

# DECONSTRUCTION

*ARCTIC FRONTIER:  
fragility of the monument,  
power of the environment*

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ARCHITECTURE / POWER / TERRITORY

## ARCTIC FRONTIER

**Research Question:**

*What is the role of architecture in territorial space-power relations found in the global extreme environment of the Arctic?*

**Key Words:**

*Territory, Geopolitics, Architecture, Conflict, Ecology, Extremes, Border, Terrain, Power, State of Exception, Arctic, Polar, Environment,*

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### Problem Statement

My project is about understanding what geopolitical, social and economic implications climate change has had on the Arctic and how it has affected a shift in power dynamics and created a new-found interest in the global north.

Placing this investigation into the current global context of the environmental crisis that our climate is facing; unsustainable resource extraction, modes of production and climate change. In a world of extremes, globalisation has shifted space-power relations, within this shift the birth of territory emerged.

## Thoughts

“En una linea el mundo se une  
Con una linea el mundo se divide  
Dibujare es hermoso y tremendo<sup>1</sup>

“In one line, the world unites  
With one line, the world divides itself  
Drawing is beautiful and tremendous

“Before there is anything like territory, there is movement. Movement creates a territory; the social territory does not come ready-made. Before there is the territory, there is a process of territorialisation.”<sup>2</sup>

Before the formation of territory, the movement and flow of people existed. In order to control movement lines were drawn in space, thus the territorialisation of land was formally established. The materialisation of military and economic infrastructure projected power over a region. Occupation of territory began to form through organisational and structural systems; establishing lines, borders, boundaries and walls. As possession and ownership took control, so did the need for security and surveillance of movement. Thus, we return to the continuous flow and movement of people.

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1 Chillida Eduardo. Open-Air Sculptures. Barcelona: Poligrafa, 2003.

2 Nail, Thomas. The Figure of the Migrant. Stanford, California: Stanford University Press, 2015, 42

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## Abstraction

My thesis research and analysis developed as a two-part process that unfold together in a linear process. The first approach forms my theoretical strand where I investigate the intersection of three concepts; architecture, power and territory. The exploration of these three concepts as analytical tools unravel how we read and understand the formation of new spatial conditions within the polar regions, specifically focusing on the Arctic. The second part of my analysis is contextual, where I gain an understanding into human value and perception within the region. Furthermore, three analytical tools were used to carry out my context analysis; the tools of cartography and narrative, a polar study comparison between the Arctic and Antarctica and finally, a site visit to Svalbard, an archipelago located deep within the Arctic circle.

The overall conclusion of my research establishes that the polar regions are constituted by rules of the 'exceptional' (similar to that of a state of exception, without the state), due to the extreme and harsh climatic conditions it is the environment that reigns as the ultimate power force. To sustain life within the region people and nations come together in all kinds of states of exception. However, due to rapid climate change and the melting of ice the Arctic is becoming more accessible and thus, nation states are attempting to subvert the environmental flows of the region.

Responding to the dynamic nature of the environment, my project seeks to create an aesthetic experience of the environment through the physical manifestation of the ecological processes and intends on rendering the invisible qualities visible through the extrinsic elements of architecture. The ephemeral nature materialises through a series of dynamic architectural responses.

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*Introduction: In extreme crisis / with global force*

This thesis is an investigation into the power-place dynamics of architecture and territory in a world of extremes. The exploration into the relationship between **architecture** and **territory** can be inherently linked to the complexities found in the relation to **power** and **place**.<sup>3</sup> The human relationship associated to place unstitches how we move and flow through spaces. As explorers, humans have discovered far edges of the world however in relation to physical geography it seems like there is little left to the unknown and at the extreme ends of the earth we find fields of uncharted territory and landscapes surfacing. On a global scale, the transformation from place to territory emerges from the blurred bounds of architecture and geography and the shift of power onto a global scale reveals the territorialisation of space. In its discourse, the discussion of architecture as a spatial agency to claim or solidify occupation is conceived from the interrogation into the concept of territory and how the relationship between architecture and power are intrinsically linked through the extreme environmental properties found within the global poles.

Architecture as a spatial agency of territory is produced as the reification of power. It is inherent that architectural thinking addresses a global increase in scale; from landscape, to cities, infrastructural systems, boundaries and much more. The geopolitical and social construct of territory materialises itself through implicit tools of control; the division of space or otherwise identified as 'architecture'. Understanding ways in which the language of architecture is used to express forms of national sovereignty (control and identity) and how power views space as a mechanism/strategy of communication. The act of territorialisation of space is always political and often results in conflict. Representing power and control of an empire/nation/power force with aims to communicate, traditionally through cartography and mapping, a worldview of a place.

3 Stuart Elden, *The Birth of Territory* (Chicago ; London: The University of Chicago Press, 2013).

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Placing this investigation into the current global condition of environmental and resource crisis that our climate is facing; this thesis reaches to the extremes. My project begins at the extreme ends of the earth, the polar ends. With aims to make the context visible on the world stage, uncovering the complex layers of a newly formed geography within the Polar regions and bringing the exceptional conditions found within the Arctic and Antarctica, to the forefront of this investigation. The analysis hopes to unlock role of architecture in spatialising the social and political interplay within a territory whilst unravelling how architecture can exert influence through the projection of power within a geo-political context.

In relation to my theoretical research, it is inherent that architectural thinking addresses a global increase in scale: this project is an architectural response to the rapidly changing global trends of territorial claiming. The geopolitics and social construct of territory materialises itself through implicit tools of control. Understanding ways in which the language of architecture is used to express forms of national sovereignty, identity and power.

My project intends on analysing and mapping the place-power relationship within territory and exploring the relation to the realm of architecture. To create a more critical understanding of architecture's role in society through the investigation into the production of territory; the division it creates, national identities and culture, organisation through military control and ability to generate conflict within its mere existence. How the reproduction of territorial logics can be found in the spatial implications of Architecture on a smaller scale. Architecture and territory are inevitably linked to its political context. To begin, I will investigate the three main concepts found within my research; Architecture, Power and Territory.

### *Architecture, Power and Territory*

The political configuration of place can be attributed to the notion of architecture as a division of space. My thesis is interested in how architecture is used as a tool to construct space. Territory can be defined as the organised division and relational claiming of land and resources. The simple act of delineating a line in space creates division, ownership and occupation. With the rise of the modern nation state came the rise of the territorialisation. Power sits at the intersection between architecture and territory, it can be depicted through the idea that space is a resource of power and at the same time, power can define space. Paul Hirst denotes the spatial qualities of power plays that can be found through the logics and systems of architecture; "Space is organized to facilitate power through forms of rationalization of structures."<sup>4</sup> Furthermore he discusses the influence in the construction of space through means of "political power, armed conflict and social control,"<sup>5</sup> all critical elements that are intrinsically linked to architecture and territory.

Breaking down the force and action of power by the nation state, we begin to unravel how actors exercise their power through visible and invisible border conditions, dominance/resistance, military control and legislative processes (treaty, states of exception). The first is the use of hard power, materialised through the physicality and occupation of architecture and infrastructure alike. The opposing, otherwise known as soft power, subverts sovereignty through means of the political, social and economic factors. Nation states proliferate power through these performative measures.

Since the political transformation of the modern state between the sixteenth and seventeenth century in Europe,

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4 Paul Q. Hirst, *Space and Power: Politics, War and Architecture* (Cambridge ; Malden, MA: Polity, 2005). 6

5 Hirst. 3

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political power has been intrinsically linked to territory.<sup>6</sup> Occupation of territory began to form through organisational and structural systems; establishing lines, borders, boundaries and walls. As possession and ownership took control, so did the need for the strategic employment of surveillance of movement. Moving towards a new-found identity, deeply embedded in place and culture. The birth of territory is understood as the interrelation of “property and political power over land, that of the relation between the state and its territory.”<sup>7</sup> The division of land is accompanied by a counter-action or re-action to which divides itself from the other, the opposing nation. It is within this space that exists the boundary or border condition. What was once a blurred zone or inferred line is now mostly physically represented in space with barriers, walls, fences and the alike.

In Eyal Weizman’s *Hollow Land: Israel’s Architecture of Occupation*, architecture is employed in relation to territory in two ways, the latter I will depart from. First, the construction of architecture is “a conceptual way of understanding political issues as constructed realities.” The second involves the architecture of occupation, describing the “elastic nature of the frontier” and the constant shifting dynamics of the border condition with its ever-changing ebbs and flows. My analysis departs from Weizman’s as it investigates military or human occupation of geography whereas my analysis begins to explore the ecological systems that occupy the geophysical. Weizman locates the dynamic conditions of geography through the architectural construction of the conflicted territory; responding to the temporality of separation borders, maintaining the ability to expand or shrink the territory at will. The architecture that I will focus on inversely facilitates the ecological processes that are otherwise rendered invisible within the powerful force of the environment.

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6 Hirst, Paul. *Power and Space*, 27

7 Stuart Elden, *The Birth of Territory* (Chicago ; London: The University of Chicago Press, 2013). 2

Within the field of territory architecture is a tool or device of control. A fixed, static element used to represent the sovereignty of the state. The static elements found within the border zone; walls, ditches, tunnels, blockages, fences do not suffice within the expanded role and understanding of territory. Boundaries that are now in question - the geo-physical, are dynamic, meaning that the previous approaches to the border condition can no longer be applied to the case of the Arctic.<sup>8</sup>

The architecture that is now being demanded for is an architecture of the geo-physical. An architecture that responds to the dynamic, ecological processes of nature. Rather than an architecture of resistance this thesis seeks an architecture of **dynamic responsiveness**. Methods of control are questioned as the nation state is limited by its very own approach towards territory; it cannot create barriers around the forces of the environment. The uncharted waters of the Arctic demand more because of its extreme unpredictability and environmental conditions.

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8 Stuart Elden, "Legal Terrain—the Political Materiality of Territory," *London Review of International Law* 5, no. 2 (2017): 199–224, <https://doi.org/10.1093/lril/lrx008>.

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### *Territory, Terrain.*

“Although it is a central term within political theory, geography, and international relations, the concept of territory has been underexamined.”<sup>9</sup>

Stuart Elden expands the understanding and definition of ‘territory.’ While Elden recognizes the general study in which Gottmanns claims “one cannot conceive a State, a political institution, without its spatial definition, its territory.”<sup>10</sup> What has had little attention until now is the political-spatial relations of territory through the interrelation of elements such as water and ice or the geophysical landscape. The geophysical materiality of territory also constitutes the boundaries of territory, the natural landmarks of the environment; rivers, coastlines, mountain crests.

Elden distinguishes between the materiality of territory and how it is generally associated to or understood as land and the built landscape; the construction of the physical mass that makes up the territorial border condition. Elden argues that ‘natural’ borders have been discredited in such an understanding of territory. The complexity of fixating boundaries, borders and territory by the state are challenged by the dynamic elements of the earth; rivers, glaciers, mountains, oceans, polar regions, coastlines, airspace and the sub-surface are all natural features that Elden attempts to place emphasis on through the development and exploration of the notion ‘terrain.’<sup>11</sup>

Understanding how the term territory can be expanded to account for and respond to the dynamic nature of the polar regions; their environmental conditions and particularly the way in which the modern state approaches the ocean in relation to power and control acts as the main drivers

9 Elden, *The Birth of Territory*.3

10 Jean Gottmann, *La politique des états et leur géographie* (Paris: Armand Colin, 1951), 71.

11 Stuart, Elden. *The political materiality of territory*. London Review of International Law Volume 0, Issue 0, 2017. 10

for the interrogation of territory, a formally static concept, within this thesis. As people like Phil Steinberg has pointed out, “this becomes complicated when we look at ice, which can be solid or liquid at different times, blurring both geophysical states and legal regimes,”<sup>12</sup> the dynamic nature of natural ecological systems challenge the exact notion of borders or boundaries as a fixed line in space or on a map. The territorialisation of the ocean begins to challenge how we perceive territory. Thus, it is at this intersection of power and territory within the unknown territories of the Arctic Ocean to which my investigation lies.

Elden discusses the complexities of understanding territory regarding the polar regions, sea and ice. The inadequacies of producing maps that construct “surface boundary divisions, which become increasingly complicated if you look below the surface, into mineral resources, the sea and the seabed.”<sup>13</sup> Throughout Elden’s more recent work on territory he explores the notion of terrain, a term that forces us to consider volume, the three-dimensional space or verticality of territory. Within the conditions of the ocean it is crucial to account for the complexity of its height and depth, what is found below and above the surface level.

“But terrain also requires us to go beyond a narrow, flattened sense of space, what might be called the cartographic imagination. Representations of complex landscapes are frequently reduced to a plane, where shapes meet, separated by a line, a border.”<sup>14</sup>

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12 Legal terrain

13 Elden, Stuart. *Legal terrain : the political materiality of territory*. *London Review of International Law*, Volume 5, Issue 2, July 2017, 19

14 Elden, “Legal Terrain—the Political Materiality of Territory.”

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### *Rise of the modern state*

#### *Dominance/Resistance*

Territory's conception begins with the modern nation state and is inherently linked to political-strategic power relations. In Paul Hirst's *Space and Power*, he investigates the history of space-power relations and what implications globalisation has on space. The territorialisation of space was the result of a political transformation as sovereign states reinvented themselves into nation states. Returning to architecture, within this transformation the fortification of architecture expanded from the scale of the city to the scale of the state and thus, transnational borders were born.

Moving towards territory, Eyal Weizman's forensic study of spaces of occupation describes territorialisation by occupation to be "understood as an architectural 'construction,'"<sup>15</sup> breaking down "how overt instruments of control, as well as seemingly mundane structures, are pregnant with intense historical, political meaning."<sup>16</sup> To succinctly put it, these measures of construction were implemented as a way to conceive, organize and operate space - not only through material but also social structure. Thus, architecture has previously been used as a means of understanding geographical political affairs through its employment of both its physical and constructed realities.

#### *Military Control*

Along with state sovereignty we must address warfare and military control. Military in this case can be defined as 'an ensemble of means by which a nation exercises its power over a group of people.'<sup>17</sup> The influence of military is enforced through occupation and circulation, or the control of movement within territory and place. Foucault's power-knowledge relations to which I address is the concept of 'disciplinary powers,' dealing with repressive forms of

15 Eyal Weizman, *Hollow Land: Israel's Architecture of Occupation*, New edition (London New York: Verso, 2017). 6

16 Weizman.

17 Leopard Lambert, *Weaponized architecture*, 18

power but also dealing with the power of surveillance. This transition towards surveillance has led to the “militarization of the everyday milieu under the rubric of security.”<sup>18</sup>

Furthermore, with the assimilation of military technology into everyday life – transport infrastructure, communication devices and how we inhabit place, a process to which Buckminster Fuller describes as the normalization of a state of exception and what he read as “weaponry arts” becoming “livingry arts.”<sup>19</sup> From the planning of cities to global positioning systems, technology that was originally developed and implemented by the military now dominate how we define, read and use the space around and beyond us.

Moving towards the globalized network of actors that place pressure on governmental power and react to destabilize formal systems of control, the force of power begins to grow into a network and the centre of power shifts. “Perhaps there is no greater lesson about networks than the lesson about control: networks, by their mere existence, are not liberating.”<sup>20</sup> The network is the contemporary form of power operating at a level of anonymity, with its distribution and complex intermingling system it cannot be simplified down to a single actor or organisation.

### *State of Exception*

An increase in the dependence of exemptions from the law by the State has led to the development and increase in ‘states of exception’, a term which was once used to describe a displacement in the enforcement of the rule of law due to extraordinary conditions; state of emergency, a natural disaster , a moment of crisis, is now used as a tool

18 Felicity Dale Elliston Scott, *Outlaw Territories: Environments of Insecurity/Architectures of Counterinsurgency*, 2016, <http://mitpress-ebooks.mit.edu/product/outlaw-territories>.

19 R. Buckminster Fuller quoted in Stewart Brand, “Apocalypse Juggernaut, Hello,” *Whole Earth Catalog*, January 1970. 21

20 Galloway, Alexander R., and Eugene Thacker. *The Exploit: A Theory of Networks*. Electronic Mediations, 5. 21. Minneapolis: University of Minnesota Press, 2007, 5

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for political or capital gain by the nation state.

Like the appearance of an iceberg in the Titanic<sup>21</sup>, Zygmunt Bauman reminds us in 'Archipelago of Exception' of the fragility of life found within a State of Exception and the power of crisis, an event or moment in time that changes the conditions of life and law overnight. As the iceberg dawns on the ship amid the darkness, the ecological, political and economic icebergs of the time push the nation state towards a recurring implementation of the state of exception. This enforcement portrays an image of instability and lack or fragility of power. For the "principle of territory, state, and nation as the key to the planetary distribution of sovereignty, and on power wedded seemingly forever to the politics of the territorial nation-state as its sole operating agency, is by now dying."<sup>22</sup> Thus, the desperate attempt by nation states to claim territory and operate within the unknown landscape of the Arctic ocean exposes the fragility of the state.

Through this shift, the State of Exception has moved from a time of environmental, economic or political crisis towards an implementation of tactical urbanised conditions used to generate situations that facilitate lawlessness in accordance with capitalism growth, trade, expansion; Zones for business and trade growth and investment into foreign markets such as Special Economic Zones (SEZ)<sup>23</sup>. Environmental, societal and political extremes have become the new normal. No longer is a state of exception<sup>24</sup> an exception, rather

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21 Bauman, Zygmunt. "Archipelago of Exception Sovereignities of extraterritoriality." Lecture, Centre de Cultura Contemporània de Barcelona, November 5, 2005, <http://www.cccb.org/en/multimedia/videos/archipelago-of-exception/225684>

22 Zygmunt Bauman, "Times of Interregnum," *Ethics and Global Politics* 5, no. 1 (2012): 49–56.

23 For a detailed breakdown of the 'zone' see Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space*, Paperback edition (London New York: Verso, 2016). 35-39.

24 State of Exception, originally referring to Carl Schmitt see Giorgio Agamben, *State of Exception*. Translated by K. Attell. (Chicago: University of Chicago Press, 2005)

replacing itself as the current state. Accepting this condition, I begin to question - how can we construct new realities if the exception has become the new normal?

### *Exceptional State-lessness*

Transcending from the state of exception and its extension of power by a government to conversely an exceptional state – or state-lessness. In the case of this thesis an exceptional state-lessness can be defined in twofold; first as a place or landscape that is dominated by an extreme environment and/or harsh/intensified climatic conditions that are beyond the control of any sovereignty or legislation. Secondly, State-lessness is a condition to which a land or territory described as Terra Nullius, a Latin term meaning land belonging to no one or no man's land. In international law, it is a territory which has never been subject to or bound by the sovereignty of any state. Terra nullius exists due to the harsh and impossibility of its conditions. The impossibility of life.

Placing the exceptional state-lessness into its context, the focal point of the world shifts from the centre as we know it (the centre being from a westernised view point; Europe – see the Mercator map projection) towards a planetary scale found in the global poles of the earth; the North, comprising of the Arctic region and the South, home to the continent of Antarctica. What is remarkable about the polar ends of the earth is their lack of state, that is their state-lessness. This lack of state can be attributed to their harsh and inhuman environmental factors; extreme temperatures, seasons, wildlife, barren/desert landscapes and water conditions. Life is established in a different way and human habitation cannot be measured through the standard tools of metrics such as time, scale, area, density, data or so on. In order to make the landscape visible, it must be read, analysed and understood through the dynamic ecological and environmental processes such as its intrinsic elements; seasons, density, speed, concentration, pressure, wind - the changing evolution of its climate.

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Like the state of exception, a process that is implemented due to extreme political, economic or environmental occurrences, the exceptional state-lessness is a concept that is a result of the ecological conditions existing within landscapes of extremity. The absence of indigenous people (Antarctica/parts of the Arctic) and lack of settlement within the polar regions holds truth to its context. The traditional tools of measurement used to determine quality of life must be reimagined through the dynamic processes found within the extreme climatic conditions. In an exceptional state-lessness the rules of law as we know them cease to exist and the architectural and territorial approaches must be reimagined within the environmental and extreme conditions of the circumpolar regions. Therefore, this is a place where people come together in all kinds of exceptions, where the rules of law as we know them do not apply. To grasp the unique environmental conditions found within the planetary extremes of the poles, a comparison study of the two regions is conceived following a thorough analysis of the Arctic's current climate.

### *[Cartography and narrative](#)*

Initially depicted through the representational tool of cartography, the territoriality of space is formalised through the agency of mapping, which has several implications such as speculation, critique and invention.<sup>25</sup> Its intention as a tool used for communication always implies something political; Cartography has the power to construct spaces. As an instrument it can filter information, include/exclude, delineate ownership, occupation and creates a world view of a particular place. When it comes to geography the polar regions have been neglected. Take for example the most common depiction of the world map as we know it, the Mercator map. When you search 'world map' on google image often the north and south poles are non-existent, and

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25 James Corner, "Chapter 10: The Agency of Mapping: Speculation, Critique, and Invention," in *Mappings*, ed. Denis Cosgrove (London: Reaktion Books, 1999), 213–52.

the map is orientated so Europe and specifically London is placed at the centre of the map. Which leads me to the question - did we forget about the arctic?

One could speculate that the polar regions were often forgotten or strategically left out in the representation of the world due to a lack of interest and value for the regions which could be due to its extreme and harsh climatic conditions, its isolated northern location and its distance from any main land settlements. Willem Barentsz the Dutch explore discovered Spitsbergen or Svalbard on an expedition in 1596, two years later he developed one of the first maps of the Arctic. Barentsz representation is significantly important as it is a projection of the resources of power at the time. The 1598 cartographic map depicts a sea full of wealthy mammal life (significant resources of the time such as whales and seals), with great ships sailing the uncharted territories and the demarcation of 'Het Nieuwe Land' (now known as Svalbard), cementing his voyage north. With new possibilities for resource extraction at the time the centre of the world shifted towards the arctic, now we see a return to the polar north.



Het neuwe land 1598  
willem barentsz

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### *Comparing the Poles*

To begin I identify the geological differences found within the territories of the Polar North and South. Environmentally it would seem that the extreme conditions contain many similarities however in a context where humans are pushed to their limit, the difference between the Arctic and Antarctica is the difference between the possibility of life. Between withstanding extreme conditions for the continuation of habitation, production and development within the Arctic region to Antarctica, where humans reach the limit of the extreme and long-term habitation is impossible.

One key difference between the two poles is found in the basic formation of their landscapes, established through the physicality of the two masses; the Arctic region is an ocean surrounded by land mass (continents) in contrast to the continent of Antarctica which is a land mass surrounded by ocean. The territorial foundation of the Arctic ocean is conditioned by and dependent on the formation of a giant ice sheet through the seasonal freezing of the ocean, connecting the surrounding continents. In Antarctica glaciers and thick ice cover between 98-99% of the land, with nearly 85% of the worlds ice locked within its land mass.<sup>26</sup>

To unravel the complexity of conditions found within the two areas this analysis will unfold in three parts; the first begins with the geology of each context and differing environmental climates, the next will navigate the human history of discovery, expeditions and resource extraction/exploitation, while the final presents legislation and geography of the regions, retelling the political tales of territorial claims by nation states.

### *State of the Arctic: Svalbard*

As the Arctic region is bound by lands of neighbouring states, this study will focus on the unclaimed area of the

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26 Woods Hole Oceanographic Institution, "Compare the Poles," December 10, 2018  
<http://polardiscovery.whoi.edu/poles/index.html>

Arctic Ocean, with a further investigation into a territory located deep within the arctic circle, Svalbard. The northern-most inhabited place in the world, Svalbard is an archipelago situated between the Arctic Ocean and the North Sea, historically described as Terra Nullius.

Svalbard is bound by the 1920 Svalbard treaty. This treaty gives “full and absolute sovereignty of Norway over the Archipelago,” however it also gives ‘equal rights’ to the 43 other countries who are registered parties of the treaty over its resources and territory. The treaty gives Svalbard the ability to act as an Exclusive Economic Zone and self-governing island, a condition that establishes its ‘Exceptional State-lessness.’

The rapid rise in temperature of the Arctic Ocean has led to newly formed geopolitical interest in the region as the melting of the ice has opened up a new landscape ready to be taken over and exploited. Approximately 30 percent of the world's untapped gas and oil resources expected to be located within the Arctic Ocean<sup>27</sup>. The Arctic Ocean and Svalbard's history is deeply embedded in resource extraction and exploitation. As most of the world sees the rapid disappearance of ice in the arctic as a climatic disaster, the arctic nations view this change as a means to access a new landscape of resources and are strategically staking claims in the newly formed territory.

### *Antarctica*

Antarctica is the only uninhabited continent in the world. Besides a small number of seasonal researchers (about 1,000 in the winter and up to 4,000 in the summer) the continent does not have permanent residences due to the desolate and barren desert landscape. Discovered less than 250 years ago, its isolated geographic location and extreme weather conditions (The average seasonal tem-

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27 Charpentier, R.R., Klett, T.R., and Attanasi, E.D., 2008, Database for assessment unit-scale analogs (exclusive of the United States): U.S. Geological Survey Open-File Report 2007-1404 [<http://pubs.usgs.gov/of/2007/1404/>].

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peratures are 20-30 degrees colder than the Arctic) means that accessibility and availability of resources are extremely limited within the region. Hence, it could be argued that the impossibility of sustaining life or exploiting the region of its resources can be attributed to preservation and research becoming the central focus.

Antarctica is regulated and maintained by The Antarctica Treaty System (ATS), in 1959 the Antarctica Treaty was established, outlining its main purpose is to ensure that the territory is strictly used for “peaceful purposes only.”<sup>28</sup> The treaty encourages transparency between nations, “promot[ing] international cooperation in scientific investigation in Antarctica”<sup>29</sup> through mandatory access to all scientific observations and research carried out and the exchange of personnel between expeditions and stations.

### *Geology and Environmental Climates*

The Arctic region is an ocean surrounded by continents. It’s landmass is formed by an ice sheet, connecting different continents and nations. During the winter months, the Arctic’s mass is formed mostly by pack ice (frozen ocean water). As the summer approaches, the ice then melts back into the ocean, with the thick yearly ice cap remaining. The Arctic’s temporary landscape extends itself, blurring the boundaries of the Arctic nations.

Since 1979, scientists have been able to monitor sea ice levels using satellites and have seen a rapid reduction in the ice formation of the Arctic.<sup>30</sup> The melting of the ice, longer periods of summer/shorter winter months and improved shipping technology (ice breaker ships) has resulted in greater access to the Arctic Ocean over the last decade. Changes in the geological formation of the Arctic has led to

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28 See Article I “The Antarctica Treaty,” opened for signature December 1, 1959, <https://www.ats.aq/e/ats.htm>.

29 See Article III “The Antarctica Treaty.”

30 DMI, DTU, GEUS. “Understanding the Arctic sea ice.” <http://polarportal.dk/en/sea-ice-and-icebergs/understanding-the-arctic-sea-ice/> (accessed January 3, 2019)

significant effects and developments in the economy; drilling in the arctic based on the expected discovery of gas and oil resources, exploration of new international shipping trade routes reducing shipping times dramatically and the increase in tourism/research for longer seasonal periods. As the Arctic region's conditions vary depending on which country is analysed, the focus shifts towards Svalbard.

The climatic conditions in Svalbard are too harsh for any plant life to survive, thus it's distinct from the Arctic tundra. Despite this, Svalbard's three main economic sources are based on its landscape and the natural geological archive. Its diverse bedrock makes it an ideal place for scientific research into the geological structure of the earth.<sup>31</sup> The landmass is covered by glaciers and the archipelago is full of arctic wildlife. In recent years, this has appealed to the tourism and Svalbard has seen a large increase in the industry. As the summer season increases in length, cruise ships and tours can flow through the fjords for longer periods of time. Finally, the carbon-rich rock formation produces coal,<sup>32</sup> an industry that was part of the establishment of permanent settlement, Longyear City (now known as Longyearbyen) during the early 20th Century.<sup>33</sup> A shift in the market and demand for coal has led to the decrease in the operation of coal mining.

Antarctica is a fixed landmass which extends its boundaries in the winter by doubling the area of the continent. Antarctica has two main differing geological areas, the east and west. However about 98-99% of the landmass is covered by ice, there is very limited surface area that can be studied, a lot of Antarctica's geology is not known in great detail and is inferred. The continent is believed to be rich in natural minerals and resources; coal, iron, copper and nickel have

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31 Synnove Elvevold, Dierk Blomeier, and Winfried Dallmann, *Geology of Svalbard* (Tromsø: Norsk polarinstitutt, 2007). 6.

32 Elvevold, Blomeier, and Dallmann. 31.

33 Rolf Stange, *Spitsbergen - Svalbard: The Complete Guidebook around the Arctic Archipelago : Natural and Human History : Routes and Regions : Useful and Important Information*, 2018. 163.

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all been discovered in the area however due to deterrents of accessibility and costly logistical and infrastructural factors Antarctica has managed to remain free from exploitation. Furthermore, in support of preservation of the region a ban on mining was put in place by the 1998 Environmental Protocol to the Antarctic Treaty.<sup>34</sup>

### *Anthropic History and Extractivism*

Home to many Indigenous populations, human habitation within the Arctic circle dates to prehistoric times, for this reason the focus on the human history of Svalbard is relevant to this chapter. An important and common condition of Svalbard and Antarctic is that they are both islands isolated deep within their oceans of origin without native people. The Terra Nullius status of these landscapes can be considered as a critical element for the establishment of the territorial condition that they currently exist within. Historians believe that the absence of indigenous people is due to its extreme and harsh climatic conditions, its isolated context and distance from any main land settlements.

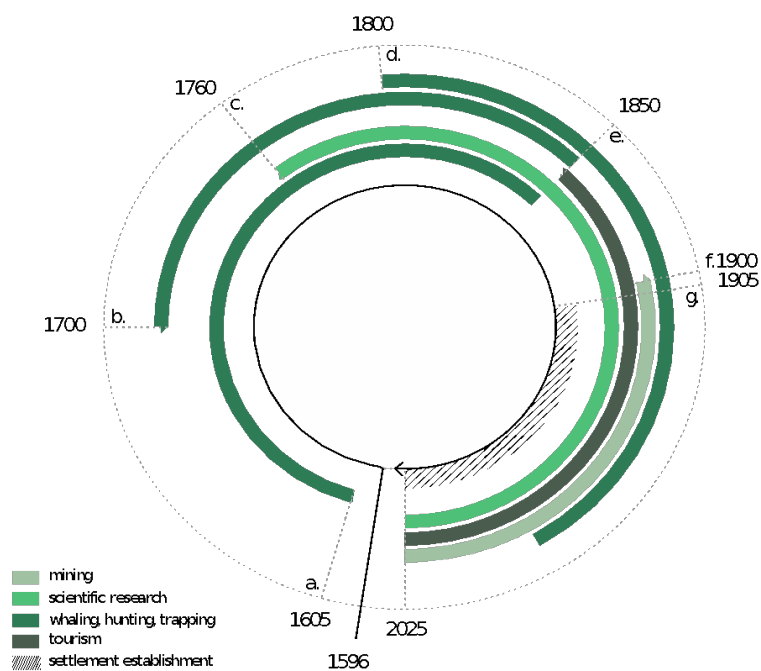
There are alternative hypotheses about the discovery of Svalbard, but the expedition by the Dutch explorer Willem Barentsz' in 1596 acts as the starting point of cultural history. From an economic perspective the history of Svalbard can be divided into different phases, which overlap. These phases cannot be imagined as a linear projection but as life cycles demonstrating the temporal, seasonal and exploitative conditions of life found within Svalbard. According to the University Centre in Svalbard<sup>35</sup> there are seven main cycles found within the human habitation of Svalbard, which are illustrated in Fig. 01. Analysis of the human history timeline depicts that the phases can be broken into four categories of extraction/exploitation; hunting (includ-

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34 British Antarctic Survey, "Antarctic's Geology" <https://discoveringantarctica.org.uk/oceans-atmosphere-landscape/ice-land-and-sea/antarcticas-geology/#> (accessed January 10, 2019)

35 University Centre in Svalbard, "SH-201 The History of Svalbard" January 18, 2018, [https://www.unis.no/wp-content/uploads/2017/01/SH201\\_Summary01\\_2017.pdf](https://www.unis.no/wp-content/uploads/2017/01/SH201_Summary01_2017.pdf)

ing whaling and trapping), scientific research, tourism and mining (coal). Currently the three main economic sources are research, tourism and although dying still present, coal mining. Large reforms are being made towards the coal mining industry, with the recent closing of mine Svea and Lunchejfell only Mine No. 7 remains open and in operation. The Norwegian Government has the goal to completely phase out the extraction of an unsustainable and devaluing market, whilst in Barentsburg the plan for the active coal mine proceeds the next 25 years. Furthermore, over the last decade an explosion of tourism has developed in the Arctic region. Whilst a rapidly changing climate has resulted in an intensification of scientific research.



- a. Whaling // international // summer
- b. Russian (Pomor) hunting, trapping mainly whaling // summer and winter
- c. Scientific research // international // Key driver in the current economy
- d. Norwegian hunting, trapping, sealing // summer, winter until end of WWII
- e. Tourism (large scale from 1890) // Key driver in the current economy
- f. Coal mining // Norwegian and Russian (from 1930s)
- g. Local settlement and community development

Svalbard's human history - Extraction life cycles

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In summary the temporal and cyclical nature of Svalbard is a result of the combination of extreme and harsh conditions surrounding the environment, absence of native people and a past lack of desire to develop settlement. Due to the lack of medical facilities, the possibility to give birth/be treated for serious illness (birth/death) is not an option, further isolating the idea of association to place and identity. Thus, the extraction and exploitation of resources solidifies the ephemeral occupation of Svalbard and the temporal culture that surrounds it.

Expedition history of Antarctica recognises several different stages in the discovery of the continent. The first crossing of the Antarctic Circle was by James Cook on January 17, 1773, whilst the first land sighting of land was by Fabian von Bellingshausen in 1820 and finally the first person on the land was John Davis in 1821. A lack of interest into Antarctica remained through the 19<sup>th</sup> Century due to an absence of available resources and the extreme conditions that had to be endured in order to get to the southern land. Since 1904 commercial whaling has posed a huge threat to the ecosystem in Antarctica, 1986 commercial whaling officially ended however whaling still occurs. The 1911 expedition to be the first explorers to reach the South Pole was completed by Roald Amundsen, an explorer from Norway.

A key moment in the history of Antarctica was the International Geophysical Year (IGY) in 1957-1958 which promoted the cooperation by 12 nations and all 7 nations who had officially made claims to territory within Antarctica. This event is significant as it acted as a catalyst moment for the unification of nation states in the name of scientific research and exploration. Joining forces and sharing information led to great developments of the continent and the establishment of The Antarctic Treaty in 1959. The treaty was signed by all 12 participating nations in 1961 and all seven previous territorial claims were suspended. In 1991, the Treaty expanded to agree not to explore for oil or other minerals for at least 50 years followed by the enforcement

of the 1998 Environmental Protocol to the Antarctic Treaty ensuring a ban on mining. Hence, the IGY 1957-1958 is a defining moment for peace keeping over territorial disputes in Antarctica.

### *Territorial Claims and Treaties*

The final comparison chapter of the global North and South presents the differing geopolitical approaches towards territorial claims. In both polar regions extensive territorial claims have been made by neighbouring states. However, it is the response to territorial claims and exploitation of resources within the Arctic that differ a great degree from the Antarctica.

To begin, the United Nations act as a governing body power for the applications of claiming maritime zones in the Arctic Ocean, the claims must be in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS).<sup>36</sup> A nation must prove that their continental shelf<sup>37</sup> extends past their coastal line and exceed beyond the 200 nautical mile territorial sea boundary in order to successfully claim new sea territory. Antarctica is governed by a treaty, The Antarctica Treaty of 1959 suspends all territorial claims made prior to the implementation of the treaty, neither confirming nor denying any claims to the territory. The self-proclaimed sovereignty of territory within Antarctica by nation states is based on initial occupation. Furthermore, Svalbard, a Terra Nullius landmass in the Arctic bares similar territorial conditions to Antarctica as it is also ruled by a treaty however Norway has sovereignty over Svalbard however certain rights are given to signatories. Following the 1920 Paris Peace Conference the Svalbard Treaty was originally signed by 14 nations, a total of 43 countries are

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36 Naja Bentzen and Marc Hall, "Arctic Continental Shelf Claims Mapping Interests in the Circumpolar North" (EPRS | European Parliamentary Research Service), accessed October 1, 2019, [https://core.europa.eu/en/engage/studies/Documents/EPRS\\_BRI\(2017\)595870\\_EN.pdf](https://core.europa.eu/en/engage/studies/Documents/EPRS_BRI(2017)595870_EN.pdf).

37 A continental shelf is where the land or continent is submerged below sea area, the continental shelf is geologically apart of the crust and therefore is an extension of a landmass/state.

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registered parties today.

Over the last decade territorial claims from neighbouring Arctic nations have exploded into a scientific, legislative and geopolitical battle for the unclaimed region. Neighbouring Arctic nations include Canada, Russia, Greenland, Iceland, Norway, Russia and Alaska have all claimed parts of the Arctic's sea bed through their continent shelf. These claims extend far beyond their territory and Economic Exclusive Zones. Thus far, the only successful scientific claims of territory extension approved by the UN are submissions from Norway and Iceland. In 2007 a Russian flag was planted in the seabed of the North Pole by Russian arctic explores. This action sent out a political message of sovereignty and was symbolic of the country's ambitions to claim the territory. Other attempts in the claiming of the arctic ocean by Arctic nations have been through historical relays and promotional videos/media related propagation.

Although Norway maintains sovereignty over Svalbard it is self-governing and an economic free trade zone. The most important part of the treaty in relation to my research is that the treaty denotes shared accessibility of resources, 'liberty of access and entry'<sup>38</sup> to its territory and the abolishment of military activity by all nation states. The abolishment of physical military activity merely deems its existence to be invisible, for the methods of control are absorbed by the (infrastructural) spatial implications. The world's largest satellite station Svallsat is located in Svalbard and it is no secret that it "serves satellites employed for both military and civil purposes."<sup>39</sup> Media and communication devices have been pertinent in modern warfare. Based on article 3 of the treaty any party has the right to "all maritime, industrial, mining and commercial operations on a footing of absolute equality."<sup>40</sup> Thus, the oper-

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38 The Svalbard Treaty, Article 3

39 Bard Wormdal, *The Satellite War*, 2011. 29

40 "The Svalbard Treaty" (Signed in Paris, February 9, 1920), [https://www.sysselmannen.no/globalassets/sysselmannen-dokument/english/legacy/the\\_svalbard\\_treaty\\_9ssf.pdf](https://www.sysselmannen.no/globalassets/sysselmannen-dokument/english/legacy/the_svalbard_treaty_9ssf.pdf).

ation of any commercial activity cements occupation on Svalbard. The Russian mining town of Barentsburg is based on the commercial establishment of coal mining. In order to exert its economic and political influence within the area and maintain a presence, the Russian town continues to run and invest in a coal mine that losing value.

In opposition to the geopolitical tension that is building up in the North, the Antarctic Treaty is a peace regulatory system which places all of its emphasis on cooperation between any nation state who wishes to partake in research within the region. Article IV specifically asserts that no nation state has the right to claim territorial sovereignty of Antarctica whilst a high level of transparency and cooperation is required from any nation participating in scientific research within the continent. The Treaty states that its signatory governments: "Recognizing that it is in the interest of all mankind that Antarctica shall continue for ever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord."<sup>41</sup> The Antarctic Treaty acts as a powerful foundation for the development of humans working together and finding peaceful resolutions towards conflict in the name of progression, conservation, equality and freedom.

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41 "The Antarctica Treaty," December 1, 1959, <https://www.ats.aq/e/ats.htm>.

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### *Context and conclusion*

A site visit to Svalbard provided me with the tools to answer this question and understand the geopolitical nature of Svalbard.

The overall conclusion of my research establishes that the polar regions are constituted by rules of the 'exceptional' (similar to that of a state of exception, without the state) due to the extreme and harsh climatic conditions and the impossibility of life. My experience led me to understand that this is a place where the rules of law as we know them do not apply. Where nation states come together in all kinds of exceptions.

Due to the extreme climatic conditions it is the environment that reigns as the ultimate power force, humans merely negotiate their position within the environment. Challenging the ways in which we think about architecture and how we measure the quality of life. However, the power dynamic is beginning to shift as climate change heats up the region, leading to an intensification in the exceptional living standard and an increase in the claiming of territory by nation states.

The key difference between the two polar regions is accessibility and flow of resources. The Arctic facilitates extraction, as we have seen in recent times that climate change is making it possible to inhabit and exploit the region. When comparing the two poles, the Arctic can be considered 'urban' as it provides flows of resources and ground for logistics, indirect military surveillance through satellite stations and modes of production. Where Antarctica represents the flow and force of nature, with conditions comparing to Mars - deeming survival near impossible. The agreement to preserve Antarctica can be attributed to the fact that it cannot be instrumentalised by man in comparison to Svalbard, which acts as a testing ground for the Arctic, pushing our understanding of the limit to the extreme.

To conclude my polar analysis, I will discuss the notion of human value within each region. Antarctica is perceived to hold intrinsic values the Arctic is only viewed as a resource or means to an end. The environment, politics and scientific approach of Antarctica distils the upper most respect and value by people. "Wilderness, aesthetic values and science became Antarctic attributes by which the intrinsic value of Antarctica could be measured." Through all of the Arctic human history cycles it has only been deemed valuable through its plethora of resources. These two perspectives can be attributed to each region's accessibility – geographically and environmentally.

"Definitions of the arctic vary considerably according to scientific, environmental, geographical, political and cultural approaches, perspectives and biases."

Hence, I hope that Arctic nations and humans can learn from the approaches and values instilled within Antarctica. Placing intrinsic wilderness, aesthetic and scientific value into the critical ecological and environmental processes within the Arctic.

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### Project-ion

Humans have literally gone to extreme and far measures for the extraction and exploitation of resources within the Polar North- reflecting the values of the past, present within the Arctic. My project materialises as a counter project to the geopolitical, economic and environmental conflict found within the Arctic region. As arctic frontiers face imperial ambitions of international shipping routes, extraction and rapid environmental change my project projects itself into a possible future. This project seeks to reverse the image of conflict (arctic as purely a tool for extraction) through the proposal of a system that harvests the environmental forces and conditions that exist within the extreme climate through the relevant lines of enquiry;

Can we imagine a future for the arctic beyond purely exploitative measures and can we instil environmental value into the arctic that exceeds the extraction of resources?

Is there an alternative approach to extractive measures?  
Can it be productive for the environment?

Can we work together with earth forces and ecological processes to create alternative ways of valuing the Arctic and its critic yet fragile environment?

“The challenge is to represent the fragility of the subject through the composition and material construction of the image.” Emma Stibbon work ‘Monumental, yet so fragile’ represents environments within the arctic that are undergoing dynamic change. Thus, I seek the extrinsic qualities of an architectural intervention, to form the physical manifestation of the ecological processes that are crucial environmental systems for human survival. The ephemeral nature of the melting landscape materialises through a series of architectural monuments. Like in Olafur Eliasson’s ‘Ice Watch’ installation project where 12 large blocks of ice cast from the Greenland ice sheet and placed in a clock formation while the ice(bergs) melt. The blocks were first placed

in Copenhagen at the time of the UN IPCC's Fifth Assessment Report on Climate Change, raising awareness of this otherwise invisible environmental condition.

David Gissen argues that there is a distinction made between environments and monuments within architectural history, that the environment is imagined through biology. That people find it hard to imagine having an aesthetic experience of an environment because it is what supports us to live. Where the monument is closer to the opposite of environment, it is understood as an object. In architecture there is a distinction between the two – environment and monument/object. Gissen questions how can we cross pollinate the two together?

To conclude, my project emerges as a series of architectural installations with the purpose of materialising the ecological processes existing within the region, acting as a form of demonstration. Each individual installation harnesses an existing ecological process rendering the invisible environmental processes visible. It is at the point of intersection of intermingling and relational exchanges of the system as a whole that this project develops. The development of my design using the environmental and ecological processes to create architectural interventions that support, stabilise and enhance each other enabled me to reflect on my role and position as an architect and the profession. Reflecting on this project I have learnt that the architect should not be limited to designing through their conventional tools of measurement, that it is critical for us to design using intrinsic values found within the environment to create a more holistic approach and positive feedback for the fragile ecologies that exist around us. Through architectural activism we have the power to instil environmental value into one of the most critical ecosystems existing on this planet, the Arctic.

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