

# MSc3 Research Report

North Sea: Landscapes of Coexistence  
*Transitional Territories Studio 2019-2020*

Richard Thomson  
*Flotta: A Bruck-Mining Saga*









*I should like to dedicate this to the memory of David F Sinclair, who was a man of many titles: sub-postmaster, general merchant (licensed to sell tobacco), novelist and blogger, he has been referred to as 'Mr Flotta' himself. David passed away in 2019 shortly before I began this project and before I had even heard of him or Flotta itself. Yet without him this project would have been very different, and certainly not for the better. I would like to extend my thanks to his wife Marina and daughter Phyllis, who were extremely gracious and welcoming both via email and in person.*

*I should also like to dedicate this to my mother- 'the craft metal worker' of this project. She is of course in life a craft metal worker- a jeweller who built her career in a backroom of the home I grew up in. She is also the person who started me on drawing, and who encouraged me to believe that what I drew was of value. Most of all, she is my mum.*







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## Abstract

This project explores the value of remote territories in a globalising, urbanising world. It suggests that centuries of fuel-dependency have led to ever-increasing centralisation of human life in cities and its subsequent decline in remote territories. The project argues this status quo is ultimately neither desirable nor future-proof for three main reasons, seeking to respond in turn to each point:

Firstly, the project postulates that global urbanisation is undemocratic. Restricting the ability of individuals to choose where and how they live (central city or remote territory?) and the increasing inability of rural economies to sustain themselves leads to feelings of resentment over decisions made far away. The dangers of this are well reflected in the rise of the political right across much of the western world (Trump, Brexit, AfD, PVV...) which depends heavily on conservative, rural voters. It can be tempting to dismiss these phenomena as mere glitches in a globalising, centralising world, but such political change is likely reflective of growing feelings of disenfranchisement. Consequently, the project argues for a symbiosis between the centralised city and the remote territory as vital to future democracy. The project seeks to build an exemplar case for continued human inhabitation- on the remote island territory of Flotta.

Secondly, the project suggests that aspirations for a renewable energy future are more territory-specific than past/current energy sources: Fuels are energy-storage mediums requiring minimal connecting infrastructure; Electricity is an energy-transmitting medium requiring continuous infrastructure between the point of harvesting and of delivery- often in very different locations. The project argues that transitioning to renewable energy has spatial consequences, and that using renewably-generated electricity close to the point of harvesting could help meet global needs while also developing a new *raison d'être* for remote communities. The location of energy-intensive industries in remote, renewable energy-rich territories ('Industrial Territorialism') is therefore advocated, with metal recycling considered appropriate for Flotta.

Lastly, the project argues that a relationship between the scale of infrastructure and of the human condition is vital to allow true symbiosis between energy-intensive industries in, and the inhabitants of, remote territories. This 'softer' lens also views the territory as inspiration for stories. Like wind and marine renewables, stories are often intrinsically connected to remote locations as illustrated by the archetypal opening: '*Once upon a time in a land far, far away...*' The project argues that stories are crucially important to humanity as a whole and that stories must be preserved. Flotta has been a rich source of stories, but they risk vanishing with the island's aging community. The project seeks to transmit stories from the declining Flotta community as it merges with the proposed new community, and to connect infrastructural-scale metal recycling with the scale of the human through craft metalworking. This perceived importance- much harder to comprehend than hard infrastructural logic- is reflected in the less 'functional' craft workshops, repository of stories, and community arts spaces. These seek to become the 'house' of the remote island territory- more permanent than any infrastructure ever can or should be.

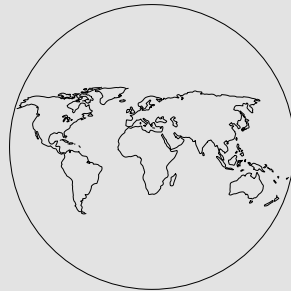
Key words:

**(de)centralisation; symbiosis; remote territory; democracy; infrastructure; story**





## a (romantic) prologue



## **A west coast territory**

This has been an extremely personal project. Growing up in the small fishing town of Oban on the west coast of Scotland, life in a remote territory was simply a way of life to me. Oban is a curious place. It is itself remote, but simultaneously a centre. Oban is far from everywhere, and so is itself a centre: With a population of 8,500, Oban is the 'largest' town for over 70 kilometres in any direction, and has one of the only high schools in the county. I went to school with a great many children from islands much more remote than Oban who stayed in the local 'hostel' and only saw their parents once every few months. There were also children who took two 90 minute bus rides to get to and from school every day, while others walked just 10 minutes... This is reflective of the inhabitants of Oban in general. It is a mix of people from many walks of life and of several nationalities who together form a community.

Oban is beautiful, raw, flawed, complex... but perhaps simply put, I can describe it best by saying it was my normality. I grew up around and on the water, in a community that was very much informed by that very same water.



*author's photograph*

## **A community afloat**

Before I came to TU Delft, I had had the good fortune to spend summers working as a sailing instructor and yacht captain, teaching school children how to sail, how to live together, and what life on a floating island in the ocean means- while I was still learning myself. When out of the harbour, the boat is remote, and the sense of community is strong. Life here is beautiful, raw, flawed and complex as well. In many ways, life on a boat is akin to life on an island or some other remote place, just in very condensed form.





author's photograph

## Stories of the remote

Not only this, but I began to realise that such experiences were of value not only to the small community forged by sharing weeks afloat together, but also all the way back to land where we had come from. The experience was something we talked about and told stories of: stories of slow time; of exotic animals, of storms and of fast time. Of course, our stories were in themselves perhaps not stories for the world, but some stories are. The act of storytelling is vital to humanity.

‘Once upon a time in a land far, far away...’ Why does the archetypal story always tell of places that are so far away, both in time and space? Clearly, there is something about remote, distant places that stimulates the human imagination. The bookshelves of humanity are lined with volumes from the annals of history, and with tales from far flung lands and seas. Hollywood is much the same- an assemblage of films telling stories of the unusual and the exotic, of characters with experiences somehow different from our own. Perhaps we are drawn to them because in the telling they become a new reality. We relate to the unrelatable. Even as individuals wandering through the maze of life, we seem to tell of our childhoods and holidays much more frequently than is justified by their temporal importance in our lives. Why? Because they are distant, remote- in time and in space. Once upon a time in a land far, far away...

Hold that thought.



*author's artwork (mixed media)*





Richard Thomson

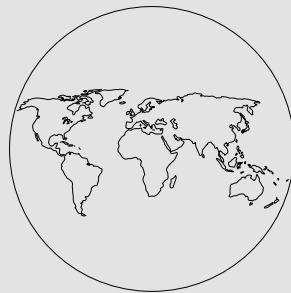
77







**the city and the territory**





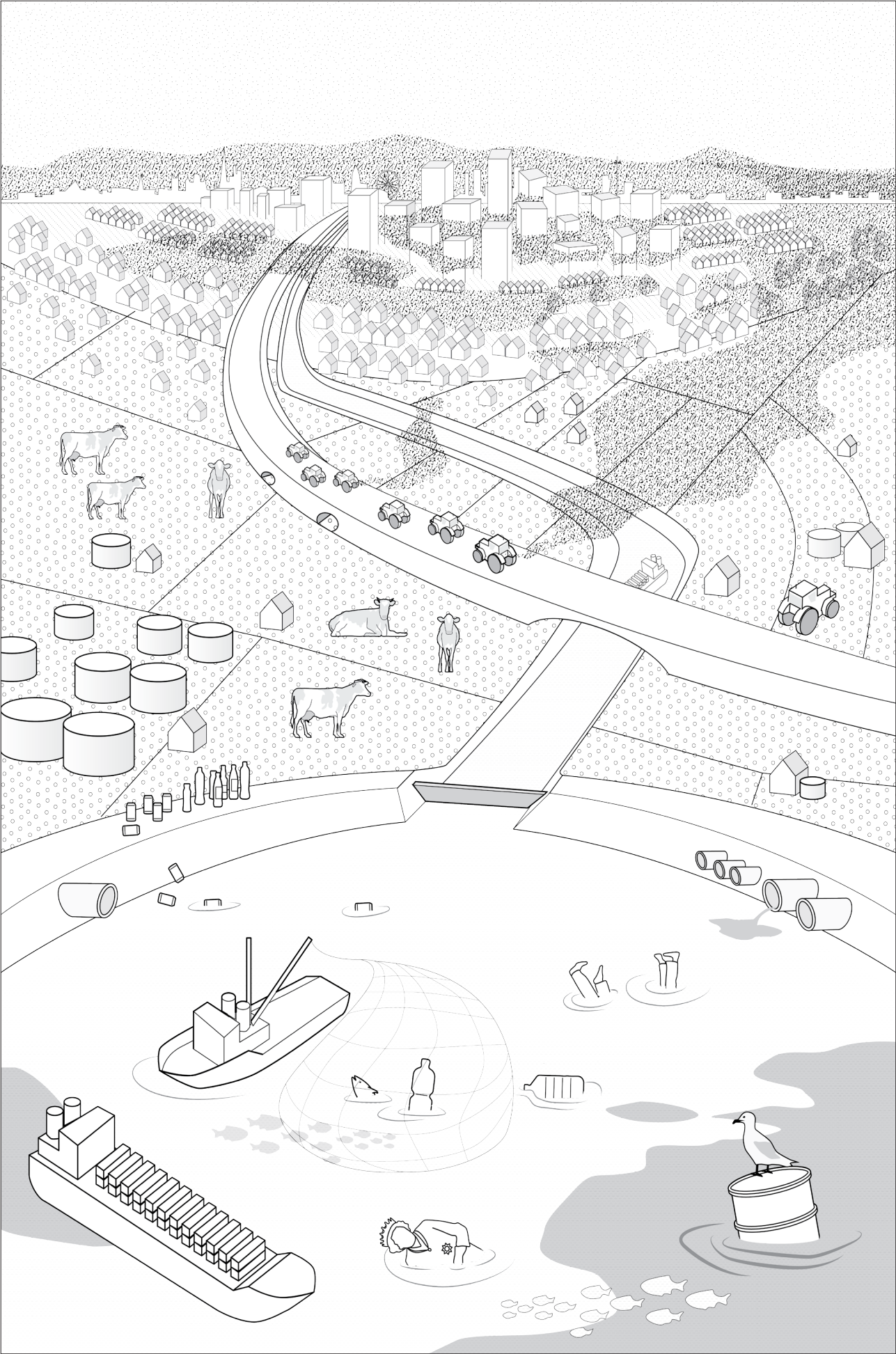








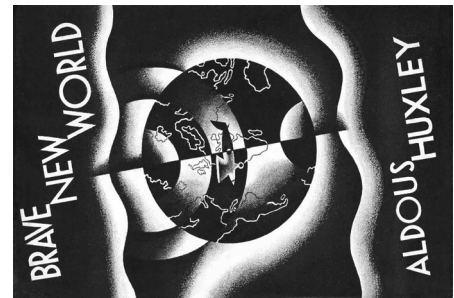


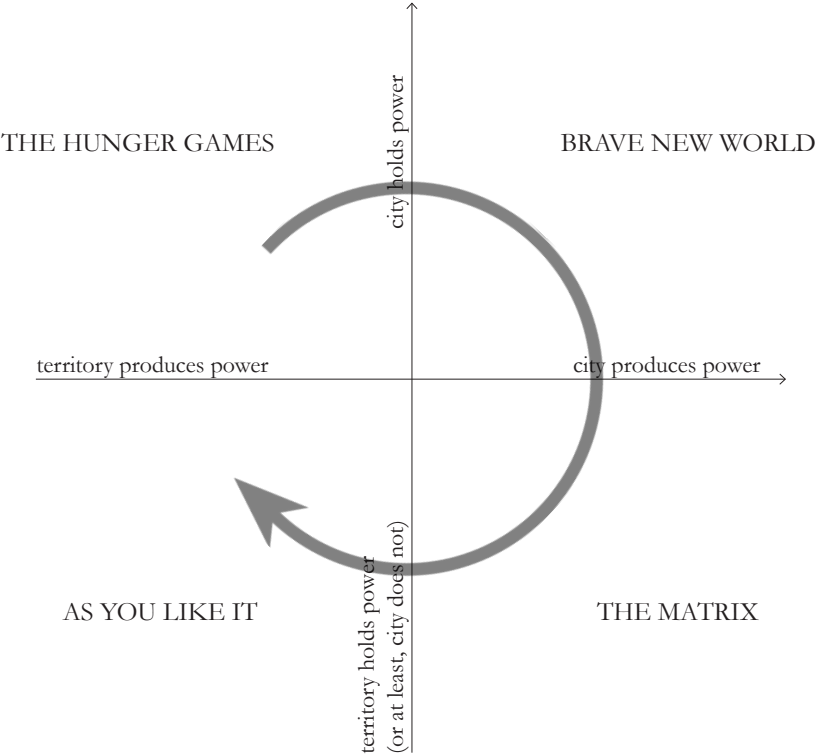


## Scenarios | The Oceanic Project

The Transitional Territories studio began with an investigative group project exploring broad themes at work on and around the North Sea. Taking the wielding of power and the production of power as two axes for a quadrant of scenarios (ranging in each case from high centralisation > high territorialisation) we proposed four scenarios for how the North Sea canvas might look.

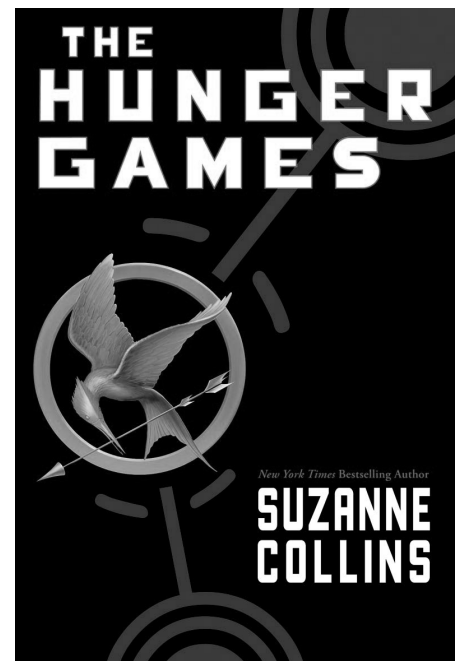
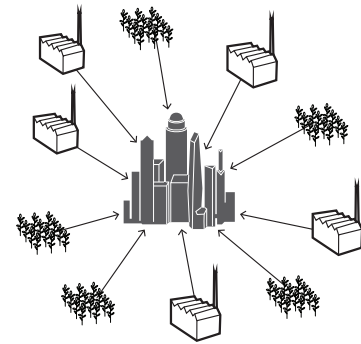
These scenarios were each inspired by fictional stories which nonetheless tell a possible reality. Yet rather than viewing each of the scenarios as independent, we also considered them as perhaps sequential, in which our present world is in some way comparable to ‘The Hunger Games’ scenario, but would likely morph to ‘Brave New World’, ‘The Matrix’ and then to ‘As You Like It’.





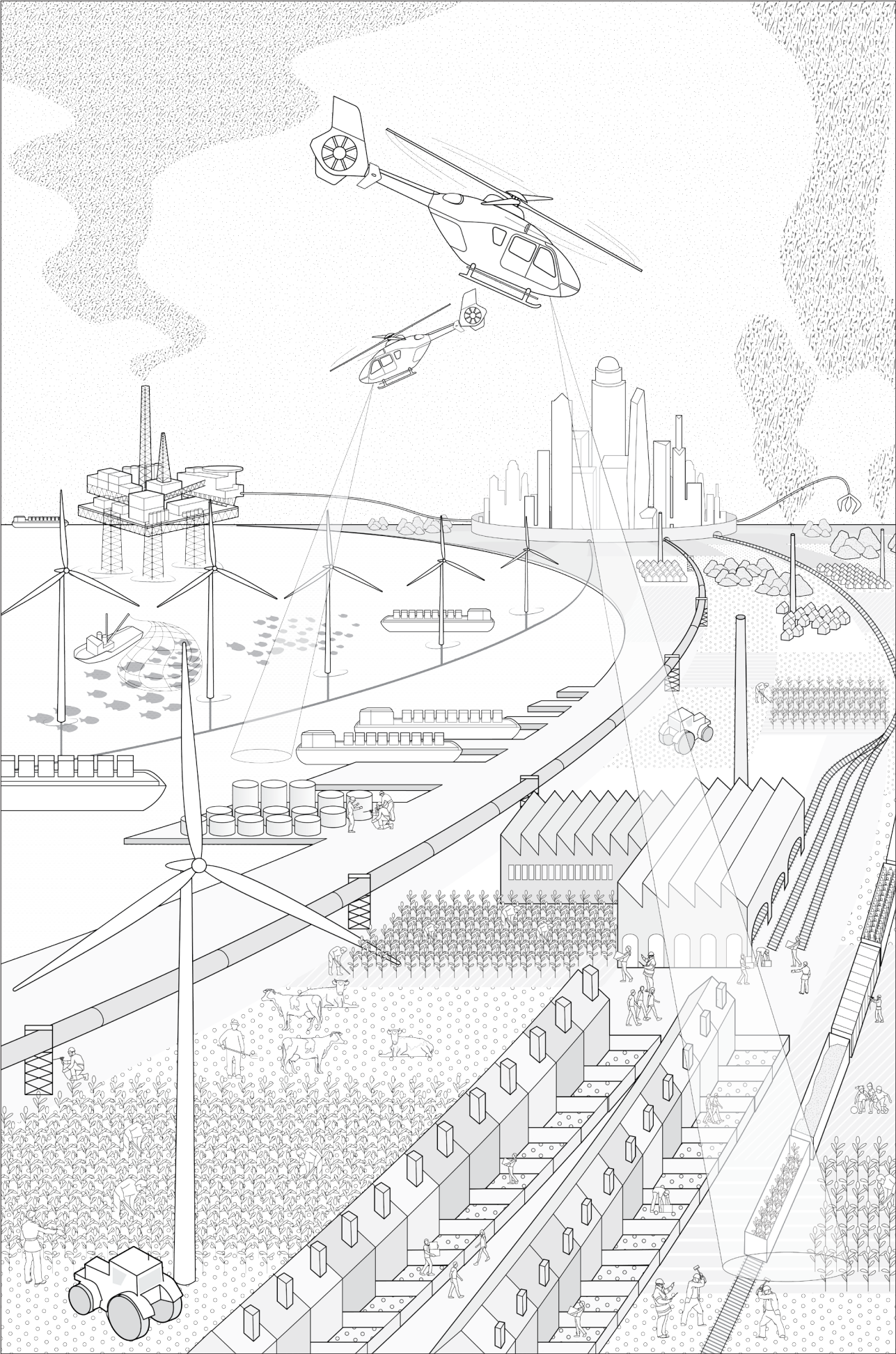
## Scenario 1 | The Hunger Games

In The Exploiting City, the city lives like a giant, powerful parasite by harvesting the productivity of the surrounding territory. A linear economy operates, lurching from one resource to the next as each is gradually exhausted in turn. Forgotten edges exist around exhausted resources, and people living within these areas can even act as an exploited resource as in Suzanne Collins' *The Hunger Games* of 2008. Efficiency varies depending on the availability of resources to be exploited and rises as required resources become scarcer. In order to exploit the territory, infrastructure runs radially to the most powerful city islands, with increasing capacity as we approach the city. Densely populated cities take advantage of maximum exploitation, while a sparsely populated surrounding territory exists to serve those cities. The wielding of power is highly centralised and depends on exploiting resources while preventing others from doing so. This results in high inequality between cities and the territory, with a secondary inequality according to ownership within cities. However, careful control of power likely prevents conflict within individual city-territory structures, though conflict between competing city-territory structures remains highly possible. Energy Generation is managed by large corporations or is city-owned, though it could include a variety of sources: nuclear, fossil fuels, renewables or even some new source of energy generation.



*literary inspiration:*  
S. Collins, *The Hunger Games*. Scholastic Press, 2008.

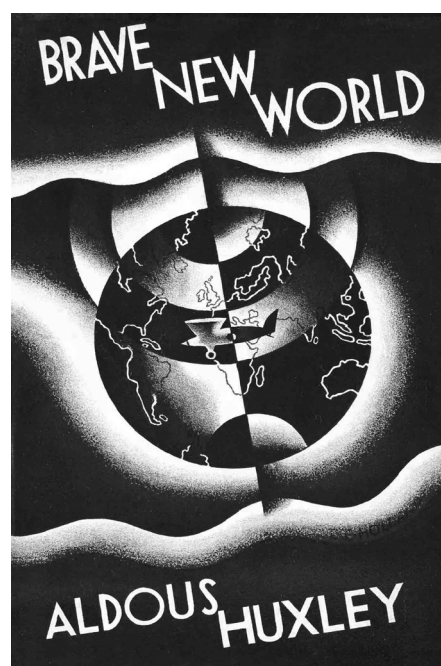




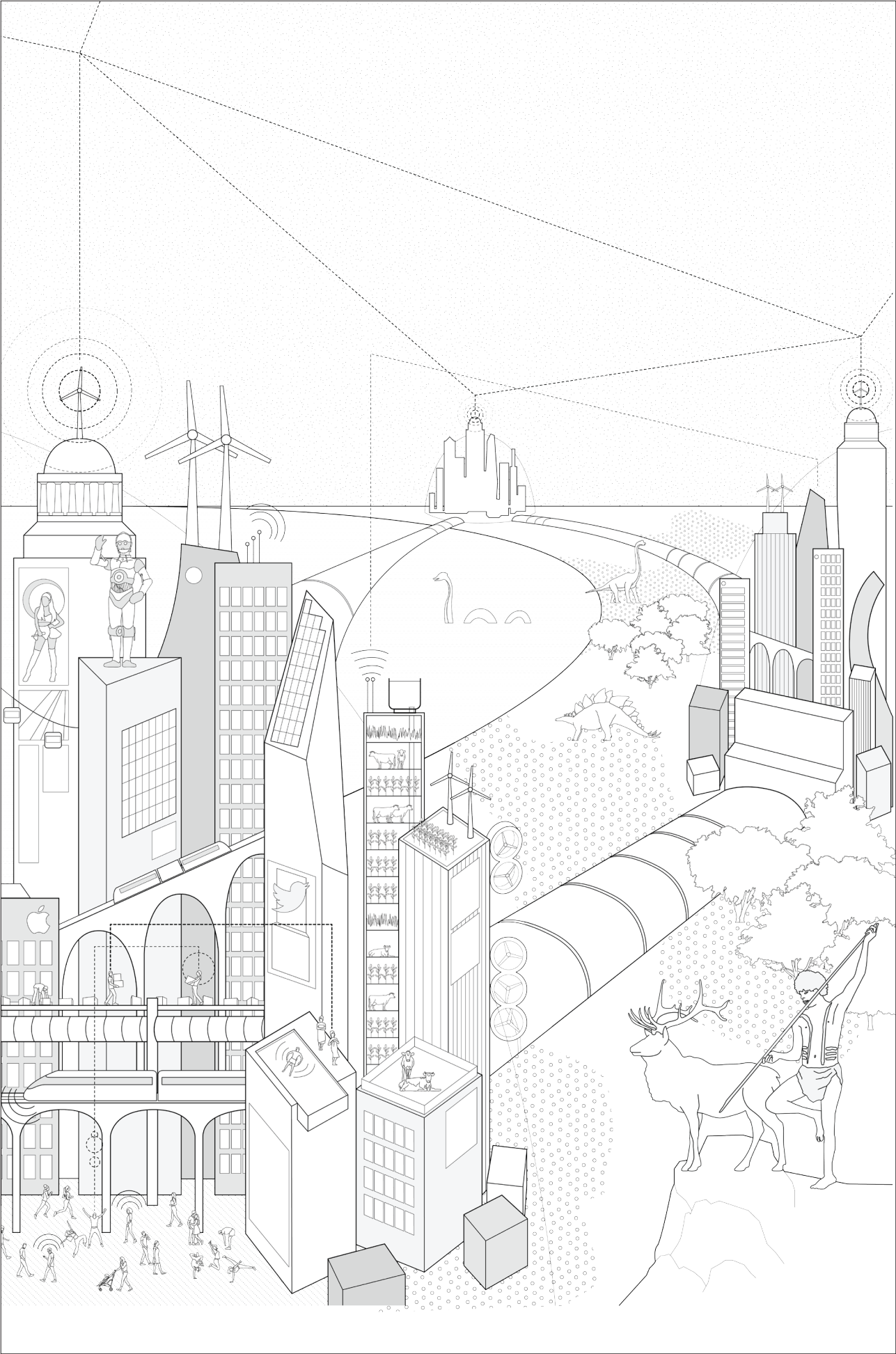


## Scenario 2 | Brave New World

The Global City lives as a self-sufficient organism, completely independent of the surrounding territory. A circular economy is a requirement for this to operate, with all resources within the city being completely recycled and reused. Forgotten edges exist outside these city islands, and the few people living outside these areas are considered 'savages' by The Productive City's inhabitants, as in Aldous Huxley's *Brave New World* of 1932. Extremely high efficiency is a requirement for the city to manage all its production, recycling and inhabitation requirements without encroaching onto surrounding territory. This likely involves high levels of (though not complete) automation; there remains a significant role for people to play in the city for it to continue functioning. Infrastructure is highly efficient within cities, while isolated, high speed connections to other Productive Cities are the only external footprint on the surrounding territory. High population densities exist within each Productive City. Levels of inequality are hard to predict here and would depend largely on how power and ownership are managed. Perhaps most likely is that those who fail to contribute to the city suffer from inequality. Thus, conflict is possible (though unlikely) within cities, but utterly senseless between cities as each Productive City is self-sufficient and, as a whole, wants for nothing. Energy Generation is state-owned and highly efficient in terms of output per unit area. Consequently, nuclear energy (or potentially some new form of energy generation/ in certain, site-specific cases renewables) is the most likely form of generation.

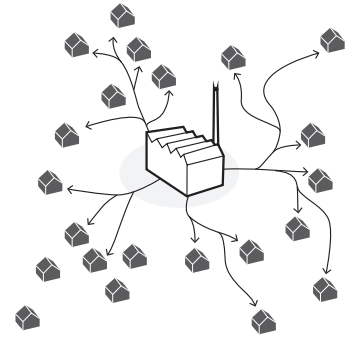


*literary inspiration:*  
A. Huxley, *Brave New World*. Chatto & Windus, 1932.



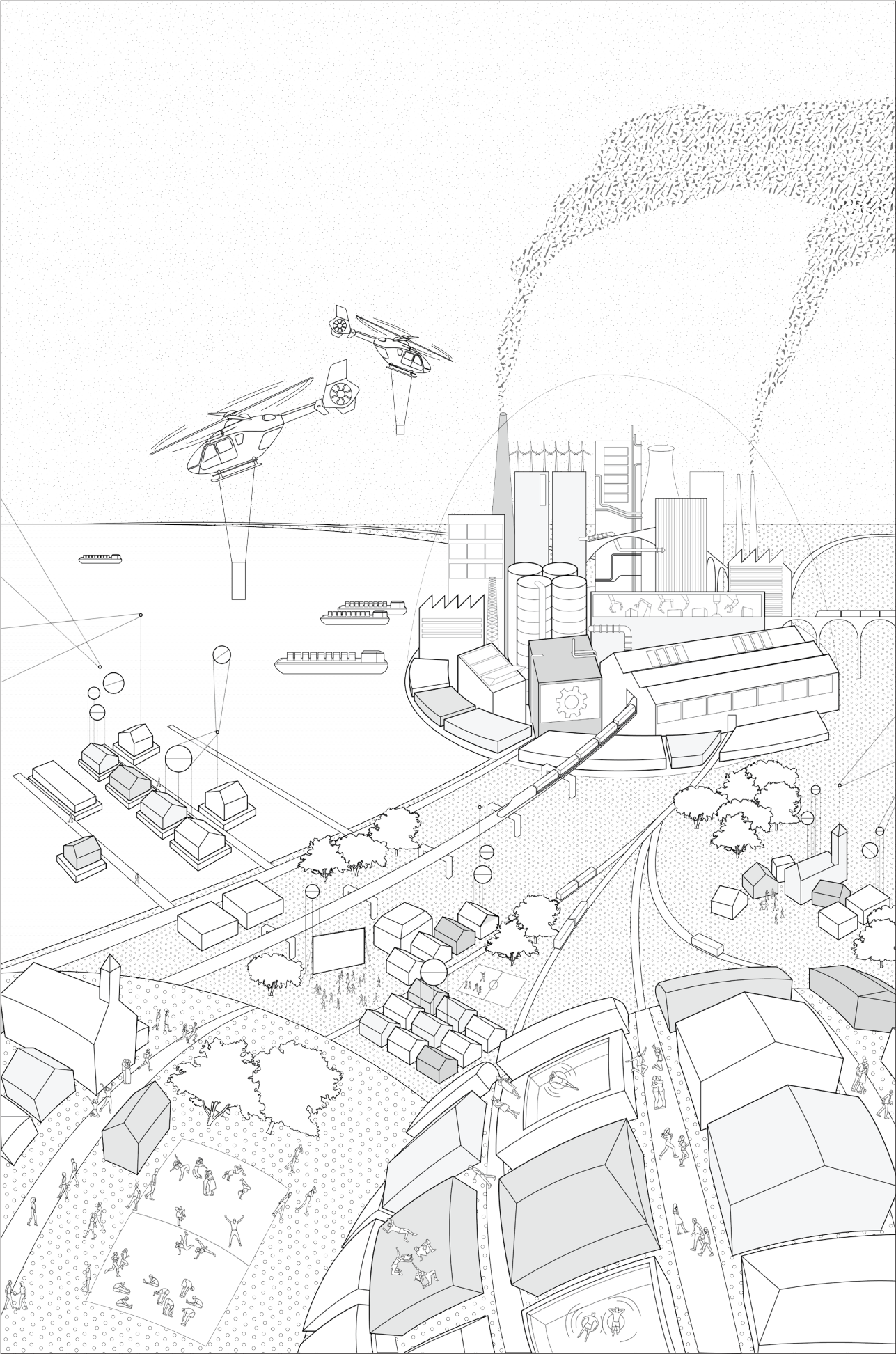
### Scenario 3 | The Matrix

In this scenario, the city is an Automated Factory with people inhabiting the territory or city as they please. All their material, energy and sustenance needs are met by automated factory ‘islands’. A circular economy operates, with flows to distribute and reprocess resources of central importance. Forgotten edges are a question of definitions: either they do not exist as the territory is non-productive, or they could exist everywhere because the territory is non-productive. Efficiency is to all intents and purposes 100% and managed (almost) entirely by automation. As touched upon above, infrastructure is of paramount importance and runs radially from the factory to settlements, or at least distribution/collection points. Population density is a matter of personal choice, with some seeking to live in a city and others occupying the wider territory. The question of power is also highly speculative, as representation no longer is related to societal contribution. Thus, inequality can only exist if automation involves ownership, and so conflict is only of marginal probability: either ownership will exercise complete power and there will (likely) be no conflict, or there will be no ownership and (likely) no conflict. Like all other forms of production, energy generation is automated, though it could include a variety of sources: nuclear, renewables or perhaps some new source of energy generation.



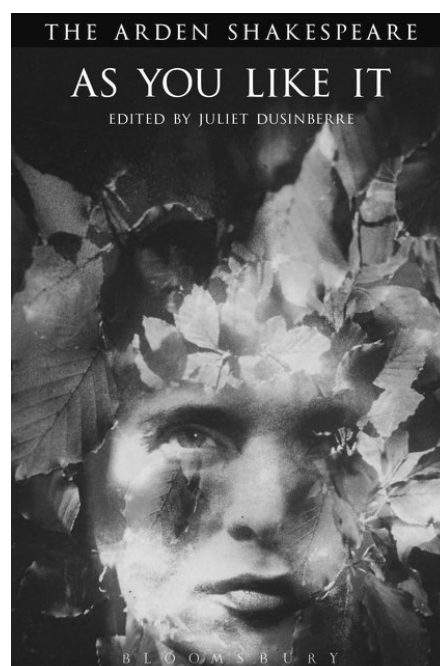
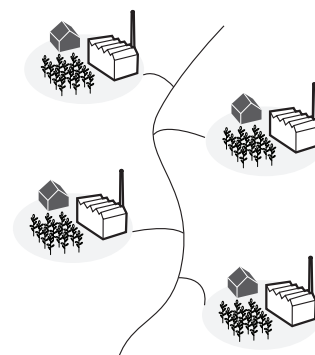
*literary inspiration:*  
 L. Wachowski and L. Wachowski, *The Matrix*. DVD.  
 Directed by Lana and Laurence Wachowski. Warner Bros.  
 United States, 1999.





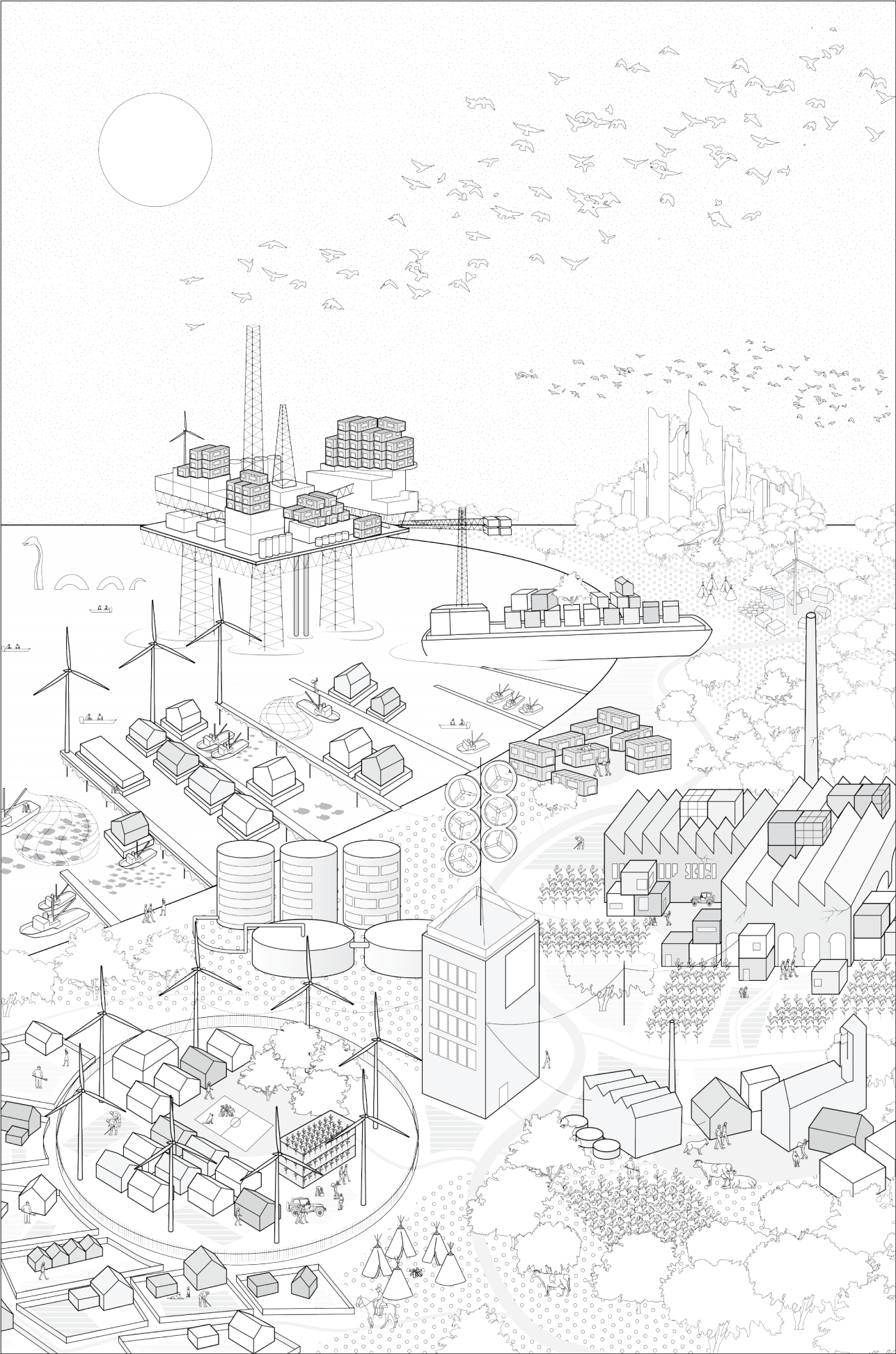
## Scenario 4 | As You Like It

In The Non - City, people live in small clusters across the territory that are self-sufficient. Such societies exist with the realisation of planetary limitations and so communities aspire to only self-sufficiency. A low consumption, circular economy operates in which the perceived material needs of people are greatly reduced. Forgotten edges are virtually non-existent, as all places have an inherent value to the communities that occupy them. Efficiency in the temporal sense is likely moderate, as small communities complete all required tasks within themselves as opposed to maximum production. This ‘failing’ according to our current economical model is however no longer considered so because of reduced desire for consumption, a theme of William Shakespeare’s *As You Like It* of 1623 and much romantic art throughout the 19th Century. Efficiency in the material sense is however extremely high, with all ‘waste’ being repurposed. Due to the self-sufficiency of community clusters, infrastructure between them is low-tech due to its being used infrequently (though this scenario could also arise if VR makes virtual connection important, in which case infrastructure for the transfer of energy and data may exist), and there is at most moderate population density. People are spread out across the territory according to the carrying capacity of that territory. Power is local, and likely concentrated in senior members of the community or a committee. Inequalities are tempered by the knowledge of a shared future and the lessons of historical conflict are heeded sufficiently (!) as to largely prevent this, with self-sufficient communities avoiding conflict as inherently wasteful. Energy Generation is community-owned and renewables based.



*literary inspiration:*  
W. Shakespeare, *As You Like It*, First Folio, 1623.







### 3x3x3 | Notions of Symbiosis: city and territory

*(Renewable) Energy at the End of the World* is the title of Professor Laura Watts' 2018 book on the bottom-up energy futures already in construction on the Orkney archipelago. It also hints at the notion that cities are at times fundamentally ill-located for renewable energy harvesting (though Watts herself doesn't explicit this). This is important because energy systems (such as wood, coal, oil, gas, nuclear, renewables etc.) have an associated architecture/infrastructure. Energy transitions involve learning from and changing that architecture/infrastructure, and can also generate obsolescence.

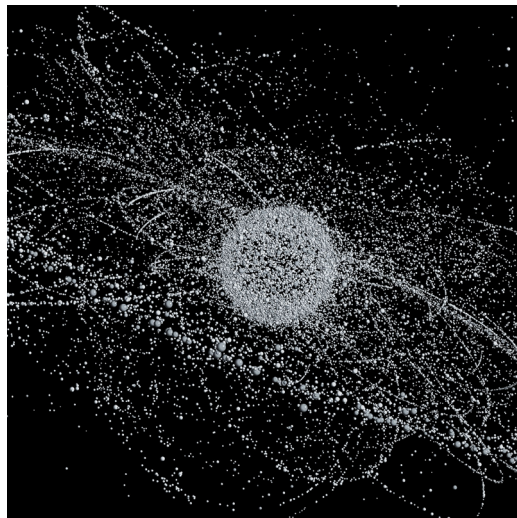
*Island Communities* addresses a counter-notion (or at least a co-existent notion) that future communities might not exclusively be cities. The notion thus suggests that the gravitational pull of cities and the centrifugal force of their orbiting bodies might/must exist symbiotically. In *The City and the Territory System*, Luigi Fusco Girard writes: 'The "revised" traditional city model, that is linked to a specific territory, to localism, to recognize the local identities that make the differences with their specific heritage, based on circular/closed processes and robust relationships between city and territory; on face-to-face relationships (and not only to digital/virtual ones) attentive to the valorization of local tangible and intangible resources.' These orbiting bodies are essentially islands (including in the topographical sense, though not exclusively) which are mostly self-contained and self-sufficient. Community in these islands is very different from community in cities. Island communities are communities of necessity.

*The Story and the Fable* is the original title of Scottish poet Edwin Muir's autobiography, which addresses the notion that a person's (but it could also be a place's) story is lived reality: 'the life of every [hu]man is an endlessly repeated performance of the life of [hu]man[ity].' The story involves everyday rituals fundamentally very similar to the rituals of others, and thus 'in themselves our conscious lives may not be particularly interesting.' But, Muir argues, 'our fable [the dreams, ideas, identity and tales built from that lived reality] seems to me inconceivably interesting.' This is particularly important when considering the identity of islands, which are perhaps more fragile than the identity of cities.

*Snow Storm*  
- *Steam-Boat off a Harbour's Mouth*  
*Joseph Mallord William Turner (1842)*



*space debris I*  
*Michael Najjar (2012)*



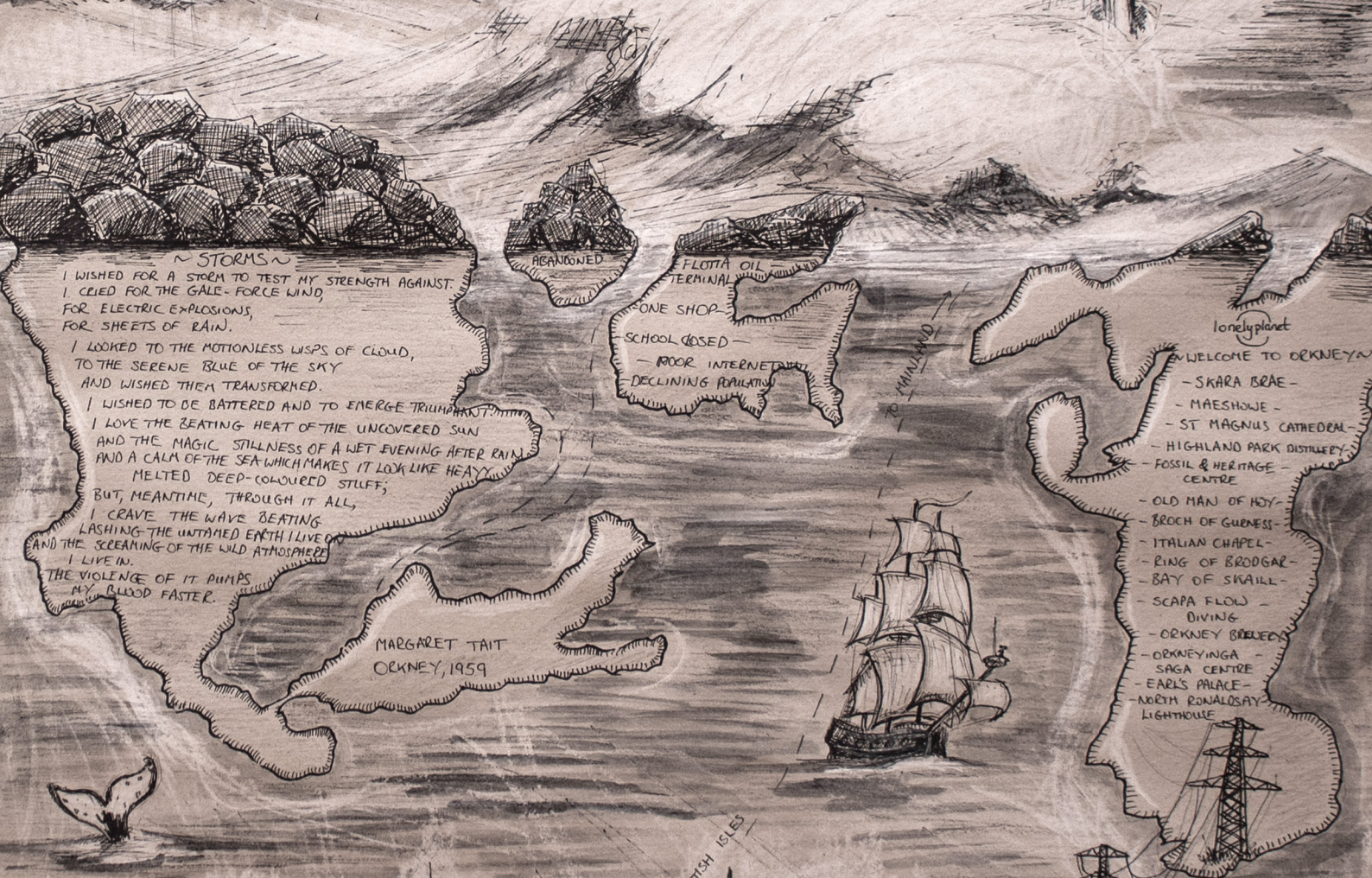
*Mona Lisa*  
*Pedro Finza (2018)*



## **The city and the territory**

The project sought to establish a symbiosis between the remote territory and the central city. With design presently focused primarily on the central city as status quo, the drawing explores the value of the remote territory as way of life, as a source of renewable energy, as inspiration for literature, and as a library of 'stories' which are accessed by visitors from cities far away. It seeks to express graphically the idea of the city and territory as possessing different qualities, but together forming two halves of a whole in a new form of globalisation where city and territory coexist symbiotically.









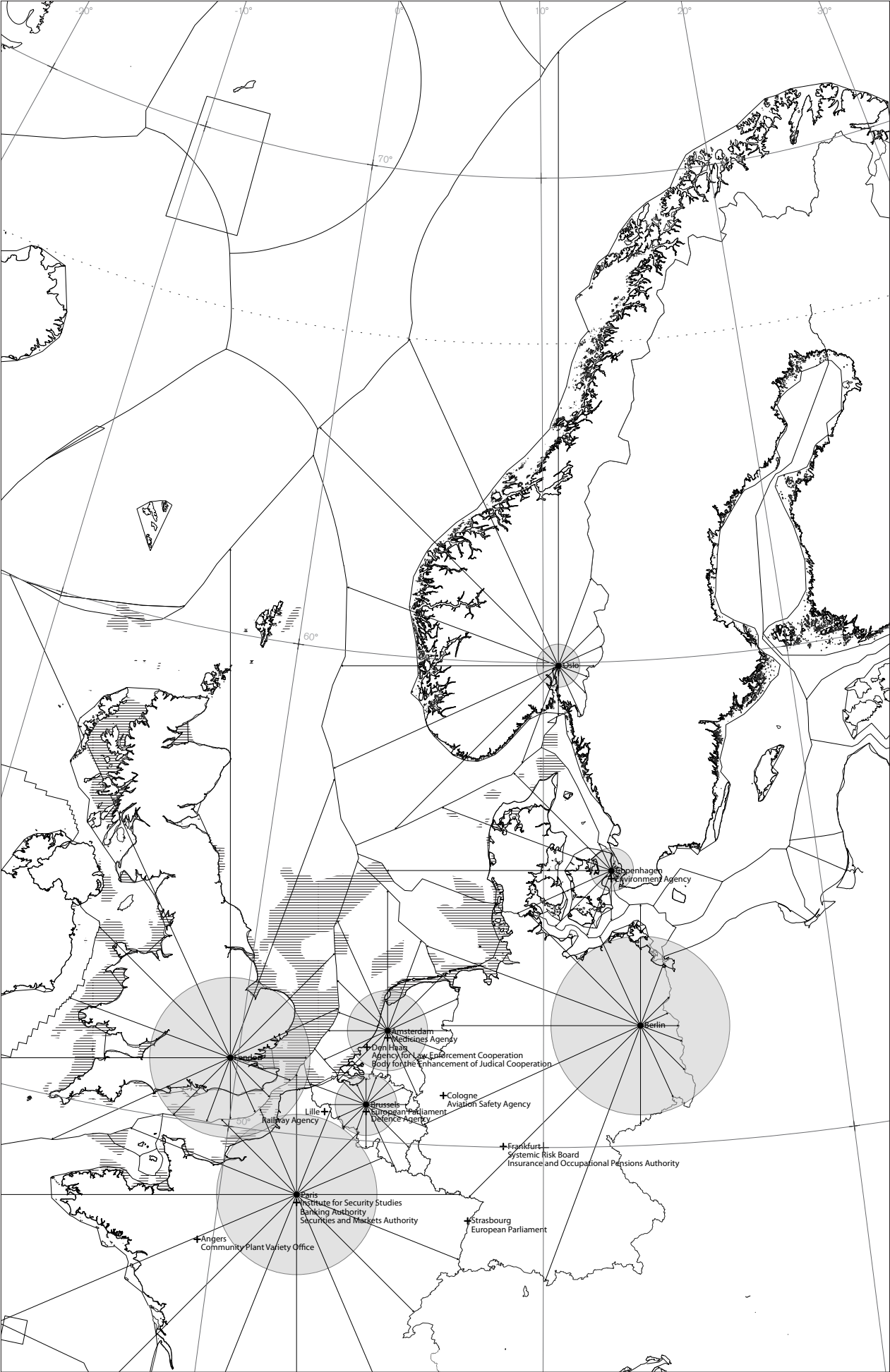
## Territory - North Sea





## Political Centres

A high degree of centralisation is reflected in the cluster of important/capital cities in the southern part of the North Sea. These cities exercise a high degree of power over the North Sea in general, and, in the case of capital cities specifically, they 'speak' somehow for entire nations. This of course highly efficient, and indeed logical, but it can also have democratic consequences, with growing feelings of disenfranchisement in remote areas especially.



## Continuous infrastructure

Continuous infrastructure (road, rail, electricity...) has gradually developed to connect these central places. Connections are both denser and thicker between central places, while being sparser and thinner in remote territories.



credits: [https://www.glasgowlive.co.uk/coming/article17169233.ece/alternates/s615b/5391371720\\_137c0f0f6b\\_b.jpg](https://www.glasgowlive.co.uk/coming/article17169233.ece/alternates/s615b/5391371720_137c0f0f6b_b.jpg)  
[https://www.visitscotland.com/blog/wp-content/uploads/2016/09/visitscotland\\_31463759347.jpg](https://www.visitscotland.com/blog/wp-content/uploads/2016/09/visitscotland_31463759347.jpg)

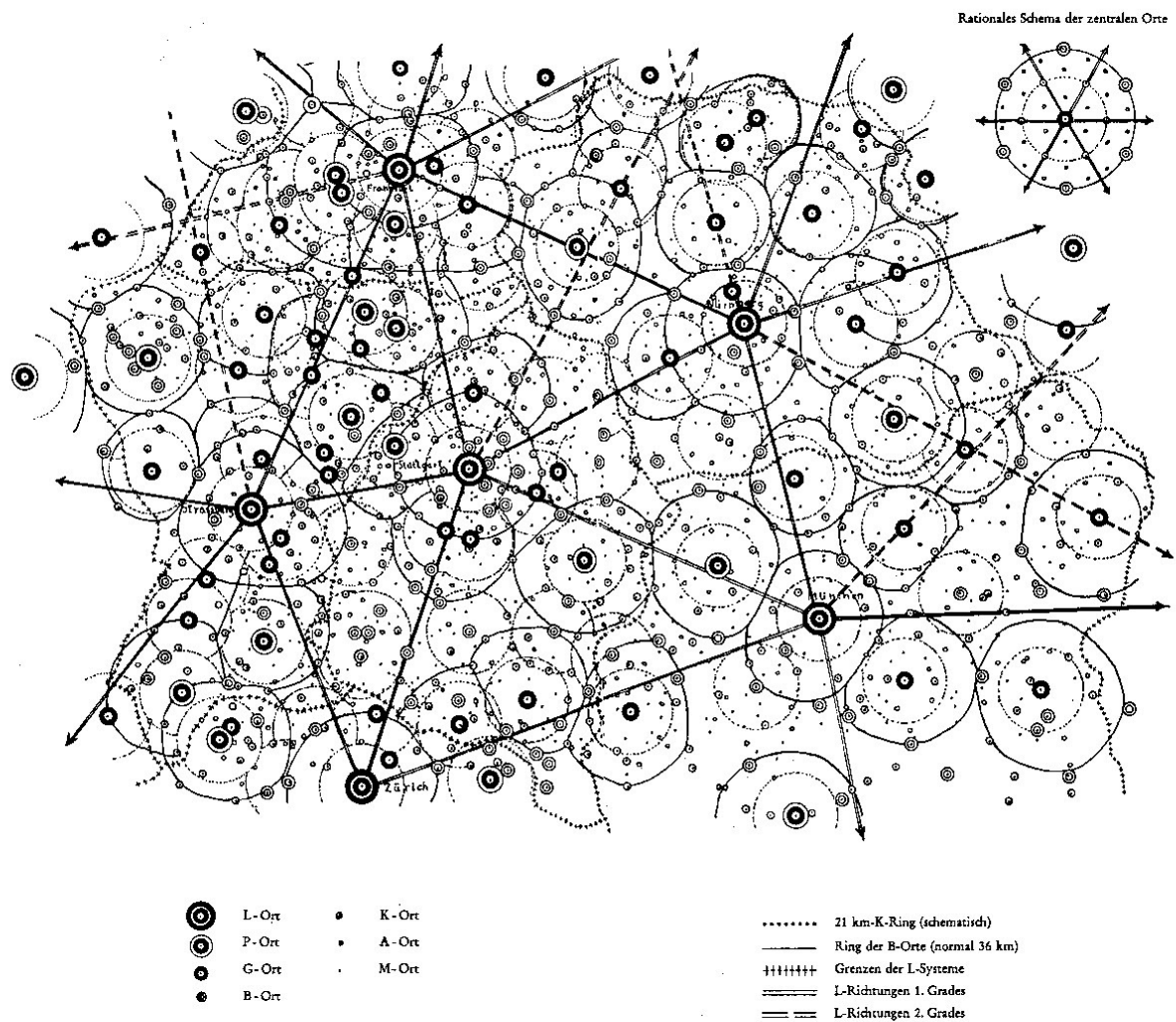




## Central Place Theory

This mapping connects well with Walter Christaller's 'Central Place Theory', which places central importance on the literal connection between city and surrounding territory. Globalisation seeks to reduce the space (by reducing time) between important city/territory nodes, which in turn becomes the destruction of the territory. The gravitational pull of the city attracts and engulfs the territory.

This hard infrastructural logic entails a loss of the romantic and romanticised value of the territory. But romanticism alone will not protect/future-proof the unique way of life in remote territories.



**Karte 4**  
Das System der zentralen Orte in Süddeutschland



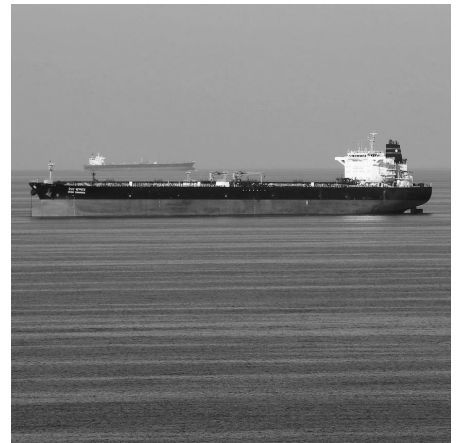
## **Mining of the territory**

As illustrated in ‘The Hunger Games’ scenario developed during ‘The Oceanic Project’ groupwork phase, central cities are currently exploiting the territory for resources. Around the North Sea, the oil industry is a particularly good example of this phenomenon, with ‘invisible’ oil rigs out at sea mining and territorialising the remote seascape to serve the needs of central places. In doing so, these impositions quash the identity and value of the territory as an entity in and of itself.



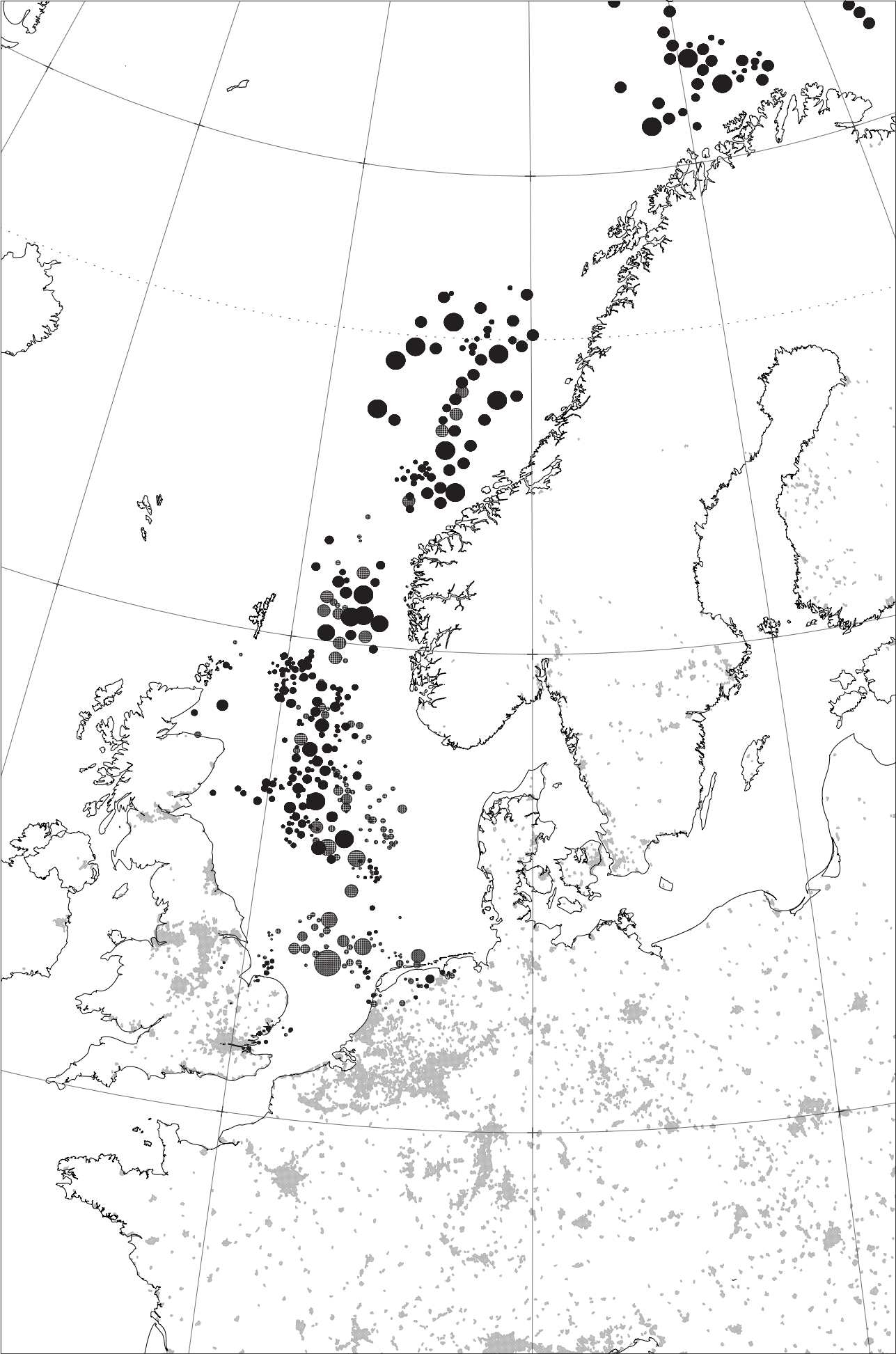
## Energy and the North Sea | Oil

Of key importance in the scenario building in the group phase was consideration of possible energy sources for the powering of human societies around the North Sea. At present, there is a high dependency on oil. This oil dependency was preceded by coal dependency, and prior to this a wood dependency. Of course, each of these energy transitions has been from one fuel to the next. Fuels are energy-storage mediums requiring minimal connecting infrastructure between the point of mining/harvesting (e.g. an oil rig) and the point of delivery (e.g. a refinery or a power station). This has promoted a high degree of centralisation.



credits: <https://www.bna.de/bilder/2017/10/16/9045583/293544463-wintershall-berge-norwegen-PZKW4Tpef.jpg>  
<https://static.independent.co.uk/s3fs-public/thumbnails/image/2019/07/10/12/Iran-tanker.jpg>





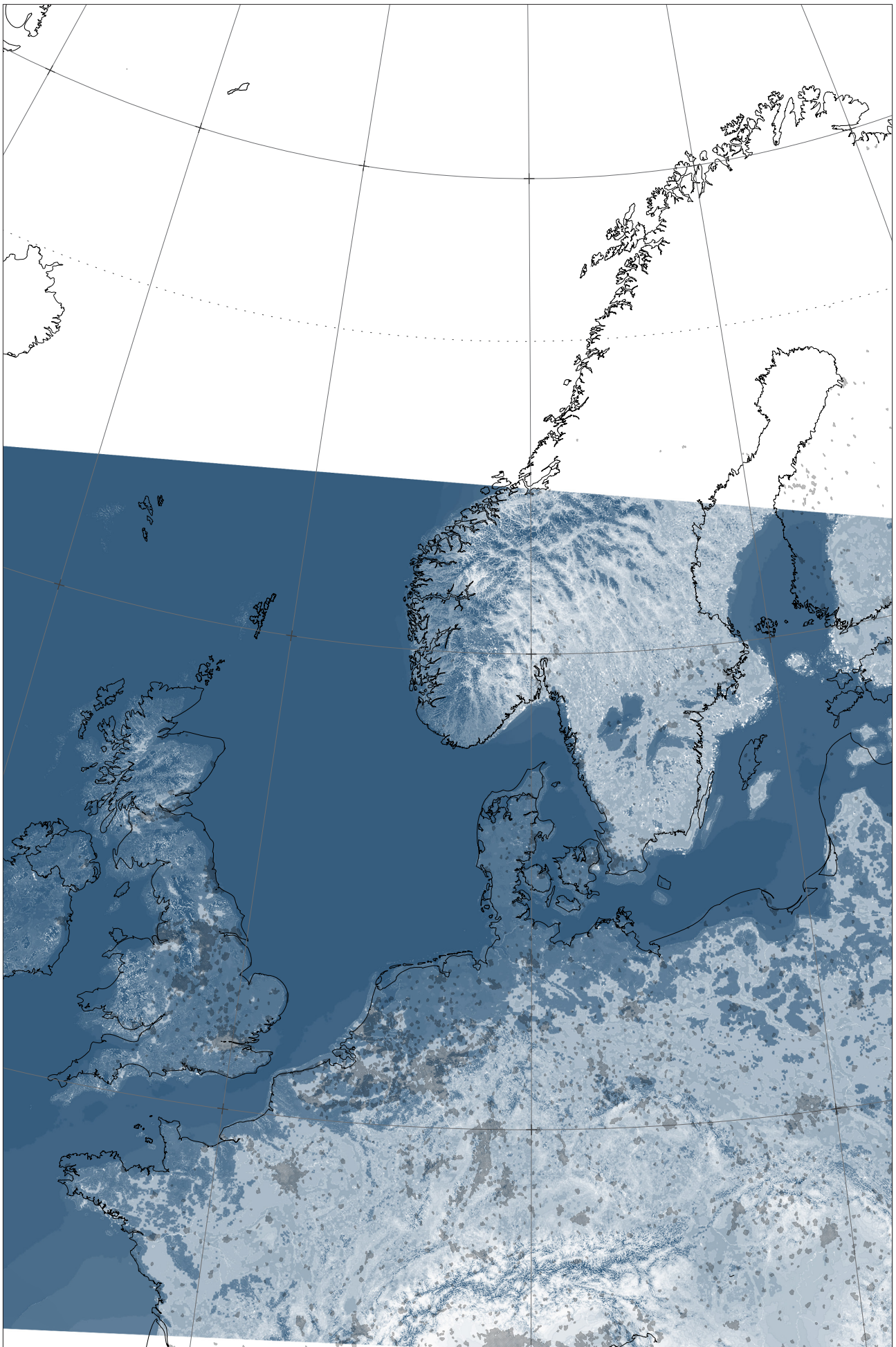
adapted from: Transitional Territories Studio. *North Sea Atlas*, 2018-2019. TU Delft, 2019. p. 56-57

## Energy and the North Sea | Wind

Of course, the Paris Climate Agreement sets out the ambition for that primary energy source to become renewables, which generate electricity. Electricity is an energy-transmitting medium requiring continuous infrastructure between the point of harvesting and of delivery- often in very different locations. Indeed, there is a serious disconnect between urban centres and the most renewable energy-rich areas of the North Sea. Indeed, wind is the most important renewable to the North Sea countries, but the best locations for generation are generally out at sea or in remote, coastal locations. This might at first seem like the same situation as we saw with oil, but the crucial difference is the need for continuous connection between the wind turbines and the cities.



credits: [https://www.businessforscotland.com/wp-content/uploads/2019/07/Ardrossan\\_Scotland\\_United\\_Kingdom.jpg](https://www.businessforscotland.com/wp-content/uploads/2019/07/Ardrossan_Scotland_United_Kingdom.jpg)  
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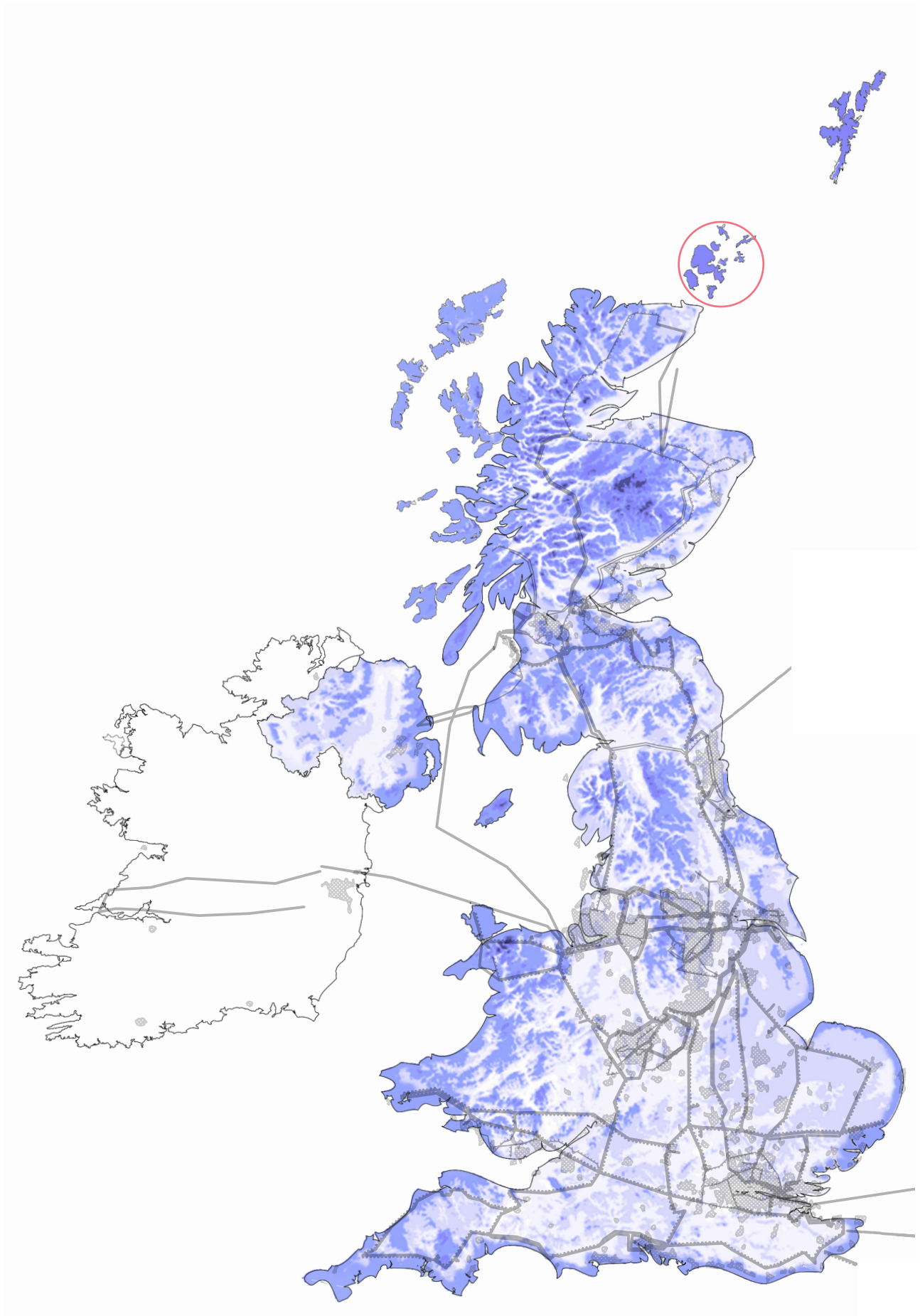
credits: Natural Earth Data, retrieved from [www.naturalearthdata.com/downloads/10m-cultural-vectors/](https://www.naturalearthdata.com/downloads/10m-cultural-vectors/), on 23.10.2019.



## Energy and the North Sea | Wind

The problem becomes very apparent when we zoom in a little to focus on a single country—in this case the UK (my home country). Here, we begin to see that there is almost an inverse relationship between the location of cities and the windiest, most renewable energy-rich locations. In addition, the high voltage networks (which were designed to transmit electricity generated in centralised power stations to centralised cities) connect those cities, but generally are not connected to those remote, renewable energy-rich locations. It begins to become clear that aspirations for a renewable energy future are more territory-specific than past/current energy sources. Consequently, it seems that a complete or near complete transition to renewable energy has spatial consequences.

- > 25 knots average windspeed
- 20-25 knots average windspeed
- 15-20 knots average windspeed
- 10-15 knots average windspeed
- 8-10 knots average windspeed
- 6-8 knots average windspeed
- < 6 knots average windspeed
- ▨ urban areas
- ⚡ high voltage infrastructure
- remote territory



adapted from: <https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/wind/windiest-place-in-uk>  
Natural Earth Data, retrieved from [www.naturalearthdata.com/downloads/10m-cultural-vectors/](https://www.naturalearthdata.com/downloads/10m-cultural-vectors/), on 23.10.2019.

## Limitations of centralised networks

Of course, remote territories do not only have a lower density of networks, but the infrastructure itself is also thinner. This means that electricity cables have a limited transmitting capacity, and this has consequences: for example, the Orkney archipelago off the north coast of Scotland already generates over 130% of its electricity needs through renewables, but it is unable to export the surplus because the undersea cable cannot cope. This means that on windy days, the turbines are shut off- hardly conducive to North Sea countries' ambitions for a complete transition to renewable energy.

Of course, it could be (and is being) proposed to upgrade all the cables, but the cost is huge. Just the North Sea Link alone (which is due to be completed in 2021 and will connect Norway and the UK) is expected to cost 2 billion euros by the time it has been completed. The sheer number of cables required (material and financial cost), the need for maintenance, and the potential issues of NIMBYism that may arise would seem to suggest that the complete transformation of North Sea electricity infrastructure is ambitious at best, and near impossible at worst.

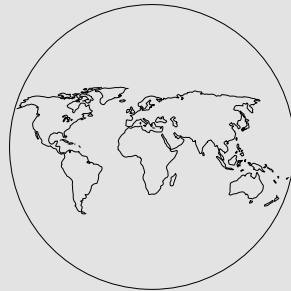
So... how to overcome the problem?







## **‘Industrial Territorialism’**







## Industrial Territorialism

The energy transition in question is crucially different from previous global transitions (i.e. the transition from wood>coal>oil and gas) because it is a transition away from energy storage mediums (fuels) towards an energy transmitting medium (electricity-which requires additional infrastructure). However, there have existed examples of industries and communities which relied upon an energy transmitting medium rather than a fuel: *'falling water is the oldest source of industrial power other than muscle.'* Such an enhanced connection between industry and territory I term 'industrial territorialism'. This forms a counterpoint to the term 'industrial urbanism', coined by Tali Hatuka in her 2017 paper 'Industrial Urbanism: Typologies, Concepts and Prospects'.

Indeed, there have been several such examples of water-powered industrial complexes, as well as other industries (such as charcoal burning metal smelters [harnessed locally available timber], or whisky distilleries [harnessed local water and peat supplies]) which are connected primarily to the territory and not to the city. This offers the possibility for comparison.

I identified how from a brief period near the beginning of the industrialised era there arose examples of industrial architecture which were specifically connected with their territory because the energy harnessed could not be conveniently translocated to the nearest city. Prime examples researched and compared from this period include New Lanark Mills, Aberfeldy Whisky Distillery, Bonawe Ironworks, and the Lochaber Smelter. Further industrial examples which have by choice been located in a specific territory (rather than the city) in the more modern world are also studied.

Methodologically speaking, I have chosen such a context-led research method because of a desire to engage with very specific territories and to propose a project that is optimistic yet nevertheless anchored in the 'real' world. I argue that despite many of my examples being separated from today's world by time, they are in fact the best 'precedents' for what the role of architecture can be in and beyond a transition to Energy at the End of the World. By assembling the results in a matrix, they give an insight into successes and failures of different strategies and relationships between industry, community, territory and the city which can be used to help shape a project brief.

There are limited examples of this industrial phenomenon, and the information about each is variable. Thus, the comparative method appears to me essential to construct a dialogue between natural scientists, engineers and social scientists about how an energy transition might (and I believe should) enable the territory to exist in symbiosis with the city - held in place by the centrifugal force of industrial territorialism which counteracts the gravitational pull of globalised urbanism.

## Industrial Territorialism- 1

### New Lanark Mills | Scotland

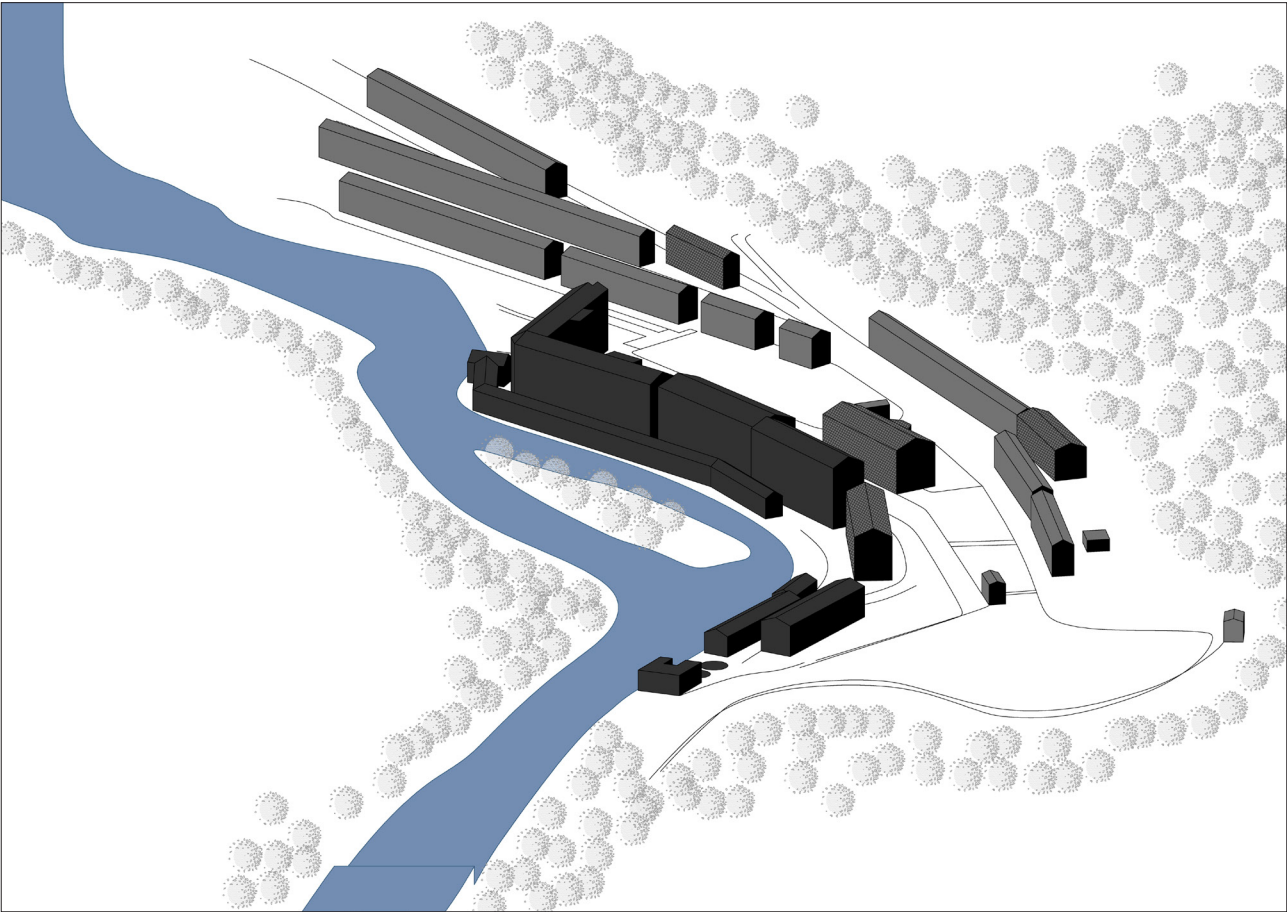
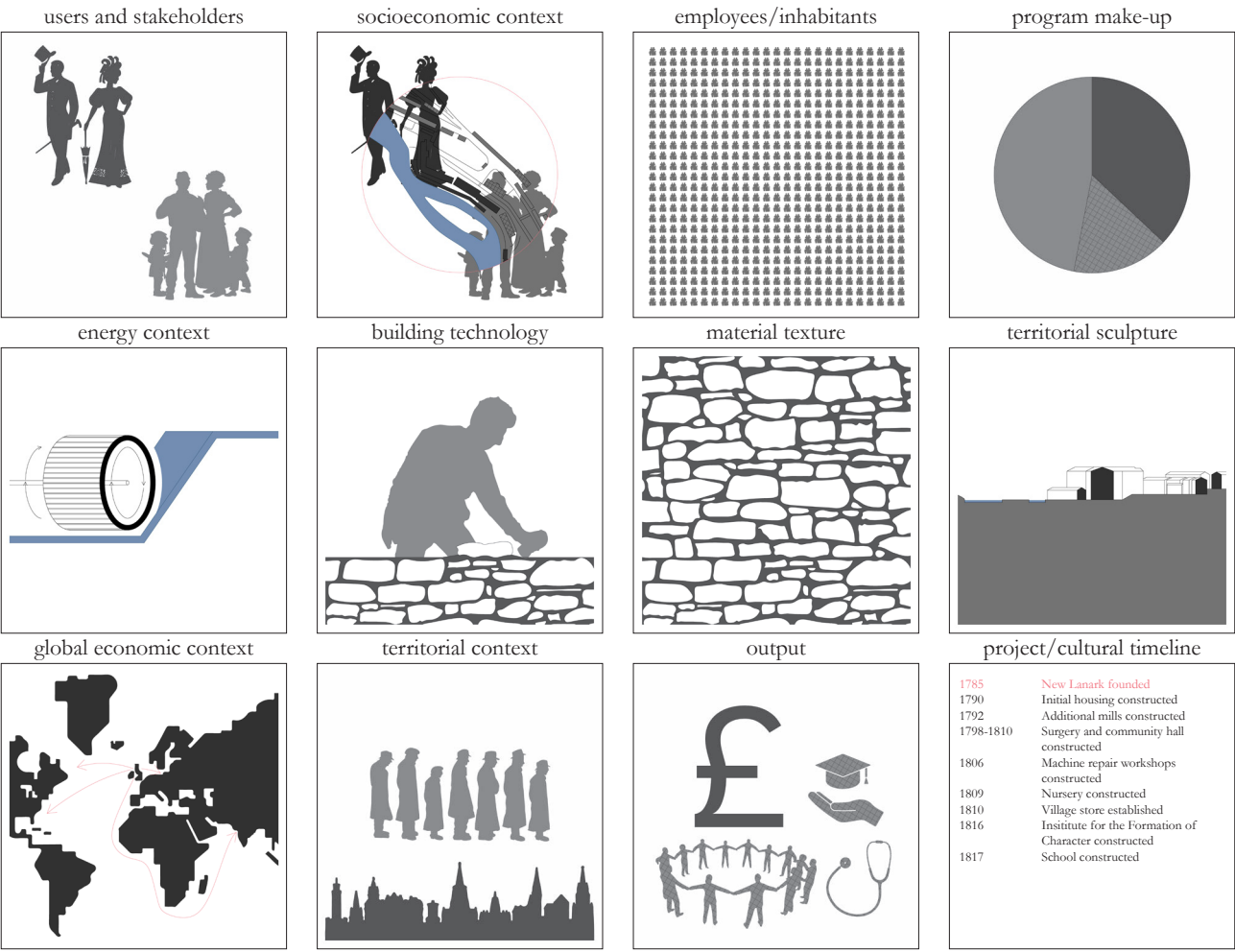
New Lanark is an excellent example of Industrial Territorialism. The industrial village was built to take advantage of the only waterfalls on the River Clyde and use the power of the falling water to turn water wheels and power cotton mills. It was founded in 1786 and operated for almost 200 years- until 1968. It has since become a major tourist attraction and a UNESCO World Heritage Site.

New Lanark is particularly notable for its time under the leadership of Robert Owen, a businessman, philanthropist and social reformer. A Utopian Socialist, Owen believed that productivity and welfare of workers could (and indeed should) coexist. He sought to improve the lives of workers and their families, opening a school, nursery, and an Institute for the Formation of Character, as well as limiting working hours and organising community events. In its time, New Lanark came to be admired throughout Europe as a healthy and clean industrial site.



credits: <https://www.myhotelbreak.com/blog/wp-content/uploads/2017/08/photo-19-08-2017-17-48-41-1.jpg>





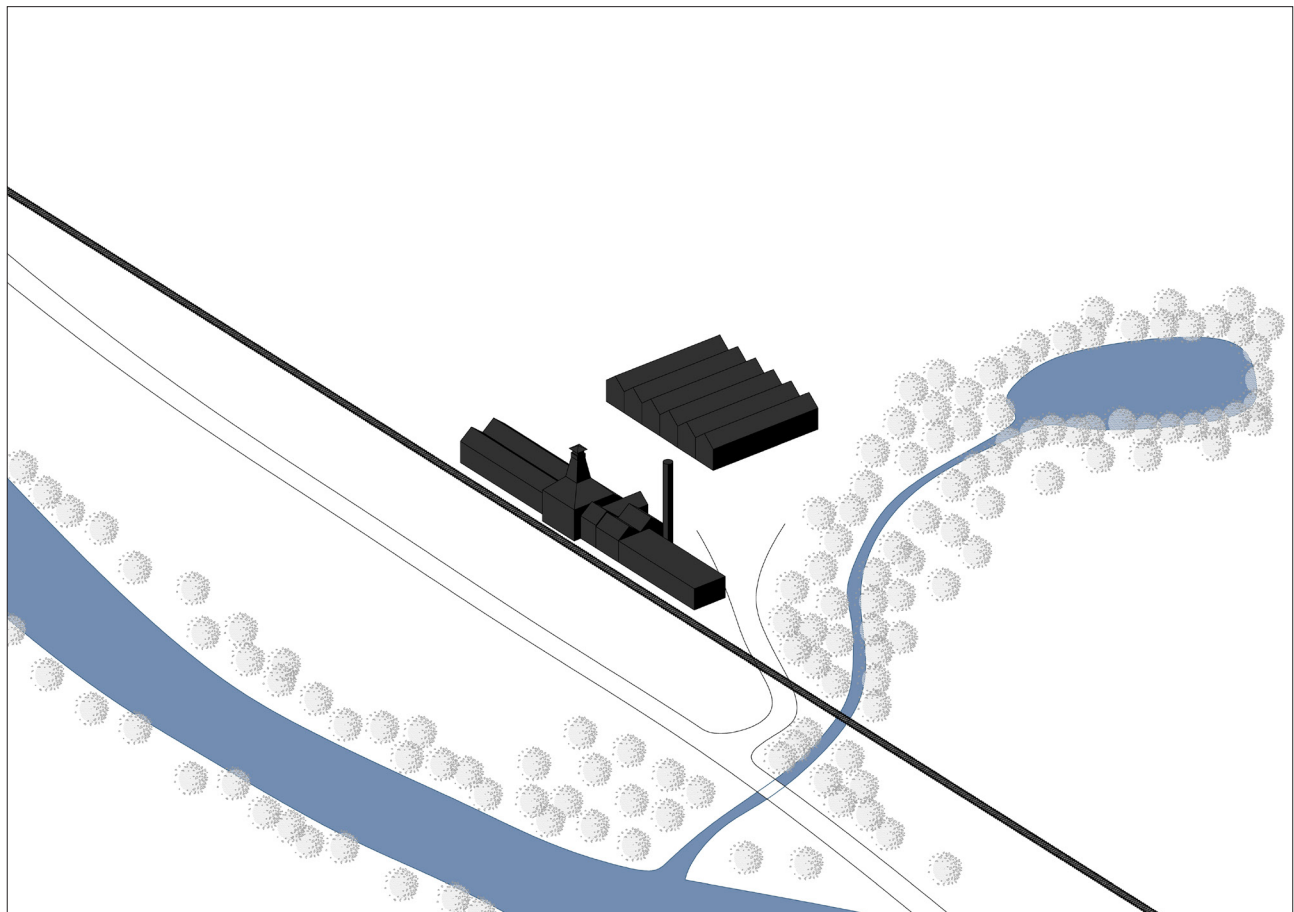
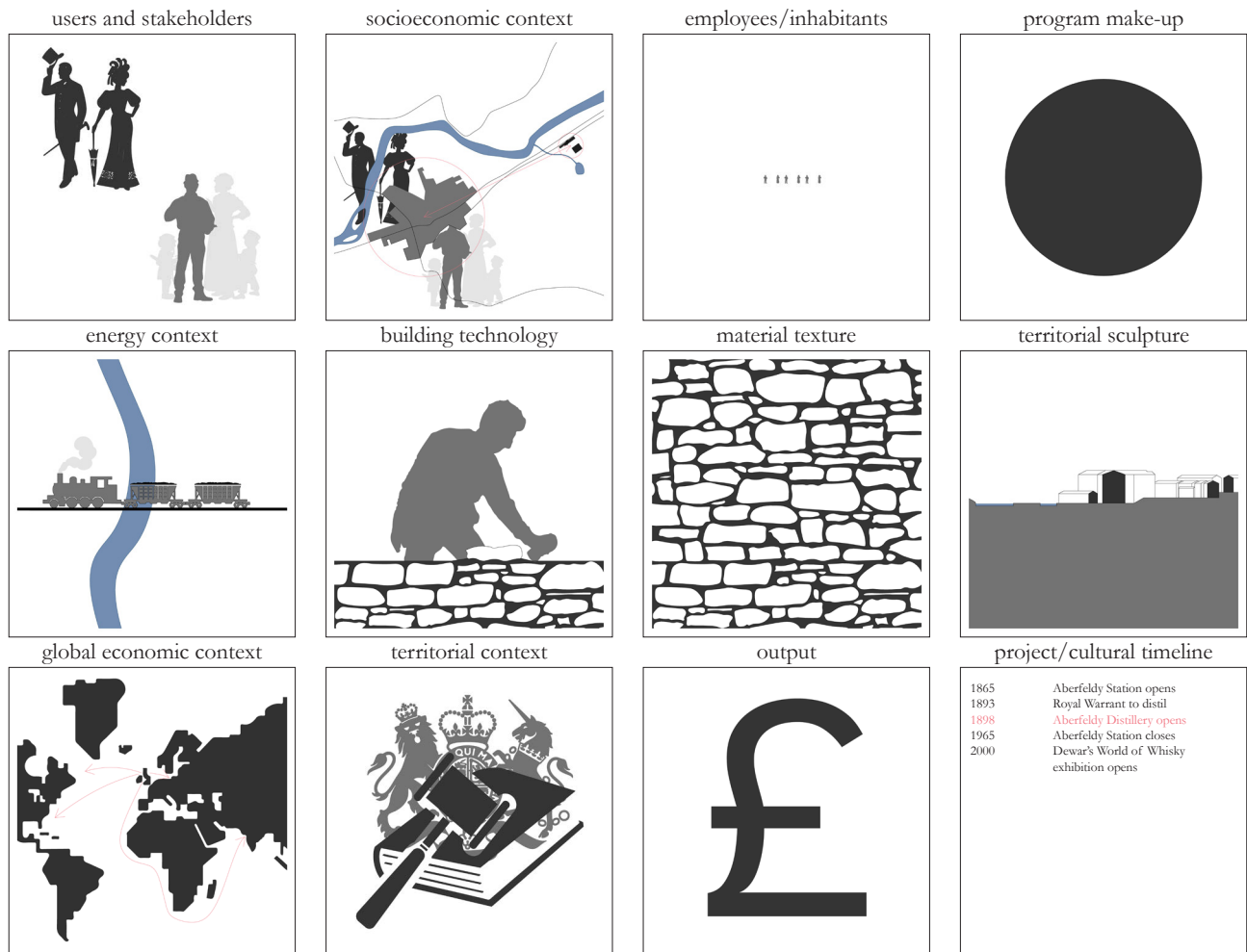
## Industrial Territorialism- 2

### Aberfeldy Distillery | Scotland

Aberfeldy Distillery is a whisky distillery built on the banks of the river Tay and drawing water from the Pitlie Burn. Whisky distilling had been practiced illegally in the area for centuries, but with the granting of a royal warrant in 1893, distilling became legal. The distillery was opened within a few years to take advantage of the clean waters from the burn and from the transport connections via the Aberfeldy railway station, established some 40 years earlier. This allowed the transport of fuel and barley to the distillery and allowed the product to be transported away to customers. The founder John Dewar was likely also drawn to the site as it lies within a few miles of his childhood home. Aberfeldy continues to distil to this day.



credits: [https://www.whisky.com/fileadmin/\\_processed\\_/7/2/csm\\_Aberfeldy\\_Ansenaufn\\_4451901f-138d29ebb42d0537f74a38ac\\_552a9c2c6d.jpg](https://www.whisky.com/fileadmin/_processed_/7/2/csm_Aberfeldy_Ansenaufn_4451901f-138d29ebb42d0537f74a38ac_552a9c2c6d.jpg)





### Industrial Territorialism- 3

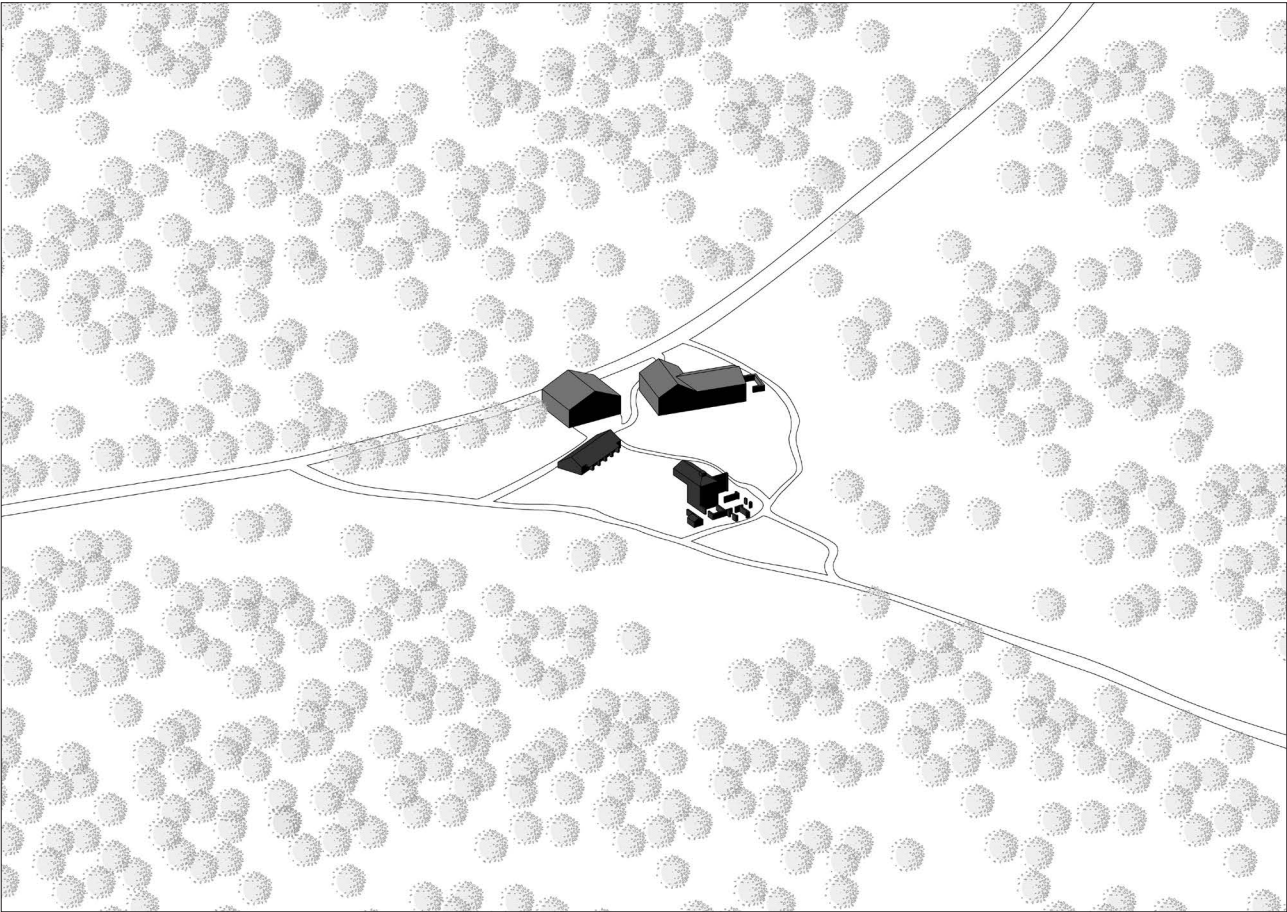
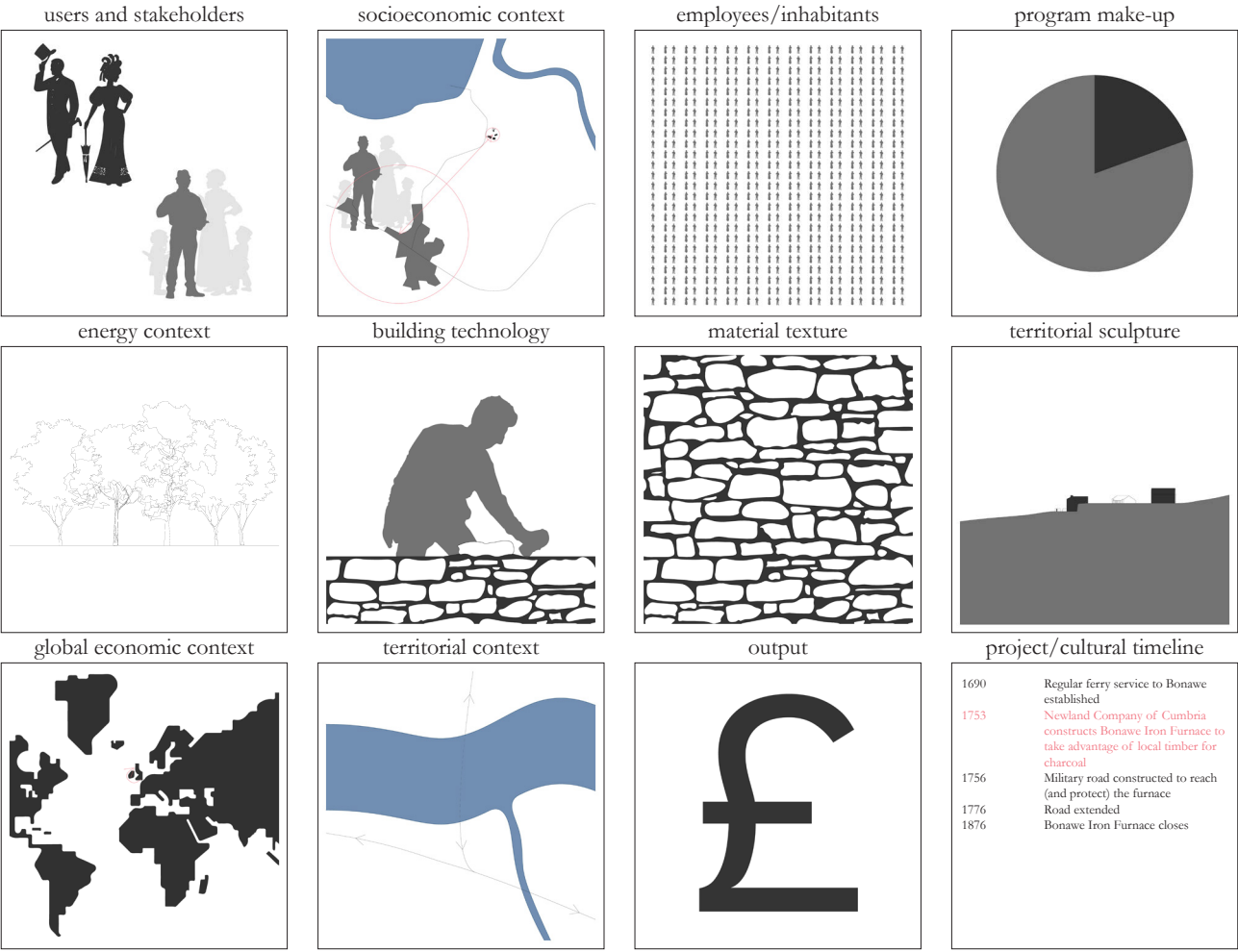
#### Bonawe Iron Furnace | Scotland

Bonawe Iron Furnace is a good example of Industrial Territorialism, built in 1753 by an English company to exploit local wood resources for charcoal when there was no longer enough wood in Cumbria. Industrial Territorialism is particularly prevalent here- the water in the river flowed fast enough to turn a water wheel for mechanical power. The majority of workers were employed in timber collection and charcoal production. The industrial complex closed in 1876 after over one hundred years of operation.

Most of the workers were locals who spoke primarily Gaelic. The relationship between them and the 20 English-speaking workers brought up from Cumbria may have been interesting. The English workers were afforded high quality housing, allotments and grazing privileges as well as schooling for their children.



credits: <https://media-cdn.tripadvisor.com/media/photo-c/2560x500/0f/28/ja/11/the-furnace-and-bellows.jpg>

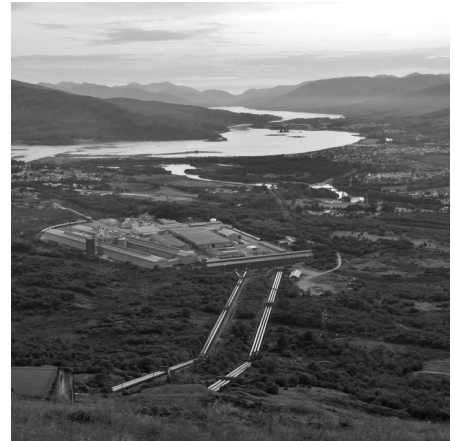


## Industrial Territorialism- 4

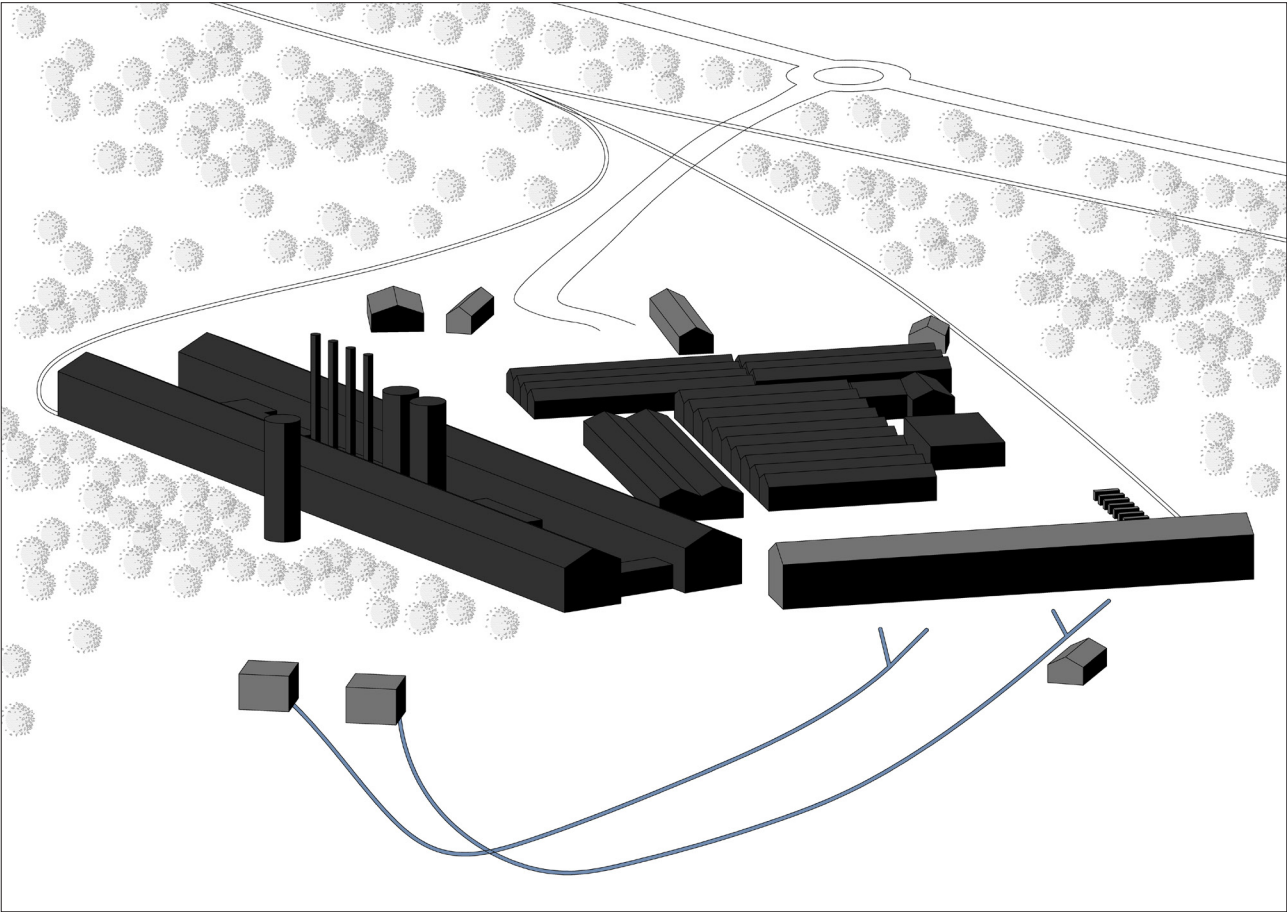
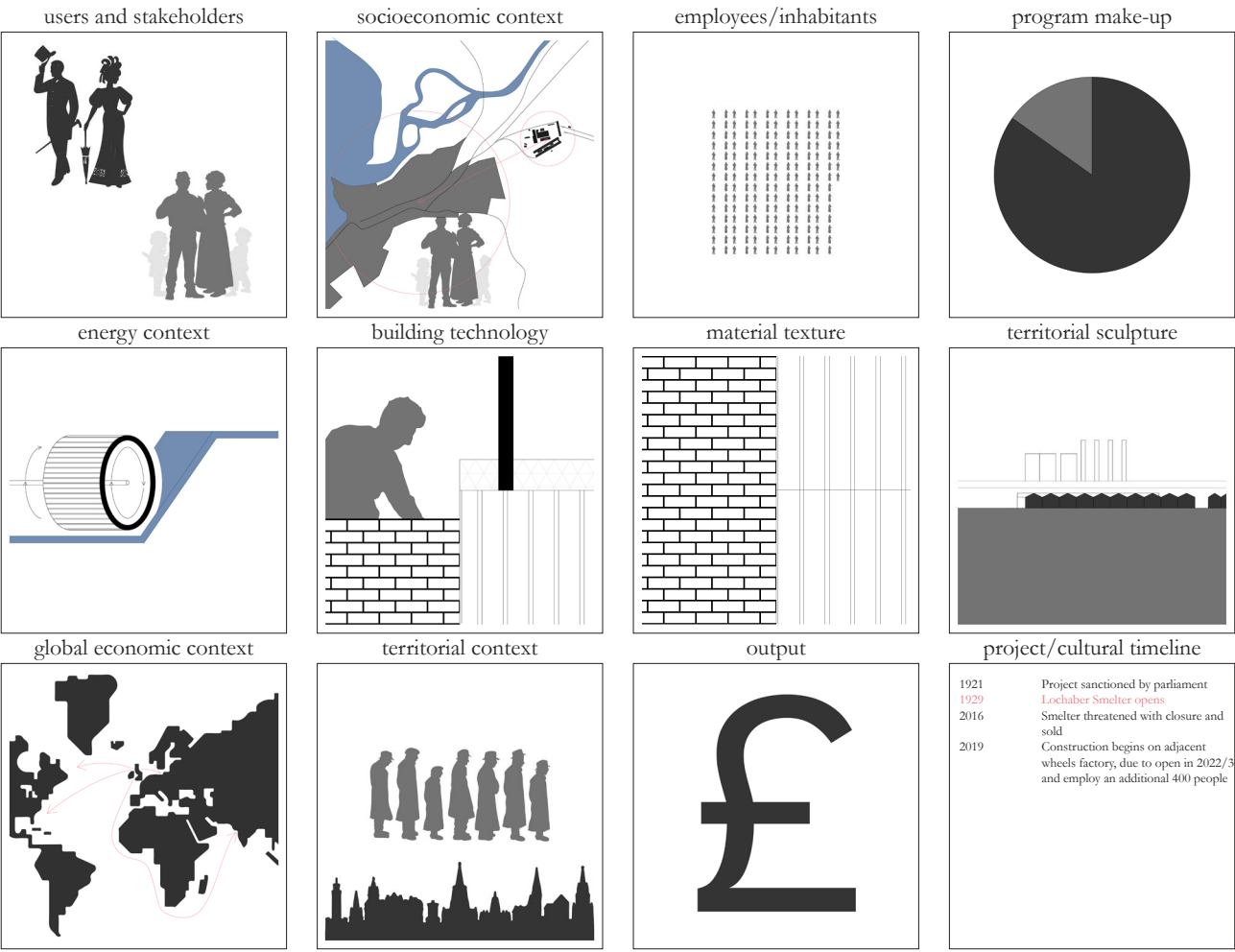
### Lochaber Smelter | Scotland

The Lochaber Aluminium Smelter is a striking example of Industrial Territorialism in the days after cities had already begun to expand dramatically and railways were able to transport coal to fuel factories in those cities. Completed in 1929, it consists of multiple hydroelectric dams and underground tunnels to transfer the water from the shoulders of Ben Nevis (the UK's highest mountain) down to the industrial complex. The hydroelectric scheme generates excess electricity which it sells to the National Grid.

The Lochaber Smelter continues to be one of the largest employers in nearby Fort William, and has stringent safety standards. The plant is a member of the Investors in People NGO, which seeks to improve the quality of the workplace.



credits: [https://s3.geograph.org.uk/geophotos/06/22/70/6227091\\_b29ebb82\\_1024x1024.jpg](https://s3.geograph.org.uk/geophotos/06/22/70/6227091_b29ebb82_1024x1024.jpg)





## Industrial Territorialism- 5

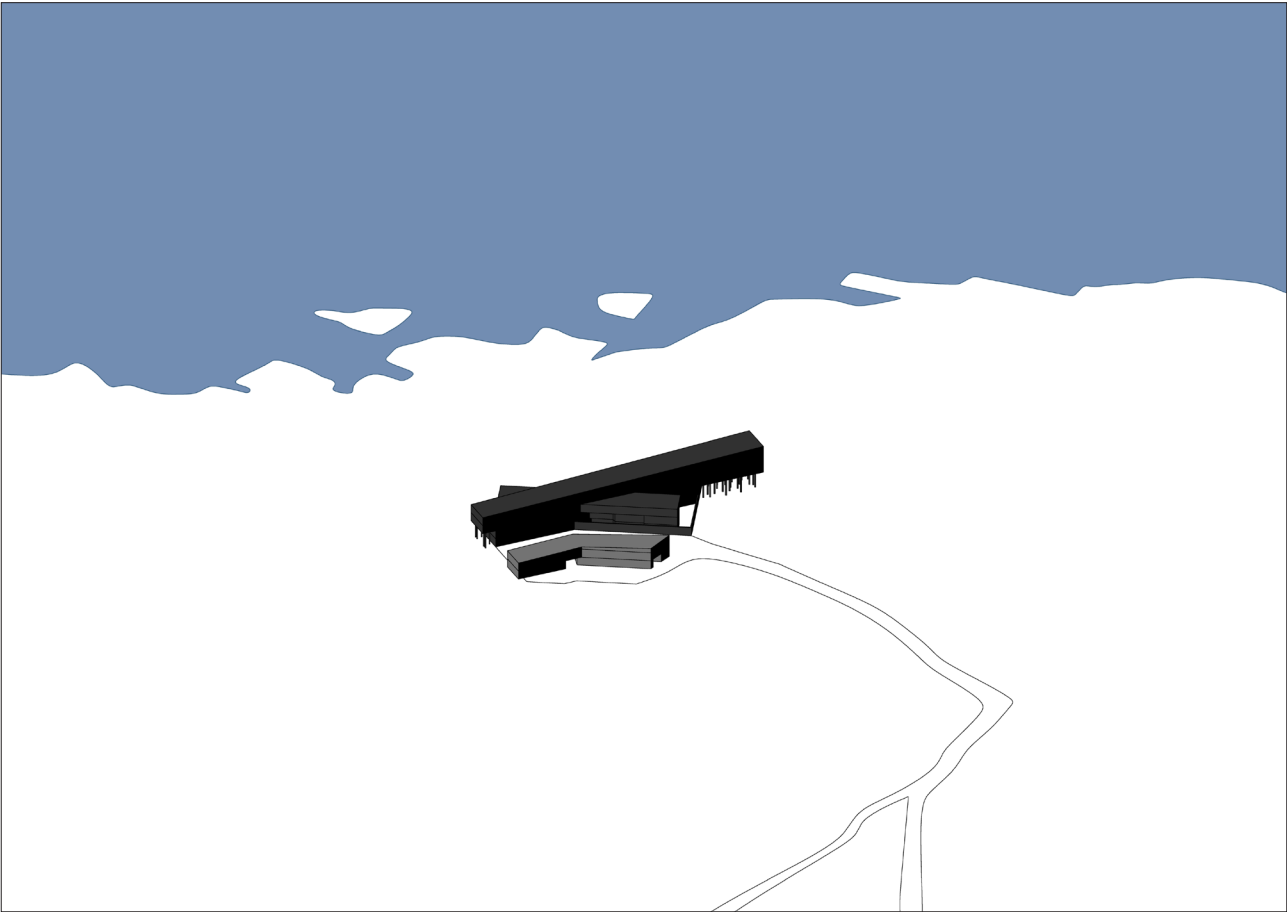
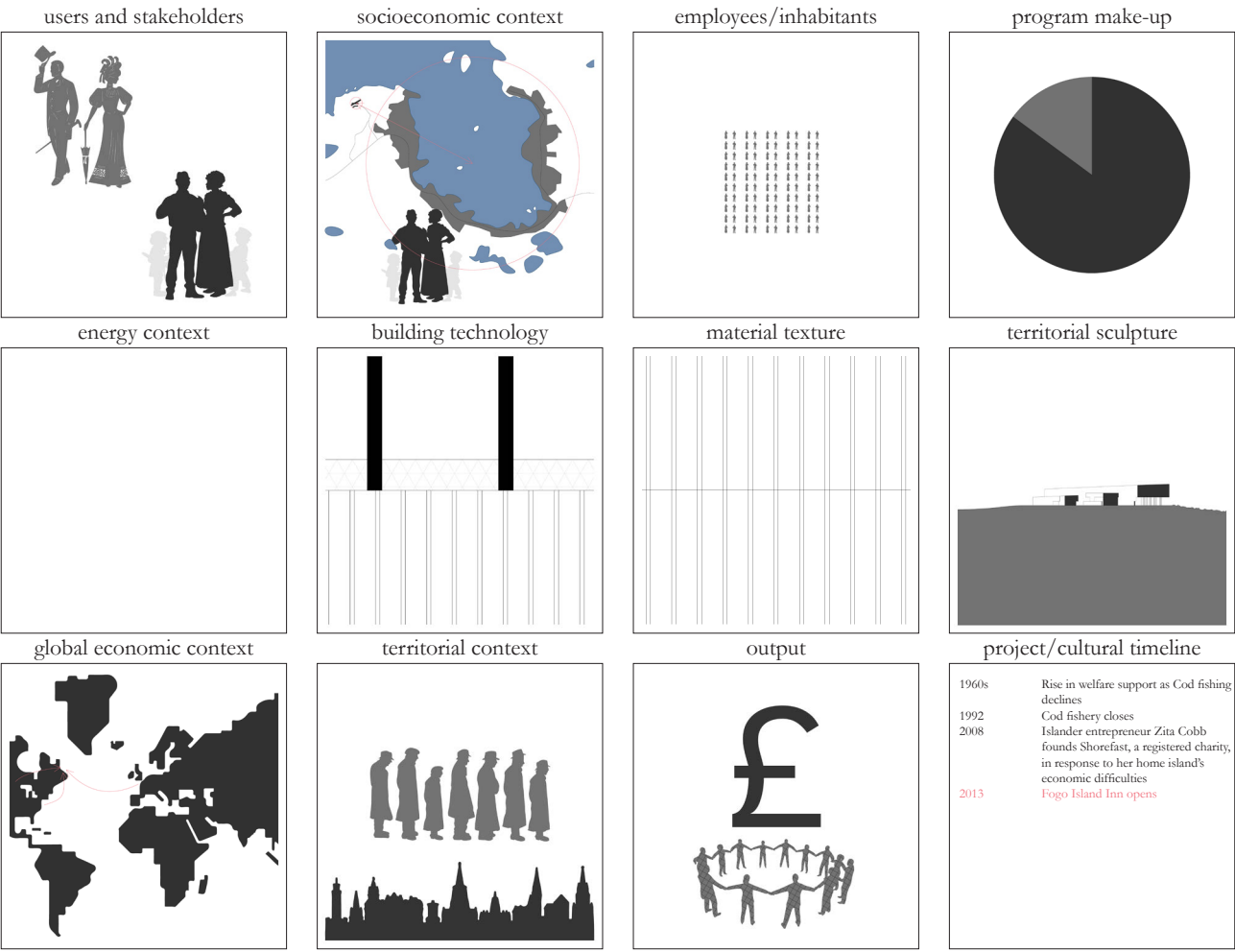
### Fogo Island Inn | Canada

Fogo Island Inn is unique amongst the examples of Industrial Territorialism studied in this research as the only non-producing industry. Instead, the Inn partakes in the tourist industry, but was conceived by Zita Cobb (local islander turned millionaire entrepreneur) as an attempt to save her island's way of life. With the decline of the fishing industry, the population had halved in a matter of decades.

The Inn was established as a social business, funded by a charity established by Cobb and returning all its profits to the island. The Inn employs local people and focuses on bringing local traditions to its guests. It has given rise to a number of smaller but comparable projects around the island.



credits: [https://images.squarespace-cdn.com/content/56c75e764a51d9b5dd8630a9/1524505559938-0\\$OWCI0OTGCVWUA-3POUH/00\\_HERO\\_<terior\\_hero1-main.jpg?content-type=image%a2Fjpeg](https://images.squarespace-cdn.com/content/56c75e764a51d9b5dd8630a9/1524505559938-0$OWCI0OTGCVWUA-3POUH/00_HERO_<terior_hero1-main.jpg?content-type=image%a2Fjpeg)



## Industrial Territorialism- 6 Glenwyvis Distillery | Scotland

The origins of Glenwyvis Distillery share a number of features with the Fogo Island Inn. The brainchild of a local farmer, it was crowdfunded by over 3,000 private investors (the majority of them local) and thus became the world's first entirely community-owned distillery.

It is an example of modern Industrial Territorialism which seeks to relate to the history and place while bringing economic benefit to a rural area. It is also an example of Industrial Territorialism in terms of energy consumption, with all of its energy coming from its own wind turbine, hydroelectric scheme, photovoltaic panels and a biomass boiler. The distillery is therefore entirely off-grid.

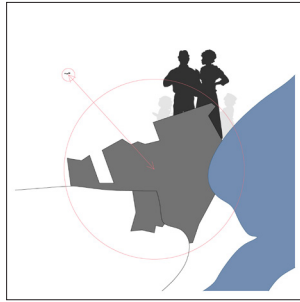


credits: [https://blackislelarder.org/userfiles/image/suppliers-retailers/breweries-distilleries/\\_large/glenwyvis5-square.jpg](https://blackislelarder.org/userfiles/image/suppliers-retailers/breweries-distilleries/_large/glenwyvis5-square.jpg)

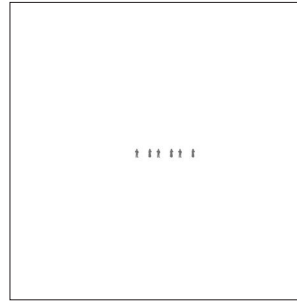
users and stakeholders



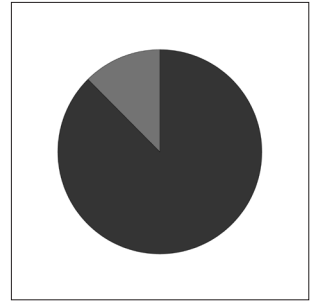
socioeconomic context



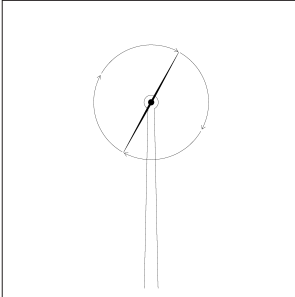
employees/inhabitants



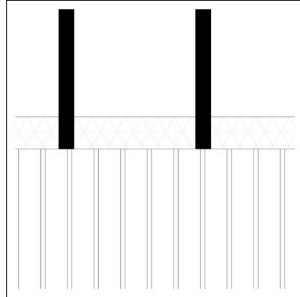
program make-up



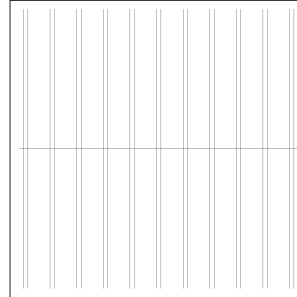
energy context



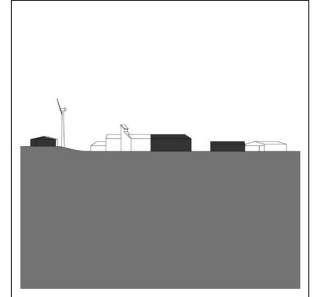
building technology



material texture



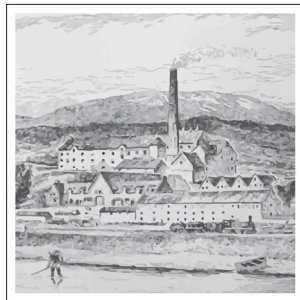
territorial sculpture



global economic context



territorial context

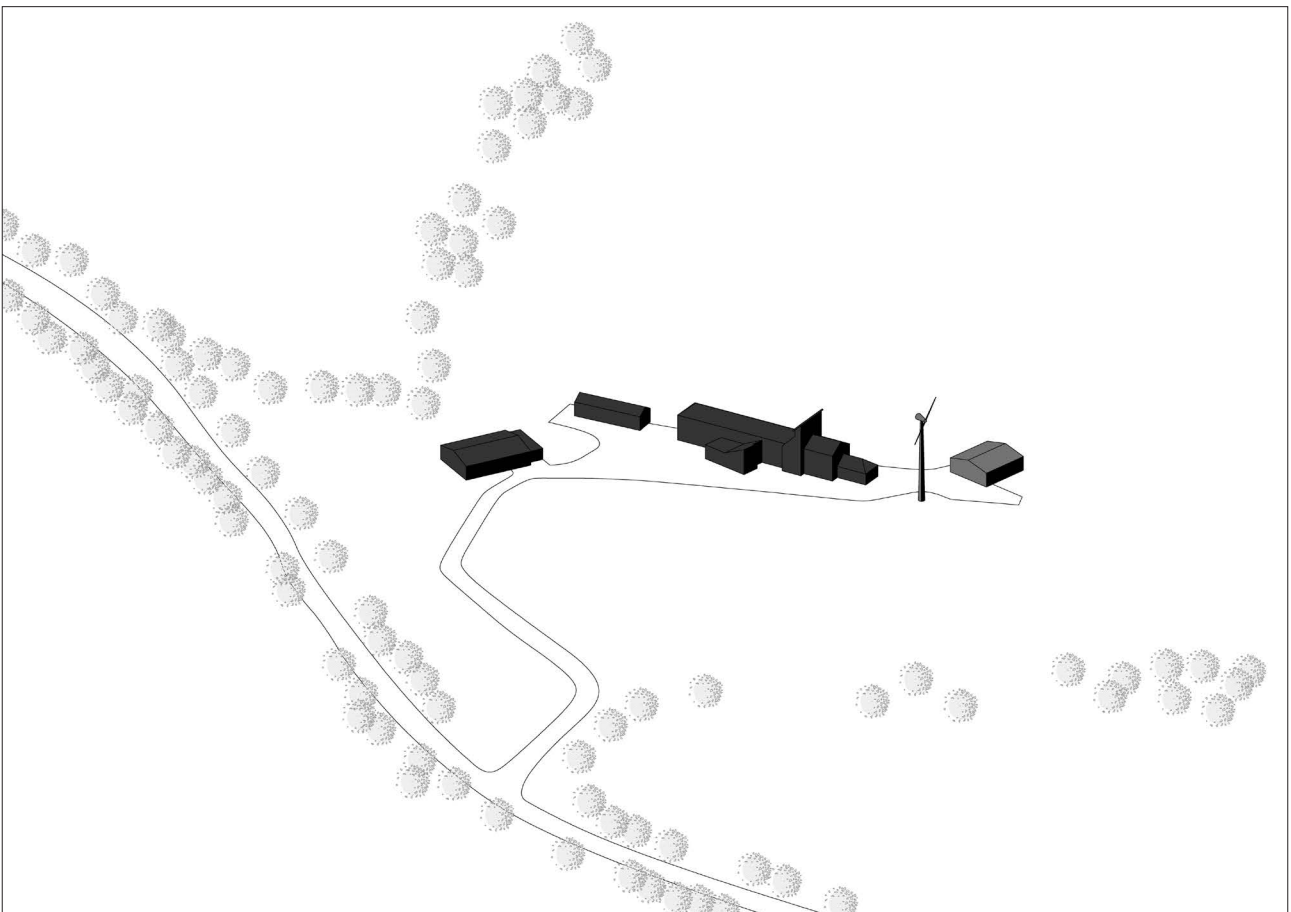


output



project/cultural timeline

1690	Distilling established
1879	Ben Wyvis Distillery opens
1896	Glenskiach Distillery opens
1926	Both distilleries close
1965	Ben Wyvis reopens
1973	Ben Wyvis closes
2015-2016	Glenwyvis established and £2.6 million raised locally. Opens in 2017
2018	Distilling begins





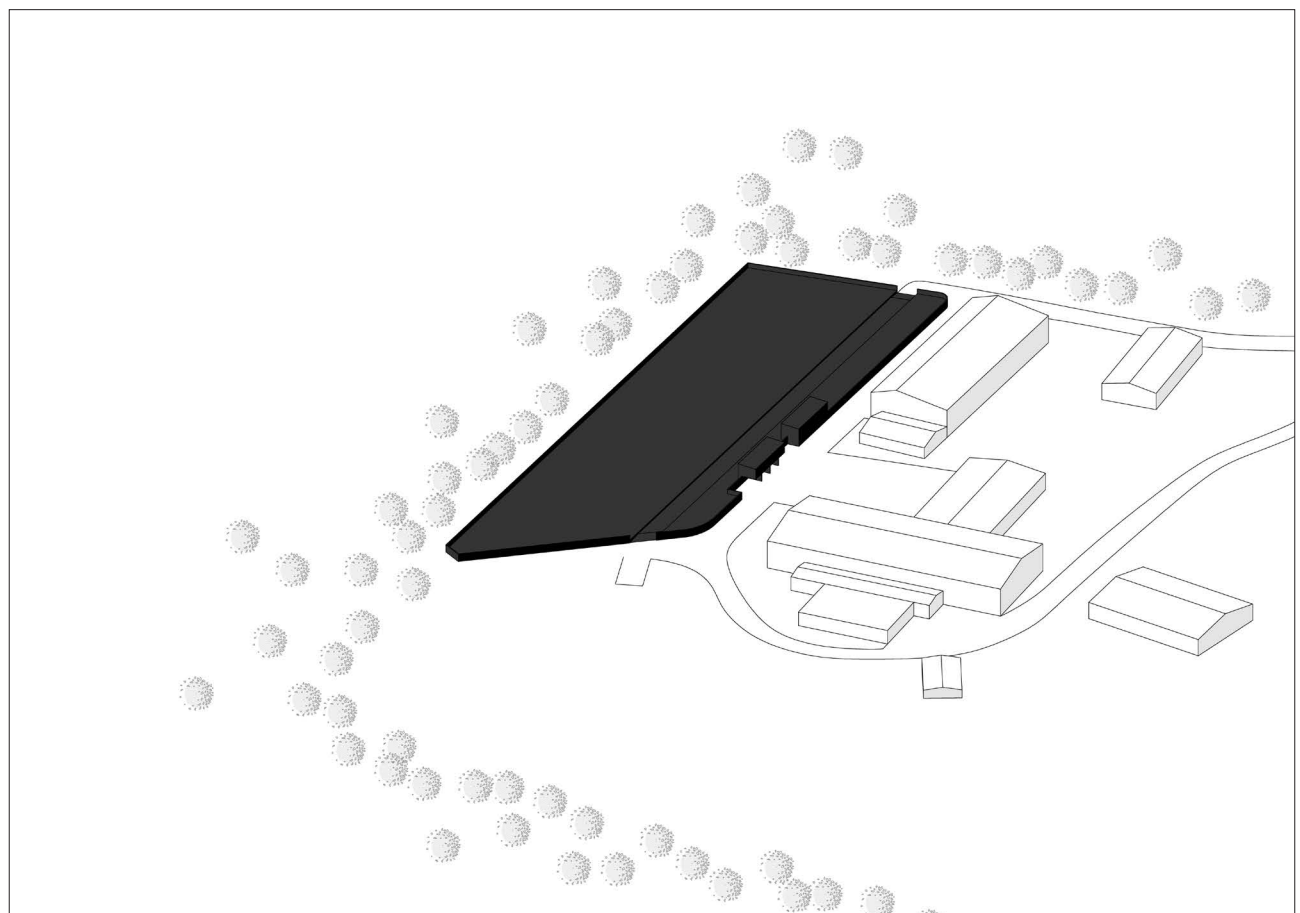
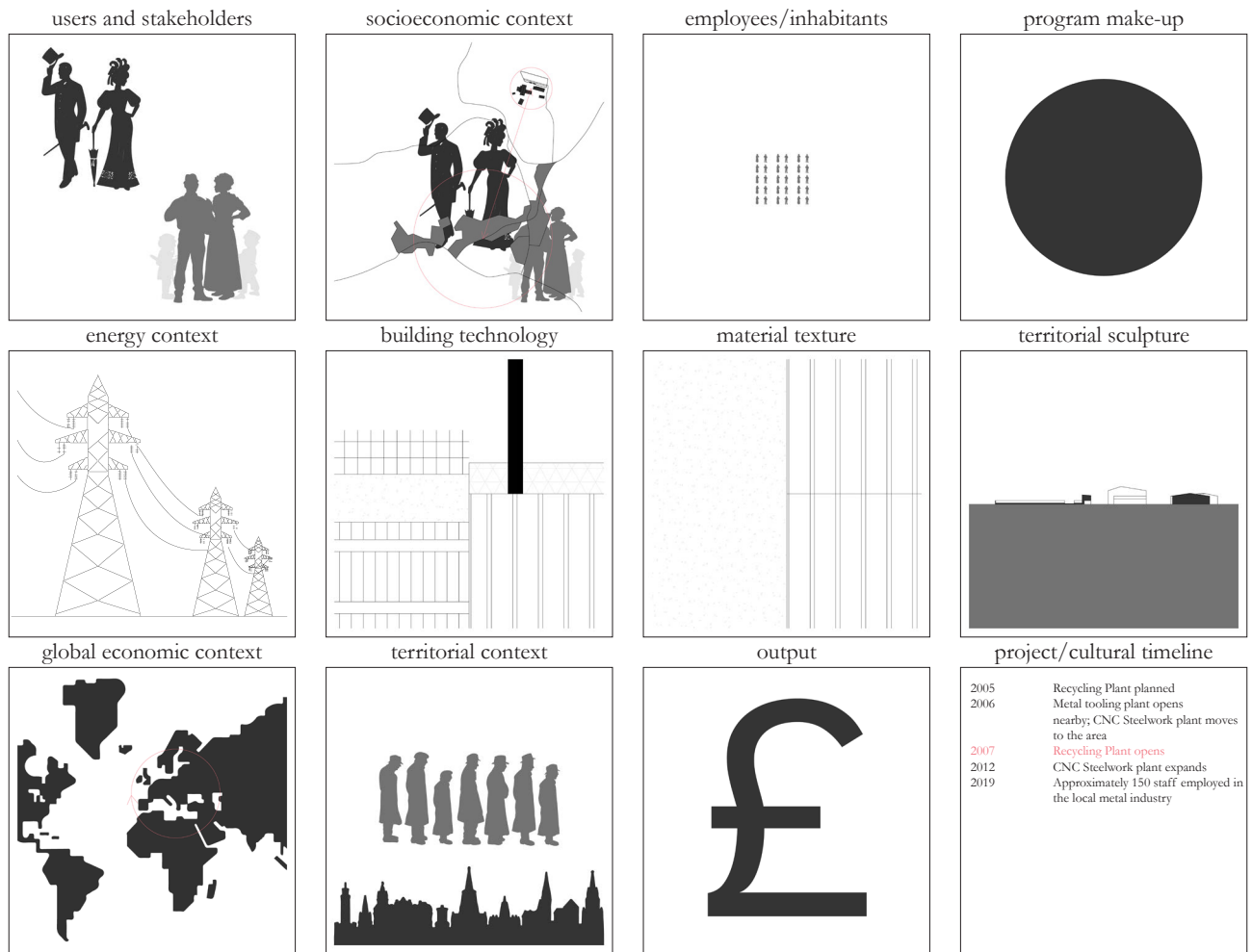
## Industrial Territorialism- 7

### Pivka Recycling Plant | Slovenia

The Pivka metal recycling plant is an unassuming yet delicate example of Industrial Territorialism. The plant accrues, separates and then recycles a range of metals, with the entire facility raised upon a plinth and with the waste metal stored behind a continuous wall. to prevent contamination of the surrounding site. Located close to an electricity substation, the plant uses electricity from the national grid but I have not been able to ascertain exactly why the project came to be located where it is. However, it is clear that since the planning and opening of the recycling plant, a number of metal tooling industries have sprung up around it to take advantage of the nearby recycled metal.

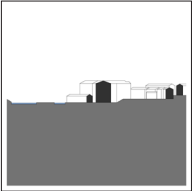



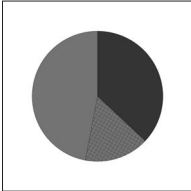
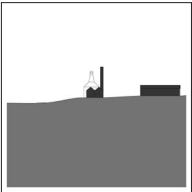



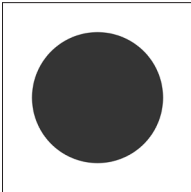
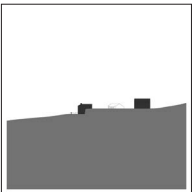

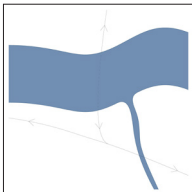

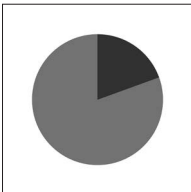
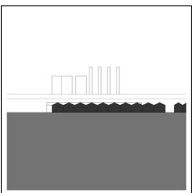

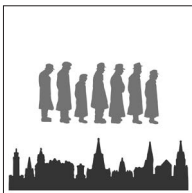

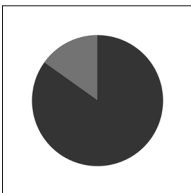
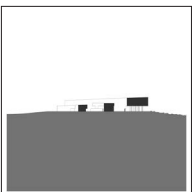

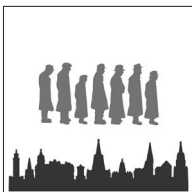

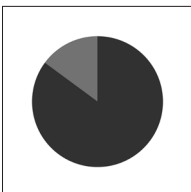
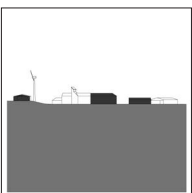

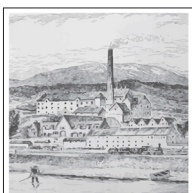

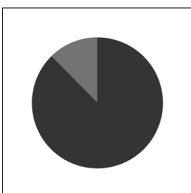
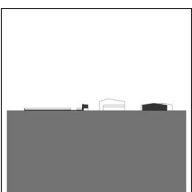


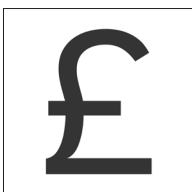
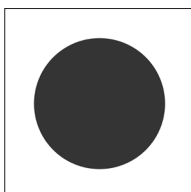


credits: <https://images.adsttc.com/media/images/5007/13d8/28ba/0d41/4800/0e62/newsletter/stringio.jpg?1414481121>



Matrix

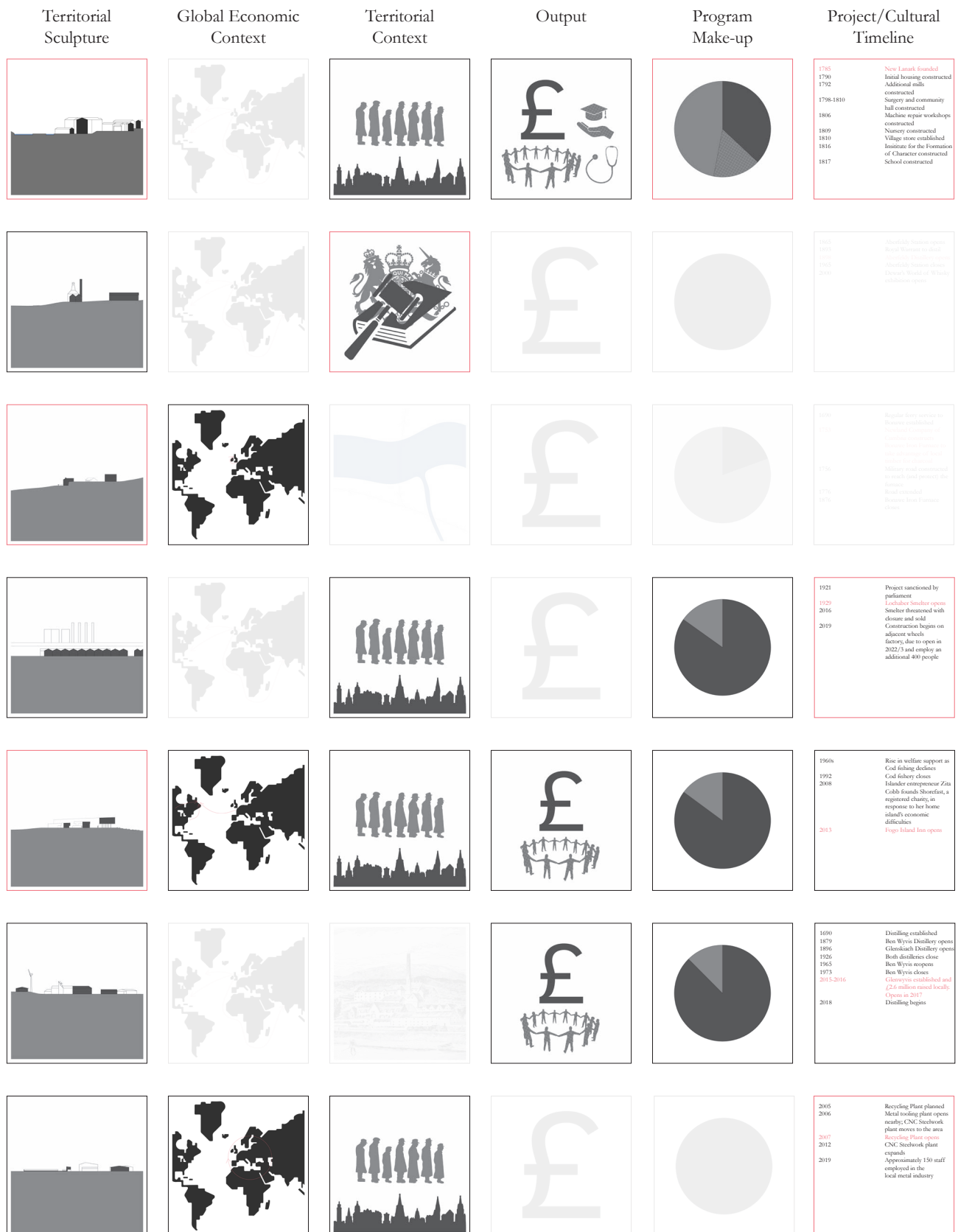
	Users and Stakeholders	Employees/ Inhabitants	Socioeconomic Context	Building Technology	Material Texture	Energy Context
New Lanark Mills						
Aberfeldy Distillery						
Bonawe Furnace						
Lochaber Smelter						
Fogo Island Inn						
Glenwyvis Distillery						
Pivka Recycling						

Territorial Sculpture	Global Economic Context	Territorial Context	Output	Program Make-up	Project/Cultural Timeline
					<div><div>1785</div><div>New Laxark founded</div></div> <div><div>1790</div><div>Initial housing constructed</div></div> <div><div>1792</div><div>Additional mills constructed</div></div> <div><div>1798-1810</div><div>Surgery and community hall constructed</div></div> <div><div>1806</div><div>Machine repair workshops constructed</div></div> <div><div>1809</div><div>Nursery constructed</div></div> <div><div>1810</div><div>Village store established</div></div> <div><div>1816</div><div>Institute for the Formation of Character constructed</div></div> <div><div>1817</div><div>School constructed</div></div>
					<div><div>1865</div><div>Aberfeldy Station opens</div></div> <div><div>1895</div><div>Royal Warrant to distil</div></div> <div><div>1938</div><div>Aberfeldy Distillery opens</div></div> <div><div>1965</div><div>Aberfeldy Station closes</div></div> <div><div>2000</div><div>Debut of World of Whisky exhibition opens</div></div>
					<div><div>1690</div><div>Regular ferry service to Bonaire established</div></div> <div><div>1753</div><div>Newland Company of Cambria constructs</div></div> <div><div>1756</div><div>Bonaire Iron Furnace to take advantage of local sulfur for charcoal</div></div> <div><div>1776</div><div>Military road constructed to reach (and protect) the furnace</div></div> <div><div>1876</div><div>Road extended</div></div> <div><div>1876</div><div>Bonaire Iron Furnace closes</div></div>
					<div><div>1921</div><div>Project sanctioned by parliament</div></div> <div><div>1929</div><div>Laxdale Shelter opens</div></div> <div><div>2016</div><div>Shelter threatened with closure and sold</div></div> <div><div>2019</div><div>Construction begins on adjacent wheels factory, due to open in 2022/3 and employ an additional 400 people</div></div>
					<div><div>1960s</div><div>Rise in welfare support as Cod fishing declines</div></div> <div><div>1992</div><div>Cod fishery closes</div></div> <div><div>2008</div><div>Islander entrepreneur Zina Cobb founds Shorestar, a registered charity, in response to her home island's economic difficulties</div></div> <div><div>2013</div><div>Fogo Island Inn opens</div></div>
					<div><div>1690</div><div>Distilling established</div></div> <div><div>1879</div><div>Ben Wyvis Distillery opens</div></div> <div><div>1896</div><div>Glenskloch Distillery opens</div></div> <div><div>1926</div><div>Both distilleries close</div></div> <div><div>1965</div><div>Ben Wyvis reopens</div></div> <div><div>1973</div><div>Ben Wyvis closes</div></div> <div><div>2015-2016</div><div>Glenskloch established and £2.6 million raised locally</div></div> <div><div>2017</div><div>Opens in 2017</div></div> <div><div>2018</div><div>Distilling begins</div></div>
					<div><div>2005</div><div>Recycling Plant phoned</div></div> <div><div>2006</div><div>Metal tooling plant opens nearby</div></div> <div><div>2007</div><div>CNC Steelwork plant moves to the area</div></div> <div><div>2007</div><div>Recycling Plant opens</div></div> <div><div>2012</div><div>CNC Steelwork plant expands</div></div> <div><div>2019</div><div>Approximately 150 staff employed in the local metal industry</div></div>



## Matrix Analysis

	Users and Stakeholders	Employees/ Inhabitants	Socioeconomic Context	Building Technology	Material Texture	Energy Context
New Lanark Mills						
Aberfeldy Distillery						
Bonawe Furnace						
Lochaber Smelter						
Fogo Island Inn						
Glenwyvis Distillery						
Pivka Recycling						



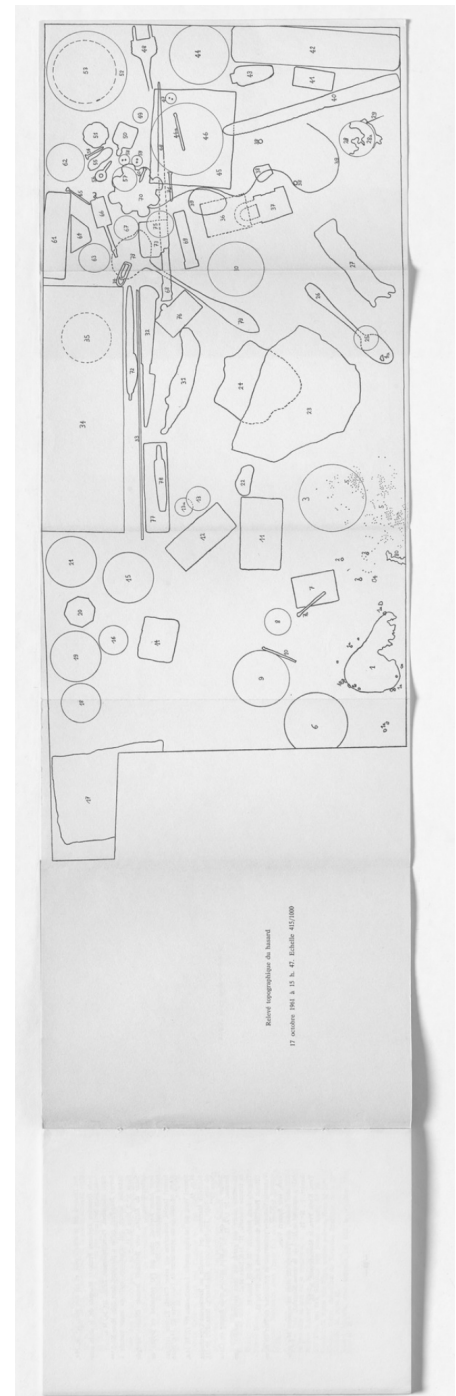
## Table of Conversation

Around this time we were completing the “North Sea Atlas” while simultaneously developing our own research. As a concluding performative act for the atlas we undertook a “Table of Conversation”, inspired by Daniel Spoerri’s *Topographie anécdotée du hasard*.

The purpose of this performative act was to reflect on our individual viewpoint with relation to the line of inquiry which had been explored in groups (in the case of Daniele, Petra, Stefano and I, “The Oceanic Project”). During this ‘performance’, each of us briefly presented our object, before a collective discussion allowed us to make visual what objects/points of view could coexist and which ones instead opposed each other...

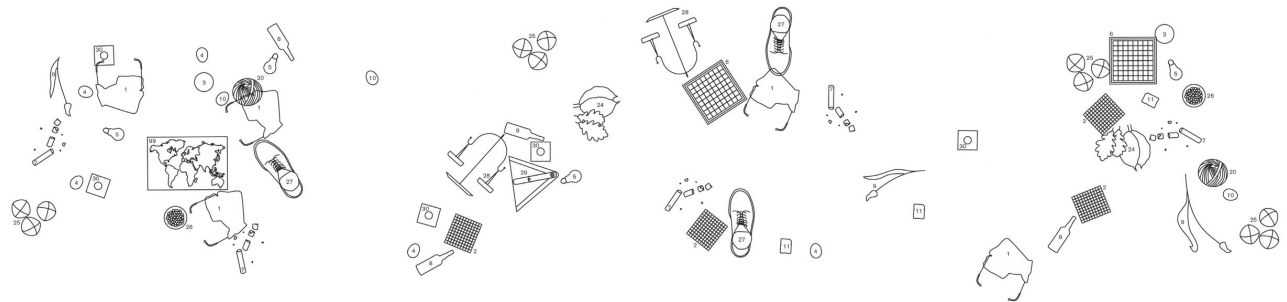
I chose a dram of whisky to illustrate my thinking as it moved from “The Oceanic Project” to my personal graduation project. For me, whisky symbolises many things: with reference to the oceanic project, it represents exclusivity and carries associated ‘island of power’ connotations- in terms of the consumer but also in terms of industry as a producer of power, which our group discussed much.

For me, this particular whisky carried a second layer of meaning- its story. Laphroaig is an island Scotch, famed as one of the smokiest, peatiest whiskeys with an aroma and taste that has been likened to burnt electrics. To me, it thus could refer to the limitations of power transmission in terms of the island condition. It also carries cultural, historical and heritage associations with a strong sense of place and identity- all factors which I view as highly relevant to my project. The whisky industry is also an inspiration for my project as distilleries are almost invariably located on strategic sites to take advantage of a local water supply or good transport links by sea. Indeed as indicated by two of my case studies in the previous pages, the whisky industry often represents an example of ‘Industrial Territorialism’. In the case of Laphroaig, the presence of the local peat as a vital energy source is also hugely relevant, as my project identified comparable challenges/opportunities that arise from renewable Energy at the End of the World. Lastly, the worldwide growth in popularity of whisky reflects my desire for the island model to form a crucial part of globalisation- not a forgotten edge, but a contributor in a new symbiotic relationship between remote territories and centralised cities.



credits: <https://deltaurbanismtudelft.files.wordpress.com/2019/04/screen-shot-2019-04-02-at-12.11.48.png>

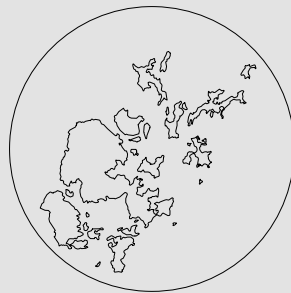
<http://deltaurbanism.org/tt2020/>







remote, renewable energy-rich territory > Orkney archipelago



## Here be dragons | wish you were here

Clearly, there is something about remote, distant places that stimulates the human imagination. The bookshelves of humanity are lined with volumes from the annals of history, and with tales from far flung lands and seas. Hollywood is much the same- an assemblage of films telling stories of the unusual and the exotic, of characters with experiences somehow different from our own. Perhaps we are drawn to them because in the telling they become a new reality. We relate to the unrelatable. Even as individuals wandering through the maze of life, we seem to tell of our childhoods and holidays much more frequently than is justified by their temporal importance in our lives.







### **Once upon a time in a land far, far away...**

Indeed, the concept of remoteness- both in time and space is of central importance to storytelling, as emphasised by the opening of the archetypical story: “Once upon a time in a land far, far away.”

In fact, all the main languages of the North Sea share this feature to their storytelling. Remoteness therefore seems extremely important to humanity. Stories are important in retrospective, entertainment terms, but also as an act of future-making. For humanity to be confined only to the urban would be to lose our stories of the remote.

UK	<i>“Once upon a time in a land far, far away...”</i>
NL	<i>“Er war eens, in een land hier ver vandaan...”</i>
FR	<i>“Il était une fois...”</i>
DE	<i>“Es war einmal...”</i>
DK	<i>“Engang for længe siden...”</i>
NO	<i>“Det var en gang...”</i>



*‘In Orkney, they tell stories’*

George Mackay Brown



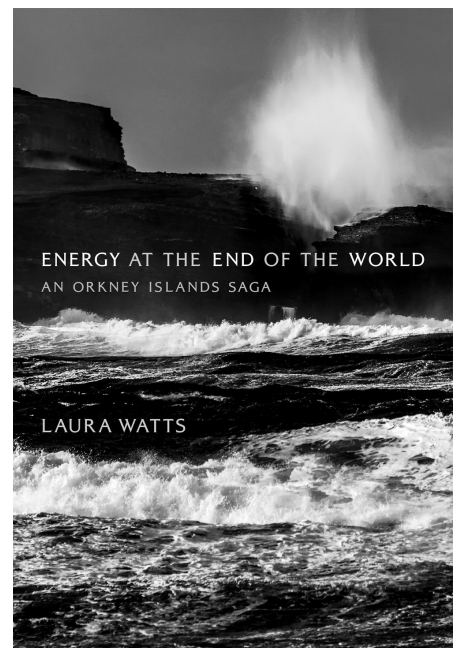
## Orkney | Stories and Sagas

Stories are nothing new to Orkney. Written in the 13th century, the Orkneyinga saga is unique in Scottish literature. It is a collection of many stories that tells of the Norse Earls of the islands. But such storytelling is not just ancient history. Just last year, ethnographer Laura Watts published a 21st century saga. It tells some of the many stories are arising from Orkney's new identity as 'the Saudi Arabia of marine renewable energy', to quote the former First Minister of Scotland. But what is the difference between stories and sagas?

Essentially, a saga is a collection of stories that together form a bigger, more complex story. A saga builds a more extensive reality from many smaller stories. A saga is not merely a device for recording things past, but it is also a future-making tool.



*Orkneyinga Saga*  
*The History of the Earls of Orkney*



*Definiton 1:*

## *“Story”*

1. an account of imaginary or real people and events told for entertainment.
2. an account of past events in someone’s life or in the development of something.

*Definiton 2:*

## *“Saga”*

1. a long story of heroic achievement, especially a medieval prose narrative in Old Norse or Old Icelandic.
2. a long, involved story, account, or series of incidents.

## Archipelago of built stories

Orkney has an incredibly long and diverse history. There is scattered evidence of nomadic Mesolithic tribes dating back over 8000 years ago, and a vast array of Neolithic sites. A selection of these are even grouped into a UNESCO world heritage designation. The 'Heart of Neolithic Orkney' consists of 5,000 year old settlements (Skara Brae being the most famous and best preserved such example in Europe), stone circles and burial mounds excellently preserved. Orkney became significant again with the arrival of the Vikings, who married the notion of saga to the archipelago. The Orkneyinga Saga is a unique work which tells the history of the Viking Earls of Orkney- a page of which is overlaid above the map to the left. It is a saga with *'no parallel in the social and literary record of Scotland'*. Viking legacy includes a Norse parliament and the spectacular St Magnus Cathedral.

During the First World War, the harbour of Scapa Flow proved strategically important for controlling the North Sea and consequently became and the primary base of the Royal Navy. The German Fleet was brought here in 1918 and scuttled, today forming an incredible scuba diving location. In the Second World War, Scapa Flow was once again the main base for the Royal Navy, and the defences were improved through the creation of the 'Churchill Barriers' (see right). These prevented submarines from entering, but also restricted the flow of water in and out of Scapa Flow. These have also since been used to create roads between what were previously unconnected islands- a fractalised version of globalisation within the archipelago itself. This concept was explored in the 'Aspects of Water Related Design' course, the proposal for which formed a sort of devil's advocate to this graduation project.





## Orkney monuments

Orkney has an especially long and ancient history of monuments embedded in the landscape, exemplified by (but not limited to) the UNESCO World Heritage Status applied to the ‘Heart of Neolithic Orkney.’

This includes Skara Brae, the best preserved Neolithic settlement in Europe.







credits: [https://sketchfab.com/blogs/community/wp-content/uploads/2016/07/whymark\\_2.jpeg](https://sketchfab.com/blogs/community/wp-content/uploads/2016/07/whymark_2.jpeg)



## Tourism in the Orkney economy

These monuments draw hundreds of thousands of visitors a year, who flock to learn about the stories of a remote life, once upon a time in a land far, far away. This is of course a complex relationship: Orkney is increasingly inundated with cruise ships: a total of 36,000 tourists in 2011, up to 126,000 by 2017. Tourists carry an controversial legacy.







## Creative Orkney Trail

They also come to see a wide range of arts and crafts along the Creative Orkney Trail. Founded in 1991, it was formed to bring together traditional and contemporary artists and craftworkers around Orkney. The trail is run by the artisans themselves, who produce everything from furniture to jewellery, and from paintings to pottery.

The poet George Mackay Brown wrote that *'there are artists, printmakers, makers of musical instruments, potters, tapestry-makers, everywhere in the islands.'* Whether this multitude exists due to the inspiration provided by this raw, windswept archipelago itself, or whether it is simply a result of very long winter nights, the Creative Orkney Trail is thriving and drawing tourists.

This trail is however noticeably absent from the South Isles of Hoy and Flotta.



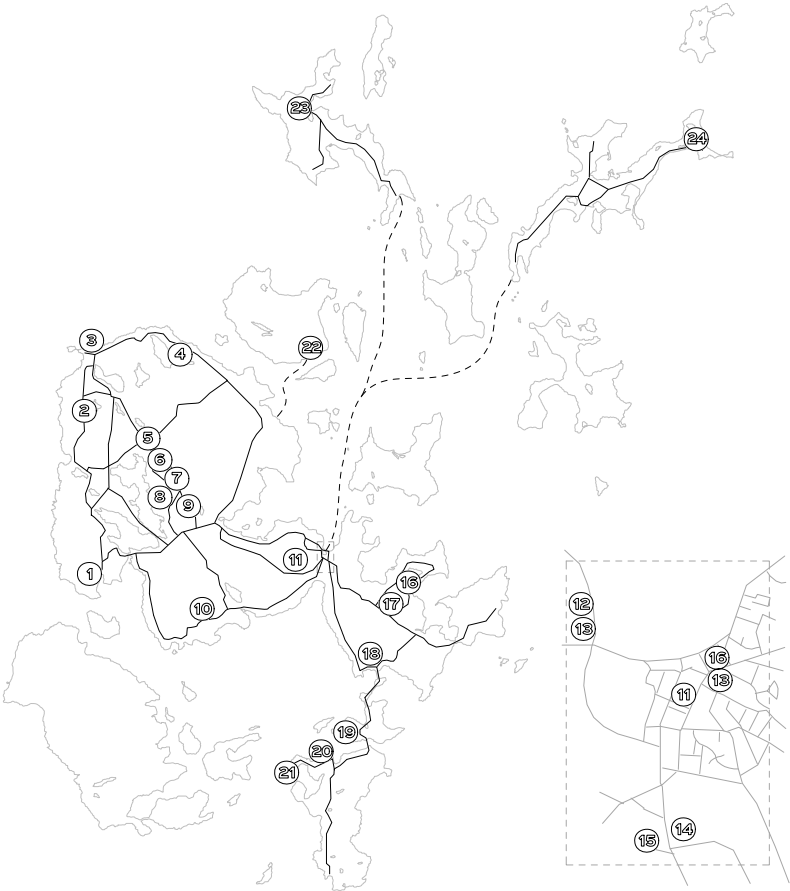
credits: <https://c.orkney.com/assets/files/10401/1b9a7265.jpg>

[https://c.orkney.com/assets/files/7424/craft\\_trail\\_hoxa\\_tapestry\\_2016-20.jpg](https://c.orkney.com/assets/files/7424/craft_trail_hoxa_tapestry_2016-20.jpg)

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- 1 Zoe Davidson Jewellery
- 2 Orkneyinga Silversmiths
- 3 Andrea Holmes
- 4 The Woodshed
- 5 Alison Moore Designs
- 6 Castaway Crafts
- 7 Harney Potter Ltd
- 8 Arica Gallery
- 9 Michael Sinclair Woodturner
- 10 Toomai Art Studio
- 11 Aurora
- 12 Robin Palmer Ceramics
- 13 Ortak Hatston/Ortak Galleries
- 14 Orkney Hand Crafted Furniture
- 15 Soapa Crafts
- 16 Sheila Fleet Workshop/Shop
- 17 Heilagy Jewellery
- 18 Celina Rapp
- 19 Fibre Jewellery
- 20 The Workshop and Loft Gallery
- 21 Heca Tapestry Gallery
- 22 The CraftHub
- 23 Hume Sweet Hume
- 24 Gallery in the Northw'

Flottas: A Bruck-Mining Saga  
Creative Orkney Trail  
Adapted from: "Creative Orkney Trail 2020"



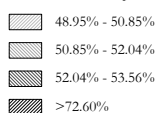
## Globalisation in Miniature

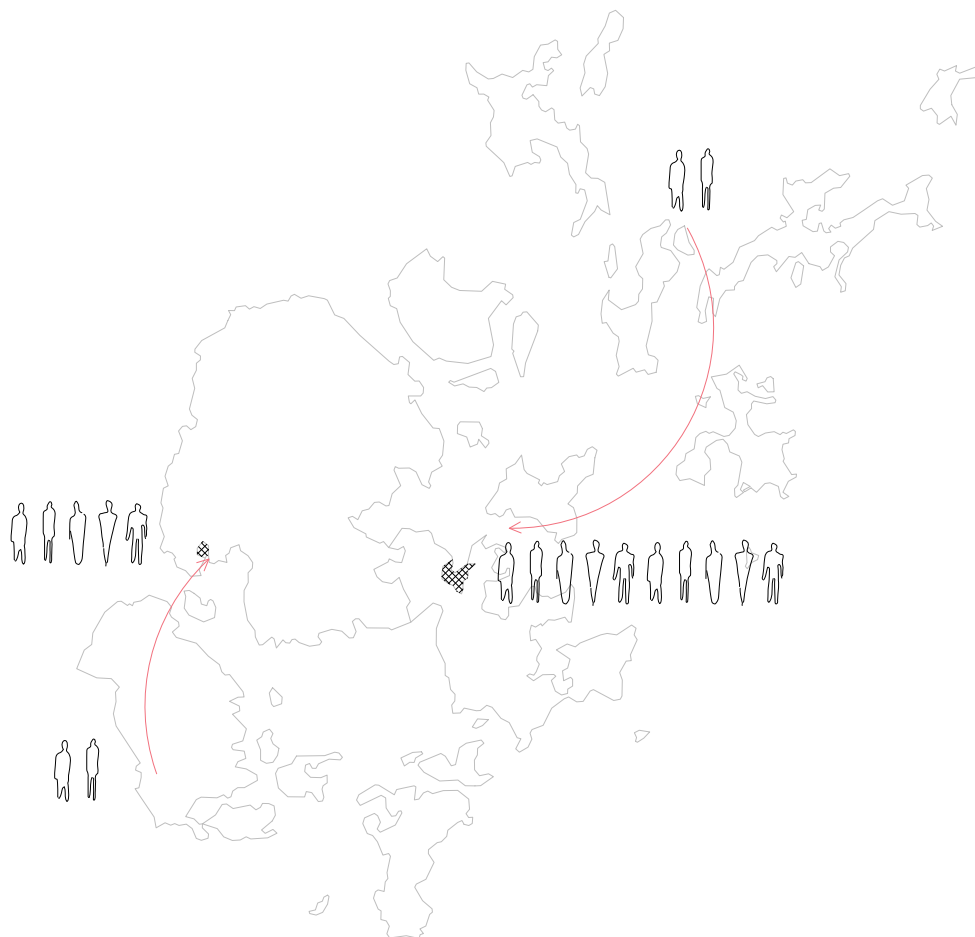
Chapters 2 and 3 indicated some of the invisible forces for the gravitational pull from territories to cities. But of course this process of global urbanisation does not only apply as a flow between a remote territory like Orkney and a central city such as London or Paris. Rather, such flows occur at multiple scales within the broader system- fractals of a larger process. Thus, the two largest towns of Orkney (Kirkwall and Stromness) are growing in population, while the population of the rest of the archipelago is in fact declining. Thus, although the population of Orkney has remained relatively constant over the last 200 years, this belies a significant movement of people between the islands. This trend (and the emotions it carries) was excellently conveyed by the Orkney writer George Mackay Brown, who wrote that:

*“Nowadays, Kirkwall is a busy town. It seems all of Orkney is to be found there, on a Monday or a Saturday afternoon. Kirkwall continues to grow, while the parishes and islands are drained slowly of their populations. In the kind of centralising society that is the universal pattern nowadays, this imbalance is perhaps inevitable. But still many Orcadians wonder if it makes for the health of the total community.”*

Of course, this centralising effect is part of a self-fulfilling feedback loop, which is particularly apparent when looking at fuel poverty on the islands. Fuel Poverty is defined where a household is required to spend 10% or more of its income on heating. Orkney in general experiences some of the highest fuel poverty in the UK, with the remoter islands such as the island of Flotta affected the most, where nearly 3/4 of residents are in extreme fuel poverty- spending 20% or more of their income on heating. Remote places have higher fuel costs, so the pressure grows to abandon these and move to urban centres.

Households in fuel poverty:



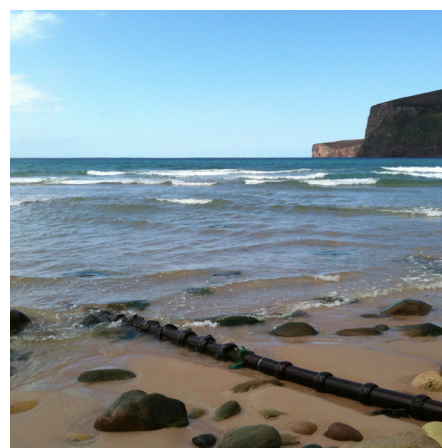
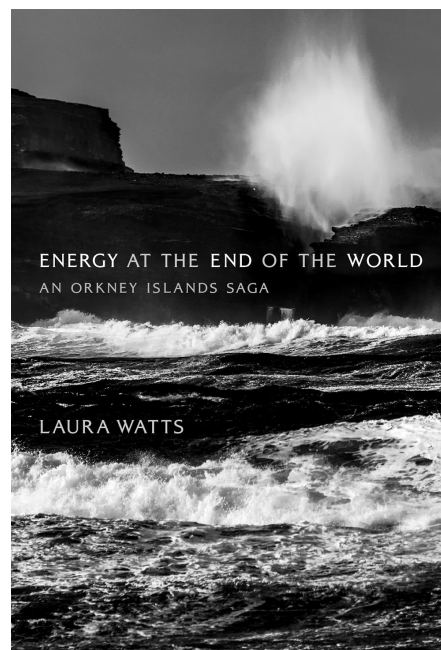




## Energy Transition | “Energy at the End of the World”

Orkney is also very energy rich- already generating through renewables more electricity than it consumes (over 130% of its requirements). Some of this is generated by the larger wind farms which we are perhaps more accustomed to seeing, but much is also generated by the microturbines of individual homeowners. The energy transition is not a remote future here, it is a reality.

But because Orkney lies at the end of a centralised electricity network, the story doesn't have an easy, happy ending. Orkney cannot simply export its surplus electricity, because the cable linking it to the rest of the UK was designed to transmit power generated in central power stations to the remote Orkney territory. That situation has now reversed, and the cable cannot cope, with the result that Orkney is being penalised for being 'too green'. Replacing the cable would be hugely expensive. Renewable energy and the Pentland Firth subsea cable is a huge political issue in Orkney.



*credits: Laura Watts*



## Energy Transition | Decline of oil

At the same time, the decline and impending closure of the Flotta Oil Terminal reflects the economic impacts of energy transition. The Strategic Reserve Fund exists thanks to a tax on every barrel of oil ever landed at Flotta, and its documentation emphasises very strongly the need for Orkney to future-proof its economy beyond oil.



credits: <https://www.energynoice.com/wp-content/uploads/sites/4/2019/01/FLOTTA-Colin-Keldie-1.jpg><https://www.lowcarbon.com/>

## 2.6.

That much uncertainty remains within the global economy and therefore considerable volatility can still be anticipated from investment returns over the short to medium term.

## 2.7.

That a prudent approach is recommended when giving consideration to requests for additional disbursements from the Strategic Reserve Fund over the next three financial years.

**It is recommended:**

## 2.8.

That the contribution from the Strategic Reserve Fund to the General Fund for financial year 2019 to 2020 be increased by £1,366,000, from £4,684,000 to £6,050,000.

## 2.9.

That a minimum balance or “Floor”, below which the value of the Strategic Reserve Fund should not fall, be set at £208,231,000 as at 1 April 2019.

## 2.10.

That the draft Strategic Reserve Fund budget for financial year 2019 to 2020, attached as Annex 1 to this report, be approved.

# 3. Background

## 3.1.

The purpose of the Strategic Reserve Fund is to support projects which provide benefit to the Orkney community as a whole, such as the development of industrial estates, harbour infrastructure and recreational projects, while supporting economic development activity in general across the Council area. The Strategic Reserve Fund is also required to support the long term objective of managing the implications associated with declining oil related revenues on the economy of the islands.

## 3.2.

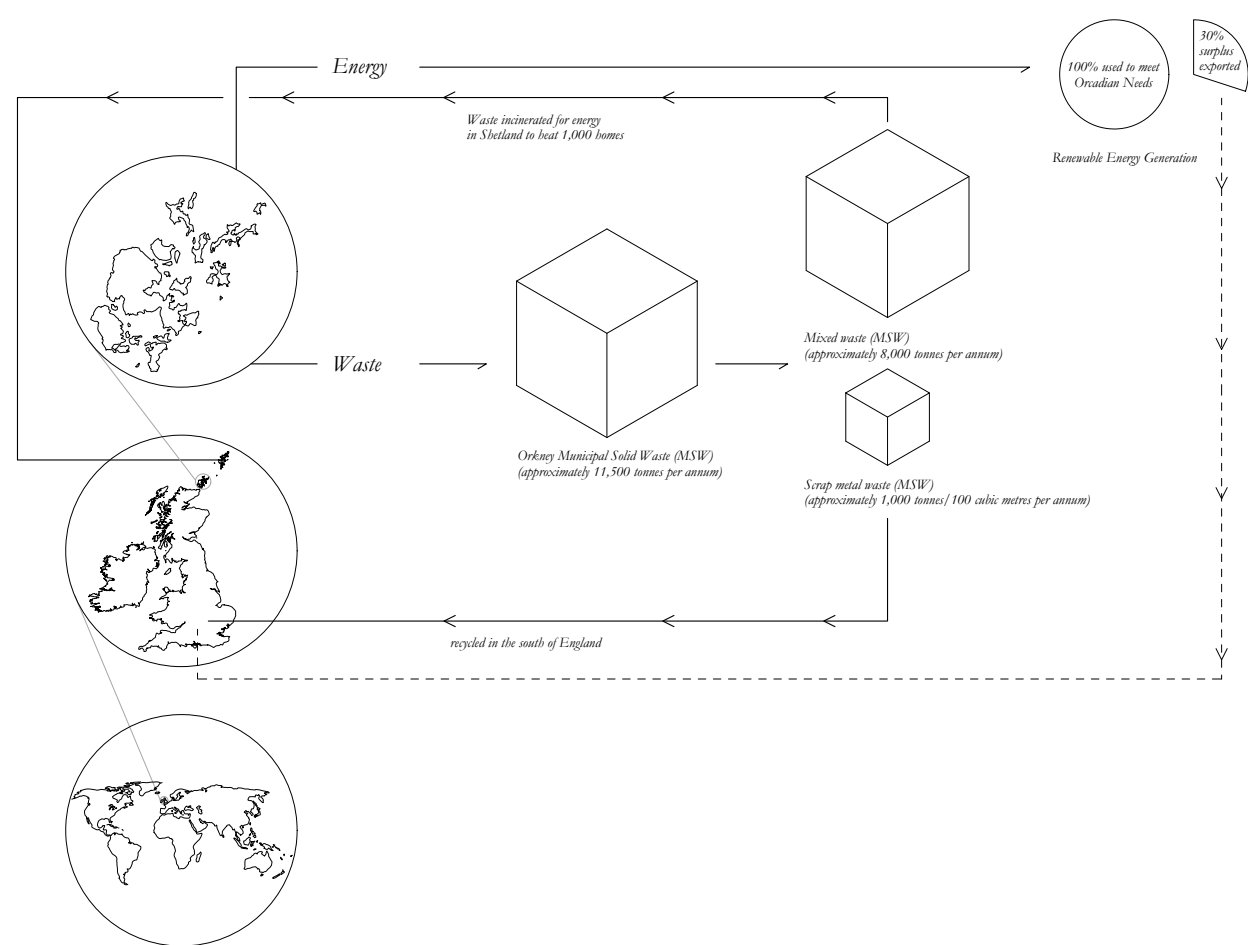
The Strategic Reserve Fund has been applied to supplement General Fund services on a restricted basis as part of an agreed strategy, whereby the Council has pressed Scottish Government for equality of treatment in the finance settlement across the Island unitary authorities. When the Council set the budget for financial year 2018 to 2019, it was agreed that £4,684,000 of income from the Strategic Reserve Fund be used as a funding source to supplement the General Fund revenue budget.



## Renewables and waste on Orkney

In Chapter 4, I explored case studies which exemplified what I termed 'Industrial Territorialism'- that is, an intrinsic connection between industry and the territory. Orkney generates through renewables a surplus of electricity which it struggles to export due to limitations of centralised networks. On Orkney, energy is specifically connected to the territory and is hard to export, which suggests there might be potential for 'Industrial Territorialism' on the islands. It also has a waste management problem, and currently exports much of its waste- either for burning in the neighbouring Shetland Isles, or in the case of scrap metal for recycling in England. The question thus arises: does Orkney generate enough electricity to recycle its own metals and consequently export its electricity in the embodied energy of that metal?





## Industrial Territorialism on Orkney?

To answer the question of whether Orkney generates enough electricity to recycle its metals requires some calculations, based on available figures:

The following calculations assume:

- 100MJ/kg embodied energy for metals (this is based on production primarily from ores and so is far too high; energy savings are around 90% for aluminium and 56% for steel)
- Orkney generates around 1000 tonnes of waste metal a year (this is about 10% higher than the figure in 2003)

That metal contains:

$$\begin{aligned} &1000 \times 1000 \text{ (kg)} \times 100\text{MJ/kg} \\ &= 100,000,000\text{MJ or energy} \\ &= 27778 \text{ MWh} \end{aligned}$$

Now,

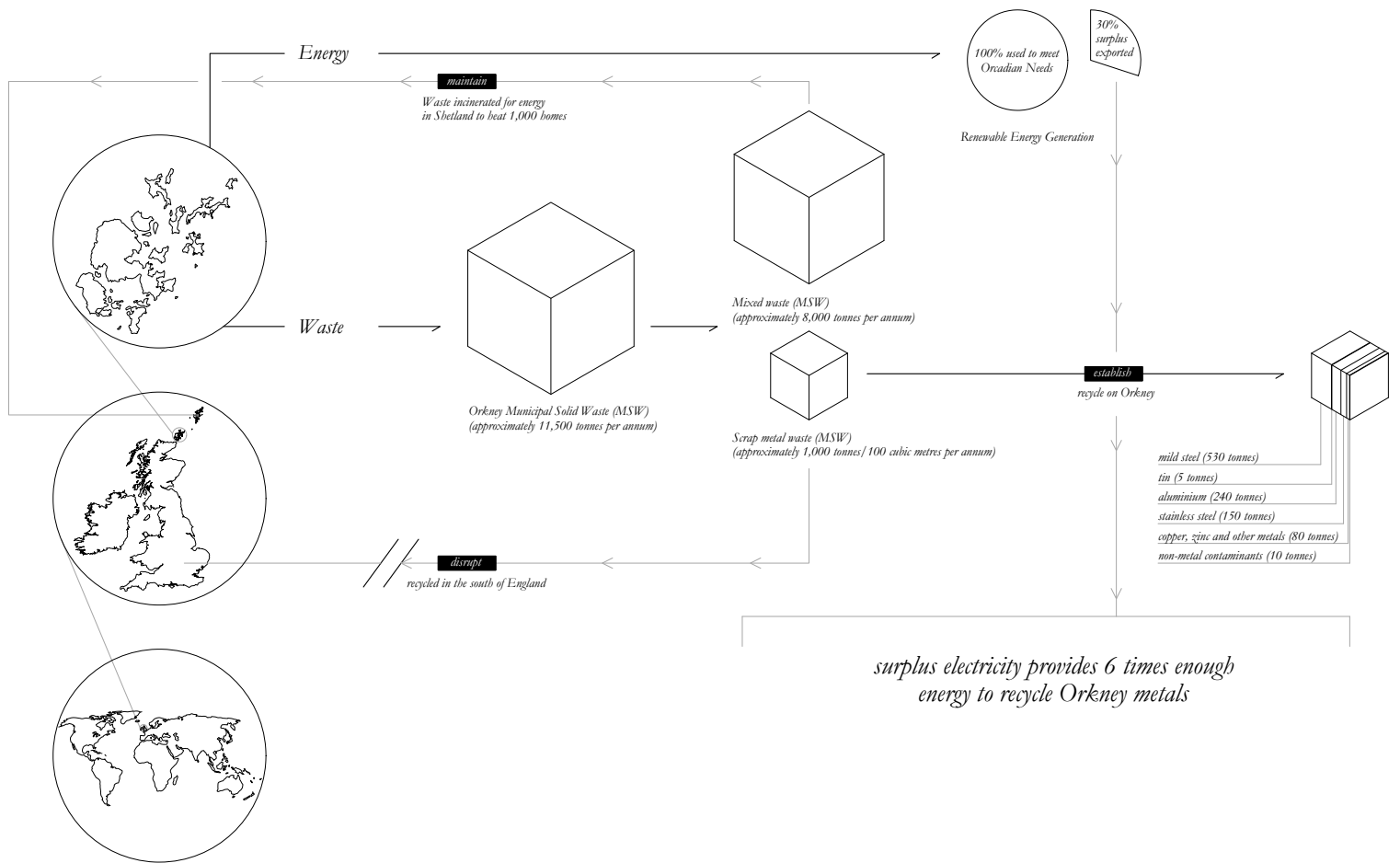
$$\begin{aligned} &4\% \text{ surplus electricity in 2014} \\ &= 11263\text{MWh} \end{aligned}$$

$$\begin{aligned} &\text{By extrapolation, } 30\% \text{ surplus electricity in 2017} \\ &= 84472.5\text{MWh} \end{aligned}$$

$$\begin{aligned} &84472.5\text{MWh (available)} : 27778\text{MWh (required)} \\ &=> \text{a ratio of approximately:} \\ &3\text{MWh (available)} : 1\text{MWh (required)} \end{aligned}$$

=> In 2017, Orkney generated enough surplus electricity from renewable resources to produce (from ore) all the metal it generates in waste three times over. Remember, the energy savings by recycling those metals are significant- 92% for aluminium and 56% for steel. Assuming just a 50% energy saving, Orkney produced in 2017 enough surplus electricity to recycle all of its metals six times over.







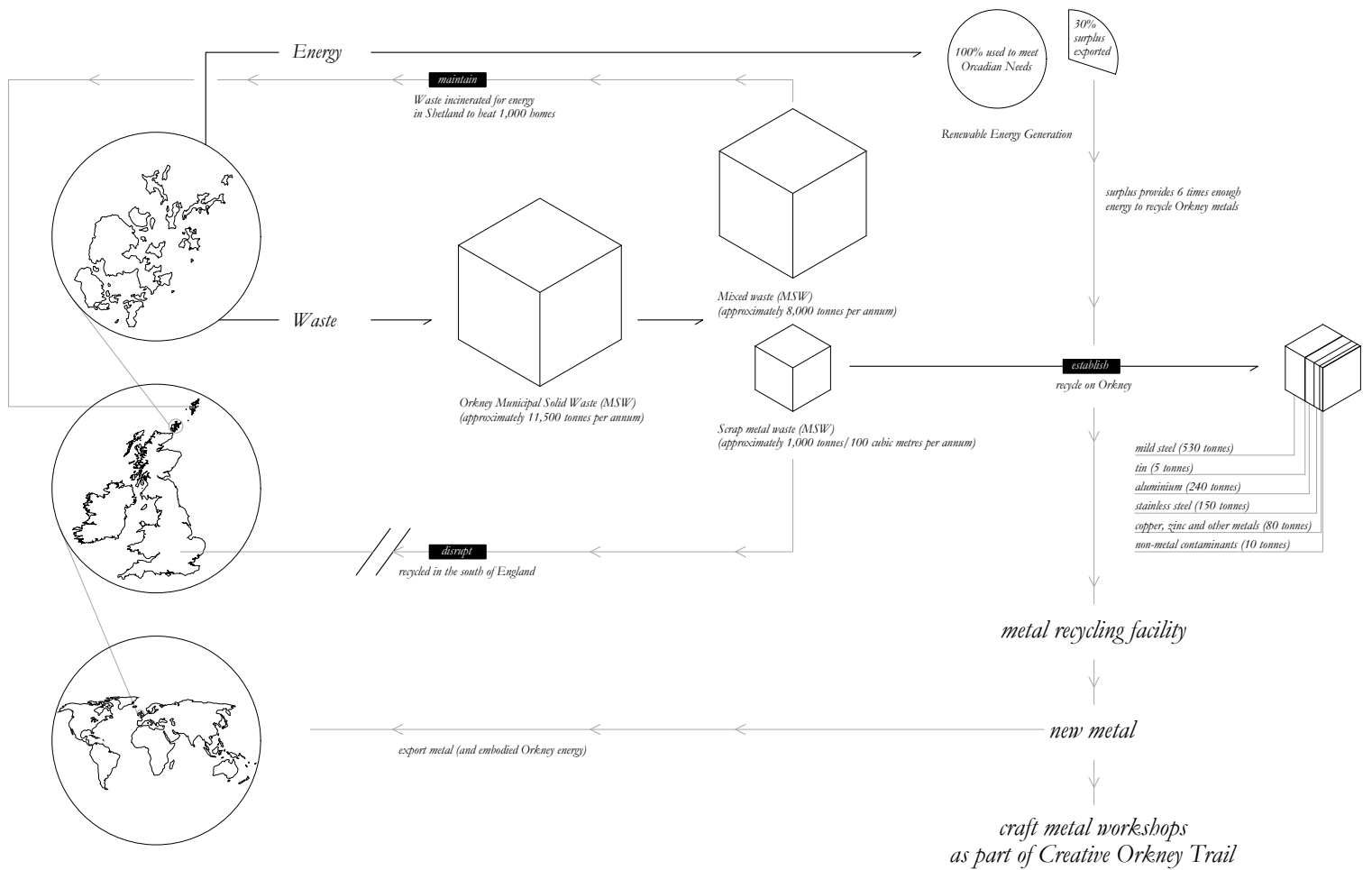
## A Bruck-Mining Saga

The project argues that this system could and indeed should be altered to connect energy, metal waste and people into a new Orkney saga- A Bruck-Mining Saga.

It proposes to use the recycled metal as a resource- both for export, but also for establishing a series of craft metal workshops as an extension to the Creative Orkney Trail.

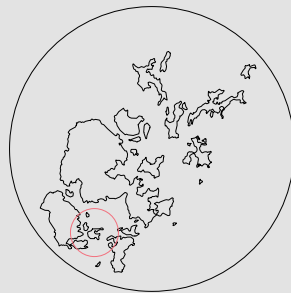


credits: <https://c.orkney.com/assets/files/10401/1b9a7265.jpg>





**site visit**





## **Journey to the ‘End of the World’**

Orkney is far away. It does have an airport, but flights to and from it are very, very expensive (flying from Amsterdam > Aberdeen > Orkney is more expensive than flying Amsterdam > New York), so most residents arrive by boat. To get from Delft to Orkney took me over 14 hours in total, and my father and I passed the last major urban centre (Inverness, population 47,000) after about 9 hours. That means Orkney is around 5 hours away from the nearest ‘city’, a city which is only about half the size of Delft.

And that’s just getting to SOMEWHERE on Orkney. It took until next day before it was even possible to drive to the ferry terminal, wait, and then take the ferry over to Flotta, which added around another 3 hours. So in total, Flotta is about 17 hours from Delft. To put this into perspective, a non-stop flight from Amsterdam to Jakarta takes less than 14 hours.

Put very simply, Orkney is remote. And within Orkney, Flotta is still more remote.



05:49



Ruth 13:46  
Give me a call if you get lost  
(you won't) and don't try to use  
sat-nav. Our postcode covers a  
big area and the last Air BnB'ers  
haven't been found yet... Just  
kidding. Safe journey and we  
look forward to meeting you.

20:14

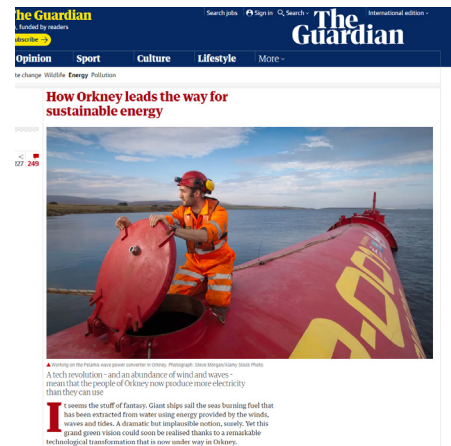


## Orkney- the 'End of the World'

Arriving in Orkney feels a little like stepping into a different world. Of course it's far away in space, but it also seems somehow to be of another time...

The modern world has of course arrived, but in bits and pieces, and it sits alongside the ancient world. But what elsewhere is being heralded as the future is also the everyday here: the innovative, snake-like Pelamis Wave generator that has been splashed over the headlines for several years now and which has been claimed to herald the arrival of marine renewables is simply a fact of life in Orkney: when I visited and was on the ferry to Flotta, it was tied up at a dock on the neighbouring island of Hoy.

At the same time, the limitations of Orkney's remoteness are very apparent: we shared the ferry back to Scotland with an old generator (or maybe it was a pump?), rather like the one that once provided electricity at my grandparent's cottage. Maybe it was being sold, or maybe it was being scrapped- but like everything else, it arrived or left on that ferry...







Flotta (‘the flat island’) in photographs







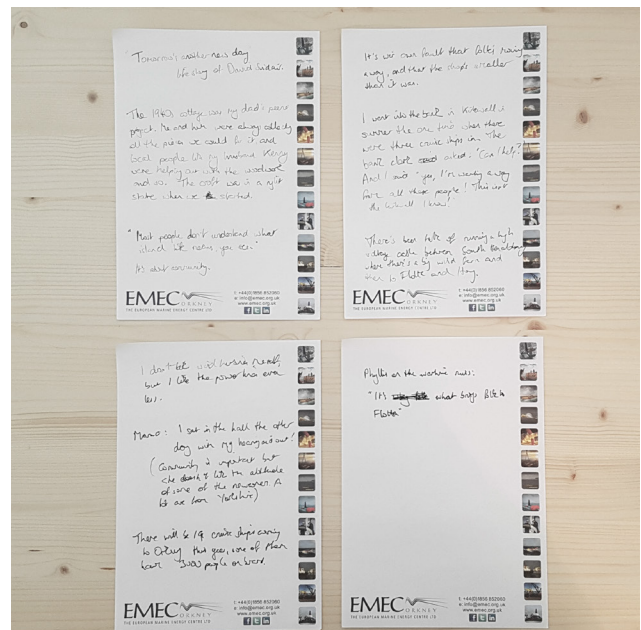
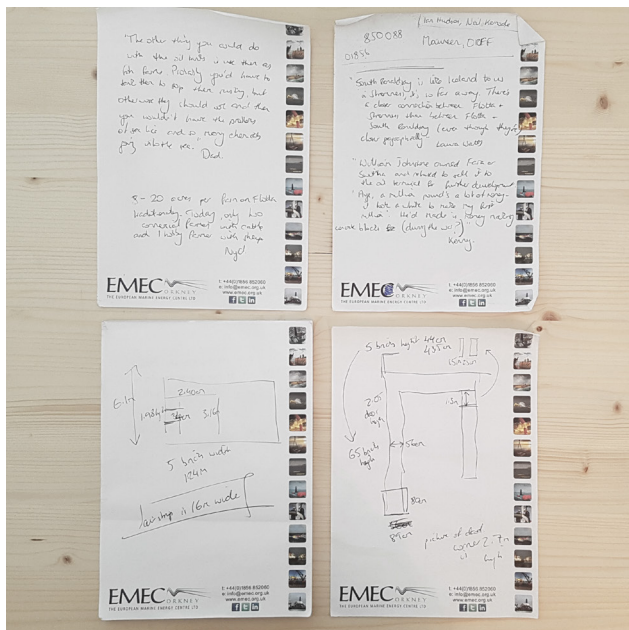
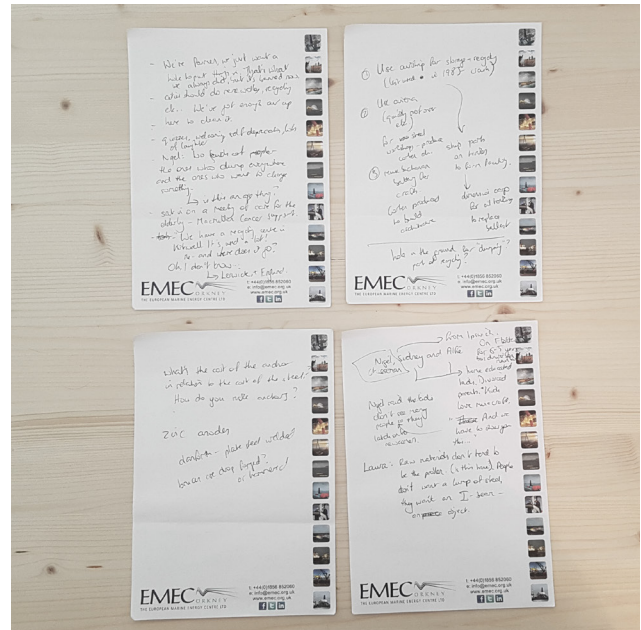
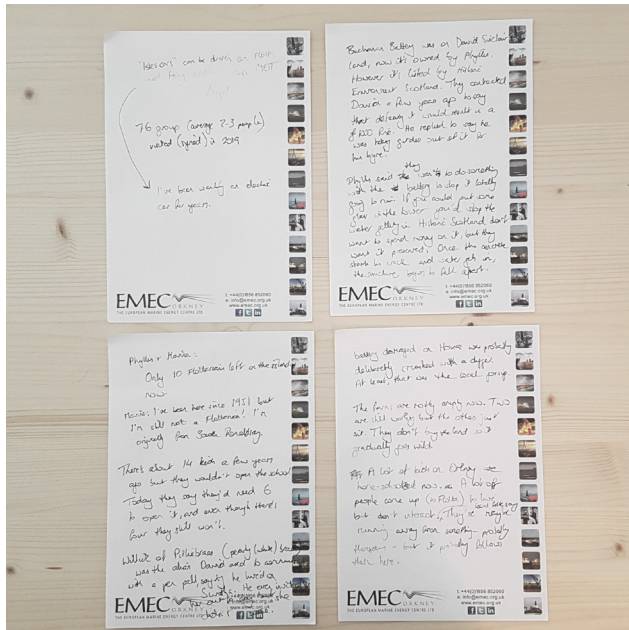
## Community is drinking tea

Remoteness has consequences. At its most mundane, it implies greater difficulty in getting there and away. Yet this in turn implies a sense of shared destiny- 'community'. Community is a difficult word- overused and oft interpreted to be *'little more than a romantic longing for a mythical past that ignores current social and economic conditions'* (to quote Bridger and Luloff). Yet academic attempts to define community should be much more layered- community is drinking tea and talking to frustrated neighbours; it is telling stories and sometimes deliberately not telling them; it is knocking on doors, quiet words, unspoken agreements that are borne of a shared destiny. It resonates far better with feminist thinking on the importance of (slow) care than with (fast) high-tech, cutting-edge efficiency. Community does not imply that everyone is friends. And it certainly cannot be captured in a photograph.

You can't always stick a camera in someone's face. A notepad is sometimes far more powerful in capturing what is said, but also sometimes what is not...











**site: Flotta**



## Flotta

Flotta is the island of Orkney's oil terminal, due to close in the 2030s. It is also home to a vanishing community. The island has been inhabited for centuries, but in the 1970s the population went into freefall as the gravitational pull of urbanisation took hold and as farming declined. The population today is under 70, down from the more or less historic constant of 400 until the 70s.

Today the oil terminal employs many of Flotta's residents, as well as other workers who commute daily by boat from elsewhere on Orkney.





## Flotta

Like the rest of Orkney, Flotta carries traces of its history everywhere. Only a fraction of the land is still farmed, with only two families still making a living from farming. Flotta was also hugely important during the First and Second World Wars, when its strategic location on the vast natural harbour of Scapa Flow made it a principal base of the British Navy. Flotta also has one of the best deepwater ports in Orkney, with 20 metres of depth at less than 200 metres from the shore where the oil terminal dock is.

Of course, the wartime presence has gone, leaving only ruins. Within a decade, this will likely be true of the oil industry as well. At present, it seems that life on the remote territory of Flotta will disappear. Human inhabitation of the territory will become just a trace...



## No stranger to strangers

In the two world wars, thousands of sailors lived on Flotta while the British Navy was stationed here. One photograph shows an audience of 10,000 attending a boxing match during the First World War- on an island that at the time had a normal resident population of 400. During the wars, Flotta also received prominent visitors- everyone from admirals to the Archbishop of Canterbury to King George V. In 1918, the entire surrendered German Fleet was anchored just off Flotta, moored alongside the British fleet.

This wartime history has left many ruins scattered around the island of Flotta. Today, they are the principal reason that visitors come to Flotta.

Then, in the 1970s, the oil industry came to the island. With great potential for deepwater mooring suitable for tankers, and located close to the Piper and Claymore oilfields, Flotta was deemed the perfect location for a terminal for storing North Sea crude. Thousands of workers descended on the island to construct the terminal, which was to consist of eight huge tanks set into the landscape- today it is still the second largest terminal on the North Sea. Oil brought new notable visitors, including oil magnate Armand Hammer and Prime Minister Margaret Thatcher.

For 50 years, the terminal has been frequented by huge tankers, carrying oil away to the refineries of Europe.

On Flotta itself, the massive scale of the terminal contrasts with but is also vital to the small community of the island. Meanwhile, the lights of the oil terminal and the glow of its flare form a landmark in the wider Orkney landscape, one which is particularly prominent and even cherished on the long winter nights. Of course, the oil terminal is due to close in the next decade...

It therefore becomes clear that such contrast of scales is somehow central to the character of the island. In short, Flotta is no stranger to strangers leaving their mark on the island.







credits: David Sinclair- <https://lurdy.wordpress.com/>  
 Imperial War Museum ; <https://c.orkney.com/assets/files/10999/tk4142.jpg>  
 @orkis\_photography  
 Dave Barlow, [https://live.staticflickr.com/8472/8101083148\\_0a7be4dc69\\_h.jpg](https://live.staticflickr.com/8472/8101083148_0a7be4dc69_h.jpg)



## Flottarian community

Like many remote territories, the population is in decline, and aging... Yet the community is strong. This does not mean everything is happy and cuddly- and there are of course difficulties that come with community. Of particular difficulty is the arrival of a number of residents from outside (mostly England) who (according to the original Flottarians) seem to want little to do with the rest of the islanders. Several of them home school their children (because the school is closed of course, but also because they want to, and consequently put no pressure on the council to reopen the school). Of course, the incomers have a different perspective on the situation- some come here because they want to lead a lower impact life, and the abundance of renewable energy in Orkney means they can do that. They criticise some of the old Flottarians for not caring about renewable energy. So who is right?

Of course, no one is, and no one is wrong. There are nuances everywhere. Nevertheless, Flotta remains home to a community who are very attached to their island, for different reasons. While exchanging emails with one of the local residents, she told me that “Flotta remains the only place she would want to live.” But of course with the impending departure of the oil terminal, it will be much more difficult to earn a living or to justify the ferry services. And with the population aging and with the school closed since 2012, the likelihood is that the community of Flotta will simply vanish into the mists of time.



## A resilient community

Nevertheless, in the face of past adversity, the Flottarian community has always been very resilient, with a range of novels and even a BAFTA winning film inspired by the stories of the island. The Flotta writer David Sinclair recalls island sentiments shortly after the oil industry arrived in the 1970s:

*‘There was a feeling of euphoria after the public meetings at which representatives of both Occidental and the Orkney County Council pointed out how beneficial the oil terminal would be to Flotta. Unfortunately, as no minutes were taken at those meetings, it was impossible later on to know what had been promised by whom. I can remember a councillor standing up and saying that we could expect to have enough young men living on the island to make up at least two football teams. Immediately from the back of the hall there came a shout of “Flotta for the Parish Cup!”’*

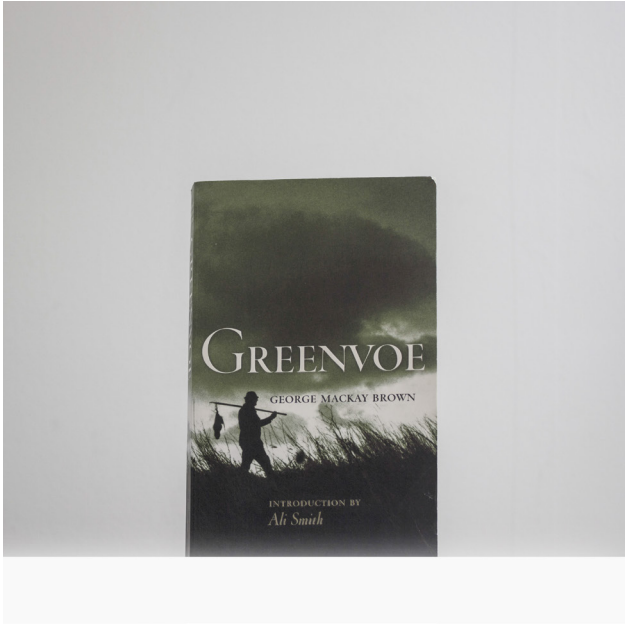
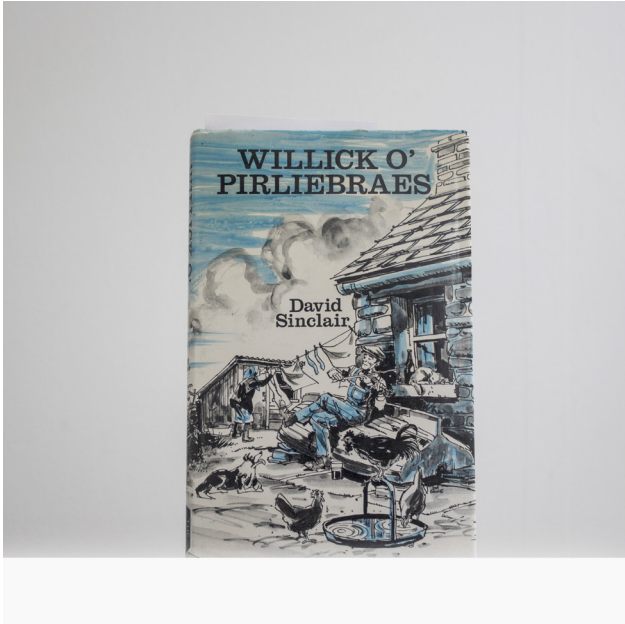
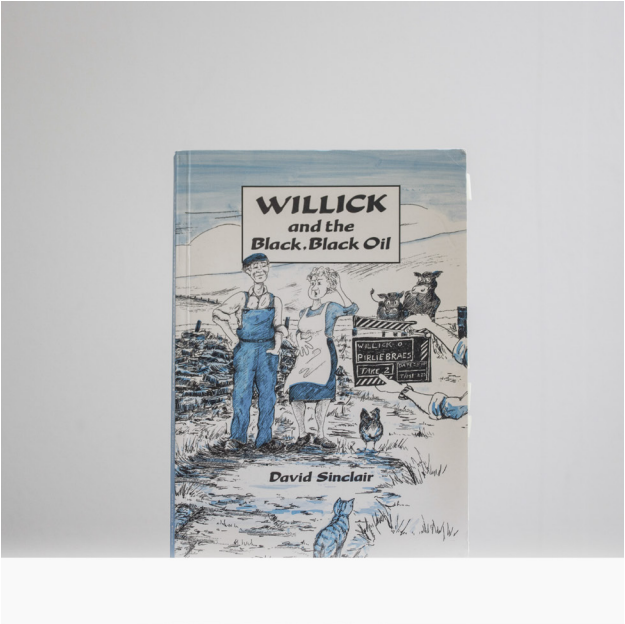
But sadly, the early excitement and anticipation that oil brought to Flotta began to subside as empty promises failed to materialise- both from the oil companies and from the Orkney Council. Rather than loud complaints, the voice of Flottarians emerged ultimately through David Sinclair’s humorous, semi-fictional stories that nonetheless tell a certain reality through the eyes of the fictional Flottarian ‘Willick o’ Pirliebraes’.

The famous Orkney writer George Mackay Brown wrote ‘Greenvoe’, which manages the complicated trick of being both comedy and dark and brooding. A decade later, Bill Forsyth’s film ‘Local Hero’ told a story of oil meets small community that was heavily inspired by the Flotta story.

So as we’ve already discussed, stories are very important to the people of Orkney in general, and to Flotta specifically. They are important in recording our humanity, but also as signposts for the future.

‘Once upon a time in a land far, far away...’





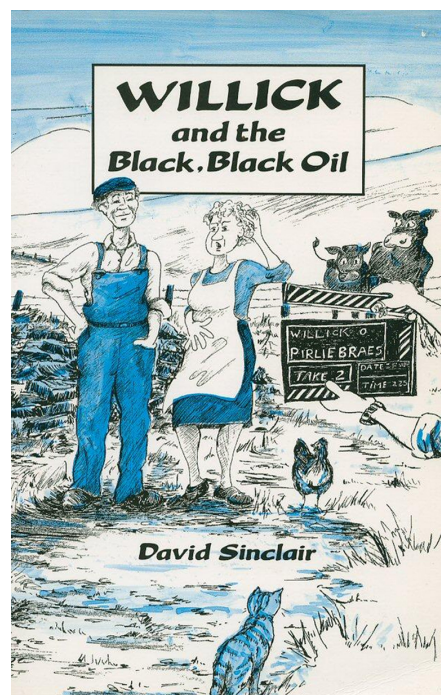
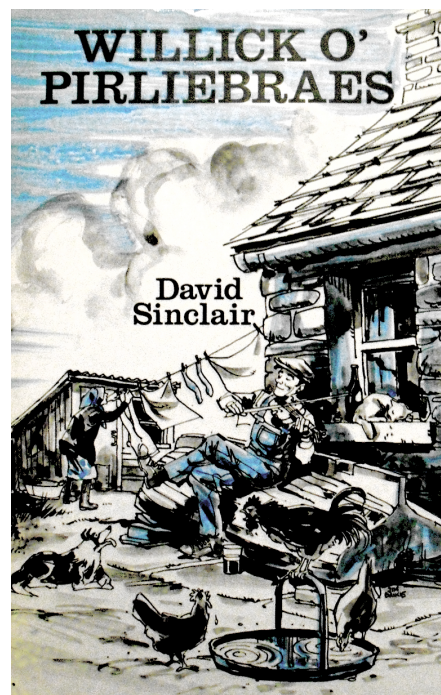


## Willick o' Pirliebraes

Rather than loud complaints, the voice of Flottarians ultimately emerged from the clamour of the oil buzz through David Sinclair's humorous, semi-fictional stories that nonetheless tell a certain reality through the eyes of the fictional Flottarian 'Willick o' Pirliebraes':

*I gave vent to my feelings in a letter which I intended sending to the editor of The Orcadian. On reading it over, however, I decided that it was far too long and would be ignored by the majority of readers. But how was I to get my point across?*

*Having always been a short story addict and a lifelong admirer of the late Bob Johnston, who peopled the fictitious parish of Stennick with such believable characters, I attempted to rewrite my letter in a short story format. It evolved into a dialogue between myself and a down-to-earth, short-tempered, local farmer who always has an eye open for the main chance. Thus was Willick o' Pirliebraes born.'*



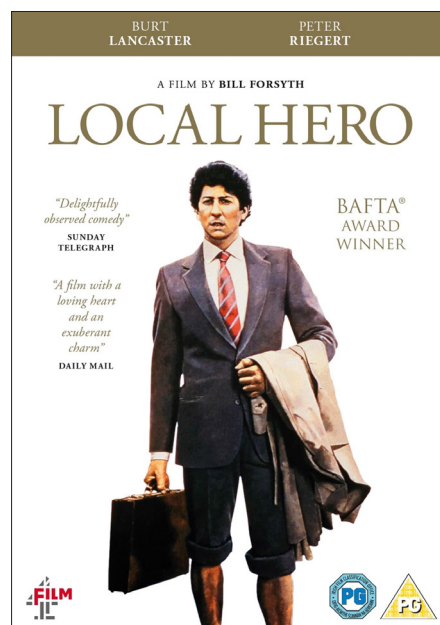


## Local Hero

Yet the voice of Flotta reached beyond David Sinclair's primarily Orkney-based readership. As Mike Shepherd writes in *Oil Strike North Sea*:

*'The efforts of the local council to establish revenue from the oil industry provided the inspiration for the popular film Local Hero, a whimsical comedy based on the efforts of the American oil tycoon Felix Happer (played by Burt Lancaster) to set up an oil terminal next to a Scottish village. The inspiration for the film had been the visit of Armand Hammer to the Orkneys to establish an oil terminal on the Island of Flotta'*

Complete with soundtrack by Mark Knopfler (the frontman of the world-famous rock band Dire Straits), the 1983 film *Local Hero* went on to win a BAFTA and, as Euan Ferguson wrote in the *Guardian* in 2008, it remains one of the 'quiet must-see masterpieces of British cinema: I can think of few friends, of all ages and backgrounds, without a copy nestling happily on some shelf, brought out on cold nights. The marvel is that it has lasted so tremendously well.'











### **‘The Agency of Mapping’ (after James Corner)**

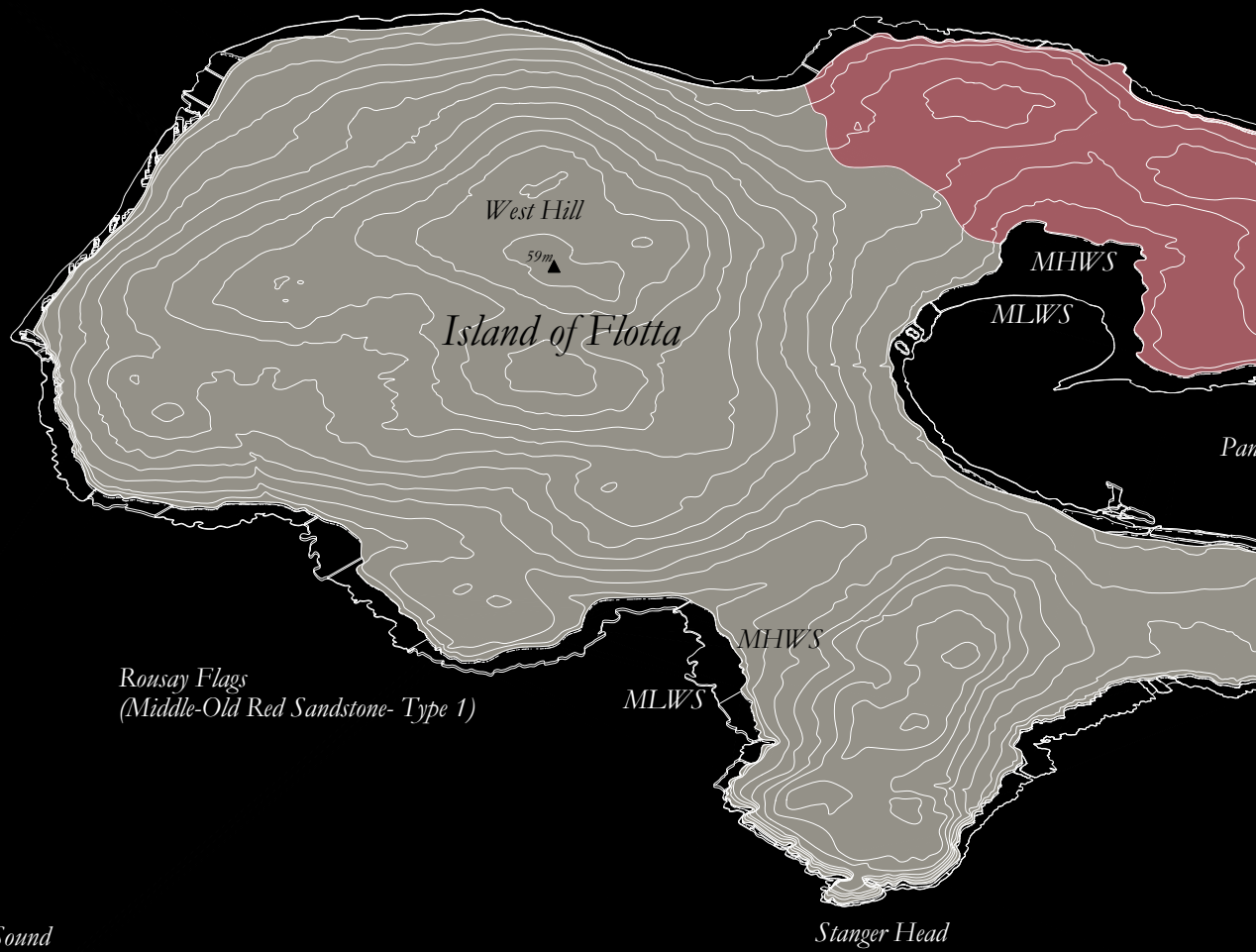
Once I started digging, it transpired there was a wealth of evidence, information and inspiration relating to Flotta, buried in many different kinds of media- some more hidden than others. Unsure how to record everything, I simply began to write it all down, resulting in a 27 page, 12,000 word document. Trying to illustrate all this in the research report would be an endless task, so I’ve tried to summarise the most important points in this report.

Continuous literature studies, interviews, a week-long site visit and consultation of (admittedly limited) existing mapping were used to build this extensive written documentation of evidence, some of which at times felt quite random but which was included as nonetheless potentially valuable. This was gradually grouped under various headings and subsequently mapped as a series of ‘layers’ which have the capacity to ‘speak’ to/interact with one another. By deconstructing evidence (everything from written stories to images, poems to verbal quotations and even 300 year old parish records) and then reconstructing it through mapping, I was able to identify different forces and characteristics of the island of Flotta, and consequently begin to understand heuristically the plural meanings of ‘Island Culture’. The Agency of Mapping allowed me to see that there was much more at stake than a mere global energy transition: There was entire way of life on this remote island that is about to be lost to history. That way of life is not just to be lost to the inhabitants of the island, but to our wider storytelling humanity. The stories of Flotta have given rise to at least three novels, extensive poetry, a popular piece of pipe music and even a BAFTA winning film- complete with soundtrack by Mark Knopfler, the frontman of the world-famous rock band Dire Straits. The physical island itself is remarkable within the Orkney context as a landmark, with the flare of the Flotta Oil Terminal visible across much of the archipelago and even memorialised in a stained glass window in Orkney’s cathedral.

Once upon a time in a land far, far away... Flotta is important- not just because it is energy rich, but as a source for storytelling. It is a place where hard, natural sciences and softer social sciences coexist. If (as I believe and as I have argued) architecture should be about connecting different scientific disciplines, then seeking to connect these on Flotta was crucially important for me.

*Weddel Sound*

*Eday Beds  
(Middle-Old Red Sandstone)*



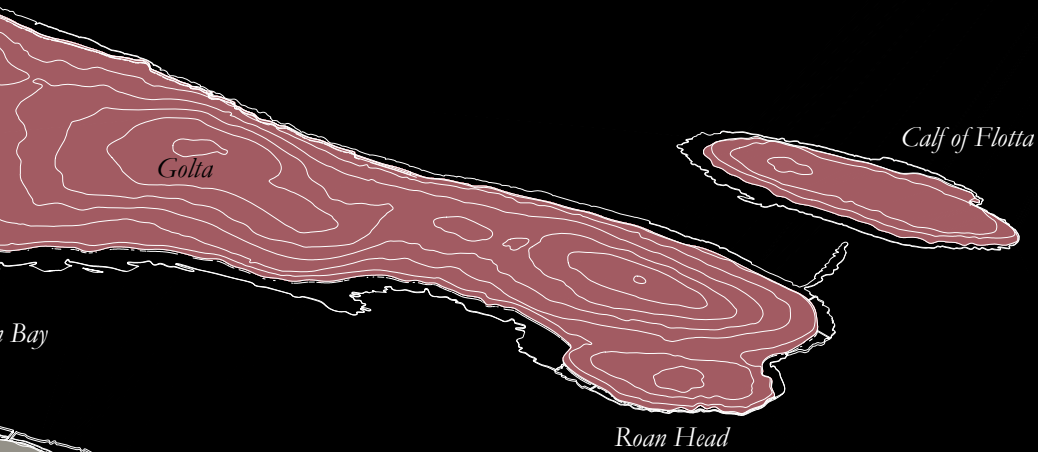
*Flotta: A Bruck-Mining Saga*

## Geology/Topography

After James Corner and "The Agency of Mapping"

one- Type 2)

*Scapa Flow*



Bay

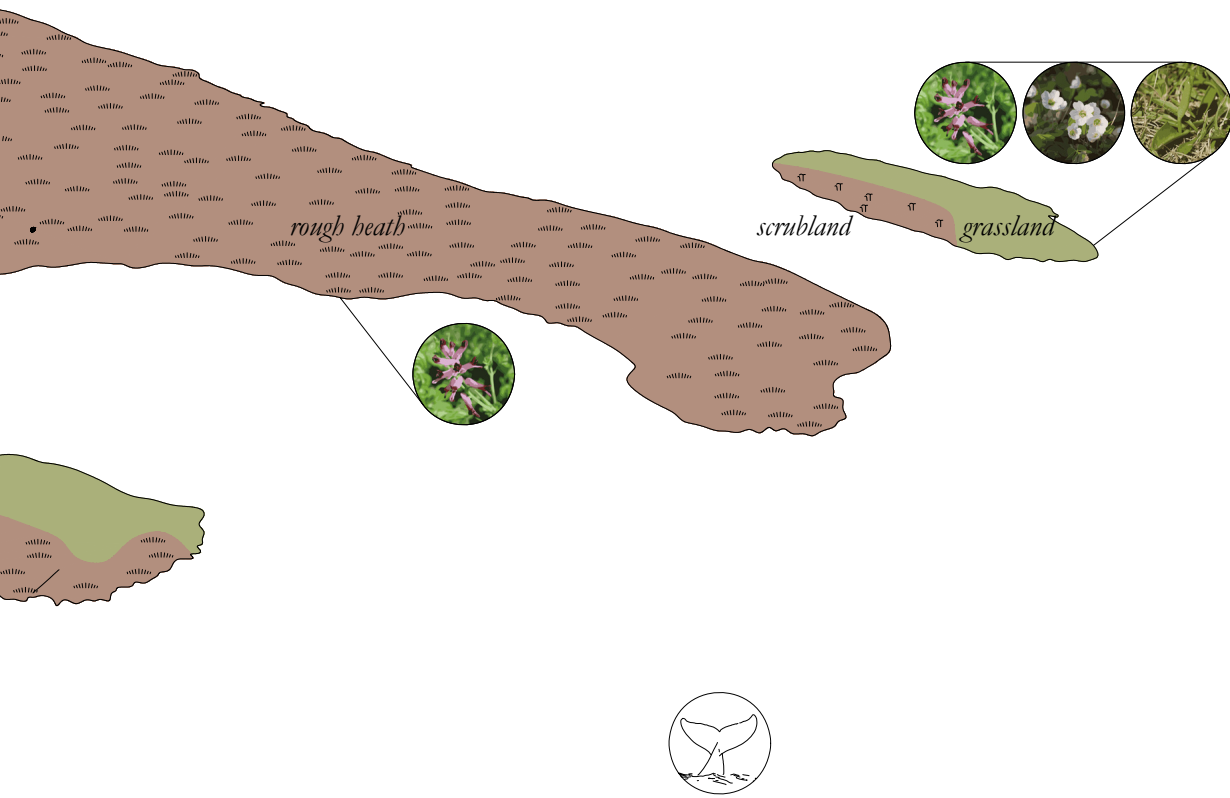
*Roan Head*

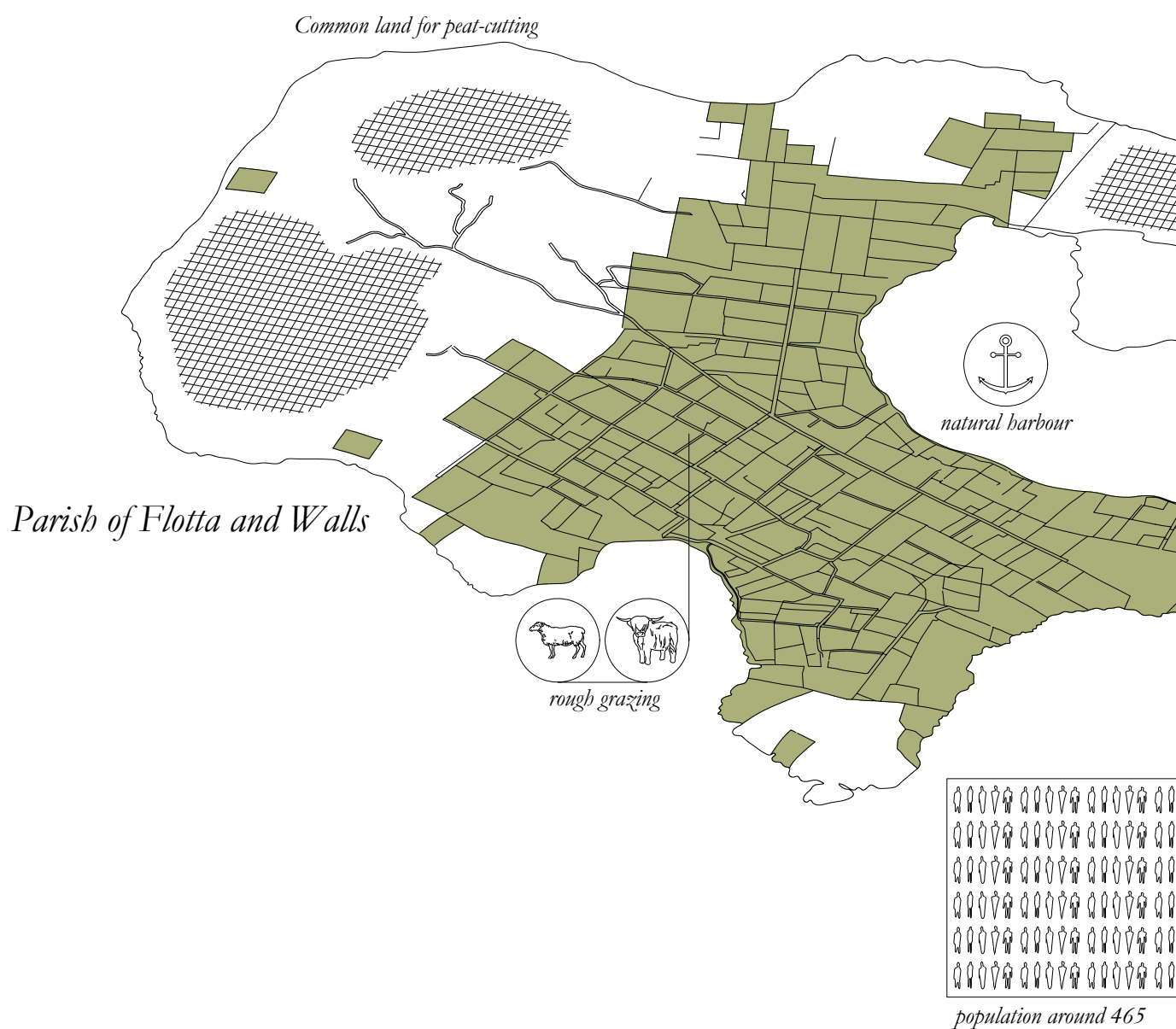
*Calf of Flotta*

*Sound of Hoxa*





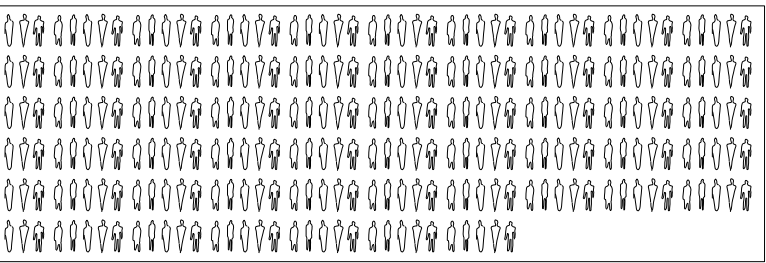
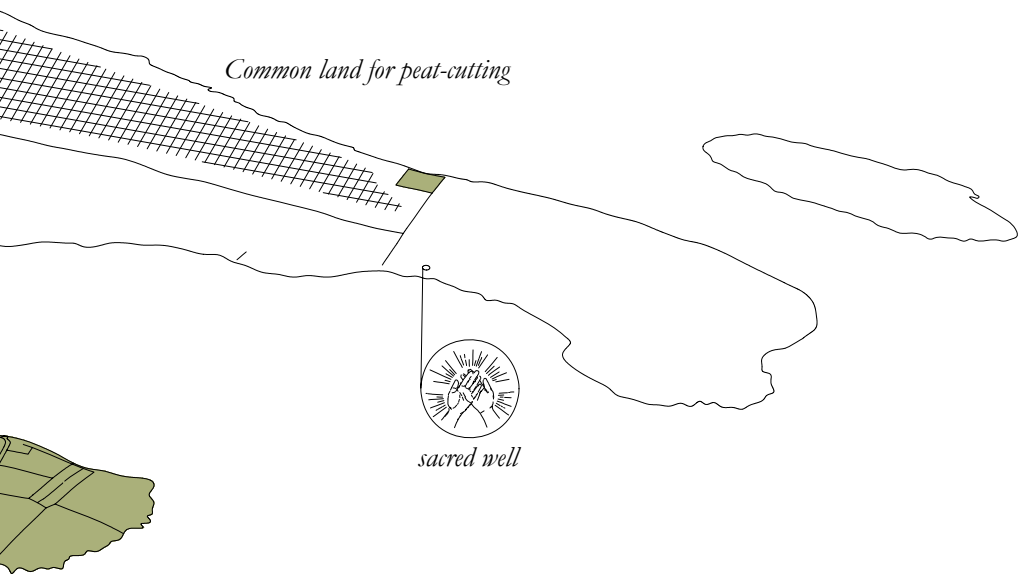




*Flotta: A Bruck-Mining Saga*

## 1880 Landscape

After James Corner and "The Agency of Mapping"





Passenger launch to Mainland [Orkney]  
(Free for Flotta residents)

Ferry to Hoy [Orkney]  
(Isles Rules e.g. no MOT required)

AC

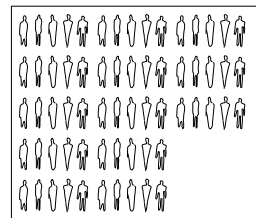
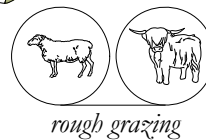
Ferry to Mainland [Orkney]  
(National Rules e.g. MOT required)

AC

Mains H20

Oil Terminal  
Repsol Sinopec Resources UK Limited

*Stromness and South Isles Ward*



population around 65

*Flotta: A Bruck-Mining Saga*

## 2020 Landscape

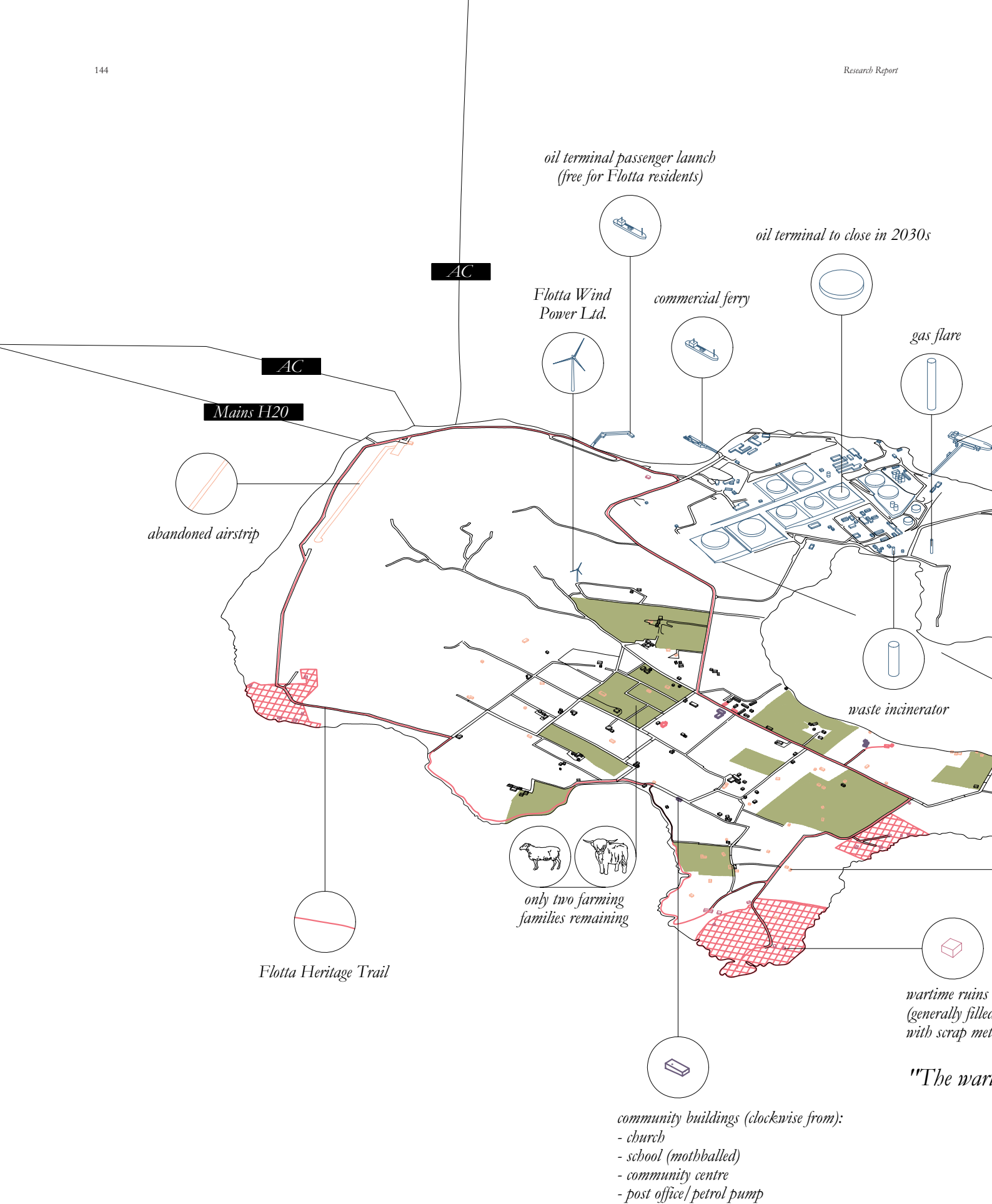
After James Corner and "The Agency of Mapping"

*De-ballast pipeline into Scapa Flow*

*De-ballast pipeline into Scapa Flow*

*Tankers to Grangemouth  
(Scotland, 8 hours sail)*

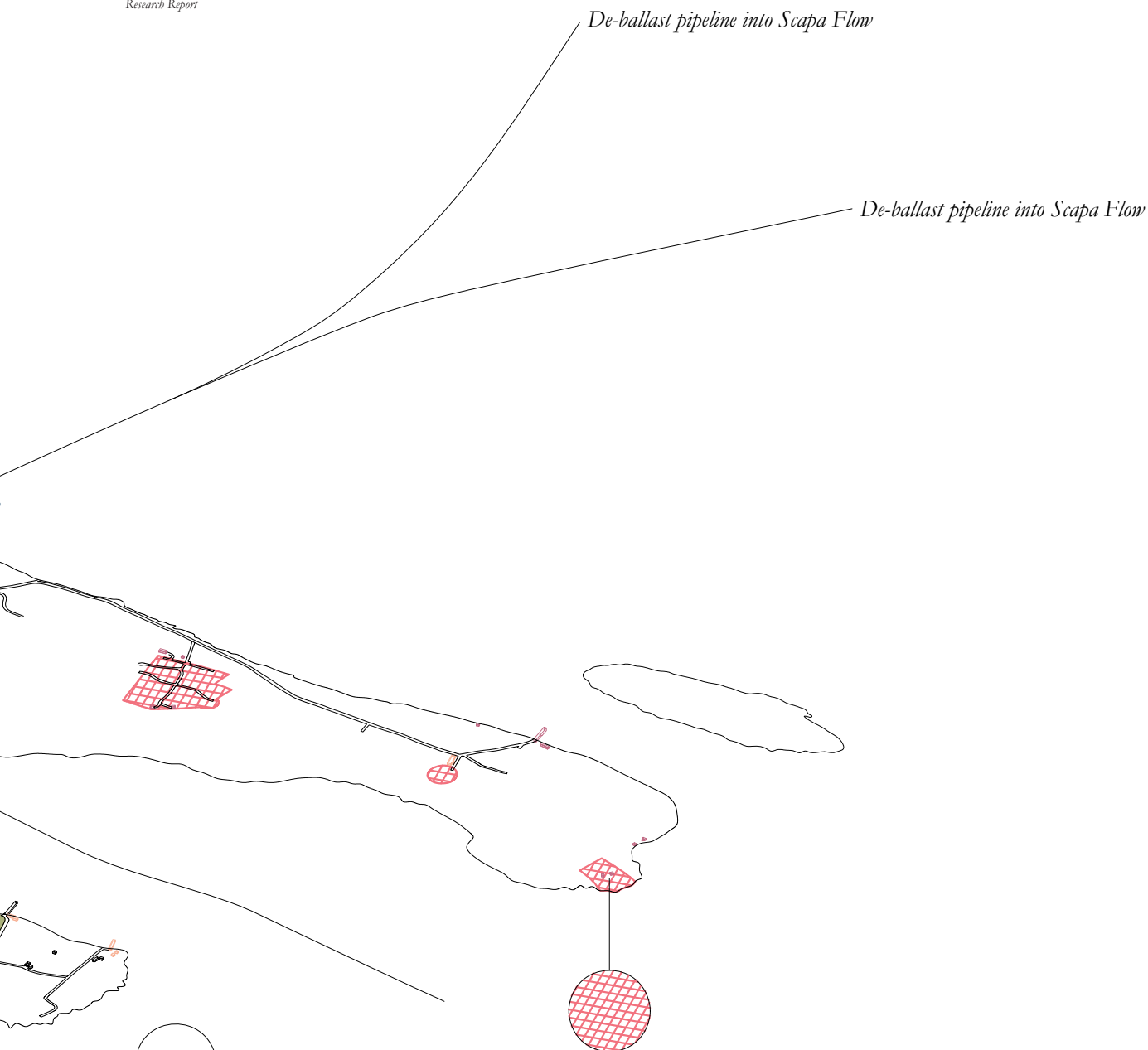
*pipeline to Piper and Claymore fields*



*Flotta: A Bruck-Mining Saga*

## 2020 Landscape Deconstructed

After James Corner and "The Agency of Mapping"



*Historic Environment Scotland Listed Buildings (clockwise from):*

- Roan Head, coastal battery and camp (WW1)
- Buchanan Battery, Stanger Head
- Stanger Head Battery, Stanger Head
- Innan Neb, coast batteries, barrage balloon site and camp
- Golta, World War II Z Battery and Light AA Battery
- Roan Head, World War II Balloon Barrage site

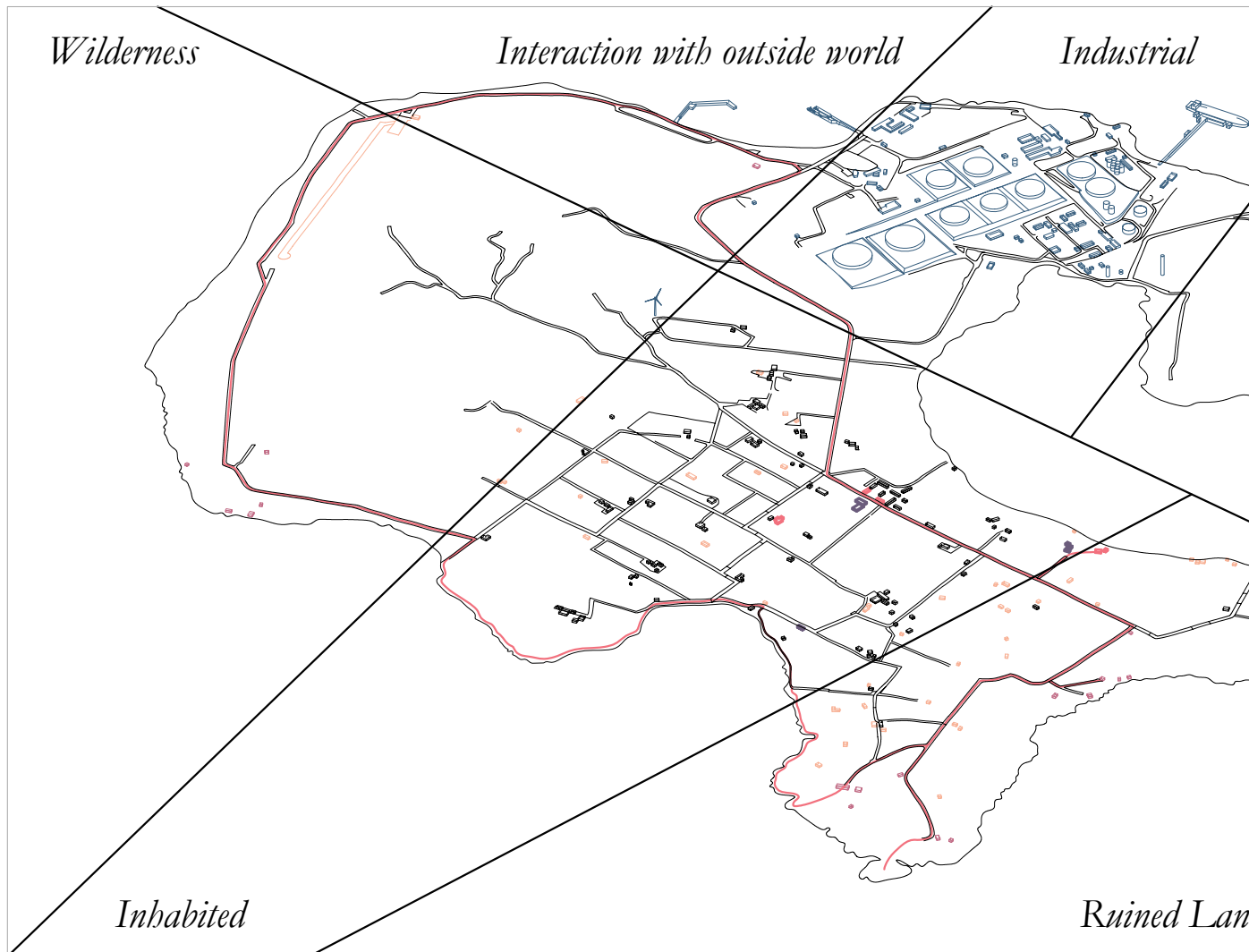
*croft house ruins*

*and with rubbish  
sculptures nearby)*

*time ruins? That's what brings folk to Flotta."*

*Phyllis Gee, Flottarian*

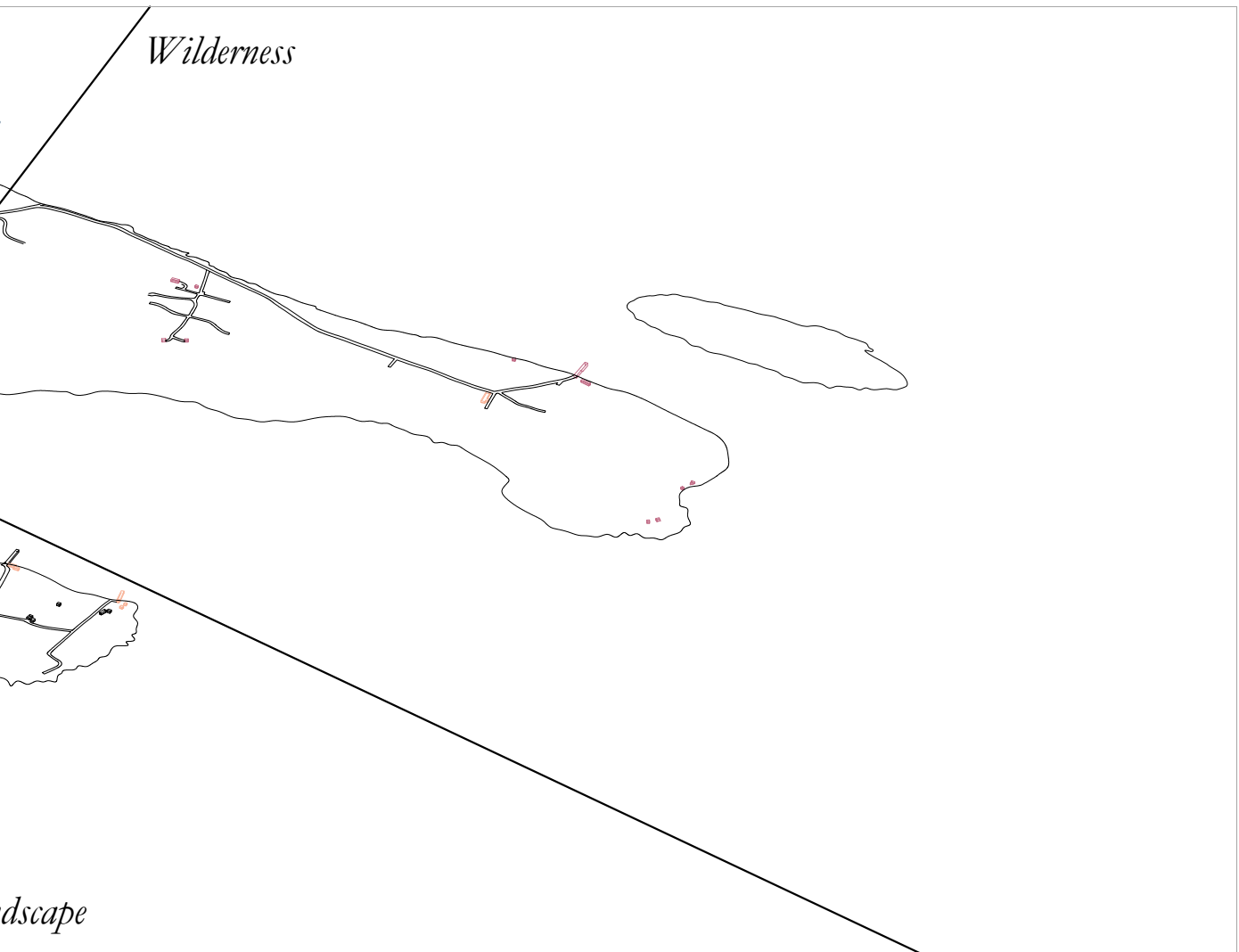




*Flotta: A Bruck-Mining Saga*

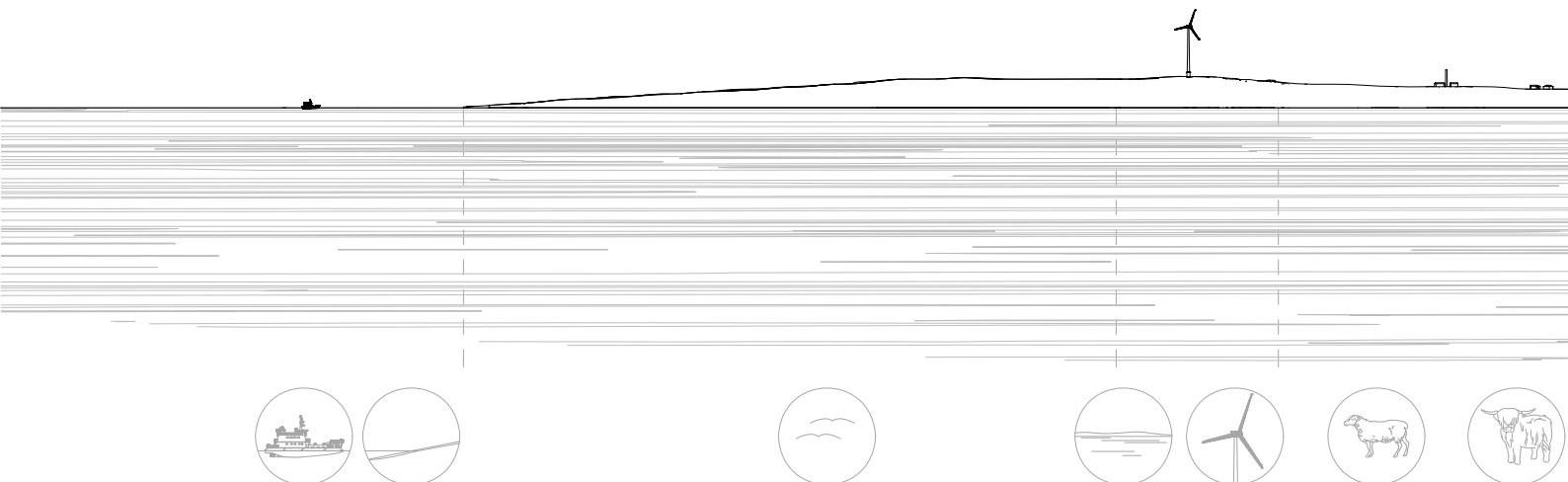
## 2020 Landscape Interpreted

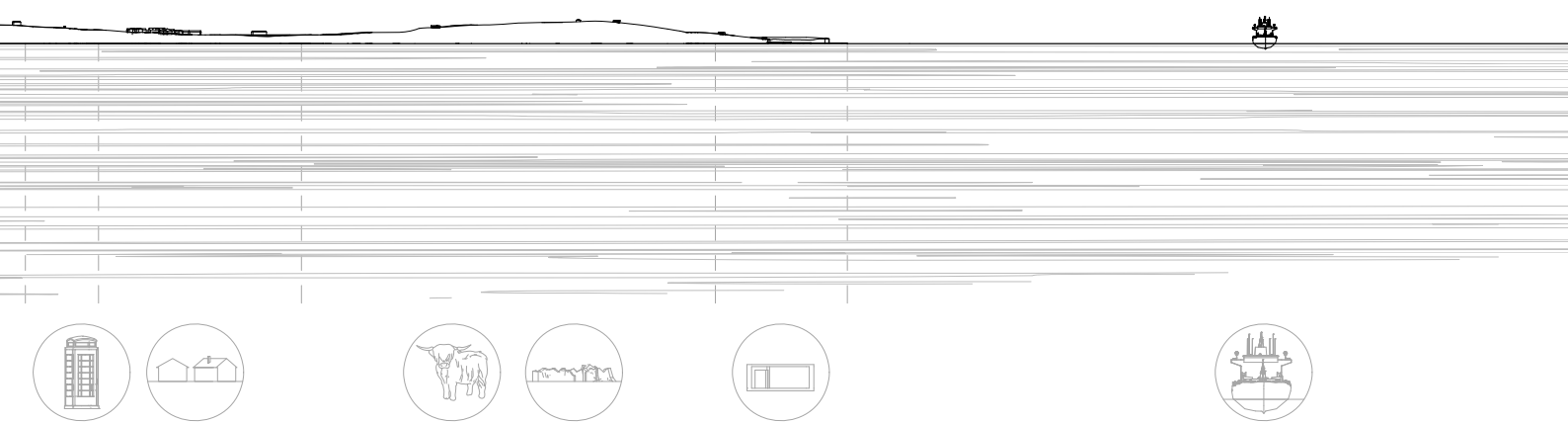
After James Corner and "The Agency of Mapping"



## Juxtaposition across ‘the flat island’

‘Flotta’ means ‘the flat island’ in old Norse. Its gentle topography means that the juxtaposition of elements and scales and times (so typical of the wider Orkney landscape) is visually very apparent on Flotta. It also can be experienced- largely by chance, though environmental factors are in part also responsible- in a series of horizontal cuts as illustrated in section. In this way, progression across the island allows for the unveiling of these elements and scales.

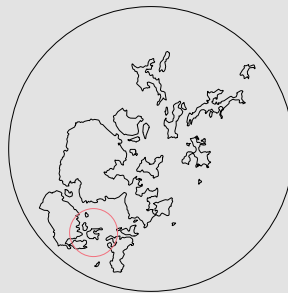








## problem analysis



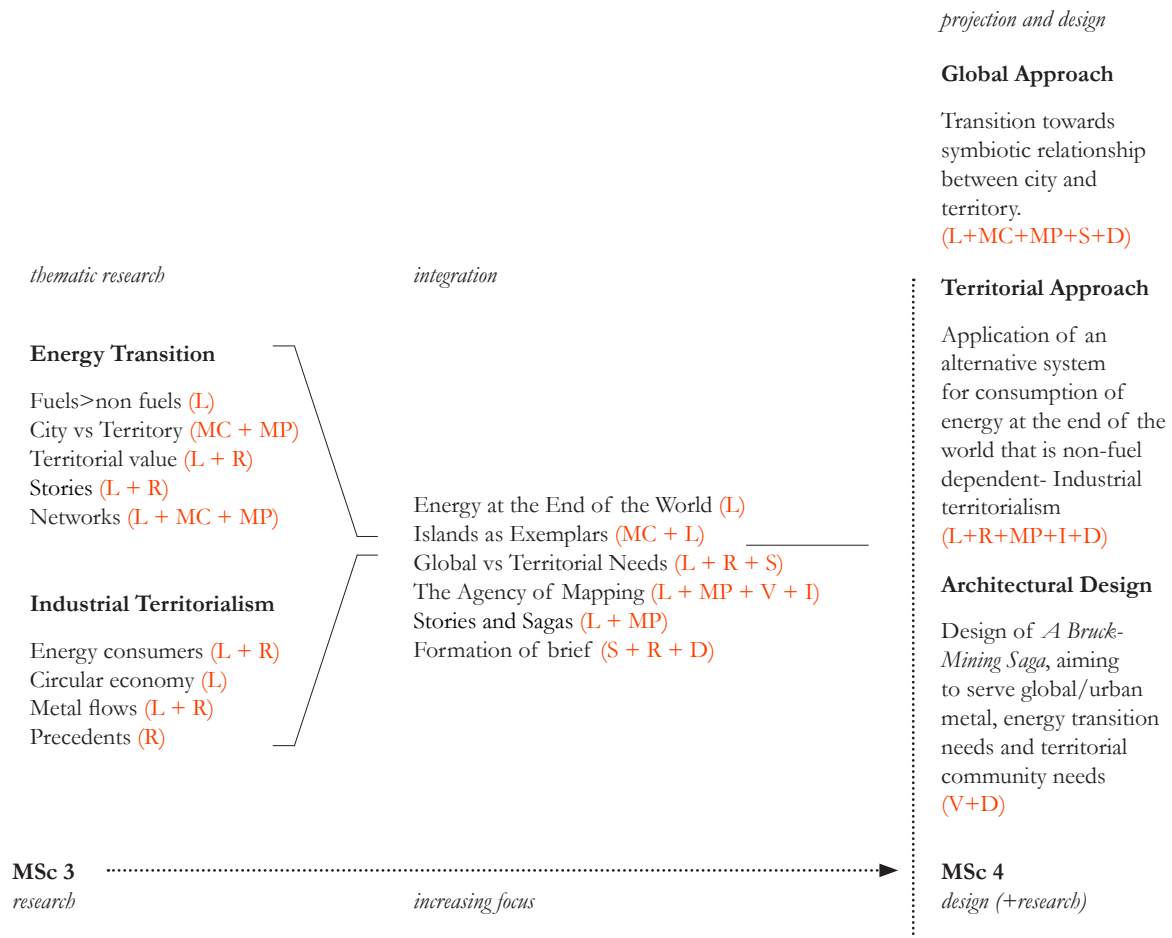
## Problem Analysis

As indicated by its title, the Chair of Transitional Territories proposes a territorial approach, viewing the North Sea and coastline at varying scales. This encourages mapping, deconstruction of that mapping and a fictionalising of cross-border themes and actors upon the North Sea. Cycling between these scales (both zooming in but also repeated zooming out) is crucial to the proposed studio approach.

My graduation project is perhaps unusual in scope- sitting at the juncture between global waste/energy contexts and territorial identity expressed through the stories of a declining island community. It is also temporal in its concern, positioning itself within a period of ongoing (and indeed uncertain) transition- both at the scale of North Sea waste management flows/energy transition and at the scale of an island and its unique community. It is interdisciplinary and requires knowledge of history, flows, systems, site and culture. Therefore, the territorial framework set out by the studio has been extremely helpful in seeking to navigate these different scales. For this reason, a number of methods have been necessary in order to conduct research and to begin design. Furthermore, revisiting of certain methods with new knowledge has also been necessary to manage interdisciplinarity as the project progresses. In doing so, the project makes the case for interdisciplinary working in architecture and science beyond.

The assembly of tutors from diverse backgrounds and of students from architecture, landscape and urbanism (along with the North Sea context) is what drew me to the studio. The value of interdisciplinarity is therefore very much embedded in the studio, and I believe has very much informed my approaches to research/design.

L	Literature Study
MC	Mapping Current State
MP	Mapping Projections
S	Scenario Planning
R	Reference Analysis
V	Visit
I	Interview
D	Research by Design







## the project





## The project

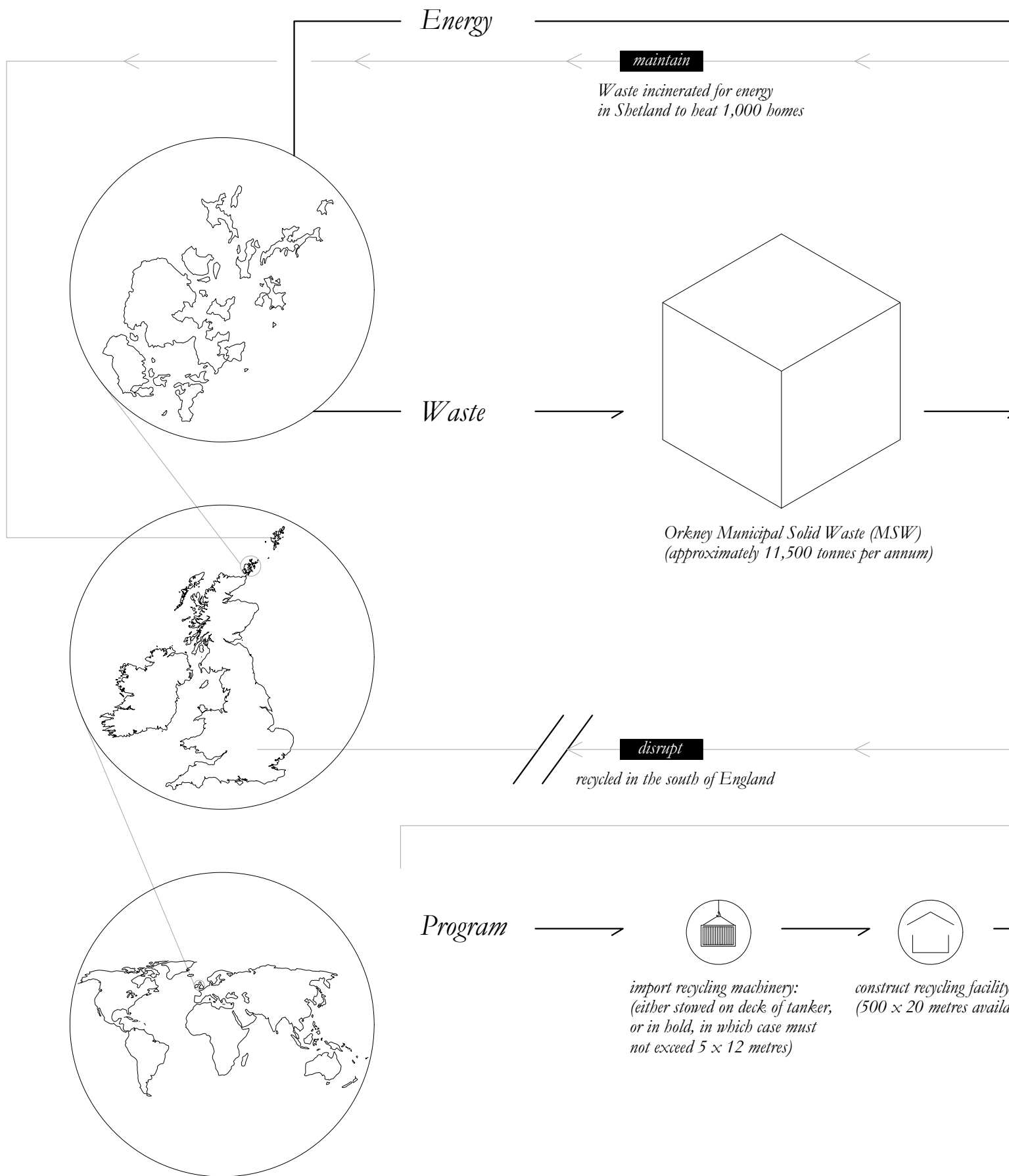
‘The project’ is not so much one project, but rather many. In essence, it is a design at island scale- a testament to the value of this remote territory, and by extrapolation, to other remote territories. This value has both ‘hard’ and ‘soft’ logic.

The ‘hard’ logic speaks of infrastructure and global transitions. The research explored the idea that a widespread transition to renewable energy has spatial consequences. By using surplus renewable energy in remote locations for energy intensive industries (rather than trying to centralise energy and industry as is the current status quo), we enable our aspiration for an energy transition to occur. To this end, ‘the project’ proposes a metal recycling plant at one side of the island of Flotta. The metal recycling plant assists aspirations for a circular economy and for a transition to renewables by exporting the surplus energy of the remote territory in the embodied energy of the metal. This part of the project also strives to meet Orkney needs to improve its waste (bruck) management and to future-proof its economy beyond oil. It also strives to meet Flottarian needs to provide a continued *raison d’être* with the impending closure of that very same oil terminal by maintaining employment on the island as well as vital services running between Flotta and the rest of Orkney (these needs are of course a function of globalisation). The metal recycling plant is located on a brownfield (bruck) site at the point where the electricity cable comes ashore. This is of course symbolic of the limitations of centralised networks.

The ‘soft’ value is a response to a deeper researching of Flottarian needs and (vanishing) identity. This research allowed me to acquire a revelatory appreciation of the value of ‘island culture’, and a quite personal desire to propose something which really spoke to and of the people of Flotta and their rich tapestry of stories. For this reason, I sought to record architecturally some of the existing but vanishing tales of Flotta’s past and intertwine them with this new tale of metal recycling. I sought also to humanise the infrastructural scale of metal recycling through the extension of the already existent ‘Creative Orkney Trail’ to the island of Flotta through the establishing of craft metal workshops within a series of wartime ruins (bruck). This proposal is an attempt to breathe new life and new stories into the island’s declining community, while still ultimately connecting it with the stories of the past. With the dichotomy between the original Flottarians and the incoming residents still unresolved, this part of the project seeks to draw together their respective needs, wishes and aspirations for Flotta through a repository of stories and community arts space. By inhabiting a ruined (currently uninhabited) landscape, the project adopts neutral ground for this interaction to occur. Of course, even were this attempt at new community synthesis to be broadly disliked (which is NOT the aim), it would still create an alternative form of unity through broad antipathy (East and West Berliners were united in their dislike for the Berlin Wall). However, I would like to stress again that the project is first and foremost optimistic in seeking to unite the Flotta community.

The architectural language of this part of the project was the subject of much discussion and deliberation (especially between P3 and P4, as my tutors Jacques, Sjaap, Francesca and Taneha will remember!). I ultimately decided that an ‘international’ architectural language (rather than a traditional language) was most appropriate for the simple reason that a crucial part of the character of Flotta is its interaction with the outside world. This is evidenced by the wartime ruins and oil terminal, both of which are central to the Flotta identity. In addition, the project is not exclusively a celebration of Flotta uniqueness, but rather an exemplar of what might be possible in remote territories...



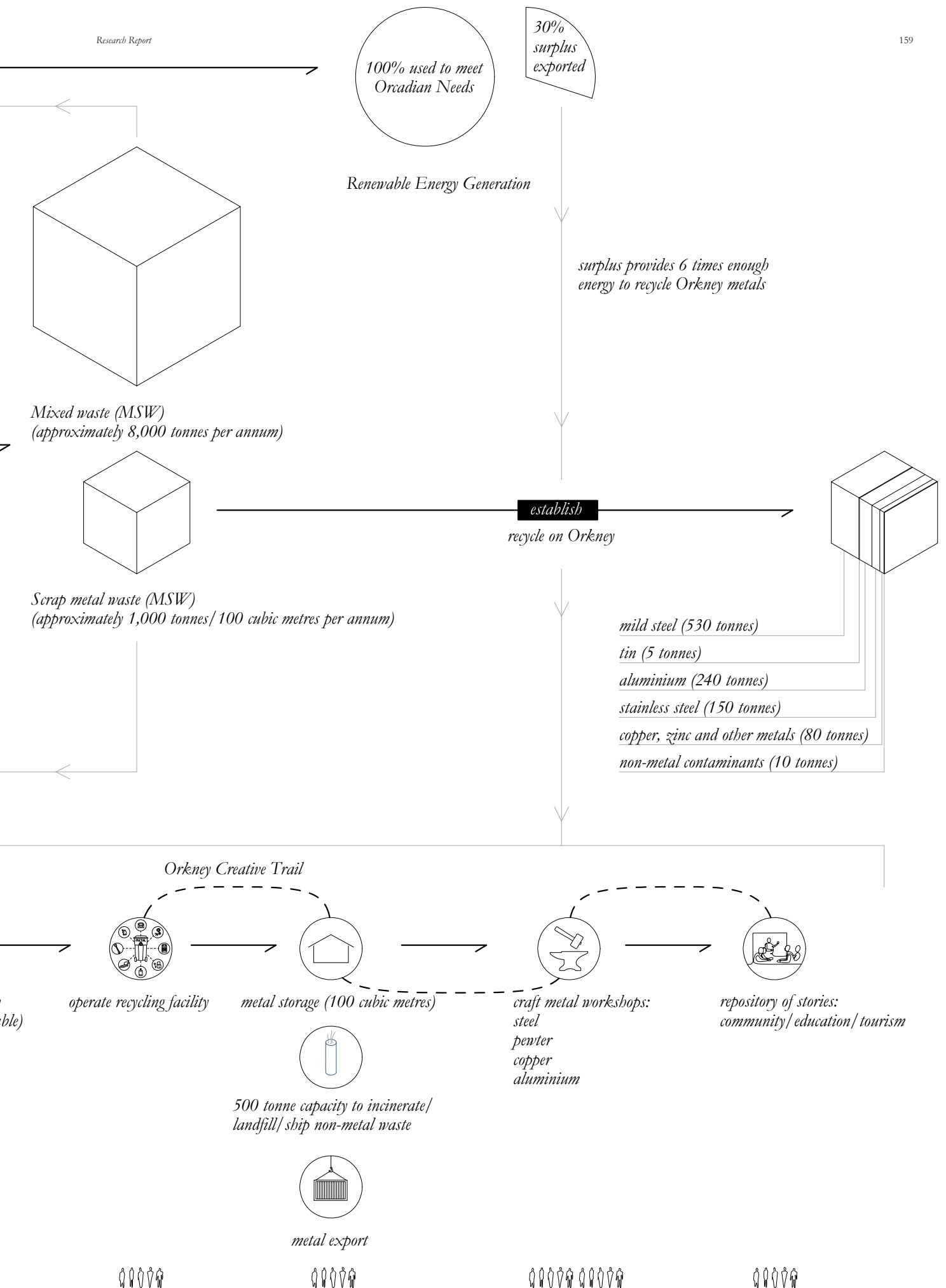


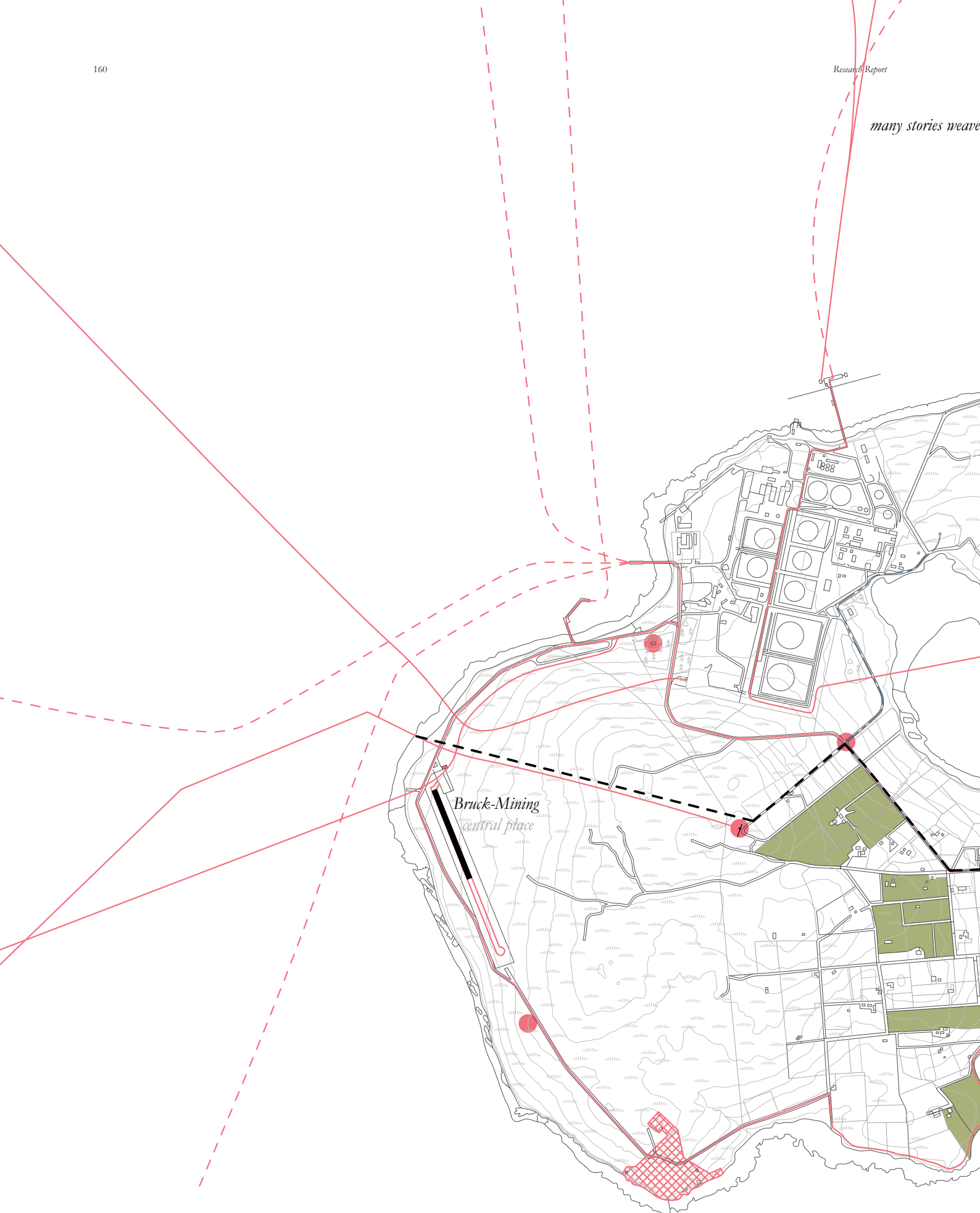
*Flotta: A Bruck-Mining Saga*

## Proposed Program

*People*

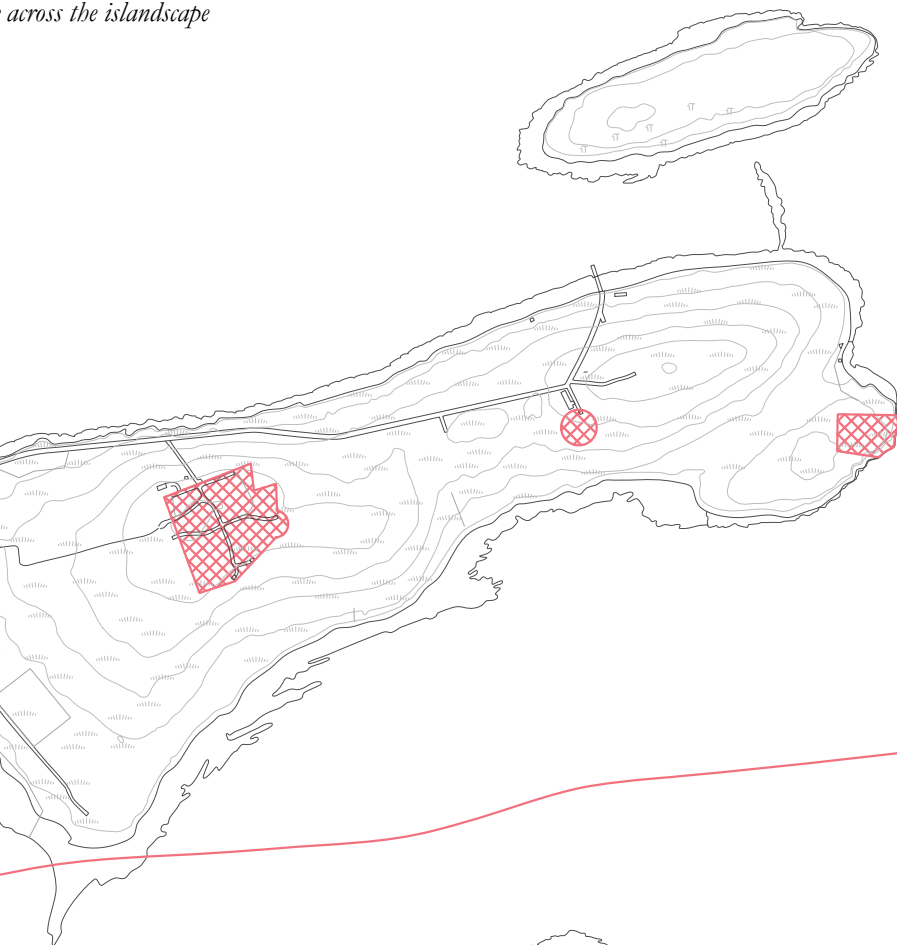




*many stories weave**Flotta: A Bruck-Mining Saga*

# Saga as connecting line across stories of the islandscape

across the islandscape



Saga  
remote territory



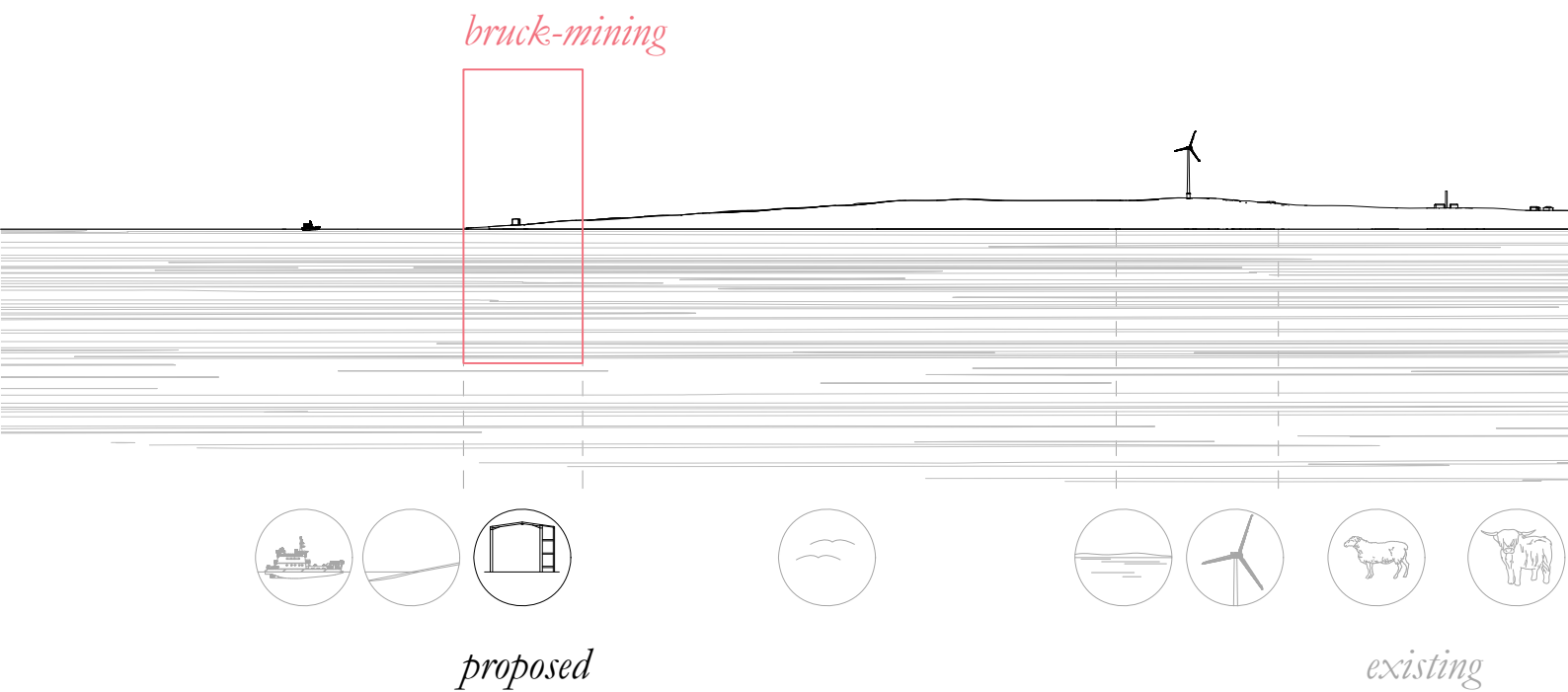


*Flotta: A Bruck-Mining Saga*

Creative Orkney Trail extended to Flotta to form a Bruck-Mining

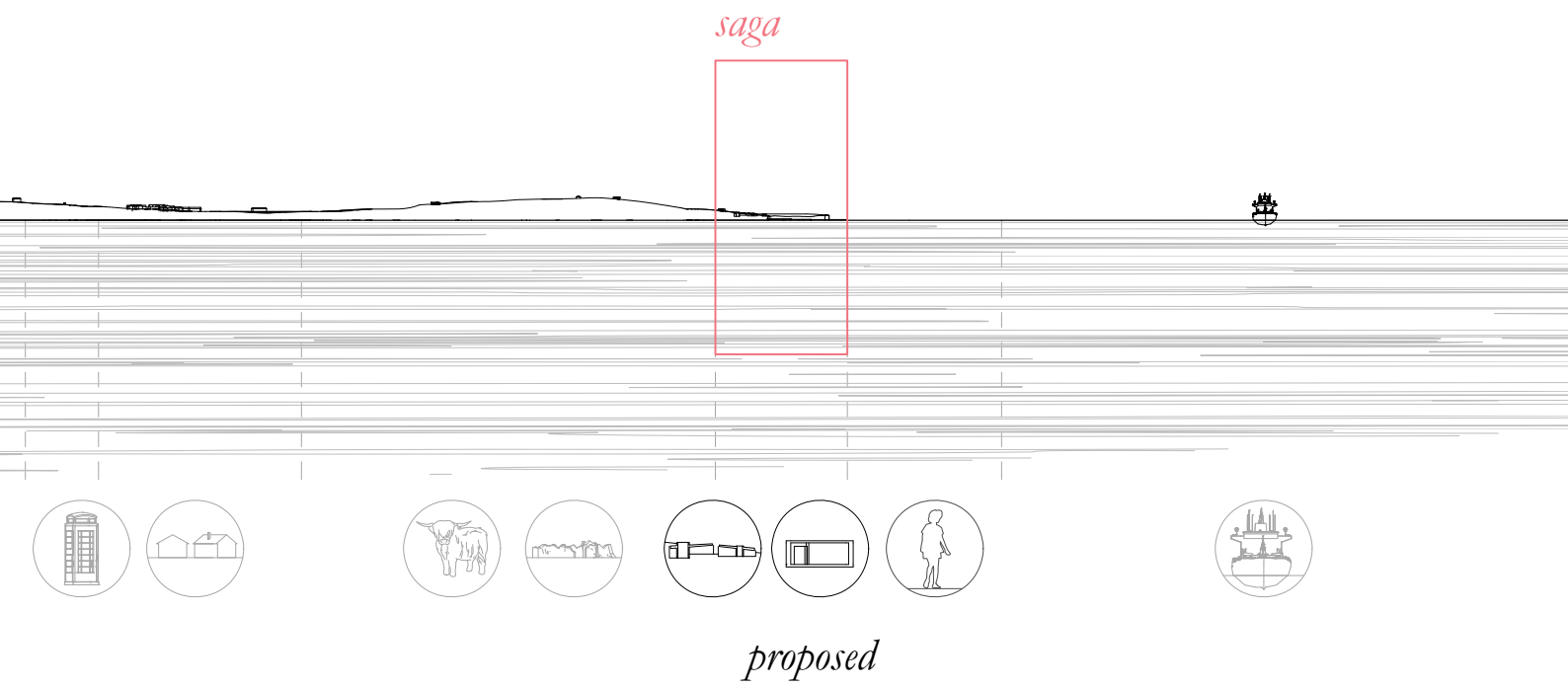


ing Saga



*Flotta: A Bruck-Mining Saga*

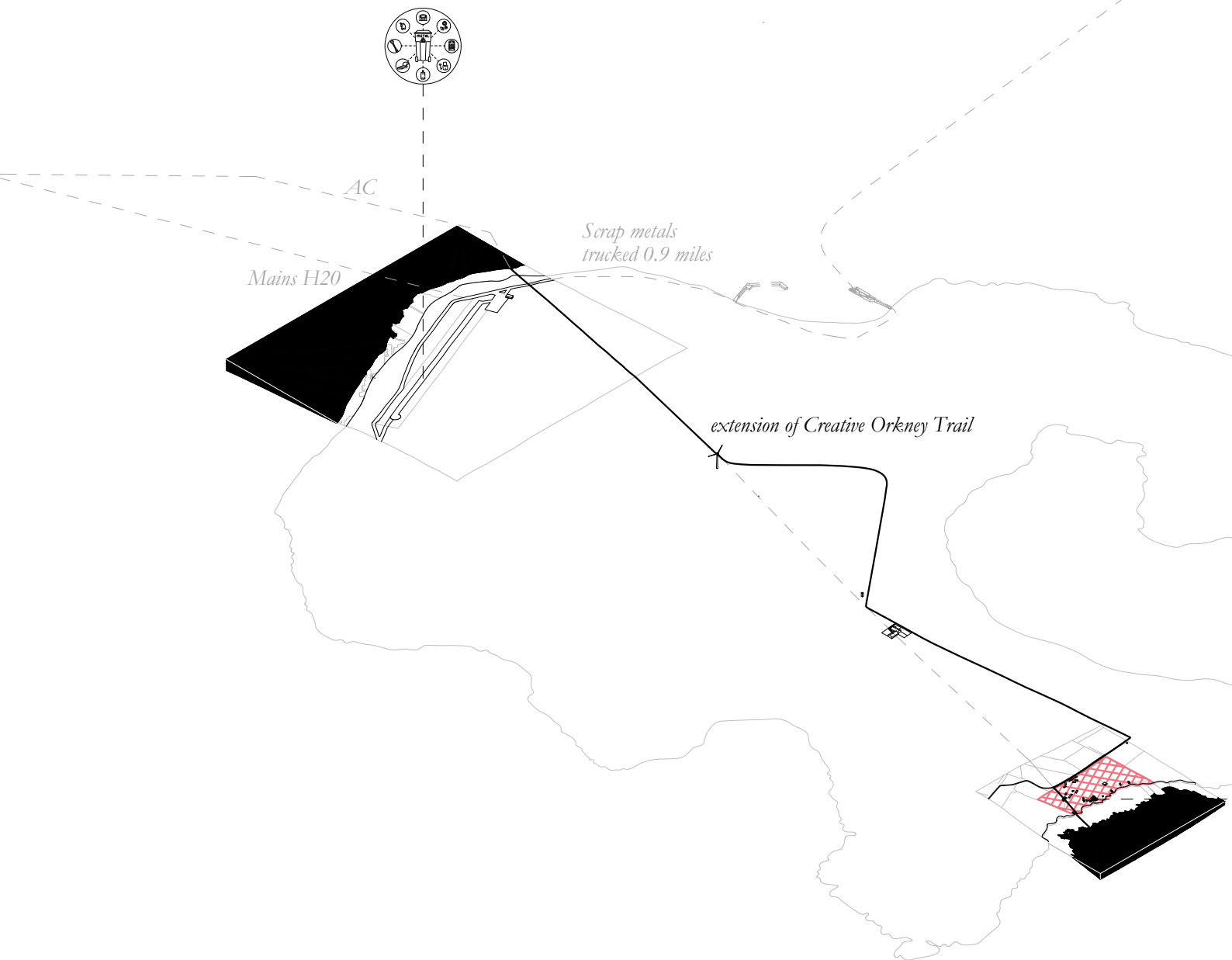
## Juxtaposition of existing and proposed features and scales



*and district heating network* → *remoteness:  
proposed human scale*

## Infrastructure Scale

*Orkney waste metal recycling*



*Flotta: A Bruck-Mining Saga*

## Connection across stories of the landscape

After James Corner and "The Agency of Mapping"



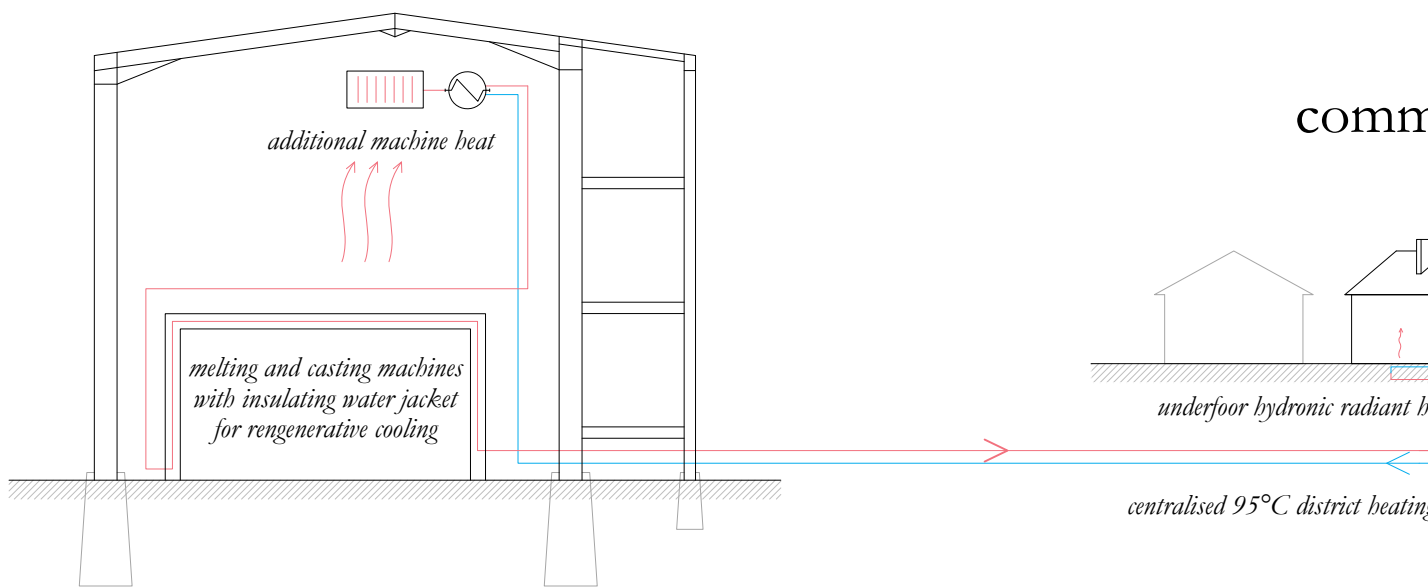
*Orkney scrap metals imported via  
Ferry to Mainland [Orkney]*



## *Human Scale*

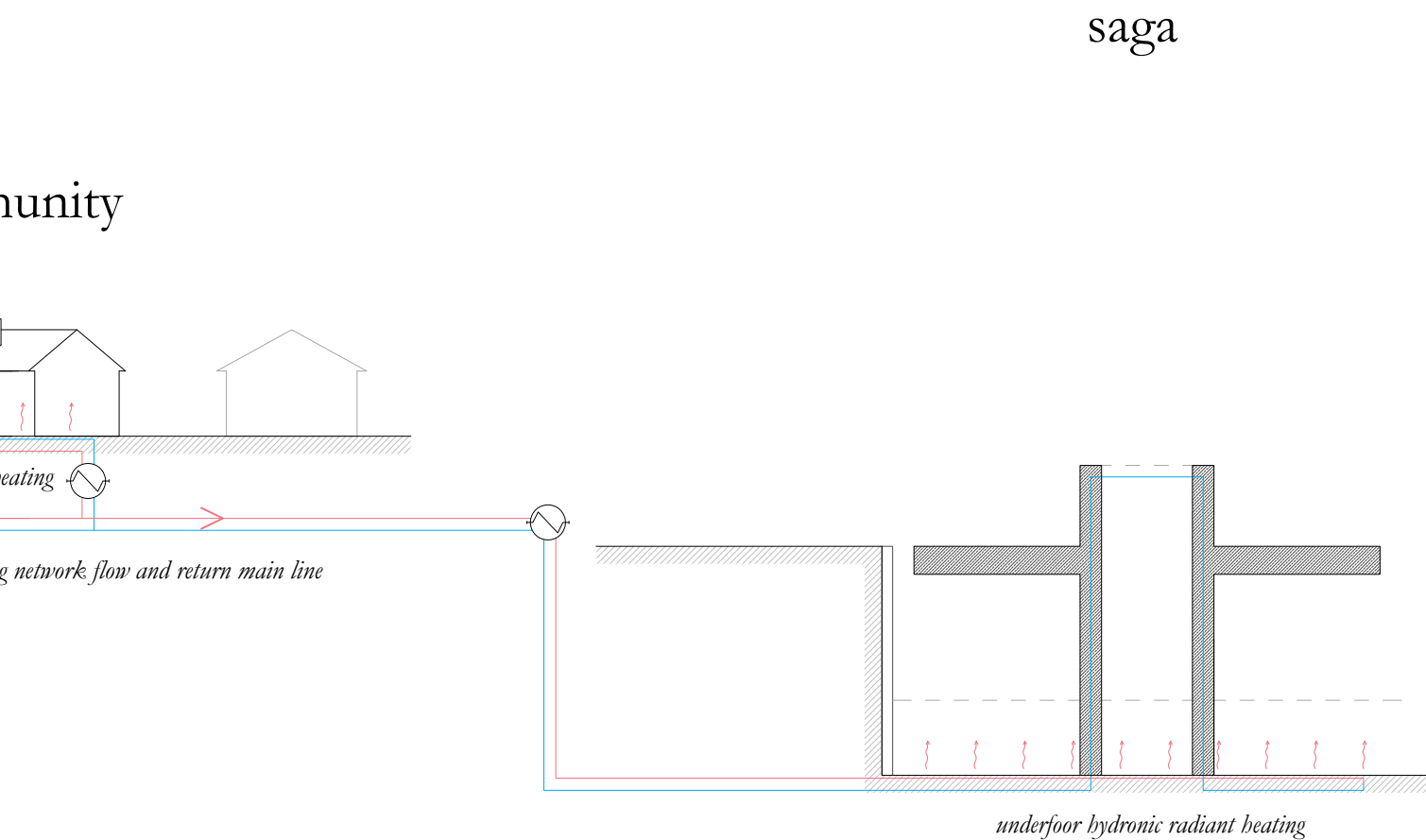
*repository of Flotta stories leading into craft metal workshops*

## bruck-mining



*Flotta: A Bruck-Mining Saga*

## A project of de(ce)entralisation











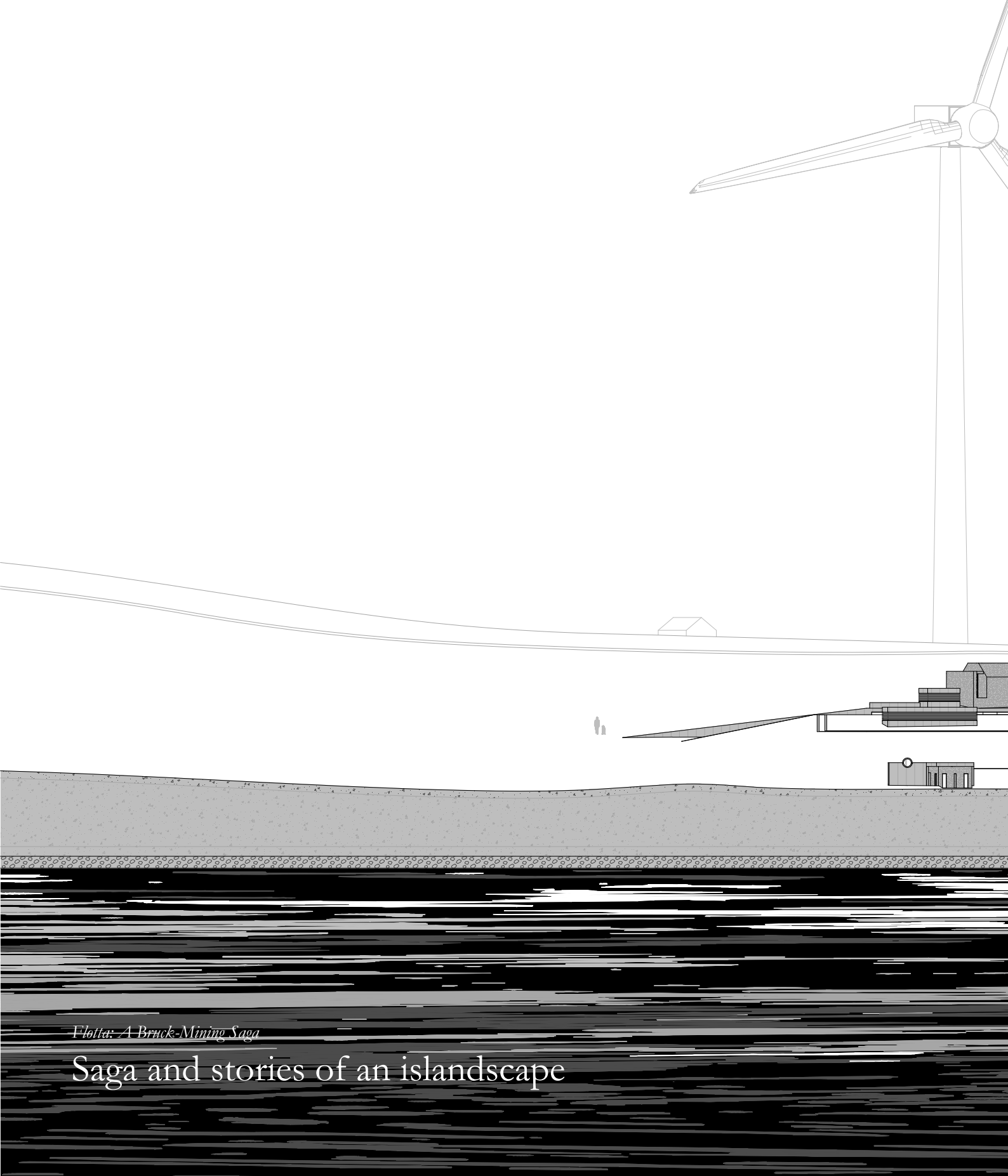
## Architectural focus

The limitations of time meant that designing in full detail a metal recycling plant, a repository of stories/community arts space and several craft workshops was never going to happen, despite my convincing myself at some point that it might. For this reason, I have designed all the constituent parts of 'the project' to some level, but focused my efforts primarily on the repository of stories/community arts space. To me, they were the most interesting and most challenging part of the island-scale project, with the greatest potential for architectural exploration.

Spatially, this part of the project seeks to be a saga in built form, in which individual stories (past, present and future) are united around this one saga line. The spaces are independent of each other, but united by a shared language which ties the individual stories into one saga.

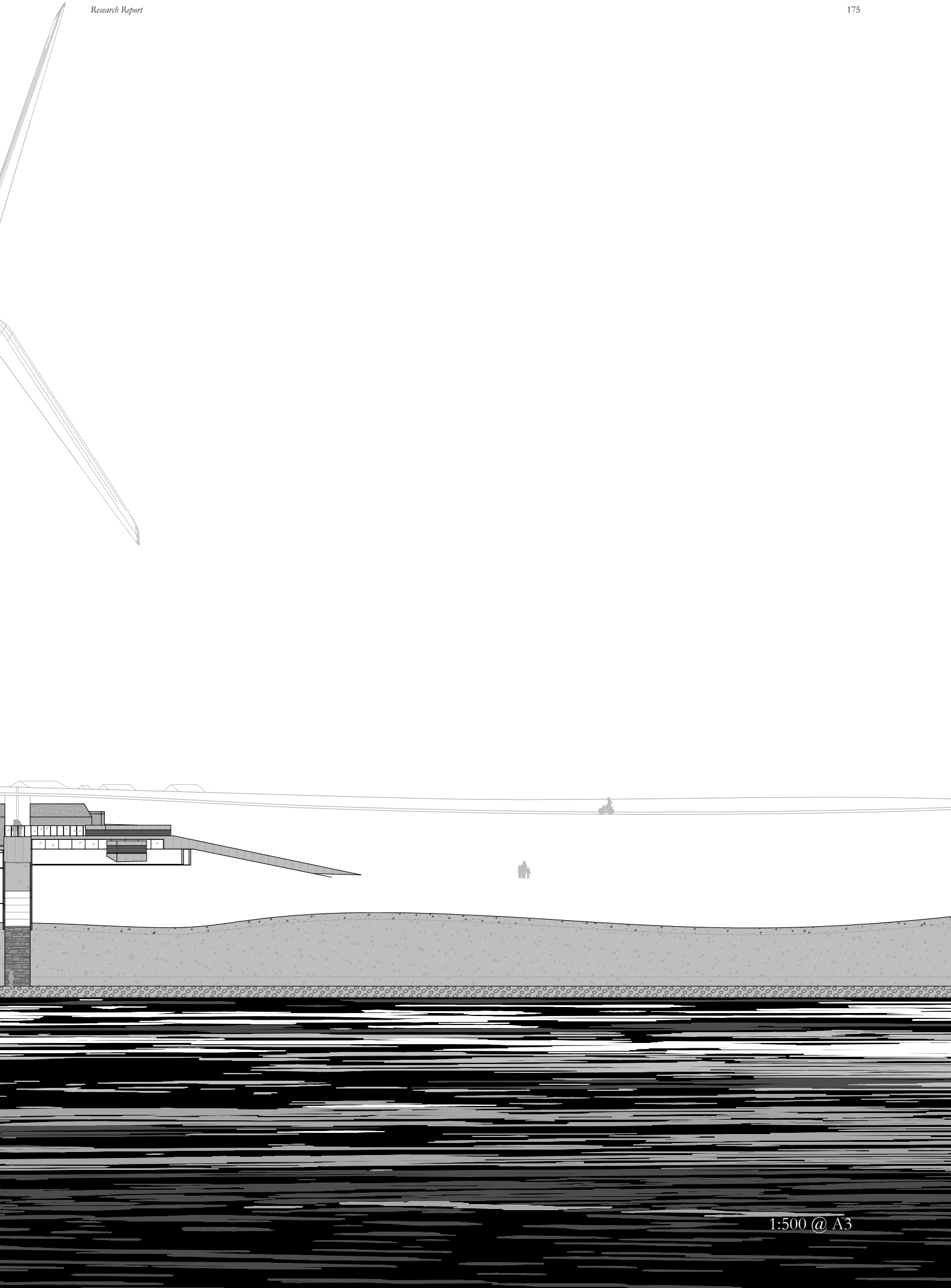
I've already written that the architectural language of this part of the project was the subject of much discussion and deliberation (especially between P3 and P4, as my tutors Jacques, Sjaap, Francesca and Taneha will remember!), but I think it's worth repeating. I ultimately decided that an 'international' architectural language (rather than a traditional language) was most appropriate for the simple reason that a crucial part of the character of Flotta is its interaction with the outside world. This is evidenced by the wartime ruins and oil terminal, both of which are central to the Flotta identity. In addition, the project is not exclusively a celebration of Flotta uniqueness, but rather an exemplar of what might be possible in remote territories...





*Flotta: A Bruck-Mining Saga*

## Saga and stories of an island



## Remoteness has consequences

The project explores the idea that where water meets land is where remoteness begins. It argues that remoteness has consequences- in terms of 'hard' infrastructure and global transitions, and with 'softer' notions of community and identity.

The project seeks to therefore emphasise the story of humanity as intrinsically linked with the remote territory- contrasted, but also in a new symbiosis with, the status quo of centralisation.

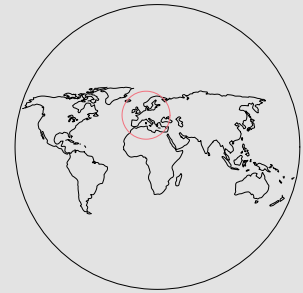
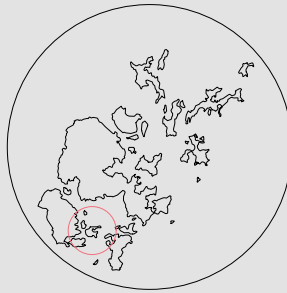


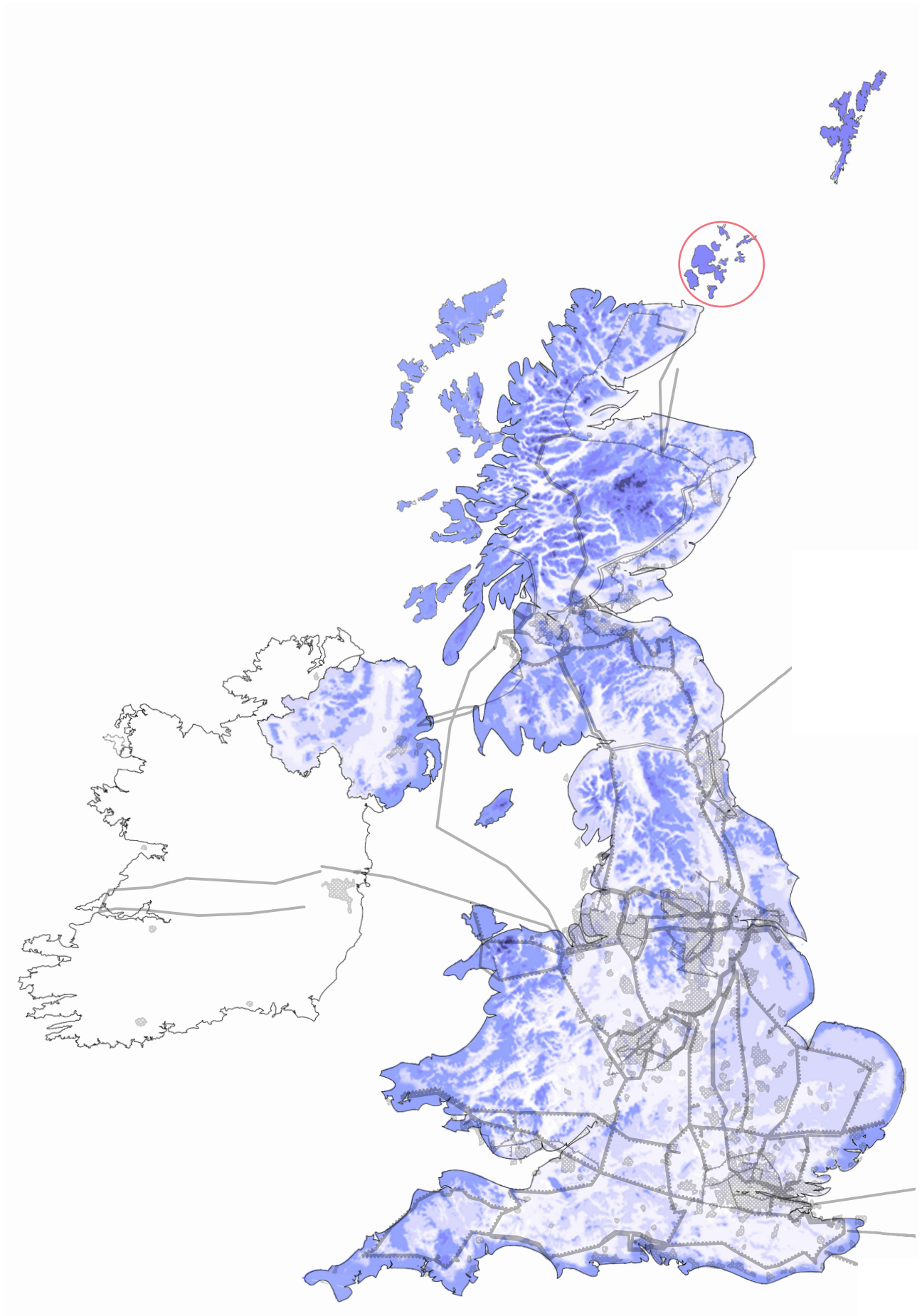






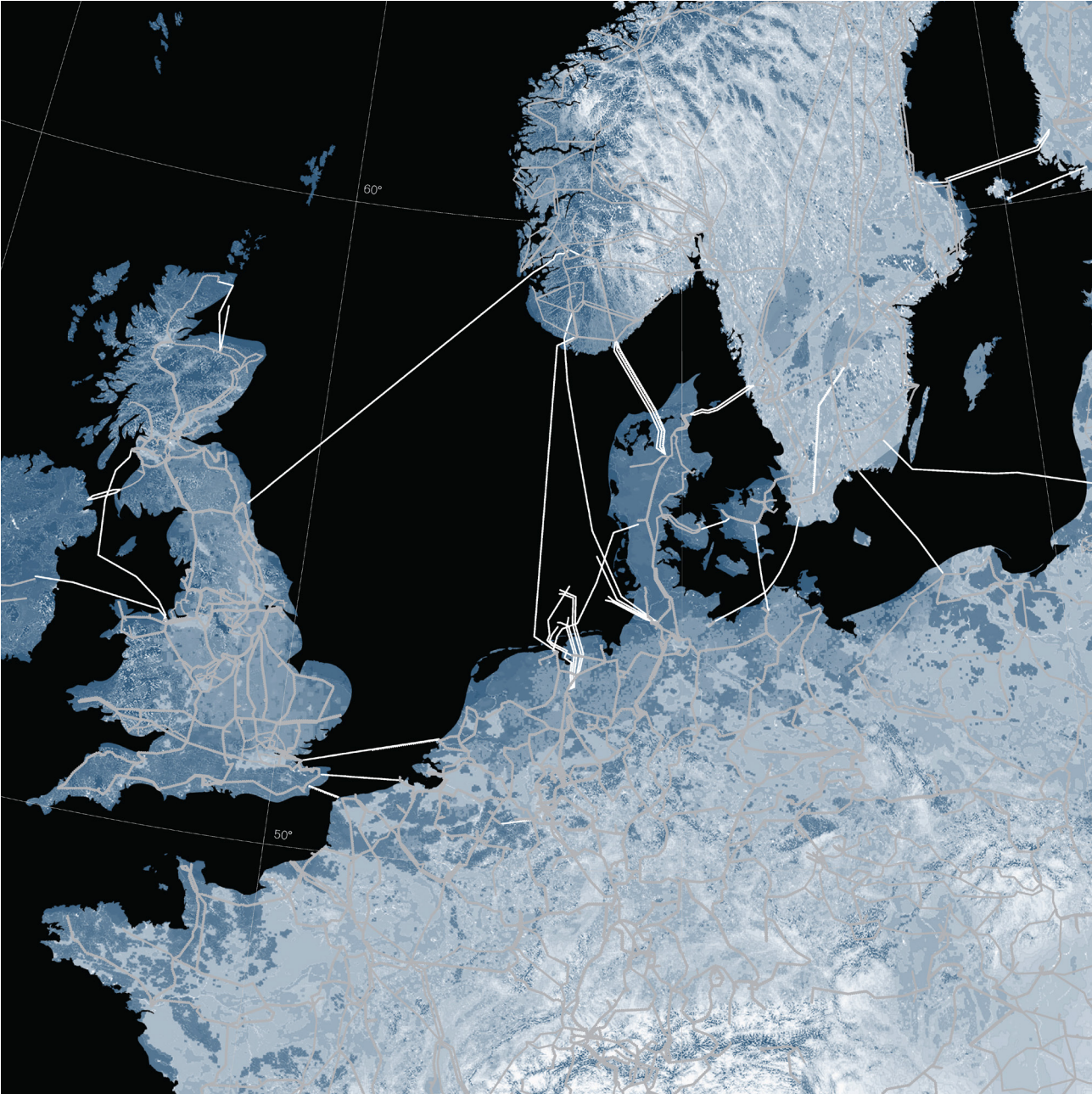
## epilogue





adapted from: <https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/wind/windiest-place-in-uk>  
Natural Earth Data, retrieved from [www.naturalearthdata.com/downloads/10m-cultural-vectors/](https://www.naturalearthdata.com/downloads/10m-cultural-vectors/), on 23.10.2019.





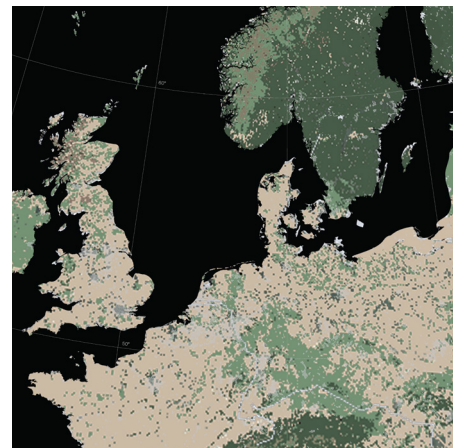
credits: Natural Earth Data, retrieved from [www.naturalearthdata.com/downloads/10m-cultural-vectors/](http://www.naturalearthdata.com/downloads/10m-cultural-vectors/), on 23.10.2019.

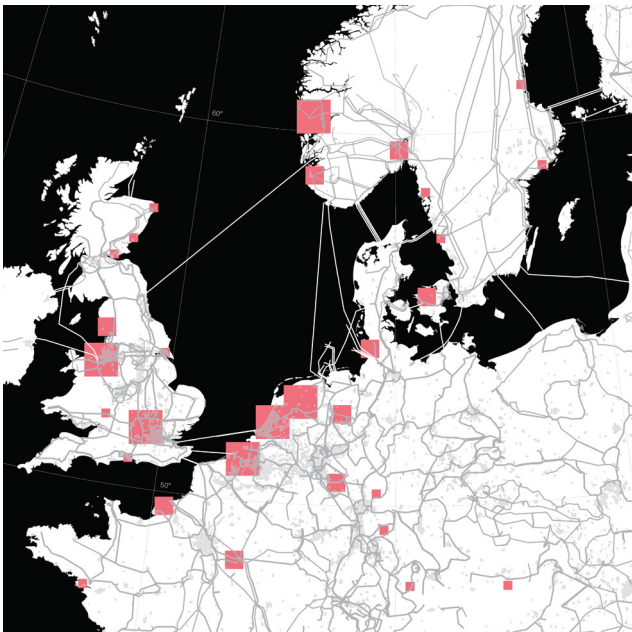
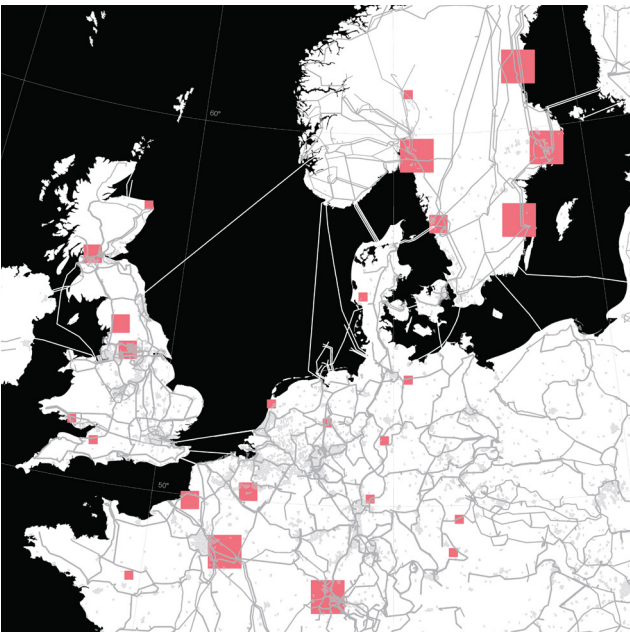
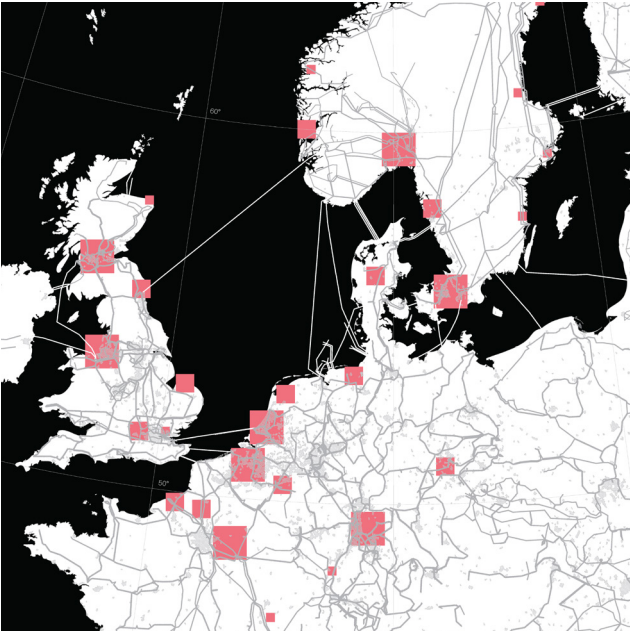
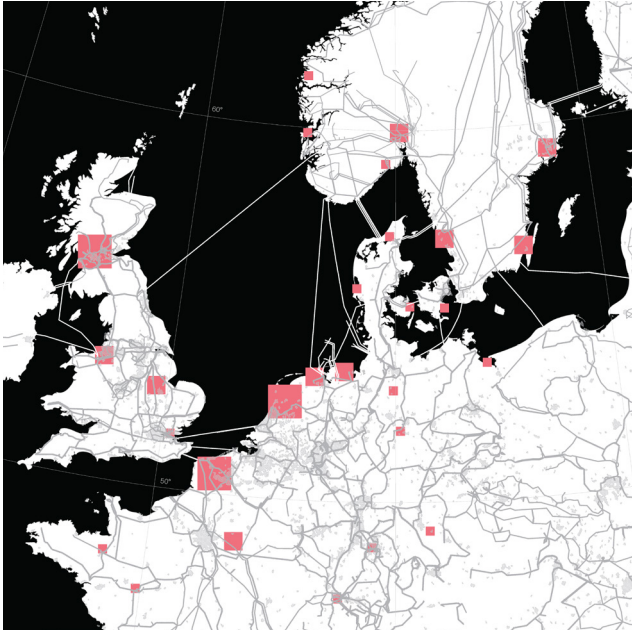
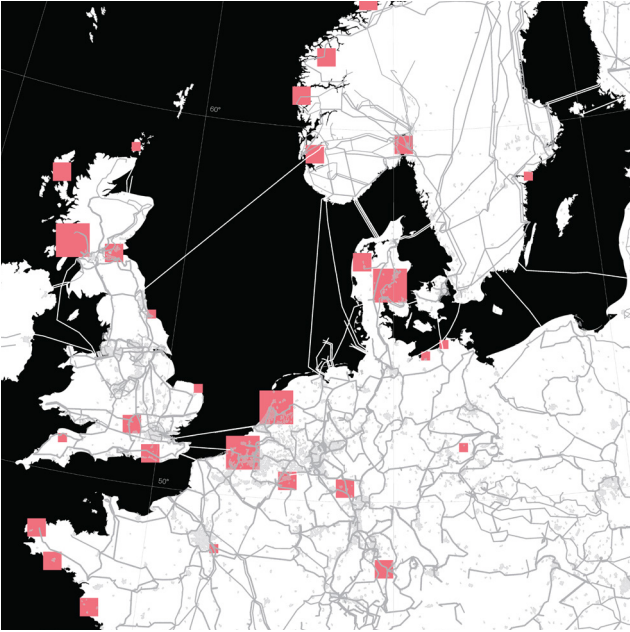


## The Oceanic Project

The Oceanic Project explored the idea of parallel worlds- the world in which power is wielded (the city) and the point at which power is produced (through the mining of the territory).

This idea of mining has sought to draw in the territory, leading to its destruction in this anthropocene epoch. Life in the territory is gradually being absorbed by the city, but this will in turn bring about the collapse of the city. The project explores the possibility of transferring energy intensive industries to the edge, where there is a surplus of renewable energy. At present, these industries are primarily existing within the status quo of centralisation.

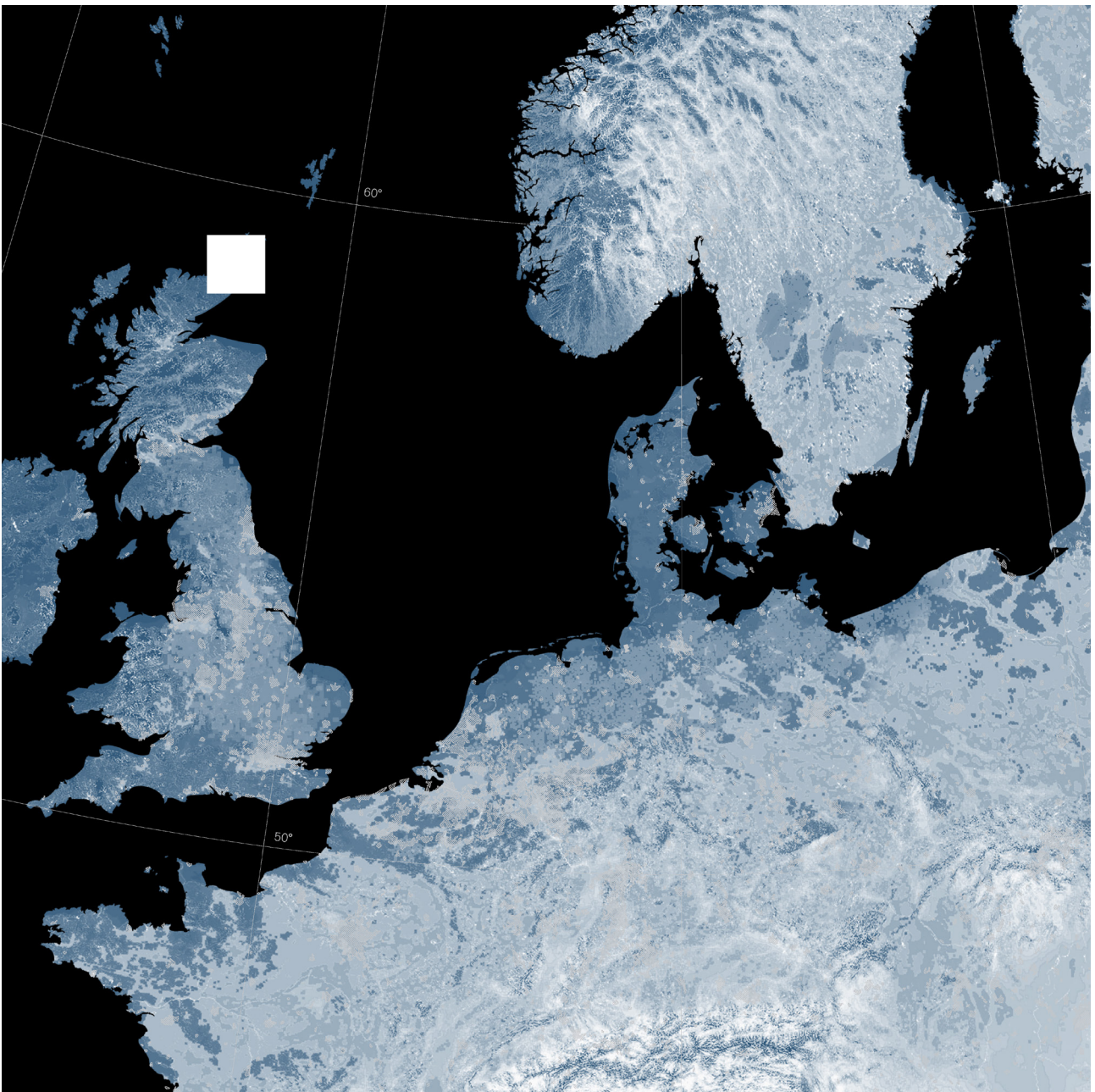


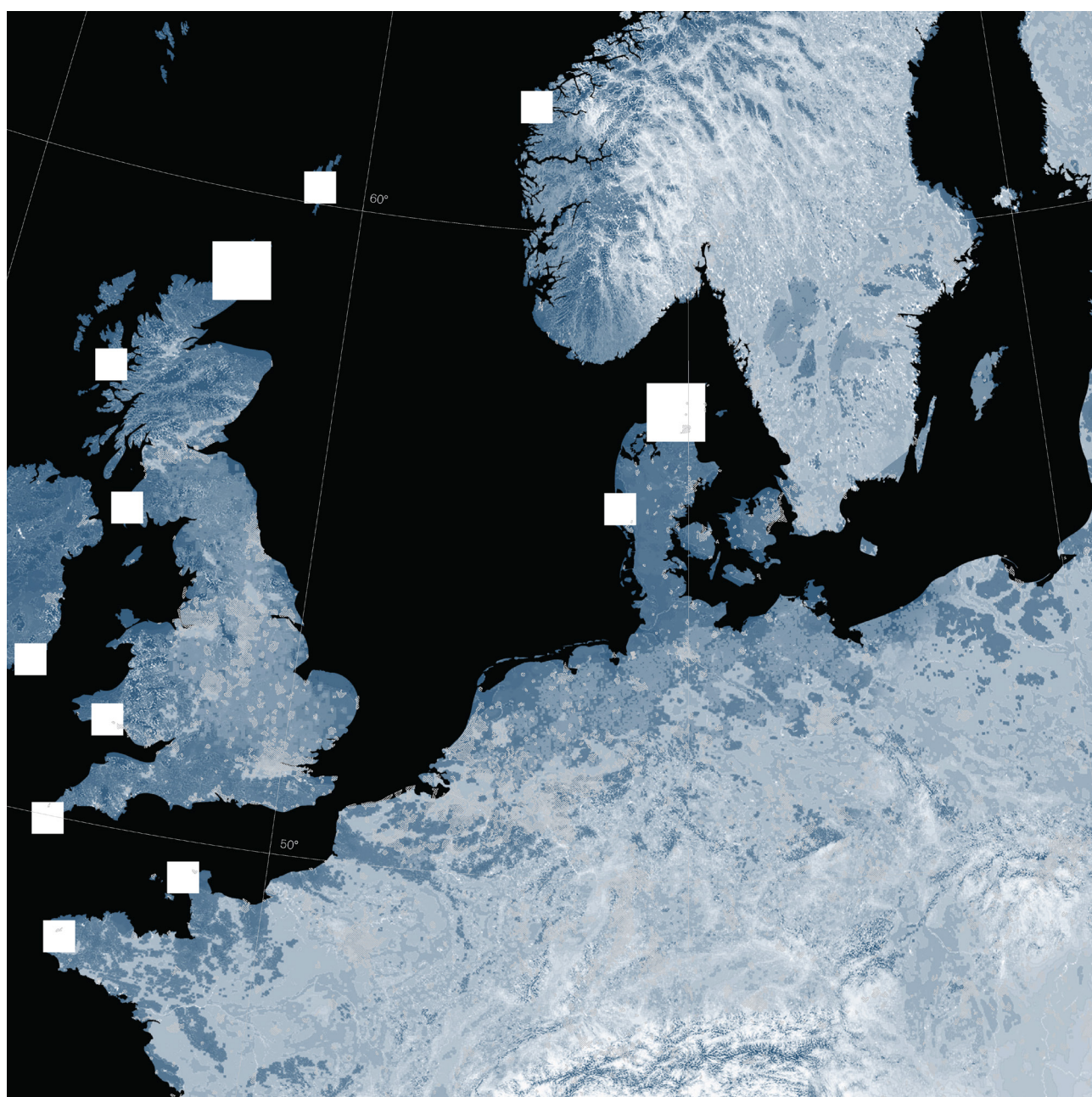




## Industrial Territorialism

The research suggests that the harnessing of renewable energy in remote, renewable energy rich locations (such as Orkney > Flotta) provides a possible solution for a new symbiosis in our globalised world. Thus, the proposal for Flotta's Bruck Mining Saga becomes an exemplar for continued inhabitation of other remote territories, a new *raison d'être* for humanity to continue to occupy 'a land far far away.'







## Epilogue

Rather obviously, this is a university project. There is only the tiniest of possibilities that it might ever be built- even in part. Yet the project ultimately rejects the notion that a dream world is an entirely urbanised world- which feels at times contradictory for an aspiring architect. This is clearly an ethical issue that I have encountered not just in the research/design for this project, but at various times throughout my university career and my year of work as a trainee architect. To be clear, I do not see human inhabitation of the landscape to be bad in and of itself. Rather, I see the unchecked expansion of cities and the building of projects (by architects) for the sake of building them to be the problem. Translated to practice, this is of course also a financial issue- the architect must earn a living. There is clearly always a balance to be sought between meeting the immediate (sometimes selfish) needs of individuals or small groups, and seeking to improve the wider world for people over a longer time period. Less is perhaps truly more. Big is not always best.

Added to this challenge is exactly the opposite problem. When considering a remote, rural landscape (some might use the word ‘unspoilt’, though this notion is of course quite naïve), there is in postmodern thinking sometimes a fear of doing anything at all. Thus paralysed, we run the risk that *Preservation is Overtaking Us*. Recognising what is valuable and what is less so is always a challenge, and of course different people may have different opinions on it. Navigating these two opposing ethical dilemmas (the risk of doing too much versus the risk of doing nothing at all) is of course a continuous challenge- one made even stronger in this case where I have sought to design a very personal project for a very specific island community, while not being of that island community myself. I can only hope there is also sometimes value in being an outsider looking in.

The above dilemmas and conclusions are of course particularly true for my project, which proposes a reasoned but nevertheless ‘utopian’ alternative (at least from my perspective) to the gravitational pull of globalisation and global urbanisation. The project argues for the democratic right of individuals to choose where they live, work and play- whether that be in central cities (which receive significant architectural attention) or in remote territories such as Flotta (which generally receive none). It sees the telling of stories to be of central importance to the human condition, and consequently to the anthropic practice of architecture. It understands the origin of stories to be commonly found in remote territories. It therefore sees the continued inhabitation of the remote territory to be vitally important to humanity as a whole. It tries to connect global aspirations for a transition to renewable energy and for a circular economy with the identity and stories of the remote island territory of Flotta. Does the project manage to convey that importance? It must seem questionable whether architecture (even of the very best kind) is able to achieve all of this. Especially if the architecture is ‘only’ a university project.

However, that university environment offers (and indeed encourages) the possibility to dream. By dreaming, the university project I’ve proposed tells a story of a possible world- a world in which we humans manage to overcome the gravitational pull of globalisation and global urbanisation and live as we choose. In my world, we manage to make the transition to renewable energy, and we develop a circular economy. The gravitational pull of central cities does not absorb remote territories, but rather those territories are held in place by a centrifugal force. Other remote, renewable energy-rich territories might undertake other forms of industrial territorialism- aquaculture, chemical manufacturing, data centres, paper manufacturing, cement production... They will also have their own stories to tell. In my world, cities and territories coexist in symbiosis. Surely dreaming is the first step towards reality. What is the role of architecture in all of this? It is the telling of that dream. It is a story, a saga. It is future-making.



This project tells stories (both real and imagined, and as I have perceived them) of the remote island of Flotta: a saga of bruck-mining. There are of course others- other territories, and other stories.

Once upon a time in a land far, far away...



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