Climate - Ecological Observatories of the Arctic Tundra

ivaarrnatur: urbanEcoObservatory

process, progress, disturbance & Ecosystem Perception

invVADSØ

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Fall 2017

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1 Introduction

1.1 Project Introduction

Climate-Ecological Observatories for Arctic Tundra

Location: Vadsø, Finnmark, Northern Norway
ivaar:natur:urbanEcoObservatory

The project consists of two parts:

I Pre-diploma: Research
Presenting initial research and mapping concerning the subject of the relationship between human and nature and the geographical area.

II Diploma: Project
Visualizing a combined urban, spatial, knowledge strategy and includes a set of designed interventions.
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1.1 Diploma Project: Introduction

My project includes an extension of the local strategy by the existing research initiative, *Climate Ecological Observatories of Arctic Tundra’s* (COAT), to communicate their climate change findings and knowledge. I will extend their strategy by designing new modes for communicating the research COAT produce along the surrounding border between tundra and taiga. The diploma project includes:

**An urban strategy**

+ **A set of design interventions**

The city centre of Vadsø will serve as the starting point to investigate how the use of place-specific assets may contribute to produce design interventions communicating COAT’s research and contribute to reflections on the eco-system and the changes.

The vast Varanger Peninsula National Park adds friction to the discussion regarding the idea of the primary and pristine. Half of the area within the Vadsø municipality is half National Park. The municipal council and the COAT research program face strict national restrictions slowing down their plans.

My project is informed by discussions of the relationship between human and nature based on considerations of eco-system management, sustainable development and climate change on a local level. The project explores how to interpret and disseminate the results of a global research program such as COAT, making it relevant locally, seeking to use the research program in an extended version as catalyst in an urban development strategy.

Program and strategy will be developed along with the project, and the design will be generated through this process. Design interventions will be the testing of how aims and strategy may manifest themselves spatially, and how this could affect the urban spaces of Vadsø and the development of the city.
Thesis Outline

2.1 Project Statement

Climate-Ecological Observatories
process, progress & disturbance

This diploma thesis will develop a design strategy for a set of climate-ecological observatories on the Varanger Peninsula in Finnmark, northern Norway. The program I will base the brief on is a part of the research project COAT (Climate-Ecological Observatory for the Arctic Tundra) initiated by The Fram Centre (High North Research Centre for Climate and the Environment). The program is currently in the progress of being implemented. Observatories will be implemented at the Varanger peninsula, as well as on Svalbard. These observatories will be Norway’s contributions to the global call to establish scientifically robust observations systems enabling real-time detection, documentation, understanding and actions on climate impacts in climate change hot spots, in this case the tundra biome. The particular program according to COAT is two field stations on the plateau of Varangervidda, one of them inside the border of the Nature Reserve of Varanger Peninsula, and also a local office located in Vadsø. The needs of the field stations are a workspace (instrument), living space (body), storage space (supply and instrument) for six people in 2-3 weeks. The field stations will be central nodes in a larger system of smaller monitoring and measuring installations, all to be considered non-permanent.

The research program will not inform the thesis as a strict guideline, but as a frame and a stepping stone to investigate the relationship between human and nature through architecture. Both program and locations has interesting friction areas related to this relationship and how it potentially translates into the production of landscape. The intention of the project is thus to challenge the term nature in itself. The sites are located within or close to the border of the Varanger Peninsula National Park. If first nature is being defined as the primary and pristine, untouched by humans, and in contrast second nature is defined as modified nature (Smith, 1984), such as extractive or settlement landscapes, you are per definition stuck with a border between the two. You are also stuck with aesthetics and economics as the two primary forces ‘producing’ landscapes and conditioning approaches (Purdy, 2014). One might ask if the idea of a national park is anything but a wilderness-seeking romanticism,
Thesis Outline

2.1 Project Statement

Climate-Ecological Observatories
process, progress, disturbance

manifested through a border drawn around a piece of territory, managed and protected as a response to the human idea of the real nature experience. On the other hand, are the current way of approaching natural resource extraction anything but treating landscape as a neutral stock of resources? Would the elimination of the border between the two landscape notions be an introduction to a potential Third Nature, and could this be a notion of nature as something not existing apart from humanity and thus contribute to create a broader ecological awareness of the integration of humans in nature?

Another area/program friction related to the question of nature and human relates to scale, and how globalization influences landscape in every corner of the globe. Thus, the global agenda of this kind of research program interacts with the local landscape and local resource practices. Both the idea of the scenic landscape and the extractive landscape (Larsen, 2014) tend to exclude the voice of local tradition and practice. Another friction the project will pay attention to is yet another border, this one existing both physically and visually: the biome border between the tundra and the taiga. This particular border is one important factor making the Varanger Peninsula a climate change hot-spot, leading to the location of the COAT research program, as it functions as a first indicator of change.

The design interventions will critique perspectives, but will at the same time answer the program of the COAT research program. This important program currently relies on an approach to landscape based on cultivating a border between first and second nature. This perspective will be challenged. The strategy of local outreach and society evolvement is already a valid part of the COAT research program strategy, differing from a lot of global research initiatives. This thesis will strive to extend this local strategy, as a tool for architecturally investigating place-specific potentials for understanding and changing our eco-system perception. Human influence is now geological in scope, and climate change is planetary engineering without a design strategy. Thus, the project is founded on an idea that in order to ‘solve’ climate change, we need to reimagine our entire relationship with nature.
The word *Nature* with its slippery, and somewhat undefined meaning, leaves a large room for interpretation. And there is no way denying this word being central to all ecopolitical discourse. “It is nature, after all, that we are told is being lost, damaged, polluted and eroded; and it is nature that we are enjoined to respect, protect and preserve.” (Soper, 1999) This makes the definition of and the changing essence in this word very important to define when entering a new chapter of environmental discourse.

This discussion has of course not just begun. The argued dualism (Schmidt, 1971) in a young Karl Marx thoughts (Economic and Philosophical Manuscripts of 1844) on nature under capital. Later Friedrich Engels wrote the Dialectics of Nature (1883). In continuation of the Marxist dualism geographer Neil Smith elaborates the terms *first* and *second* nature. First nature as the primary and pristine, untouched by human. In contrast, second nature including all forms of nature humanly modified. Agricultural and urban landscapes, the commodified nature. (Smith, 1984) Smith further argues that there are no longer any use in trying to find *first nature*. Everything is to some extent commodified and valued for resources. Following this logic it does not make sense to even think about trying to protect, or not to mention create first nature, no matter how strong the yearning we have for it. Because as soon as we do it is no longer neither primary or pristine and it will merely be perceived *first nature*.

So concepts of first and second nature are not new. The same goes for *Third nature*. Third Nature was a term coined during Renaissance referring to a new type of garden creating a new and unknown reality with a radical new materiality constructed through cultivation. (AA Gallery, Third Nature Exhibition, 2014) Marcus Tullius Cicero (106-43BC) mentioned first nature (wilderness), second nature (sowing corn etc) and third nature or terza natura (the landscaping of gardens) (Bartolomeo Taegio, 2011)

What is changing though, I argue, is the increasing need for its relevance and value in the ecopolitical discourse. Third nature as a definition of the symbios between nature and human, which historically has been everything from harmful, necessary, useful to beneficial and meaningful.

In the sami language this kind of landscape are called *meahcci*, meaning something that has to be cared for, but at the same time give us what we need. A connection between animal, plant and human.
Thesis outline

2.1 Project Statement *Third Nature*

This leaves us with a front stage and a back stage. The front stage giving a vision of this pristine landscape staged, framed and commodified as the pure, real, wild experience. This romantic notion of the nature conceals a complex truth about our relationship with it. Placing us at a safe distance, gazing. Then we have the backstage, the landscape we use for extraction of resources. With both a proud and a problematic history attached to it. Still is damaging, necessary and beneficial all together, kept as far away as possible from being mixed with our scenic landscape. This makes the knowledge and discourse on Nature Preservation and Landscape Extraction and use today rather blunt.

By deromanticizing nature, in the sense that human intervention should and could contribute to restore the damage done, we could leave the path of unrefined nonsofisticated extraction of resources, concealing rather than dealing with the truth of our interaction / interference / exploiting of natures resources.

This obvious urge to control and protect raises some interesting question. Faced with these regulations according to completely diverging notions of landscape it becomes interesting to look at why it is like that. When it comes to the romantic notion the visual seems to play a significant role and question what is esthetically pleasing, what do we see, and why does it matter? Much which ecologist losely referres to as natural is indeed a product of culture, both in a physical sense and in the sense of the perceptions of its beauties and value are culturally shaped”(Soper,1999)

This contributes to preventing the ability to grasp a larger complexity both in time and scale, putting us in the position of categorizing rather than connecting to see the larger picture that is our eco-system. It makes our ecological awareness limited and two-dimensional.

Could the access and appreciation of a Third nature this be an opportunity to raise a stronger and more complex ecological awareness?
Thesis Outline

2.1 Project Statement *Third Nature

We extract, modify, destroy, create and cultivate. Humans today extract and use around 50% more natural resources than 30 years ago. Further ongoing environmental change increasingly demands that humans has to intervene in ecosystems to maintain or restore ecosystem services and biodiversity. So why is the ecopolitical discourse so heavily influenced by elements creating a somewhat dystopian image, leading to a sense of powerlessness and apathy. We should withdraw at this point. We should expand, cultivate and sophisticate our interventions. And the knowledge and awareness to go with it.

First and foremost, to be able to raise awareness the need for accessible information is undiscussable. But there are tons of information out there and the ability to process information by looking at neutral statistics and is not useful neither appreciated.

Telling the story of the previous would be important to put todays events in a line of ever-contionuing processes. Accessing present established methods and traditions of interactions and interventions with landscape and nature has a purpouse when it comes to understand our infliction on process, either productive or destructive. Problematic interactions with landscape, as well as necessary and meaningful ones are all important to grasp the larger picture of future opportunities of processing and development.

On the foundations of the previous, both productive and destructive (or both) landscapes, introducing the visionary and imaginative visuals will be important. Evoking the hope for ongoing change, triggering the imagination for something larger.

Process, not object. The describing of the northern territories as being subjected to deep time, climate change, geological forces encounters the dimension of complexity in time and scale that this thesis should aim to approach.
Thesis Outline

2.2 Research Questions

1. How can a design strategy reveal the human made influence in a landscape perceived as *first nature*, primary and pristine?

2. How can design interventions architecturally investigate place-specific potentials to understand and change our eco-system perception?

3. How can a climate-ecological observatory work as a catalyst in an urban development strategy for a shrinking city?
3.1 Program

Existing Program of COAT
(This program only partially informs the program of my diploma thesis, see p. 1)

COAT Research Project
Location: Varanger Peninsula

Office logistics:

Vadsø, Statens Hus
Office space 1 person
Storage space at the Vadsø harbor

Tromsø, Framsenter & University of Tromsø
Office space, the rest of COAT research team

Field logistics:

2 field stations
a part of COATs 2 intensive areas
basis for field work-based monitoring

Housing units
accommodation for COAT personnel
max 6 persons i 2-3 weeks of field work
workspace for
processing of samples, data
preparing of instruments

Supply logistics
storage space / supply and gear
HMS equipment
scientific equipment
food supply
fuel

Instrumentation: Weather stations Camera trap
Networks, listening stations etc

Not to be considered permanent installations.
Geographical Region -
3.1 Climate Challenge - COAT

Locations of COAT field observatories

SVALBARD
- Longyearbyen
- Adventdalen // Sassendalen
- Ny Ålesund

NORWAY
- Varanger Peninsula
- Vadsø head quarter
- Komagdalen v/Hubahytta
- Nesseby v/Bergebyvann
3.2 Research Infrastructure

Field Station: «Hubehytta» Komagdalen: N70.32212 E30.06437

Field Station: «Skoarrajohka» Bergebyvann: N70.33102 E29.13655

Varanger Peninsula

national park Border

tundra / taiga Border

snow monitoring

listening station area

int. square area

existing cabin

trail cam area

trail cam E

trail cam P

trailcam + bate

intensive square

weather station

gravel road

main road

national park Border

path pattern

rough road

main road

Varanger Peninsula
COAT Climate-Ecological Observatories for the Arctic Tundra

Locations: Varanger and Vadsø
My summary on COAT’s Local Strategy based on:

Science Plan of The Climate Ecological Observatories of the Arctic Tundra, published 2013

3.3 Local Strategy

Established Local strategy

COAT Research Project

Societal involvement / Community outreach

Local agenda “(...) a structured scheme for involving stakeholders, policy makers and management authorities, as well as a protocol for monitoring changes in the public perception and use of ecosystem services and nature. This monitoring system of the socio-ecological system will partly be web-based and partly be based on observations and interviews”.

From the Science Plan of The Climate Ecological Observatories of the Arctic Tundra (COAT), p. 147

Global agenda “The rapid shift to new climate regimes is likely to give rise to new ecosystems with unknown properties, making science unable to accurately predict the consequences. (...) This realization has led to urgent global calls for the establishment of scientifically robust observation systems that enable real time detection, documentation, understanding and actions(...)”

From the Science Plan of The Climate Ecological Observatories of the Arctic Tundra (COAT), p. 21
Climate-Ecological Observatories for the Arctic Tundra
Fieldwork

Listening Station, Grouse module

Possible location of Weather Station

Temperature Measurements
Climate-Ecological Observatories for the Arctic Tundra

Fieldwork

Reindeer in dead Birch forest

Intensiv Quadrant 15x15m
Collaborating Observatories:

The circumpolar tundra biome is vast, and different geographic regions are subjected to different climatic domains, species pools, ecosystem complexity and anthropogenic impacts. Thus, no single site or ecosystem can be expected to be representative for the changes the biome will be facing in a warmer climate.

Greenland & Bylot Island
COAT shall maintain tight links with other ongoing monitoring/long-term research initiatives applied to tundra ecosystem that have adopted a comparable approach (i.e. based on a food web perspective); notably NERO/ZERO in Greenland and the Bylot Island ecosystem project in Canada. Indeed, collaboration between these initiatives

Russia
Russia harbors almost all of the Eurasian arctic. tundra. we regard in particular two sites as suitable sister observatories to the two Norwegian COAT sites; Erkuta in Yamal Peninsula relative to Varanger peninsula in the low Arctic, and Wrangel Island in eastern Siberia relative to Svalbard in the high Arctic.

From the Science Plan of The Climate Ecological Observatories of the Arctic Tundra (COAT), p. 143
Arctic tundra biome is located in the northern hemisphere, encircling the north pole and extending south to the forests of the taiga. Known for its cold, desert-like conditions. The average winter temperature is \(-34^\circ\text{C} (-30^\circ\text{F})\), the average summer temperature is \(3-12^\circ\text{C} (37-54^\circ\text{F})\) which enables this biome to sustain life. Bordering the tundra is the taiga biome (boreal forest).
Arctic future strategies from a local perspective

Arctic communities are facing the direct impacts of climate change in unique ways—retracting sea ice, increased marine shipping and tourism, thawing permafrost and coastal erosion, earthquakes, tsunamis, hurricanes and loss of biodiversity. Models already indicate that climate change will change the timing and magnitude of spring melting, resulting in "ice jam" flooding in communities. In addition to the people within the community, this shift will impact on fish resources and biodiversity.

Environmental changes are coupled with human-made phenomena such as globalization, urbanization, social inequality, and a lack of modern infrastructure and essential services and the new economic opportunities that often accompany them. Increased transportation and more infrastructure will affect indigenous peoples in remote communities and their use of frozen lakes and rivers as routes to traditional hunting, fishing and trapping areas or for accessing larger human settlements.

Cathleen Kelly, Senior Fellow, Center for American Progress points out that the global costs of Arctic climate change will be astronomical, reaching anywhere between $7 trillion to $90 trillion between 2010 and 2100. There is most certainly a sense of urgency and a need for all hands on deck.

In this dynamic, it will be local communities who adapt, manage risk, and work to harness the benefits of change for the community, and local leaders will be on the frontline. To confidently address these challenges and seize opportunities, the Arctic region needs new forums for cooperation, learning and best practices sharing at the local level.

The Arctic Mayor Forum - Municipal Leadership and Development
Social and ecological systems in the Arctic are inextricably linked, more closely than most other regions of the world, and some aspects of these systems are changing fundamentally and surpassing thresholds that may be irreversible. Indigenous residents of the Arctic have always adapted to environmental changes, but the intensity of climate change, combined with social, environmental, economic and political shifts and constraints, make adaptation extremely challenging in today’s Arctic settlements.

“The people of our municipality are resilient and intend on creating a good life for themselves and their neighbors, and on facing the obvious challenges head-on... We need to strengthen the local government and we need to find solutions on resilience for the north together.” Mayor of Kommuneqarfik Sermersooq Asii Chemnitz Narup (Greenland)

“The English philosopher John Stuart Mill made clear that local government is the essential part of the democratic government because they increase the opportunities for participation … Local authorities have considerable power, as local knowledge, interests, and perspectives to make it more likely that greater efficiency can be achieved.” Mayor of Akureyri Eirikur Björn Bjorgvinsson (Iceland)

The Arctic Mayor Forum, under the heading ‘Municipal Leadership and Development’, is an important step in advancing local circumpolar cooperation in the Arctic discourse, providing local leaders a more evident role developing the pan-Arctic future. The goal is to secure participation from as many Arctic Mayors and communities as possible to secure the value of this process.

May 11th, 2017 marked a historic day in this development. Twelve mayors from five countries—the United States, Canada, Finland, Iceland, and Norway—developed and signed the first-ever Arctic Mayors Declaration. The Declaration, among other thing, states:

“Local government in the circumpolar region has a special role — to deliver essential public services; convey the priorities of residents at the most fundamental level to state, national and international decision-makers; and work to ensure that the community itself is resilient and sustainable in the long term.”

The Norwegian Government has implemented the regional development in their Arctic strategy, hence they find that the Arctic is Norway’s most important foreign policy priority. Foreign and domestic policy are intertwined in the region, and people’s everyday lives involve both high politics and day-to-day issues. Close international cooperation is crucial to maintain safety standards and protect the Arctic environment and resources, presented by Grete Ellingsen, State Secretary to the Minister of Local Government and Modernization, Norway.

Resilience building is essential in the face of changing challenges in this extreme climate, as such, special focus was given at the Arctic Mayors Forum on sharing the tools that local arctic leaders can use to become more resilient. To take this initiative further, Mayors, local governments, and community leaders were invited to the United Nations Human Settlements Programme (UN-Habitat) to establish an Arctic Resilient Cities Network (ARCN).
4.1- Global Arctic - Hot spot

As highlighted by the Arctic Council, it is important for governments, indigenous peoples and local communities to work collaboratively to build resilience to socio-ecological changes. This correlates with the terms of the ARCN, which suggests that the best possible means of ensuring future resilience in arctic settlements is through collaboration between cities, their local governments, and their cultural heritage leaders, by sharing knowledge, exchanging information, and lobbying their national governments to ensure inclusivity, safety, and sustainability of villages, towns, and cities throughout the region.

"Participating members of the ARCN will have access to proven tools, guidelines and expertise through UN Habitat’s programmes and communities of practice. The ARCN will also provide a global platform for engagement of Arctic leaders with local governments around the world." Dan Lewis, Chief, UN Habitat Urban Resilience Programme

Whilst the effect of a changing climate remains a primary factor in the future vulnerability of human settlements in northern extreme cold climates, the resilience of these settlements depends on a transformative approach to planning, development, and governance.

'Resilience' is the ability of a system to bounce back and thrive during and after disturbances and shocks. Climate Adaptation is one series of adjustments in natural or human systems, in response to climate change, intended to minimize disruption or take advantage of opportunities.

However even in the Arctic, villages, towns, and cities face a wide array of other challenges, and will need to consider their future development through ‘planning out risk and building in resilience’.

"The leaders of the North want to lead, to create the future and make adaptation and resilient societies that benefit and secure our people. The local governmental voice is necessary to secure and shape the Arctic future for both the Arctic and the world." The Mayor of Bodø, Ida Pinnerød (Norway)

Mayors and other local leaders plan for the future of the Arctic people. Increasing the toolbox of resources (technology, smart solutions and social and educational development initiatives, among others) through a forum and space for sharing knowledge, best practices, and innovation is both required and requested.

And this is is what it is all about: Bringing together local leaders for global change.

Christin Kristoffersen is the former mayor of Longyearbyen, in the islands of Svalbard, the northernmost permanently populated location in the world. She is now a UN Habitat Arctic City Resilient Adviser, working with international relations, integration, migration, societal development, for the Arctic. You can follow her on Twitter @ckristoffersen

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The Mineral report (Mineralmeldingen) is a strategy for mapping and extraction of Minerals in Norway. The grey hatch shows the mapped areas.

Geographical - Region

4.2 - Rural Norway

In rural Norway the opposition between sentrum versus periferi is very present. The Norwegian Government reforms regional Norway according to the idea of centralization as a tool for efficiency, efficiency being considered the most solid quality to aim for. Many local inhabitants of rural Norway express discontent and powerlessness in terms of decision making concerning landscapes and resources historically belonging to them. The decisions are many of them made in centralized areas, only arriving locally when implementation of legislation is proceeded.

The county of Finnmark being no exception. Located in the most both northern and eastern part. Being the largest but least populated county of Norway, have several times through history felt the consequences of being considered periferi. Concerning infrastructure, settlement, administrative functions, health care, and foreign politics as a part of the Barents Region sharing a border with Russia.

The diverging landscape notions become very obvious in an area like Finnmark. Rich on natural resources and with a high score on wilderness estetique. Both these qualities are usually followed by extensive systems of laws and legislations concerning extraction, pollution, preservation, monitoring, measuring and so on. All of them tend having one thing in common. None of them likes to much interference in terms of local opinion often concerning their traditional way of use and extraction in their landscape, potentially interfering both with the preserving environmental law, and the capitalized extraction methods.
Mapping of areas still to be considered pristine nature, 2014

Pressure increasing on the Northern territories

Nord-Norge
Northern Norway

Finnmark fylke
County of Finnmark

sami: Finnmárku
kven: Finnmarkku

Area 48 618 km²
Inhabitants 75 605
Geographical Region -

4.3 Varanger Peninsula
Geographical Region -
4.3 Varanger Peninsula
Vadsø, aerial photo from west

Vadsø, view from Melkevarden

Varanger Plateau, Suottarvuopmi

Varanger Plateau, aerial photo, Soppavannet

Vadsø, aerial photo from west
Geographical Region -
4.4 Vadsø
Næringsminister Trond Giske vil kartlegge alle mineralressurser i Norge.

Forfatter: Espen Bjerke

Publiseringstid: Mars 13, 2013 12:30 PM

Sist oppdatert: Febr. 11, 2014 6:36 AM

Næringsminister Trond Giske vil kartlegge alle mineralressurser i Norge. (Foto: Marianne Hagen / NTB scanpix)

Det er tidenes skattejakt i Norge

-Nå skal «arvesølvet» kartlegges. Målet er at 75 prosent av Norge skal kartlegges med avansert utstyr. Dette blir tidenes skattejakt i Norge, sa nærings- og handelsminister Trond Giske da han onsdag presenterte planer om å kartlegge alle mineralressurser i Norge.

Ifølge mineralmeldingen Giske onsdag la frem, har Norges geologiske undersøkelse anslått verdien «i bakken» av kjente og undersøkte metallressurser som vurderes som lønnsomme å utvinne, til om lag 1 400 milliarder kroner. I tillegg kommer industri mineraler, pukk, grus, kull og naturstein, som er beregnet til anslagsvis 1 100 milliarder kroner, og alle mineralforekomster som ikke er undersøkt.

Norge har en variert geologi med stort potensial for mineralproduksjon. Lang kystlinje og nærhet til det europeiske markedet er viktige konkurransetrykk, mener Giske.


Mineralloven skiller mellom mineraler som er eid av staten og de som er eid av grunneier. Staten eier metaller med en egenvekt på 5 gram/cm³ og over, samt malmer av slike metaller. Dette omfatter blant annet krom, mangan, molybden, niob, vanadium, jern, nikkel, kobber, sink, sølv, gull, kobolt, bly, platina, tinn, wolfram, uran, kobaltdioxid og thorium. Alle andre mineraler er eid av grunneier. I hovedspråk kan grunneier adressere sine tre hovedkategorier; naturstein, byggeråstoffer og industri mineraler.

(Kilde: Stortingsmeldingen Strategi for mineralnæringen)

Jedediah Purdy is a professor of law at Duke University. Jedediah Purdy teaches constitutional, environmental, and property law and writes in all of these areas. He also teaches legal theory and writes on issues at the intersection of law and social and political thought.

A thought mediated in Purdys book *After Nature* is the idea of a new epoch, the epoch of humanity, in which people are a force, maybe even the force, in the development of the planet. Leaving the Holocene era, now entering the Antropocene. With this as a basis he pushes the increased importance of politics regarding the control and management of our landscape.

This was a text becoming highly relevant for this thesis when entering the geographical area of Finnmark, when faced with massive laws and legislations concerning both the protection of pure nature and the extraction of nature resources. Purdy especially emphasizes the importance of recognizing that we today let estetic, economics and environmental laws control our management of the landscape.

As I interpret the text, it deals with the vision of pristine wilderness as merely that, a perceived vision. Because everything is touched up on by human, even the areas left to be pristine nature is touched by human as a result of the very action of protecting and regulate.

The deromanticizing of nature that Prudy seems to call for, could translate into opening the Varanger Peninsula National Park entirely for research purpuses. Not slowing down the research by not permitting certain instruments at certain locations because of a romantic notion of the pristine.

Bringing forward theories of the antropocene, the idea of the antropocene era being the era of humanity, in which people are a force that is substantial, is an understanding that further contribute to emphasize the importance of reflecting on our eco-system perception.

The key here is the awareness of being a part of something larger than you in both time and scale, but at the same time realizing, that you, as human, have the skills and power to change ecological trajectories.
Appendix

5.1 Literature


Janike Kampevold Larsen is associate professor in the Institute of urbanism and landscape. Specializing in landscape theory and particularly the configuration and conceptualization of contemporary landscapes. She is project leader of the Future North.

What becomes very relevant for my thesis I am approaching reading this text is the formulation of the diverging landscape when situations in Norway, and particularly with Northern Norway as an example. Introducing the concepts of *scenic landscape* and *extraction landscape* and presenting a set of contemporary situations building this argument. How would a synthesis between these diverging landscapes notions look like? As Larsen points out the increased interest in the circumpolar territories and the pressure following the emergence of previously inaccessible resources now becoming accessible because of climate change. This points at the vulnerabilities of these areas as a direct consequence of these changes. And then its opposite situation, the scenic landscape projecting totally different trajectories. Just as commodifying, but on totally different premises. Using the Norwegian Tourist Route Project to exemplify a tradition of staged, animated and furnished scenes being instruments for making the landscape a object of our gaze.

The text points out important points, both time and scale wise. “These two landscapes appear to reference different time frames: while extraction landscape can be read as a territory for the global energy market oriented to the future, the scenic landscape offers panoramas based upon the European landscape traditions of the past” (p.86)

She critizes the fact that TRP (The Norwegian Scenic Routes program by National Road Authorities) are being staged and marketed according to old traditions of travelling and viewing and only a few of the Touris Projects relates to the geologic history or the true materiality of the sites not being able to communicate a potential of a sense of deep time. This suggests to me to avoid the pure static visual experience in order to explore ecological awareness.
Appendix

5.1 Literature

Ellsworth, Elizabeth, Jamie Kruse, Smudge Studio. “Motivations, Provocations Humans assembling with the geologic.” I: Making the Geologic Now, redigert av Ellsworth, Elizabeth, Jamie Kruse. s. 5-24.


“To invent and enact practices capable of acknowledging and living in responsive relationship to forces of change that make the world”.

In this essay they claim that people can imagine deep time and site-specific material realities and through this perception alter mind trajectories, imaginations, and experiences of ourselves and our eco-surroundings. This becomes an extremely interesting possible approach when searching for ways to investigate spatially how to communicate the work of the climate change research program.

As J. Larsen states, what they describe is the opposite of the experience accessible through most of the Norwegian Scenic Routes projects as of today. Where you are set at a theatrical distance, observing, merely visually experiencing the landscape. Ellsworth and Kruse describe the landscape they move through in Lofoten as oblivious to the existence of them as its beholders. As soon as something shows awareness of it being observed, it loses its credibility.

“We sensed our exposure to this place’s raw materiality directly, yet the force was everywhere. It did not single us out. In fact, it seemed terribly indifferent to our existence.”

Smudge Studio Lofoten Travel Note. https://fopnews.wordpress.com/2011/05/21/lofoten/
Tatjana Gorbachewskaja, Katya Larina, Nikel Materiality, Dark Ecology 2015 Commission
Nikel Material Culture, Industrial Mining town North Russia

Tatjana Gorbachewskaja (RU) architect and urbanist, grew up in Nikel.
Katya Larina (RU) architect and urban designer.

The project consists of a catalogue of an emergent symbiosis of the natural environment and alien materials which were brought in through human activity in the city Nikel in Russia

It presents the study of a situation and area of extreme human-made disturbances to the eco-system. However, what makes it even more interesting is the emerging result of the power of *nature* restoring itself even in such an extreme case. A process of emergent symbiosis of the natural environment and alien materials brought in by severe human intervention in the form of the extraction of the natural resource Nikel (Ni28) through severe mining, the town being named after this very material. The artificial was eventually forced to “interact directly with the natural conditions of the unique Arctic climate and ecosystem. Nikel’s artificial materiality was forced to adapt to survive.” (Gorbachewskaja, 2015)

This project is also worth analyzing for the challenge of collecting a lot of information, and then making it available, appreciated and useful in a global and local discourse. Tatjana Gorbachewskaja and Katya Larina illustrate this idea through thematic maps and catalogues The series of maps and artefacts will be published on an online platform. During the second “Dark Ecology Journey” Gorbachewskaja and Larina presented their research in the form of a talk and a conceptual walking tour through the city of Nikel. Available documentation, an archive, a catalogue are illustrative and informative.
Appendix

5.2 Project

Farah Aliza Badaruddin, Master Architecture thesis, Bartlett School of Architecture / Triggered lightning technology at the University of Florida’s Lightning Research

University of Florida’s Lightning Research
Triggered lightning technology

Existing research and technology at the lightning farm of the University of Florida’s Lightning Research program meets a speculative vision of an opportunity to manipulate the force of lightning into restoring ecological damaged soil and ground water. So established human science and knowledge expanded to look at future scenarios where human interference with nature could be within the category of beneficial, or even meaningful.

The testing of the theory that lightning can be harnessed on-site to pyrolyse highly contaminated groundwater as an approach to remediate the polluted site. The controlled and repetitive lightning strikes could also, in turn, help fertilize the soil, producing a kind of bio-electro-agricultural event.

In connection with this, visiting facilities are designed to make information attainable and appreciated. The experience of the process of forces moving from high atmosphere to deep earth is strong. It is a statement, we could actually make difference facing the extreme forces of climate change.

At the same time the project visualizes a new kind of landscape of leisure, far from established estetiques and the typical postcard or Instagram update you would give friends and family when out travelling in areas like Varanger, Northern Norway.

http://www.lightningsafety.noaa.gov/photos.shtml
http://auneforlag.no/produkter/finnmark/nordlys

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Appendix

5.2 Project

Raviv Ganchrow, is a sound artist and researcher focusing on interrelations between sound and space. *Long Wave Synthesis*. Installed at: Sonic acts Festival (art, music and science), Høybuktmoen, Sør-Varanger 2015

Ganchrow created a topography of amplified long wave sounds: the tectonic plates moving / avalanches sliding / earthquakes trembling / volcanoes erupting / icebergs calving. This topography of sound focuses on the sounds in the lower threshold of human hearing. A new type of landscape emerges, putting the visual landscape in the background. Connecting beyond what you are able to perceive through your eyes. Could similar measures give access to ancient and futuristic visions in spite of

The project is interesting because it puts us in a larger context and provides a different entry points challenging ways of perception by moving away from the visual.

The way he creates a space for studying the relations between how we perceive the landscape and long-wave vibrations is relevant when wanting to reflect on the challenging we as human face when trying to grasp incomprehensible sizes in both time and space.
timber processed / kreosot impregnated / chopped re-use / drifting / ocean sculpted / vardø shore resting
Reference List

6.2 List


1 Introduction

1.1 Project Introduction

Climate-Ecological Observatories for Arctic Tundra

Location: Vadsø, Finnmark, Northern Norway

The project consists of two parts:

I  Pre-diploma: Research
Presenting initial research and mapping concerning the subject of the relationship between human and nature and the geographical area.

II Diploma: Project
Visualizing a combined urban, spatial, knowledge strategy and includes a set of designed interventions.
The strategy I propose in this booklet is fictional, but based on actual information collected by me during a period of approximately one year working intensely on this project, my diploma thesis at The Oslo School of Architecture and Design. This is as such my interpretation of this collected information presented as a possible scenario for Vadsø.

It therefore have to be taken into account the possibility of collected information being wrong or misinterpreted. Feel free to give me feedback if you discover any misinformation presented in this project presentation.
1 Introduction
1.1 Project Introduction

2 Geographical context
2.1 Arctic Norway
2.2 Varanger Peninsula / Local actors
2.3 Vadsø
2.4 Vadsø / COAT Research program

3 Urban strategy
3.1 COAT + Local actors
3.2 Local strategy

4 Design strategy
4.1 Location
4.2 VARANGERLAG Common hub
4.3 Seafront Greenhouse
4.4 Vadsøya Eco-science garden
4.5 Urban coastal path destinations
4.6 The Blue Pavilion

5 Event strategy
5.1 Miljøcamp
5.2 On the Notice board

6 Appendix
6.1 Exhibition - Diploma Works 2018
6.2 Photo series

7 References
7.1 Photos
7.2 Thanks to
1 Introduction

1.1 Project Introduction

Climate-Ecological Observatories for Arctic Tundra

This project is informed by discussions of the relationship between human and nature based on considerations of eco-system management, sustainable development and climate change on a local level. The project explores how to interpret and disseminate the results of a global research program such as COAT, making it relevant locally, seeking to use the research program in an extended version as catalyst in an urban development strategy in a community of uncertain future trajectories.

The project is situated in Vadsø and visualizes an urban development strategy, including a set of designed interventions which acts as a feasibility study of how the strategy could manifest spatially.

The strategy is to extend the local intentions of the international research initiative, Climate-Ecological Observatories of Arctic Tundra, to communicate their climate change findings. I extend their strategy by 1) designing new modes for communicating the research produced, and 2) expose the abundance of approaches and knowledges on nature held by local actors, highlighting competing perspectives on the relationship between people and nature. It thus also investigates how such a program can become a strategy for urban development in a community of uncertain future trajectories.

Geographical context

2.1 The Pan Arctic

The project is situated in Vadsø, on the Varanger peninsula in arctic Norway.
The Varanger region is the most eastern part of Finnmark county. It is not a precisely defined area, but usually Varanger is considered to include the entire Varanger peninsula and otherwise the areas around the Varangerfjord. This includes Berlevåg, Båtsfjord, Vardø, Vadsø, Nesseby og Sør-Varanger.

Varanger Peninsula is a peninsula in Finnmark county, and the largest one in Norway. The peninsula has the Tanafjorden to the west, the Varangerfjorden to the south, and the Barents Sea to the north and east. The Varangerhalvøya National Park covers a major part of the land on the peninsula.

The landscape here was mostly shaped before the last Ice Age. The geology is peculiar. Plant life and animal life as distinctive as it is sparse. Reindeer husbandry being practiced. This landscape makes you reflect upon scarcity. And deep time.
Geographical Context

2.3 A map of Vadsø centre

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Geographical Context

2.3 A map of Vadsø centre
Geographical context

2.3 Vadsø municipality and city

**Vadsø**

(nordsamisk: áhcesuolu gielda, kvensk: Vesisaaren komunijis the administrative centre of Finnmark and is located on the south side of The Varanger Peninsula, and on the north side of the Varangerfjord.

The municipality has 6160 inhabitants, 5064 living in the centre of Vadsø.

Most distinct landscape features being the defining southern border of the coast line and to the north the vast but not steep plateau stretching beyond.

The fishing community evolved into a city of trade and commission through the 1700hundreds and was given a city status in 1830three. Today Vadsø still has the identity of both an administrative centre and a fishing community, but both project uncertain future scenarios.
Geographical context

2.4 VADSØ + Climate-Ecological Observatories for Arctic tundra

Science Plan for COAT:
Climate-Ecological Observatory for Arctic Tundra

FRAM - High North Research Centre for Climate and the Environment
Geographical context

2.4 Climate-Ecological Observatories for Arctic tundra

My project aligns with the international research program of COAT short for Climate Ecological Observatories for Arctic Tundra. COAT researches climate change by monitoring the biome border between taiga and tundra intersecting the Varanger Peninsula. Their local office is already located at Statens hus in Vadsø.

VADSØ - The Arctic Capital of Climate change knowledge

Their work at the Varanger Peninsula consist of collecting information data through field work. The biome border, visual as the treeline provides a hot spot for climate change monitoring. With collaborative laboratories in Canada, Greenland and Russia this makes Vadsø a part of an important circumpolar effort to understand climate change and provides an opportunity to assert itself as the Arctic capital of Climate change knowledge.
Urban strategy

3.1 Climate-Ecological Observatories for Arctic tundra

My project is an extension of COAT’s local strategy, which is to communicate climate change knowledge within the community. I extend their strategy by 1. designing new modes for communicating the research produced along the surrounding biome border, and 2. bringing in the abundance of approaches and knowledges on nature held by local actors. Highlighting competing perspectives on the relationship between people and nature.

The development of the program has not been a preliminary exercise but an important part of the development of the project design itself. Developed through fieldwork, research and continuous conversations with the COAT research team and a wide range of local actors in Vadsø, the program became the core of the project strategy and in the end the generator of form.

In the process of locating local actors it became very clear how - for the local community - knowledge of the territory and awareness of individual spheres of action and reflections, is key to ownership, responsibility and environmental care.

My project therefore takes the position that this is not only about objectively observing and describing change as traditionally represented by researchers, but how landscape is produced and becomes meaningful to all local actors.
Urban Strategy

3.1 COAT + LOCAL ACTORS / Landscape investments
Regional level - Varanger Peninsula

Varanger Peninsula National Park
Varanger Peninsula National Park (northern sami: Várnjárga) established in 2006 is a norwegian National Park in the sub-arctic mountain landscape of Finnmark. On the Varanger Peninsula, äthetween Sykefjorden og Varangerfjorden. It covers an area of 1804 km² and is situated in the municipalities of Båtsfjord, Vardø og Vadsø.

Nature Agenda
Established “to preserve a large untouched area of nature, nearly free of human interference”.

Climate Ecological Observatory for Arctic tundra
The COAT Research Program

1.1 Global Agenda

Global agenda “The rapid shift to new climate regimes is likely to give rise to new ecosystems with unknown properties, making science unable to accurately predict the consequences. (...) This realization has led to urgent global calls for the establishment of scientifically robust observation systems that enable real-time detection, documentation, understanding and actions(....)

1.2 Local Strategy

Societal involvement / Community outreach

Local agenda “(...) a structured scheme for involving stakeholders, policy makers and management authorities, as well as a protocol for monitoring changes in the public perception and use of ecosystem services and nature. This monitoring system of the socio-ecological system will partly be web-based and partly be based on observations and interviews”.

from Climate Ecological Observatory for Arctic Tundra Research Program report, 2016.
Urban strategy

3.1 LOCAL ACTORS / Landscape investments

Local level - Vadsø

COAT has a scientist’s approach towards nature, producing a certain type of landscape. The energy supplier, the storyteller, the curator, the gardener, the hiker, the herder or the hunter produce different ones.

The project explores a city development strategy that pays attention to these physical, cultural and social identities that defines the landscape. In this way many of them get to play out and strengthen their connections in ways that make ongoing changes evident and enable local agency in deciding the future.

I have made a selection of local actors, and highlighted them to particularly inform the program of the COAT local strategy. Still all of them are equally important. Vadsø is famously known for its many lag og foreninger – meaning unions and organizations. My idea is to provide a space and a common union named VARANGERLAG where all lag og foreninger small or big can participate, access or visit.

The word Lag in Norwegian means a group or team of common ground, closely related to the spirit of volunteer work and a proudness of identity linked to place.
Urban strategy

3.1 LOCAL ACTORS VADSØ / Varanger Peninsula

**COAT + Local Lag & organizations = VARANGERLAG common hub**
(list from Frivillighetsregisteret i Brønnøysund)

### The VARANGERLAG hub

**COAT**
Climate-Ecological Observatory for the Arctic Tundra

**VARANGERLAG hub**
- 4 x desks
- 1 x meeting room / learning space
- 1 x small laboratory
- 1 x city centre green house

**The Blue Pavilion**

**SNO - Statens Natur Oppsyn**
Norwegian nature surveillance

**VARANGERLAG hub**
- 1 x desk

**VNP - Varanger Nasjonalpark styre**
Varanger National Park Directory

**VARANGERLAG hub**
- 1 x desk

**Hagelagene (Local Gardening Association)**

**Vadsø Hagelag / Skogsholmjordets venner**

**VARANGERLAG hub**
- 1 x city centre Green house

**Vadsøya Science Garden**

**DNT - Norwegian Tourist Association**

**Tourist Info**
INFO space

**Hytteforeninger: Local cabin owner org.**

**Varanger Kite Club, the VAKE event**

**Annual event at VarangerLag**

**Vadsø skiklubb**
Vadsø Skiing Association

**Sno-scooter Foreningen**
Snow mobile Association

**Badeklubben: Local bathing club**

**Varanger turlag**

**Båtforeninger: Boat owners org.**

**VeliHavn: Guest harbor, 20 spots**

**Beitelag: Reindeer herders**

**Jeger og Fiskerforbund: Hunting and fishing**

**Nordre Varanger Bondelag** Farmers organization

**Varanger Kraft**
Local Power Company

**VARANGERLAG hub**
Satellite exhibition space

**Hunting and fishing exhibition**

**Vadsø Fiskarlag**
Vadsø Coastal fishing fleet Association

**Vadsøbruk fiskemottak, Domstein building**
Fish Processing Centre

**Varanger Bærlukkerlag**
Ut og pluk - Berry pickers

**VARANGERLAG hub**
A common info point and a meeting space

**The Blue Pavilion**

**Historielaget**
Local History Club
Varanger Museum

**VARANGERLAG hub**
Satellite exhibition space

**Temporary exhibitions**

**On human and environmental awareness**

**Vadsøya Science garden**

**Bunker Observatories**

**VARANGERLAG hub**
LAG&forening meeting space

**Clubs and associations of Vadsø/Varanger citizens**

An open common space + 2 private units
Available for booking and drop-in use.

**Frivillighetssentralen**
Volunteer Centre
Existing program in this building.

**Urban strategy**

3.1 LOCAL ACTORS VADSØ / Varanger Peninsula

**List of local Lag & organizations (from Frivillighetsregisteret i Brønnøysund)**

Locations: A few of the larger and/or more commercial unions or organizations has offices or somehow other established spaces for meeting. The smaller once are organized around a social structure and has no headquarter connected to a physical space.
Urban strategy

3.2 LOCAL STRATEGY: COAT + LOCAL ACTORS
A selection of knowledge systems

COAT
Climate-Ecological Observatory
for Arctic Tundra

Investments / Knowledge / Ownership
A selection of active local actors and associated processes has been made to establish a structure for the scenario representing a varied spectre of local knowledge systems. It will also be the foundation for the the proposal for the program of the physical space The VarangerLag hub.

FRIVILLIGETSSENTRALEN
Avd. Vadsø

VARANGER KITE CLUB
Annual Event: VAKE

VARANGER KRAFT
Headquarters in Vadsø

LOCAL MARES KNOWLEDGE
Vadsø Fiskarlag
Vadsø Havn RF

VADSØ HAGELAG / Ytrebyhagen
Skogsholmnsjovdets venner

VARANGER MUSEUM
Avd. Vadsø

VADSØ TORG

VARANGER PENINSULA

The selection was made emphasizing local presence and agenda of the individual local actor in combination with the intention of uniting a group of diverse and contrasting knowledge perspective on landscape and nature resources.
Urban strategy

3.2 COAT + LOCAL ACTORS
Investments / Knowledge / Ownership

Initial selection of LANDSCAPE INVESTMENTS / LOCAL ACTORS

Klimasøkologisk Observasjonssystem for Arktisk Tundra - COAT

Local office: Vadsø centre
Main office: Tromsø, Fram Centre

Fram Centre
COAT

COAT in Vadsø. COAT represents a modern ecosystem approach. A part of this being their strategy towards the local community and its actors.

They have established a structured scheme for involving stakeholders, policy makers and management authorities, as well as a protocol for monitoring changes in the public perception and use of ecosystem services and nature. on integrating research with education at levels ranging from primary school to PhD courses.
Urban strategy

3.2 COAT + LOCAL ACTORS
Investments / Knowledge / Ownership

An initial selection of
LANDSCAPE INVESTMENTS /
LOCAL ACTORS

FRIVILLIGSENTRAL
LOCAL VOLUNTARY CENTRE

Local office: Tollbugt 11, Vadsø Torg
THE NEW LOCATION OF THE VARANGERLAG HUB

Frivilligsentral is a part of a network of voluntary centres that spans the country. It is a local centre for participation in voluntary work contributing to the local society by fostering and developing volunteerism. The volunteer work would typically be more socially than financially targeted.

Services offered could typically be food delivery, snow shoveling, garden maintenance for those not able to do so themselves, hiking groups, language and integration initiatives, fundraising, help with homework, café etc.

This way it functions as a focal point for voluntary work, at the same time as being an important social spot in a small town like Vadsø. Frivillighetssentralen in Vadsø is located in the small shopping mall called Vadsø Torg right next to the city hall square.

The combination of having a good location right in the middle of city centre and a already well developed social infrastructure and services connected to it makes this a well suited possible location for the VarangerLag Common Hub.
Urban strategy

3.2 COAT + LOCAL ACTORS

An initial selection of LANDSCAPE INVESTMENTS / LOCAL ACTORS

VARANGER MUSEUM
/avd. Vadsø

INVESTMENTS / KNOWLEDGE / OWNERSHIP

Varanger Museum consists of three departments, located along the Varanger Fjord in Vardø, South Varanger and Vadsø. The museum documents and presents the multicultural history of the region. All departments undertake work on the local history of their respective areas at the same time as functioning as a unit.

They have an existing presence, a location in Vadsø, and an established infrastructure as a part of Varanger Museum and as a part of a worldwide museum network.

As a local institution they are a manager of local history, creating awareness around history and identity in Vadsø and the surrounding landscape of Varanger. They possess expertise on dissemination of knowledge.
Urban strategy

3.2 COAT + LOCAL ACTORS
Investments / Knowledge / Ownership

An initial selection of
LANDSCAPE INVESTMENTS /
LOCAL ACTORS

VADSØ HAVN KF
VADSØ FISKARLAG

INVESTMENTS / KNOWLEDGE / OWNERSHIP

Vadsø Harbour is owned by the municipality and manages all daily operations in the harbour of Vadsø. Vadsø's advantages as a harbour was the reason for the city to be established in the first place.

Vadsø is historically a fishing community, and this is still an important part of Vadsø's identity. There is still an active fishing harbor and a fish processing centre present, and the amount of private owned fishing boats has actually increased rather than decreased the last years.

It seems to be a certain eagerness amongst young people to practice this type of traditional small scale harvesting from the sea. The Norwegian Fishermen Association is the professional fishermen's union and business organization, and they have a local division.

The sea has an infinite presence in Vadsø and is an important, if not the most important, angle on local eco-system perception and knowledge.
Urban strategy

3.2 COAT + LOCAL ACTORS
Investments / Knowledge / Ownership

An initial selection of
LANDSCAPE INVESTMENTS /
LOCAL ACTORS

VARANGER KRAFT

INVESTMENTS / KNOWLEDGE / OWNERSHIP

Varanger Kraft has a local office in Vadsø and a established infrastructure in Vadsø and Varanger. They are the local producer and supplier of water and wind energy, and at the same time a provider of local workplaces.

They have future visions for green energy supply and the knowledge and resources to bring them forward. Internally linked with this is an indisputable regional pride.

Another example of a local initiative is their participation in the city centre development of Vadsø through the planning and facilitation for el-charging stations.

Their future agenda are global at the same time as local. Through a collaboration with Japan they have been working on the development of liquid hydrogen as a means to transport green energy. A part of this vision is vehicles running on H2 fuel. This could substitute for todays diesel driven ferry bringing people around the coastline of the Varanger peninsula.
Urban strategy

3.2 COAT + LOCAL ACTORS
Investments / Knowledge / Ownership

An initial selection of LANDSCAPE INVESTMENTS / LOCAL ACTORS

YTREBYHAGEN HAGELAG
VADSØ HAGELAG

HAGEBYEN VADSØ

INVESTMENTS / KNOWLEDGE / OWNERSHIP

Vadsø is historically known by the name of Hagebyen. This is because location and shelter provided by Vadsøysa creates a micro climate, making Vadsø the place in Varanger where you can grow species not possible else where in the region. The tradition bloomed with the extravagant gardens of the merchants and officials in the days of Vadsø being an important trading centre.

Vadsø hagelag established in Of historic importance, a tradition bearer and knowledge keeper of the practice of gardening in Vadsø. An extensive archive kept at the city hall shows the works and studies of a group of gardeners (at f.ex Skogsholmjordet) from Vadsø testing out different types of species while thoroughly documenting their results.

Ytrebyhagen hagelag. Existing gardening group in Vadsø. They represent the new generation of gardeners in Vadsø, continuing the tradition, at the same time as bringing forward the contemporary approach, eco-gardening and the eco-conscious gardener.
Varanger Kite Club is a small kite club located in Vadsø, using the vast plains of the Varanger Peninsula as their playground. They work to promote kiting as a sport and Vadsø and Varanger as the main destination for this.

**Annual Event: VARANGER ARCTIC KITE ENDURO**

Once a year The Varanger Kite Club invites the world to join the worlds longest kite race across the Varanger Peninsula. The inspiration for Varanger Arctic Kite Enduro, came from the sled dog races. This existing annual event is a unique opportunity to turn the worlds eyes to Vadsø, promoting the *Arctic Climate-Change Knowledge Capital*
Design Strategy

Location: Vadsø, Finnmark, Northern Norway
ivaarnatur: urbanEcoObservatory

VADSØ
The Arctic Centre for Climate change knowledge

VARANGERLAG
-the local union
The design interventions include a main hub on the harbourfront in the city centre and smaller design interventions in the centre and on Vadsoya, the island. The limegreen dots indicates the locations of the design interventions.

The design proposals acts a feasibility study. It visualises examples of how the environmental knowledge strategy could manifest spatially and what this could do for the urban spaces in Vadso. The town serves as an observatory and a laboratory. These design interventions and spaces encourage reflection on human-nature relations and eco-system management at the same time as being places and alibis for social encounters.

The design interventions are independent, but coordinated, in order to encourage a movement between. They emerge in connection with a distinct existing quality, a coastline path that brings you through the entire town from edge to edge, including the island. Not the usual sleek and imported harbour promenade, but an urban coastal path displaying the wide range of landscapes and historic layers that Vadso has to offer. From decay to prosperity. From wild to domesticated. A feature of Vadso is that the harbour, the industrial areas, and the museum sites, are not closed off. There is a stretch of the path that is obstructed on the western tip of the island. The old herring oil factory. There are plans for its redevelopment, but with heavily contaminated soil and large buildings in decay, this is a long-term project. I suggest to make a hole in the fence and secure a path through. The experience of walking between the industrial relics is spectacular in itself, and the view of the city centre is particularly magnificent from this site.
Varangerhus - Local typology

Varangerhuset was a combination house with housing and barn connected with an inner aisle. The house had all farm functions under the same roof. It could also contain stables, high barn, storage rooms and saunas.

One of many manifestations of a long tradition of an intimate relationship with nature and its resources.

VARANGER
LAG - a common hub

The VarangerLag hub: An important part of the strategy to create a platform for sharing and participation for all of the above & the centre of proposed and existing satellite locations spread out in the city centre and the surrounding Varanger Peninsula and Varangerfjord.

Design strategy

4.2 LOCATION - LOCAL HUB

A HUB for information, initiative and knowledge exchange

The new common Hub – ‘VARANGERLAG’

VARANGERLAG - a common hub
The new common Hub – VARANGERLAG

The choice of location became very important. The choice fell on transforming parts of a small scale shopping mall in the main commercial street, Tollbugata. A concrete structure built as a part of the post war reconstruction of the city centre. I chose an existing building to stay coherent with the idea of operating with modest economical investments, and I chose this exact building because the location provides the most interesting duality reflecting the identity of the city. The harbour front façade and the official city facade facing the city hall square. The hub becomes the mediator between.

**PROGRAM:**

At VARANGERLAG you can catch up on the latest biome border updates, stop by the laboratory and see for yourself. An update on the berrypickers or the reindeer herders seasonal analysis. Dig into the digital archives or check the noticeboard. Pick up instrument or gear for exploring the landscape from a different perspective than your own.
The mid section of the existing building has been cleared to make space for the VarangerLag hub. The program of the neighbouring sections could beneficially add to the hub. Frivillighetssentralen (The voluntary centre) is moved out of the middle section and in to the neighbouring north-east section. This symbiosis could obviously benefit VarangerLag.

The exhibition space and the noticeboard is accessible and visible from Tollbugata. The satellite exhibition space of the Varanger museum and the power company Varanger Kraft is a part of this same space. The laboratory of COAT placed in the mid section, close to the rough entrance for direct access when returning from field work. A learning space in connection with the laboratory and the common kitchen core. More closed off work boxes and two LAG available available for booking or drop-in for a club, organization or others in need of a meeting or working place.

There is a second level added. One attached to the west façade, providing access to a harborfront viewpoint. The second one in the center of the building, linked to existing vertical communication.
Design strategy

4.2 LOCATION:
A - VarangerLag Community Hub

Vadsø Torg
Existing shopping mall & location of Frivillighetsentralen. Middle section transformed into the common hub of VARANGERLAG

Vadsø City hall & Vadsø main square
Built in 1950 as part of the post WW2 rebuild of city centre (Midtbyen) which was heavily damaged
Design strategy

4.3 A - VarangerLag  1:150
Community info hub
Greenhouse garden
COAT + Vadsø Hagelag

The west facade extended in the form of a seafront greenhouse, the coastal path passing just outside. A social space at the harbor front, but also an arena for Vadsøs Hagelag, COAT and others to research plant species future due to climate change.

A branch of COATs local educational strategy and Hagelagenes intergenerational learning as well as a sheltered social space at an otherwise windy harbour front. The plants seen in the illustrations are based on information from an archive established by Vadsø gardeners and COATs science plan.
Design strategy

4.3 LOCAL ACTORS
A - VarangerLag Community Hub - Greenhouse garden
Design strategy

4.4 B - Vadsø - The Garden City
VADSØYA ECO-SCIENCE PARK

Sheltered social space and winter garden at Vadsø city centre harborfront
+
VADSØYA ECO-SCIENCE PARK
adding a layer to existing Vadsøya Kulturpark
(nature reserve and cultural heritage site)
In order to design new modes for communicating the research, it is important for me to make a statement concerning the conflicting agendas of preserving and researching. The Varanger Peninsula National Park has strict regulations protecting the tundra landscape from potential disturbances. The aesthetics of the instruments and the associated human activity is not consistent with the idea of a pristine and picturesque wilderness, making the fieldwork of the researchers difficult. The very thing the regulations are there to preserve is slowly diminishing as the biome border continues to move north due to climate change.

Given the right instruments, humans gain access to and, more importantly, begin to interact with entire systems of objects and landscapes that were present all along but had otherwise been physically underestable, camouflaged or hidden(…)

Geoff Manaugh

Målerjakt
A mobile phone application for registration of observation developed by COAT as a part of the citizen science strategy
This project includes a proposal to reframe the aesthetics of the instruments and embrace human activity in nature. Such a reframing could also lead to opening the National Park for research purposes and turn it, and the town, into a National Science Park.

To do this within Vadsø, a Science garden is established in the Nature Reserve on Vadsøya’s east coast (Vadsøya Kulturpark). It will be another branch of COAT’s local educational strategy and an intergenerational learning garden of the local garden group in Vadsø.

This high-tech garden provides pieces of territory that can be manipulated through installed instruments: Summer three times a year. Never below 0 degree. Test it out.

The local gardeners have since Vadsø’s origin as a Garden City worked with lighter manipulation: Careful site choices, experimentation with plant species, and installation of snow fences, wind shelters and insulation.

The project will not compromise the park as a space for leisure and recreation, but experiment with new kinds of garden elements and aesthetics as a way to reconceptualise the population’s relationship to their changing territory.
Design strategy

4.5 Preserve / Use - Examples of VARANGERLAG instruments
Varanger Peninsula National Park

Design strategy

4.5 Preserve / Use
B Vadsøya Kulturpark: a nature reserve / cultural heritage site
+ Vadsøya Science Garden + Vadsø coastal path

- Nature Reserve border
- Coastal path pattern
Design strategy

4.5 Preserve / Use

VADSØ COASTAL PATH DESTINATIONS

- Vadsøya Kulturpark: a nature reserve / cultural heritage site
- Vadsøya Science Garden

B Vadsøya Kulturpark: a nature reserve / cultural heritage site
+ Vadsøya Science Garden

- Freeze & thaw speed up
- CO2 emission
- Due mire in climate change
Design strategy

4.5 Preserve / use

B Vadsøya Kulturpark: a nature reserve / cultural heritage site
+ Vadsøya Science Garden
Design strategy

4.5 Eco-system process - Ocean waves

*G Ocean Megaphone* Coastal path destination

Eco-system process - Tidal Cyclus

*G Mudflat Bench* Coastal path destination
Design strategy

4.5 Eco-system process - Tidal cyclus

**Tidal shelter.** An example of an instrument that should appear several places along the harbour front, giving a precise visual measurement of the sea level at all times at the same time as being a destination along the coastal path.

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**Table: Sundet Levels**

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Design strategy

4.2 Eco-system process - Tidal cyclus

**Registration & E Tidal house** Coastal path destination
Design strategy

4.5 LOCAL ACTORS - Varanger Museum
Knowledge / Ownership

Bunker Observatories. Activate maybe the darkest part of Vadsøs rich history by cutting open and in this way reframing and taking ownership to make new use of 2 bunkers built on Vadsøya by the nazis regime during WW2.

Design strategy

4.3 LOCAL ACTOR - Varanger Museum
C / D Bunker Observatories - Reframing history

Drawing from Fotefar mot Nord

Drawing from Finnmark under hakekorset
Design strategy

4.5 LOCAL ACTOR - Varanger Museum

C Bunker Observatories - Reframing history

Observe all Day. For when the day goes on forever. The angled cut by a diamond wire reveals the inside of the bunker while exposing a south westbound cut surface, and offers a concrete slate tempered to lie on while waiting for the midnight sun to hit position.
Design strategy

4.5 LOCAL ACTOR - Varanger Museum  
**D Bunker Observatories - Reframing history**

**Observe all Night.** For when the night consumes all. The spheric hole created by a rotary drill with a diameter of 2.4m leaves a spheric negative suitable for a gathering, observing what is above: borrow a telescope at the VarangerLag hub and check it out.
Design strategy

4.5 LOCAL ACTORS: Varanger Kraft
Hydrogen fueled speed ferry & EL- charging stations as a part of city centre strategy

The hydrogen fueled speed ferry at the city centre dock

Possible public space situations in Vadsø city centre making use of the future visions of Varanger Kraft

El-charging station as a network connecting the city. Different combinations of el-charging for car, snowmobile and bicycle. Heated benches makes it a place to linger even when the arctic cold arrives.
Design strategy

4.6 LOCAL ACTORS: Local fishing industry

B - The Blue Pavilion - Mobile extension of VarangerLag

LOCAL MARINE ECO-SYSTEM KNOWLEDGE

Preparing the nets

Sorting the catch

Domstein fish processing centre

Local fishing boat harbor & Fish processing centre
Traditional small scale harvesting

A merde - Paddocks used in fish farming at sea
-in the Varanger fjord. Modern large scale harvesting

Design strategy

4.6 LOCAL ACTORS: Local fishing industry

B - The Blue Pavilion - Mobile extension of VarangerLag
Design strategy

4.6 LOCAL ACTORS: Local fishing industry

B - The Blue Pavilion - Mobile extension of VarangerLag

The Blue pavilion is an extension of Varangerlag, mobile on sea. Docked at the city centre harbour front outside of the hub when not towed away for use at events other places in Vadsø or the Varangerfjord. A toolkit for beach-cleaning and an ice-bading/sauna platform for leisure after hours of work. A pavilion and an instrument giving access to the sea. It has a sensor installed, providing real time updates on water quality of the harbour. Yearly average will once a year be spray painted on to the silo towers.
The designs reflect some of the most characteristic landscape-based eco-system processes of Vadsø and the Varanger peninsula. The interventions amplify or re-interpret them, at the same time as affording places to rest. The process or character of the spaces enables certain social events: Seek shelter and listen. Observe the night lasting all day long. Enjoy the day lasting all night long. Go mudflat exploring. Find out where the Blue pavilion is. These design interventions form an urban strategy of sensing, knowledge building, encounters and urban development.

The interventions and instruments cross-breed different forms of landscape practices and appreciations. They reframe or highlight historic landscapes and access deep time in the present by reframing, demonstrating or measuring. As such, they address known challenges of sustainable thinking, particularly something as abstract as large-scale territorial transformation.
Event strategy

4.2 LOCAL ACTORS + Possible Events

Upcoming events on the noticeboard:

UPCOMING EVENTS!
Event strategy

4.1 LOCAL ACTORS: Resources

Upcoming Events

EXISTING
International Environmental Youth Camp
+ Build the Blue Pavilion - a Mobile extension of VarangerLag

INTERNASJONAL MILJØCAMP

#YouExplore vi The Dale Oen Foundation har siden 2015 engasjert ab 6 000 ungdommer i Norge i aktiviteter i forbindelse med fokus på forurensing i norske havområder og sjøområder. På nytt arrangerer vi Europas første og største forurensningskonferanse for ungdom, med 600 unge deltakere i Gjesdal.

Gjennom støtte fra Barenservicekometer og Inter Arctic kunne vi også imitere sjønivå og nordsjøiske ungdommer til Gjesdalen og Nelles aktivitetslokaler ved sentrert vågt. De fikk forstå seg på forurensning på plas i sjønivåen utenfor Bergen. I tillegg til å vi nyttet et avdeling arranger for plastfrit.

Hånd for #YouExplore er å bygge opp en "havn" på flere millioner ungdommer verden over med kulturarv - praktiske saker som bevegelse - for å oppfylle visjonen om røde verdensmenn i 2050.

Vi har redaksjon, konsulent og begjæremenn gjennom prosessen som knytter oss til forberedt neste generasjoner på beskyttelse av sjøområdene. Vi har forstått, vi har kontakt med leverandører av teknologi globalt, og vi vet hvordan vi skal arbeide konsulentativt, med ulike myndigheter globalt for å åle handling.

OM #YOU EXPLORE INITIATIVET

Vi er i planlægningsfasen med å arrangere en internasjonal miljøcamp for ungdom på Elveøya i Volda kommune. Vi har i tillegg mest søndag 5 til søndag 6. September i år 1. Miljøcampen vil ha fokus på hvordan man kan fjerne plastkropp og mikroplast fra havområdene i nord.

Miljøcampen #YouExplore Varanger 2018 har stort sett med det å dekke forurensning fra Barenservicekometer og en arbeidsdel med å dekke spesialiserer for å forurensningsarrangementet. Vi har god kontakt med vårt internasjonale netværk og med de medlemmer som vil velge tildelt et bidrag innenfor ulike områder.

Prosjektgruppe består av The Dale Oen Experient, Inter Arctic og Monica Consulting.

Added program
PROGRAM & BUILD the Blue Pavilion
Event strategy

4.2 POSTER on the Noticeboard
Upcoming Events

Help us program & build
THE BLUE PAVILION!

In partnership with #YOU EXPLORE VARANGER 2018
at the VARANGERLAG Common Hub, Tollbugata 11

Join the event
25-26th Oct 2019
12-6PM Tollbugata 11
VARANGERLAG
#YOU EXPLORE

THE BLUE PAVILION
Event strategy

4.2 POSTER on the Noticeboard

Upcoming Events
Event strategy

4.2 POSTER on the Noticeboard
Upcoming Events

BUNKERCUT
PART I

Welcoming the Polar Night

Join the event
SATURDAY 25th Nov
12-6PM VADSOYA

STARTUP
DRILLING for
THE BUNKER
NIGHT OBSERVATORY!

Vadsoya Eco-Garden
VARANGERLAG
Event strategy

4.2 POSTER on the Noticeboard
Upcoming Events
5 Appendix

5.1 The Exhibition
Final Exhibition: AHO WORKS STUDIO + DIPLOMA
SPRING 2018 Open: 29.05 - 06.06
Byggehallen, at the Oslo school of Architecture and Design
5 Appendix

5.1 The Exhibition
Final Exhibition: \textit{AHO WORKS STUDIO + DIPLOMA}
\textit{SPRING 2018 Open: 29.05 - 06.06}
Byggehallen, at the Oslo school of Architecture and Design

by:
Gun blue
Hydrochloric acid
Salt water
Ccc-6-66
Weather
Wire brush

Vadsøya from Melkevarden

Process – Progress
– Disturbance – Succession

Collected items of Varanger
5 Appendix

5.1 The Exhibition
Final Exhibition: AHO WORKS STUDIO + DIPLOMA
SPRING 2018 Open: 29.05 - 06.06
Byggehallen, at the Oslo school of Architecture and Design

Exhibition space in Byggehallen
Oslo school of Architecture and Design

The Blue pavilion - a model 1:100

Vadsøya & Ørtangen - a model 1:5000
THANKS TO

Supervisors:
Lisbet Harboe
Peter Hemmersam

COAT
Eeva Soininen
Rolf Ims
Jan Erik Knudsen
Ingrid Jensvoll

AHO
Sabine Muller
Oda Havstein
Morgan Ip
Jannike Kampevold
Miles Halmaker
Brona Keenan
Jomy Joseph
Finn-Erik Nilsen

VADSØ BIBLIOTEK
Irene Jullum Hagen
Geir Østereng, Varanger Nasjonalpark
Anna Solvoll Rognmo, VAKE Kiteclub

Lars Smeland, Tana kommune
Bengt Eriksen, Kartverket
Jan Sverre Ule, Vardø kommune

VADSØ HAVN KF
Elin Hoel, havnesjef
Ynve Eliassen

BARENTS SECRETARY
Kim Pedersen
Amanda Åserød

BARENTS INSTITUTE
Unni Sildnes

VARANGER KRAFT
Morten Albertsen
Inger Ballo
Stein Mathisen

HAGELAGENE
Ytrebyen Hagelag, Gunn Tone Grubstad Vyörykkä
Vadsø Hagelag, Torhild Eriksen

VADSØ KOMMUNE
Rådgiver plan, Eva Steen Jensen
Ordfører, Hans-Jacob Bønå
Servicekontorer
Arkiv, Beate Olsen
PMK, Sverre Jakobsen
PMK, Yngvar Mekele
PMK, Eirik Karlson

Ottar Zahl Jonassen, Marelius Group
Bård Harvilla, Harvilla Gruppen

Local history:
Trygg Jakola
Einar Niemi

Snow mobile access:
Alf Helge Bernhardsen
Tom Olav Stavseth

SIVILFORSVARET
Thorleif Bårdman
Ivar B. Frantzen

VARANGER MUSEUM, Vadsø
Gyrid Øyen
Tove Kristiansen
Morien Rees

VARANGER MUSEUM, Kirkenes
Camilla Carlsen

Glenn Antonsen, Akvagroup
Arkitekt Mathias Wijnen
VARANGER