

# Manifesto

*The Embassy of Waste*  
Architecture Report

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*Transitional Territories Studio*  
*2019-2020*  
*TU Delft*  
*Architecture Track*

I want to thank my tutors Taneha, Kaveh, Sjaap and Francesca, for making me step out of my comfort zone and supporting me as I ventured into the unknown. Thank you for the challenges, but above all, for the encouragement.

Thanks to the long distance and unconditional support from my family and to the companionship and growth from the good friends I have made in Delft.



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The Embassy of Waste  
Longyearbyen , Svalbard

### **Abstract**

In the current geopolitical climate, where Arctic nations are at the brink of conflict in their pursuit for influence and resources, mining has acquired a political character, establishing a delicate equilibrium between resource claims and the protection of the territory. This equilibrium is manifested in the Svalbard Free Zone, where all nations are free to make use of its resources, yet the presence of Norwegian population, and mining as *raison d'être* of inhabitation, has acted as the entity of governance and ambassador for the best interests of the region. Nonetheless, with the ongoing end of coal mining in Svalbard, and the demise of Norwegian presence in the archipelago, the 'free zone' will face a state of uncertainty, vulnerable to the interests and disputes amongst the Arctic nations (Pedersen, 2017).

As the 'free zone's' uncertainty threatens the stability of the entire region, mining waste becomes a glimpse of hope towards a new form of political representation. While the Arctic communities face the havocs of such waste, its potential reuse makes it a novel resource and a chance for cooperation to counterbalance both its environmental effects and the political crisis that is about to unfold. Hence, the Embassy of Waste is a political manifesto that introduces the recollection and recycling of mining waste in the decaying mining community of Longyearbyen, Svalbard, in an attempt to become a novel tool towards the governance and self-sufficiency in the region.

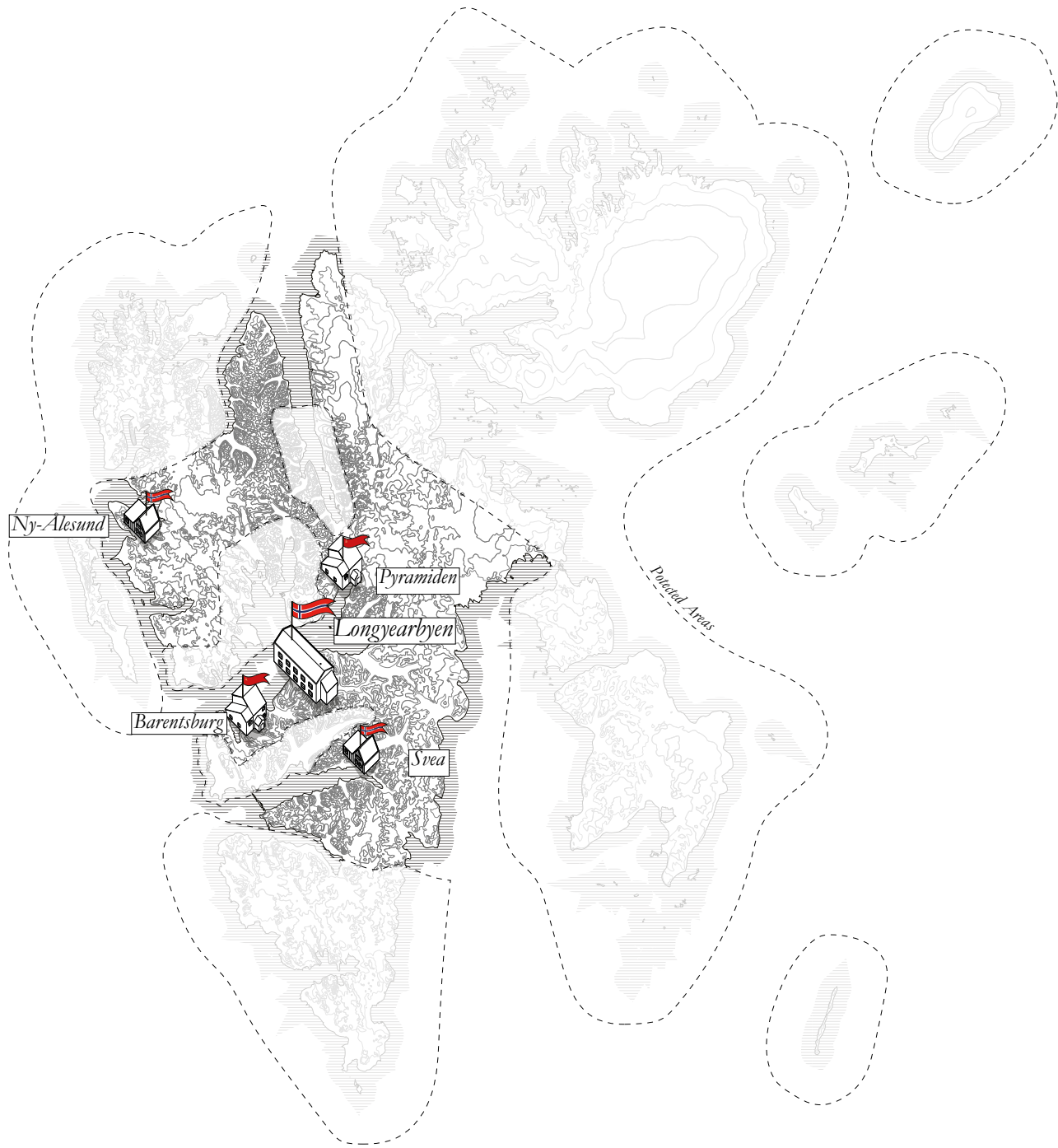
# Svalbard Free Zone

*Political Crisis*









SVALBARD TREATY

1920

Spitsbergenverdrag



Sovereign

Plenipotentiaries - Ambassadors

Rights

## Delicate Equilibrium

The Svalbard Free Zone's condition has the potential to promote international cooperation among nations, (as with the research activity) yet is vulnerable to the resource claims taking place in the Arctic. As agreed in the Svalbard Treaty, its protected condition relies on the Norwegian presence as *Ambassador* for the territory's best interests. Mining as governance and reason of permanence of Norwegians on Svalbard has created a delicate equilibrium between the conditions of "free zone" and protection. Yet, today this balance is being disturbed by the end of mining as it threatens the permanence of Norwegian citizens, therefore its presence and sovereignty over the territory. Without Norway as a strong ambassador for the fulfilment of the treaty, the "free zone" becomes an open door for the extractivist interests of the Arctic Nations.

This delicate equilibrium is evidence of how a crisis in a small Arctic community can have important repercussions on the territorial and global scale.

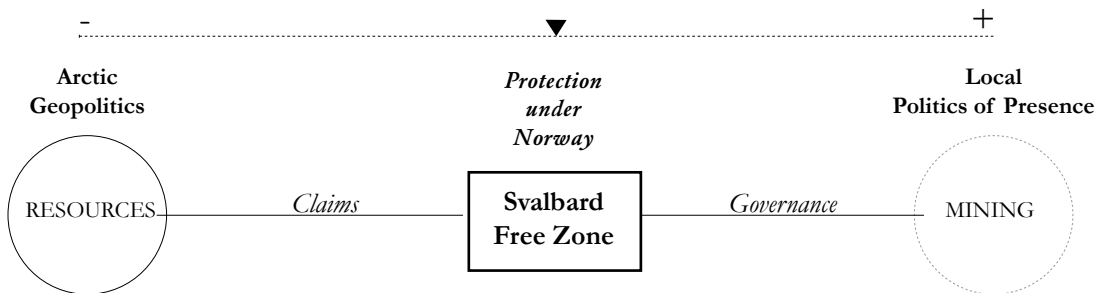
*"Isolated, the declining trend in the share of Norwegians in Svalbard is likely to fuel misperceptions about its legal status. Misperceptions, which in turn, could tempt other governments to assert more political influence in Svalbard, which may ultimately affect peace and stability in the region."*

*The Politics of Presence:  
The Longyearbyen Dilemma  
Torbjørn Pedersen*

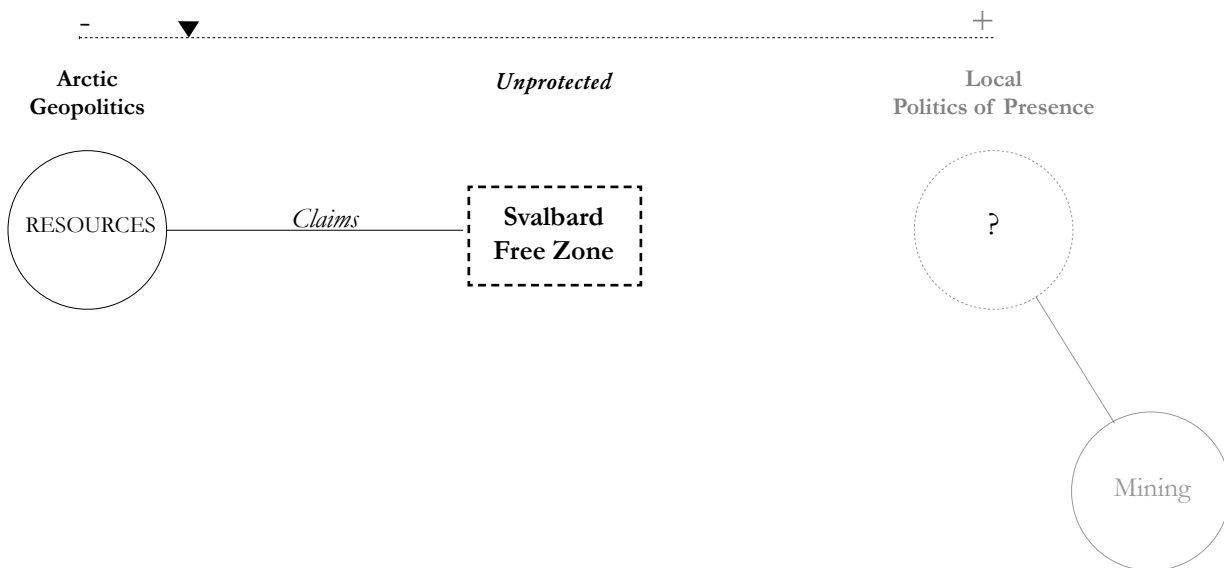
Territorial Scale  
Arctic

Local Scale  
Longyearbyen

*Delicate Equilibrium*



*State of Uncertainty*



## The “Cold” Free Zone

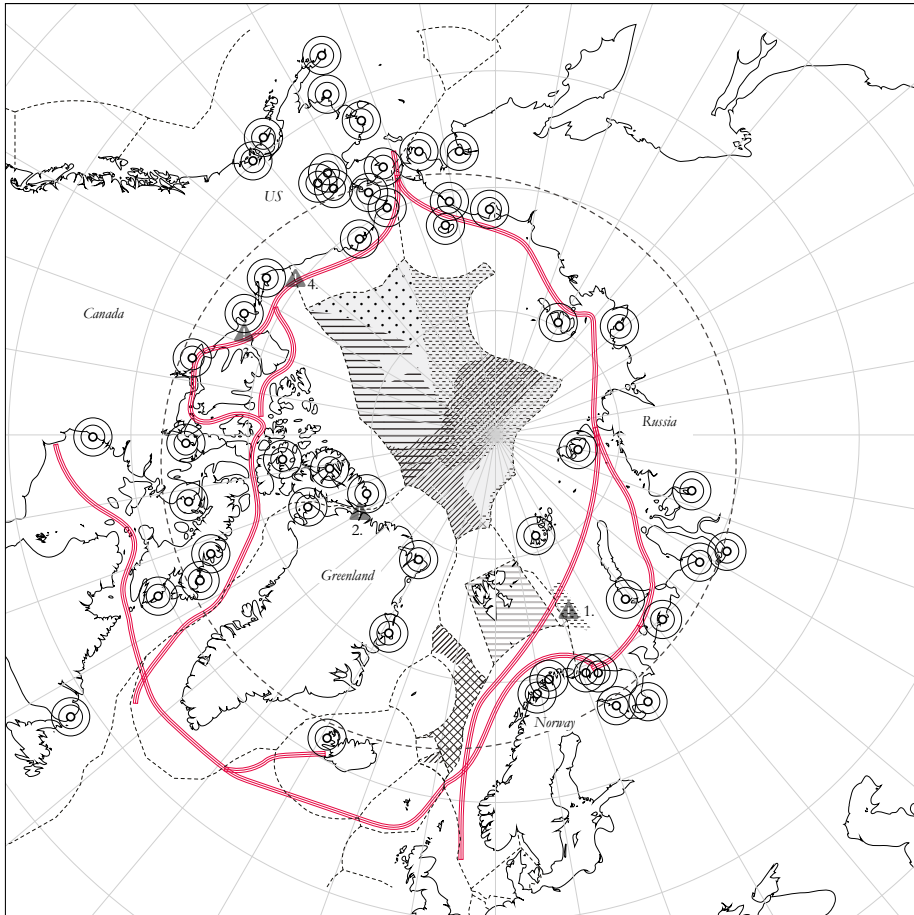
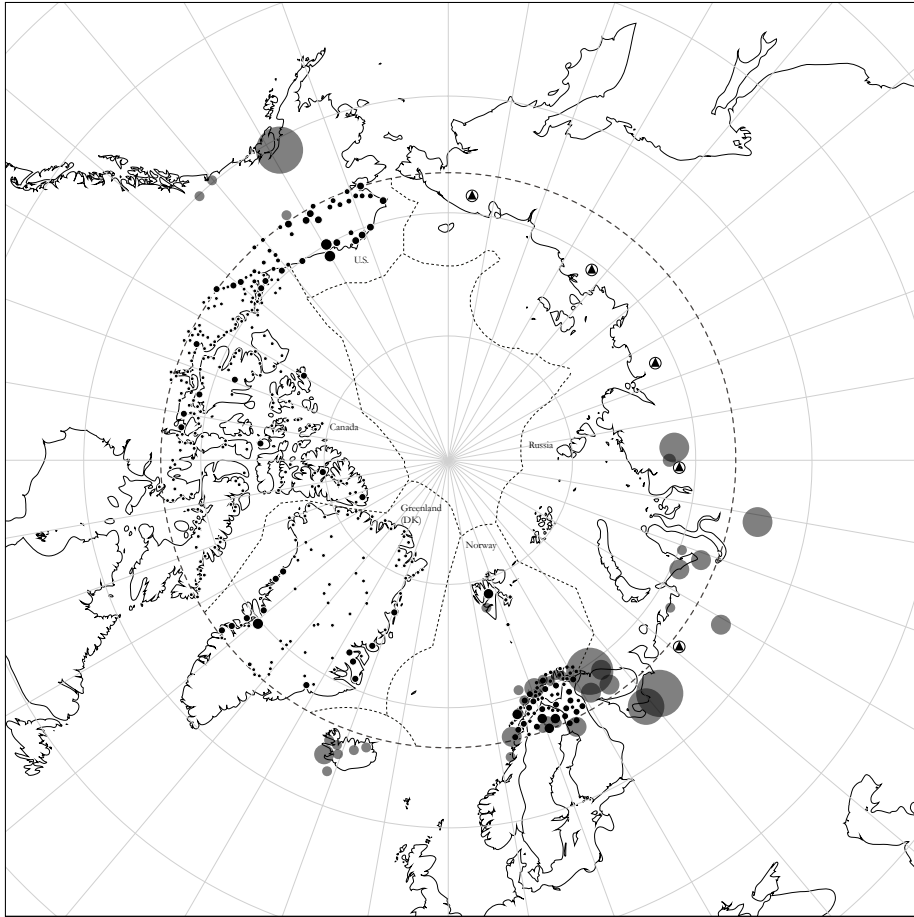
Even though historically the Svalbard Free zone has been a safe haven for cooperation, today’s epoch of over-extraction leaves the Free Zone as the centre of a geopolitical dispute.

The discovery of new resource deposits, new and shorter trading routes, developing cities and ports and a more favourable weather have triggered a resource race and the further claims of resources and territorial waters

Today the Arctic nations are presenting their continental shelf claims, looking to get the bigger piece of the split of the Arctic. Additionally there is a resource race and a military race taking place. Nations as Russia, The United States and Canada are already placing military bases in strategic places along the Arctic, as it becomes the new geopolitical chess.

As the different claims overlap and military bases sprawl, conflicts arise between theatrics nations, which seem to be turning their eyes at Svalbard.

Under the treaty, the resources in Svalbard are meant to be shared, yet Norway has acted as control, to allow the free zone to have a balance between sharing and protection of the ecosystem. Yet as all military bases seem to silently face the archipelago, it has become the “cold” free zone; a state of uncertainty on the verge of collapse.



## Research Question

*How can the management of mining waste become a tool for governance and self sufficiency in the Arctic?  
Can mining waste re*

As I focused on the specificities of the Arctic and on Svalbard as a territory currently transitioning from mining to other activities, I realized that my research was intrinsically political. Svalbard is an archipelago known for being 'no man's land'. Through history it had withhold its character of an unclaimed territory of which its in-habitation is solely because of the mining of coal. For this reason and due to its remoteness, and internationality, mining companies became the entity of control and governance in Svalbard, similar to the role of an ambassador sent by different nations to represent their interests in foreign land. Therefore, through my research I realized that mining in the Arctic is much more than just an environmental and social problematic, it is a geopolitical issue and the *raison d'être* of Svalbard as a consolidated territory. Therefore, by understanding the political relevance of mining in this Arctic community,

I came to the realization that my project had to address the management of mining waste from a political point of view in order to successfully embed itself in the Arctic context. Reason why Svalbard's condition of "free zone" became an important topic as it is meeting point between the two sides of my research. Addressing and maintaining that delicate balance that have been established between mining as governance and the resource claims and political influence in the Arctic. On one hand having the potential to recollect such mining waste due to its condition of exception (ref), and on the other addressing the political vulnerability of this territory within the resource claims in the Arctic.

Therefore, my research developed and transformed radically. Although always in the line of mining waste, it transitioned towards the politics of such waste. Therefore the name of my project as "The Embassy of Waste", tackles mining waste management and reuse as a political tool of local governance and Arctic cooperation and self sufficiency. By consolidating Svalbard through its condition of "free zone" as a sustainable wasteland, not only am I addressing the governance on the territory, but the cooperation among Arctic nations. Through its name of "Embassy" it acquires both a local and a regional political character, veiling for the protection of Svalbard while benefiting the Arctic nations by managing the waste produced and reusing it towards a new local material. Therefore becoming a project from the Arctic to the Arctic, with Svalbard as an ambassador and intermediate.



Territorial Scale

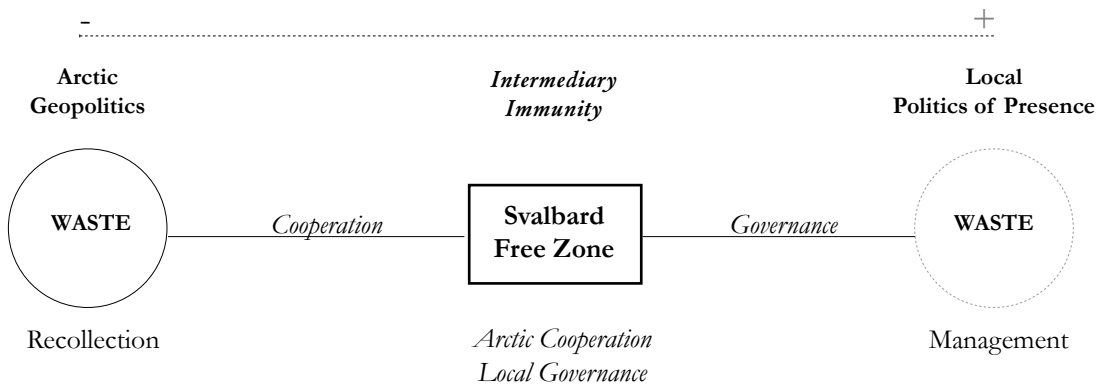
Arctic

Local Scale

Longyearbyen



**EMBASSY OF WASTE**  
 An Architecture of Exception



(in Svalbard) "Norway undertakes to grant to all nationals of the High Contracting Parties treatment based on complete equality and in conformity with the stipulations of the present Treaty. "

*Svalbard Treaty 1920*

The Svalbard Treaty , Paris, 9 February 1920, Versailles Treaty , available from [http://library.arcticportal.org/1909/1/The\\_Svalbard\\_Treaty\\_9ssFy.pdf](http://library.arcticportal.org/1909/1/The_Svalbard_Treaty_9ssFy.pdf)

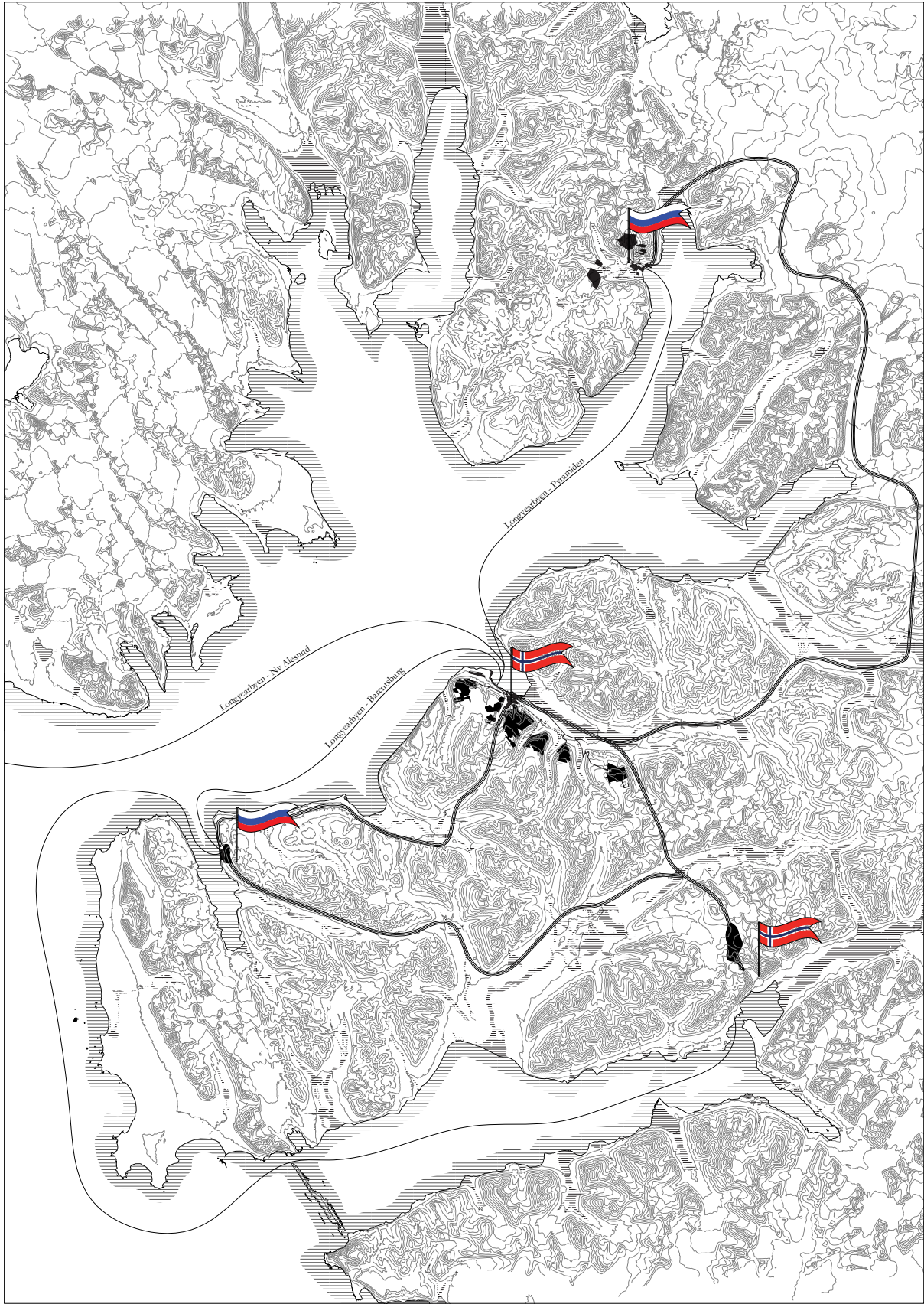
# The Embassy

*Waste as political representation*



**Isfjord**

Isfjord is the main fjord in the island of Spitsbergen. Three of the 5 historical mining settlements are located here. Towards the north-east there is the abandoned Russian town of Pyramiden and towards the west, the Russian mining town of Barentsburg. Right in the middle, the city of Longyearbyen is positioned strategically based on the coal deposits found there, yet also as a transportation hub to the other settlements around it.



*Isfjord*





*Adventvalley*



*Longyearbyen*



*Infrastructure Network*





*Externalities to Mining*

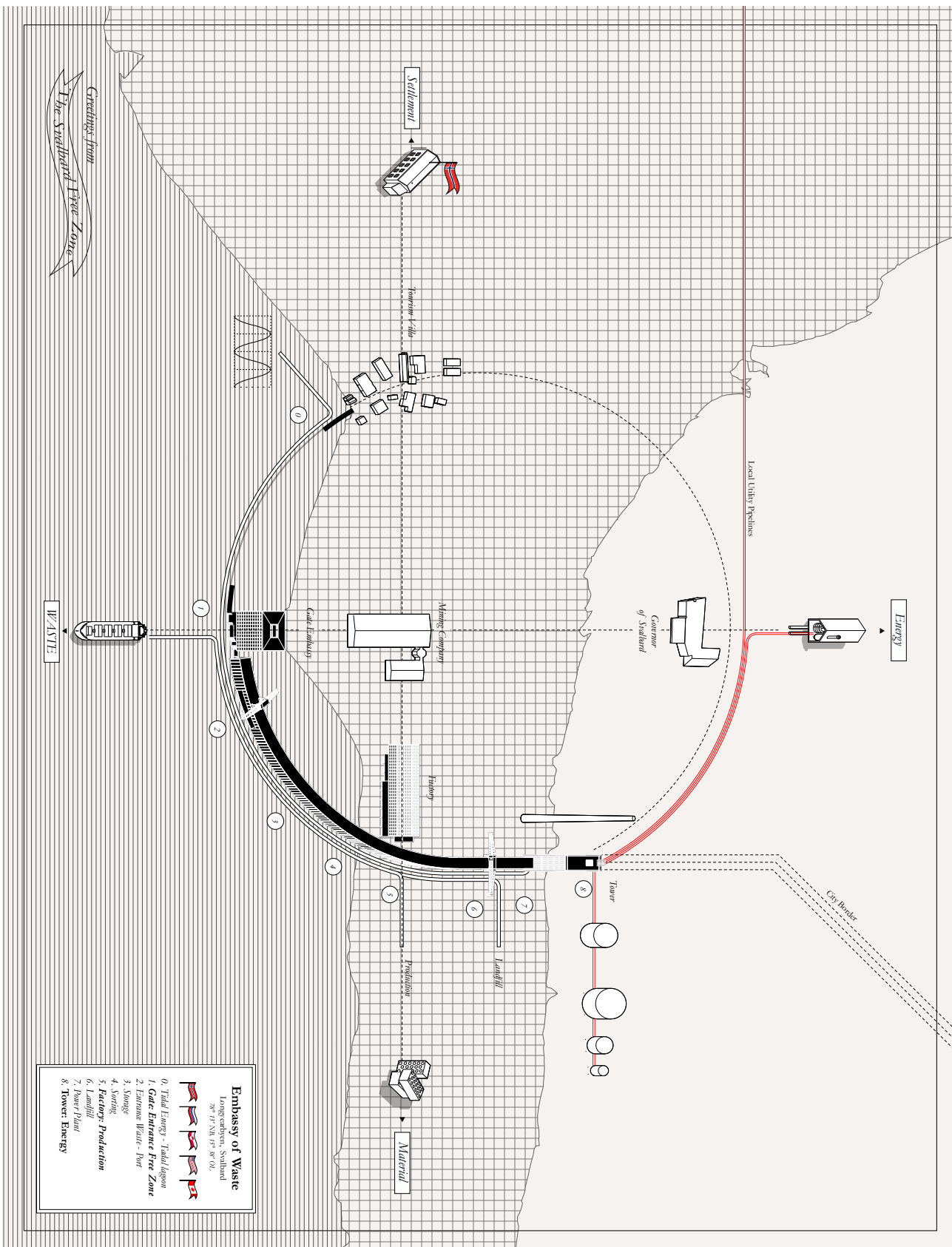


## **Project**

Given the invisible yet important political value of mining, the Embassy domesticates its externalities on the territory, aiming to restore the energy, production and governmental processes that are soon to face total oblivion. Embedding itself within the existing mining and energy infrastructure of the city, the Embassy extends from the sea to the land introducing the linearity of mining waste management as an infrastructural, non-human spine that articulates the project and stitches the territory. Furthermore becoming the border of the ‘free zone’ and the *cardo* and *decumanus* for the future growth of the city

Along this border, embracing the urban mesh, three architectural buildings become the manifestation of the politics of waste by intertwining the non-human process with the public character of the Embassy. The Gate, The Factory and The Tower, represent the converging point between the different governmental scales and the industrial process. Thus, by bringing the public face to face to the management of mining waste, the project becomes a political act in itself as it blurs the existing threshold between the community and the industrial imagery, strengthening the notion of waste as a means for political representation.

With waste as a resource, the material produced in the project is the physical manifestation of the politics of waste, a result of Arctic cooperation and local governance. As a conscious understanding of the territory and its politics, the material becomes a local resource towards the circularity of the Arctic region. Therefore as the ice melts and the Arctic cities face their inevitable growth the Embassy becomes the new centre of the city as it positions Svalbard as an ambassador not only for the stability but for the self-sufficiency of the Arctic territory.



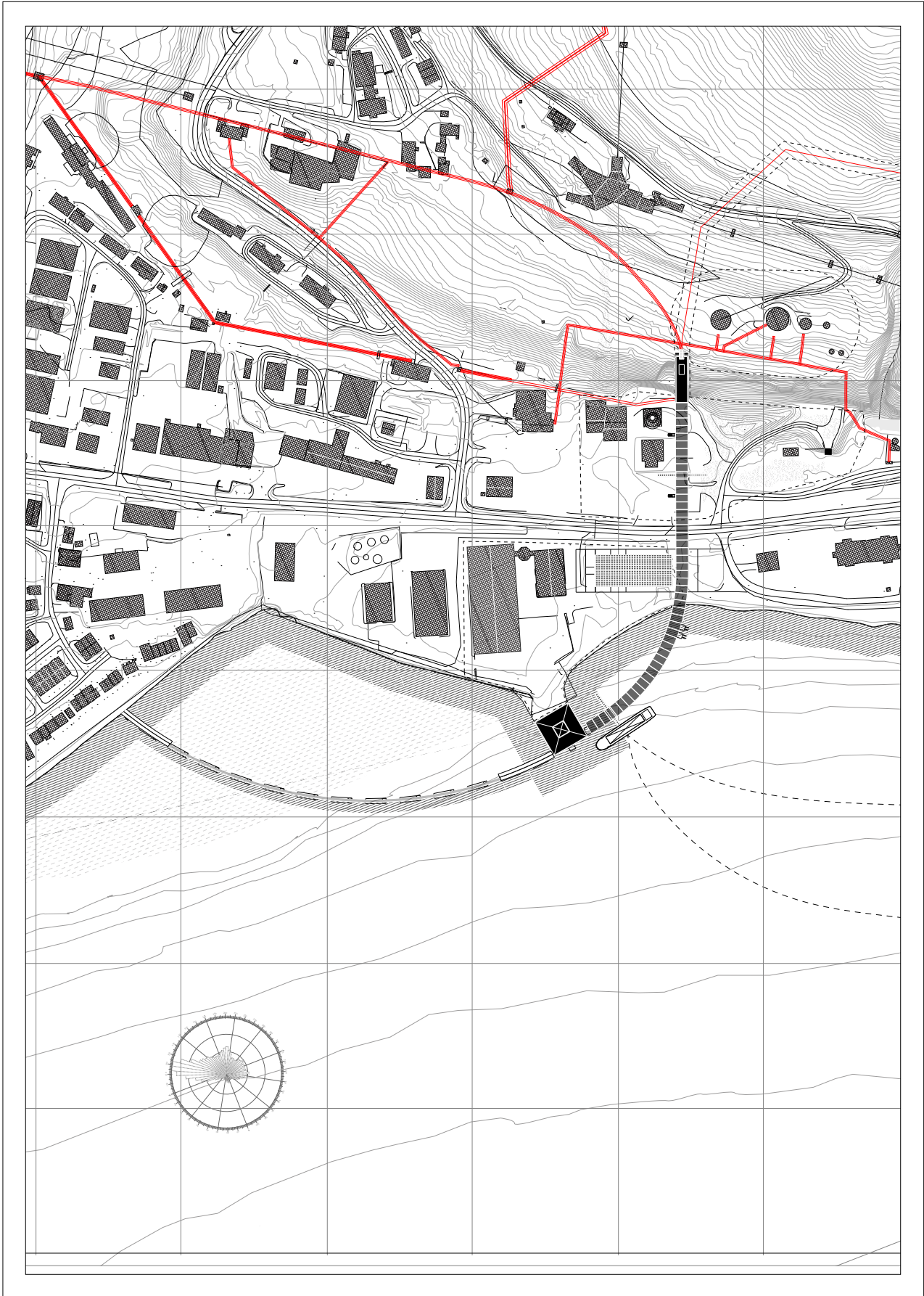
**Embassy of Waste**  
 Longcross, Scotland  
 29° 17' N, 99° 38' 01"

0. Tidal Energy - Tidal lagoons  
 1. Gade Embargo Free Zone  
 2. Entrance Waste - Port  
 3. Storage  
 4. Storage  
 5. Factory Production  
 6. Landsfill  
 7. Power Plant  
 8. Tower: Energy

## **The Embassy of Waste**

Within the major network of infrastructure, as externalities to mining, the project embeds itself in the productive and administrative core of the city. The linearity of mining was then introduced connecting the port, the industrial area and the power plant.

Consequently the project creates a logistical chain that stitches the territory from sea, to landscape, yet separates the city and public life from the heavy industrial activity. Towards the city, three public buildings embrace the city, creating a connection between waste and the community.



*The Embassy of Waste*

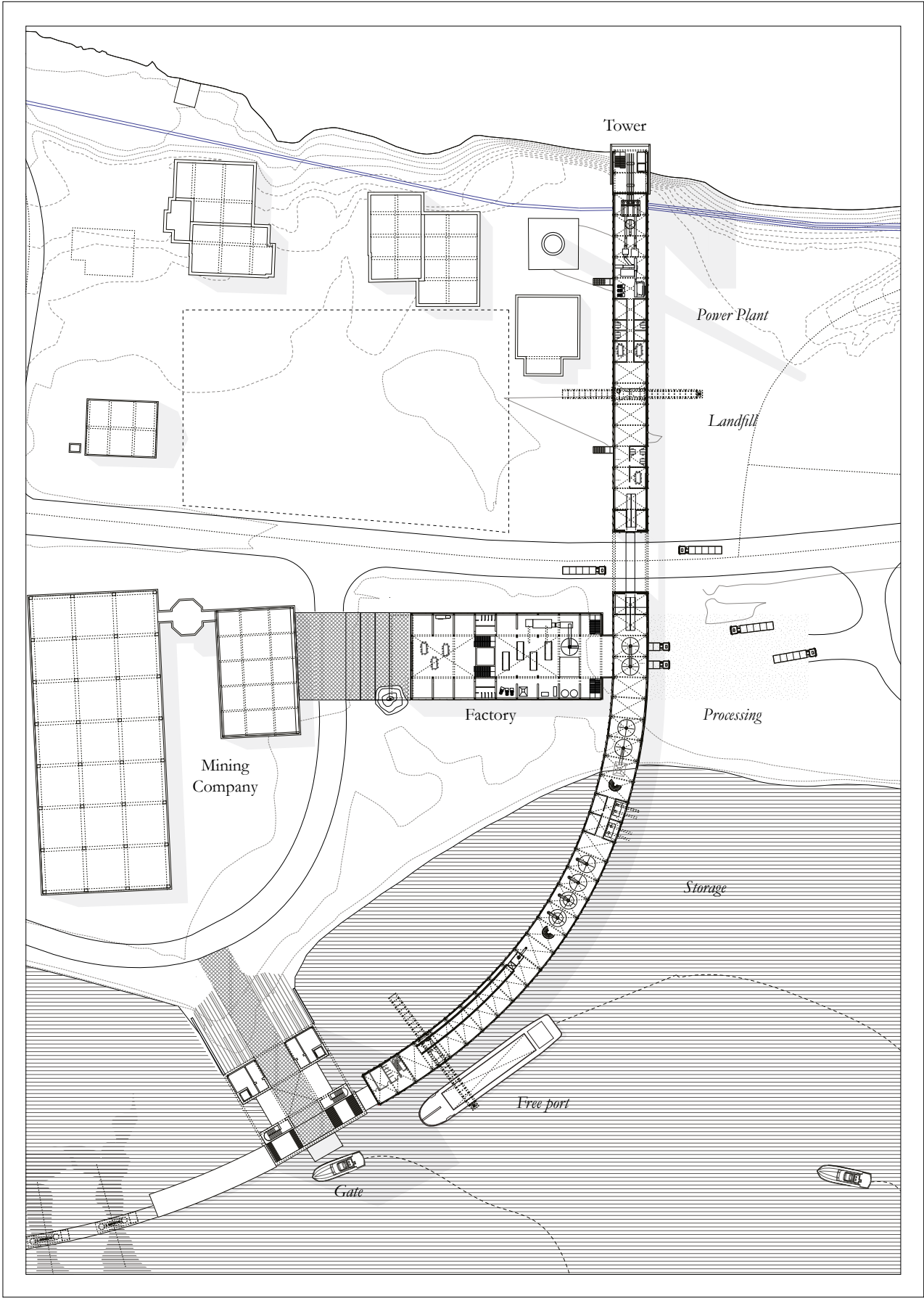


## Ground Floor

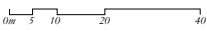
At the ground floor level, the almost 300 m long bar hosts the industrial activity of waste management. From the recollection at the port, storage, sorting and processing, and the eventual landfill, where waste is disposed in the many abandoned mines around.

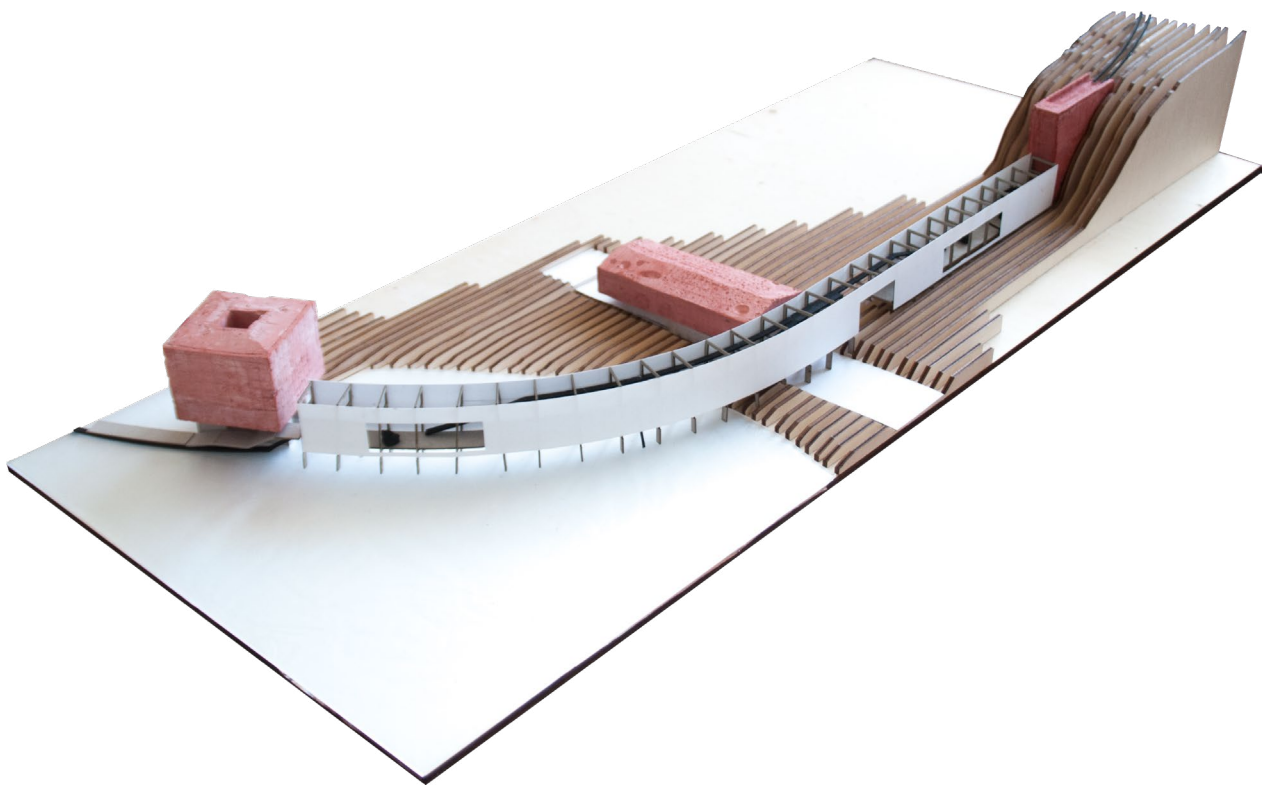
The three public building, *The Gate, The Factory and The Tower*, are the public and governmental response to such process. The gate as entrance of both as port for the recollection of the waste. The factory, as the production space for the re-use of such waste, and eventually the tower, where the energy infrastructure departs towards the city.

From the sea to the landscape, the buildings respond to the different site condition of the site and bring the infrastructural character of the bar to a public scale. The gate as connection between land and sea, the factory as the productive spine of the project, and the tower, anchoring the building to the landscape.



Ground Floor









## The Gate

*Arctic Cooperation - Diplomatic*

### Article 3

Free Trading Zone

*“Equal liberty of access and entry for any reason or object “*

### Article 4

*“Absolute equality to communications*

*Between all flags”*



## The Factory

*Workforce - Production*

### Article 3

*“Subject to the observance of local laws and regulations, they may carry on there without impediment all industrial, mining and commercial operations on a footing of absolute equality. “*

### Annex

Russian Mining Community

*“Russian nationals and companies shall enjoy the same rights as nationals of the High Contracting Parties.”*



## The Tower

*Energy - Public*

### Article 8

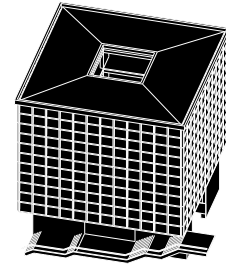
*“Norway undertakes to provide the (Svalbard) territories of regulations (...) and guarantee welfare”*

Today manifested in Norway being responsible for the provision of the basic services.



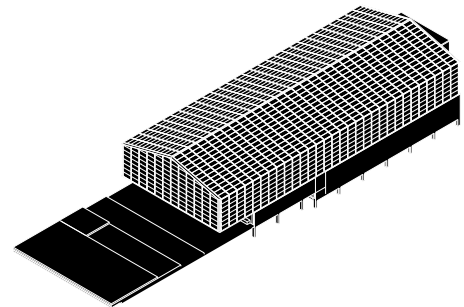
Arctic

*Diplomats  
All Nationals  
Waste*



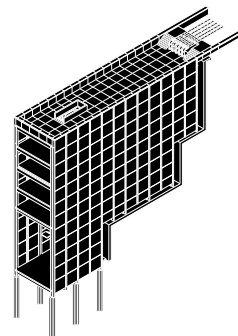
Svalbard

*Miners  
Community*



Longyearbyen

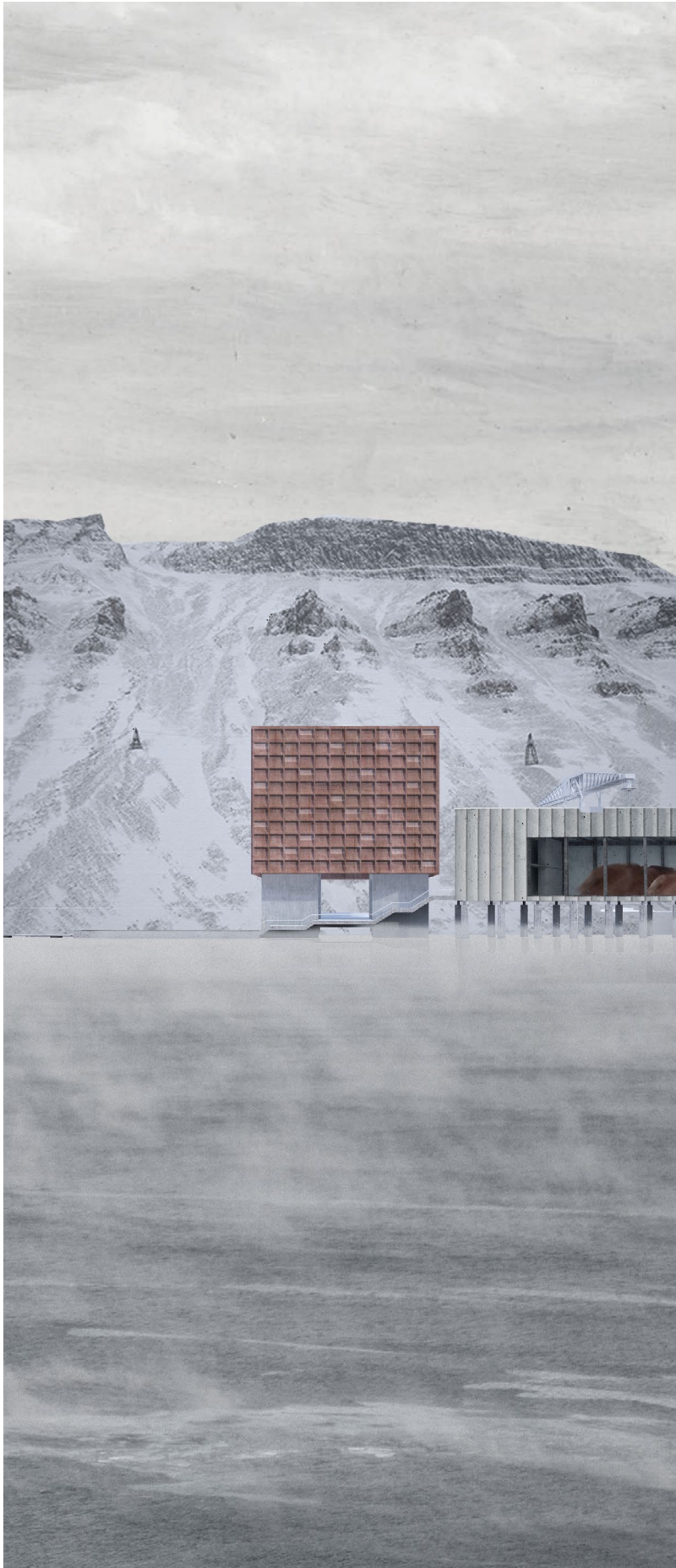
*Community*

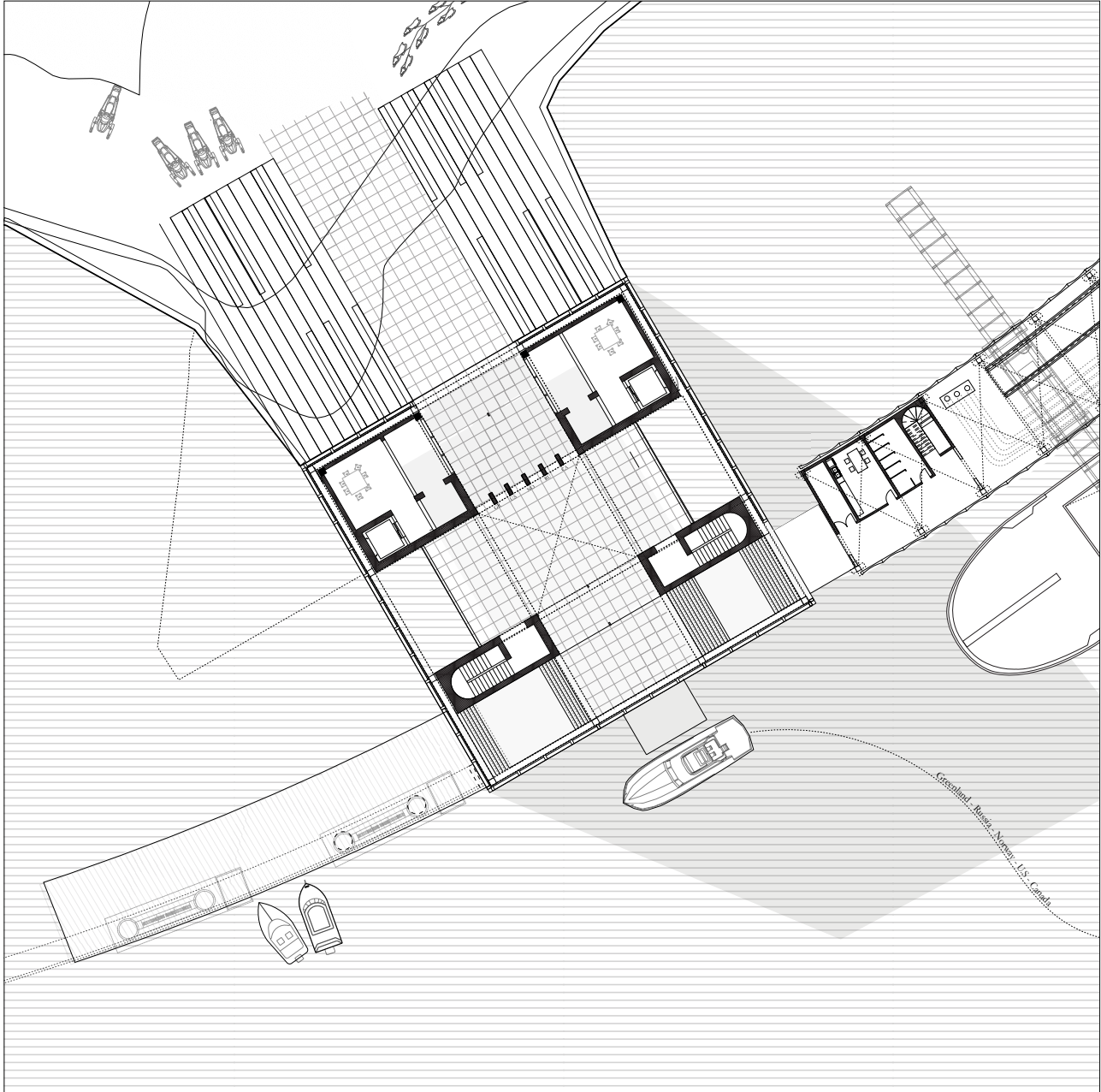


# The Gate

*Arctic Cooperation - Free Port*

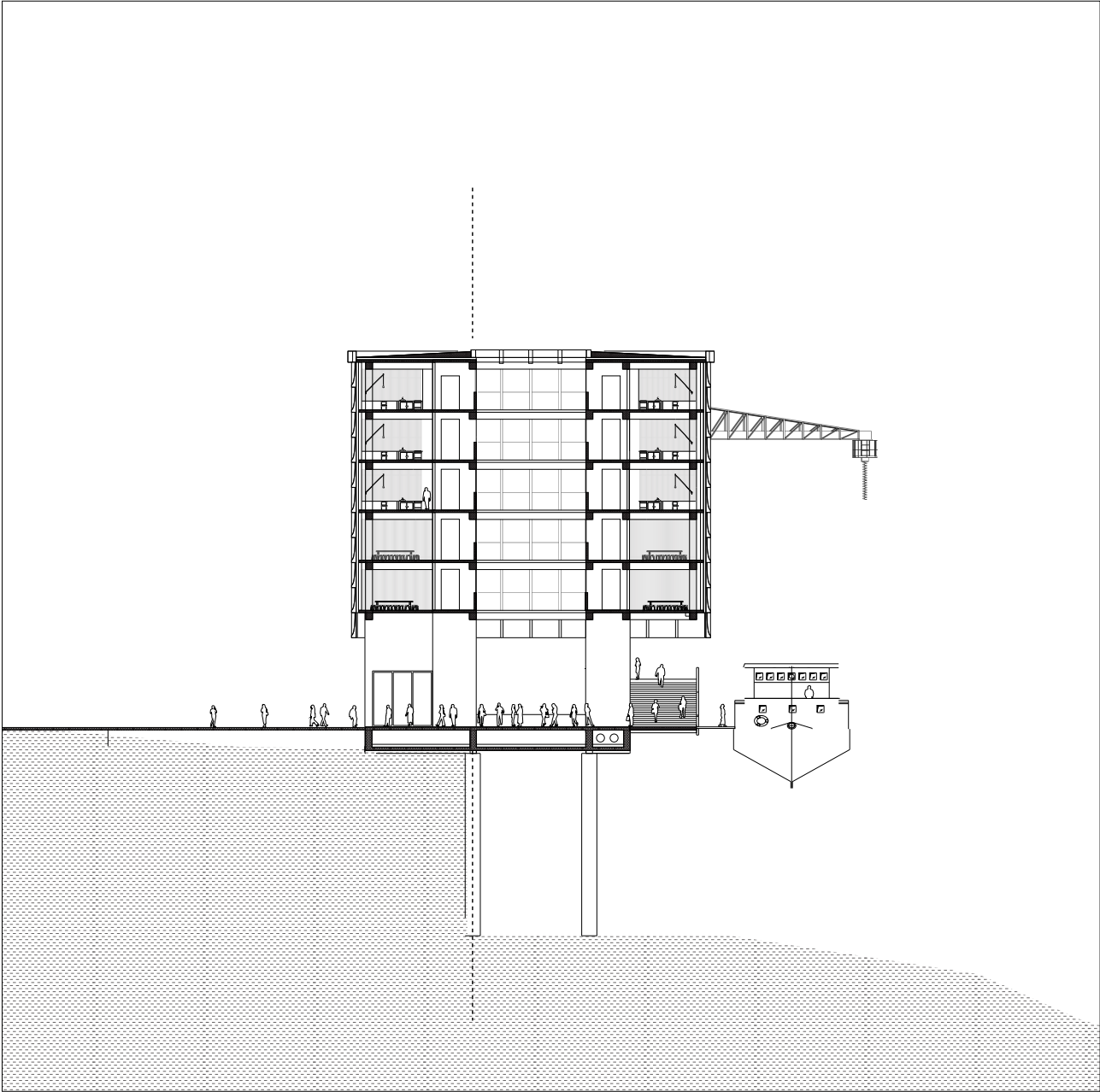






0m 5 15 30m





0m 5 15 30m



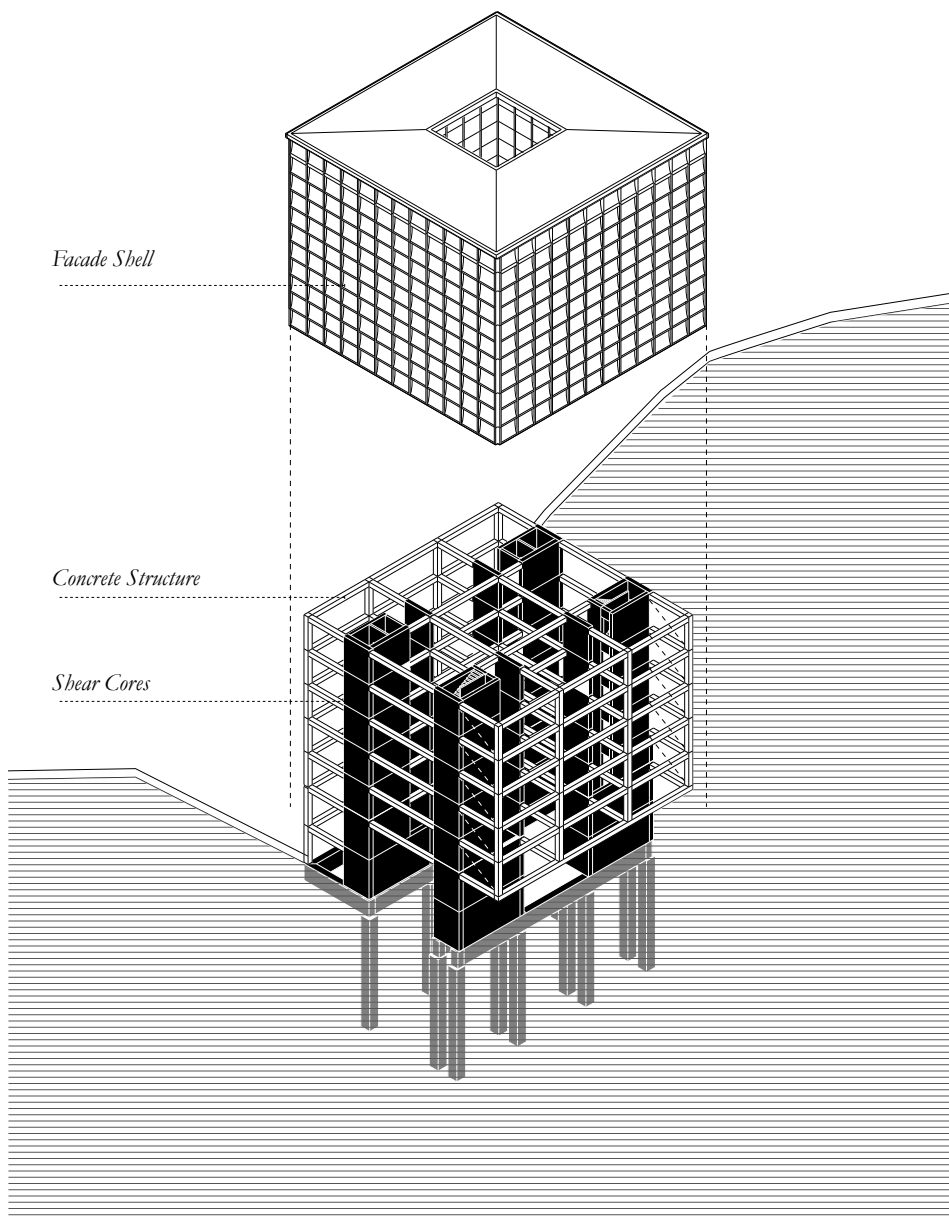
## Structure

The structure of the projects is a design operation that allows to free almost entirely the ground floor of the building. As the entrance to the city, and Svalbard, the Gate lays over four shear concrete cores that act as legs of the facade shell, and seem to continue all the way to the sea.

Towards the sea the building is cantilevered over a set of stairs that connect the public pier with the processing bar. This cantilever enhances the idea of internationality, as the building grounds itself on the shore, floating over the openness of the sea.

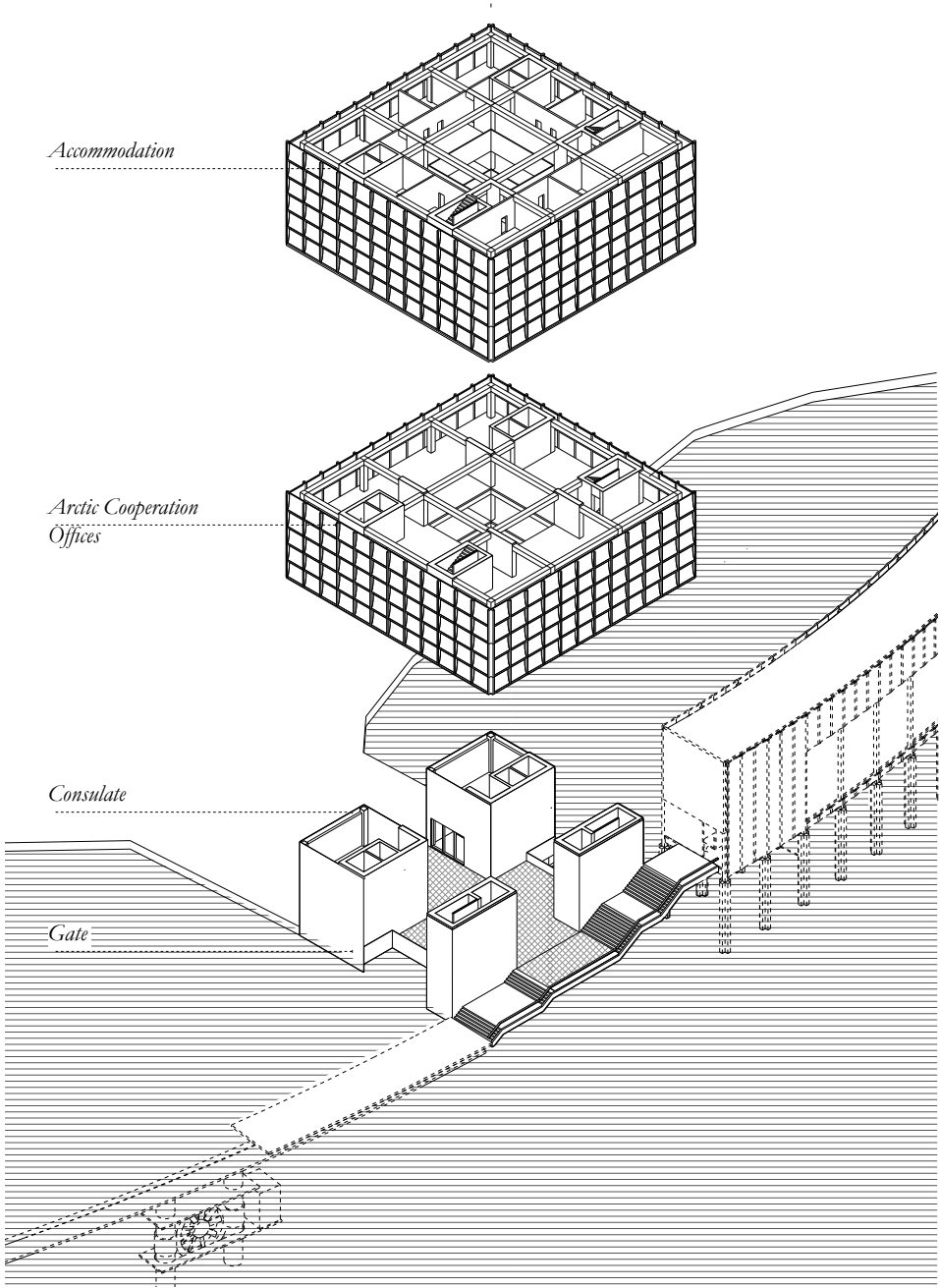
As the ground floor acts as a pier, the four cores act as the vertical circulation, which allow for flexible spaces in the habitable floors above.





**Programme**

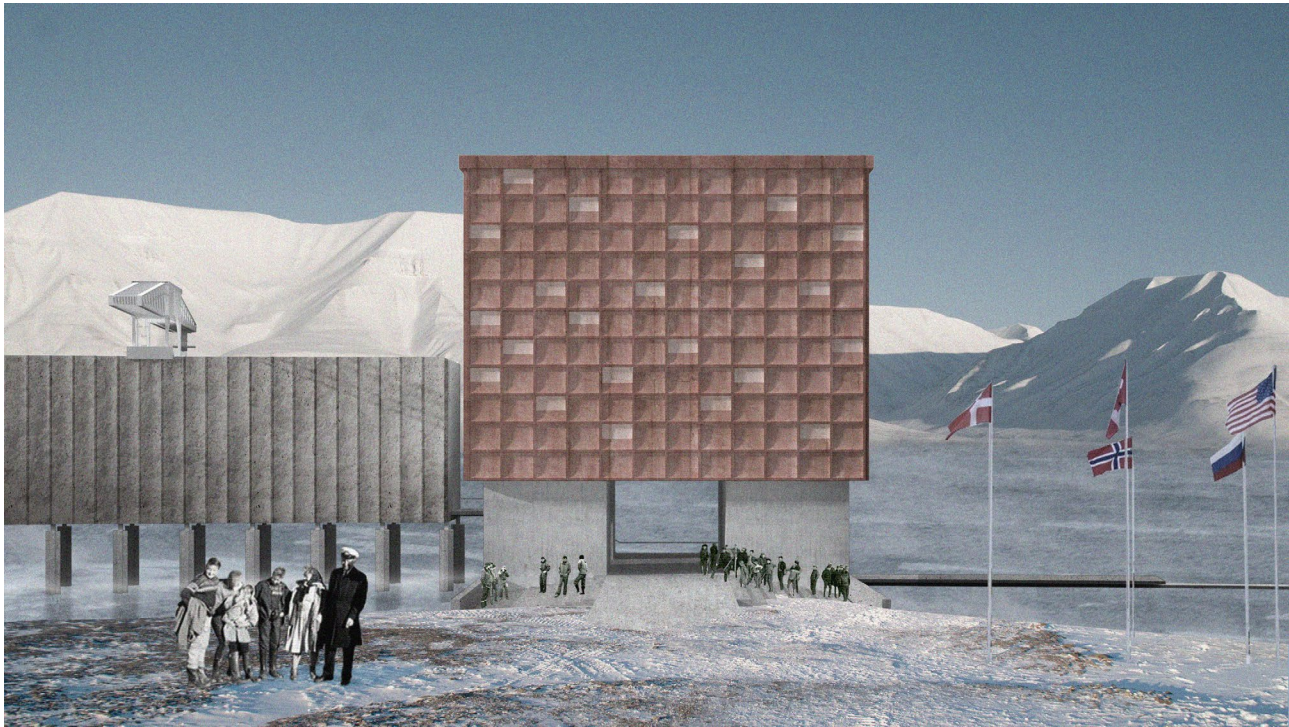
The programme of the building answers specifically to the governmental scale of the Arctic. As the building that welcomes all nations and promotes the Arctic cooperation, the gate creates a democratic public space in the ground floor. Above, two floors are destined for offices and assembly halls for diplomatic purposes, and the three top floors as accommodation for diplomats and visitors.



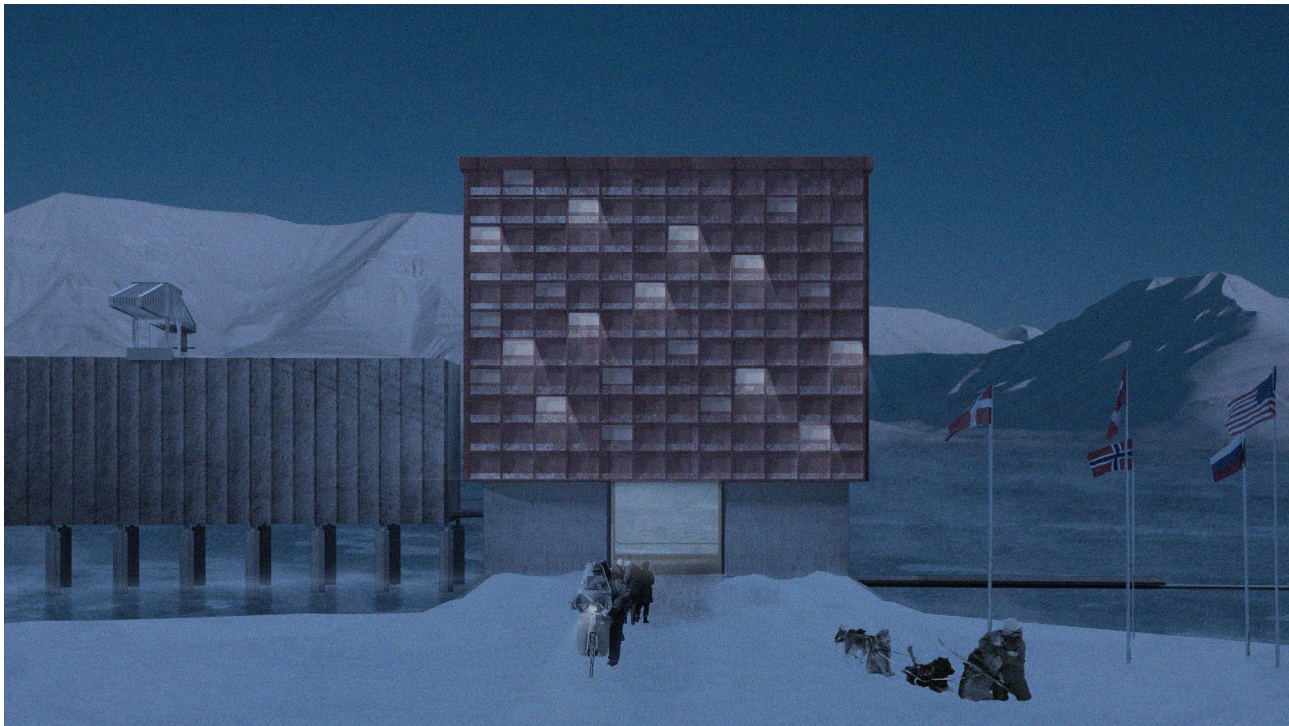
## **Approach**

As locals approach to the building, it acts as a threshold between land and sea. With a dramatic view of the fjord, the approach to the Gate gate-reveals the relationship with the processing bar and the tidal energy pier. Public stairs facing both enclosed pockets of sea give a certain theatricality to the monumental entrance of the building.

Positioned in the tip of the coast, the building at the edge of the shore, blurring the lines between land and sea and giving the Embassy of Waste a public character beyond waste management.



*Approach*



*Polar Night*

## **Interior**

As one enters the building, it is evident that no interior is found. Instead, the four cores create a hybrid between a square and a pier that acts as the entrance and symbolic border control. This public space not only connects visitors through land and sea, but in the other direction it faces the sea that has been enclosed by the project's loop. Therefore this simple yet powerful gesture creates a transition process between land and sea and vice-versa. From land, by passing underneath the building one exits the territory. As the visitors continue their path to the sea, the cross in the public space frames the view of the process, as a transition between land and sea. Finally, the visitor exits the building and sails away.



*The Gate*

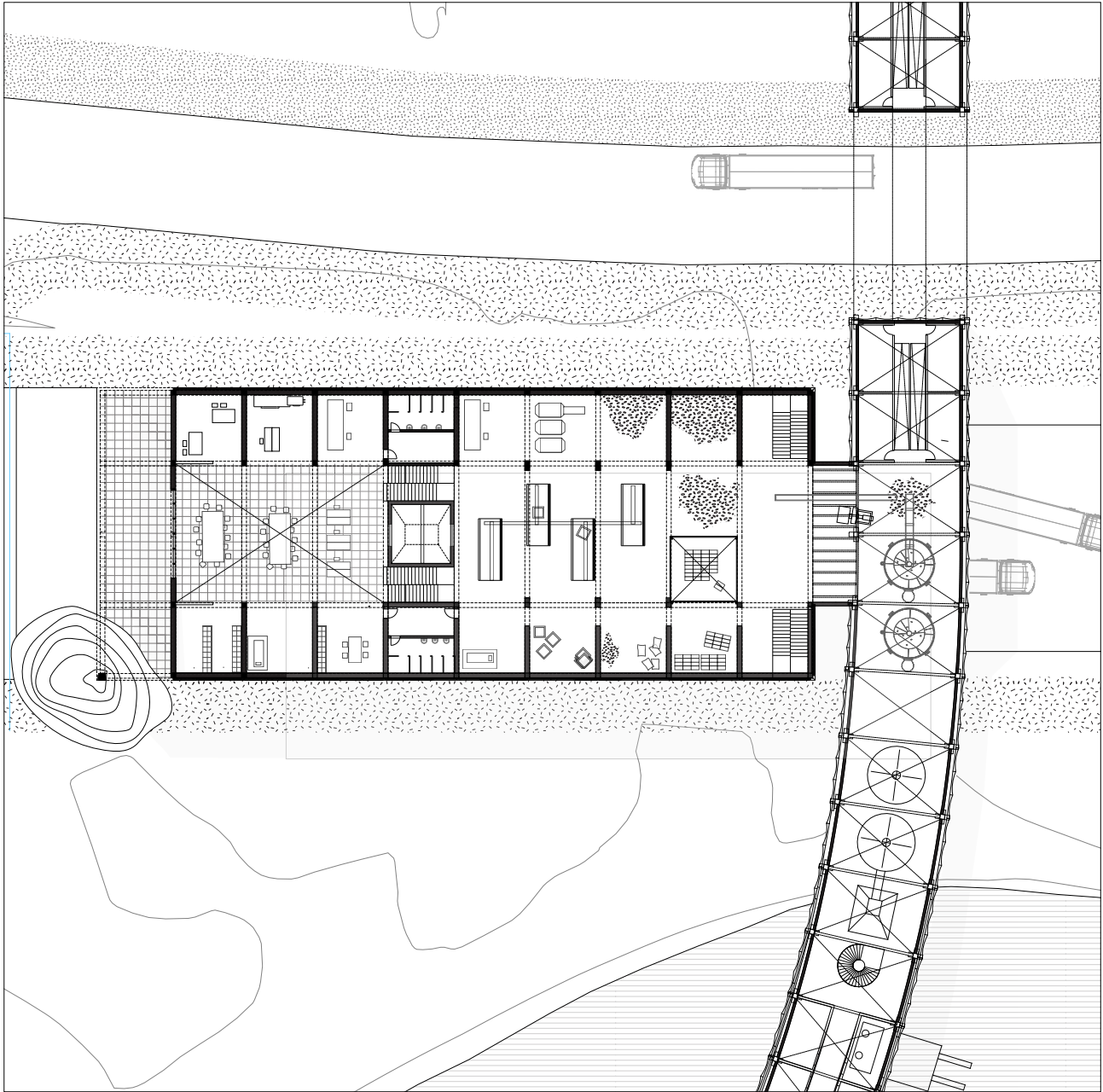
# The Factory

*Svalbard's Workforce - Waste Re-use*



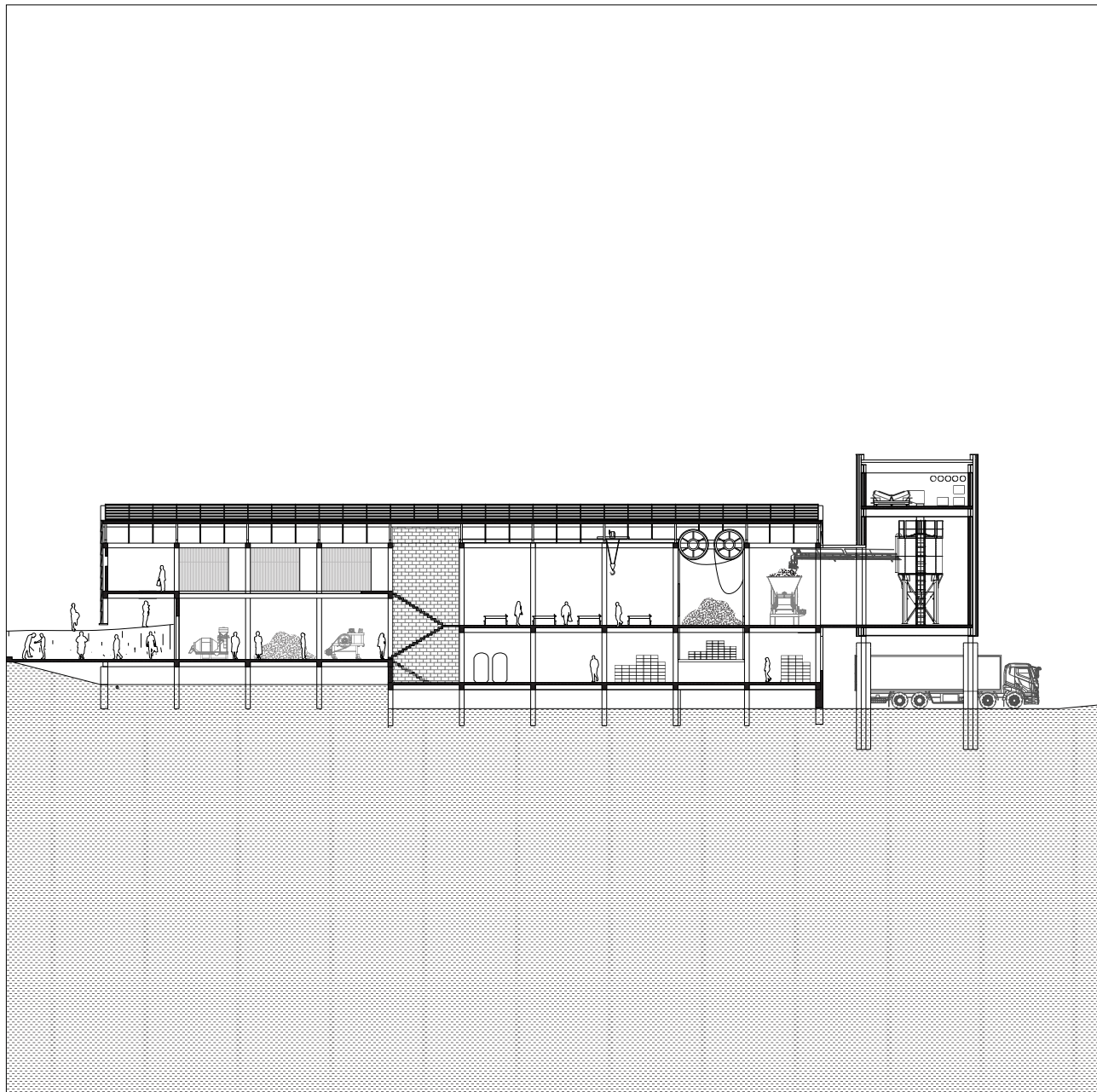






0m 5 15 30m





0m 5 15 30m



## Structure

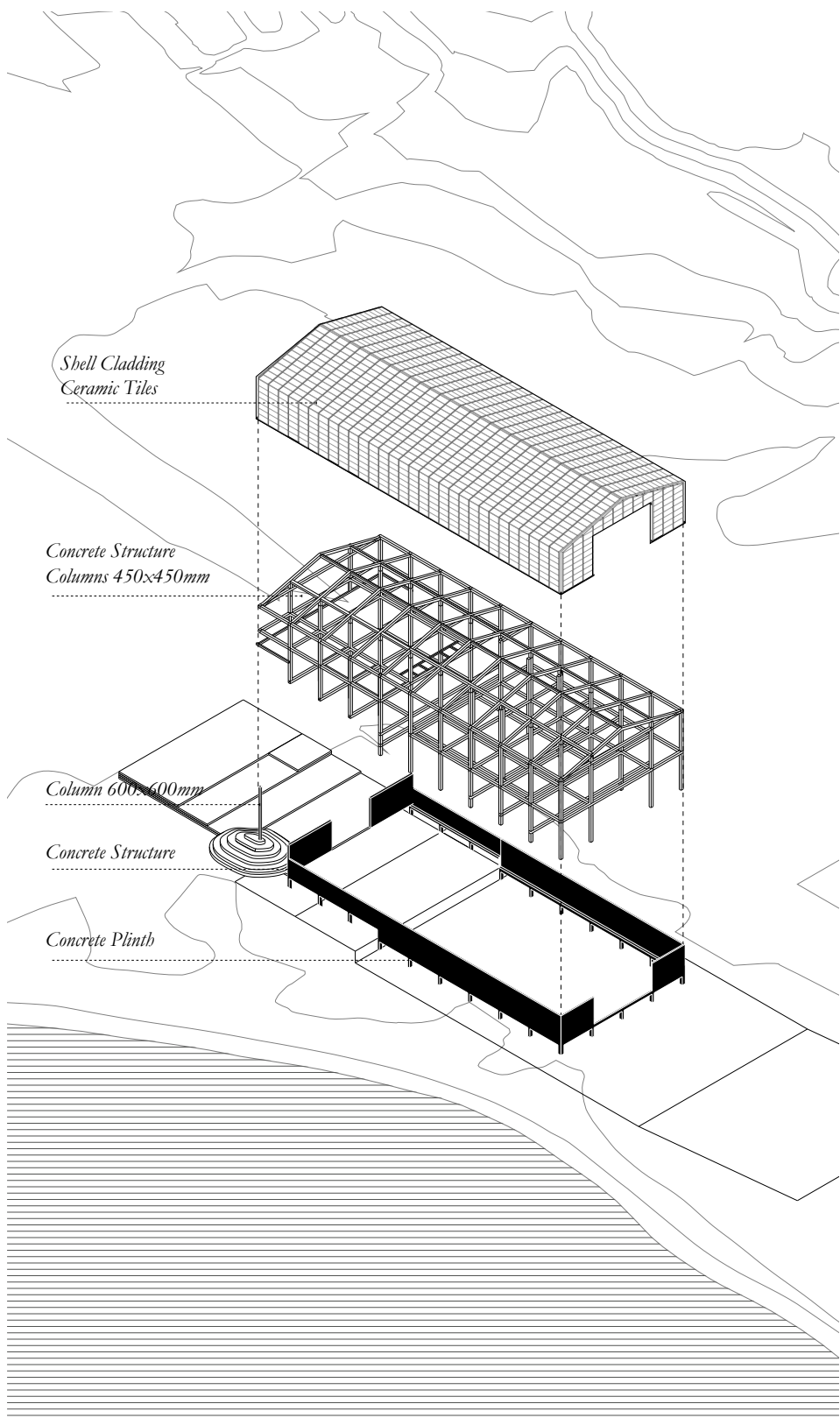
Due to its industrial yet public character, the array of concrete portals allow to have open spaces for both production and learning. It lays over a concrete plinth that lifts the building from the ground.

Covering the structure, the cladding of the facade and roof, as a result from the reuse of waste act as a shell that protects from the harshness of the environment.

On one direction this shell connects to the bar as the material enters the factory, yet on the other, it cantilevers over a public space, which welcomes the locals and visitors.

As the building lays 1 meter underground in relation to the road, the cantilever acts as a public shelter space, there the shell protects from wind and snow.

Towards the north - east corner, the landscape seems to make the column disappear, while the south east corner is totally freed, enhancing the idea of floating shell above the public space.

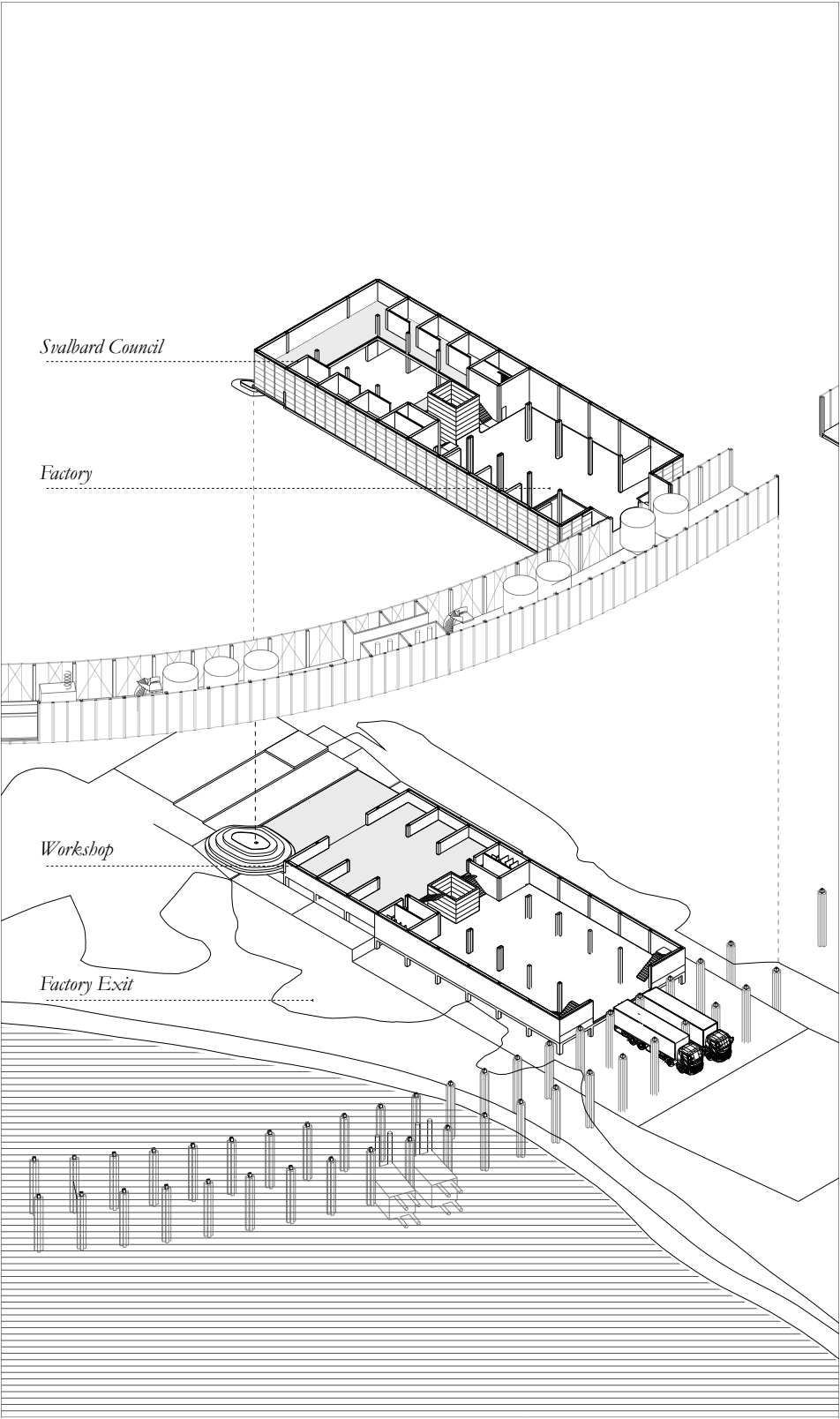


## **Programme**

As seen on the section, the difference in the terrain allows for intermediate slabs in opposite sides of the building. This condition permits a good visual connection between the public workshop located towards the city, and the production space towards the infrastructure bar.

The opposite sides of the programme overlap in the middle, blurring the lines between waste and public. And creating an educational dynamics between workforce and community.

Above the workshop, offices of the Svalbard councils and commissioner of mines act as the governmental aspect of mining on a territorial scale. Additionally, below the factory, the material is packaged and exits below the infrastructure bar towards the industrial area.



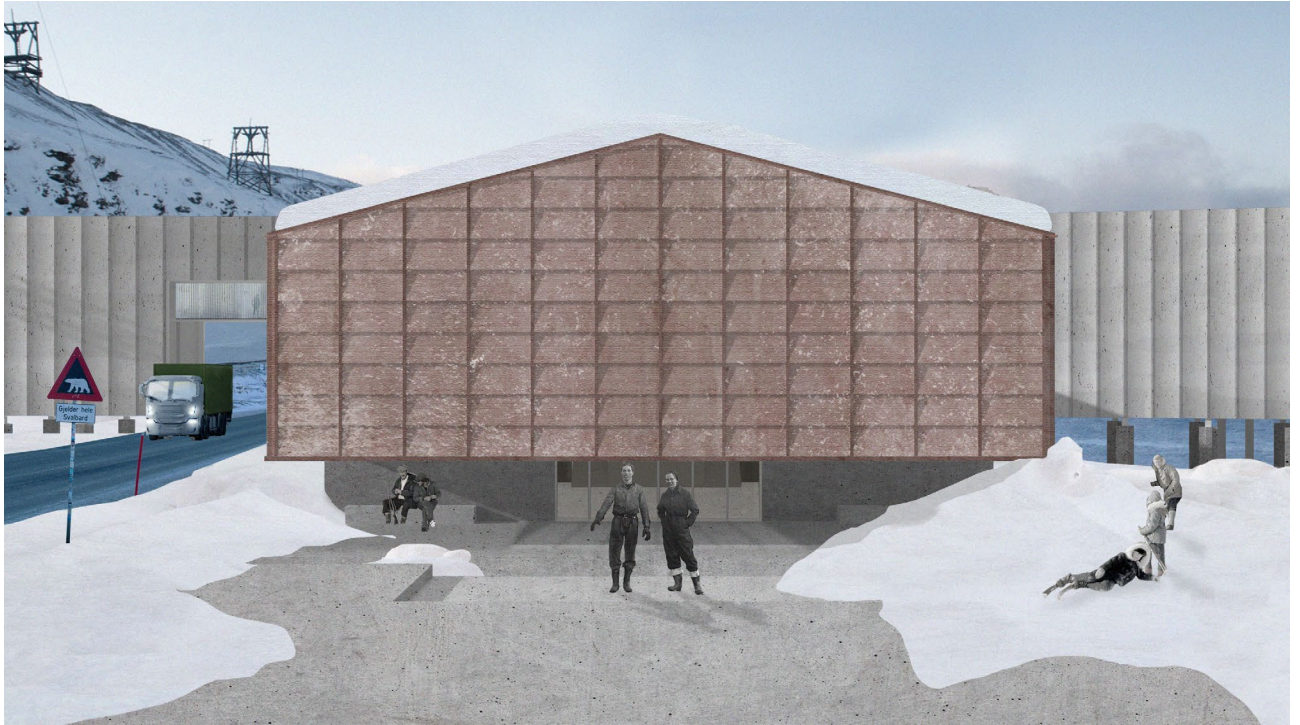
## **Approach**

The factory, as productive spine of the project, is the one with most flow of people. Therefore its public character answers to the human scale rather than to the monumentality. Therefore the cantilevered shell acts as a shelter and threshold between inside and outside.

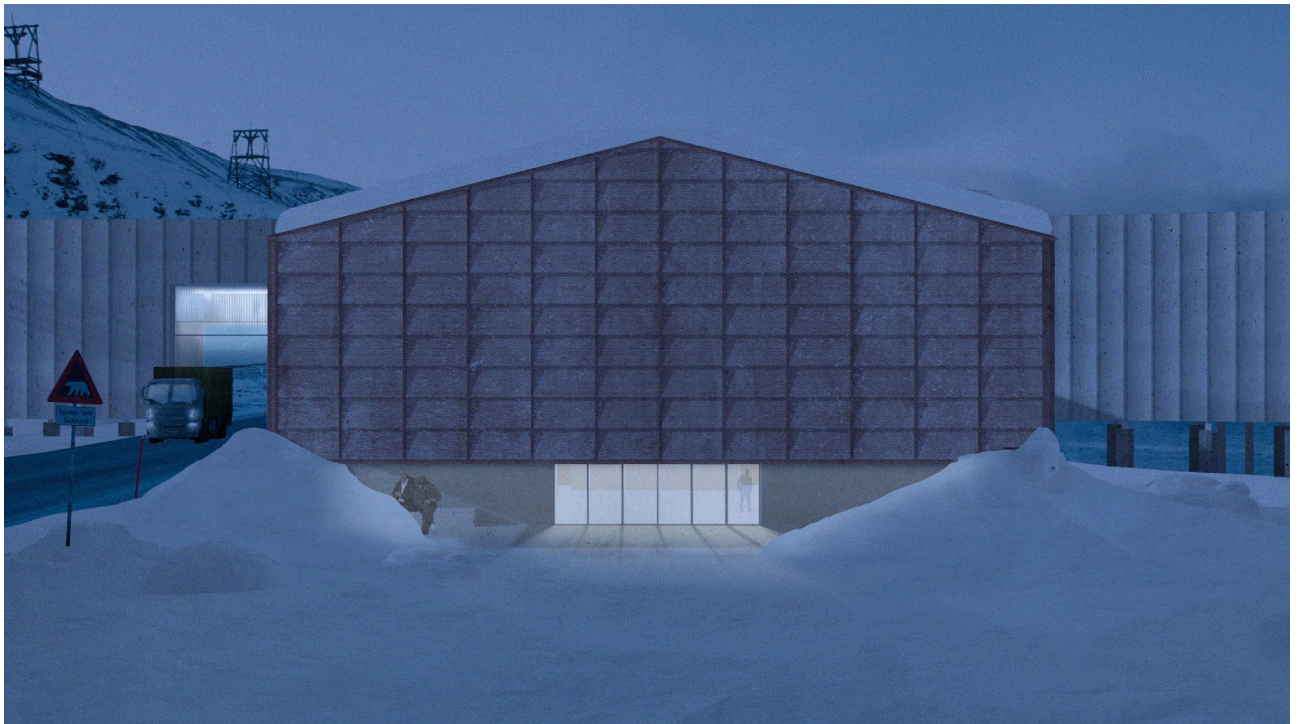
As the snow accumulates almost all year long, the height of the shelter is reduced, contributing to the illusion of the building laying above the snow.

As the public space transform depending on the climatic conditions, the shelter allows to keep a snow free area previous to enter the building, preventing the entrance from being blocked by snow.





*Entrance*



*Polar Night*

## **Community Workshop**

The community workshop is the converging points between waste and community. It is the programmatic manifestation of waste as representation of a community. By introducing not only the industrial reuse of waste but the craftsmanship of such, waste as mining, becomes part of the collective imagery of the territory.

As an active, public and educational space, the reuse of waste becomes the base towards the straightening of the local community as it gives the tools for a future self sufficiency.

The workshop act as an open learning and working space, where tools and machines located by the side rooms provide people of the necessary tools. In the centre of the building, dividing the workshop and factory, the kiln, where prefabs are burned, acts as the transition between public and industry, between citizens and miners.

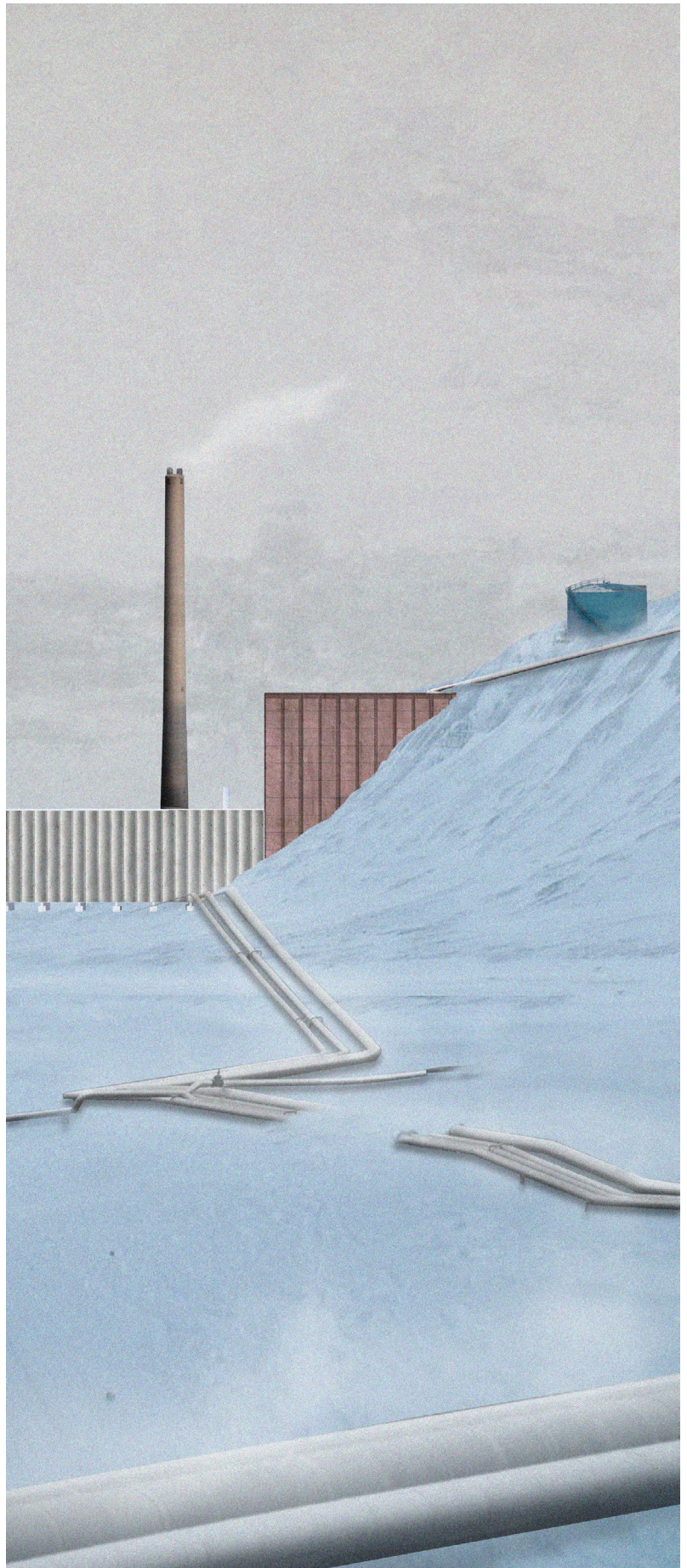


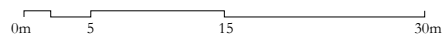
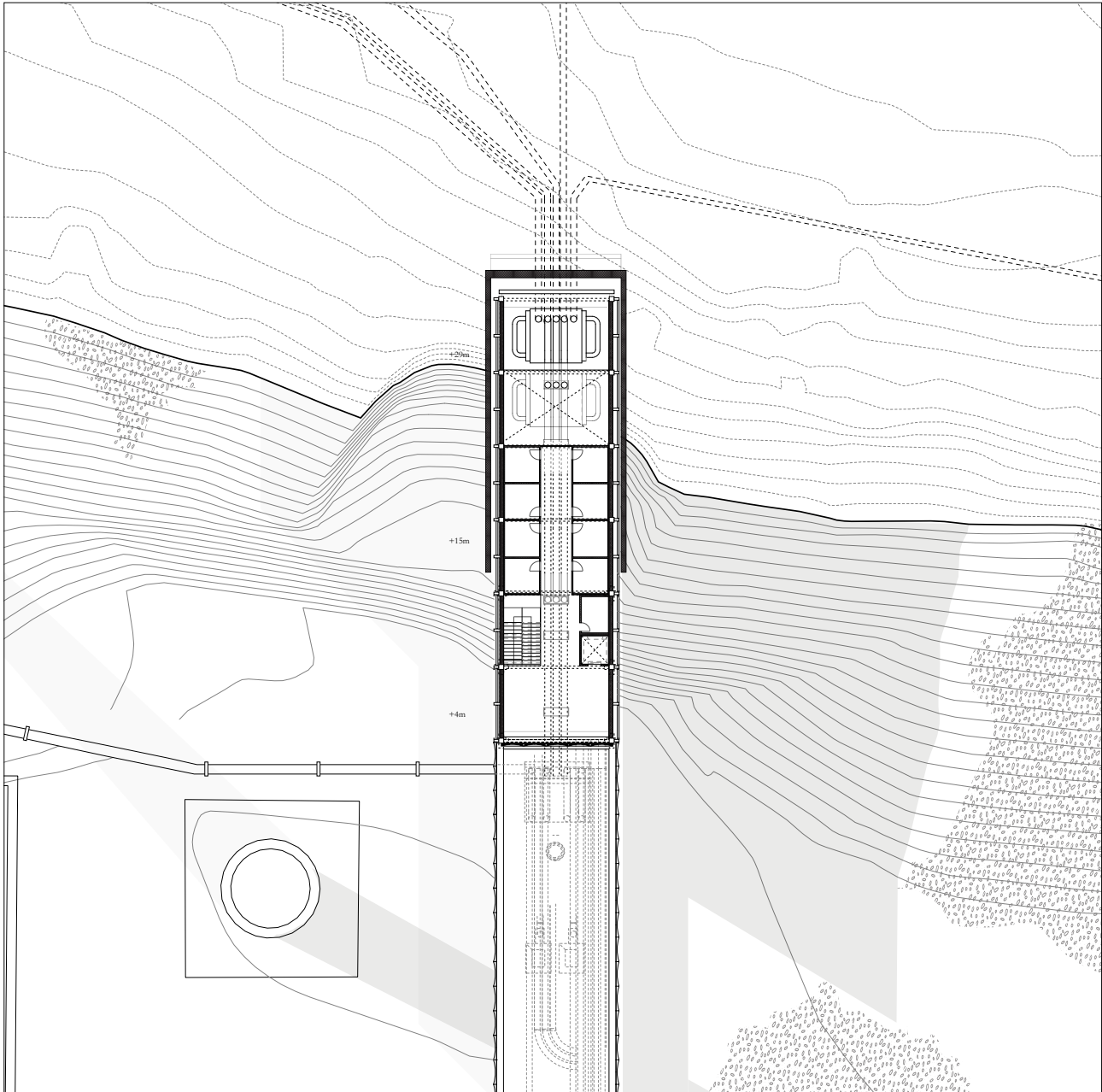
*The Community Workshop*

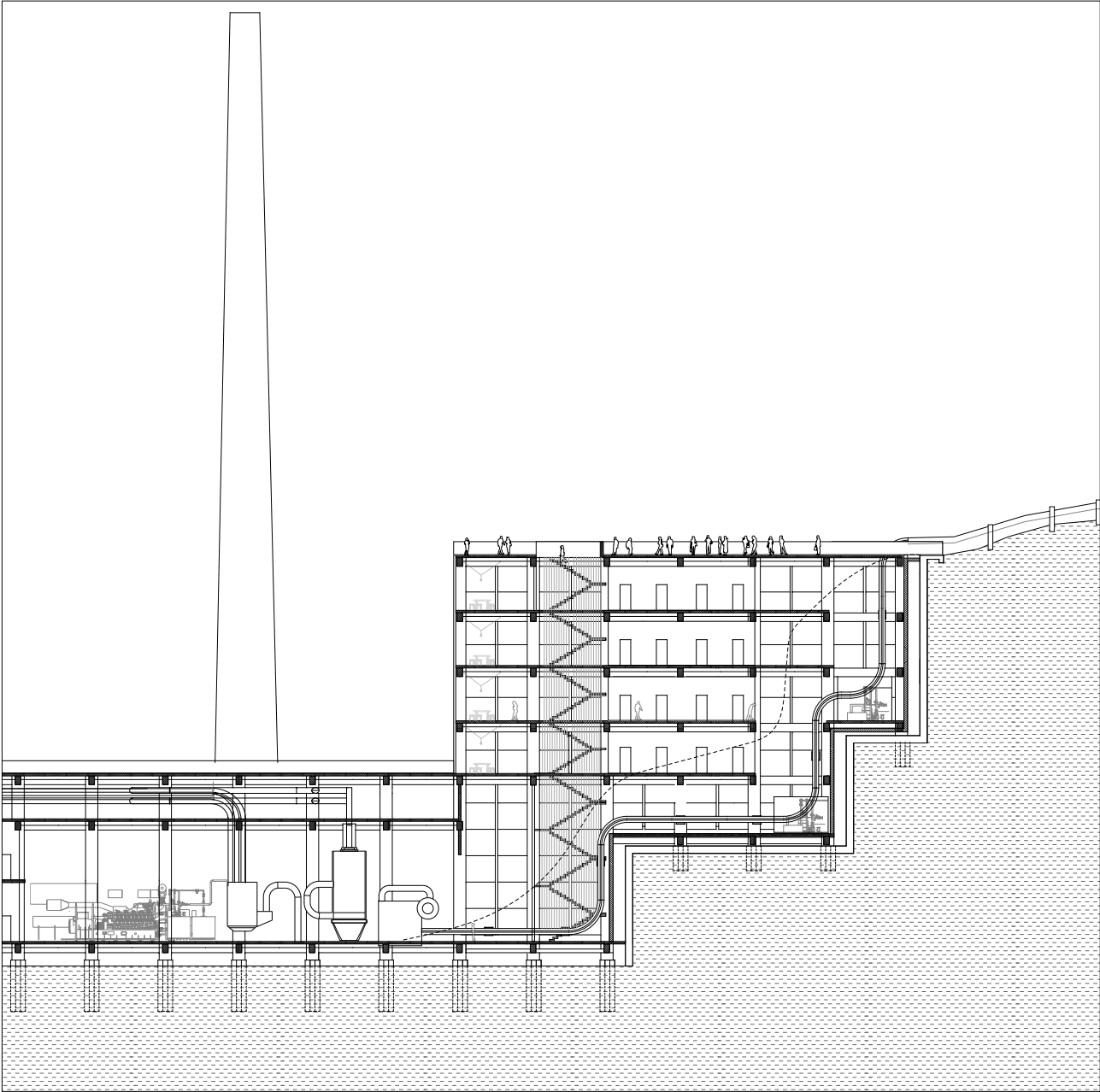
# The Tower

*Longyearbyen's Energy - Public*









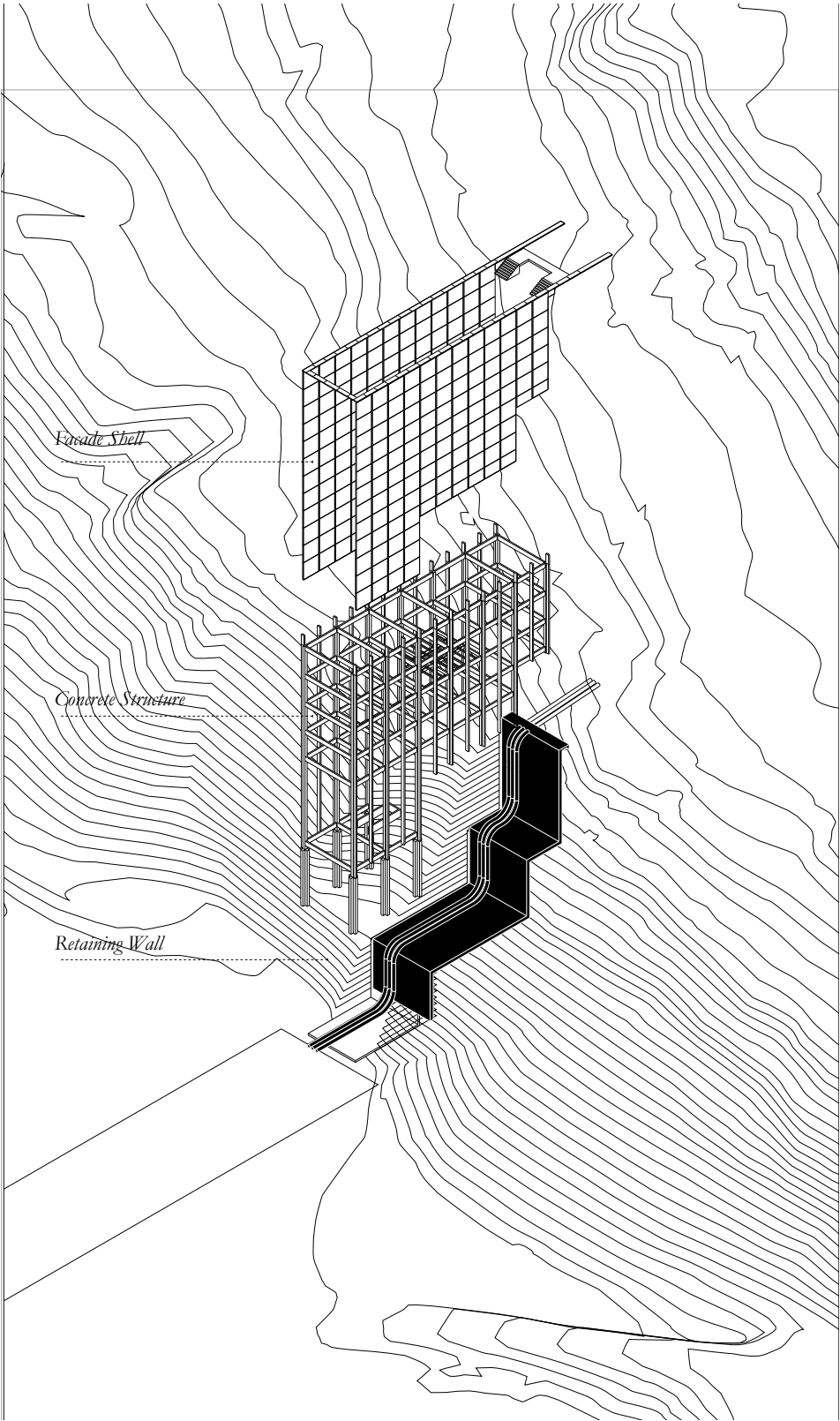
0m 5 15 30m



## Structure

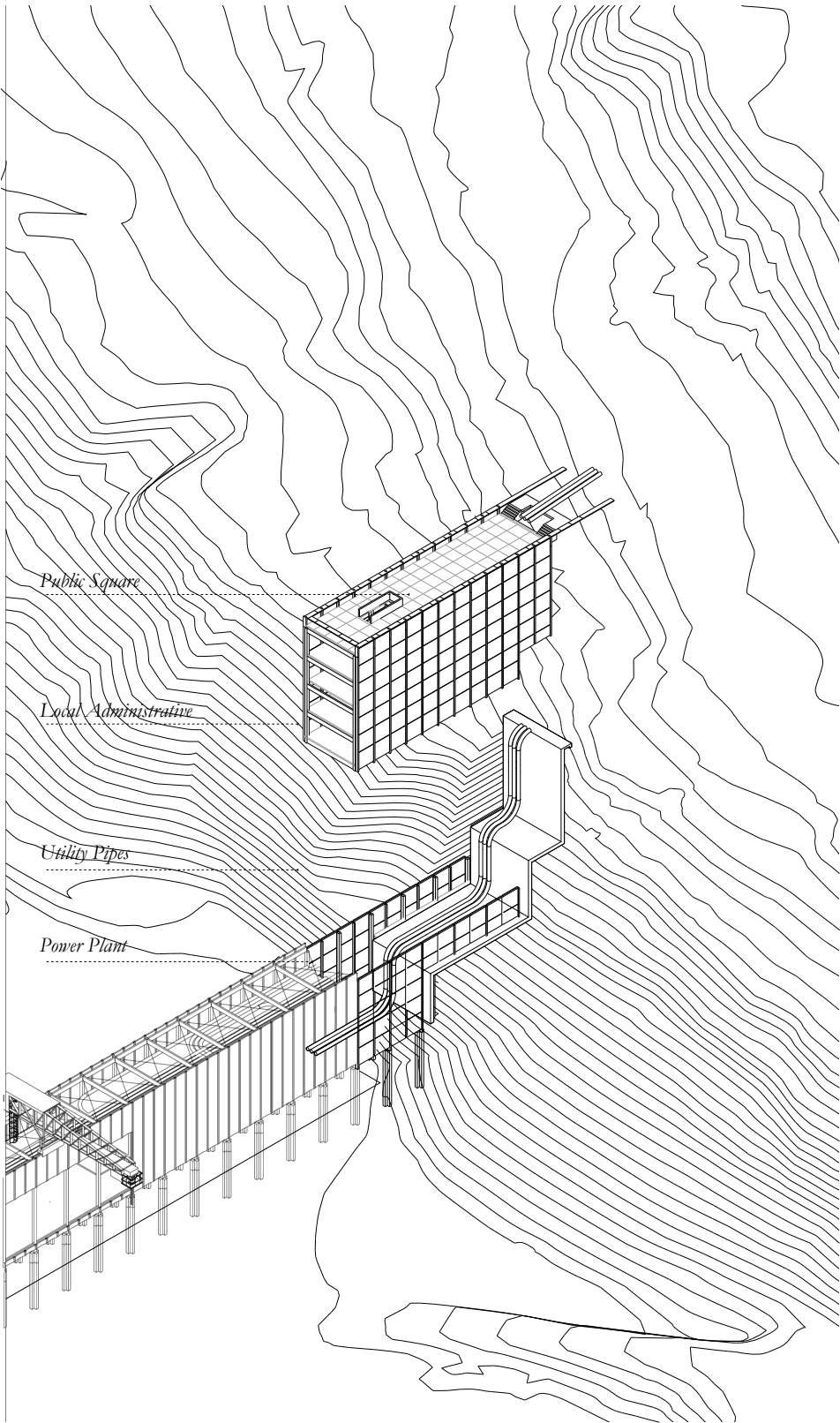
As the Tower anchors itself in the landscape, a stepping in the rock is made and contained by a retaining wall. With the retaining wall as foundation, a concrete structure lays over it, connecting the flat part of the site with the top of the cliff. The facade acts as a cladding becomes the border wall of the public rooftop.





**Programme**

As the tower acts as the distributor of the utility pipes coming from the power plant towards the city, the programme becomes a hybrid between infrastructure and habitability. In the bottom part of the building, the fire house receives the energy from the power-plant and becomes the departure point of pipelines that step upwards following the retaining wall. In the upper part, offices for local administration and energy are located with a clear visual connection to the pipelines.



**Interior**

In the promenade architectural, contrary to the other buildings, the interior of the towers a is the prior step before exiting towards the public space. In this thin bar, offices are located on the sides with a central corridor that connects the frontal facade and view of the project, with the void and the stepping pipelines.

Again, the connection between the process of the bar, and the public character coming together in a simple architectural gesture.

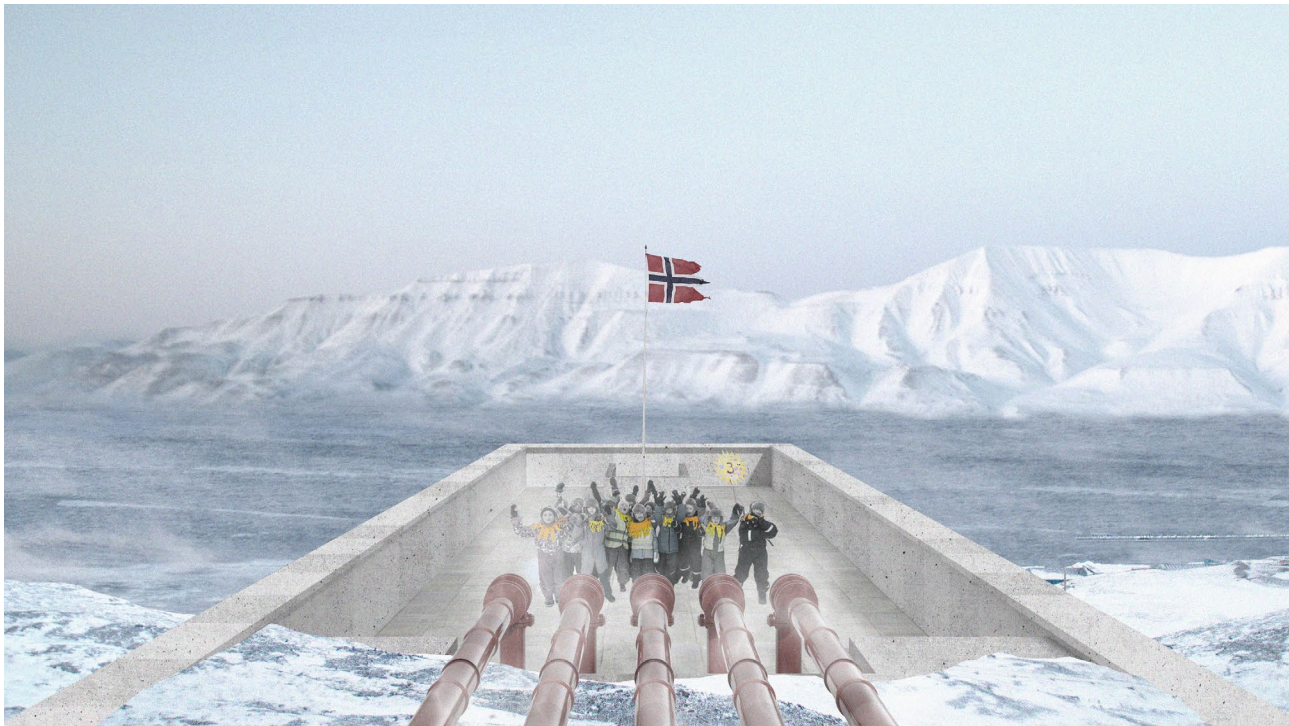


*The Offices*

## **Approach**

As visitors follow the pipelines and approach the tower from the high part of the city an open space as an extension of the cliff becomes a viewing point with a strong public character. With the old city and tourism sites above the cliff, the rooftop of the towers acts as a square, where the pipelines become the monument and the people, the main user.

Due to its monumentality, location and privilege views, this space could potentially become the new lookout over the landscape, where the celebrations yearly of the sun can take place, and where locals and visitors can appreciate the spectacle of the northern lights.



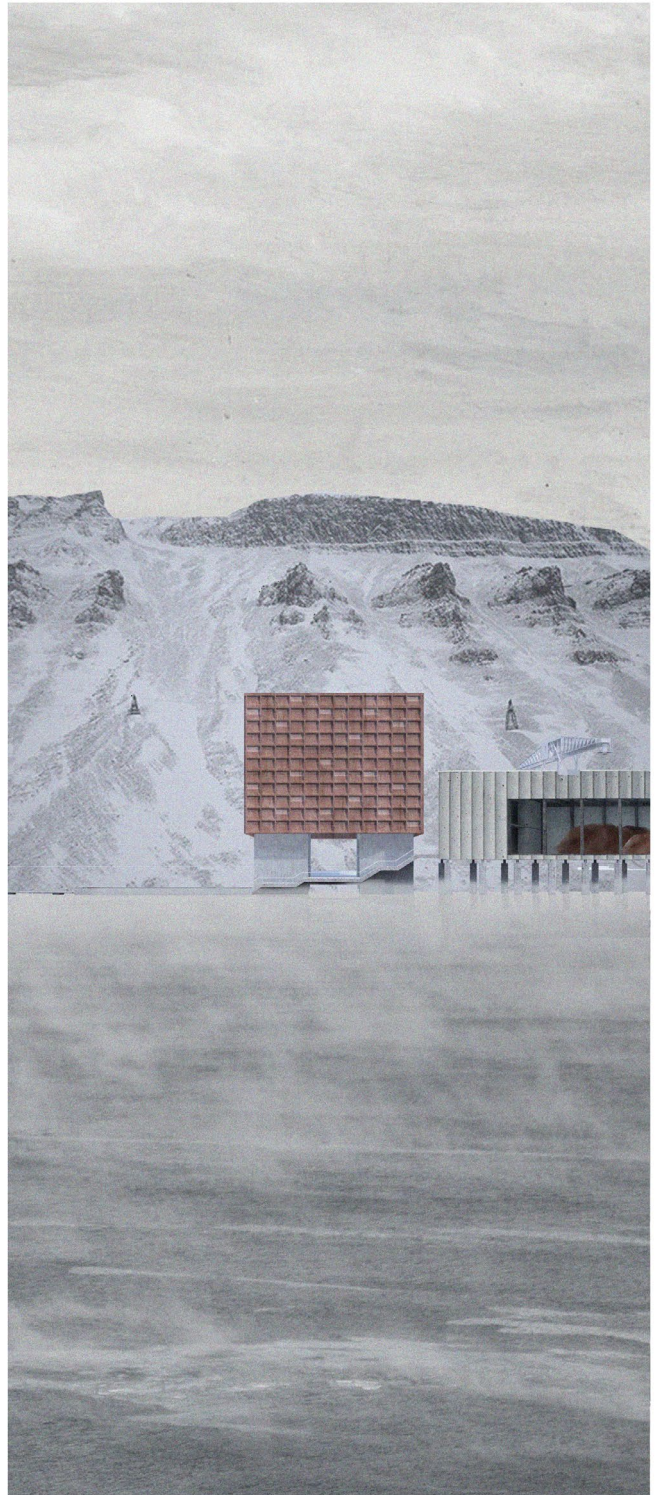
*The Public Tower*



*Polar Night*

# The Bar

*Process - Border - Monument*







### Politics of Waste : Border

Lorenzetti's mural, just as its name, depicts the *effects of good government in the city and the countryside*. In this allegory, a good government is achieved by the interconnection of the many different dynamics on the territory, both in and out the city. With a wall dividing the mural in city and country, it acts as filter between the many and threshold between this two symbiotic yet contrasting activities.

The Embassy of Waste aims towards a similar allegory. The bar as monument and border stitches the territory yet it structures the limit of the city and the country (industry). As the three buildings embrace the city, they act as the threshold between industry and public, waste and community. Therefore aiming towards waste as a tool for the good governance of the Arctic.



Effects of Good Government in the City and in the Country  
Ambrogio Lorenzetti



## **Logistical Monument**

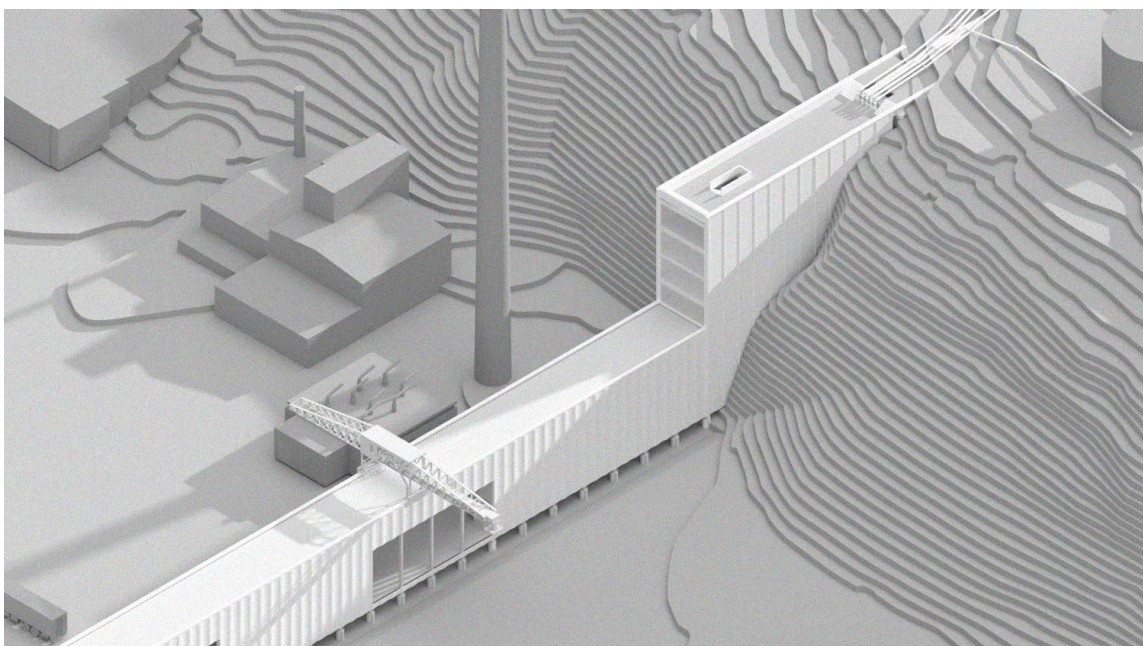
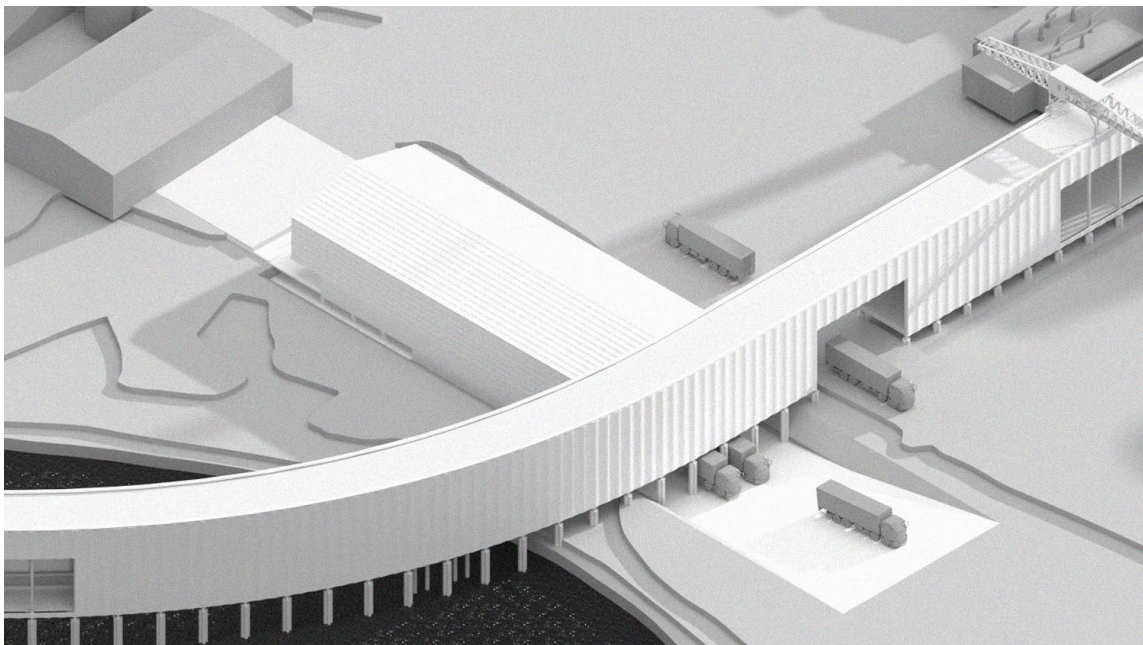
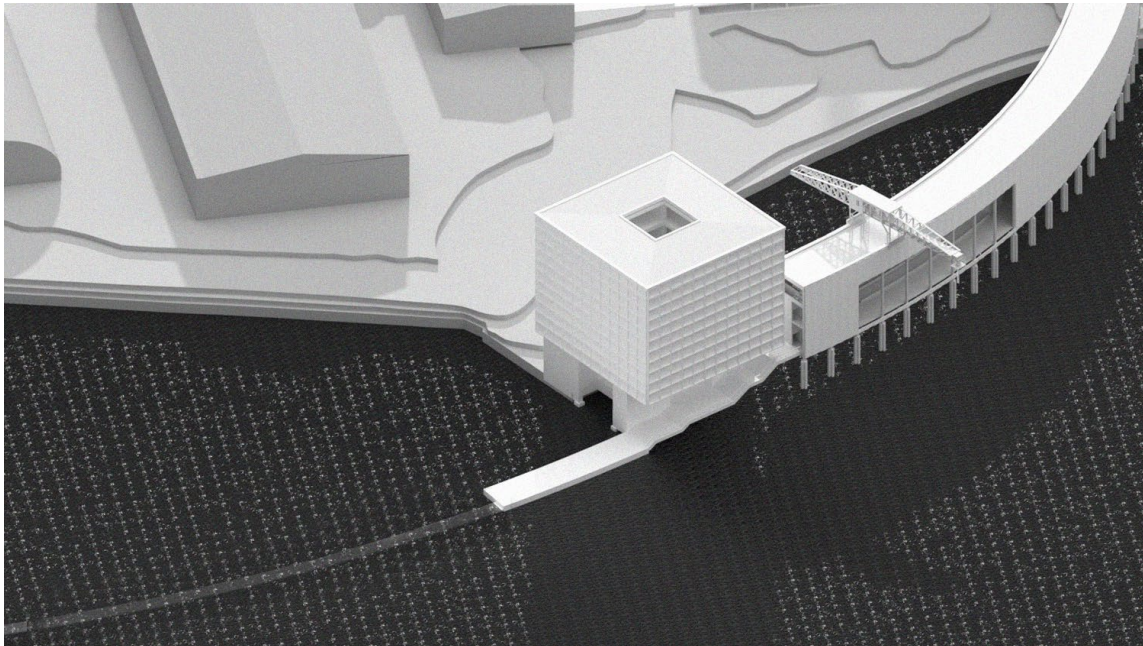
As it extends from sea to land, processing waste and transporting energy, the bar becomes a logistical monument that both acts as border, yet as articulator of both the project and the territory. The monolithic look aims towards the imposition of an infrastructure monument in the territory, that is then brought to the public scale through the three buildings along its path.

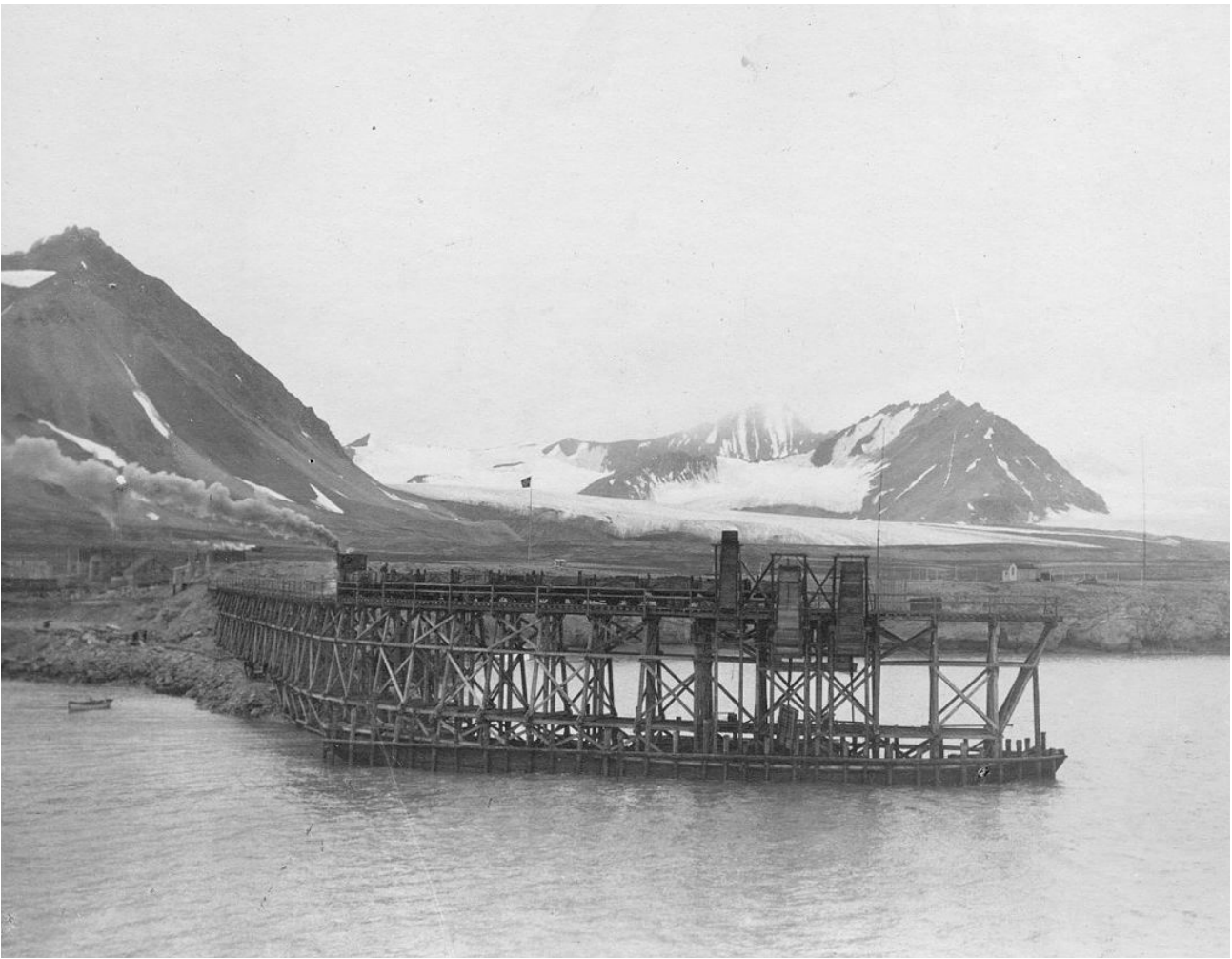
As the solid shape of the building connects in the same level, sea and land, the cross shaped concrete foundations level them up to the territory. This levels up allows for the bar to have different heights and conditions towards the ground floor permitting the different logistical activities embedded in the project.

Towards the sea, its pier condition become a docking space for the barges carrying the waste.

As it travels and arrives to the industrial area, the waste is recycle and its products exit underneath the bar for further trade.

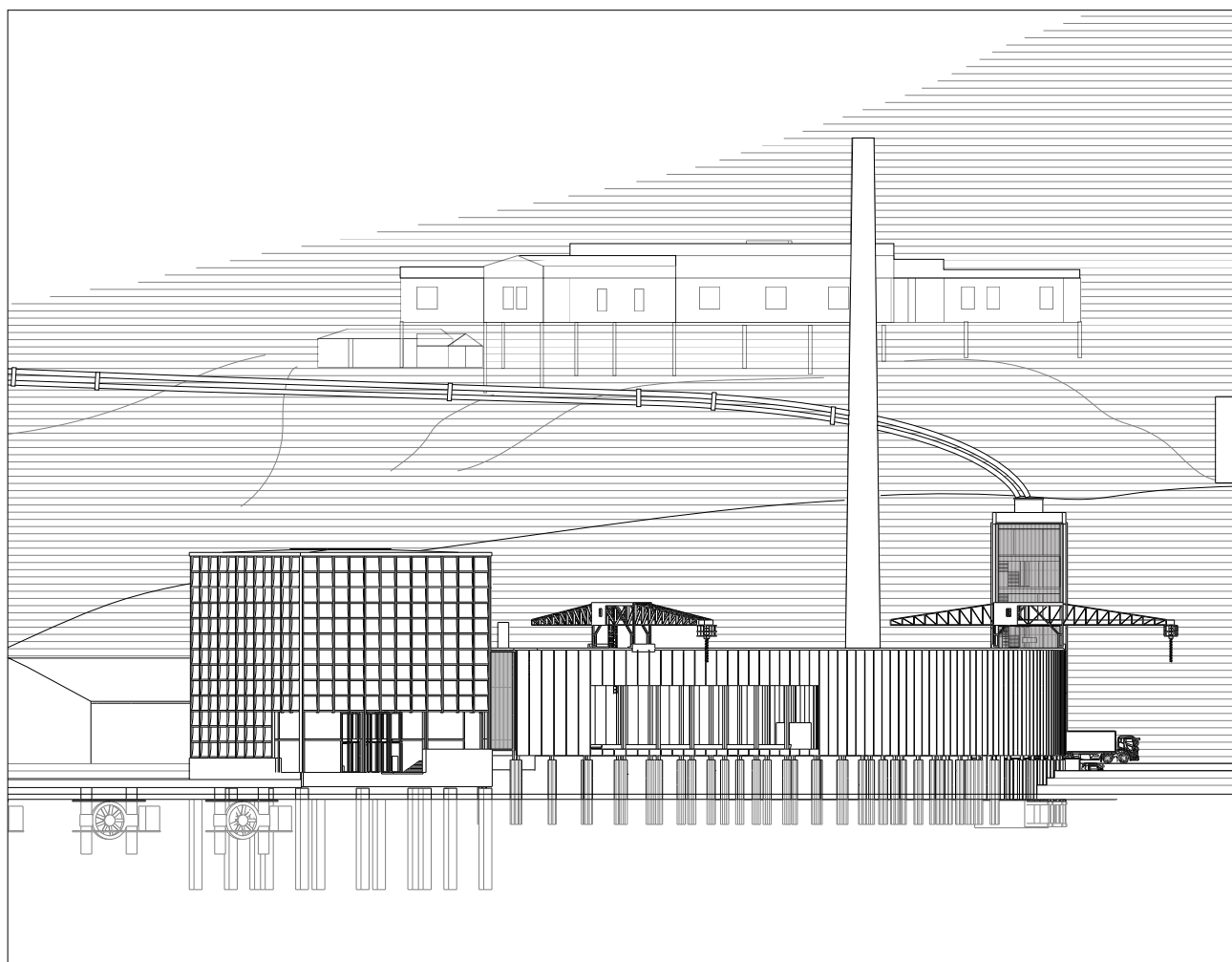
Finally, the end waste, non reusable material, is then taken to the existing landfill, where the material is disposed from the building to the land and then transported to abandoned mines.



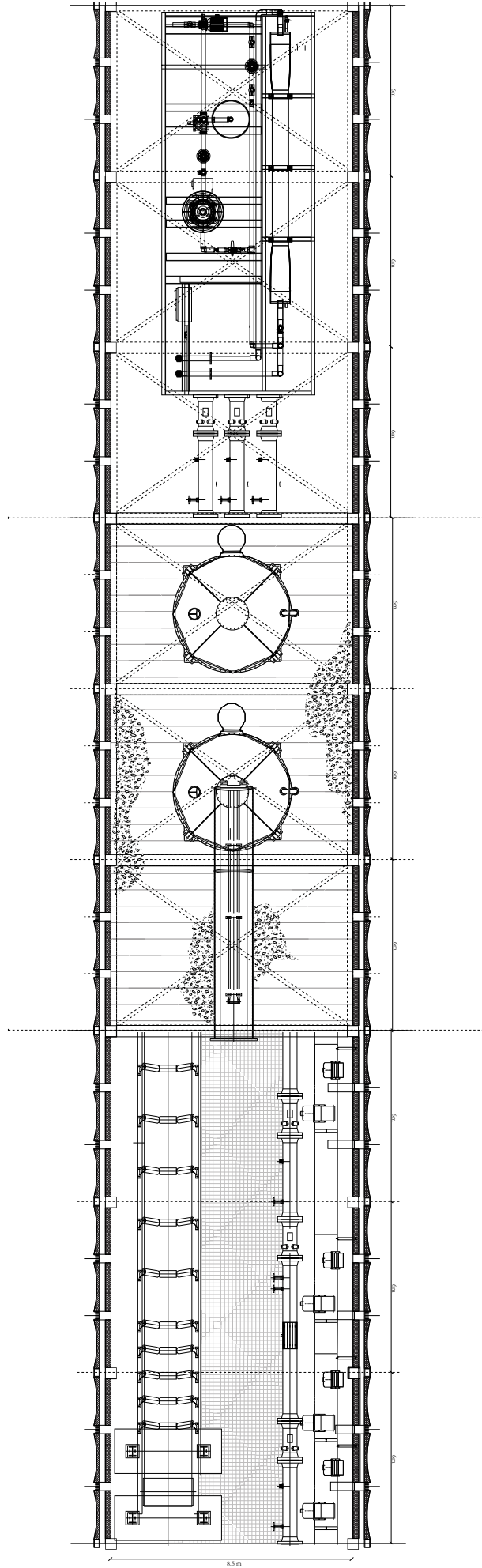


*Mining Quay Ny Alseum, Svalbard*

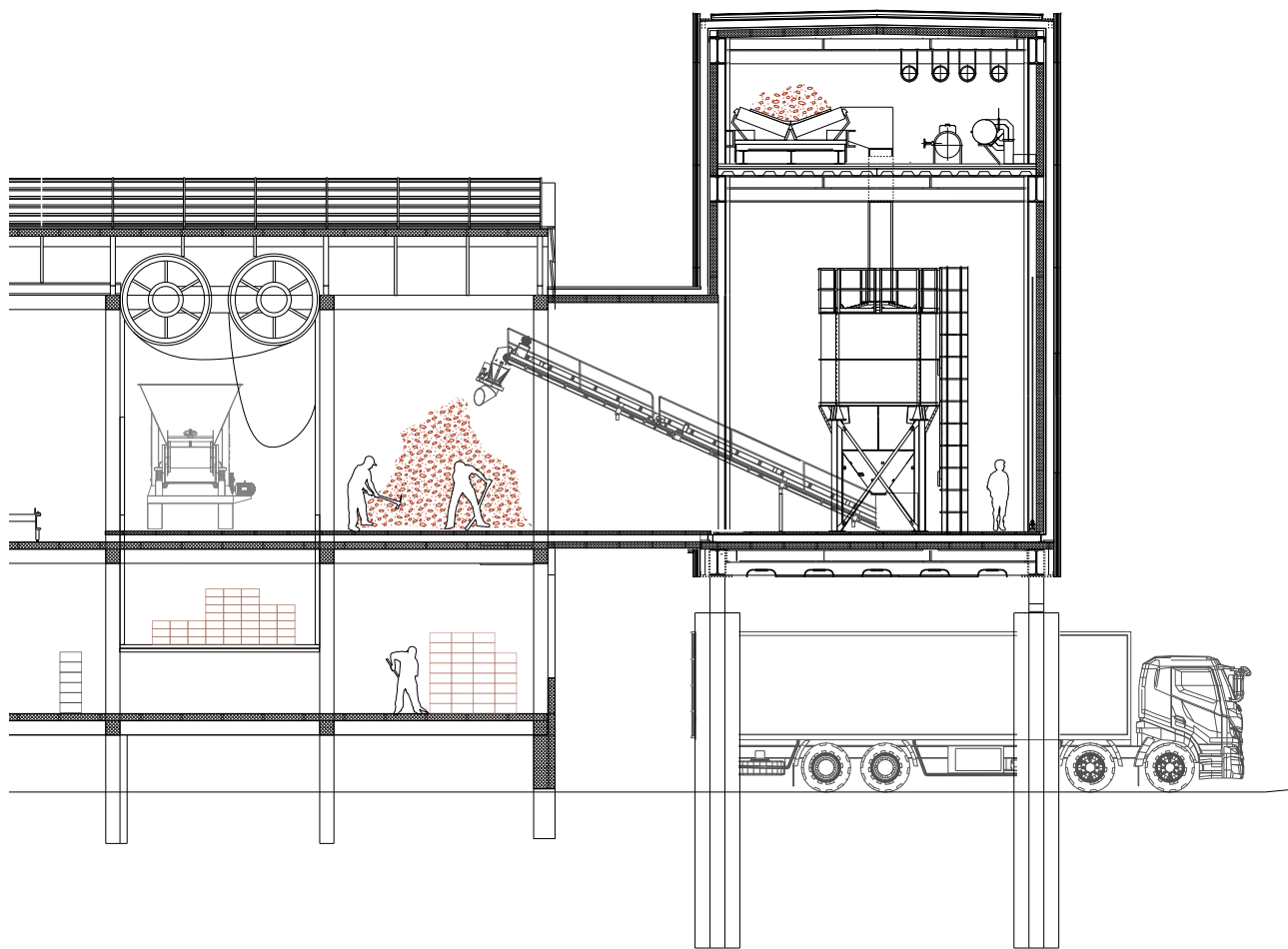
Source: Svalbard Museum Photo Archive

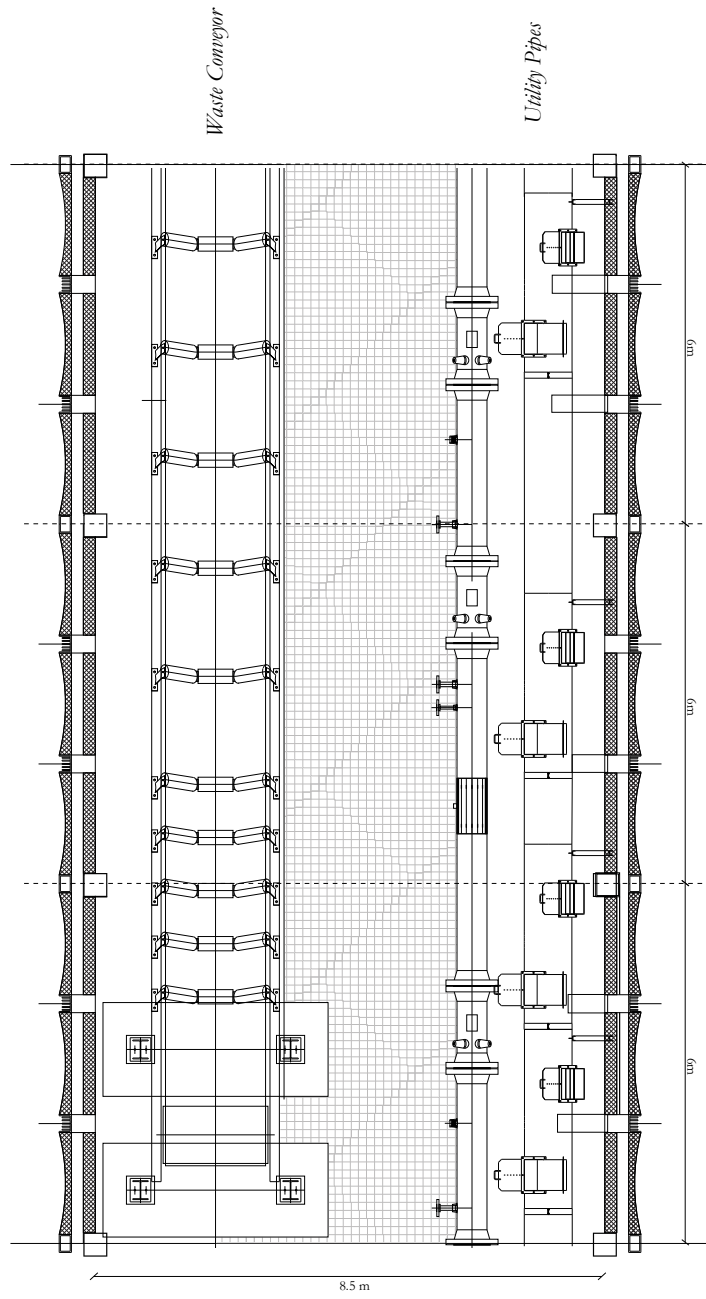


*Frontal View*

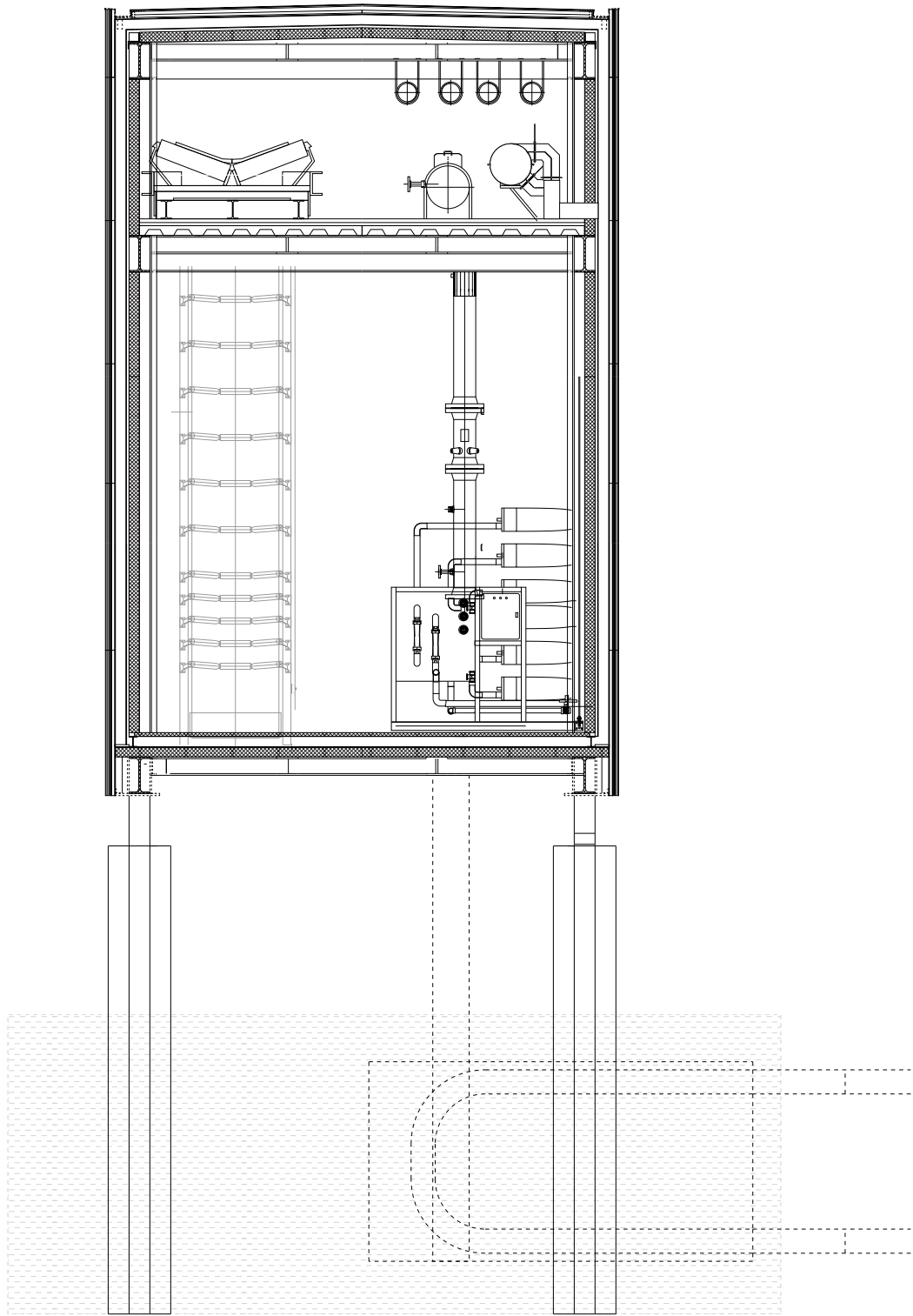


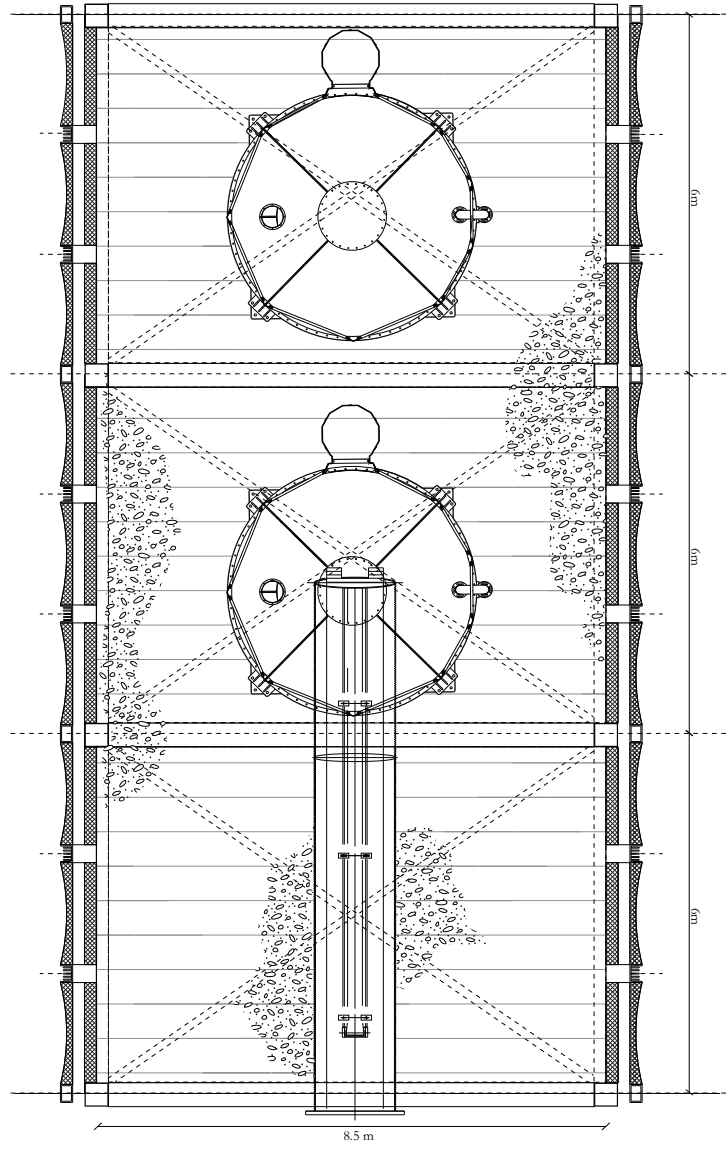




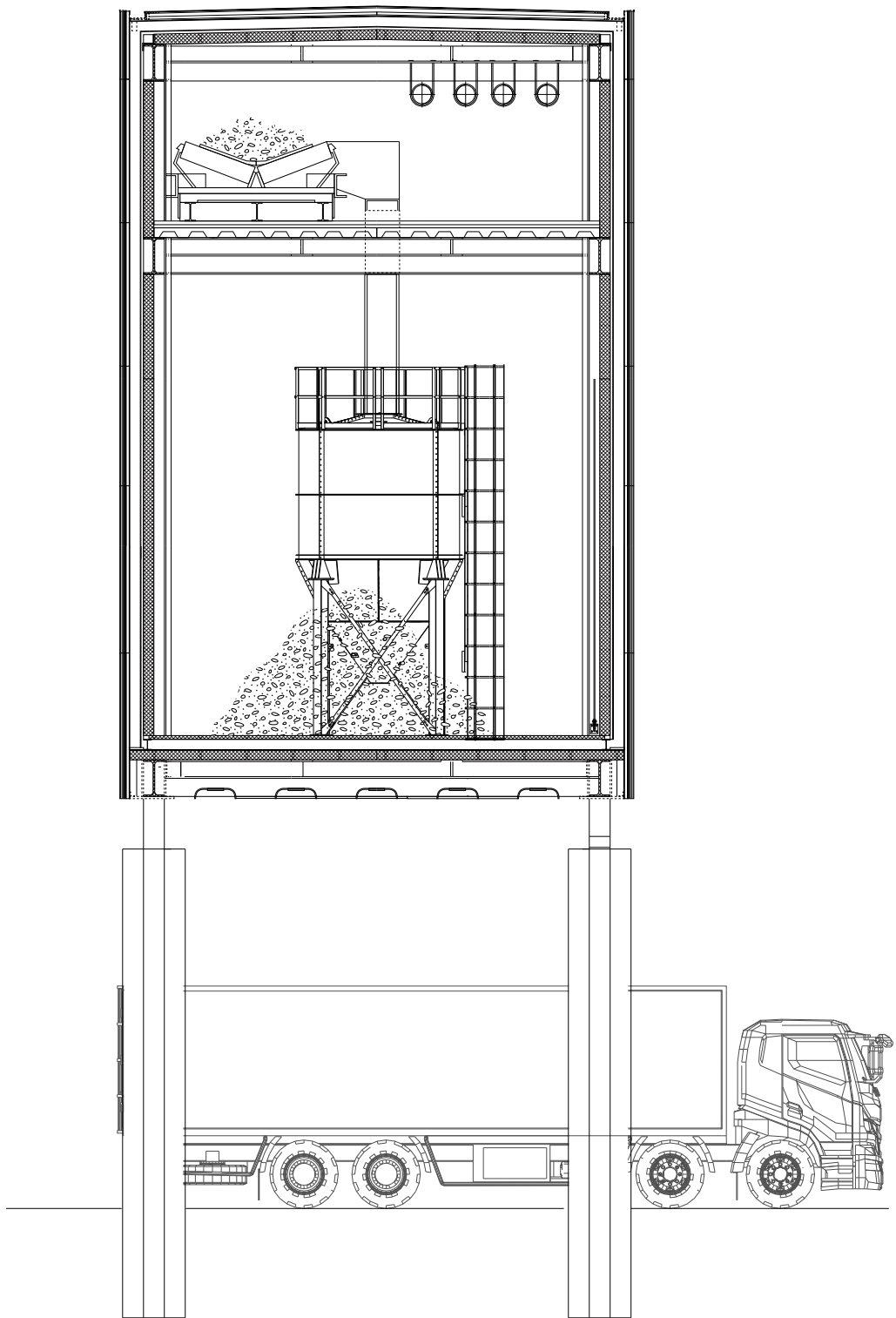


*Flows*

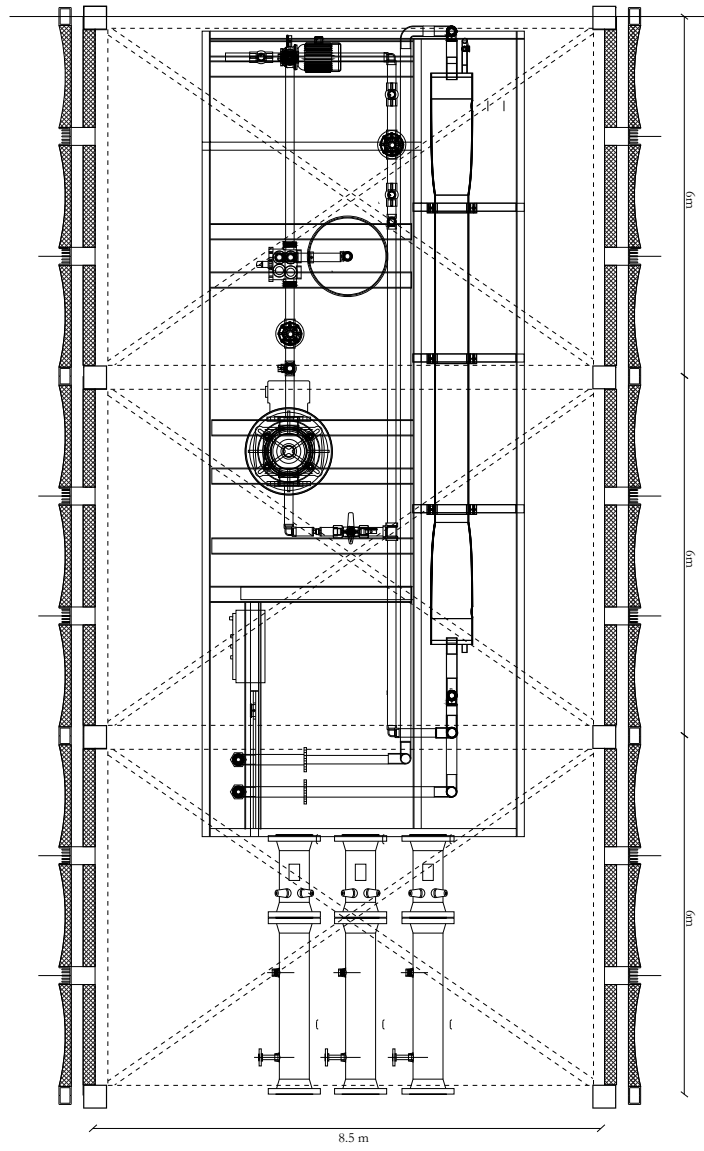




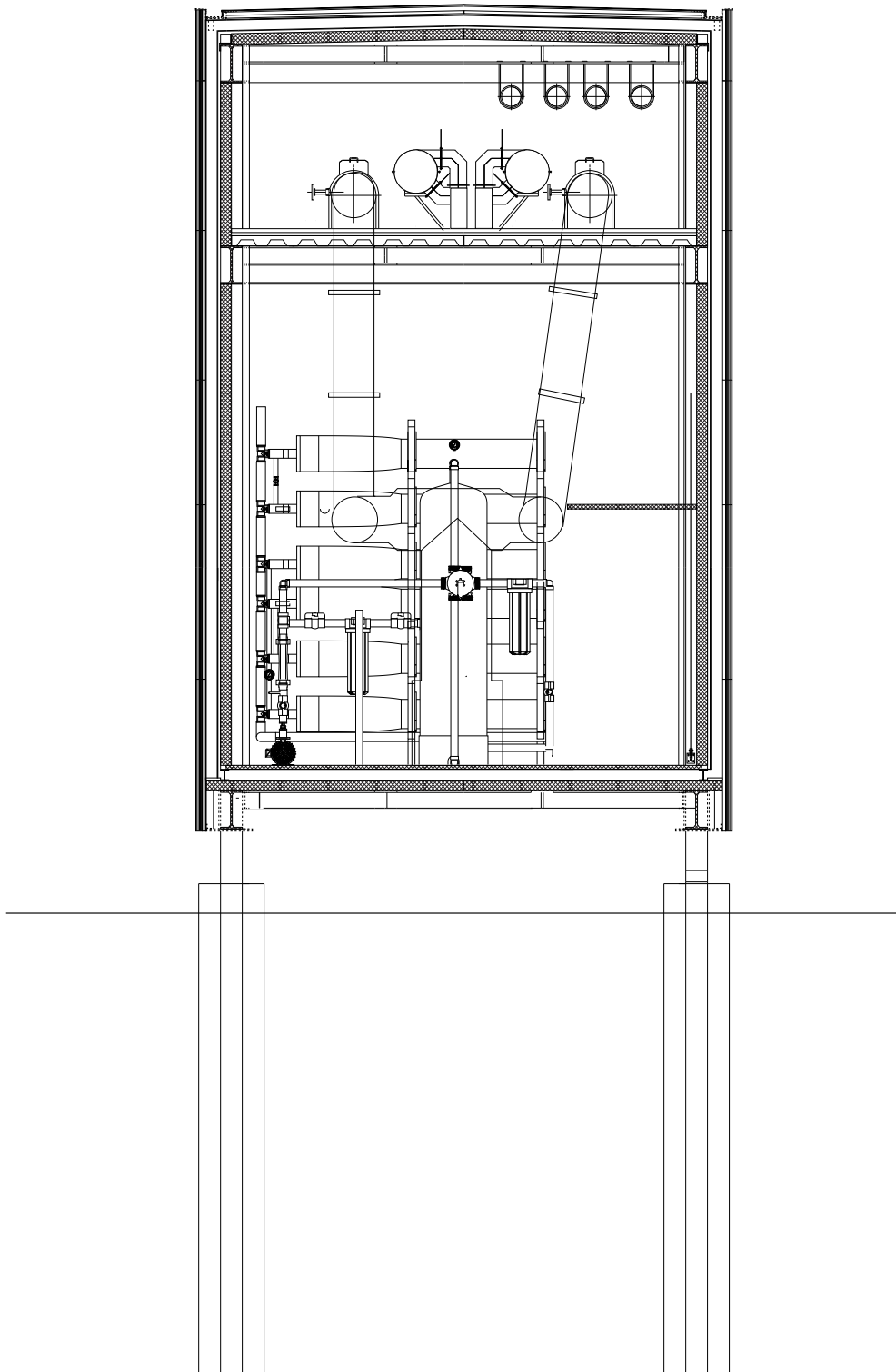
*Processing*



*Existing Kettle*



*Energy*



**Interior**

Its monolithic and monumental look on the outside, translates in the inside as this almost exclusively non human building hosts infrastructure, machines and services. The prefabricated elements of the facade include ventilation gaps ever 2 meters to allow the fumes to go out, while bringing an array of shadows as a subtle gesture of the outside towards the machine.





*The Bar*

# Political Act

The project, just as mining in Svalbard, tackles many of the intertwined complexities and specificities of the Arctic context. By addressing both an infrastructural and industrial aspect such as mining waste management, and a political and social aspect such as governance, my research encountered a dilemma between the scales. Both the infrastructure and political topics suggest a monumentality and a big scale that contrasted with the small scale of the Arctic communities and the local approach that my project has intended. Yet, it was not until I widen my research and my view on the territory, that I understood my project as one piece within a wider pre-existing network of externalities. Therefore by understanding my design as part of a territorial dynamic, rather than just an architectural project, I managed to provide my project of scale and context in order to overcome such dilemma in the design process.

Therefore my project embeds itself in a territorial loop of externalities (energy, infrastructure, governance), in which it addresses the different dynamic while developing a specific architectural project. This leads me to a second dilemma regarding the design. The Embassy of Waste, as mentioned above, requires both an infrastructural and political character, yet by approaching them through an architectural programme they revealed a dichotomy between the building for non-human and building for humans; between infrastructure and community. Therefore the project splits in 2 simple gestures; one central spine addressing the linearity of the infrastructure process, with three architectural elements which embrace the city and that brings the industrial process and the Arctic life together. This design gesture made me realize that my project is not a hybrid between politics and waste, instead, by bringing waste and people together, the project becomes a political act in itself.

Moreover, by introducing active cycles of reuse and production of mining waste in such a vulnerable territory as Svalbard the project acquires an ethical character beyond architecture, but that of an ambassador, veiling for the best interests of the Arctic region; sustainability, political stability and self-sufficiency.<sup>9</sup>

<sup>9</sup> The Svalbard Treaty, Paris, 9 February 1920, Versailles Treaty, available from [http://library.arcticportal.org/1909/1/The\\_Svalbard\\_Treaty\\_9ssFy.pdf](http://library.arcticportal.org/1909/1/The_Svalbard_Treaty_9ssFy.pdf)



# The Material

*Ambassador for Self Sufficiency*



### **Properties of Waste**

It is proven that the recycle of mining waste can result in the production of insulation, ceramic tiles, crafts, cement and even porcelain. The Properties of the waste depends on the type of waste, hence on the type of extraction. In the context of the Arctic it would be metals including aluminium, Iron, Copper and others. Hence, as the Embassy of Waste, the project recollects mainly metallic ores which have specific properties towards reuse.

Slag: It is the wasteful result of the separation of metals from the rock extracted at the mine. The properties of Slag, mainly from Copper and Iron, are mainly towards the replacement of cement in the production of concrete. By replacing cement, it reduces co2 emission in 70% and it is proven to increase thermal capacity.

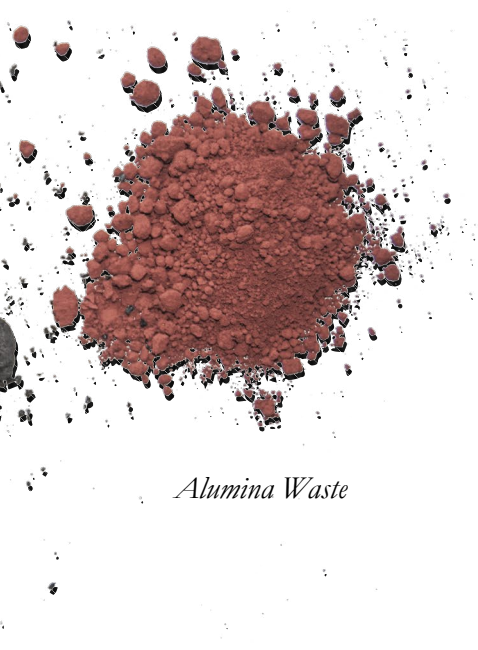
On the other hand, Bauxite Residue is the result from Alumina industry. It is characterized by a reddish colour and it can be used in the production of ceramics.

MINING WASTE

*Copper Slag*



*Alumina Waste*



**Pre Fabricated Elements**

As a result, the project showcases the product material in its façades. The bar, showing the recycling of waste towards a local production of concrete, and the three satellite building becoming a catalogue of the colourful prefabricated elements that could potentially result from the mixing of certain kind of waste.



*The Gate: Ornament*



*The Factory: Operable Tiles*



*The Tower: Functionality*



### **Politics of Waste**

With waste as a resource, the material produced in the project is the physical manifestation of the politics of waste, a result of Arctic cooperation and local governance. As a conscious understanding of the territory and its politics, the material becomes a local resource towards the circularity of the Arctic region. Therefore as the ice melts and the Arctic cities face their inevitable growth the Embassy becomes the new centre of the city as it positions Svalbard as an ambassador not only for the stability but or the self-sufficiency of the Arctic territory.



*Longyearbyen, Svalbard*

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**Svalbard Museum Photo Archive**

**LPO Arkitekt**

*Embassy of Waste*  
*Svalbard, Longyearbyen*  
*78°13'N 15°38'E*

*Greetings from*  
*The Svalbard Free Zone*