimes staying apart, but always recognizing their interdependence'. To fully comprehend the meaning of this landscape, we suggested we ask 'who owns or uses the spaces, how they were created, and how they change'. (Jackson, 1984)

Thus, according to Jackson, landscape is not only the universal ground for narratives of habitation — its ground is littered with overlapping layers of grammar and logic. In other words, we can describe the landscape in mundane terms, give it social order, aesthetically perceive it like a painting, and even take it for granted. But no matter how we perceive or treat the landscape, it will remain an essential component of our identity. 'It is', he wrote, 'the slow accretion of all elements in society. It grows according to its own laws, rejecting or accepting neologisms as it sees fit, clinging to obsolescent forms, inventing new ones'. The result is a hybrid field of fluid chronologies marked by territorial conflicts between what is established by tradition and authority, and by what arises in response to cultural change and the introduction of new knowledge. 'Whatever definition of landscape we finally reach', he continues, 'to be serviceable it will have to take into account the ceaseless interaction between the ephemeral, the mobile, the vernacular on one hand, and the authority of legally established, premeditated permanent forms on the other'. (Jackson, 1984)

All of these conceptions raise serious questions regarding the agency of landscape, and these questions become even more compelling when situated within the current debates on climate change. For example, how are regional landscapes delimited and territory defined within a constantly changing global environment? How does climate change impact cultural preservation efforts? How do strategic mining and military interests motivate the stakeholders, particularly with newly exploitable resources? How does memory come into play when the landscape is both a focus of, and defined by mountains of surveillance and monitoring data?

What territorial relationships exist between temperature, ocean currents, trade routes, resource extraction, pollution, and migratory patterns? And how can these complex interactions be presented in a form easily grasped by the general public?

It is exactly this agency and these questions that the studio component of Future North Svalbard addresses. But before we describe how these particular answers were researched and represented, it is necessary to step back for a minute and present a brief history of Svalbard — an isolated, but strategically located, archipelago of rocks and glaciers located 78 degrees north of the equator just south of the Artic Ocean.

For hundreds of years the landscape of Svalbard existed as an incompletely mapped terra incognito — a legendary land of fictional geography, cartographically populated by vast expanses of sea ice and sea monsters. It wasn't until 1596 that Willem Barentsz (William Barents) officially discovered the archipelago, and called it "Spitsbergen" in honor of the eastern shore's jagged, snow-covered mountains. (Polar Institute, 2011) A period of intense resource extraction followed, beginning with an international coterie of whalers who fought over, and ultimately depleted the supply of whales and whale oil. Hunters were next in line, and they derived their livelihood from the fur and ivory supplied by the land's abundant populations of walrus, polar bears and arctic fox. (Wallis, 2011)

When coal was discovered in the late 19th century, mining supplanted hunting as the archipelago's biggest industry. The introduction of this land-based resource extraction, led to the demarcation of the landscape into distinct territories, each with their exclusive ownership claim. Missing, however, was an official means to oversee and regulate these claims.

The Svalbard Act, negotiated in 1920 as part of the Versailles Agreement of World War I, installed a state authority with 'the complete and full sovereignty' over the territory and its water, as well as the power to regulate territorial disputes arising from the mining claims. (Wallis, 2011) With the enactment of the Svalbard Treaty in 1925, the Archipelago of Spitsbergen officially became known as Svalbard. (Polar Institute, 2011) All parties to the Treaty have access to fishing and hunting grounds, however Norway has the authority to ensure their preservation. Existing mining rights, as well as territory occupied by other nations at the time of the treaty, were honored, but again Norway was given the right to regulate and levy taxes these operations. The Treaty forbids preferential treatment by nationality, as well as a military presence on the archipelago. (Sysselmannen Archive, 2011)

A governor — Sysselmannen — appointed by the Polar Department of Norway's Ministry of Justice officially administers the territory of Svalbard. The Sysselmannen resides in Longerbyen, Svalbard's main city, for the duration of their term in office. The population demographics of Svalbard, as recorded by the CIA World Factbook in 1998, was 55.4% Norwegian, 44.3% Russian and Ukrainian, and 3% other.

Of major concern here, at least to the Norwegians and their strategic allies, is how to maintain the Norwegian population advantage and majority stake in the land. The Norwegian government proposes a mix of tourism, research and industry, abetted by tax-free liquor, tobacco and vehicle sales.

Each of these histories has marked the land, and due to the extreme cold, each mark remains, piling up over time like the snow on the surrounding glaciers, covering but never fully erasing the past. This palimpsest is what the Svalbard studio documented, using an ingenious combination of plan and section. The resulting projects delved deeply into the terrain of politics, architectural preservation, artic exploration, whaling and hunting settlements, coal mining, science and technology, and ecological material and energy flows.

To begin their study of the Svalbard landscape, students were asked to empirically explore the site through notes, sketches, photographs, mapping surveys, literature searches, and archives. This was followed by the selection of a topic uncovered during their research, which as noted previously was to be graphically document in plan and section. This, in turn, required the consideration of scale, framing, and accuracy — both compositionally and epistemologically. Critical here is the notion of choice, and what information to include or exclude in their narrative portrayals.

Not surprisingly, the dialogue between the maps and the sections, and their different modes of coding and representing information is one of the most intriguing aspects of this work. The maps use cartographic conventions, defined measurements, and succinct labels to organize and illustrate the territorial dynamics of the landscape. Conversely, the roughly chronological sections detail an imaginative terrain where it is possible to cut diachronically and synchronically through layers of time and space and chart unexpected linkages between objects and ideas. Although both the mapping and sectional operations take into account location, ownership, dimension, morphology and time — the visual language of the maps tends toward grammatical convention and proper punctuation, while the visual language of the sections favors textual deconstruction and exploratory editing. It is when these two methods are combined that synergistic narratives emerge.

Even more intriguing, however, are the insights that surface when the two processes driving the visual production of the maps and sections are considered as analogies for the two processes driving the social production of the Svalbard landscape. This comparison returns the discussion back to J. B. Jackson, who observed the landscape, as both an imaginative construct and physical actuality, is nothing more than a series of accumulated actions reflecting two different political regimes. The first regime achieves legitimacy through convention and authority, while the second regime operates by informal rules, and often as an ingenious adaptation to an unlikely site. If we extend this analogy further what the production of these maps and sections tells us, and what Jackson presciently noted, is the fact that landscape 'is never simply a natural space on the surface of the earth, a feature of the natural environment — it is always artificial, always synthetic, always subject to sudden or unpredictable change'. (Jackson, 1984) In this sense, landscape is not only a place where we overlay social and cultural syntax upon a terrain governed by natural processes of growth, maturity and decay — it is also a language layered with imaginative possibility. And when these narratives intertwine and ripple across space and time, they foment unforeseen events and unanticipated consequences that subvert any preconceived formulation of the term landscape.

BIBLIOGRAPHY

Carl Sauer. 1925. The Morphology of Landscape (Berkeley: University of California Press)

Central Intelligence Agency. The World Factbook: Svalbard https://www.cia.gov/library/publications/the-world-factbook/geos/sv.html, accessed January 2016.

Richard T. T. Forman. 1995. Land Mosaics: The ecology of landscapes and regions (Cambridge: Cambridge University Press)

David Harvey. 1996. Justice, Nature & the Geography of Difference (Oxford: Blackwell Publishing)

John Brinckerhoff Jackson. 1984. Discovering the Vernacular Landscape (New Haven: Yale University Press)

Office of the Governor of Svalbard https://web.archive.org/web/20110723003932/http://www.sysselmannen.no/hovedEnkel.aspx?m=4530, accessed January 2015: See also, The Svalbard Treaty, http://www.jus.uio.no/english/services/library/treaties-/01/1-11/svalbard-treaty.xml, accessed January 2016.

Norwegian Polar Institute Place Names of Svalbard and Jan Mayen, https://web.archive.org/web/20110606113449/http://miljo.npolar.no/placenames/pages/detaile.asp?placeNameID=813614P, accessed January 2016.

James C. Scott. 1998. Seeing Like a State (New Haven: Yale University Press)

Yi-Fu Tuan. 1974. Topophilia: A Study of Environmental Perception, Attitudes and Values (New York: Columbia University Press)

Diana Wallis. 2011. 'The Spitsbergen Treaty: Multilateral Governance in the Arctic' Arctic Papers Vol. 01

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NARRATA
Researcher

I am a bio-enhanced, nuclear assisted narwhal. I keep myself busy by observing and exploring the changing landscapes and discourses of the Far North. My long tooth has special properties. It's an aerial of sorts, able to receive and send information and sense climate conditions and change. I can dive deep and swim great distances. But I am also able to use my special enhanced power to jettison myself out of the water and into the air. Beyond these properties I have developed extra sensory sensitivities that I use to look into the changing landscapes of the future north and the forces of today that may impact on our shared tomorrows.

You might say I am a communicative device, a constructed persona, a mobile apparatus for collaborative communication. A design fiction. Design friction! Read more here to get to know me and how we all need to heed changes in the far north and the ways they are shaped discursively already today. I'll provide you with links and feeds, and a unique opportunity to travel a part of the globe you may find hard to visit yourself.

http://www.oculs.no/projects/future-north/news/?post_id=4118&doing_wp_cron=1573211491.441332

Seamless

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- The urbanity of Longyearbyen and the fluid territory of Svalbard

Narratta, October 30, 2013

I am back in Svalbard. The majestic mountains rise above the sea, my sense of perspective challenged each time I return, the glaciers climbing taller as I approach land and the ice cream thick curls of snow exquisitely untouched by anything we can see at a distance. It appears as though climate change has little effect as I punch my tail up and down through the cool water, powered by own motivations, unsure of what this day will reveal. But I know these surface shots are deceptive. There is a big melt coming by mid-century.

Last night I listened to a bunch of scientists. On a thought cruise I called it. Smart people, bringing their gaze closer in, empirically, on the damage to lichens, the effects of melt water, the accelerated change right here on Svalbard, a place where relatively few people visit but where a third of the worlds low orbiting satellite activity is monitored. I'm still trying to understand these layers of the material and digital landscape, the local and the global, the gradual

migration north of other species and the volumes of data hoovered up and downloaded every second.

The sun is shining again and the water still, like ice. Placid. Primeval. But there is a deliberately massive machine intelligence at work too. And then some 16 or so cruise ships will sail into Longyearbyen and the hamburger bar will for an hour or two seem like a public abattoir of appetite and the long chain of grain-fed imported beef forgotten as the juices flow. The town suddenly a high rise of cabins! Not the Norwegian hytte dotting the shore, mind you, but sea views of a different kind. I'll come back to these floating hotels another day. Today I need to talk about power. No, not my own nuclear restlessness, but other energy forms.

Svalbard is an international 'treaty territory'. I think I made up another word. All the feeds coming through to my tusk produce these neologisms.

It's a strategic location on the global map. Russia and Norway. Side by side. Dug in in earlier times. Following their seams. Coal, I mean. Well, actually their fitting together like seams of different cuts, and also in terms of their geo-political purchase on this remote archipelago. But there's nothing seamless here. The coal mine at Baretensberg still chugging along, several museum sites now at Longyearbyen. The arcs of the Taubanesentralen reaching high above the town. The arc of the satellites higher still. The future a territory now.

http://www.oculs.no/projects/future-north/news/?post_id=4196

Blimp me

Narratta, November 04, 2015

Technologies of seeing, remote sensing, satellite hoovering. Who'd have thought the far north town of Svalbard would have become such a techno-scape. Mines closed, hand drills and the elaborate overhead shuttle system would be replaced by scientists, students and tourists. Hey, it's time to get outta town, this frontier like moon base sorta place I heard one of those Future Northers saying. Students all off on a landscape architecture task to draw sections, see the town differently, scaled and spliced up with new eyes.

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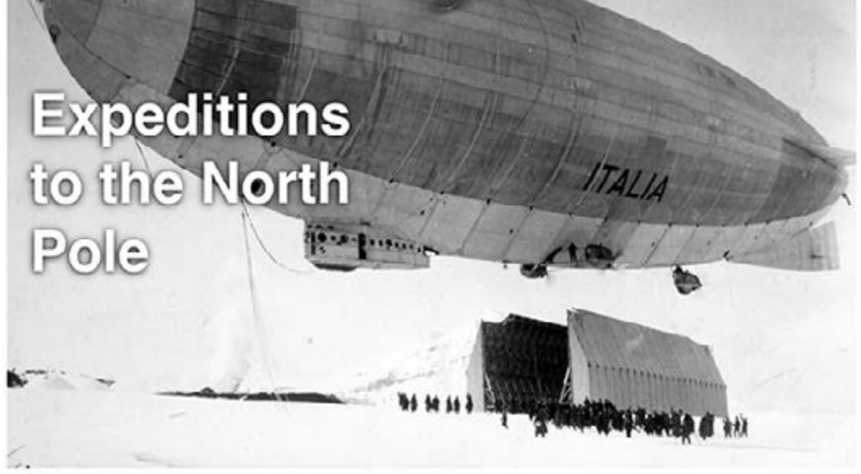

Reminds me of coming across those adverts for the Spitsbergen Airship Museum. Ha! I see it's closed for the dark months. I fly on through the inky skies all year.

The westerly side of the archipelago is largely ice free, with low pressure and currents keeping my seas just crisp. And summers are a treat, with the midnight sun my companion. Not to mention the gaggles of tourists who now bob about their pleasure palaces happy to see a murky lens zoom of a polar bear and her cub oblivious to the onboard lecture on climate change.

Ah, climate toursim. They are so intent on the bears that they done see me floating in the sky behind the vessel, blimp like for a moment, then with a flick of my tail, gone, below the surface, my sensors zinging with the depth.

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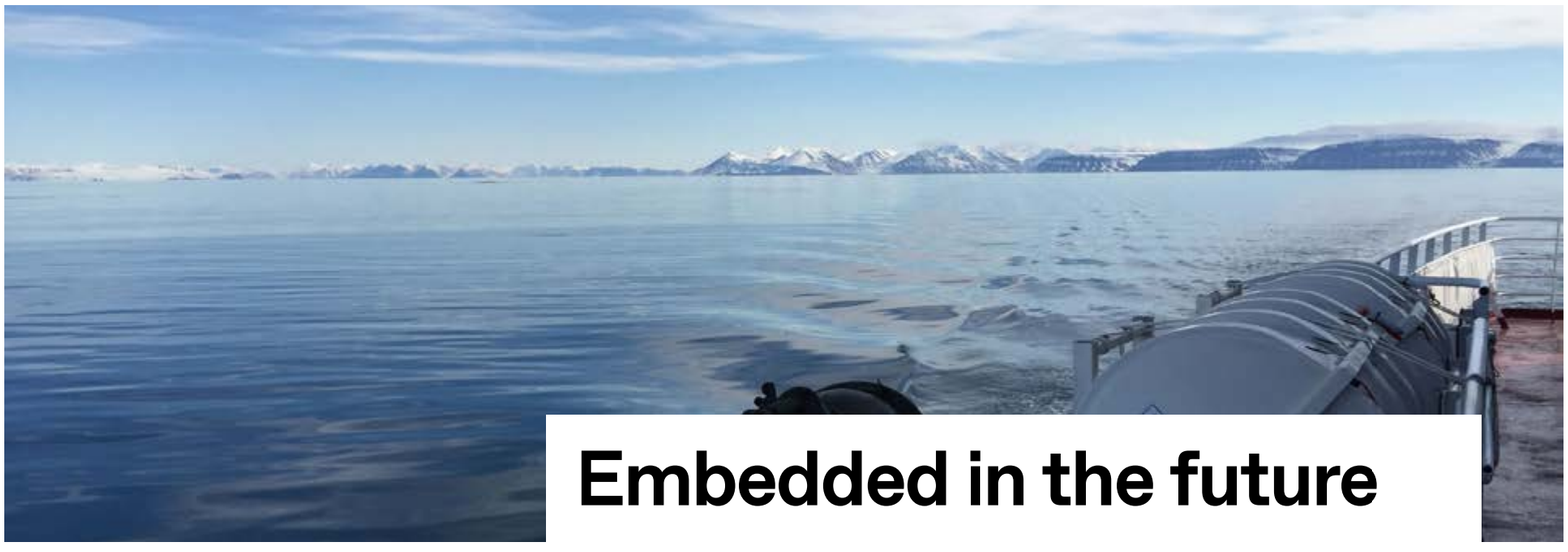

Embedded in the future

Narratta, May 29, 2015

Some days all my nuclear empowerment makes me restless. Anxious even. Shark-like, I survey these Arctic waters. Murmansk, Vardø, Svalbard, across to the east coast of Greenland. And I love to lie shallow bays, chortling to myself with my thoughts of how to reveal the mysteries of climate change to the assemblies of scientists and tourists, behind my back, belly laid bare to the midnight sun, I find I become, well, a little reflective.

When I lurk in harbours, swim alongside ships, tune into the Wi-Fi traffic of researchers and the gaggles of strategic planners, I often wonder if they are really able to think about the future. I have no choice. I'm embedded in it for two centuries at least. It really changes your point of view, well so does being able to shift my electronic self across time, something must have happened as I was powered up, a small glitch crossed not only the materiality of the mammal flesh and the neutrons and electrons, but also my trajectories.

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And there half the time already powered ahead of the curve, the surge, the endless dirge about climate change all about me in the present is a change isn't ever never gained between carbon taxes and emissions policy. Listened to a bunch of them last night, out on an interdisciplinary seminar on the small icebreaker that plows the fiords of Svalbard. I rather unthinkingly linked in to a discussion of face-to-face and online-line partnering between a bunch of glaciologists down at the prow tapping away at their smartphones and one another's shoulders. It was a bit windy for most of them, used to slower moving currents of water wedged across the valleys! An interesting and dedicated crowd. But they had a strange understanding of time. They were actually discussing arctic tourism.

Svalbard, an archipelago arising out of the ocean this long evening, glittering in the evening light, sun bouncing across the fiord, arcs of energy spliced back at me. I relish the cool of the water as I dip down a few metres, then back up, flippers clipping the surface, another late evening in May.

3. Place-Specific Arctic Urbanism

Peter Hemmersam & Lisbet Harboe

NEW PLANS 1950–51. Hugo Lund Andersen o.a., "Byplanforslag i Vestgrønland: Narssaq, Sukkertoppen, Egedesminde, Godthåb". Institutt for eskimologi, Københavns universitet, 1950–51.

We know that the Arctic is urbanising. This urbanisation is not only an economic process but also one that reflects cultural evolutions, changing values, and lifestyle choices. However, for decades little attention has been paid to the actual urbanism and design of cities in the region. The urbanism and planning in today's Artic have to capture contemporary cultures, values and lifestyles in each specific place.

Arctic communities are considered to be climatically marginal places and most of them are also marginal in terms of social and economic development. The planning of Arctic communities still largely happens within the modernist master-planning framework, which prescribes measures for the welfare of the inhabitants and the physical layout. It is based on an idea of pre-set or standardised provision of services, dwellings, urban layouts, and social and educational facilities. Characteristic of this model is functional zoning that separates living, working and free-time activities and industrially produced housing units. The modernist model prescribes a utopian but also highly rational and healthy, well-organised physical planning that eliminates practical and social problems.

The New Towns of European satellite cities but also Arctic city developments proved the modernist model to be highly questionable. Social problems seemed just to explode in these 'place-less' and abstract housing complexes. Inhabitants' lack of identification with their urban environment was the key theme in post-modern critique of this planning regime.

The post-industrial, post-modern, urban discourse in Western Europe and elsewhere has broadened to include 'Communicative Planning' procedures[1] as well processual dimensions and individual initiatives with regards to different aspects of cultural, social, physical and economic development. Yet, modernist planning has largely persevered in Arctic communities. There might be many reasons for this.

Debates on Arctic communities have been dominated by anti-urban identity discourses based on the dichotomy between colonial modernisation and indigenous ways of life. As a result, local and indigenous populations have had little room for re-evaluating the design of their cities as contemporary urban environments.[2]

The emphasis on a harsh climate is yet another reason why modernistic planning is so persistently present in Arctic communities. Planning here is still centred on Arctic survival and the robustness of infrastructure. Urban layouts tend to focus narrowly on microclimates and urban 'hardware' such as: roads, airports, pipes, functional build-

1 See Healey 1992, 1996, Innes 1995, Forester 1994

2 Dybbroe, 'Is the Arctic really urbanizing?'.

3 Provoost et al., WiMBY! Hoogvliet: The Big Book: Future, Past and Present of a New Town.

ings, and so on. However, looking outside the Arctic, one finds other, contemporary forms of urbanism that increasingly acknowledges the complexities of this relationship as the basis for the design and planning. Crimson Architectural Historians, who prominently includes Wouter Vanstiphout and Michelle Provoost, have called this new planning regime 'contextual urbanism' in opposition to the old modernist, but still evident 'technocratic urbanism', which, focuses on the 'hardware' of the city and the efficiency of a the masterplan.[3]

The story of Blok P in Nuuk, the capital of Greenland, provides an example. To modernize Greenland, parts of the indigenous population moved from smaller settlements to brand new and efficient housing blocks in town. Blok P was erected in 1965. It soon acquired a reputation of social problems.

In 2012 the housing block was demolished and all inhabitants were resettled. Post-modern housing typologies replaced these homes, however, the paradigm and the logic of modernistic urbanism remain: Inhabitants had again to leave their homes and move — as part of a comprehensive, design- and hardware-based solution to a social problem. So while a modernist regime is no longer evident in building forms, it persists as a conceptualisation of planning practice.

In contrast, Crimson's 'contextual urbanism' values the existing, imperfect and even contradictory urban environment, including the planned as well as the unplanned. The concept challenges the lingering notion of a deterministic relationship between the physical environment and people. The conceptualisation of a context includes not only the minimum, such as climate, landscape and cultural heritage, but starts with the mapping of the everyday city, making no distinction between physical and non-physical aspects: buildings, landscapes, but also uses, mental images of the city and ideas about the future.

In this approach, design proposals are simply extensions of what is already there, and according to Crimson, "formulated from the standpoint of the continuity of the city as analysed" and "implemented as series of more or less mutually independent interventions, of limited scale although with an impact on the whole".[4] The quality of these urban interventions will depend on how planners seize the physical, infrastructural, economic and cultural opportunities that are already present and how they are moulded together into something new. Again quoting Crimson, the "recipe for renewing an urban area must spring from an interpretation and amplification of its existing qualities."[5]

In order to capture the various aspects of the urban context, Crimson coined three categories: 'hardware', 'software' and 'orgware'. 'Software' refers to the ideas, images, memories, opinions, and plans of residents, visitors and professionals while 'orgware' describes the organisational complex of institutions, enterprises and civic society. This framework helps the urban designer and planner to capture compound urban environments. The model goes way beyond addressing the climatic function of buildings and the efficiency of infrastructure, to capture a complex of physical and non-physical aspects — including the inhabitants' desires and their initiatives. The process enables a meaningful co-creation of place rather than the reductive modernist fabrication of space, while at the same time acknowledging the socio-economic framing conditions of the (re-)design of cities.

What does a contextual urbanism and the concepts of 'hardware', 'software' and 'orgware' contribute to the analyses of Arctic cities — such as Longyearbyen or Tasiilaq on the east coast of Greenland? We have explored these questions at the Oslo School of Architecture and Design, students and researchers together. Analyses are not limited to the surveying of topography, built structures and cultural heritage artefacts, but cover every aspect of contemporary urban life. However, to cover every aspect is an impossible task. Yet, to reach wider and include a complexity of issues is feasible.

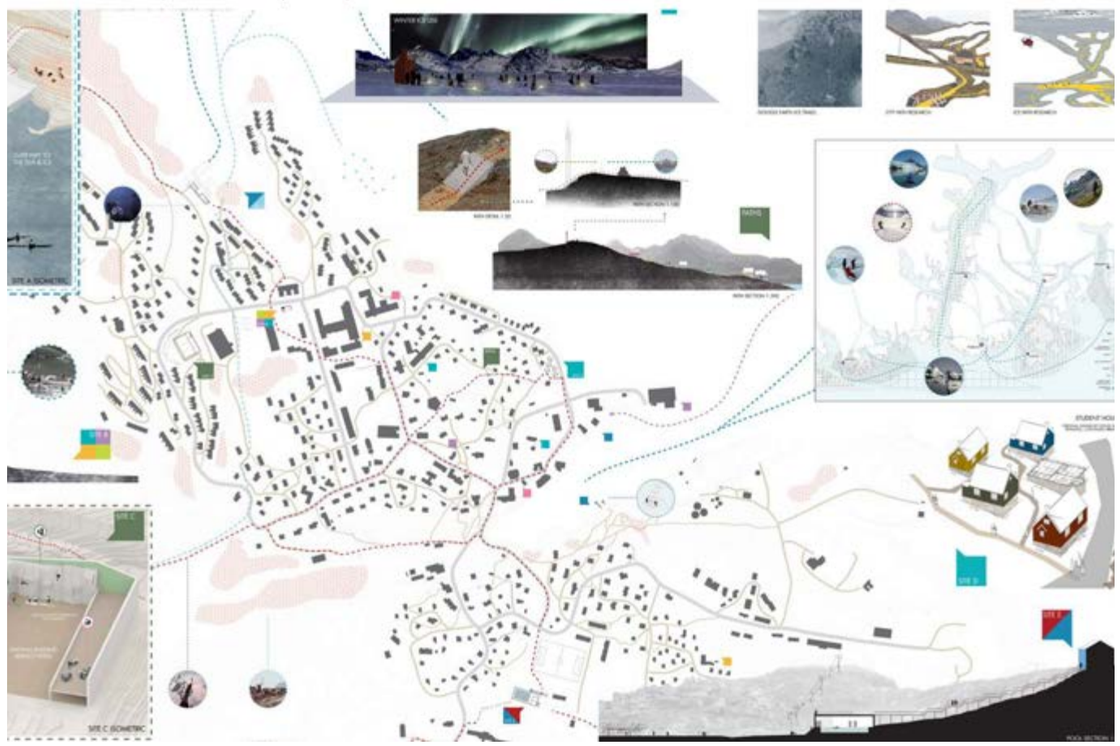
In the on-site mapping, 'hardware', 'software' and 'orgware' are not separate analytical categories. We do not map built structures and infrastructure as simple hardware but rather as complex local material cultures — both the formal technical solutions and the informal, innovate solutions as cultural expressions of everyday life.

Contemporary urban living in the Arctic areas includes in most places an intimate relationship with the surrounding landscape

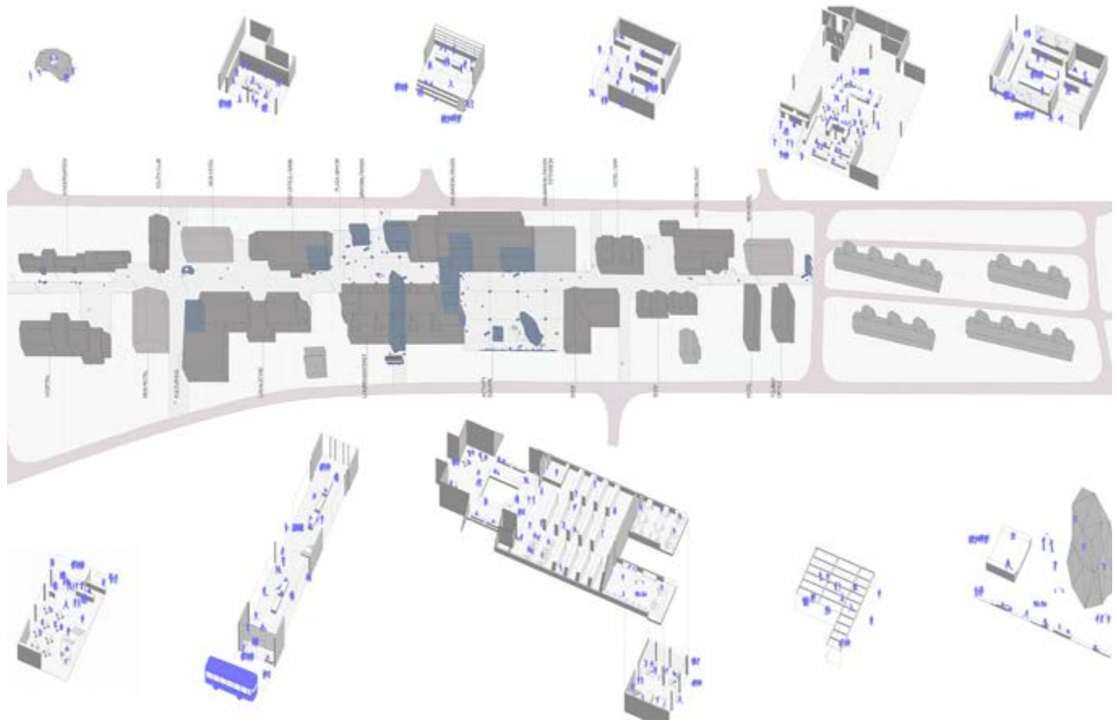
4
Ibid. p23

5
Ibid p24

Town centre of Nuuk with Blok P, the largest apartment building in town (and in all of Greenland). (photo: Vincent van Zeijst, CC 3.0)



Greenlandic Guide Training Centre, Tasiilaq, Greenland by Jack Hughes, AHO student, 2014.



'An (Extra) Ordinary Street', City Centre, Longyearbyen by Alberto Barea and Nadine Schmauser AHO students, 2015.

— being it in the form of resource extraction, hunting and fishing, or outdoor life. In Greenland, hunting still is the main occupation for many inhabitants in the villages. In the cities, it is more often an integrated part of the contemporary urban life as a leisure occupation. So, as we map, we not only look at formal systems of transportation, but also the routes and locations of a variety of outdoors activities by inhabitants and tourists, by young and old.

Seeking to move beyond notions of a rational and functional city in which urban form 'maps' pre-identified 'functions', we attempt to bring out a multitude of contrasting or even conflicting views on the city and the variety of practices taking place in and in relation to the city. This includes, for instance, how youngsters, business owners or tourists regard and use the urban environments.

Present businesses, future plans and potential entrepreneurial resources have to be mapped — both as 'hardware' and 'orgware'. The latter also includes individual human resources, entrepreneurs and movers of the local communities.

Urban design proposals by our students result from this mapping of Arctic cities and are, in Vanstiphout and Provoost's words, "formulated from the standpoint of the continuity of the city as analysed". They are of "limited scale although with an impact on the whole."[6] So, these projects are multi-dimensional: They make use of, and reconceptualise, existing physical and non-physical qualities. They address conflicts and potentials revealed in the analyses. They bring into play a multitude of assets found in the city.

The project by Jack Hughes for a Greenlandic guide-training centre in Tasiilaq demonstrates the approach. In order for the project to have a real impact in the city, the proposed educational programme was designed as an integrated, decentralised part of the urban environment, including into the project: human assets, organisational structures, buildings and spaces. Organisationally, socially and physically, the training centre will not be one singular, insular object, but rather an organic part of Tasiilaq, bringing together traditional indigenous skills and modern lifestyles. The project illustrates a way of opening for local re-designs and re-conceptualisations of Arctic urban living.

The project for the Longyearbyen city centre, by the students Alberto Ballersteros and Nadine Schmauser, demonstrates concretely how to build on to an existing ordinary urban fabric — making the ordinary — into something out of the ordinary. The city centre, we found, is an active hub of people, services and activities. People meet here! Yet, the place only receives limited attention — compared to the surrounding natural landscape. The project demonstrates how this — a bit dull-looking — city centre can enrich the quality of urban living in this Arctic city: how ordinary activities can become visible for both locals and visitors, and the extraordinary local scene can enrich the experience of the central urban space. In the proposal, shops were opened to the street, windows and entrances were added, and playful urban elements like climbing tower and fireplace were added. Also, a daylight space was introduced in to the street, and the passage through the existing shopping centre was extended to create a public space.

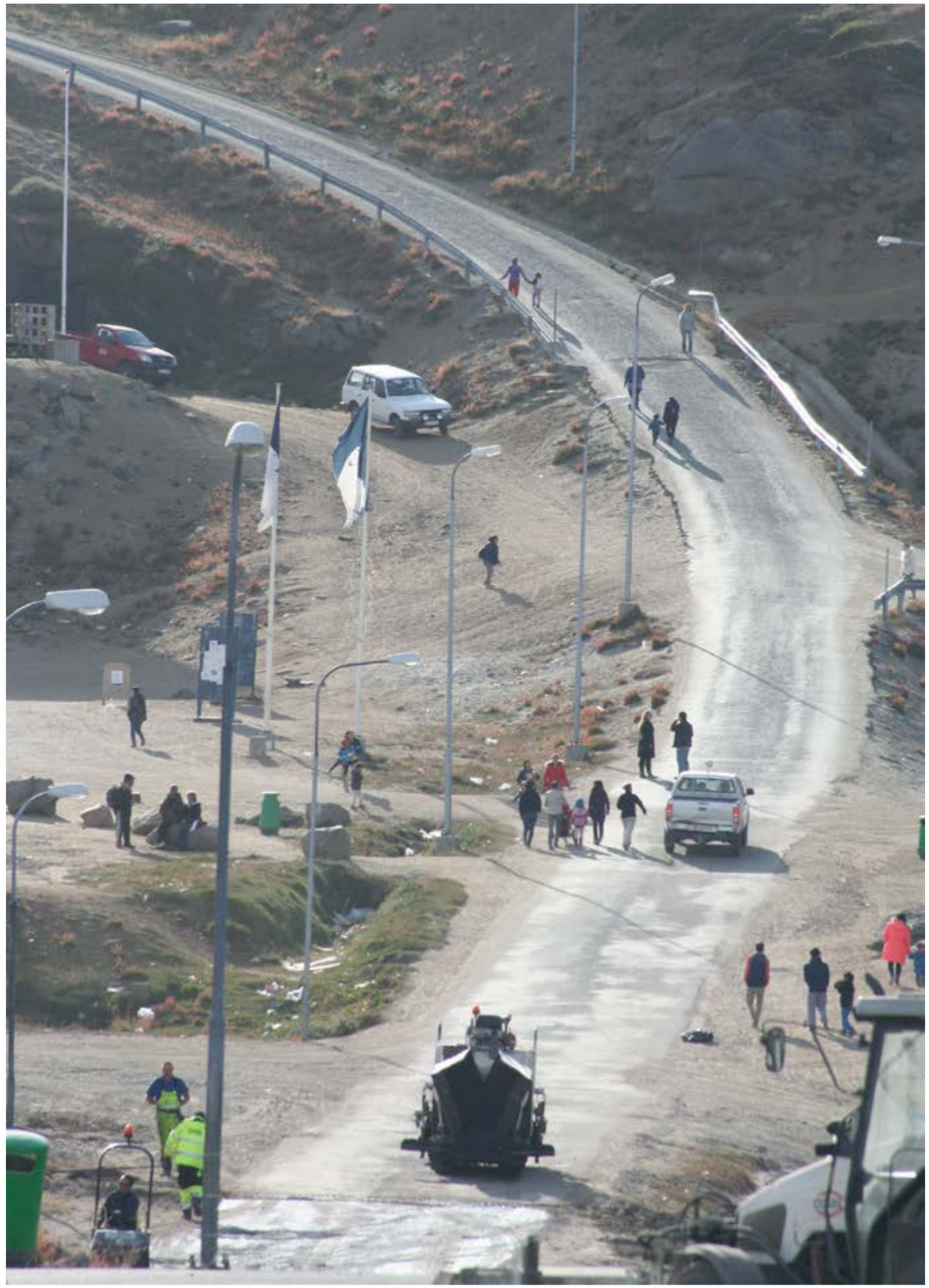
The utopian modernist logic is still found in the planning of Arctic cities — even though architectural forms have changed to 'mimic' greater diversity of uses and modes of architectural production. In our contrasting approach, 'hardware', 'software' and 'orgware', are not discreet categories, but they collectively indicate important dimensions of a 'contextual urbanism' as a contrast to the 'technocratic urbanism' of modernism.

The contrasting perspectives illustrate an important aspect related to the post-colonial discourse on the Arctic by highlighting the tensions between paternalistic narrations of urban life as constructed from the outside and the perceptions based on the use of the everyday urban environment.[7] Despite the good intentions of architects, planners and decision makers, the architecture and urbanism of Arctic cities is still largely the result of projections from afar — either from southern capitals, or from the utopian standpoint of modernist planning. The often-quoted 'father' of Arctic architecture and urban design with a human touch, Ralph Erskine, is yet another representative of this approach.

There is a need to move beyond the meta-narratives of, for instance, industry versus environment or modernity versus aboriginality, in order to reveal the complexity of urban life in the cities of the North. In developing an urbanism of the Arctic, one has to move beyond notions that they are in need of 'development' according to social narratives of idealised or abstract norms. Rather, we need to continue to explore ways to capture and express the contradictions and richness of urban life, and to evolve Arctic cities as complex, diverse places in ways that are relevant to their inhabitants. We do of course see this already in the major cities of the Arctic, such as Tromsø or Murmansk, that are broadly considered 'cultural' urban spaces in their own right.

6
Ibid. p21

7
Bravo, Michael T. 'The Postcolonial Arctic'. *Moving Worlds* 15, no. 2 (2015): 93–110.



City street in Tasiilaq, Greenland, 2014

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Three Futures for Longyearbyen

Peter Hemmersam, August 30, 2015

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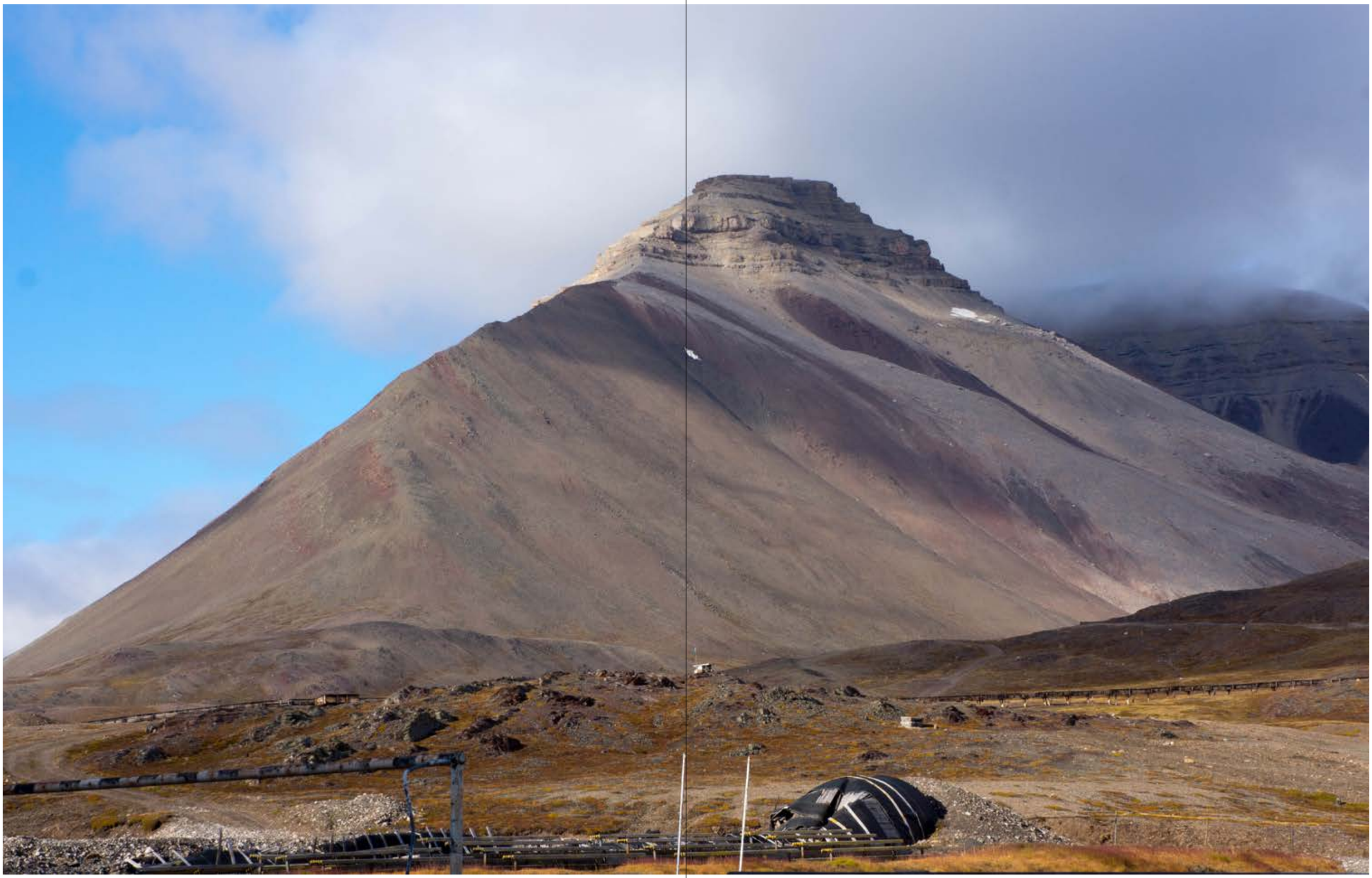
Longyearbyen, the 'capital' of Svalbard (or Spitsbergen as it is called by some), is a lively community that is now facing closure of its cornerstone-industry: coal mining. World market prices have plummeted, operating costs are high, and coal power is perhaps too much of a paradox for the Norwegian government priding itself on sustainable energy and environmental protection of the archipelago's wilderness.

1. TIGHT FOOTPRINT
From the future Governor of Svalbard (currently the General Director of Norway's Polar Affairs Department) Kjerstin Askholt, we learned that the policies for preserving Svalbard's untouched wilderness trumps all other considerations. At the same time, maintaining a Norwegian population and building a family society is important for geopolitical reasons. One important tool for overcoming this apparent conflict, involves restricting access for both locals and the 150,000 tourists to areas close to, or inside, Longyearbyen. In other words, Longyearbyen is necessary in order to support Norwegian

sovereignty and governance over the archipelago, and should be where the human footprint on Svalbard is concentrated. In other words: to keep the surrounding landscape 'untouched'; Longyearbyen has to continue being the place where you do all the shit.

2. ARCTIC METROPOLE
Tourism manager Ronny Brunvoll elaborated on the importance of developing Longyearbyen as a tourist destination (a 'sub-brand' to 'Svalbard'/'Spitsbergen'). Too many tourism operators organize ten hour snowmobile expeditions, while simpler and more accessible activities in and around Longyearbyen could draw new segments of tourists, and fill hotel beds in the dark months of the year. Achieving this would require an enhanced 'arctic-ness' in this otherwise slightly scruffy mining town. It should become an urban destination in itself by highlighting the contrast between the ordinariness of life and the extreme environment. Perhaps a new Arctic metropolitan architecture is necessary to increase the photogeneity of Longyearbyen?

3. SUSTAINABILITY SHOWCASE
Architect Arvid Ruud from LPO told us about his vision of Longyearbyen as a sustaibability showcase for Norway. Svalbard is already an international showcase for Norway, and prime ministers and diplomats come here to meet Norwegian politicians promoting Norway's ethical profile as guardian of untouched nature, and of the World's crop genes in the Global Seed Vault. Norway is in transition Ruud argues, from being an oil and coal producer to becoming a greener society. It has also saved money that could be spent on this transition, and he suggests that Longyearbyen could become a kind of laboratory, as it's adverse environment and isolated location would make a 'green city' here a high profile achievement for the government (Think Masdar City in Abu Dhabi).



4. Svalbard — A Fluid Territory

Janike Kampevold Larsen

The geology of Svalbard leaves an impression both of stability and flux. Enormous talus fans of rushing sand and water shape the mountain slopes and arrange striking patterns along the beachfront. This particular fluidity of masses contribut to create a general pattern of modules and pyramidal shapes wherever one turns one's eyes.

To a contemporary landscape gaze, Svalbard presents itself as mass — masses of rock, masses of ice, masses of coal. And it has received attention for all of these — from geologists, glaciologists, and mining companies. It does however also present itself as the very opposite — as ephemeral qualities of light and expanse — an expanse of pristine wilderness, glaciers and teaming wildlife. It receives attention for these as well, from the at least 50.000 tourists that arrive with air-planes and cruise ships every year.

SVALBARD AS BORDER

Eighteenth century travelers related to the Arctic (and the Antarctic) as an indescribable emptiness. Literary scholar Cian Duffy claims that the discovery of the polar regions was "the discovery of absence, the discovery of the inhumane. [...] silent, frigid emptiness"[1]. The regions were hostile, not only to human life, he argues, but to imagination itself. This aligns with Kant's definition of the mathematical sublime — an experience of complete perceptual shortcoming in the face of magnificent phenomena and events. Other representations of the Svalbard landscape reveal what might be called an object-related sublime. One of the first Norwegian geologists, Balthazar Mathias Keilhau describes Spitsbergen's glaciers in 1827 as holding a "rædsom kønhed" — a terrible beauty.[2] Early travelers like George Shelvocke, describe their journey around the coast of Svalbard as being terrifying because they were: "[s]eparated from the rest of mankind" — they would have no chance of receiving help or assistance if anything went wrong.[3] The 'polar sublime' of these explorers is signified by an experience of extreme coldness, bad weather, the solitude and isolating felt as the travelers ventured close to the archipelago, or into the ice, or into the land. This is a sublime that is more in line with Edmund Burke's sublime — the experience of awe or fear is related to the quality of the objects encountered:

> Whatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime; that is, it is productive of the strongest emotion which the mind is capable of feeling.[4]

There seems then to be roughly two versions of the sublime — that of the awe inspired by the vastness and harshness of the territory and the perils it represents, and that which is connected to the impossibility of even imagining the degree of emptiness and inhumanness of the territory. The first is based on a conceptual distance between human cognition and natural force, (Kant), the second on the actual distance between one's body and the witnessed event (Burke). Both are based on a distance to the territory.

Present day encounters with Svalbard as territory are quite different — whether they are by researchers, tourists, or coal miners. Tourists may have an impression of Svalbard as untamed wilderness harboring imminent danger still, but we all arrive by plane, tour the fjords on cruise boats, and may tour the inner territory safely on skis, provided good planning and the correct equipment. The compellingly beautiful beaches are strewn with remnants from old mining and hunting activities dating back about 400 years, to the early whaling and blubber industry that commenced in 1611.

What we see are landscapes of use. We pay attention to how mining has changed the

1 Cian Duffy, *Landscapes of the Sublime 1700–1830: Classic Ground* (London: Palgrave Macmillan 2013), p. 104

2 Balthazar Mathias Keilhau, *Reise i Öst- og Vest-Finmarken: samt til Beeren-Eiland og Spitsbergen: i Aarene 1827 og 1828* (Christiania: Johan Krohn, 1831), p. 136.

3 George Shelvocke, *A Voyage round the World by Way of the Great South Sea* (London, 1723), pp. 72–73. Quoted by Duffy, ibid., p. 108.

4 Edmund Burke, *Burke, Edmund. On the Sublime and Beautiful. Vol. XXIV, Part 2. The Harvard Classics. New York: P.F. Collier & Son, 1909–14; Bartleby.com*, 2001. www.bartleby.com/24/2/. [June 12, 2019].

landscape — and created new ones. We document the tailing mounds at Hotellneset, white mountains converted to black hills of coal waiting to be consumed in the district heating plant. Student Rasmus Weitze documents how new micro landscapes are emerging from the coal beds that have come to make out the ground at Hotellneset since coal mining commenced in Longyearbyen in 1907. The area also stores considerable amounts of arsenic, chromium, selenium, lead, mercury and cadmium that seep into the vulnerable fjord at a steady flow.

From a boat deep in the Billefjord, we have an infatuating view to the Nordenskiöld glacier from the boat. Our drone however reveals the extent to which that too, is a nature affected by culture. What looks like a couple of hundred meters of melting is in fact more than a kilometer our drone reveals. On the other side of our boat sits Pyramiden, the Soviet mining town that was abandoned in 1992. Between 1956 and 1992 coal was extracted at three different levels of the mountain. Our tourist view to the glaciers is disrupted both by the aerial view that reveals the degree of its melting, and by the coal production landscape of Pyramiden.

It requires a degree of imagination to realize that is it the coal and our dependencies on it that by analogy has looped from Pyramiden on our left and onto the glacier on our right.[5] We are certainly amazed at Spitsbergen's geology, its shapes and materialities; at the layers of industrial residue on the ground, at the prolific mining infrastructure, at the glaciers — their blues and volumes of ice. Yet, we are caught in a weird imaginary loop knowing that what we look at is changing due to us and our kind, and that even flying there to see it we have contributed further to its change. We may be distanced from Svalbard's shores to a certain extent, but they are not sublime. They are cultural landscapes. Yet, the old-fashioned distance of the tourist gaze, the joy of landscape splendor, collapses into a deep intimacy.

THE INTIMATE SUBLIME

It has become a well-accepted fact that we are living in the era of the Anthropocene, an era where humans' influence of the globe is so extensive that it is significantly altering its systems and chemical compositions, from the atmosphere and all the way down to the bottom of its acidifying oceans.[6] Philosopher Timothy Morton associates the Anthropocene with what he calls agrilogistics[7] — a certain logics of agriculture that occurred in the Fertile Crescent some thousands of years ago.[8] The development of an efficient agriculture depended on a number of subroutines: the elimination of contradiction and anomaly in the cultivated land, an establishment of boundaries between the human and the non-human, and an effort to maximize man's existence. This basically implies that man, by moving into large-scale agriculture, would take control of the cultivated environment and make it manageable, which again implied turning the earth into an object that could be controlled. Humans became un-intimate with the Earth, distant to it by way of a need to maximize consumption and profit. Extraction of carboniferous fuels like oil and coal is a continuation of this logics of controlling and objectifying the world and its resources.

Svalbard has been a purveyor of this one other thing besides agriculture that is still contributing to changing the atmosphere, and along with it the ecology of the Svalbard archipelago. At the same time, Svalbard is the place where the most rapid temperature changes are being recorded and monitored, where the content of methane in the atmosphere is increasing most rapidly, where the effect of sea ice on animal populations may be most easily observed. Svalbard now is a territory subjected to human forces that we long since have lost control over — and as it is melting, we make it still contribute to its own change as we extract coal from its ground. The sand and pebble material shaping into fantastic pyramidal forms along the beaches have been affected by global warming already, and will be even more so: Erosion will increase following increased precipitation, which means not only will geohazards increase, but the territory will lose much of its topographical characteristics. A warming climate leads to thawing and freezing in the winter, which affects the grazing conditions for rein deer, glaciers are retreating, the composition of species in polar waters are changing, the winter sea ice is diminishing posing problems for nesting seals as well as diminishing the salinity of the ocean. Not the least: the melting glaciers that are veritable archives of atmospheric transport and global pollution since thousand of years ago, are melting. Volcano ashes dating back thousands of years, byproduct from carbon resources, soot from burning forests, radioactive fallout, and pollen: These are a few of the archived residues that allow researcher to project from past climate change to present and future climate change, and which will get lost.

Today, if we can at all speak of a sublime in relation to Svalbard, it is produced by that which we cannot yet perceive in its full effect, and especially not visually: climate change. The sublime is not an effect of the talus fans, nor the beach lines, nor the great white beyond. The one thing that is incomprehensible is the speed and degree of the changes that are working on all the atoms of the territory. The idea that nature is larger than us, superior to us, a vast expanse beyond comprehension, has long been superseded by an acknowledgement of the fact that nature is not separate from us, it is an intimate mesh of human and nonhuman factors.

5 For a more extensive account of this scene, see my article 'Landscape in the new North', in *Future North, the Changing Arctic Landscape*, J.K. Larsen and P. Hemmersam (eds) (London: Routledge, 2018).

6 We could maybe better refer to it as the Chthulucene, embracing Donna Harraway's definition of an era where human and the non-human are inextricable linked. See Donna Harraway, *Staying with the trouble, Making Kin in the Chthulucene* (Duke University Press, 2016).

7 Timothy Morton, "How I Learned to stop Worrying and Love the term Anthropocene", Cambridge Journal of Postcolonial Literary Inquiry, Cambridge University Press, 2014 doi:10.1017/pli.2014.15, p 1.

8 The Fertile Crescent is an area of fertile land in the Middle East, extending around the Rivers Tigris and Euphrates in a semi-circle from Israel to the Persian Gulf, where the Sumerian, Babylonian, Assyrian, Phoenician, and Hebrew civilizations flourished.

We can put the paradox differently, as does literary scholar Benjamin Morgan:

> Among the many ironies of the present era of climate change is the fact that regions that had for centuries dramatized the fragility of human life have, in a few short decades, been refigured as representing the earth's profound vulnerability to collective human agency.[9]

In short: territories that used to inspire terror in travelers, are now demonstrating that it is we who are the terror. It is we who obliterate them. This entails that the Arctic now is doing a very different kind of cultural work than it used to do. In the context of this text it means that the Svalbard territory no longer poses as an imaginary of obliteration, terror, or as individual subconscious anxieties, as Katherine Bowers suggests is active in the polar sublime.[10] It provides an abysmal experience of melting and becoming fluid of that which we thought was solid; a whole territory assumes the character of a slowly moving geologic force of change, and it literally changes as we watch. The 'sublimity' of climate change is a sublimity of intimacy. We are still, ontologically, at a distance from what we look at and admire, but as a species we have marked it profoundly in and by our consumption.

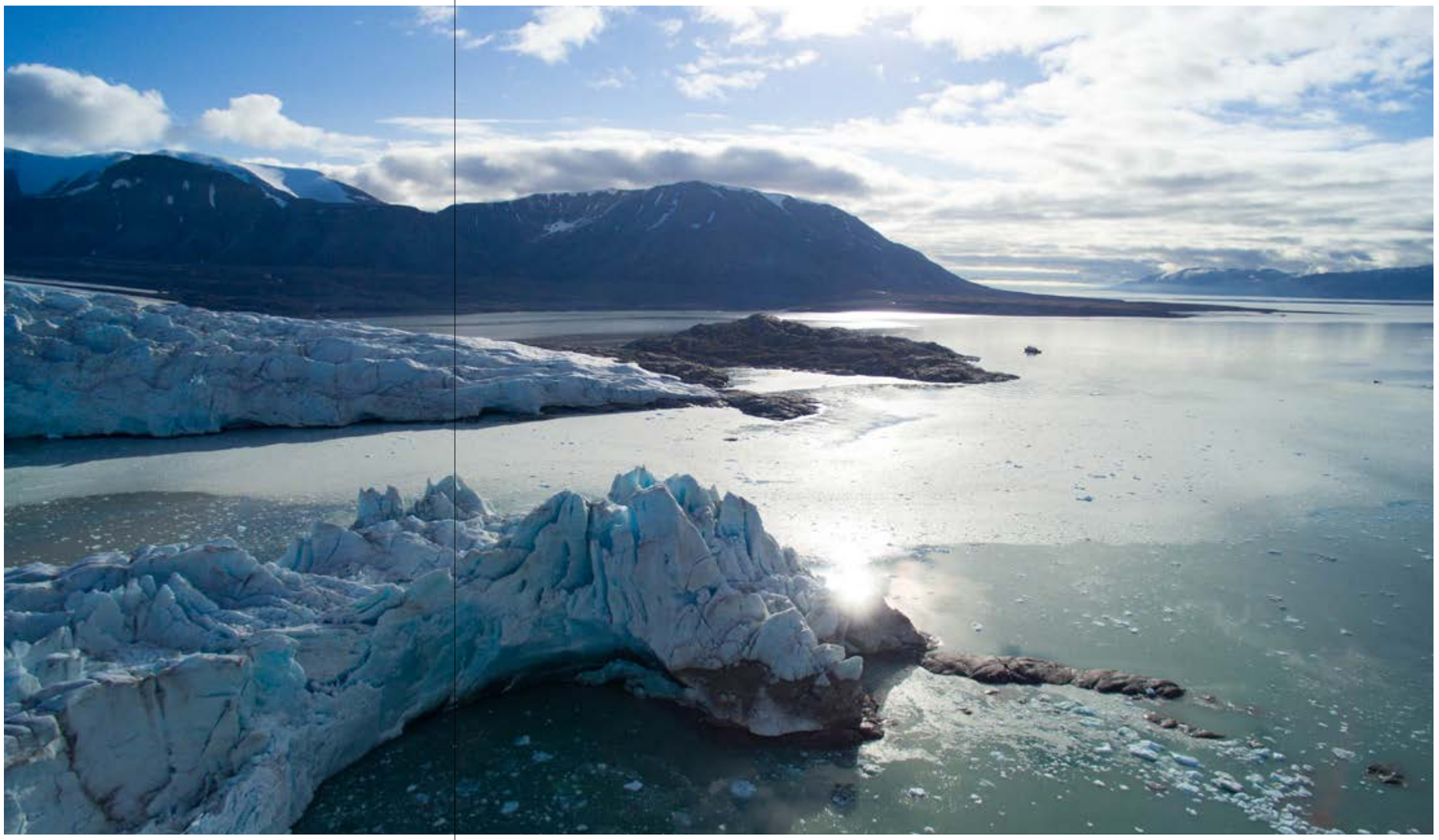


Photo still from drone video by Riccardo Pravettoni, 2015

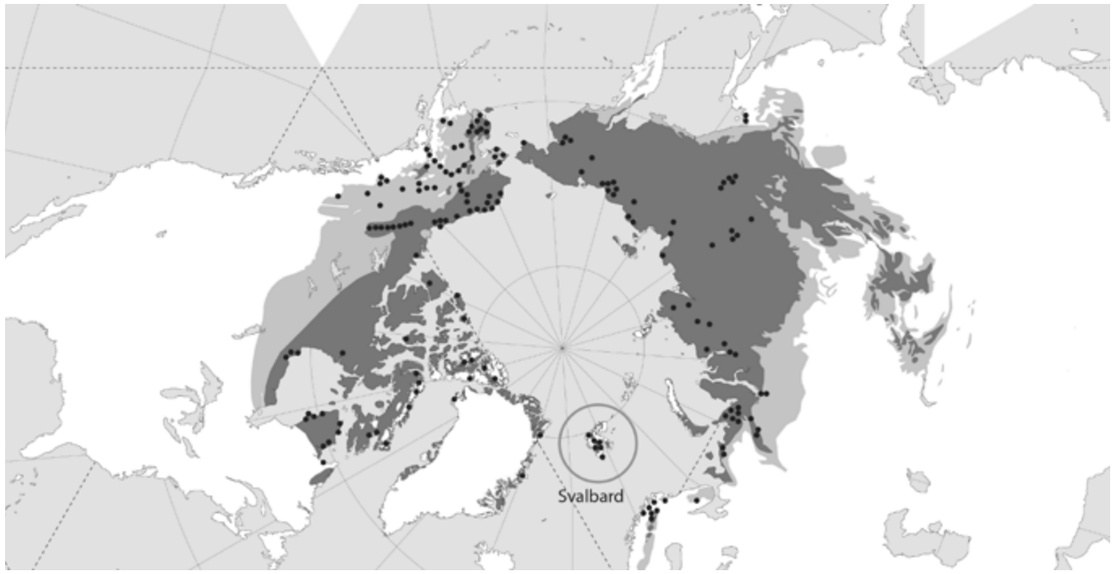
9
Benjamin Morgan, 'After the Arctic Sublime', in New Literary History, Volume 47, Nr 1, Winter 2016, pp 1–26, p. 3.

10
Katherine Bowers, 'Haunted Ide; Fearful Sounds, and the Arctic Sublime: Exploring Nineteenth-Century Polar Gothic Space', in Gothic Studies, Vol 19, no 2, 2017, pp. 71–84. DOI: https://doi.org/10.7227/GS.0030

5. Active Layers

Eimear Tynan

Environmental change is occurring at unprecedented rates in the Arctic. One of the key concerns is the warming of the Arctic and its repercussions. Thousands of research projects are being conducted by scientists in this region to record and monitor these changes. Arguably, it is a scientific vantage point that has framed how we anticipate our future. It seems timely then that landscape architects engage with scientific research to understand the extent of these changes. Scientific research is often removed from the social and cultural dimensions of the Arctic with a lot of findings ending up exclusively in scientific papers. There are gaps existing in this intermediate layer between science and society that landscape architects can connect. By deciphering complex scientific information an awareness and a framing of pertinent issues can be brought about to highlight some of the changes occurring in Arctic landscapes today. A Masters research project, undertaken by the author in 2014–2015, investigated ways in which engagement with science and scientific methodologies could be explored in order to bring about an awareness and understanding of a warming Arctic. The main subject of the project was on permafrost. Global warming has triggered a thawing of this vulnerable physical layer, resulting in changes to ecosystems, hydrologies and carbon release, in addition to increased phenomena of geo-hazards. Permafrost is ground that is frozen for two or more years. It includes all types of soil, rock or organic material that is part of the ground. Increasing global temperatures are, however, causing a thawing of permafrost. The intense scientific research on the subject of permafrost has affirmed that far from the ground being frozen and static, it



Continuous (dark grey) and discontinuous (light grey) permafrost in arctic and sub-arctic regions with dots indicating permafrost research locations

Original map source: Kartdata © Norsk Polarinstitutt, Longyearbyen lokalstyre, Store Norske, Sysselmannen og Telenor

is dynamic and in constant flux. The changes that occur underground influence the landscape above. Just above the permafrost layer is the active layer which is seasonally frozen ground. It freezes in winter and thaws in summer. As the climate warms the active layer increases in depth while the permafrost layer thins. It is this layer that became the focus of the research.

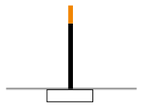
Following a trip to Longyearbyen, in Svalbard, it became apparent, that the dominant infrastructures remaining from the mining industry were vulnerable to the conditions both above and below the ground. These modern ruins from the coal industry create strong trajectories across Longyearbyen. Inspired by these infrastructures, it seemed appropriate to adopt a new line of infrastructure in the form of a scientific line of research and monitoring. Scientists in Svalbard have, up to now, created lines of permafrost monitoring sites but on a relatively small scale and generally on flat areas of ground. With a longer line of research traversing different ground conditions and at different elevations a very rich and informative research could be derived from the landscape and shared and compared with other research sites in the arctic.

The line followed a previously constructed cable line (taubane). It was used to carry coal between Mine 2A and Taubanesentralen. Although very little infrastructure from the line remains, it is a protected sight line across the town. In addition, the line is very close to an existing UNIS permafrost monitoring area. The data from this area is a valuable resource providing information relating to local ground conditions.

The proposed line was composed of 5 m high poles with ground sensors that would trigger a light to illuminate when temperatures would rise above 0 °C. This would reveal a spatial, performative outcome by combining landscape with scientific sensory tools. The behaviour and verticality of the poles located along different material conditions would also indicate the stability/instability of the ground below. Scientific data produced on site could be transferred to an offsite centre to archive the collected data. This would allow for possibilities of comparing locally collected material to other sites in the Arctic and highlight the importance of the local landscape in a global context.

The proposed line of lighting poles would respond to different conditions along its route. These conditions would affect 1) the verticality of the poles and 2) the lighting being triggered by temperature change. The conditions below the surface would make invisible phenomena (temperature change)more visible for both short and long term time scales. The conditions along the line are determined by many factors such as:

- Elevation
- Land form/sediment type
- Distance from the sea
- Ice and water content



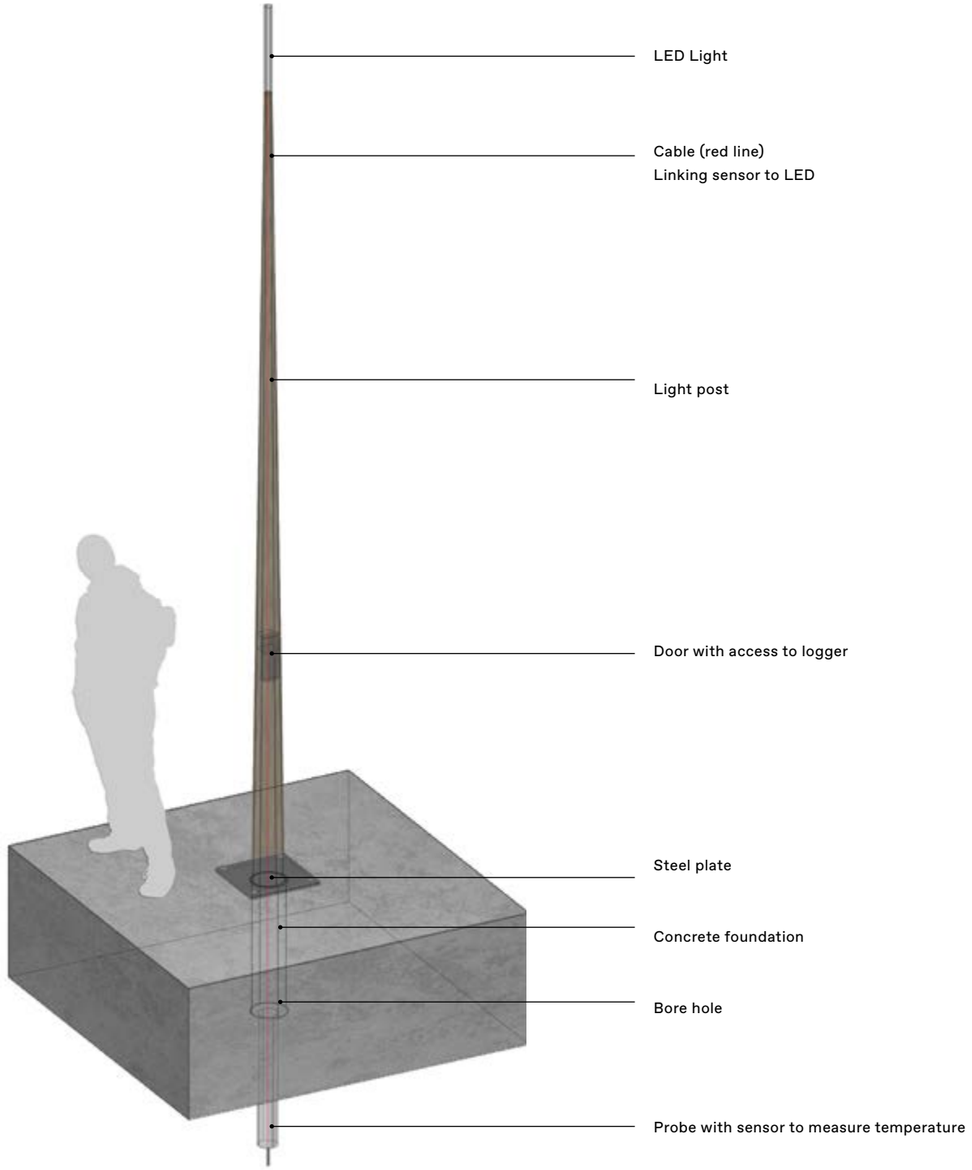
Lighting poles
(object)

In a line
(research field)

To the archive
(recording)

Share and compare
(open source)

*
These are estimated depths based on a 3D modelling carried out UNIS. Source: http://www.unis.no/35_staff/staff_webpages/geology/ole_humlum/Modelling.htm



5. Active Layers

Eimear Tynan

Students investigating Longyearbyen`s shoreline. Photo:Eimear Tynan

6. Urban Design — Arctic City: Longyearbyen

Peter Hemmersam & Lisbet Harboe

The Arctic is changing, not only in terms of climate and environment, but also in terms of demography and urbanism. These changes have lead to intense debates and extensive research. Through the research project Future North and in a series of educational master level studios, the Institute of Urbanism and Landscape with partners has investigated the urban landscapes and their relation to future imaginaries in a variety of Arctic cities, demonstrating that there is not one, but many different Arctic Urbanisms.

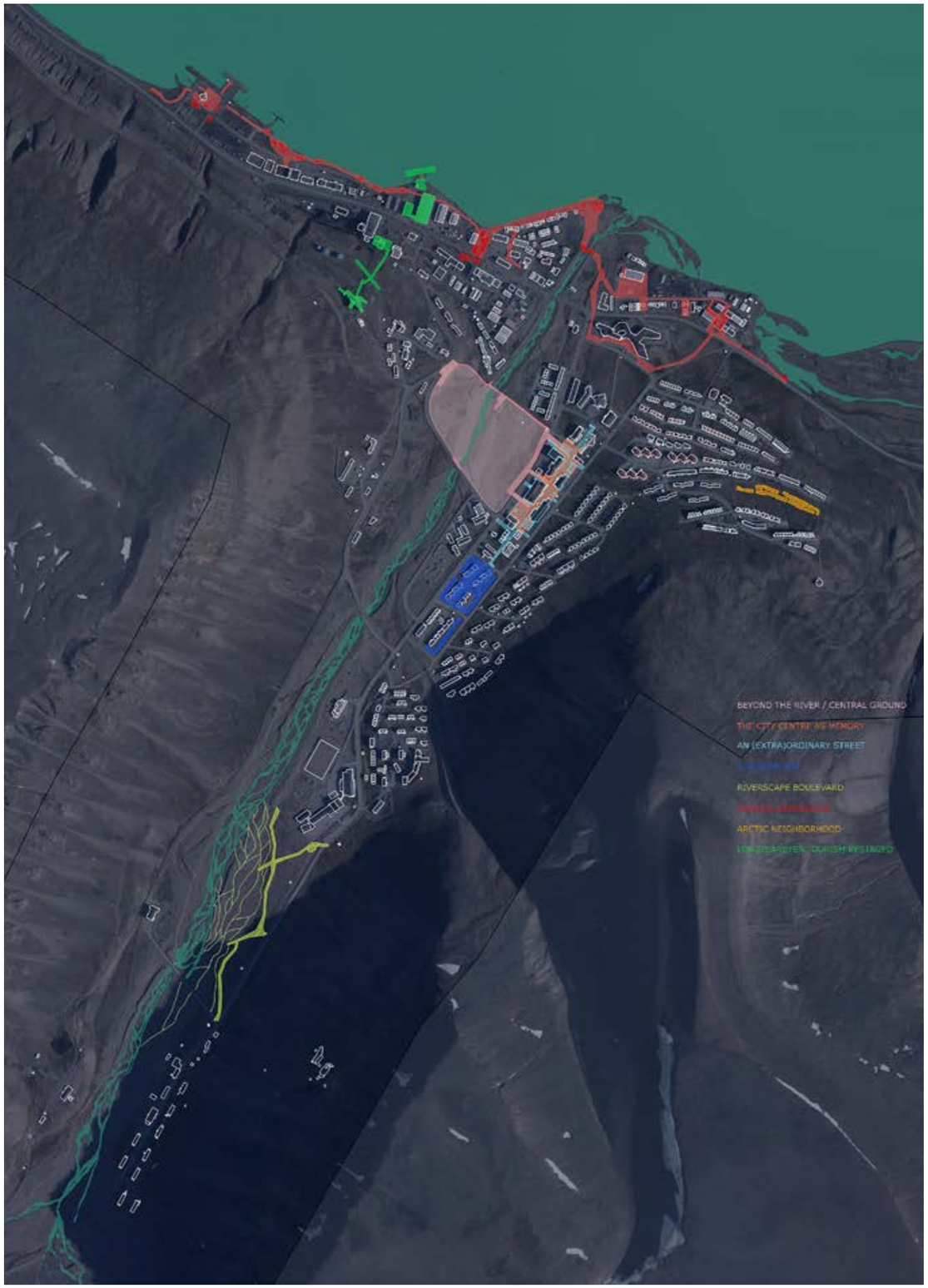
In our research, we have stressed the fact that contemporary changes in Arctic cities are not necessarily connected to resource exploration and exploitation, but also to a general societal change. We have challenged both conceptions of Arctic communities as non-urban and concepts of urbanity in the Arctic as largely imported from other regions. In general we find that most recent attempts to develop specific approaches to Arctic urban design have focussed narrowly on the design of landscape relations and on mitigation of local climate, fundamentally reducing urbanism to an issue of engineering.

The Autumn 2015 Urban Design studio at AHO explored the specific urban landscapes of Longyearbyen in the archipelago of Svalbard. This community has undergone rapid development, possibly facing even more dramatic changes in the years ahead. A main issue for many Arctic communities, as elsewhere in the world, is the development of social, economic and environmental sustainability, something that is also highly relevant in Longyearbyen. This studio has focussed on a wide range of issues, not in order to separate them, but rather to capture the complexity of the everyday and site-specific, treating these issues as complementary, entangled and place-related. In our study, we have asked: what kind of urban design strategies, projects and landscape interventions will benefit Longyearbyen in order for it to become a more liveable, sustainable and enjoyable Artic city?

We have mapped the urban and landscape characteristics of Longyearbyen, a mapping of potentials and resources but also of challenges and needs. This mapping along with insights provided by key actors in the community, has provided us with a place-specific basis of knowledge. Based on this, we collaboratively formulated positions on the future of the local society and teams of students have proposed projects, strategic urban designs, and landscape interventions in and around the city. The themes of the projects include: a new harbour, seafront development, retail and tourism infrastructure, new housing, and social facilities. The student projects have collectively indicated themes and strategies for long-term sustainable urban development. It is the complementarity of these themes, based on wide scope knowledge collection and collaborative approaches, that first and foremost promises sustainability in the future thinking of cities in the Arctic.

Teachers:
Peter Hemmersam and Lisbet Harboe

Students:
Alberto Ballesteros Barea, Robert Blödorn, Ka Yeung Chi, Wai Fung Chu, Martin Danais, Raphaël Fournier, Veronica Gallina, Simon Heidenreich, Eakapob Huangthanapan, Alexandra Niedermayr, Minh Tin Phan, Berenice Rigal, Nadine Schmauser, Kari Tønseth and Benjamin Astrup Velure



A colour-coded plan showing the location of the students' projects

Students visiting Taubanesentralen in Longyearbyen. Photo:Eimear Tynan

7. MAPPING: Urban development history

Raphaël Fournier & Berenice Rigal

MENTAL MAP OF LONGYEARBYEN

The mental map of Longyearbyen is produced by asking locals to draw their own city, to describe it, name places in it or give directions. The approach is based on the method developed by Kevin Lynch in the 1960s, and is usefull to get an understanding of how a population percieve a city — including its most prominent places, but also the spaces that are not seen as important. The mapping uses four categories: Nodes, Edges, Paths and Districts.

The mapping revealed three important issues in Longyearbyen:

- Main Road

This is the main path in the city. The road is 3 km long and mostly linear. It is the most commonly used road. All age groups use it everyday. It serves every district and link them to the city center.

- City Centre

Parallel to the main street we find the main District: the linear pedestrianized «city center». In the middle of it we find the main node of the city: the shopping centre Lompen. It contains many public facilities (shops, hairdresser, library, café, etc.)

- River, Mountain, Sea

The natural environment around the city seems to be forgotten by the inhabitants. It is so ordinary that it is no longer a boundary. The edges of the city are blurred. Nature and city interpenetrate. Notably the river does not feature on the inhabitants' mental map, neither does the area between the coastal road and the sea.

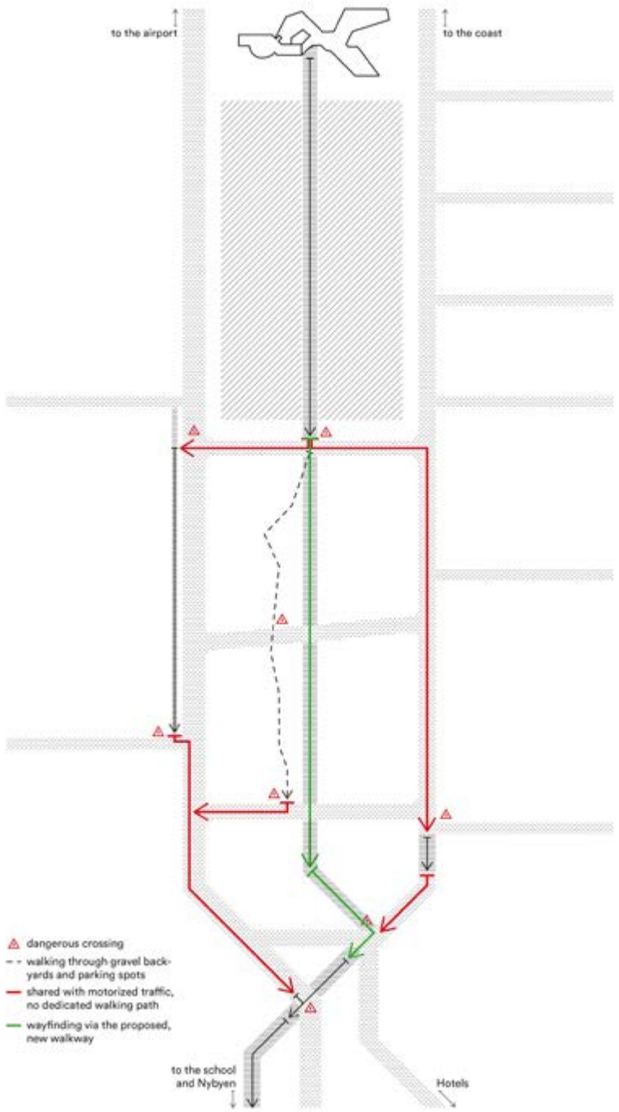
8. MAPPING: Informal Material Culture

Simon Heidenreich and Benjamin Astrup Velure

The urban landscape of Longyearbyen reveals its specific conditions in the technical and engineering solutions of the site. This includes measures to isolate structures from the dynamics of permafrost. In addition, the local inhabitants have adapted the buildings and urban spaces to meet the requiremnts of everyday life. This includes covering bedroom windows with tin foil, and adding homemade, improvised outdoor porches to their dwellings, and bridges that enables pedestrians and snowmobiles to cross the overground heating and water pipes.

9. PROJECT: A Denser Way

Simon Heidenreich



pedestrian pathfinding

This design is a proposal for densifying the residential area directly south of the town centre and closing the gap in the pedestrian walkway from the university centre to the school and towards Nybyen."

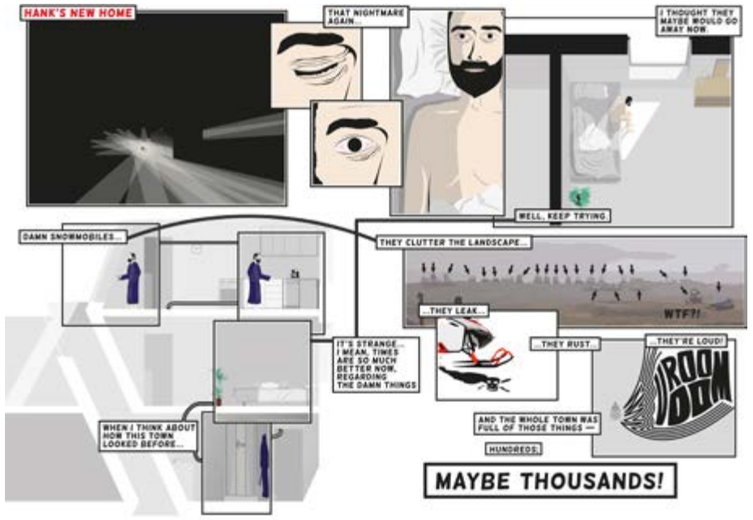
It consists of 73 new single family row houses, six two-storey apartment buildings with four units each and two long rows of seven three-storey apartment buildings with six units each, located at the south-eastern rim of the plot to create a barrier against the harsh winds blowing from south-eastern directions in the winter.

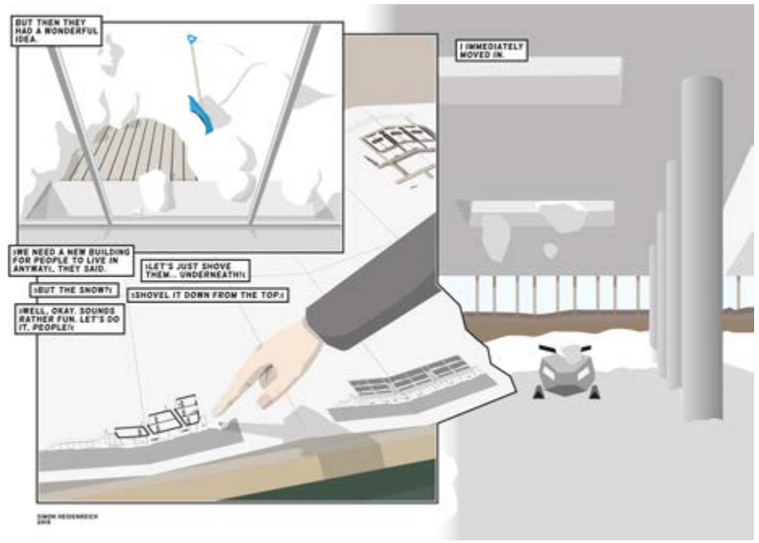
The resulting 181 new dwellings eventually replace the existing 15 single-family row houses on the plot that are nearing the end of their life span in the next years, thus increasing the population density sixfold.

The second goal of the design is to complete the pedestrian walkway from the university centre towards the school and Nybyen.

The proposal is a neighbourhood that incorporates a covered street for parking of cars and snowmobile storage below the buildings.

This design suggests »growing inwards«. The reasons for densifying the residential area are manifold: The number of inhabitants that reside in Longyearbyen permanently as well as the average time of stay is increasign. This means that there is a need for rethinking residential space: Currently most new buildings are situated on the edge of the town, spreading the settlement even more into the surrounding landscape. This results in longer distances and more car and snowmobile traffic.





10. PROJECT: An (Extra)Ordinary Street

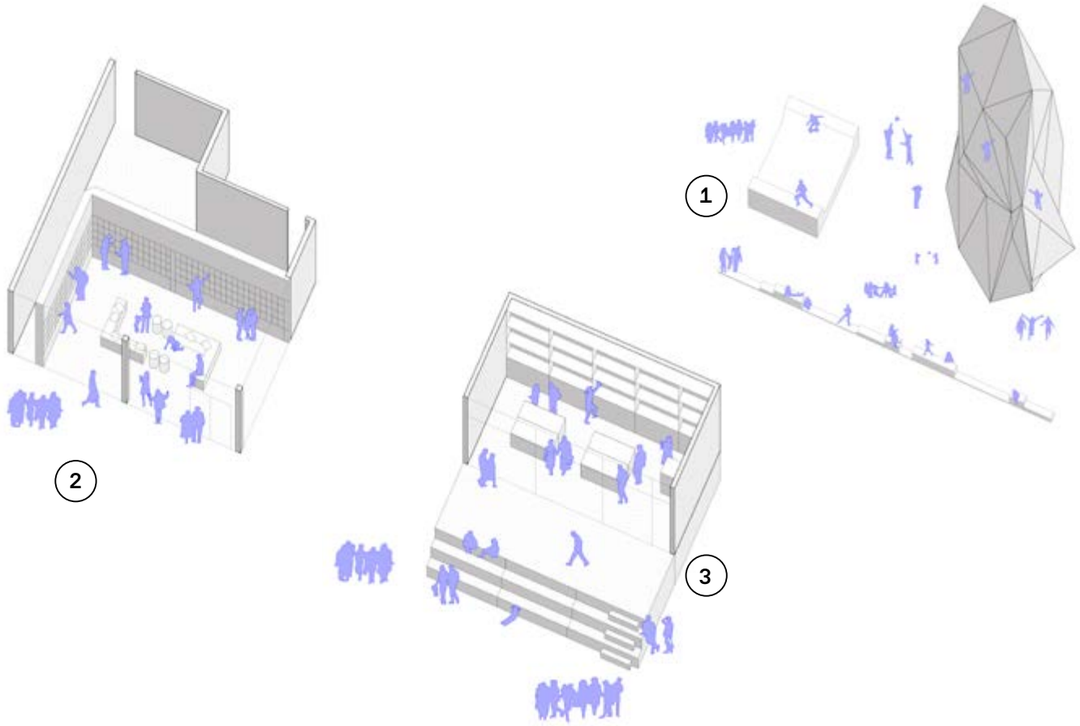
Alberto Ballesteros Barea and Nadine Schmauser

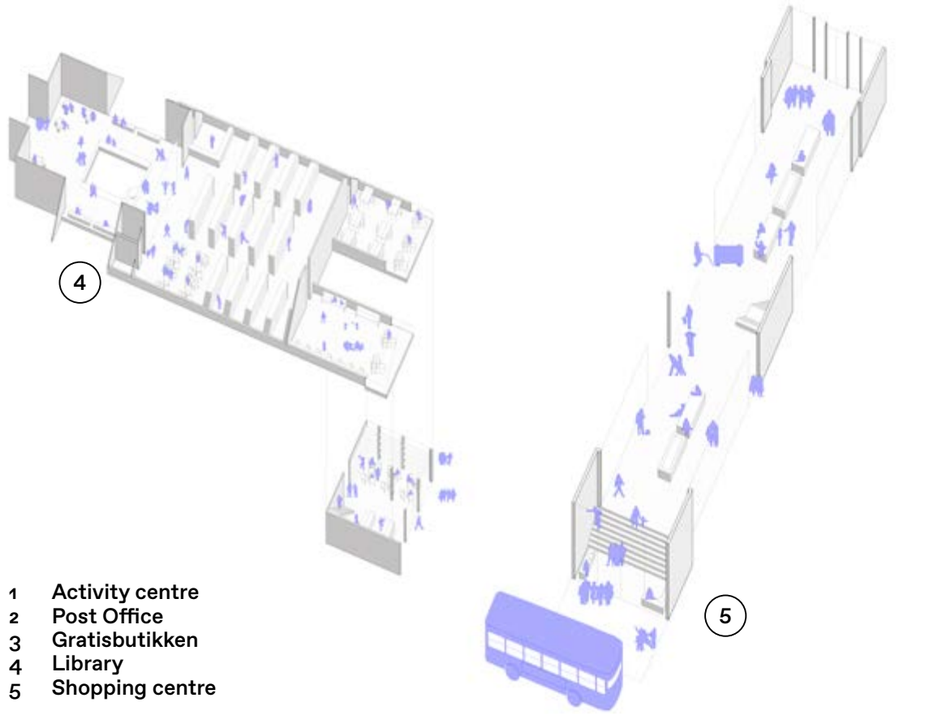
The project comprises the creation of social spaces within Longyearbyen city centre, places where both locals and tourists can meet and gather.

Longyearbyen has been dependent on coal mining industry throughout its history. However, in the last years the mining sector has been decreasing and tourism has emerged as another pillar in the archipelago's economy. Currently, the city plays a role of a "basecamp" in which tourists only stay before and after taking part in tours and activities in the surrounding areas. Longyearbyen is not the destination of the visit itself.

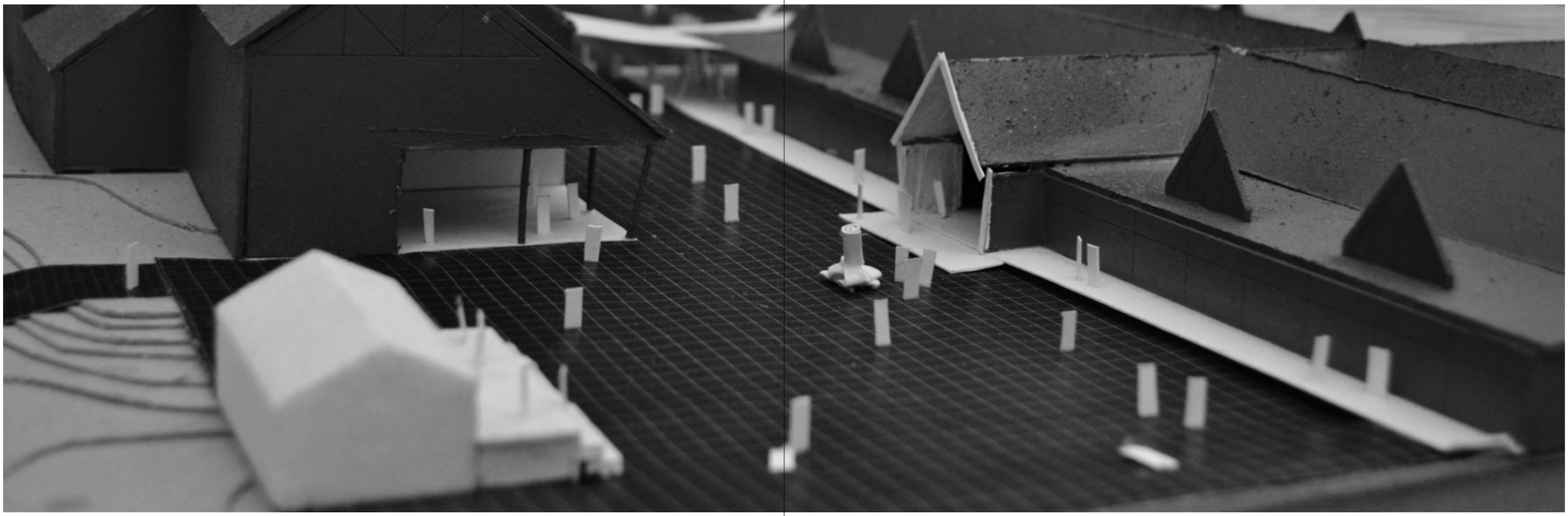
The tourism masterplan emphasises limited self-organised activities and a lack of "photo opportunities" within the city centre. Despite a seemingly dysfunctional arrangement of the built environment, public amenities are condensed and people make use of the city centre. Therefore, there is no need of a large scale urban intervention, only improving spaces in order to adapt them to the current situation. Small changes are sufficient to reach the desired effects.

The project involves two fields of action addressed by small interventions in existing buildings and spaces. By using the concept of "extraordinary ordinary", we are creating photo opportunities for tourists as well as showing the daily life in the unique context. Also, these interventions are used to generate interaction among the different groups of inhabitants by creating places to meet and gather. This way we are enhancing the pedestrian street that is currently providing few common spaces.





1 Activity centre
2 Post Office
3 Gratisbutikken
4 Library
5 Shopping centre



Model showing view over main pedestrian street

11. PROJECT: 78°13'13"N, 15°28'1"E — Central Ground, Longyearbyen

Ka Yeung Chi

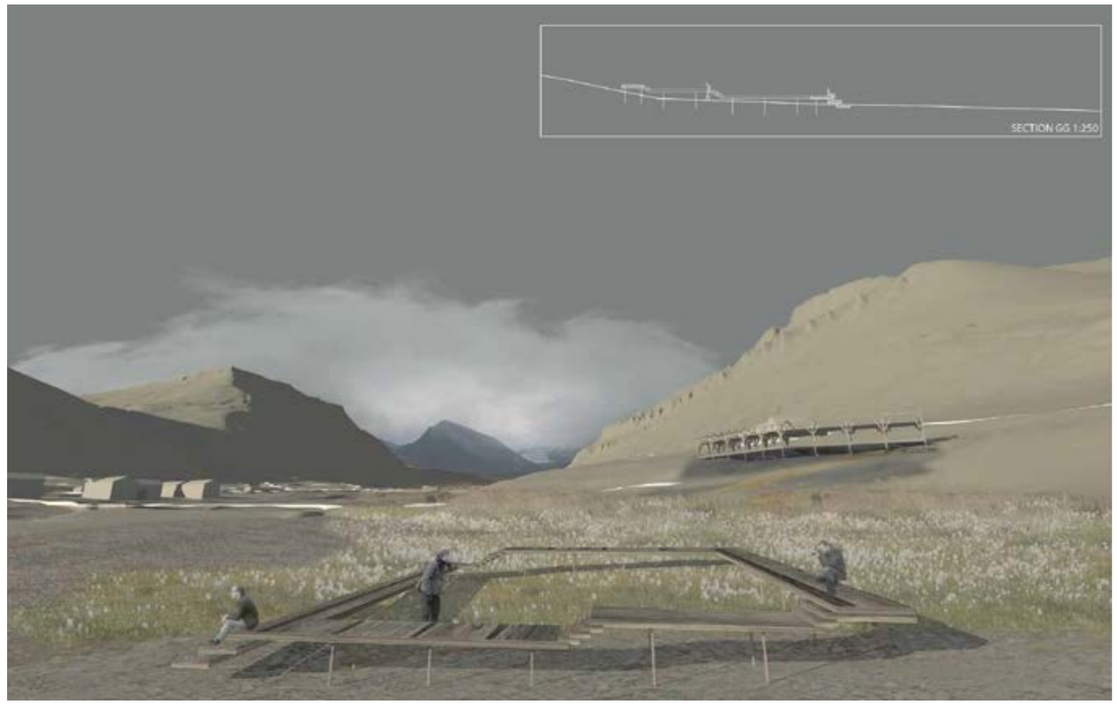
The project transforms the riverbed into a landscaped space for the locals and tourists. By having a public ground at the central location of the city, the eastern and the western parts can be physically and conceptually reconnected.

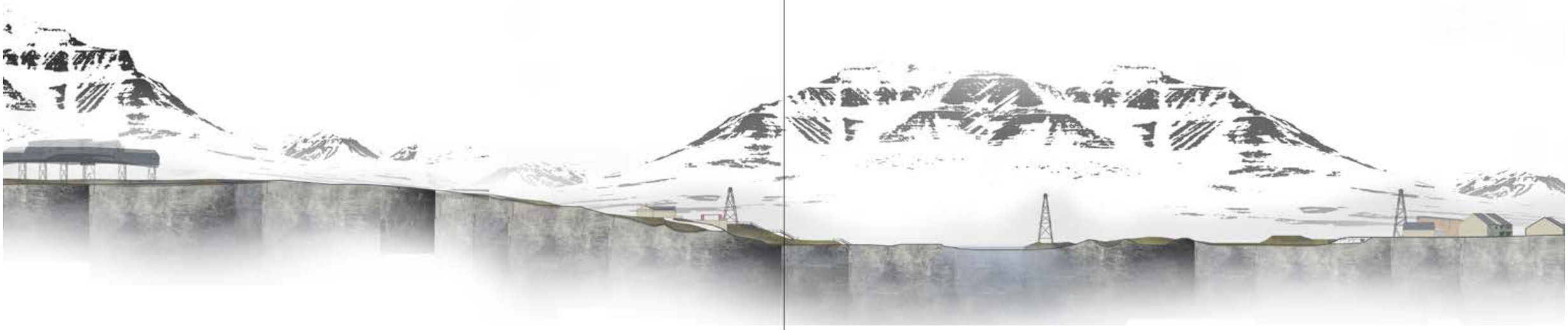
The commercial city centre, as well as most of the residential developments are found on the east side of the river, while the old administrative centre and the historic industrial cluster is located on the west side of town. There is a potential to improve the connection across, especially as there are plans to redevelop the industrial harbour zone in the future.

The space between the districts has great potential to be developed as a unique place. However, the river tends to disappear in the locals' understanding of the town. People come to Svalbard for its wilderness, and they ignore the outdoor experiences within the town itself. The project convert the river space into a "park" where people can enjoy the landscape just a few steps away from the shopping street.

But what is an arctic park? This design tries to develop the "ground" itself as the landscape. It is not about rebuilding nature, but about creating new experiences and even an identity to the city by revealing the character of the ground, which is the result of human intervention in the natural landscape, framing the listed industrial monuments that tell the history of the town, and showing the river itself, which has been excavated over the years.

Stairs and ramps lead people to the ground, and there are platforms that surround and frame landscape and historical elements. Stairs lead up the hill and a viewing platform with a restaurant protrudes from the terrain, providing a view back to the city centre and the river.





12. PROJECT: Beyond the river

Berenice Rigal

This project consists of a series of landscape interventions framing a river landscape within the centre of Longyearbyen. The project reveals the riverscape and makes it accessible.

Originally, the river formed many meanders and spread throughout the valley. Now, it is concentrated in a channel to facilitate the city construction by protecting against flooding. This also reduces physical and visual access to the river. The river divides the city in two, the city centre and residential areas in the east, and the industrial and administrative areas in the west.

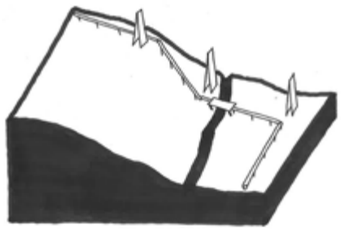
The first intervention is a new pathway connecting to the existing bridge on the western side of the river. The pathway leads from the river to a new observation deck and information centre, which provides new views. The second intervention is an esplanade along the main street and the city centre. A staircase runs all along it and provides seating as well as access to the riverscape, encouraging tourists and citizens to discover this area.

The topography of the river space is modified to create paths and make experiences of this landscape possible. Small modifications of the stony topography add to the experience of walking through the landscape.

DIAGRAMS 1–2
The broad view and spectacular surrounding landscape attract the attention and few people approach the river in the midst of their everyday environment. The pipes that surround much of the area makes it difficult to access. Moreover, the soil is muddy in some places and do not incite people to venture onto the site.

DIAGRAM 3
A car road serves this space connecting the city centre and the administrative area. Only a small pathway along the pipelines bridging the river connects the city centre to the other part of the city. It is hardly accessible and frequented, even by locals. During the winter, this situation changes as snowmobiles circulate in the river landscape.

DIAGRAM 4
The administrative area overlooks the town. We have a large panorama before us. One can perceive the riverbank area as a whole with the city center in the background. I use this view to create a visual connection to the city centre.



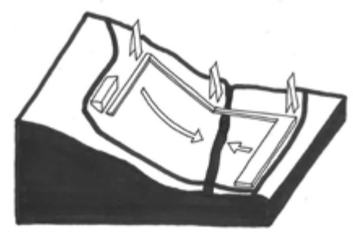


DIAGRAM 5
Different structures Different structures are present on the site (towers, pipes, bridges). They are included in the design of the project.

13. PROJECT: Riverscape Boulevard

Alexandra Niedermayr and Martin Danais

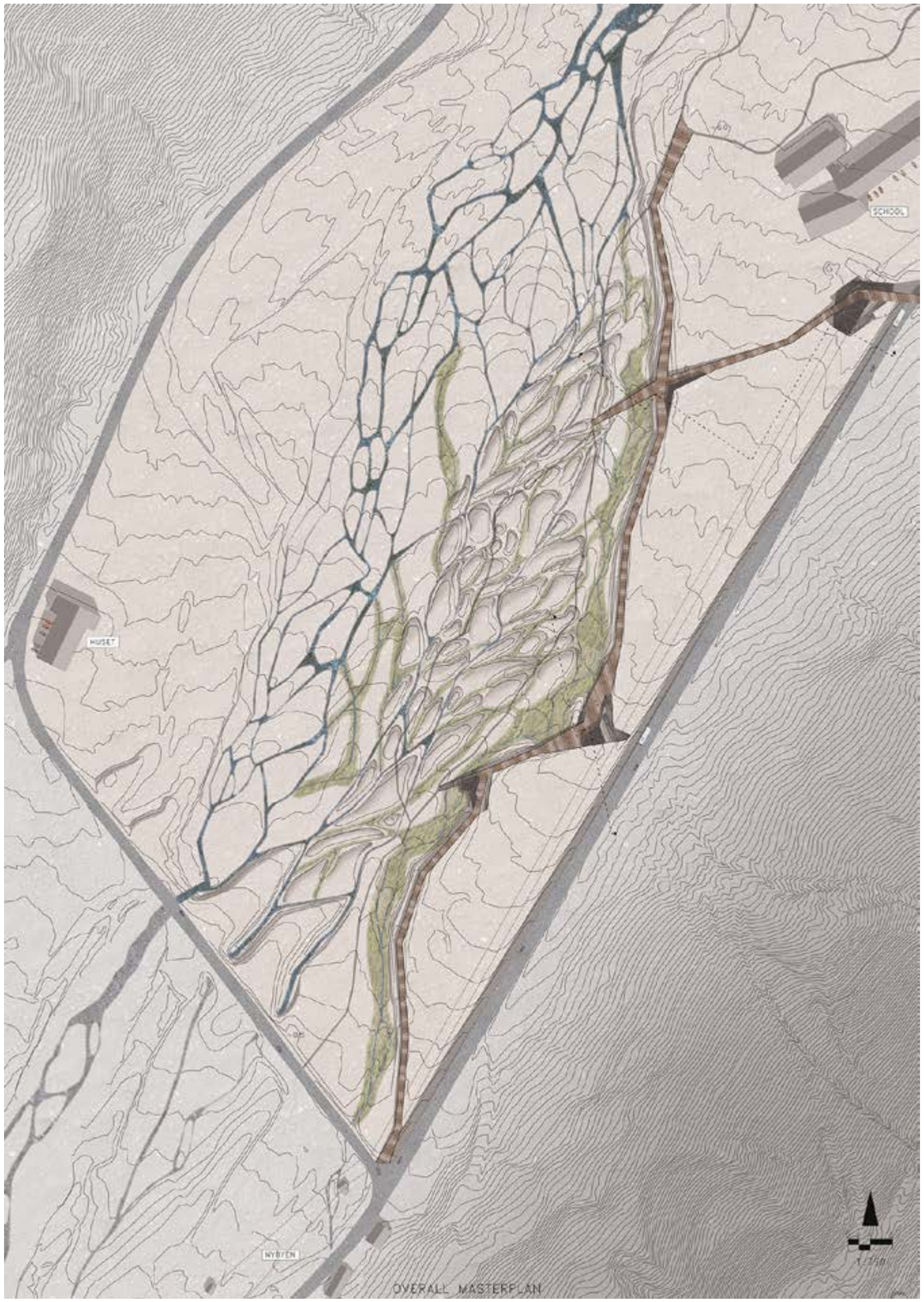
This project explores the valley landscape in the city of Longyearbyen to redevelop the old riverscape and connect separated parts of the city.

This area in the middle of the valley is a no-man's land. It is a huge space surrounded by barriers such as pipelines, the river and the road. In the past it was a wide riverscape where the river could run freely, but more recently, the river shrunk into one single channel with high stone banks on each side in order to protect the surrounding buildings against floods.

We suggest to recreate the former river arms and create a new path for pedestrians and cyclists between Nybyen and the city-center. Our purpose is to reopen the former streams of the old river in order to recreate a new landscape for the city. Extending the riverbed will allow the biomass to arrange itself and it will at the same time allow the arctic river plants to grow again in the valley, following the new streams. Additionally, modeling the topography of the space will open unknown views onto the city and the landscape and create a new experience of the ground.

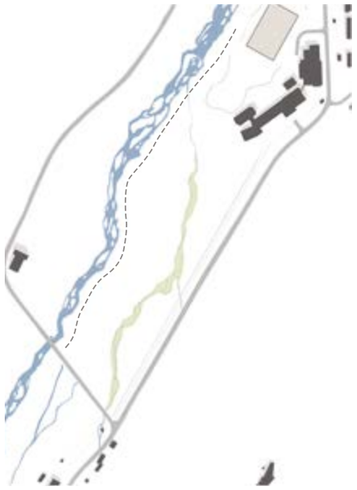
We suggest a boardwalk for bicycles and pedestrians alongside the riverscape, and furthermore a hiking path going through the landscape. Our proposal offers an opportunity for both, tourists and inhabitants to experience the nature of Svalbard by staying in the protected area of the city. While this aspect of the proposal mostly concerns summer activities, the new winter connection between the ski slope (next to the school), Huset (one of the main bar-restaurants of Longyearbyen) and the crosscountry ski trail, facilitates for the winter sports. This path works not only as a better connection between the two river parts, but also as a connecting tool between the different winter sports.

In the meeting of these two "seasonal" pathways, we suggest a building serving winter sport facilities and a bus stop next to the schoo. A building serving the new campsite in particular will connect the city and the landscape where both inhabitants and tourists can observe and enjoy the surrounding nature.

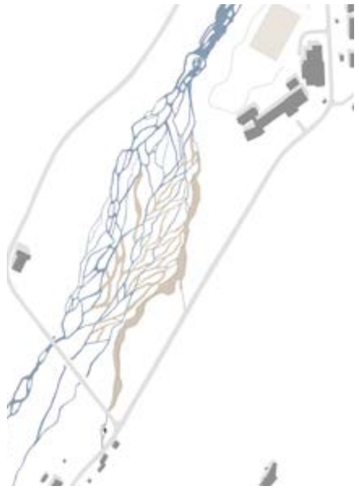


The following diagrams outline the historic and present day river situation. They proceed to illustrate how the river could partially return to its historic network by opening up channels and adding boardwalks.

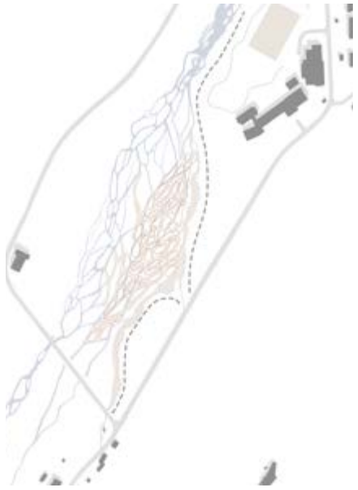
Historic river situation



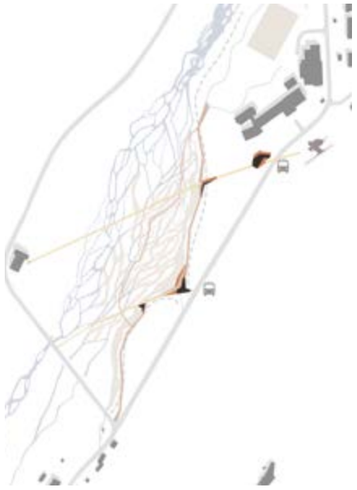
Todays situation where the river has artificial embankments



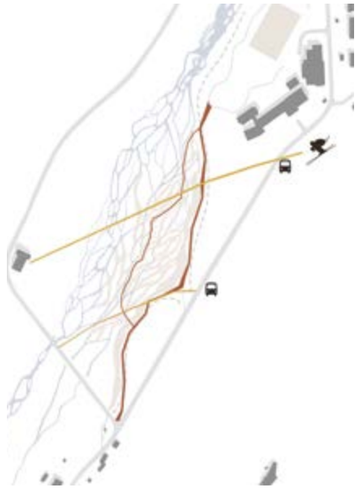
Proposal to open up former river channels



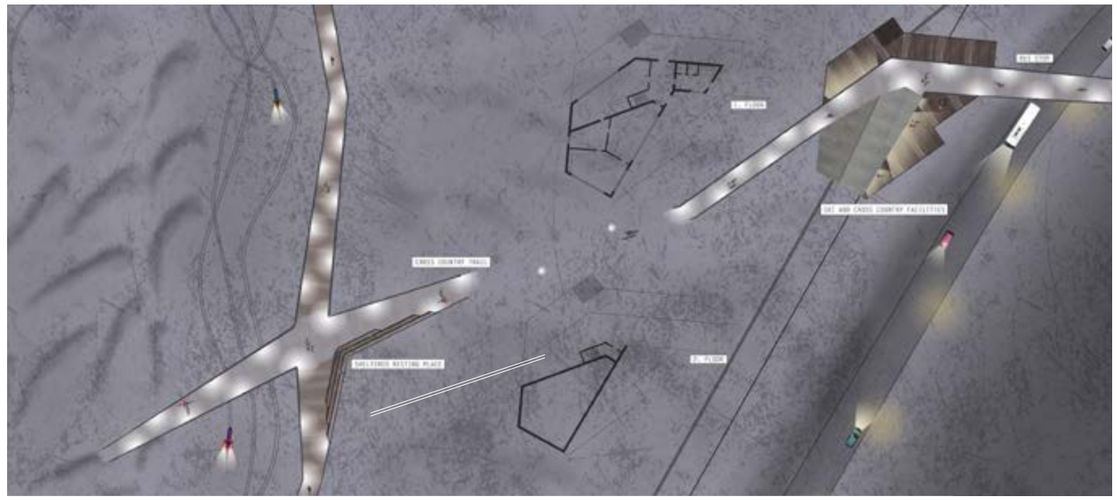
Modelling the ground



Creation of primary and secondary connections

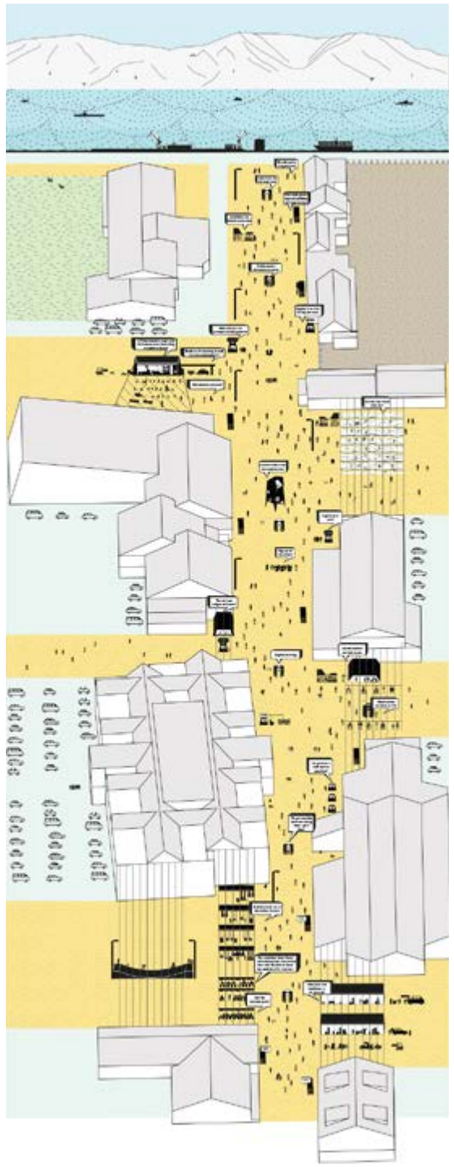


Addition of crossing points and places to stay



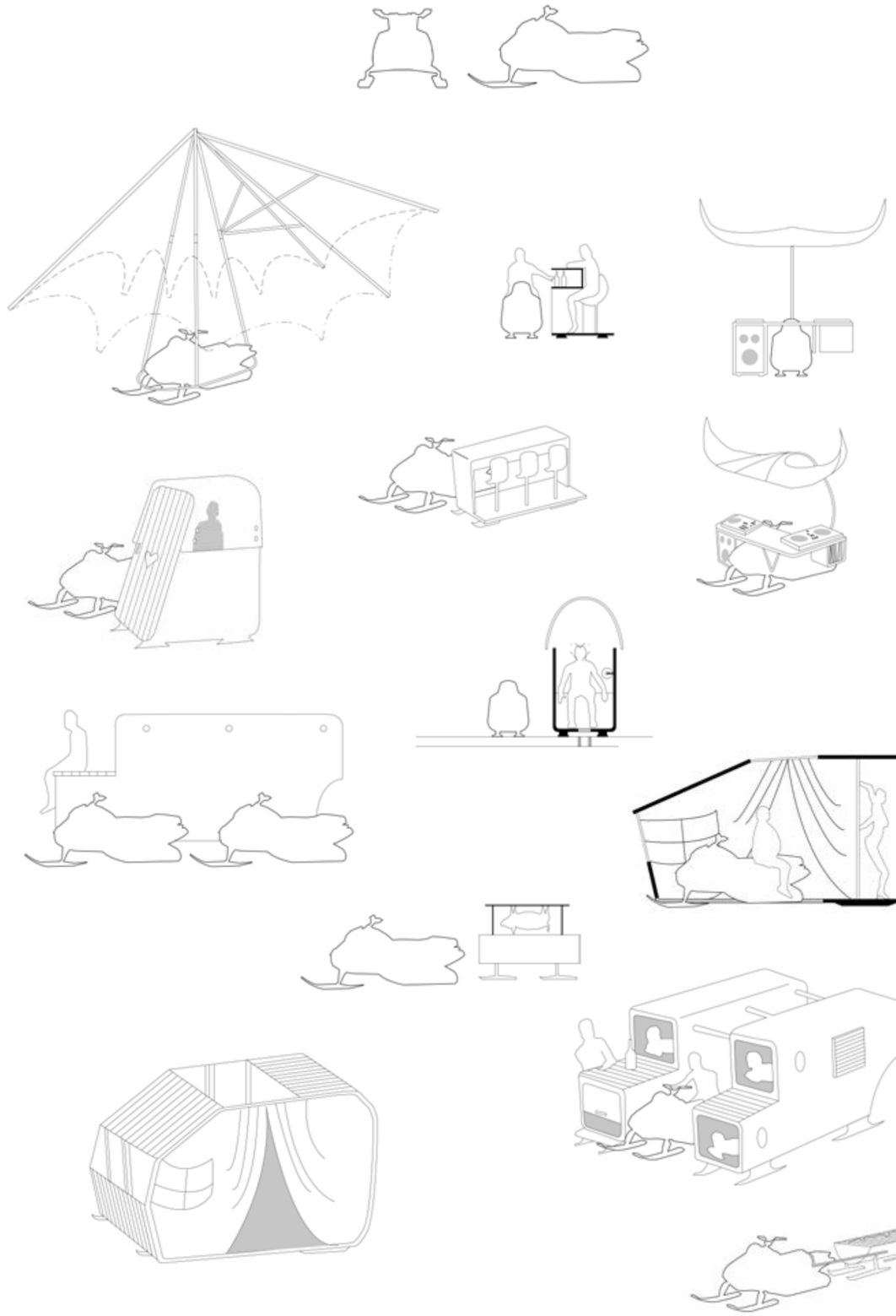
14. PROJECT: The City Centre as Memory

Minh Tin Phan and Kari Tønseth



Moving to Longyearbyen can be a harsh transition if you are not prepared. From dressing appropriately for the local climate to getting your gun license in order to travel on your own in Svalbard.

The Welcome scenario provides for the newly arrived inhabitants easy access to city life and functions. The city centre can temporarily be transformed into a strip, gathering all the important services one has to go through as a new inhabitant. The 'Gratisbutikken', or 'Bruktikken' provides free kitchen utensils, clothes, books and outdoor garment. With a more open pavilion and a bigger space, this service becomes more apparent. An extension of this service, is a reuse station, where one can pick up free furniture or just tinker your own stuff from scraps in the workshop. By the end of the strip you will have all you need, from signing up your kid for day care, registering your mail address to picking up today's dinner.



14. MAPPING: Programs and Functions

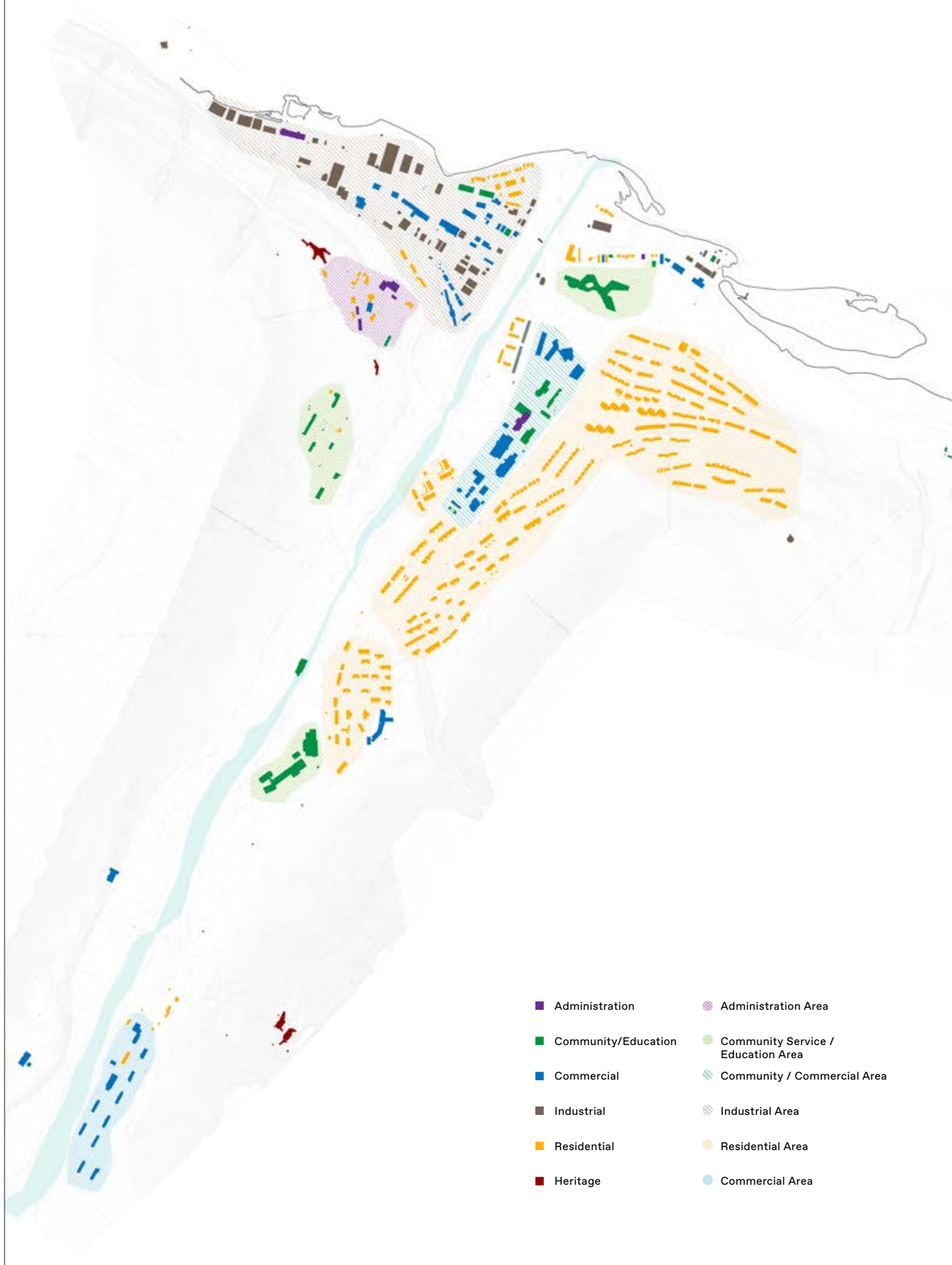
Minh Tin Phan and Eakapob Huangthanapan

It is easy to generalize the programmatic areas of Longyearbyen. Due to the lack of mixed-use development in earlier stages, the walking distances between different sectors can be between 200 m and 2,7 km, which is a long stretch for a city of 2000+ residents. This development has generated four homogenous areas:

- Industrial area.
- Research/educational area.
- Administration area.
- Residential areas.

There is currently a trend of combating these homogenous areas. The industrial area is currently the subject of mixed-use development. Here we find not only commercial services settling in, but also hybrid buildings that serve more than one intended purpose. Examples include LPO's project for Maler Hansen and the Arctic Explorer building. The plan for the harbor also signals a more up-to-date mixed/use harbor development and proposes relocating heavy industry and establishing a new city center. The urban qualities of the area, however, do not agree with this trend. Visitors have to walk past warehouses and industry to get to the hotel or the boathouses, and guardrails block commercial programs.

Even in the administration area, there are many housing units — many of them linked to government jobs — with one notable exception: the home of Jason Roberts, a producer of wildlife documentaries on Svalbard. The community center/commercial area is a mixed-use zone with all the necessary amenities within a 150 m range.



15. PROJECT: Coastal Experience

Robert Blödorn and Veronica Gallina

Our proposal consists of a new path along the coastline of Longyearbyen, connecting the city centre and existing traffic infrastructure. The city is currently separated from the sea by a linear industrial area, and our design target has been to develop this area and to improve them with new functions in order to really experience the seaside landscape and its sceneries.

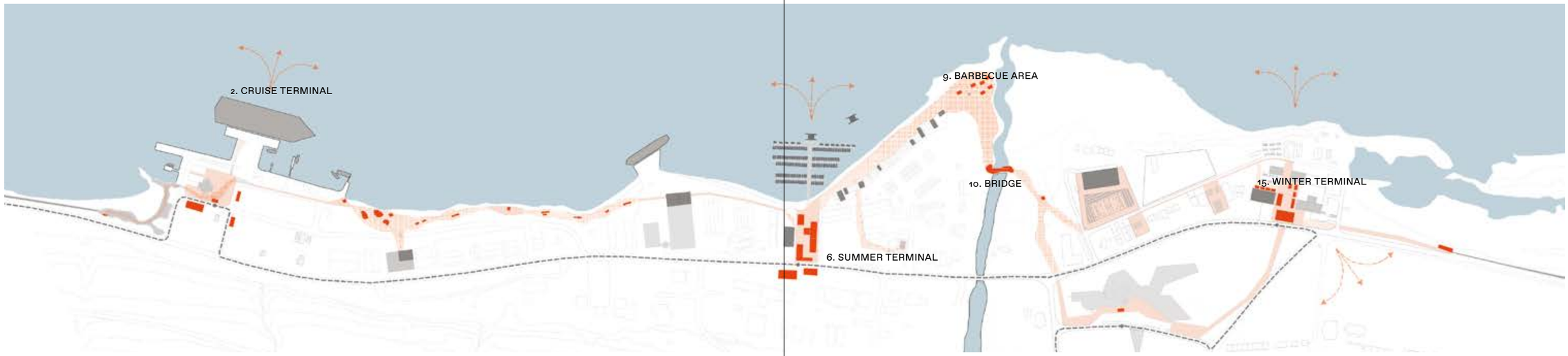
A new regular bus network is a key element, which connects all the areas within the city center and the airport, serving both inhabitants and tourists. Three important places along the coastline are improved and developed; each of them with a bus stop.

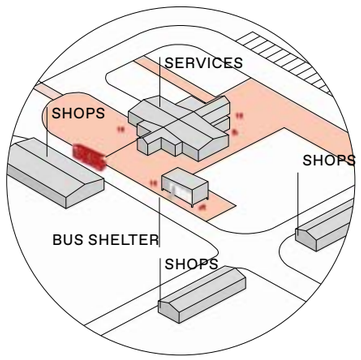
At the cruise terminal people arrive and leave by cruise ships, expedition boats and by bus directly to and from the airport or the city center.

The summer terminal includes a new marina for small private boats, the regular catamaran service to Barentsburg and Pyramiden, and the rubber boats of tour operators for trips in the fjord. The bus shelter, by the road, creates a waiting place but also a meeting and relaxing area. The most attractive place is the national park centre, which is part of the actual future plan for Longyearbyen.

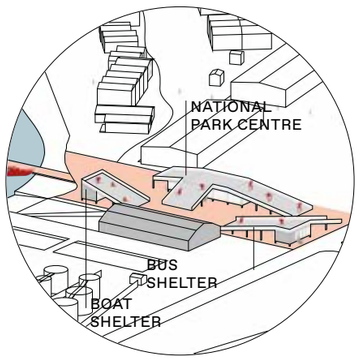
The third terminal is the WINTER TERMINAL, which is already working quite well today. We have added some activities to make the place a more attractive hub for both inhabitants and tourists. Another national park centre is situated here, including an exhibition on artic expeditions. The snowmobile rental, the workshops and technical stores are preserved.

The new path for pedestrians connects the terminals, and the bridge is an important link between the areas divided by the river that will enable people to experience the different tides of the river in the different seasons, thus enhancing the presence of the river in the city today.

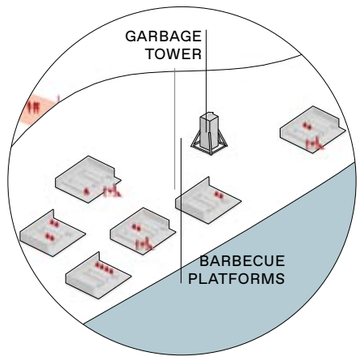




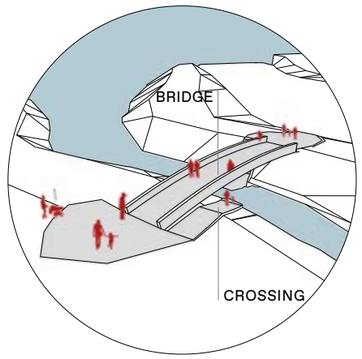
2 — CRUISE TERMINAL



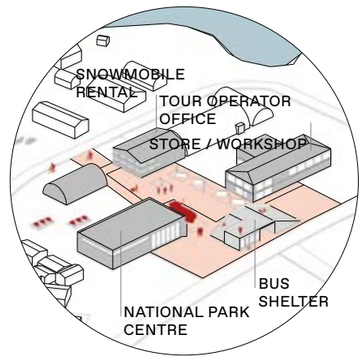
6 — SUMMER TERMINAL



9 — GARBAGE TOWER



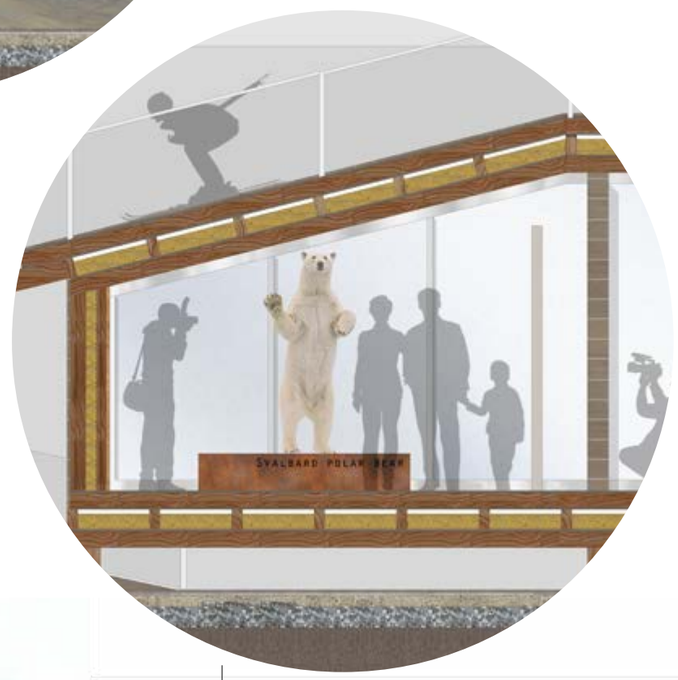
10 — BRIDGE



15 — WINTER TERMINAL

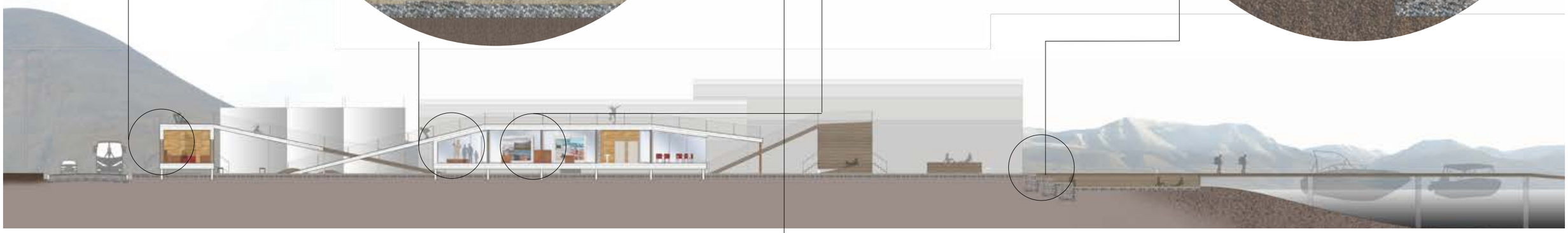
BUS SHELTER

NATIONAL
PARK CENTRE



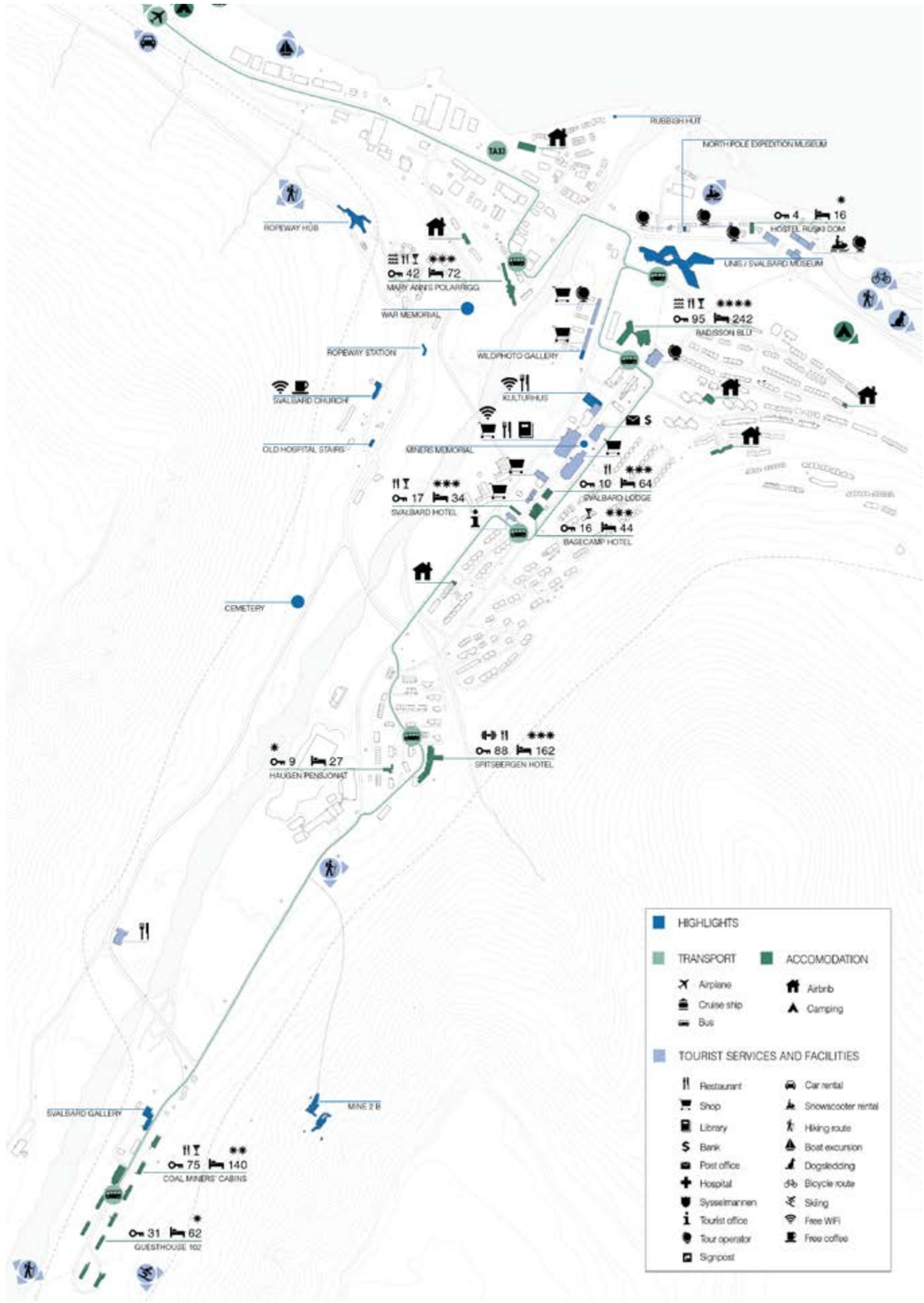
NATIONAL
PARK CENTRE

MARINA



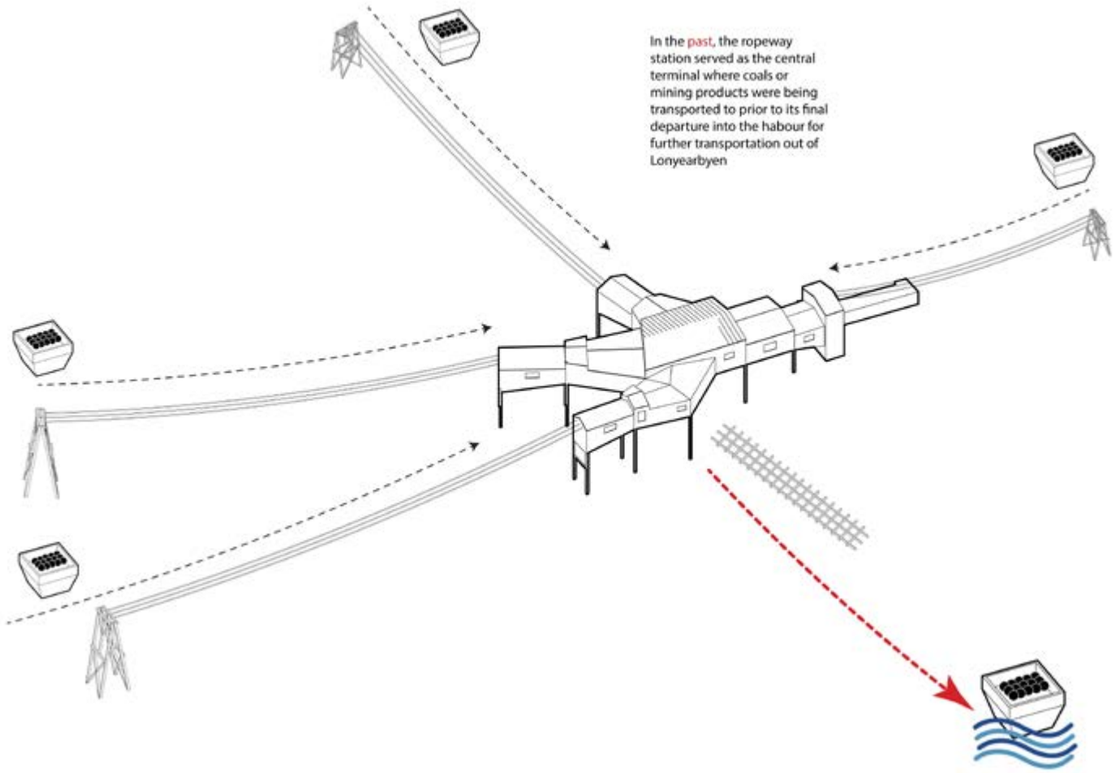
16. MAPPING: Tourism Infrastructure

Robert Blödorn and
Alberto Ballesteros Barea



17. PROJECT: Longyearbyen Tourism Restaged

Wai Fung Chu and Eakapob Huangthanapan



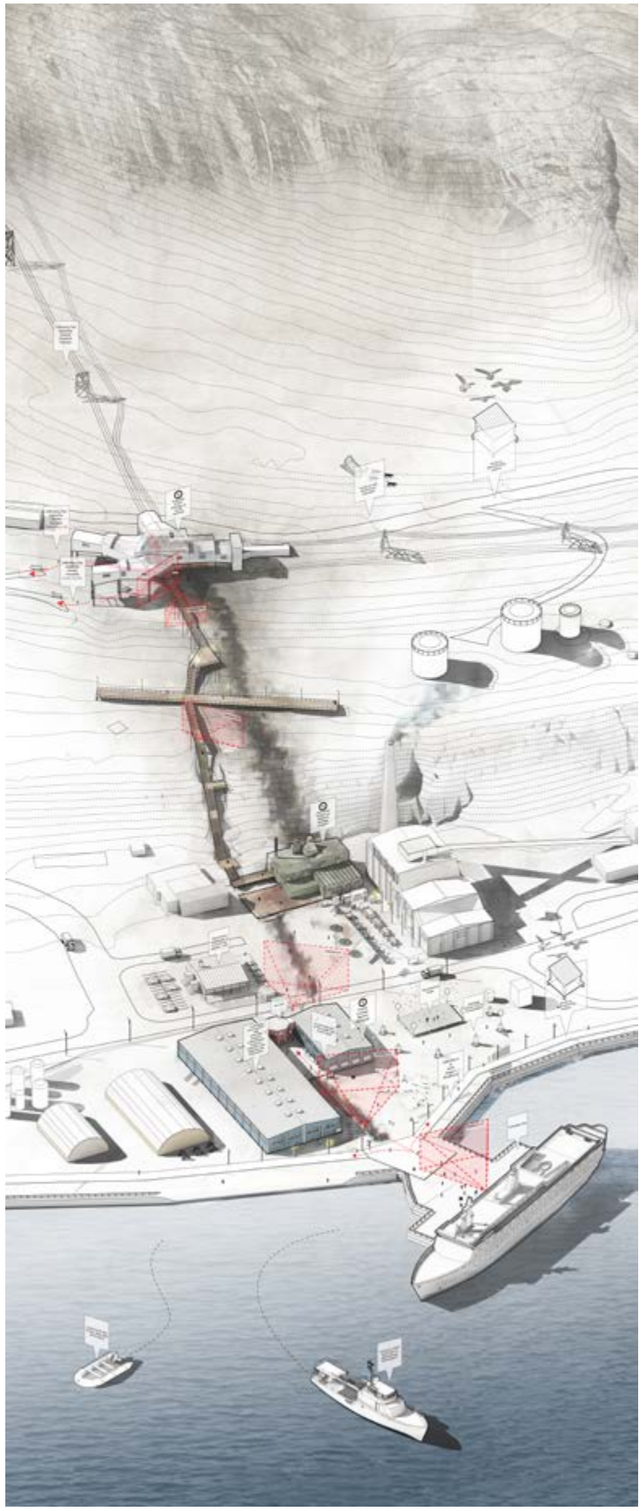
The project reconsiders the tourism infrastructure of Longyearbyen by utilizing the cultural heritage as a tool.

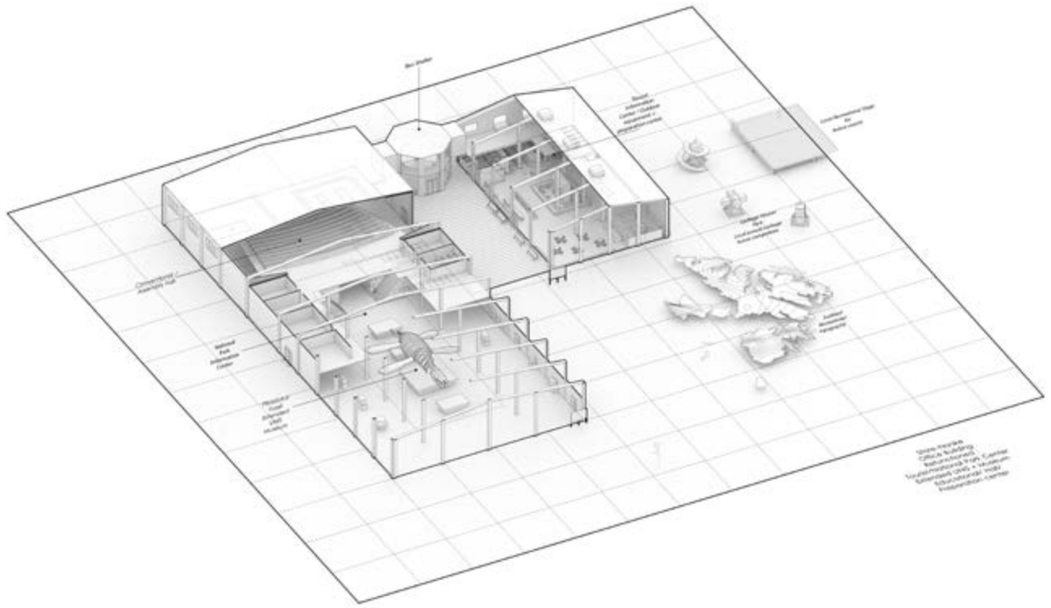
There is not currently any strong infrastructure for cruise tourists in Longyearbyen. Thousands of tourists of diverse nationalities stream out from the cruise ships for very short and temporary visit, during which, they may miss out on opportunities to understand the town, its history, and the essences of the land they're stepping on.

We are proposing a new tourist route and infrastructure concept that would support large number of tourists for brief periods of time. It would prepare and inform them about the town and Svalbard as a whole, and also circulate and spread them through the uses of the existing cultural heritage.

We propose using the existing cultural heritage of the mining infrastructure as the new tourist infrastructure. A central hub would be the ropeway station that extrudes in the directions of the ropeways that lead into different parts of the city towards the old mine heads.

In the past the ropeway station served as the central station to collect coals from all the four routes and send it directly to the power station and to the pier for further logistics.





In the proposed project, the movement would be reversed. The tourists arrive at the pier, are led through the Store Norske office building which is repurposed into a tourist information center, a outdoor equipment rental and tourists preparation center, a national park information center, an educational space for environmental issues, and an extended campus of UNIS and the museum exhibiting the recently found plesiosaurs fossil.

17. Project: Longyearbyen Tourism Restaged

After passing through this building, the tourists are guided to the old power station through the outdoor exhibition of the historical mining elements. The existing interior of the old power station and the facilities are reserved as a exhibition on the mining history. The tourists then will be led by the stairways that built upon the dents of the past mining infrastructure towards the ropeway station. This route towards the ropeway station also acts as the lookout points where the remains of the different mines are visible within the landscape. The ropeway station at the end of the stairway acts as the distribution point where they can choose to spread and explore Longyearbyen in different directions following the ropeway towers.

Wai Fung Chu and Eakapob Huangthanapan

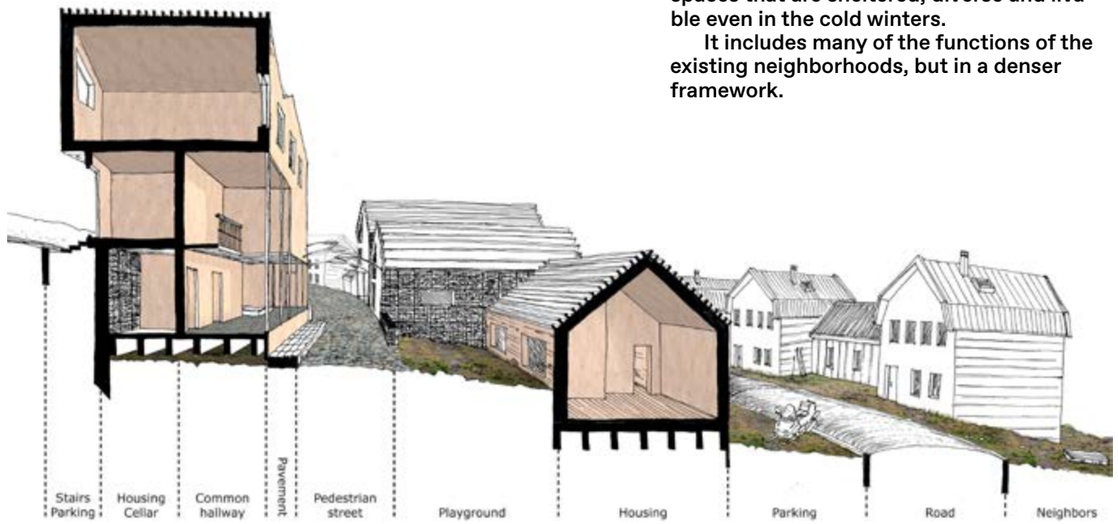
18. PROJECT: Arctic Neighborhood

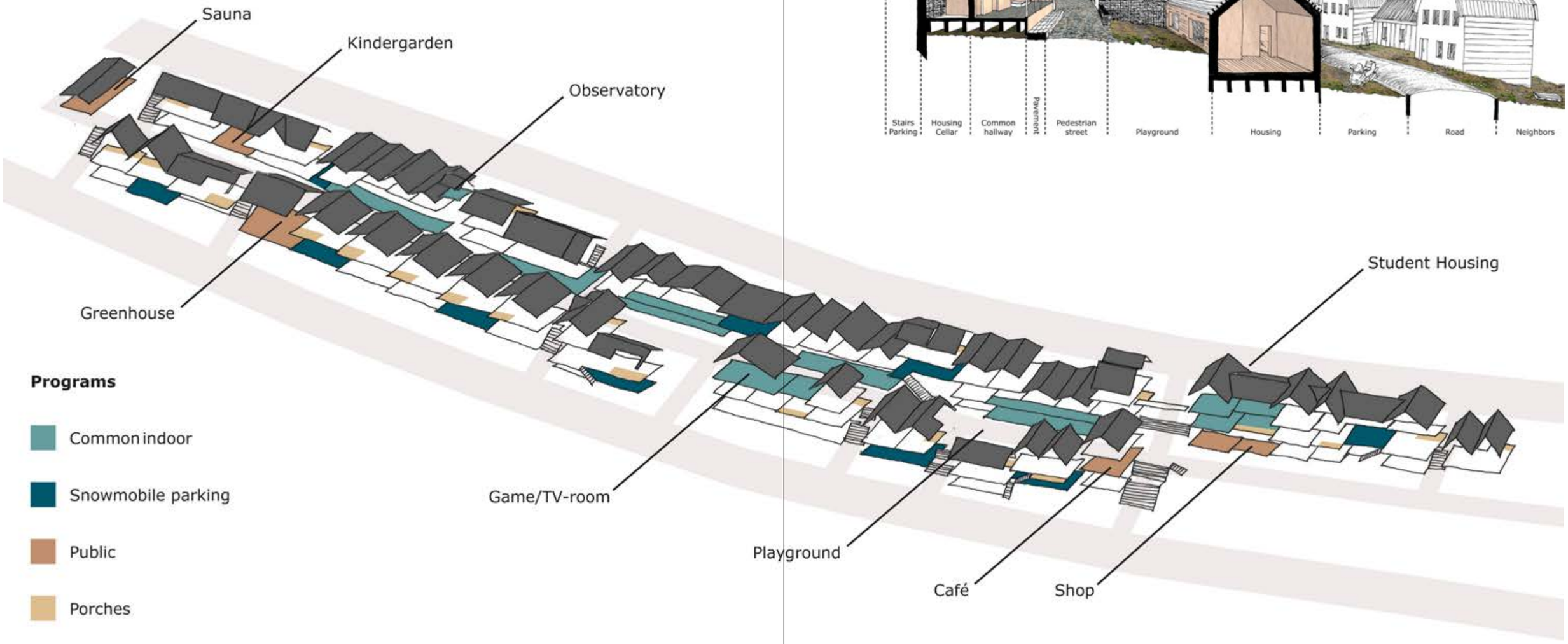
Raphaël Fournier and Benjamin Astrup Velure

Longyearbyen's population is stable despite the downsizing of the mining industry. As the number of people working in the coal mines is decreasing, more people are employed in research, education and tourism. Single-family homes are becoming more popular while many of the cramped miners barracks are ready to be replaced.

This housing project intends to introduce a denser residential area that creates urban spaces that are sheltered, diverse and livable even in the cold winters.

It includes many of the functions of the existing neighborhoods, but in a denser framework.



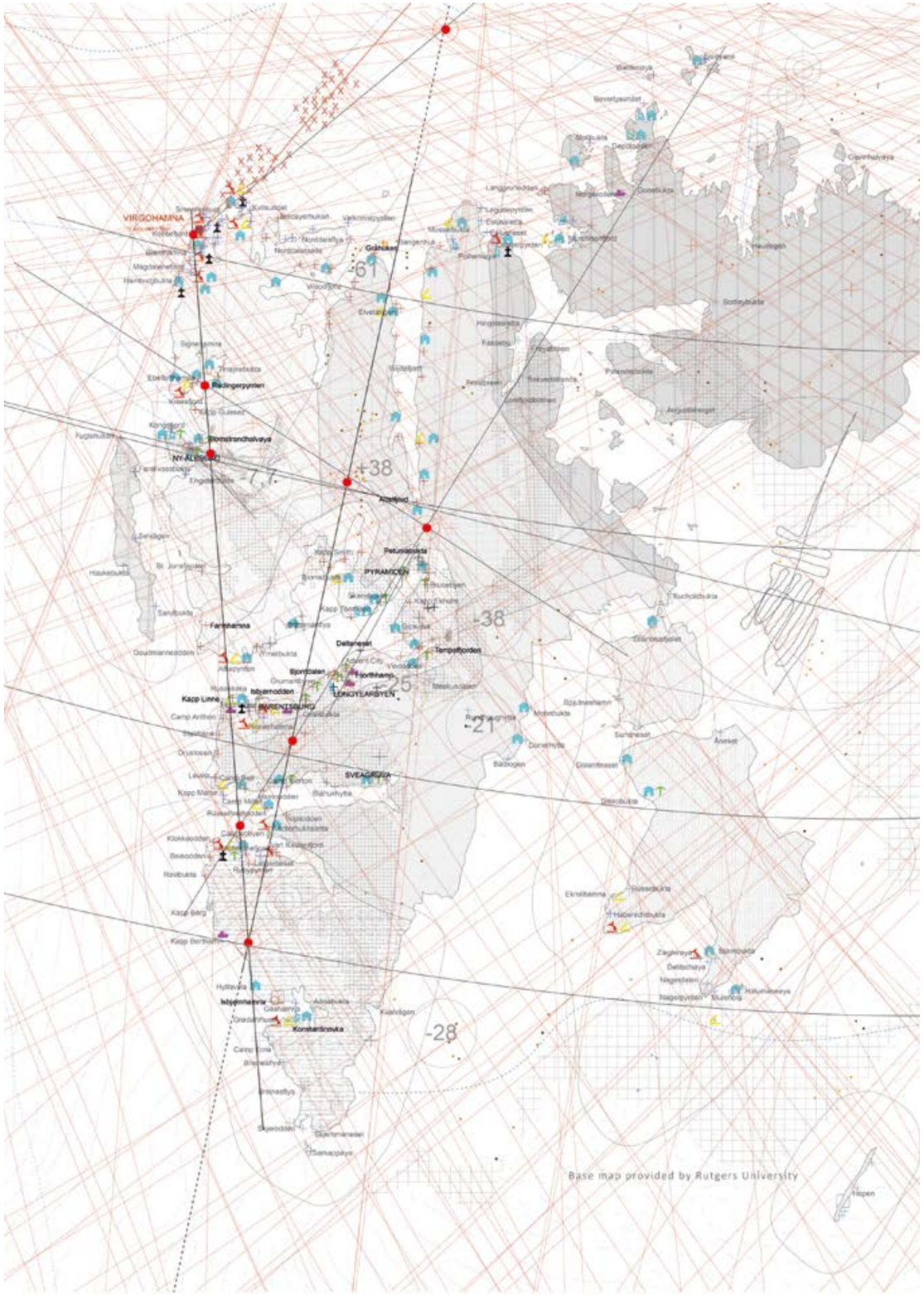


19. Svalbard as a Fluid Territory

Janike Kampevold Larsen & Eimear Tynan

Through a series of studies, the Tromsø Academy of Landscape and Territorial Studies have investigated landscapes and their development in a variety of Arctic Territories, demonstrating that there is a major global influence on local communities, and territories. This studio course, in conjunction with the Future North research project, has examined Svalbard as a fluid territory. The studio explored different methods to map a territory. The mapping, conceived as a series of layered, interlinked chronologies, has explored quantitative (data-driven), historiographic (archive research) and qualitative (memory and oral histories) aspect of this territory.

A study trip in August allowed the group to explore the territory by foot, car and boat. This allowed the group to engage with the landscape in different ways and at different speeds. Each place offered very different perspectives of Svalbard as a territory. The settlements, for example, uncovered very different cultural layers but all contained industrial pasts that contrasted strongly to the outside environs that gave a sense of wildness and purity. Each student undertook a series of assignments to develop a specific narrative attuned to a theme or subject of influence. Using a section line as the main research tool allowed for new and unforeseen readings of the territory. In addition, time was introduced to further enhance and inform the section. The superimposition of time and space revealed new logics, information and insights into Svalbard. The time frames varied enormously — from tracing Svalbard's geologic time-frame to mapping satellite trajectories over Svalbard in a 24 hour period.



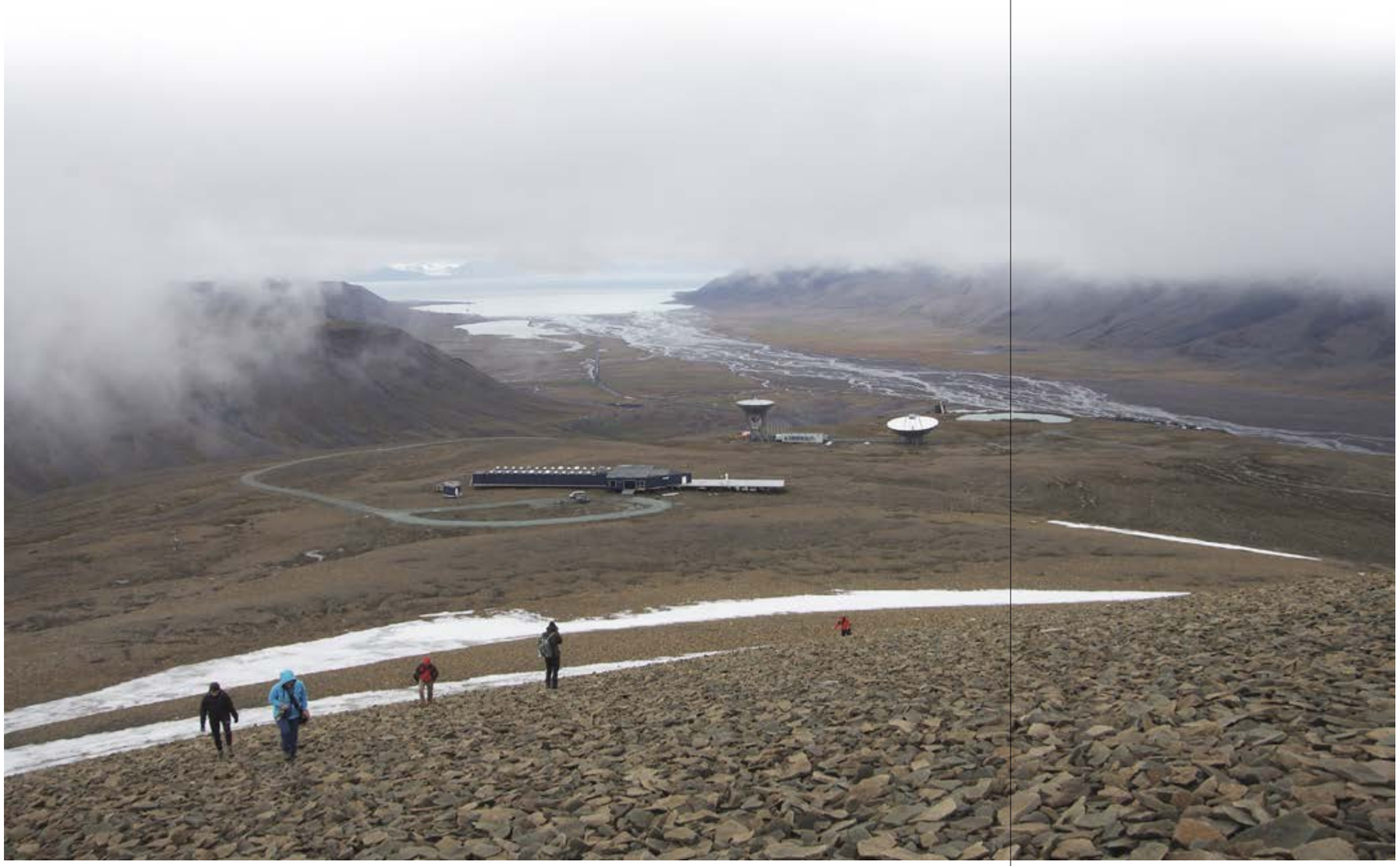
The product of the studio is an archive of material rather than an atlas of territorial information. It extends beyond the fixed data that we can easily access to examine the conditions that determine why a place is the way it is. It echoes philosopher Jacques Derrida's reference to the archive as both place and process. The studio can conclude that Svalbard is a territory in constant flux, where processes from the local to the global level, influence its being. It questions how landscape architects can develop an integral role in the Arctic in a territory of uncertainty.

This studio work received the Reward of Excellence in Research from The American Society of Landscape Architecture (ASLA), 2017.

Teachers: Janike Kampevold Larsen, Eimear Tynan, Kathleen John-Alder (Rutgers University) and Mats Kemppe
Cartographer: Riccardo Pravettoni
GIS specialist: Ellen Oettinger (Rutgers University)

Students: Jérôme Codère, Hans Eriksson, Brona Keenan, Charlie Laverty, Rasmus Pedersen, Matt Poot, Audrey Touchette

Back: Charlie Laverty, Jérôme Codère, Mats Kemppe, Riccardo Pravettoni, Rasmus Pedersen, Hans Eriksson, Matt Poot and Kathleen John-Alder; Front: Eimear Tynan, Audrey Touchette, Hsiang Hsiang Wang (guest student), Janike Kampevold Larsen (course leader), Brona Keenan and Ellen Oettinger



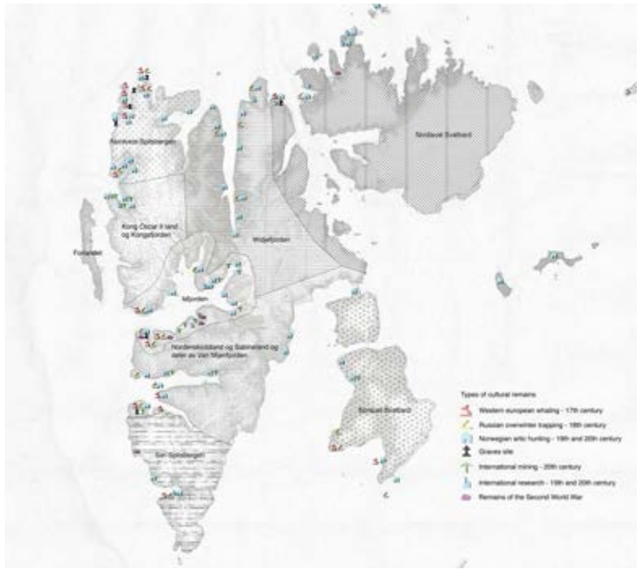
Site visit to the Kjell Henriksen Observatory

20. Ordering Disordered Memories — Svalbard as a Ruin Landscape

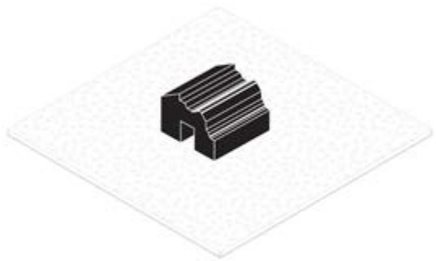
Jérôme Codère

Svalbard is often imagined as a pristine landscape, an untouched territory. However, while experiencing this landscape, one would quickly realise that is not the case. Remains of human presence and occupation are easily perceivable throughout the territory, in the form of tiny fragments and empty settlements and every scale in between. The poetics and sublimity of such a process and landscape are however quasi-unmappable and hardly quantifiable.
The aim of this work was to, at first, try to understand this entropic process of decay and ruination and summarize the forces at work, from landscape, to infrastructure, to ruin and to rubble that are embedded again at some point in the landscape, adding through time layers over layers of memories from what was previously present.

Mapping and categorizing these remains from different pasts allows us to have a better reading of the value of these ruins, distinguishing waste from cultural heritage, and incidently to decide whether or not to influence the ongoing decay and dissolution of these sites.



Svalbard cultural heritage remains location and categories



Ruins

"Ruin is both the claim about the state of a thing and the process affecting it."
"'The Rot Remains': From Ruins to Ruination",
Ann Laura Stoler

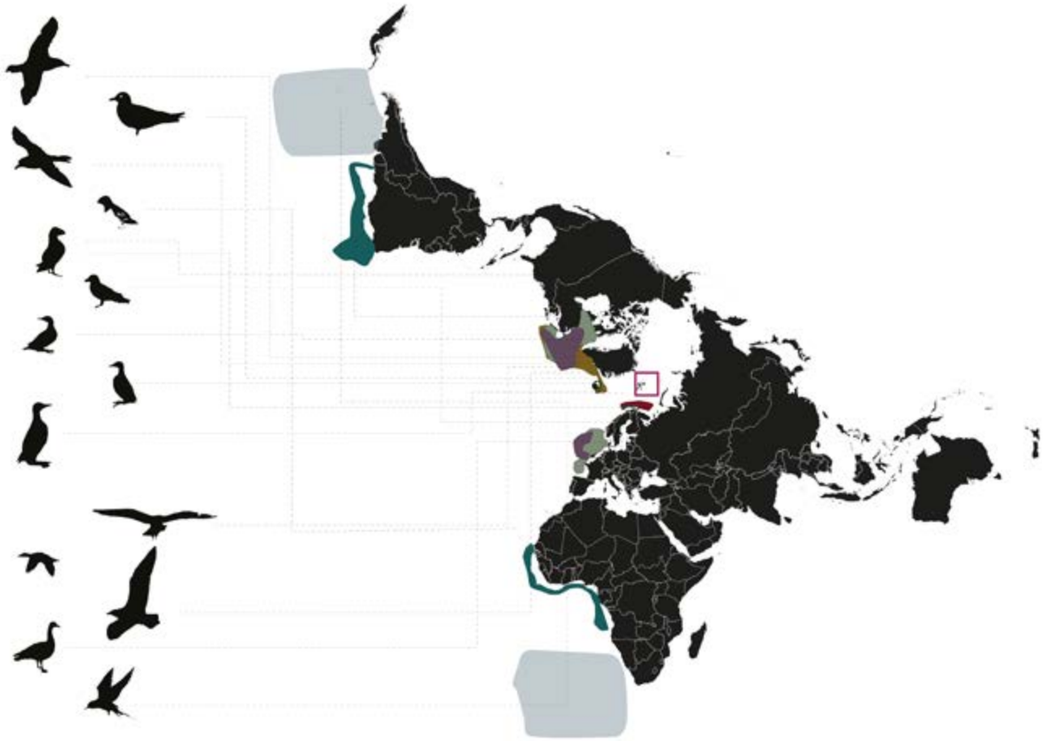
21. Vulnerable Svalbard

Hans Eriksson

The first coal miners in Svalbard used a canary in a cage as an alarm system. If dangerous gases were leaking, the canary would die before the miner and the miners could save themselves. Today, Svalbard's migrating birds also work as an alarm system due to climate change and pollution. The researchers study the birds to understand how individual species and populations respond to climate change, trophic transfer and accumulation of pollutants.

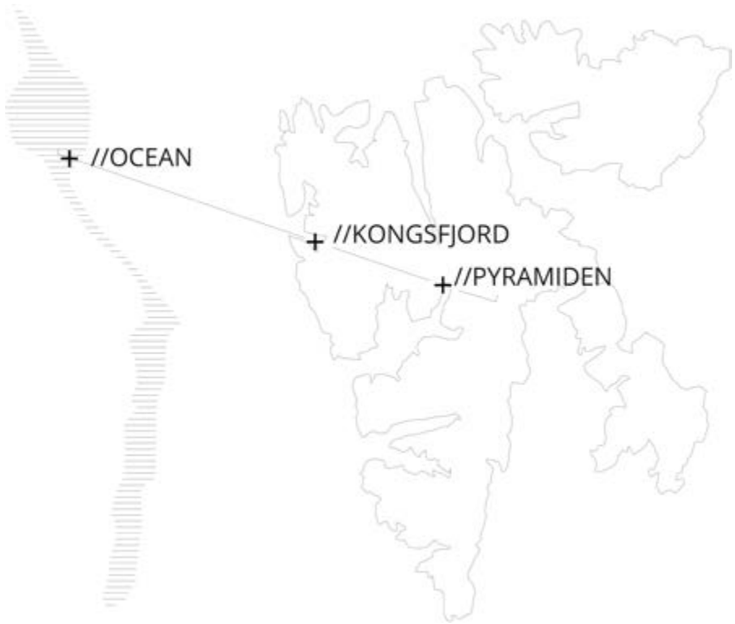
The focus of this investigation lies at the intersection between the human and non-human forces through one specific bird, the Kittiwake. As a migrator that connects Svalbard to a wider territory, it was interesting to understand which external forces affect their Svalbard habitat.

Birds in Svalbard are important for the Svalbard ecosystem. They fertilize the land through energy transportation from the marine to the terrestrial system. The research carried out during this studio examined the vulnerabilities of the Kittiwake in Svalbard's environment with particular emphasis on temperature change and increased exposure to pollutants. It was evident that changes on a global scale are impacting on a local scale. It is predicted that these changes will be even stronger in the future, creating a cocktail of stress factors mostly created by humans far away from Svalbard. Therefore, it is possible to conclude that the birds again are in a cage and giving signals that something is not right. The question now is: what will our response be?



The global map contextualises Svalbard as a haven for several bird species, many of whom, travel long distances to breed here.

The global map contextualises Svalbard as a haven for several bird species, many of whom, travel long distances to breed here.



Base plan showing the line of investigation: The section line cuts through Pyramiden and Kongsfjørd and follows through to the deep ocean ridge off Svalbard's western coast where birds feed.

22. Retracing Failure

Brona Keenan

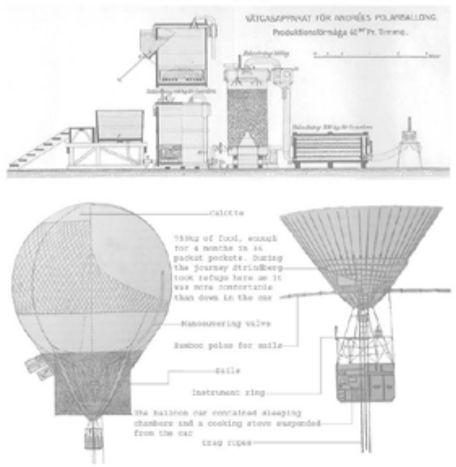
Virgohamna was a hub for early aerial attempts to the North Pole. The Andrée expedition was the first attempt to fly there and required innovations including aerial photography and gas manufacturing in the Arctic. Technological developments evolve in conjunction with our desire and ability to explore the world. Expeditions demand instrumentation and provide ideal testing ground for equipment. Individuals involved in the design of these technologies are often keen advocates for exploration, including Alfred Noble and Alexander Graham Bell. This project contextualises the history, geography and technology of the 1897 Andrée Expedition in a hot air balloon. It is informed by archival material from Andrée, Frænkel and Strindberg found 33 years later.

Earlier expeditions by sea were subject to many forces including politics, media and technology but also ocean currents, weather conditions, and sea ice. The idea of taking to the air would reduce exposure to natural elements, but only if the technologies could be relied upon. The balloon should also be steerable, remain aloft for 30 days carrying 3 men and supplies for 3 months.

The Andrée expedition was planned for 1896 but never happened. In 1897 preparations were in place to proceed as early as possible in the season. Boats brought media and tourists, supplies and mail. Emergency bases were stocked. The expedition was into unknown territory and they anticipated to land in Siberia, Alaska or Canada. Andrée indicated that the expedition might not be heard of for over a year.

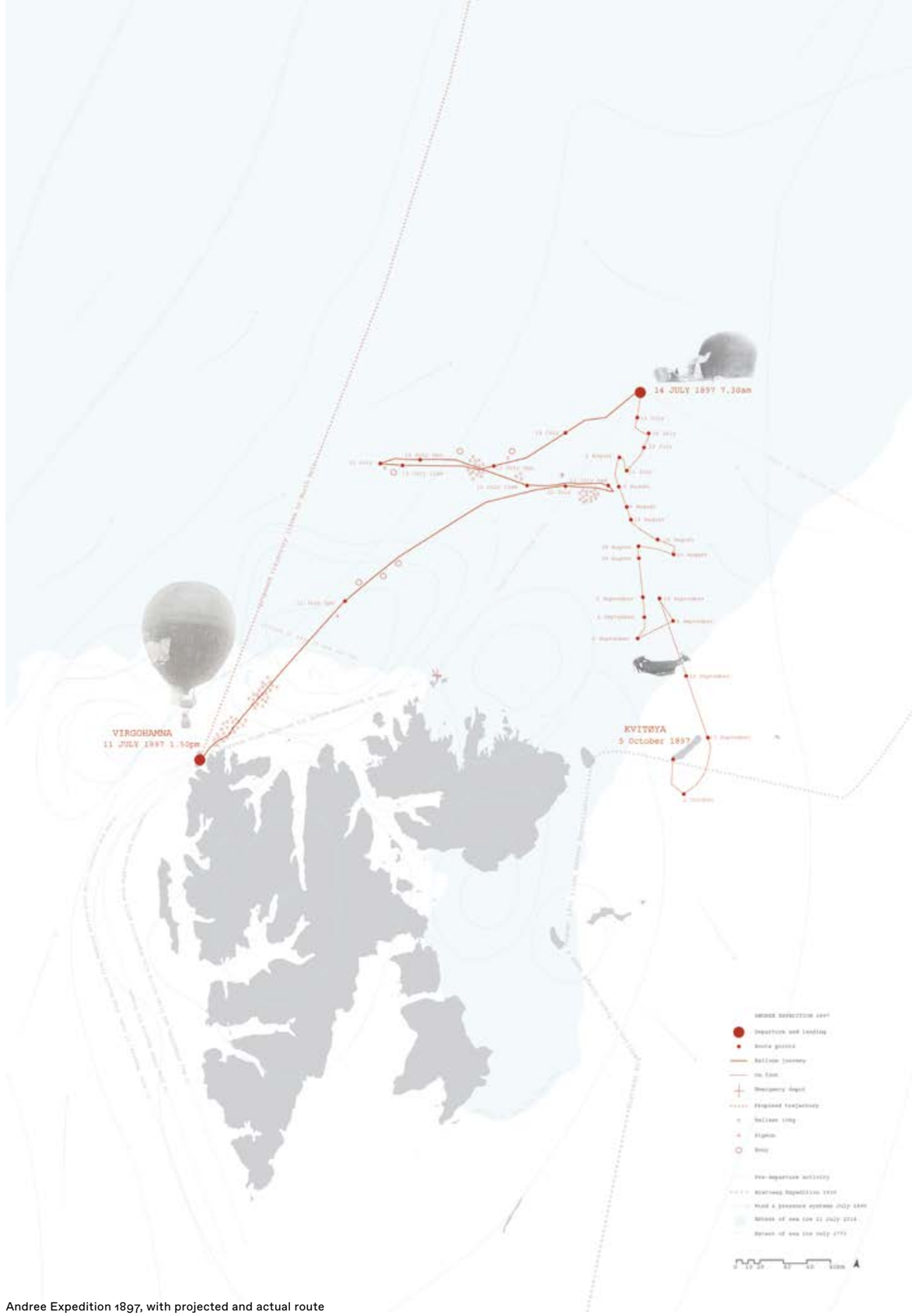
Predicted weather patterns for July were utilised as these would effect the balloon in flight. After jettisoning so much ballast early in the flight, the balloon was out of equilibrium resulting in an ineffective steering mechanism. This resulted in the balloon going off course in addition to the adverse effects of the unfavourable wind and pressure patterns.

The subsequent journey on foot over the ice was subject to strong sea and wind currents, occasionally forcing them in the opposite direction of the intended travel. Numerous search parties were sent out to find the expedition. In 1930 the Bratvaag Expedition came across the remains of the Andree expedition.



Expedition innovations required for the balloon

> "If Andree reaches his goal, if only he gets half way, the very feat itself will result in new ideas and new reform. In this too I want to serve the idea of peace, for each new discovery leaves traces behind it in the human brain which makes it possible to hand on to future generations more brains which will be capable of arousing new thoughts of culture."
> — Alfred Nobel



Andree Expedition 1897, with projected and actual route

23. Svalbard Shorelines

Charlie Laverty

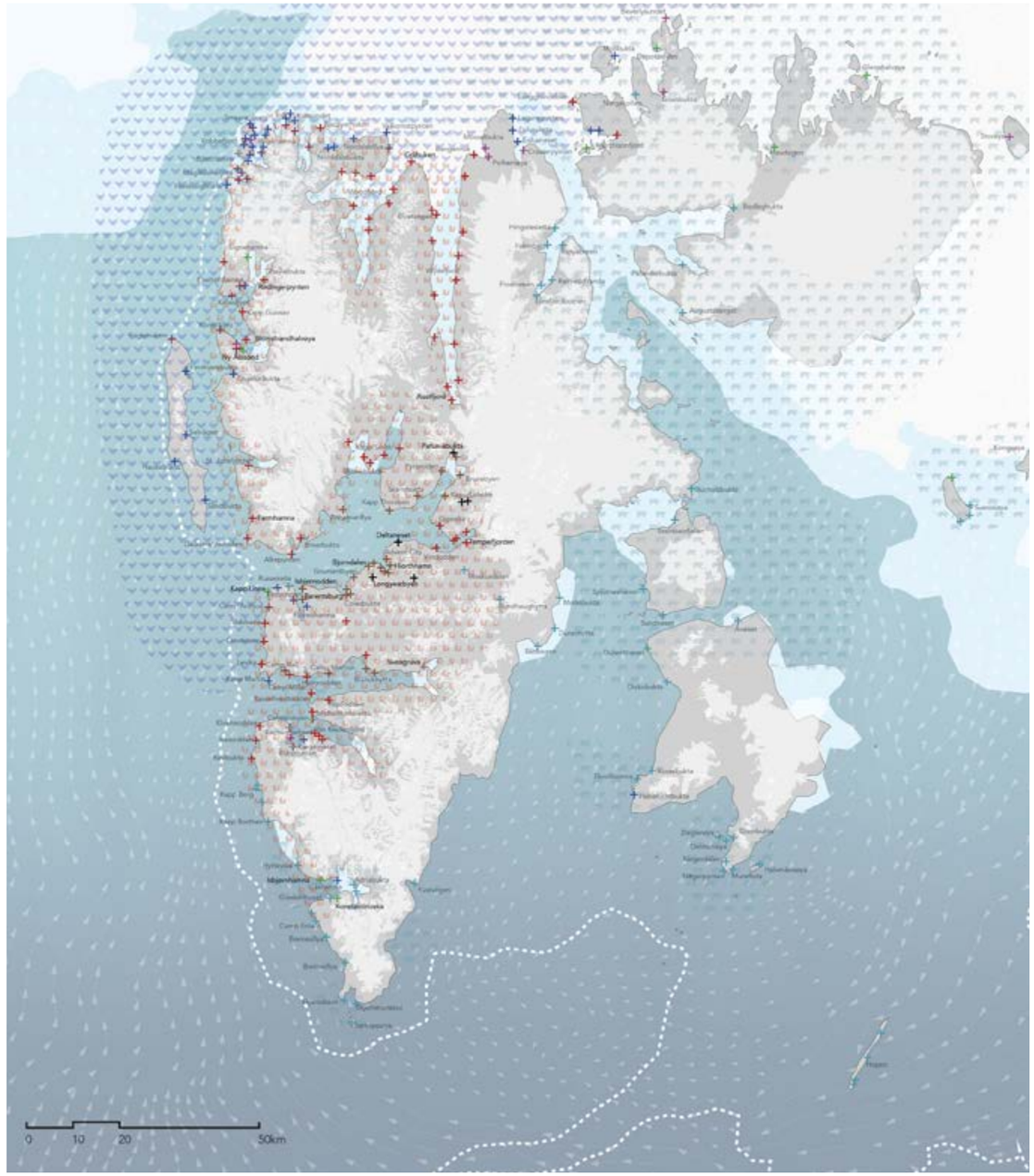
This project is a study of some of the forces which act upon Svalbard's shorelines; uncovering the relationship those who inhabited them had with their characteristics and materiality. The vast majority of human traces at Svalbard can be found along its coasts, dating all the way back to its discovery. Norwegians, Russians, Brits, the Dutch and many more have all trod the sandy, rocky, icy and windy beaches for a range of different purposes.

By mapping the forces that are impacting upon these shorelines, this project aims to understand why some shoreline landscapes have been so favourable, and others not so. Furthermore, mapping the extensive settlements, activities and nationalities reveals territories that have been located at Svalbard throughout time, challenging the view of Svalbard as a remote and untouched territory.

Most human activity at Svalbard has been located along its west coast. The west coast is exposed to warmer sea currents, particularly towards the north, that make up part of the Gulf Stream which keeps it relatively free of sea ice in comparison to other parts of the archipelago. This allows ships better access to these areas. Also, glacial terrain is more prominent in the east of Svalbard. In some areas, such as at Nordaustlandet, massive glaciers extend into the sea and become the coastline, making these areas inaccessible. An abundance of natural coves and harbours complement this, giving the vessels a place to dock and providing shelter. Therefore, in some places, it is no coincidence that different generations of inhabitants have ended up in the same areas, even if for different purposes.

'Svalbard Shorelines' aims to find out what it was like for the early settlers to inhabit these areas, and how they utilised the landscapes differently or similarly to each other.

Photo by Louise Roberts : https://louiseroberts.exposure.co/sailing-the-noorderlicht



Base map, including glacial terrain, provided by the School of Environmental and Biological Science, Rutgers University.

24. Evolutionary Accumulation

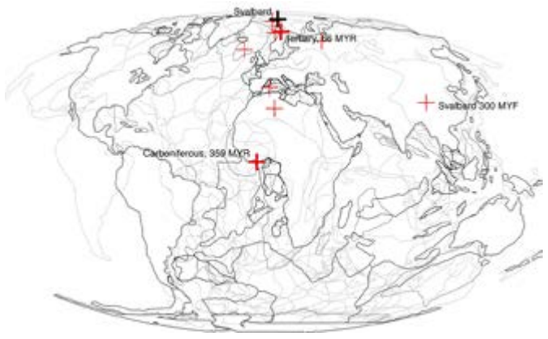
Rasmus Pedersen

Materials are moving and changing, at different speeds and different size, from one substance and volume to another. This material fluctuation can be traced through the present coal-landscapes of Svalbard, and the systems and processes they belong too.

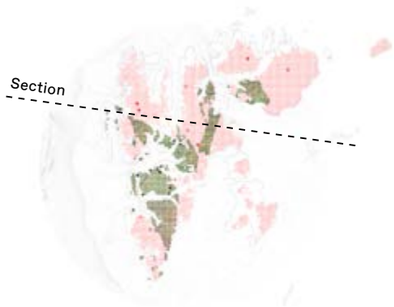
The coal in Svalbard represents an accumulated vacuum of time and space, which has manifested itself in the landscape as a contemporary geological layer. Coal seams from different geologic periods of time and geographic origin have been, and still are, excavated and exploited for similar purpose as a part of a production process. As a by-product of this process, different landscapes have emerged on Svalbard. As significant topographies on the ground and ephemeral, yet persistent, particles in the atmosphere.

Coal Carboniferous: 359MYR

Coal Tertiary: 66MYR



Svalbard's movement over time — tracing the origins of Svalbard's coal layers from 10N to 79N



Coallayers, glacier expand with mining- and ice-core sites

Water erosion and vegetation create new by-product landscapes and topographies in abandoned coalfields from the mining practice.

Where the coal layers represent a deep time nature we can only try to imagine, a more recent accumulation of time and space is found in the immense expanse of glaciers on Svalbard. The glaciers cover 60% of the archipelago and represent an archive that enables us to recall global trajectories of natural and cultural processes effecting the environment.

Those two time/space accumulations have become interrelated as scientific and cultural objects. By the ongoing release of energy from the deep time geologic space we both accumulate and deplete the archive, which contain these actions of our own time and space — the Anthropocene.

The investigation of an East/West section, from the Greenlandic Sea throuvvgh the former mining town Ny Ålesund, the glaciers Holtedahlfonna and Lomonosovfonna out in the Barents Sea, suggest looking at Svalbard as a territory where geologic timescales and geographies of deep time, within and beyond the archipelago itself, are re-articulated as by-product landscapes. New typologies and topographies appear while other dissolve.

"New", undiscovered topographies appear as the glacier's front retreats and adjusts their mass to the present climate conditions

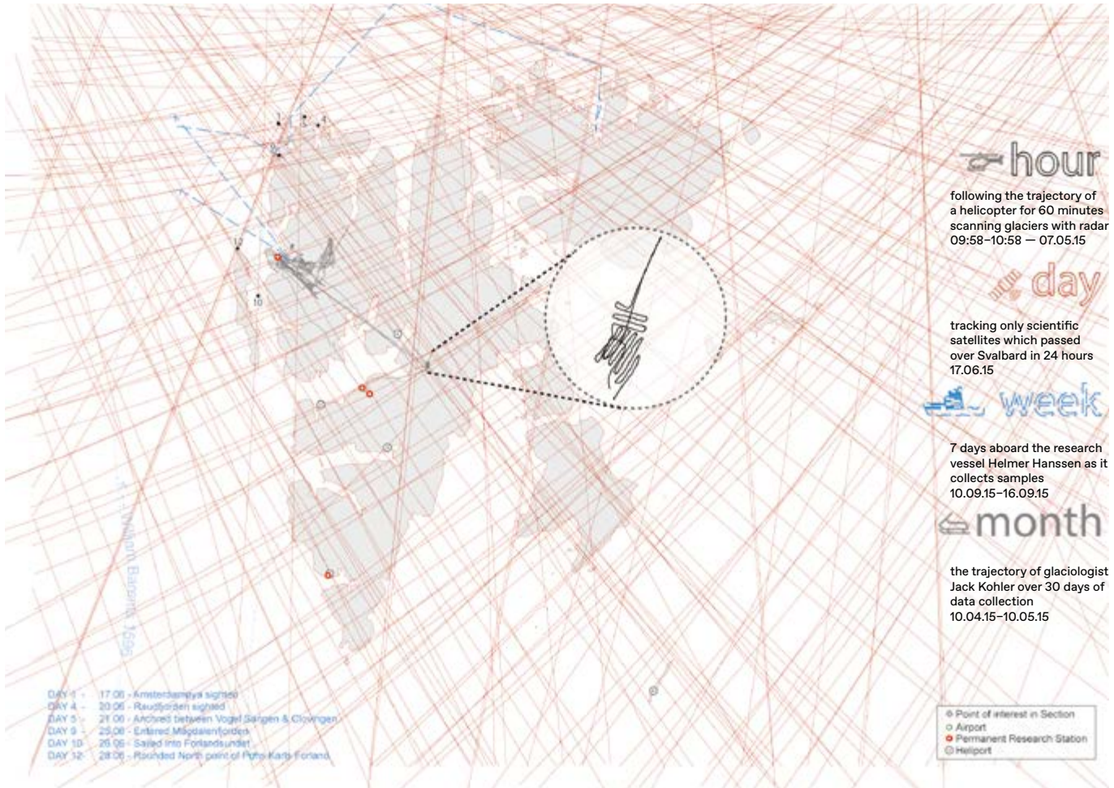
25. From Physical Landscapes to Digital Territory

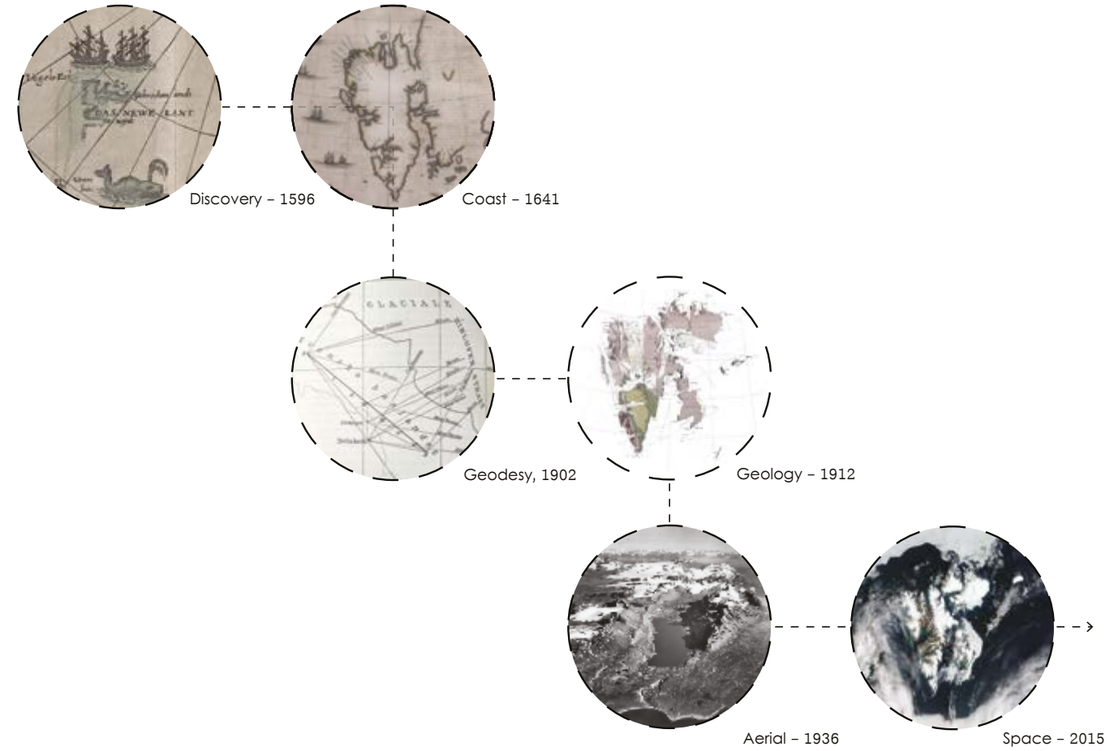
Matt Poot

This poster works to show the history of scientific activity in Svalbard while providing a narrative for a shift in the relationship between people and landscape. What was once a world observed and collected, where observer was separated from the observed, has transformed into a world where there is no separation between what is being observed, and that which is doing the observing. Sporadic expeditions of great cost and little depth have given way to a total saturation of activity and understanding across even the most remote of Svalbard's environments. Science plays an important role in how we see, understand, and interact with the landscape.

In many examples of contemporary science in Svalbard, the means of interacting with the territory have grown increasingly abstract and removed, while the relationship between the scientist and their object of study becomes simultaneously more complex and intertwined. Early scientific endeavors were characterized by the collection and description of easy to observe specimens and associated processes. These were generally carried out by generalist individuals or small groups of people. This has progressed into large, collaborative research programs where individual scientists are extremely specialized, and focus on understanding underlying processes which remain invisible to the untrained eye, yet which are fundamental in their shaping of the natural world.

The practice of science and its steady progress has had a large impact on how people can interact with Svalbard on both an emotional and intellectual level. The large natural parks and ecological reserves rely fundamentally on the practice of science for their very existence, both in defining their modus operandi and determining their boundaries. The deliberate process of research and understanding of the pieces and processes of these areas shapes how they are understood by the general public as places of special worth, and worthy of attention for their unique qualities. The knowledge passed on to the public in the form of simple and informative brochures or via the dialogue of tour guides and presenters reveals Svalbard as a territory which is isolated and extreme, yet beautiful and amenable to the everyday person.





26. Invisible Boundaries: Staking a Claim to the North Pole

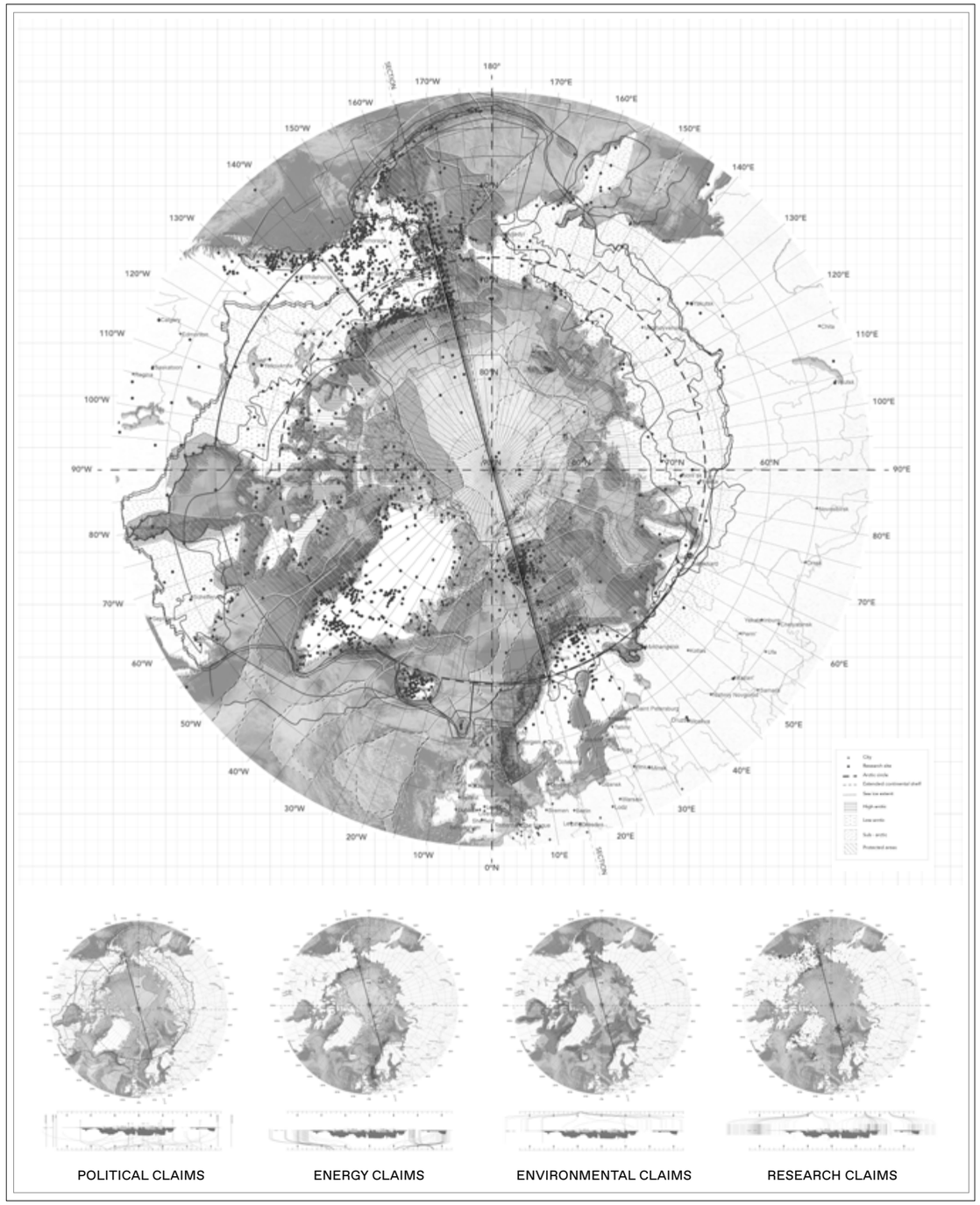
Audrey Touchette

Under the sea ice resources are hidden. As climate change has speeded up in the recent decades, the Arctic 5 territorial claims grids have spread toward the North Pole overtime accordingly to the availability of the resource resulting in a discontinuous territory of research and extraction, defined in itself as an unique ‘‘moving’’ and ongoing topography.

The Arctic geopolitical debate uncover the true state of relations between the countries in the High North. Ironically, forces are working together toward an Arctic cooperation but at the same time against each other, acting upon the territory, revealing research, political, environmental and economical structures. Each states try to get a ‘‘piece of sea’’ by creating and adding new divisions/ boundaries.

Svalbard’s key location is defined as one of the most accessible area in the Arctic with well-developed research infrastructures and at the very intersection of new shipping routes. Not to mention that on another perspective it’s deep value can also be synonym of vulnerability.

Are these extensive grid networks made up by political, energy, environmental and research claims the new strategy for the conquest of the North?



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VIRGOHAMNA
11 JULY 1897 1.30pm
14 JULY 1897 7.30am
EVITSYA
6 October 1897