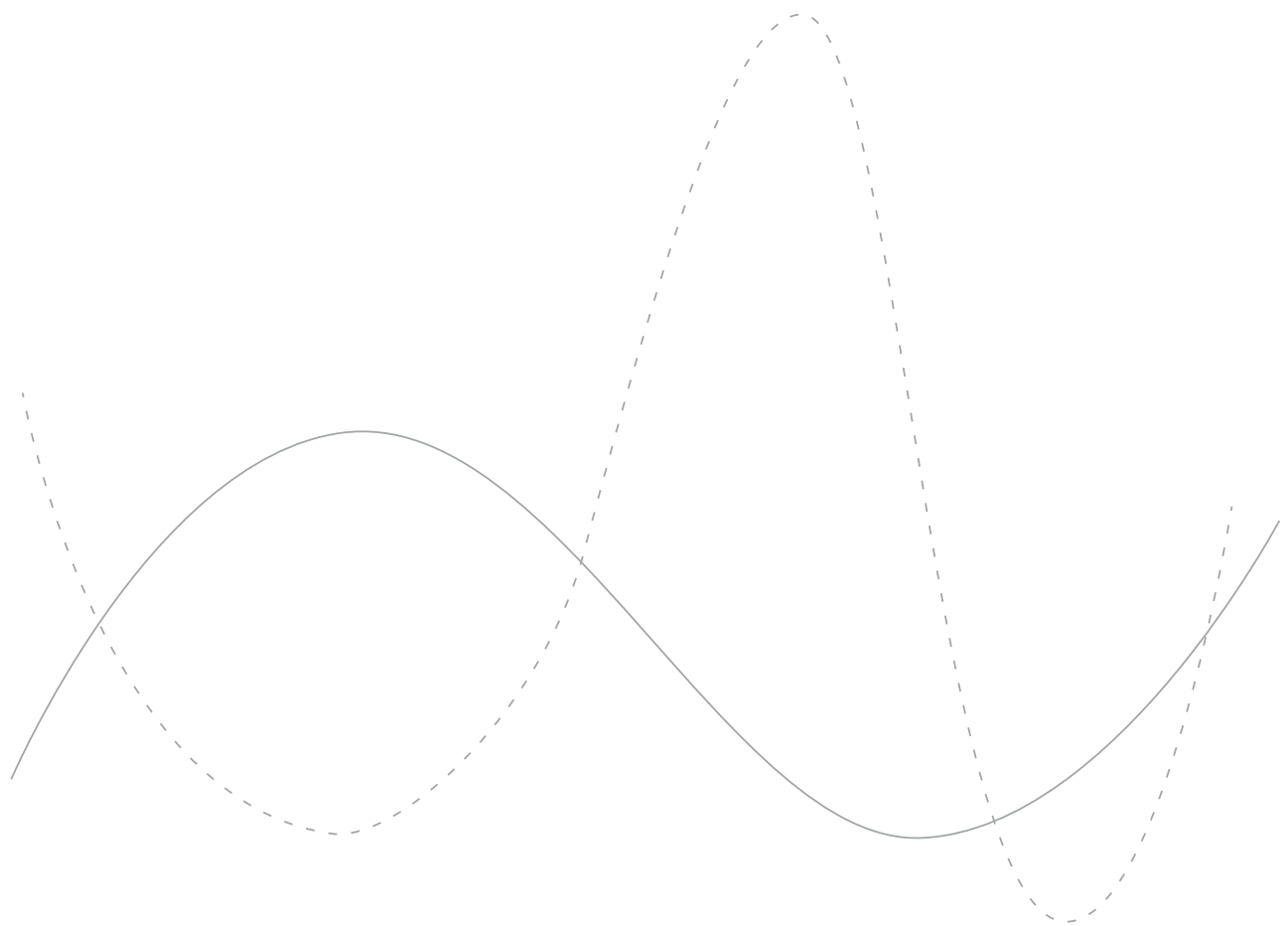


Cultivating Culture | *Cultural Cultivation*

creating spaces of (ex)change

Transitional Territories | Ruby Sleigh

July 2019



Cultivating Culture | *Cultural Cultivation*

1/ Problematique

an other species, another life

borders of extraction

monocultures

one or many?

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scaling up

lessons for the future

1/ Problematique

an other species, another life

Problematique

an other species, another life

We are living in the Anthropocene; a period of time shaped by, and for, dominance of the human race. Barely a place or species sharing this earth remains unaffected by our activity. Humans treat other animals as commodities, objects available to be exploited. They are used for our gain and pleasure, at great cost to those individuals involved and indeed to entire species.

The North Sea, surrounded by many of the world's most powerful nations is suffering from catastrophic overfishing. Trillions of fish are killed each year, a scale of extraction so huge it is leaving ecosystems on the brink of collapse. A disconnect in our empathy for other species is further widened by the border between land and sea, the familiar and the unknown, between us and them.

Scalloway is a small town in the Shetland Isles, 260 miles North East of Scotland. It sits in a wild, beautiful and romanticised landscape, surely the epitome of nature. Yet the islands are dominated by intense and ever growing salmon farms, highly destructive both to the fish who are farmed and the environment the industry dominates. As demand continues to grow, consumers typically have very little connection to the producers or the impacts felt by production. Scalloway is left in a state of constant adaptation, intensification and increasing dependency.

Alternatives to animal-based foods exist and the arguments for their adoption, from nutrient profile to sustainability to animal welfare is compelling, so why haven't we changed our approach to production? Food, despite playing an essential, daily part of each and every of our lives, appears to be the last aspect we are willing to adapt or change. It is embedded within our social, cultural and emotional connections: a change to our eating can bring so much more.

Taking Scalloway as a precedent, a new approach to food production is envisaged, using spatial design as a tool to challenge, inspire and shift patterns in our daily lives. It harnesses the technical capability of architecture, providing the physical infrastructure for a new system of production, yet combines this with the aesthetic qualities it imbues to inspire, attract and reinforce the positivity of new possibilities. Finally, it breaks down barriers and thresholds to provide spatial connections, bringing together producer and consumer and creating habitats not only for humans but for all species to thrive.

Understanding the process of change as a series of provocations, reminders and inspirations, cultural (ex) change invites the visitor on a journey. A series of moments mark the gradual transition from the comfort and familiarity of the land, to the sublime, unknown of the sea; defamiliarising, reorienting, sharing and expanding.

Food production anchors habitat and livelihoods for other species in a mutually beneficial, productive relationship, bringing together human and non-human needs in places of co-existence. Consumption is reunited with production to create a place of experiential education, of discovery and exploration. A place that reconsiders, how we live and who we live alongside, bringing awareness and responsibility back into the public realm, back to the scale of the individual.

Border Theory | *us & them*

The concept of the border can be seen across all scales and all situations - occurring 'naturally' and as a constructed part of human society.

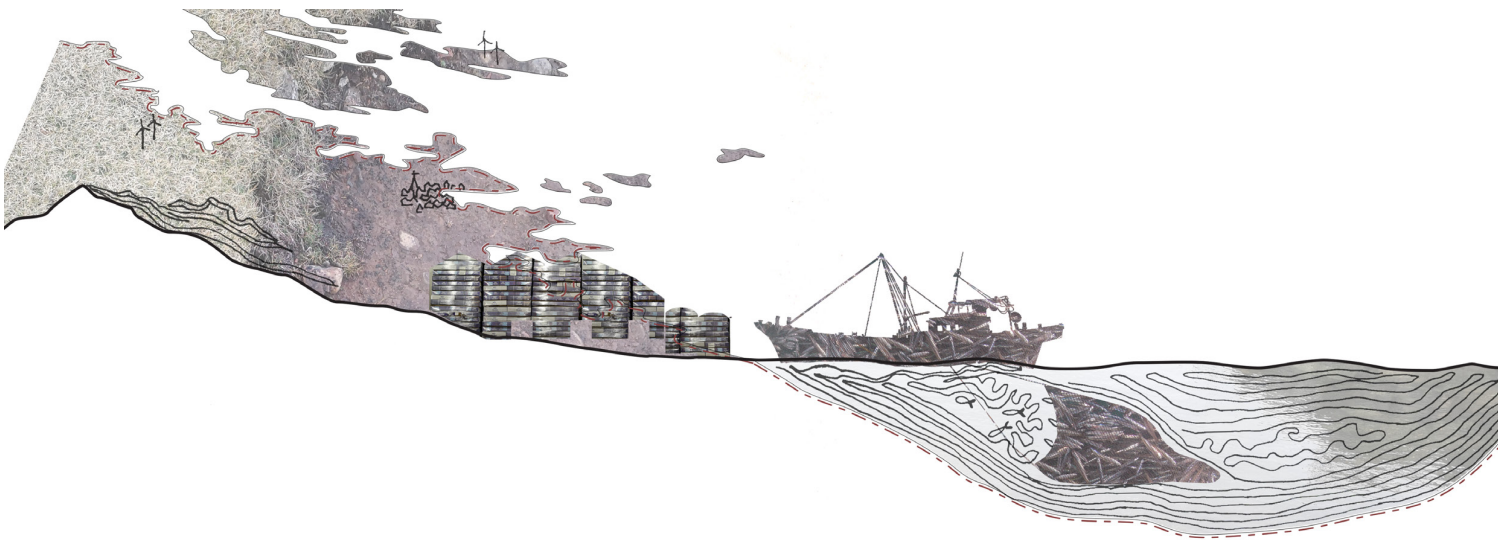
Philosophers working in the field of border theory have explained border creation as an extension of the creation and protection of the self, a way to other 'them' to solidify the 'us'.

However, this externalisation of them as 'othered' creates divisions, lack of empathy and exploitation of those who are not included, dismissing their needs.

The border between the sea and the land acts in this way, humans treating the sea, along with all its inhabitants as a resource from which to plunder.

Van Houtum, Henk, and Ton Van Naerssen. 'Bordering, Ordering and Othering'. *Economische En Sociale Geografie* Vol 93, no. 2 (2002): 125–36.

Foucault, Michel. 'Of Other Spaces, Heterotopias'. *Architecture, Mouvement, Continuité*, no. 5 (1984): 46–49.



Borders of Extraction

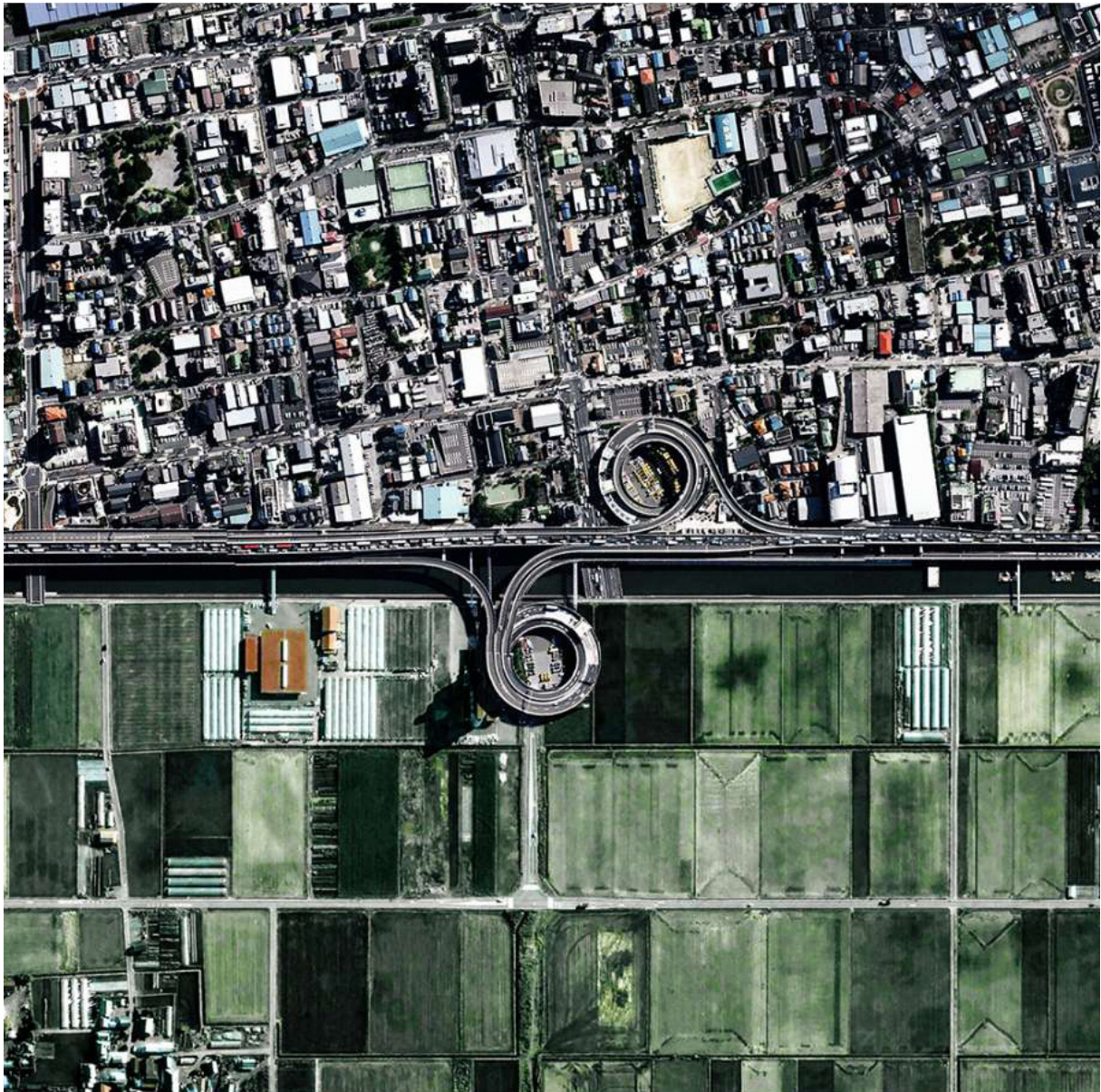
Spatialising the Other | *a divide*

The philosophical ideas of othering manifest spatially, with a distinct division between zones of production and zones of consumption.

Exacerbated further by modernist planning principles, industry, production and the producers, a term here used to include other animals as producers, are relegated to the outskirts of developments - the exterior bubble.

This is resulting in a lack of knowledge and understanding of what and who is involved in the production process, as well as the legacy it leaves.

Image: NIMBY 1, Atlas of Places, 2018



Segregated Spaces

Anthropocentric Spaces | *agriculture as monoculture*

Anthropocentric spatial use directly reflects the othering of different species with barely a space left on Earth which is untouched by humans.

Agriculture is one of the most destructive of our land uses. Landscapes reflect their subjugation to systems of power, frequently gridded, monocultured and exhausted of resources.

The farming of particular species for our use has led to drastic imbalances, with 95% land animals now humans or animals bred for human use. It is written into our landscapes today - future geologists will find a fossilised layer of chicken bones in the earth's crust due to the scale of consumption today.

Image: Feedlots, Mishka Henner, 2012-2013



Monocultural Production

Monoculturing at Sea | *intensive farming*

These patterns of monocultured food production seen on land are quickly taking over in the sea too as we move towards the urbanisation of a new territory.

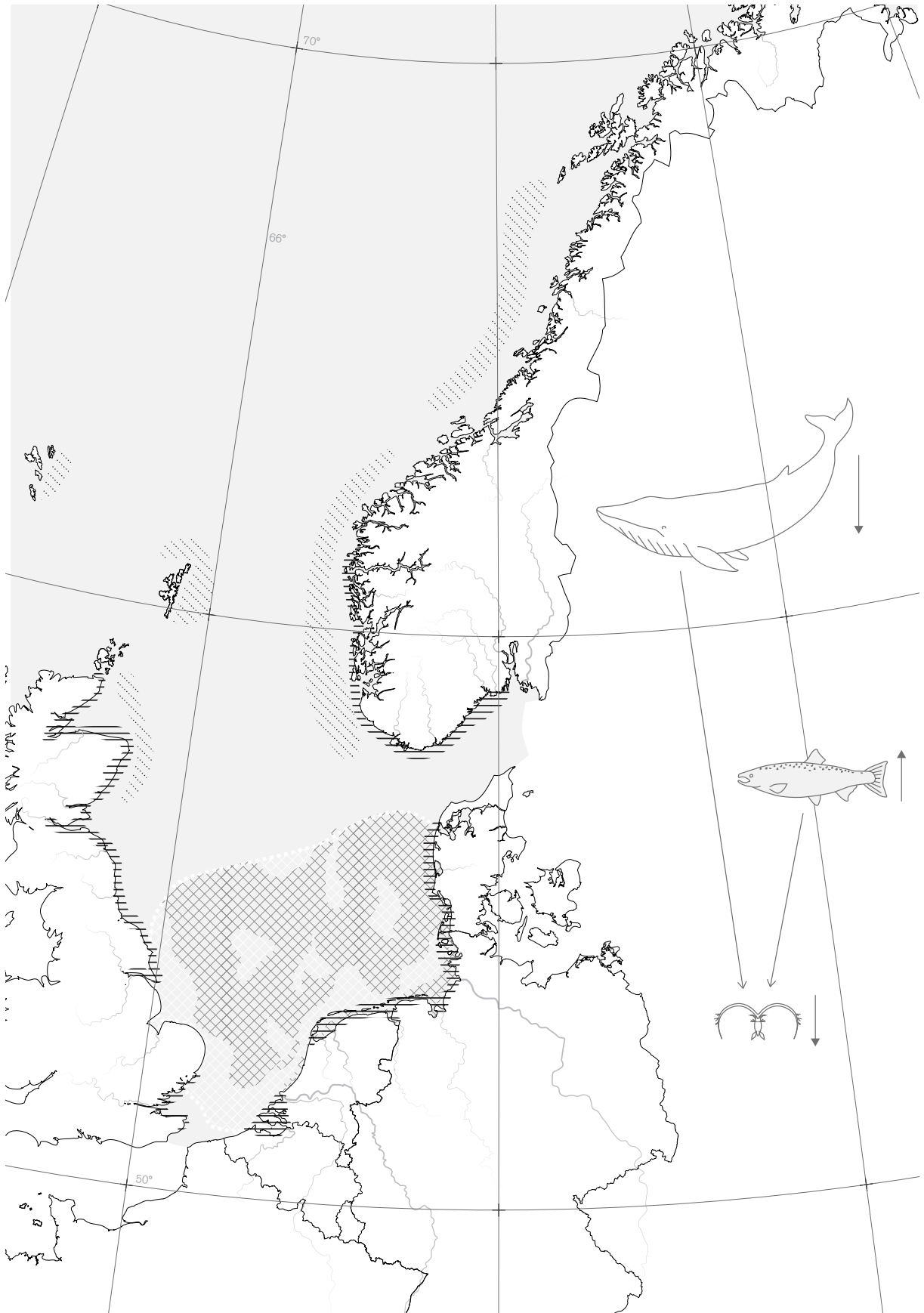
Huge areas of the coastline, particularly close to the Northern countries in the North Sea, are used to farm fish, particularly salmon. They are farmed in cramped, inhumane conditions, replicating the monoculture of the land.

The scale of this has territorial impacts, disrupting entire ecosystems, mineral balances and having a knock on impact at all trophic levels across the food chain.

Projected invasive species due to farming

1:10 000 000 @ A3
TT Atlas, 2018

| | |
|------------------------------------|----|
| Plankton population under pressure | 01 |
| Salmon farms | 02 |
| Shellfish farms | 03 |



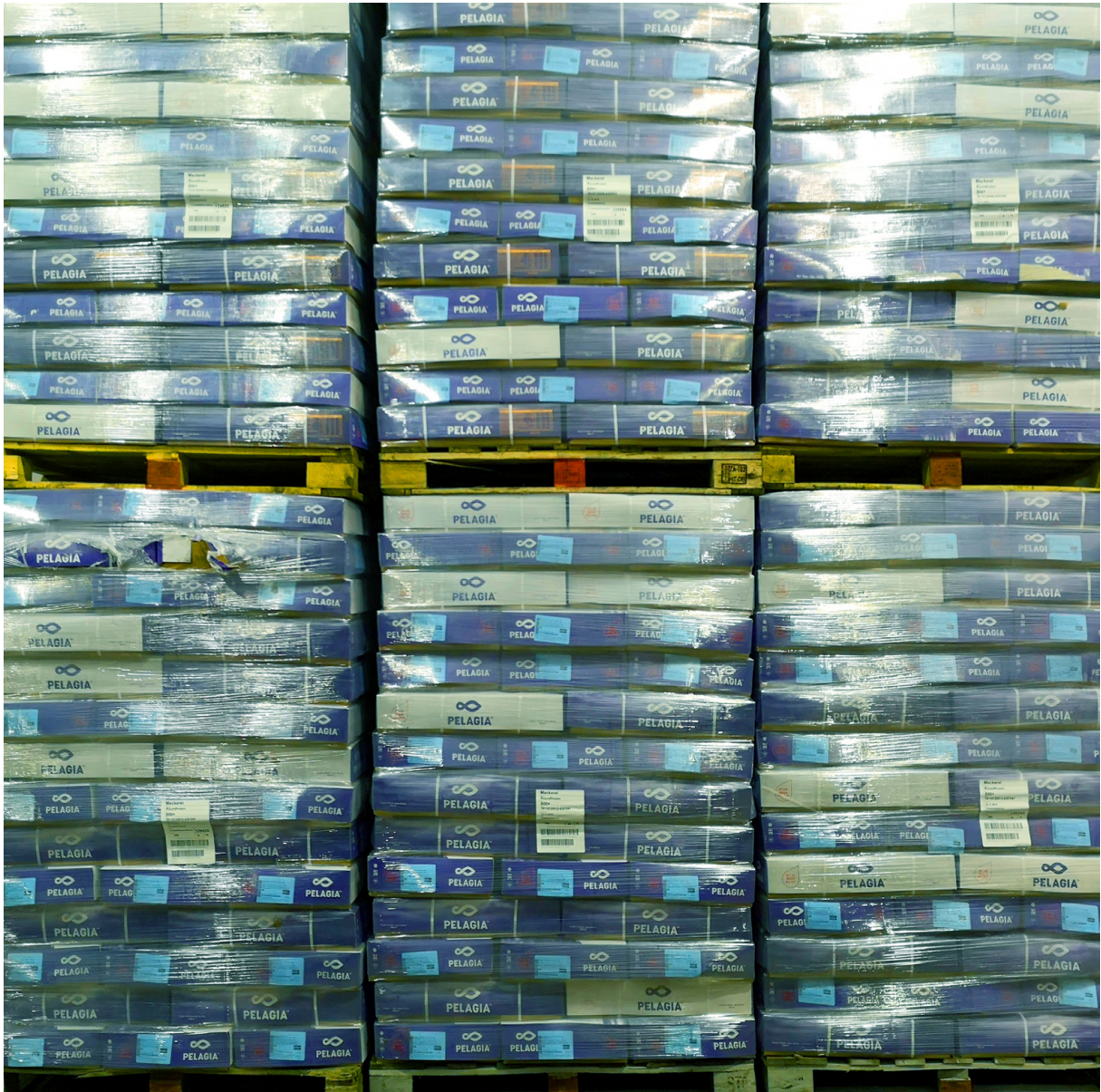
Farming at Sea

Territorial Impacts | *commodification of scales*

For fish, and other animals caught up in the fishing industry, this has resulted in ever increasing quantities and scales of extraction. Trillions of animals are killed each year for human food, with most consumers giving little thought to the process or impact on those individuals, and indeed wider patterns as a whole.

The scale of the issue is enormous, with modern vessels able to catch and kill 1.7 million kg fish in just 5 minutes, a quantity which translates into €2.4 million for the fishermen.

It is commodification and objectification at its epitome, all these lives becoming numbers, products and objects in boxes.



Quantity, Quantity, Quantity

Quantitative vs Qualitative | *individualised impacts*

But although the impacts mapped at the territorial, ecosystemic and species level are shocking, this mass is made up of many, many individuals, each with their own experience.

I argue that we are in need of reframing our perceptions, to look not from above and outside, but to change our level and attempt to see from within.



One or Many?



Reframing Perceptions

2/ Tactics & Approach

architecture as activism





“Change is cumulative. For each person who reaches a pivotal shift in behaviour, there has been a series of stories, moments and interactions leading them to this decision. Activism must take the form of a series of gentle, guided and repeated messages”

- Dr. Melanie Joy, Beyond Beliefs

My research follows an 'emancipatory' approach, with the ultimate aim of not only recording and analysing current systems of power, but also taking steps to enable their transformation. It is underpinned by a critical discourse analysis, understanding the shaping of space in the context of wider societal influences, notably anthropocentrism, speciesism and neoliberal capitalism.

Within this framework, I am following two complementary methodological routes. At the territorial scale, the use of mapping and scenario building quantifies and represents the overall scale of the issue. The studio structure, beginning with widescale mapping of ecological conditions and projected changes for the North Sea, has enabled a broad understanding of the wider political, economic and ecological patterns of commodification. Specific methods and tactics used at this stage involved the sourcing, analysis and extrapolation of data to formulate informed projections and scenarios for the coming period of change in the North Sea. This data was then compiled and consolidated into maps to facilitate effective representation, synthesis and communication of the key issues and themes.

However, due to the complicity of mapping as a tool of commodification, this will be balanced with a qualitative methodology at the scale of the body. Following a narrative-based research methodology, I will use a combination of interview and observational, praxeological techniques to consider the experience of space at the scale of the individual. Countering the dominant idea of ecological design as quantitative, considering other animals predominantly in terms of whole species and biodiversity, I will aim to consider the narrative of other animals from the perspective of an individual, (re)granting their agency as a sentient being.

Due to the obvious barriers with empathising and communicating with members of other species, this research will be predominantly observational, understanding that though we don't communicate linguistically with other species, acts such as struggling and escaping, or increasing inhabitation and playfulness, are also highly communicative. The majority of this research was carried out during a second, additional field trip to Scotland. During this time, I carried out informal interviews with local residents, employees and consumers in the fishing industry, as well as primary observational research of the patterns of movement and behaviours of nonhuman users of the spaces. Since our time and capacity there was limited for this, I have since supplemented this research with more extensive secondary research on sea animal behaviour, sightings and research.

This approach embraces the role of the designer both as objective outsider, gathering knowledge from the spaces and occupants themselves, but also as a subjective participant in the process, valuing the designer's interpretation, narrative building and contribution through an heuristic approach.

RESEARCH QUESTIONS

How can the **agency of design** be utilised to facilitate a new infrastructure for food production and consumption, moving from **exploitation to co-existence** and encouraging a **shift in our perception** of other animals?

- 1. What are the needs of other animals within our environments and how can these be (re)built into human-shaped scapes of coexistence?*
- 2. How can design be used as a form of activism, creating value for the structurally undervalued and enabling changed individual perceptions?*
- 3. How can we learn from the coming urbanisation of the sea in order to better inform and transform our urbanisation of the land?*

Behavioural Change | *steps of transition*

Given my attitude and conclusions drawn from understanding the problem field, it is clear that a drastic change is needed in order to reframe how we see other animals, how we interact with the environment around us and the relationship we have been production and consumption.

I will therefore be working through architecture as a form of activism. I will explore this idea both as a claim to space in order to protect and afford for those most chronically undervalued and also as a tool to instigate behavioural change.

Understanding that change takes place as a fluctuating process, not as an instant or linear decision, I am interested in the idea of a series of repeated messages, allowing gradual and sustained contemplation, preparation and reinforcement.

The transtheoretical model of behavioural change, introduced by James Prochaska and Carlo DiClemente, identifies key characteristics of each stage, as well as mechanisms to help move forward to the next stage.

Prochaska, JO; Redding, CA; Evers, KE. The Transtheoretical Model and Stages of Change. In: Glanz, K; Rimer, BK; Viswanath, K. (eds.) Health Behavior and Health Education. 4th ed. San Francisco: Jossey-Bass; 2008. p. 105.

| | | PREPARATION | ACTION | MAINTAINENCE |
|-------------------------------------|------------------------------|----------------------------|----------------------------|--|
| | | <i>gathering knowledge</i> | <i>tangible, noticable</i> | <i>consistency, repetition</i> |
| | CONTEMPLATION | | | |
| PRECONTEMPLATION | <i>ambivalence, conflict</i> | | reward successes | reinforce through positive association |
| <i>denial, ignorance</i> | communicate confidence | facilitate | encourage social support | make habitual |
| encourage rethinking | identify barriers | demonstrate success | enable & provide | repeat & incorporate |
| explain & demonstrate current risks | identify pros & cons | motivate | | |
| encourage self-reflection | | | | |

Theory of Change

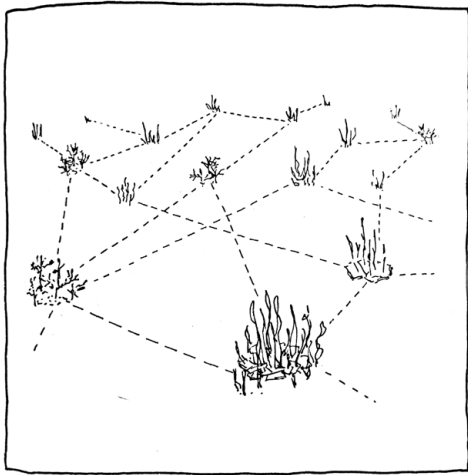
The Agency of Design | *three dimensions*

In terms of how this relates to the agency of spatial design, I have identified three complementary components of spatial design which allow for change.

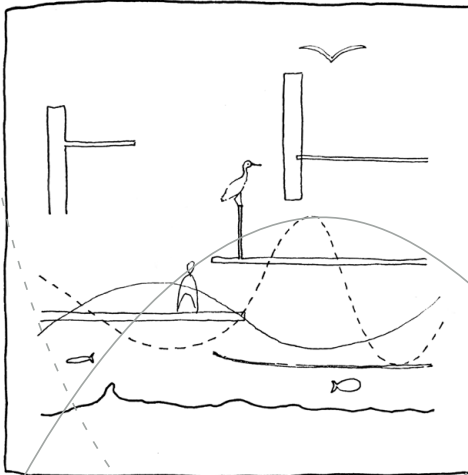
At the infrastructural level, spatial planning can provide the physical alternative for a different option, making it possible for a different decision to be made by the consumer.

Architecture also acts through aesthetics, having a cultural impact allowing a positive association or inclination to try a different decision.

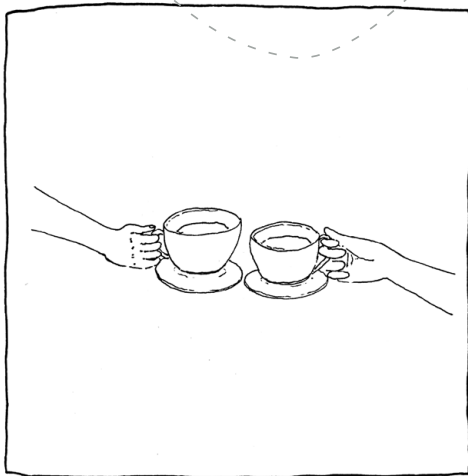
Finally, in the same way that I have previously criticised spatial planning for creating divisions and lack of understanding, adjacencies and visibility can encourage understanding, education and awareness to allow informed and appreciated change.



Infrastructural/Technical
- *physically enable change*



Socio-Spatial
- *visual & physical adjacency or intersection*



Cultural/Aesthetical
- *influence cultural shifts*

Protein Comparison | *Plant-based vs Animal-based*

Given that the vast majority of fish extraction and farming takes place to provide food, I will be looking at alternative, plant-based options for food provision.

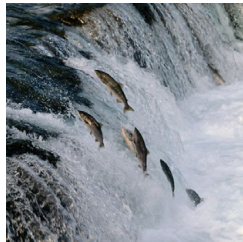
Seaweed offers a viable and highly improved profile when compared with salmon farming. Creating habitat for other animals rather than destroying it, sequestering carbon rather than releasing it, restoring nutrient balance and encouraging biodiversity, landscapes of seaweed production offer a far greater alternative for us all than landscapes of salmon production.

Also offering a higher nutrient profile, the transition to a seaweed cultivation feels like a win-win situation.

Territory



Farmed Salmon occupy an average of 200m diameter pens.



Wild Salmon travel up to 3220000m annually to spawn

Diversity



Salmon farms function as a monoculture, dominating the local ecosystem



Kelp beds support life from up to 260 different species at all trophic levels

Mineral Balance

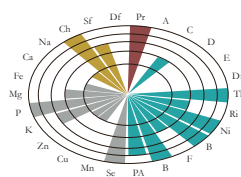


Equivalent of 9.4 million peoples' sewage pollutants released by Shetlands farms

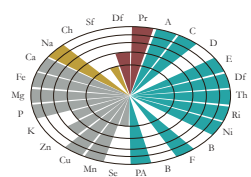


Sea plants absorb contaminants, nitrates and CO₂, cleaning the seas

Composition



Salmon comprise 25% protein, along with plentiful vitamins & minerals



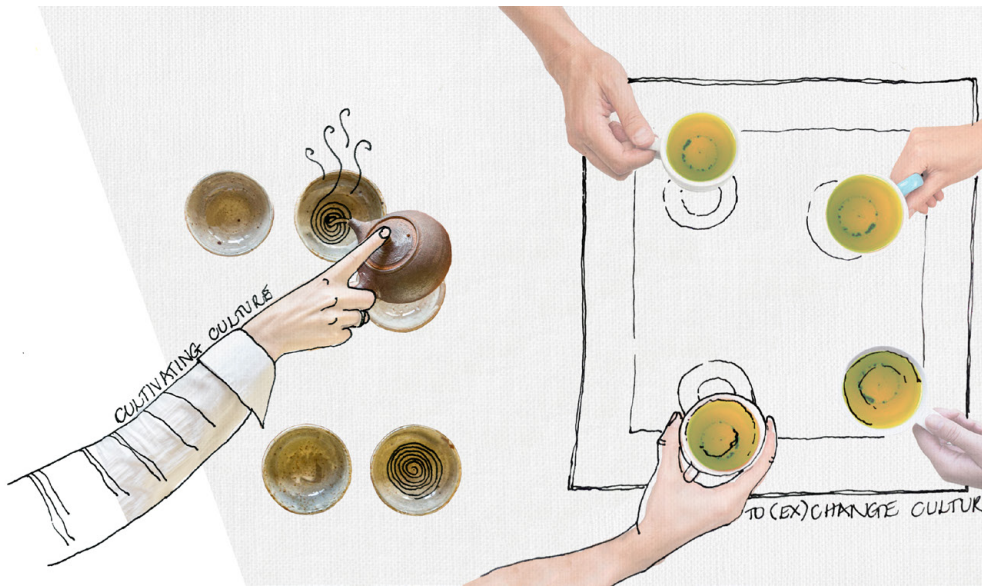
Sea vegetables provide 24% protein, along with plentiful vitamins & minerals

Food for Thought

So why aren't we already adopting a new diet?

Food forms a strong and emotive foundation of our cultures, social lives and traditions. Despite the agricultural industry being one of the most damaging sectors of modern life, we are consistently reluctant to address it.

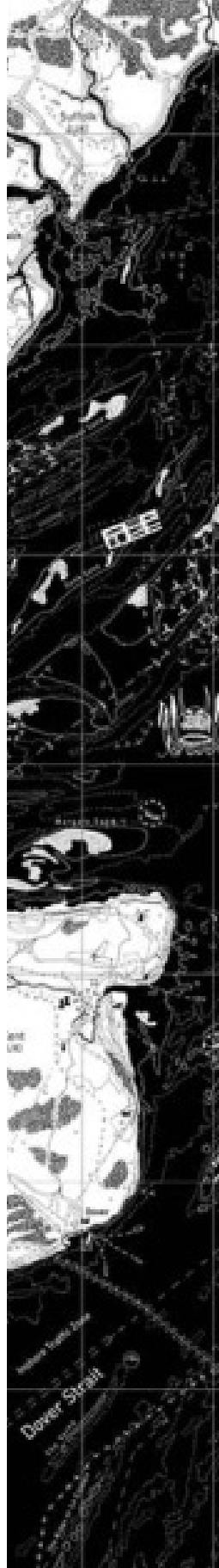
This project must take into consideration not only the method and logistics of how to provide a new food source, but how this will become incorporated into our living environments, social interactions and daily lives.

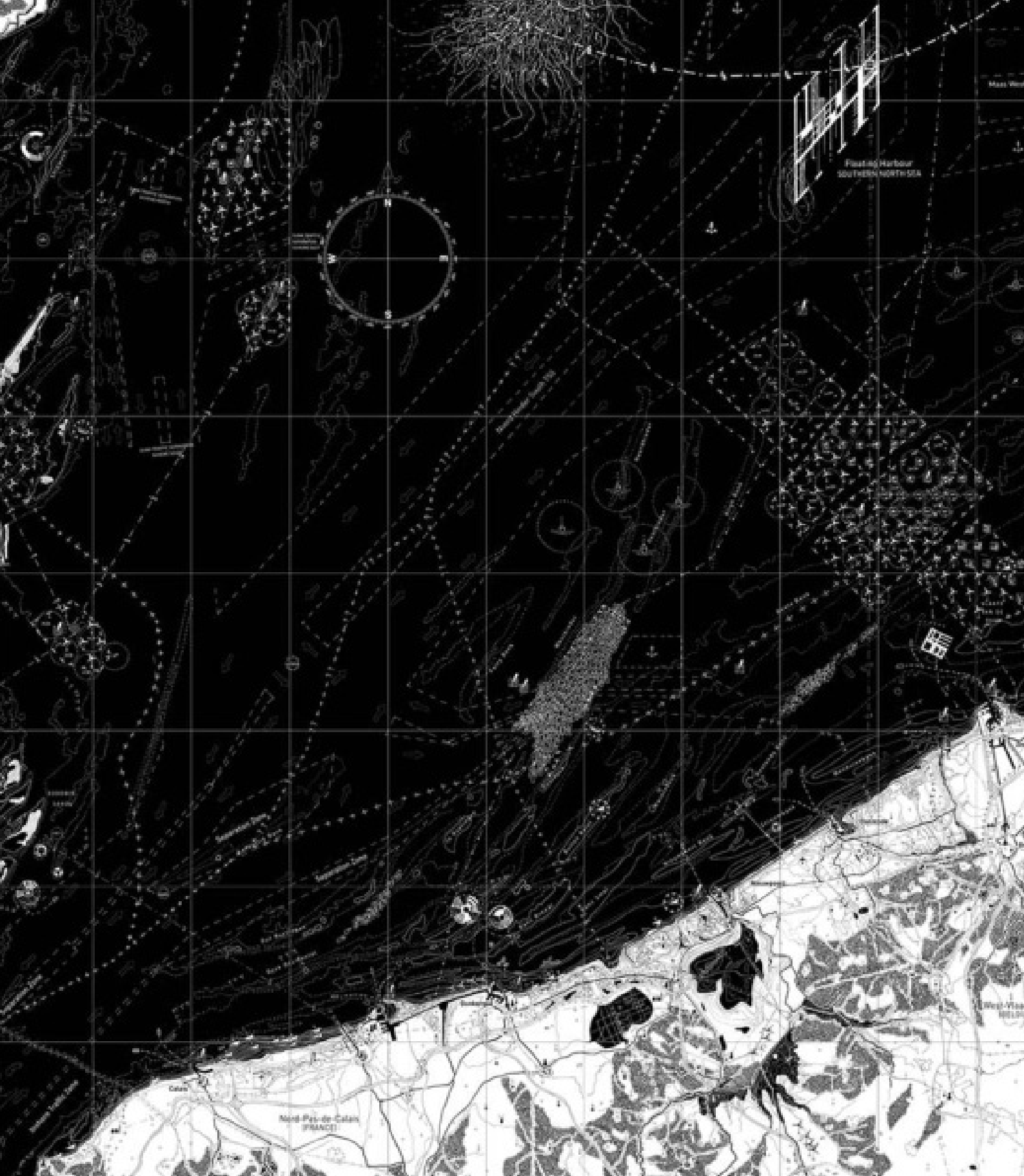


Cultivating Culture

The Components

ingredients of change





“If we are to destabilize any essentialised correlation between territory and terra, just as much as we are to interrogate the seeming indifference of urbanization over both land and sea today, it may be in constructing new historical geographies of power that we can best grasp the political spaces and technologies of our world in the present”

- Dr Ross Adams, Mare Magnum, Urbanisation of Land and Sea

The whole project follows a 'research by design' methodology, first gaining a theoretical understanding and position from which a strategic approach can be developed. This outline strategy is then further developed and tested within a site specific context, taken to be one potential application of the system as a whole.

Following my research conclusions of a need to reprioritise space for the systematically undervalued - in this case to focus predominantly on fish and sea animals, my strategic approach starts from a need to (re) establish habitat for ecological diversity.

The project understands current productive landscapes as creations under systems of power - patriarchal, colonial and anthropocentric. This has led to the need to sustain power through ever increasing production, intensification and exploitation, creating monocultures devoid of life or diversity.

My stance therefore directly opposes this, rejecting the gridded or linear forms of production associated with traditional land-based, sea-based and even long-line production methods of seaweed cultivation in favour of a more harmonious response to ecological and geological patterns in the area.

Interventions aim to embrace the ability of human production to create and move our landscapes, not shying away from a human quality, but ensuring that this is opened out, inviting comfort not only for human users but for the non-humans in our ecosystems. They aim to see us not as humans in opposition to nature, but as one more component of nature, helping shape the landscapes around us. We have the ability, opportunity and therefore responsibility to consider others within our practices.

Bearing in mind the three identified aspects of design's agency to change, the system establishes core components or ingredients needed to ensure the project ideals are met.

A new infrastructural system is designed for the cultivation of seaweed itself, designed to afford plentiful production for human need whilst preventing over harvesting and habitat destruction. Along with this, structure allows for processing to take place adaptable to allow for changing technologies, demands and locations.

To ensure production is securely anchored within spheres of consumption, the aesthetic side of architecture must always be considered. This aspect is site specific, but must always be anchored to local daily life, for example via a visible landmark of change, eateries or selling, or community involvement itself.

Finally, a strong connection must be forged. A level of honesty and openness of production for visitors to experience is fundamental to the premise of the project, visual connection with other species co-existing in the same places and crucially, a connection between the sea and the land. What lessons from this time of urbanisation of a new territory can we apply when considering our existing territory?

Structural/technical | *contemplation, preparation*

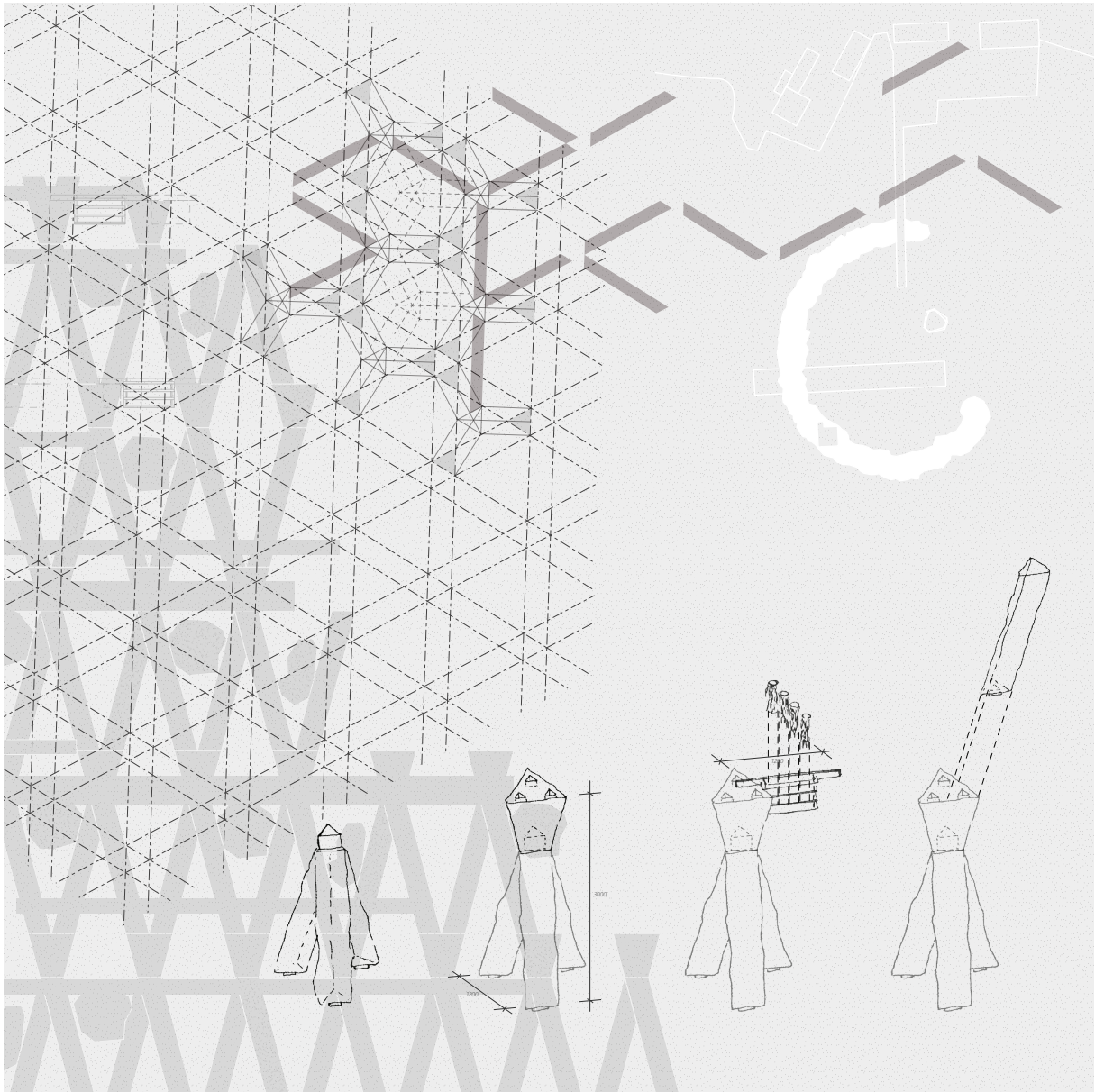
In contrast to the predominant 'long-line cultivation' method of seaweed production, the use of stacking, pyramidal reef modules creates a permanent growing space and habitat for other animals.

Cast using concrete with a high percentage of building waste or other suitable substrates, they provide a rough surface to encourage plant growth, with plenty of affordance space for other animals too.

They interlock, creating a dense mesh and tessalating via varying shapes in plan and section. Reusable stainless steel spool holders are then set into the spaces in-between these at the top 2 levels, allowing easy plant out of seedlings and collection via boat once matured.

By the nature of the spatial arrangement, only the top 2 layers are accessible to harvest, designing in a secure way to ensure habitats are not overharvested and depleted.

These components act as the 'preparation' stage of change, creating the opportunity for new ways of living.



(infra)structure provision

Aesthetic/cultural | *action, maintainence*

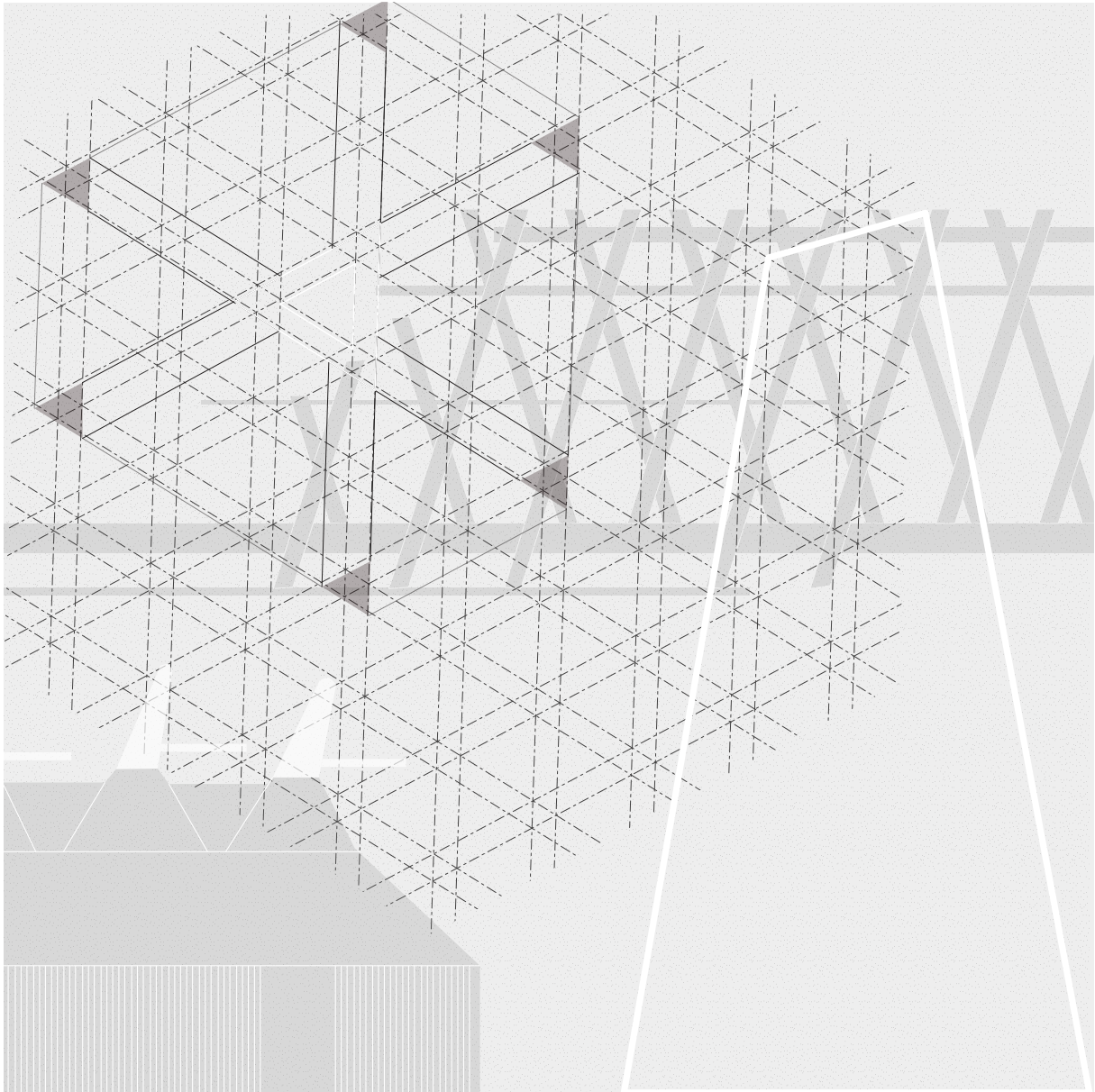
The aesthetic or cultural aspect of the intervention responds to the language of the structure, but also the nature and language of the site and community. These element(s) act on two levels.

Firstly, they function as landmarks or beacons of change, inviting visitors in and encouraging a step towards the 'contemplation' stage of change - inspiring the first engagements.

Secondly, they act at the action stage of change, creating an experiential or even ceremonial space, creating new traditions to filter out the old, creating positive associations and memorable or thought provoking experiences.

In order to make these aspects of the project successful, a careful balance between the new, exciting and promising; against the familiar, the comfortable and the loved is needed. Landmarks should take on an aspirational and contemporary aesthetic, but always taking into consideration the local, the vernacular and the context.

This could for example be the language of oast houses used in brewing, the thick walled spaces of historic settlements or a series of repeated motifs, creating a complementary architectural language to the existing context.



signs of transition

Socio-spatial | pre-contemplation, maintenance

Finally, these production and consumption aspects of the project must always be linked. Visually, physically, conceptually.

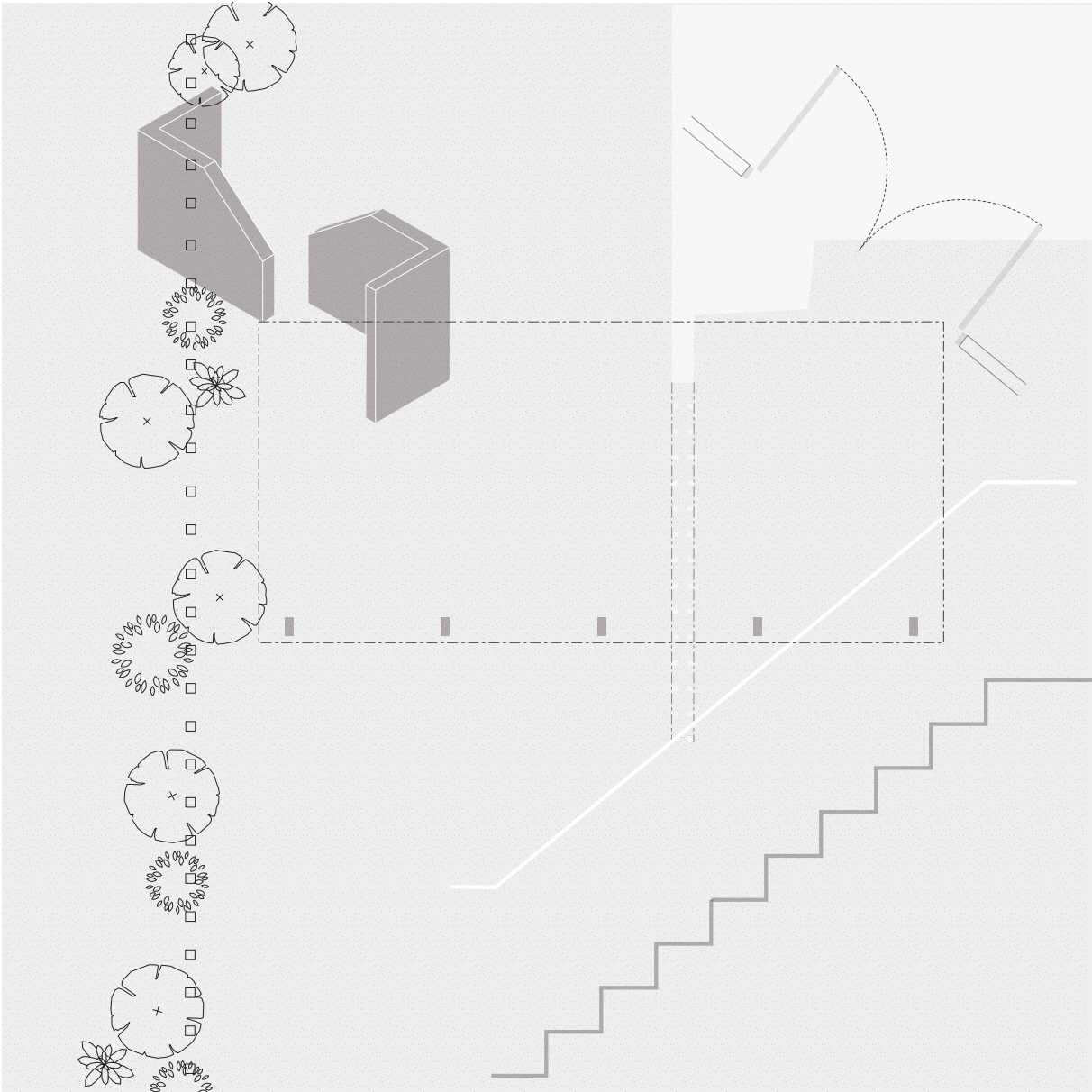
In some situations and scales this may take the form of a physical path or route through, whilst others could be via views, or even architectural language.

The connectivity is not only dynamic, moving through living, working and leisure environments, but also takes place in quieter, static moments of pause and reflection.

The agency of the threshold is harnessed to create moments of pause, redirection, intersection and consideration.

Therefore, this element of the intervention should always capitalise on the moments within the project where things intersect - a pause and view into production, moments where land-sea borders are crossed, the change from a visitor to a participant, or employee to a vendor.

In this way, both the pre-contemplation and maintenance stages of change are addressed, creating slower moments for a time of consideration, or sharing experiences to solidify new habits.



thresholds for change

4/ Site Selection

fostering the new





"Its not so much that Shetlanders choose the traditional over modern life, its the aspects and scale of modernity that gets her
People want the excitement of the modern, they just want it to be our modern."

- Magnus, fish processing plant manager, Shetland Isles

Shetlanders have been making a living from the land for 5000 years. With a settlement history reaching back as far as iron age times, the islands hold a huge history of settlement, defence, trade and livelihood.

However, as production has industrialised and intensified over the past years, its location and remoteness in the very North of the North Sea has led the islands to become more of a romanticised or exploited territory on the world stage. They lie outside of the consumer centres of the world and become an externalised producer zone.

Settlers have always been attracted to Scalloway due to its rare fertile land, strong topography and natural harbour. It later became the capital of the Shetland Isles, building a rich trade industry based on fishing and fish processing.

Strong trade in Cod with Norway, then Herring with The Netherlands formed the mainstay of an otherwise unpredictable economy for the islands, bringing wealth to Scalloway. Rich landowners dominated the harbour front and castle and records show a bloody history of battle over land ownership and witch capture practice.

The settlement developed along the harbour front, taking advantage of the long views and topography. Piers extend the settlement out into the water, connecting land to sea. Street patterns behind this developed based on the narrow gaps between buildings, extending back and up the slopes away from the harbour. Plot size varies according to the historical status of the owner, giving a diverse streetscape.

Scalloway offers a great opportunity as a test bed for the proposal. As a small community it has a great scale to explore the idea of the individual and 1:1 relations. Yet despite being a fairly small collective of residents, the town is lacking program or leisure. Scalloway is hungry for an increase in culture, social provision and small-scale economic growth.

There is also a pre-existing marine research centre, which holds infrastructure and knowledge to provide for the more specialist aspects of seaweed cultivation. They are already researching the future of seaweed production, so provide a great potential development partner.

Site Context | *the externalised producer*

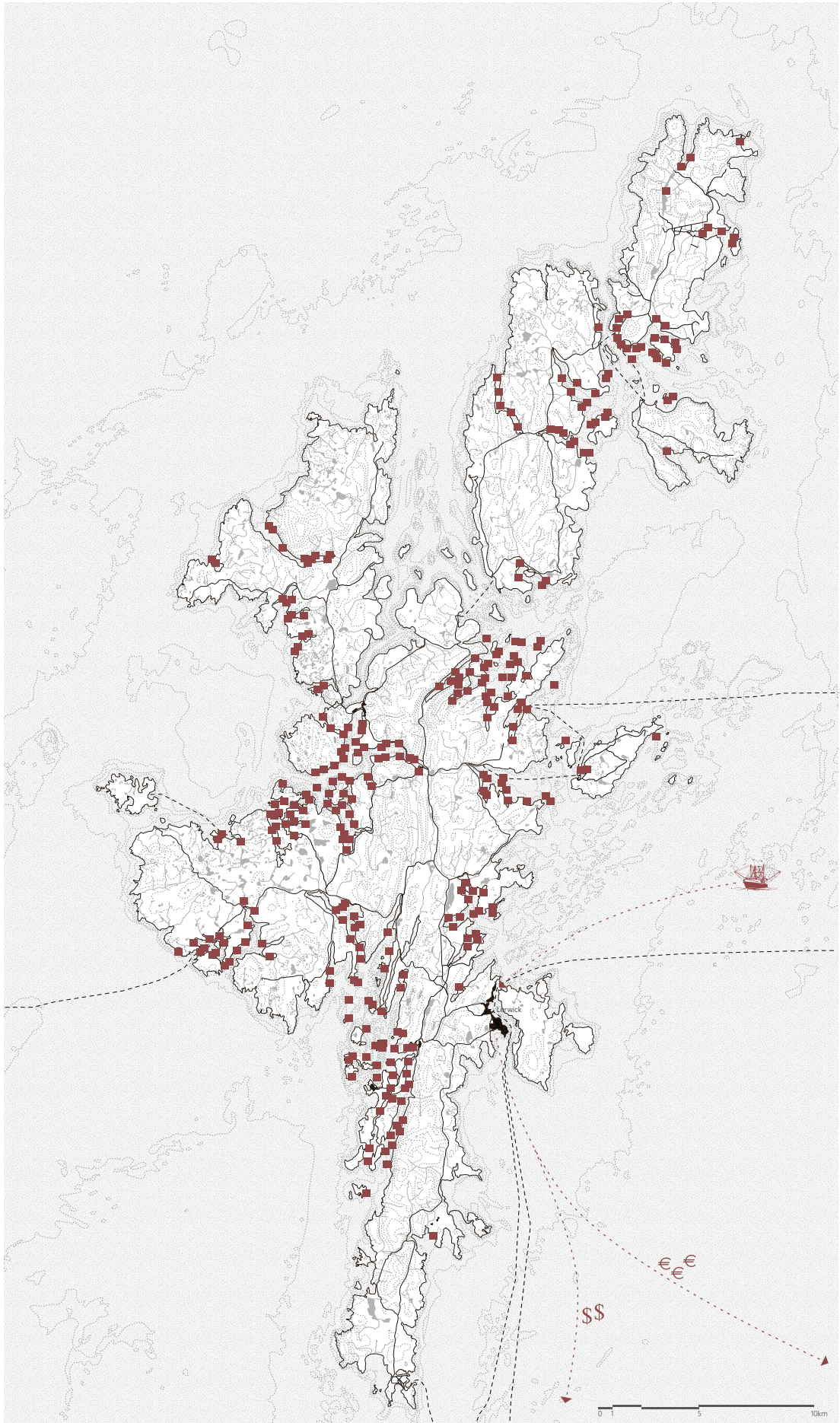
The Shetland Isles lie far away from consumption centres, remote and isolated. Outside of the global 'consumption interior', they are relegated to production, with harsh impacts on both the people, environment and other animals there.

Lerwick, the capital, hosts Europe's largest fish processing plant, handling 60 tons/hr fish at peak seasons. However, the money in this relationship lies not with the processors but with the fishermen, with all wares exported globally.

The Islands are most notably marked by salmon farms however. All along the coast, the nets can be seen, holding fish in high densities with incredibly harmful impacts on the fish themselves, localised ecosystems and wider pollutants.

Islands of Production

- 01 Inland fresh water
- 02 2000 fishing vessels, carrying over 57000 tonnes of pelagic fish per year
- 03 £57 million worth processed fish exported to EU and globally
- Salmon farm





NAFC Marine Research Centre
education

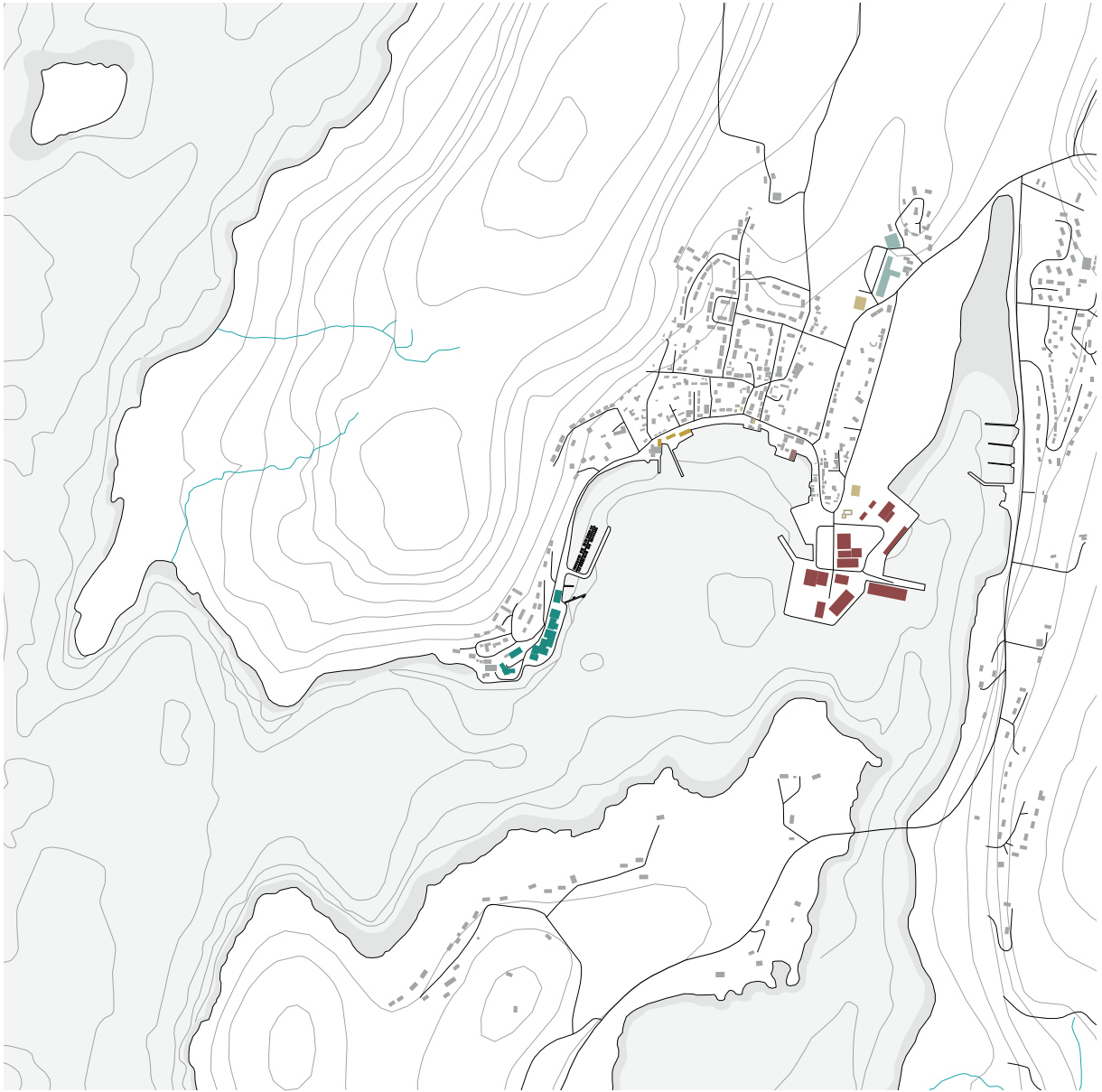


Boat Builders' Yard
cultural



Fishing Harbour
existing industry

Scalloway itself hugs a natural harbour and is predominantly residential. This is punctuated only by the declining fishing industry to the East, now used mainly for aquaculture vessel repair, the NAFC Marine Research Centre in the West and a small collection of historical warehouses at the base of the pier in the centre of the town.



Scalloway, Shetland Isles

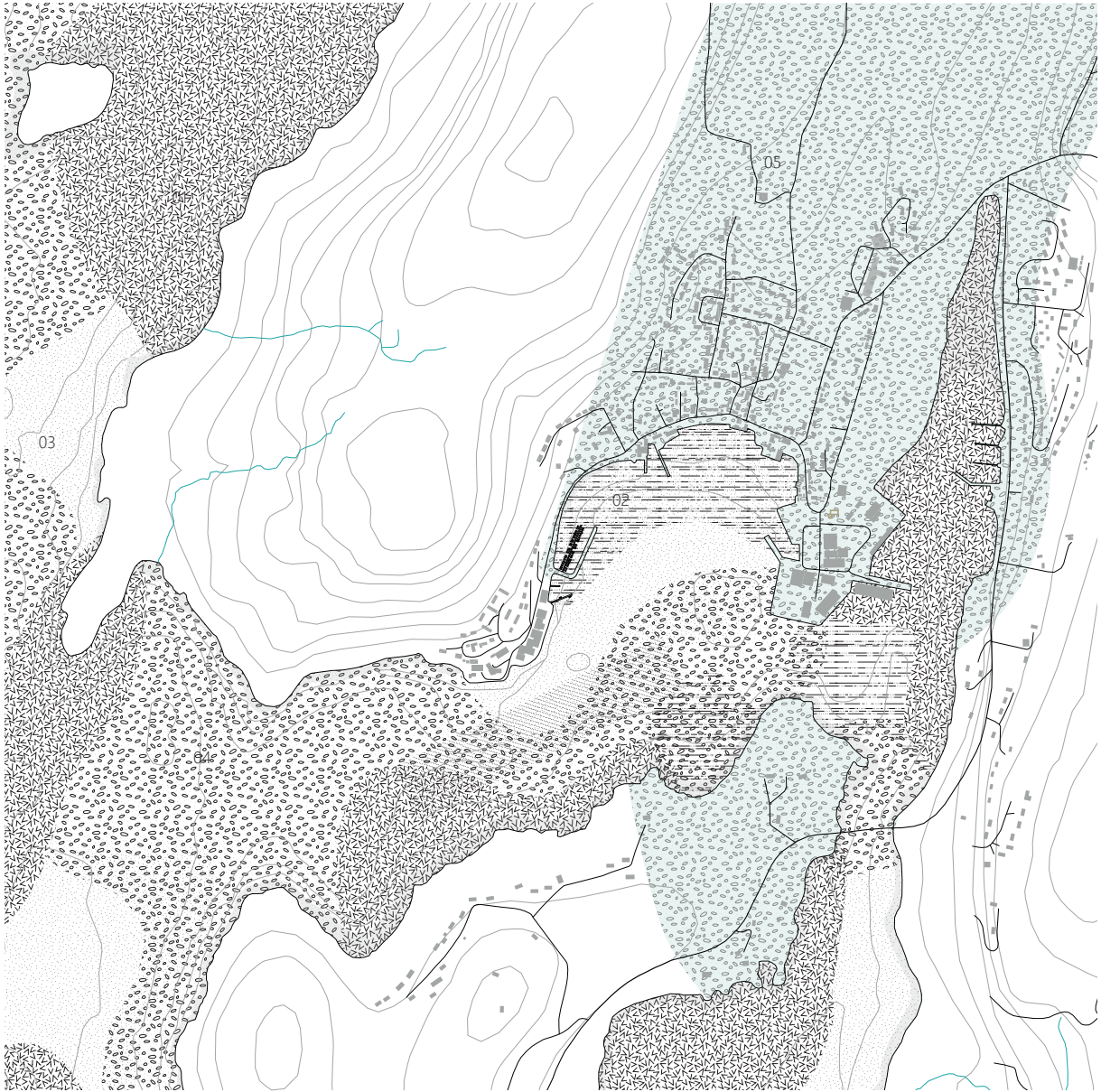
Geology & Ground Conditions | *a fertile harbour*

Geographically, Scalloway also offers an ideal location to host a seaweed cultivation project. It lies at the base of a fertile valley, a rare sect of fertile ground for the Shetlands, offering a better potential to connect with land-based cultivation.

The seafloor is varied, offering different kinds of substrates and diverse habitats. The land also forms a natural harbour, protecting from the worst of the SW winds.

There are some existing salmon farms close by, as well as dredging damage for boat access that inclines the project towards the need for ecosystem repair.

- 01 Rock
- 02 Mud
- 03 Sand
- 04 Shells
- 05 Brown Earth and Limestone



fertility & potential

01



02



03



04



05



06



- 01 view across bay from West
- 02 Scalloway castle
- 03 seaweed and plastic beaches
- 04 relation to water
- 05 boat repair
- 06 net storage

07



08



09



10



11



12



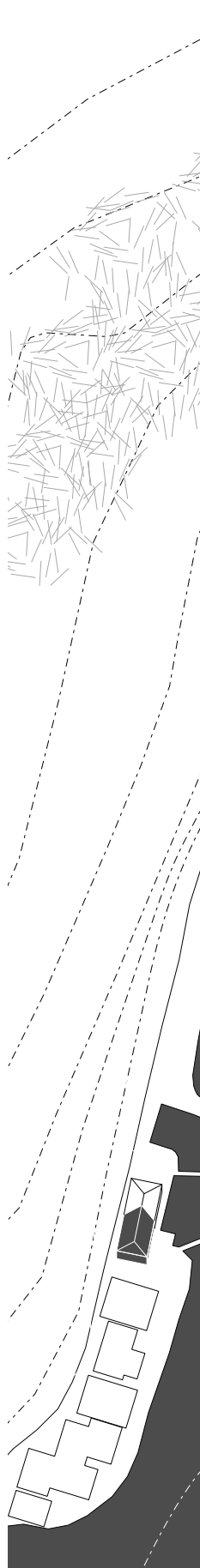
- 07 overlooking the bay
- 08 watery gardens
- 09 vernacular
- 10 pier peer
- 11 local culture
- 12 composition of parts

5/ The Proposal

cultural (ex)change

The Proposal

cultural (ex)change





Alternatives to animal-based foods exist and the argument balance for their use is compelling, so why haven't we changed our production? The importance of the role of culture, livelihood and tradition must never be underestimated, and is incredibly powerful when it comes to our practices around food. This project seeks to employ the potential within architecture to challenge, inspire and shift rituals and patterns in our daily lives. It harnesses the technical capability of architecture to provide the physical infrastructure for a new system of production, yet combines this with the aesthetic qualities it offers to inspire, attract and reinforce positive associations with new foods and routines. Finally, it breaks down barriers and thresholds to provide spatial connections, bringing together producer and consumer, creating habitats not only for humans but for all species to thrive.

Understanding the process of change as a series of provocations, reminders and inspirations, cultural (ex)change takes the visitor through a journey. A series of moments mark the transition from land, familiarity and comfort to the sublime, the unknown and the poetry of the sea; defamiliarising, reorienting, sharing expanding. It understands the commodifying nature of reading experiences via masses, overviews and summaries and counters this, embracing each space and interaction via narrative.

Creating place as an anchor for everyday life, of intersection and interaction, we can create a place to learn and discover through practice, exploration and joy. The way we think of production, how we live and who we live alongside can incrementally shift, bringing an awareness of production back into the public realm, to the scale of the individual

Regional Strategy | *reclaiming territory*

The cultivation of seaweed offers not only an alternative food source for human consumption, but also restores or creates important habitat for other animals, improving mineral balance, biodiversity and creating spaces of a greater balance between humans and other species.

The Shetland Isles are currently under great pressure from the intensive and increasing numbers of salmon farms, which dominate the space, release pollutants and damage biodiversity.

The project aims to reclaim some of this space taken for human needs alone through the establishment of a series of kelp bed plantations. Anchored in place by their usefulness in the production of kelp for future or export use, this creates a distributed network of protected zones for habitat regeneration, mineral rebalance and increasing biodiversity.



Territorial Claims

Location & Composition | *axes & views*

Taking the natural form of the harbour, the collection of historical buildings at the base of the pier immediately caught my attention as the heart of the settlement.

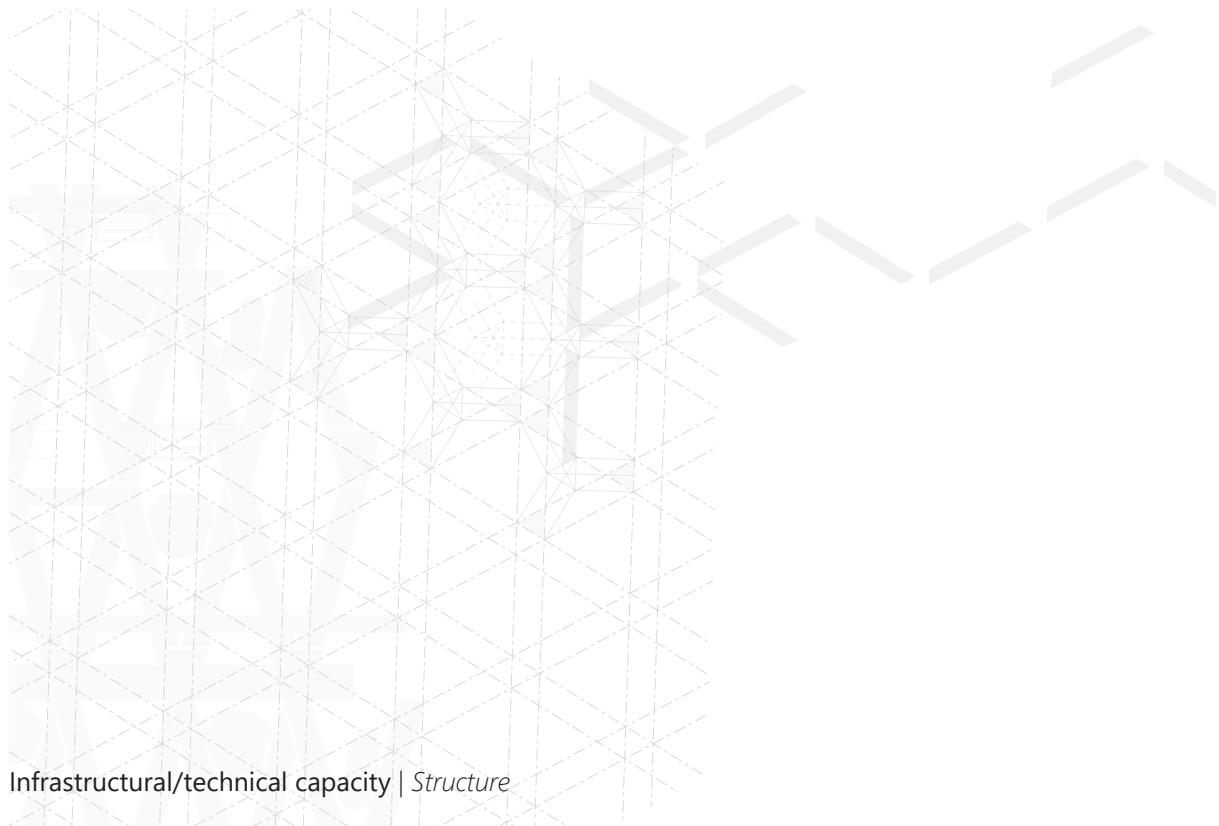
Given the nature of this intervention as the 'flagship', testbed project, it felt important to compose it as a focal point in contrast to other options of dispersed, more integrated, consolidated or so on.

The project therefore takes the derelict warehouses at the heart of the settlement as its starting point and reaches out from land to sea from there via the pier.

Views are established, connecting the pier to the old industrial area in the East, before reorienting and giving a view towards the new.



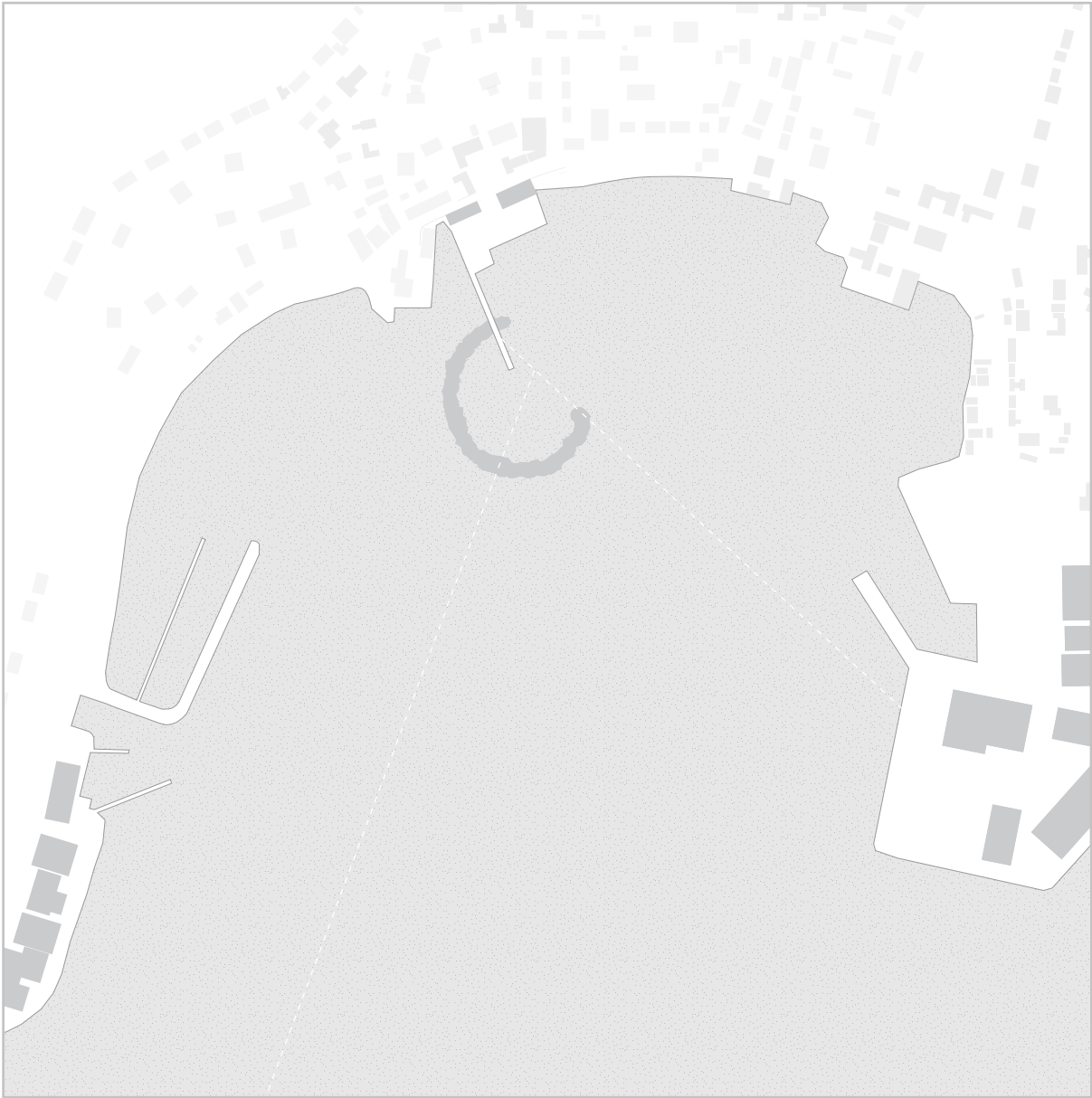
the Old and the New



Infrastructural/technical capacity | *Structure*

Responding to the gentle curve of the bay, the substrate modules are arranged to form a gentle curve, intersecting the pier.

It creates a breakwater to slow any strong currents reaching the bay, creating zones of slower and shallower water inland to afford breeding grounds and calmer conditions for fish to inhabit, as well as providing a level of protection for buildings and program inside the reef.



Ecology First



Aesthetic/cultural capacity | *Threshold*

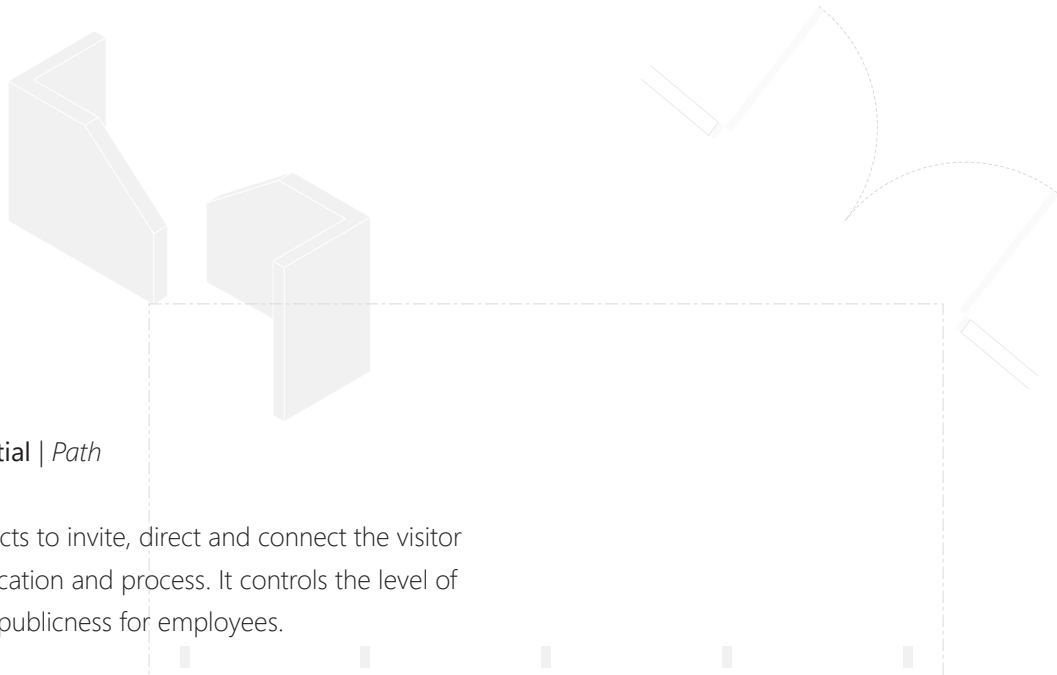
Within the harbour of the reef, components of both production and consumption, or dual functionality, are embedded

following the logic of a series of repeated messages, these moments are assembled such that the visitor must pass through both components, maintaining contact visually or physically throughout, following the axial views set up in response to the site.

The moments are united as one intervention through a mutual architectural language - a series of concrete walls, bowing down at certain moments, the steep triangulation of the reef modules below the surface expressed above the surface and a twisting path which unites it all.



Embedded Experience



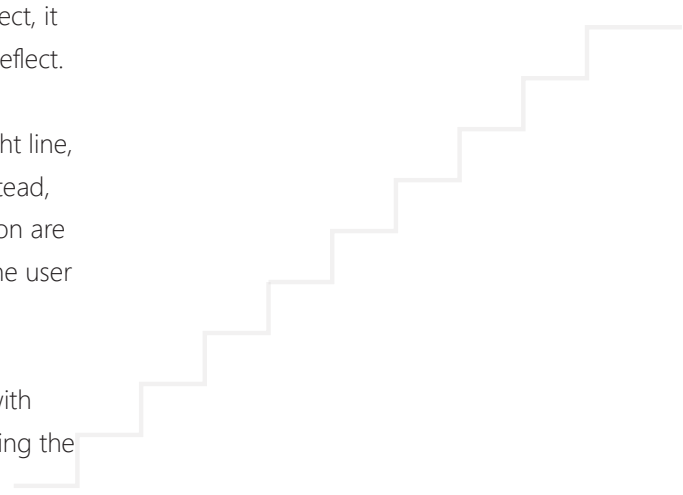
Socio-spatial | *Path*

The path acts to invite, direct and connect the visitor with the location and process. It controls the level of privacy or publicness for employees.

Yet at the same time as working to lead and direct, it also offers moments to slow down, pause and reflect.

The path deliberately strays from a linear, straight line, reflecting the nature of experiential change. Instead, moments of ascent, descent, changes in direction are embraced as opportunities to reframe, cause the user to engage and make a decision.

It also acts to control the idea of co-existence with other species. It peels away at moments, revealing the sea or the sky and their inhabitants.



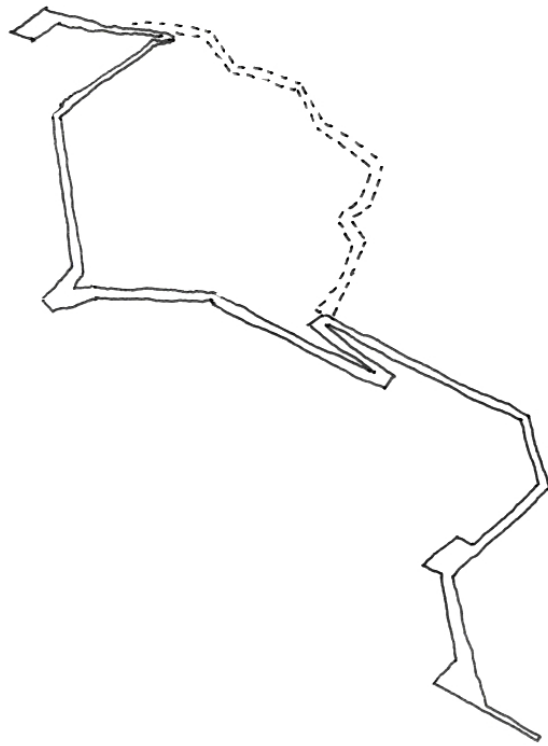


Intersecting Lives

Narrative | *space as experience*

Continuing to focus on the qualitative, in order to highlight the individual, my research by design strongly emphasised the power of the narrative - of the bodily experience.

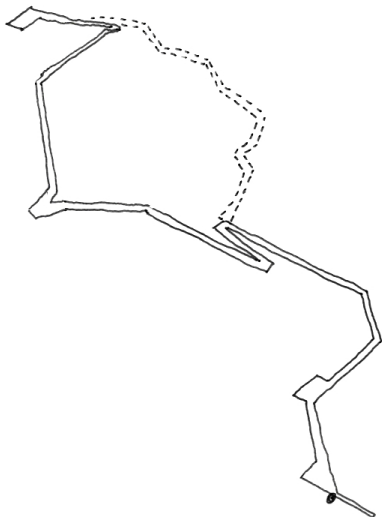
Using narrative, serial vision and perspectives to continue research through the design phase, the project unfolds as a series of moments, sewn together through the movement through the project.



Cultivating Culture, Cultural Cultivation

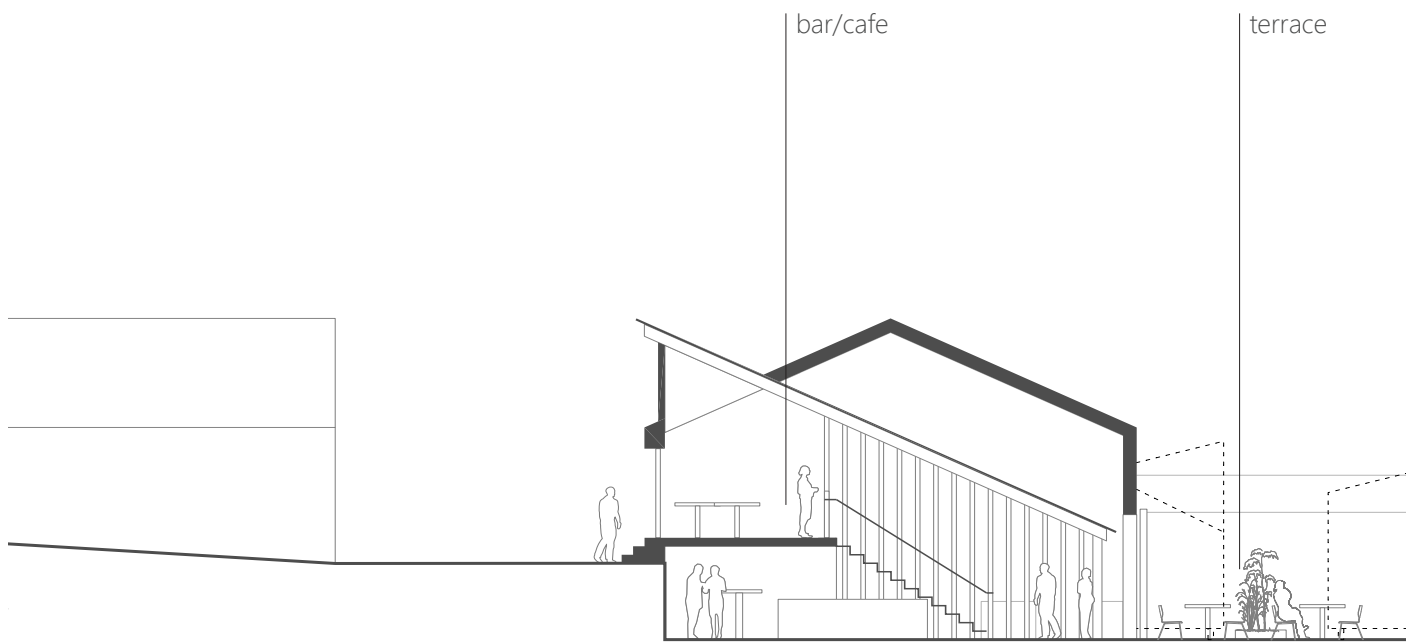
Arrive | entrance

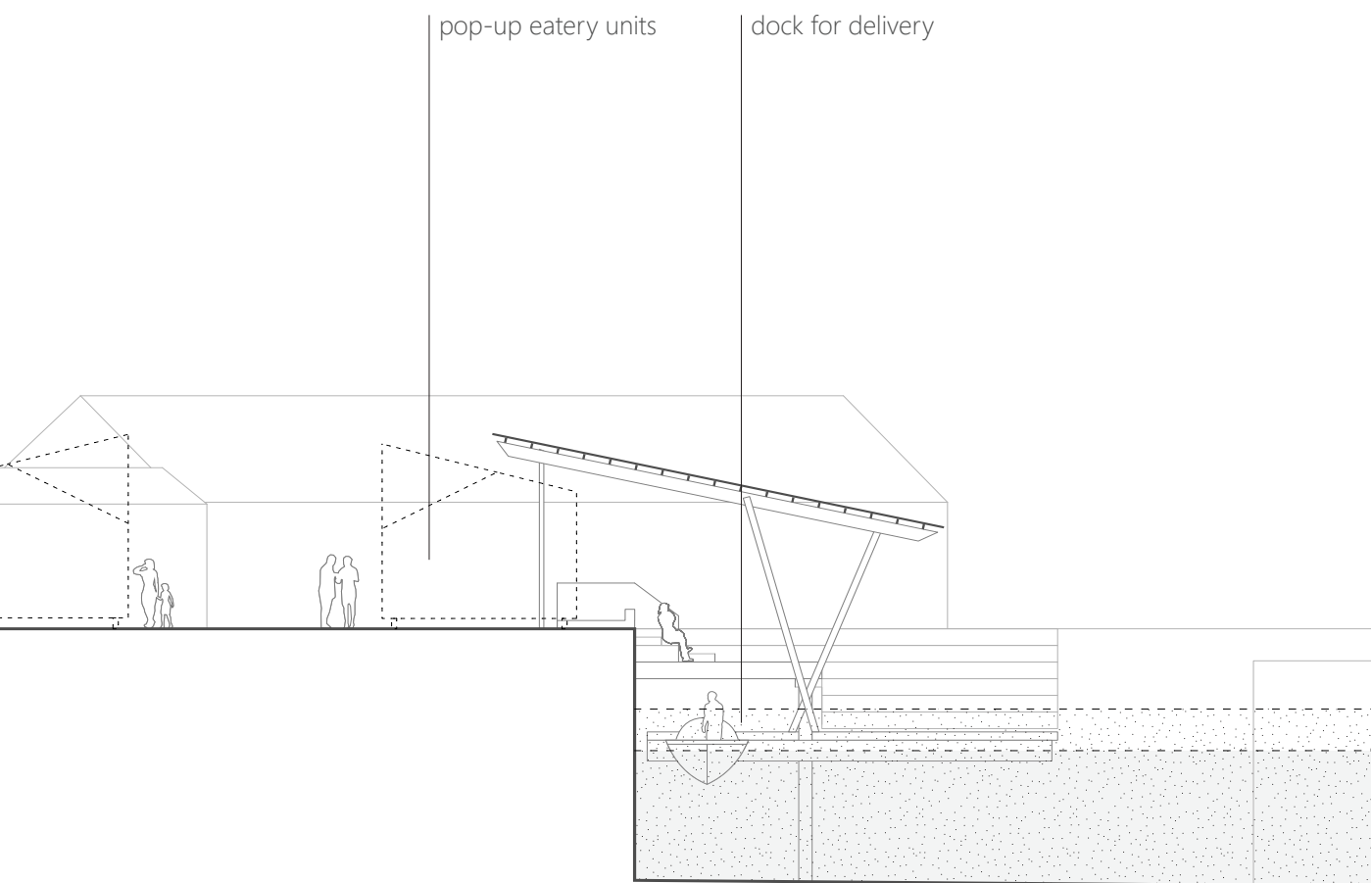
a first taste





Susan, a local resident of Scalloway, has been eagerly watching the new construction emerging from the heart of the bay. Her son is now grown up and lives on the mainland but, having recently gone vegan, is back to visit for the grand opening this weekend. As they trace the familiar high street along the harbour, a new, timber clad roof and concrete steps project out from the once derelict boat store, inviting them in.

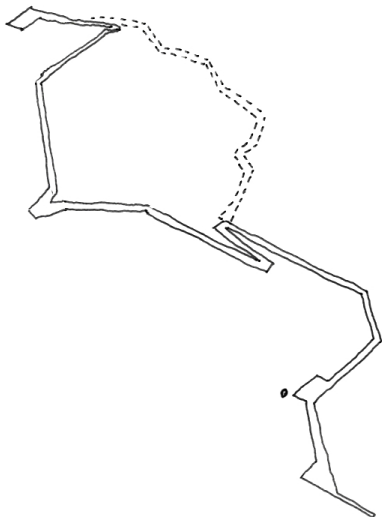




Section A | Entry

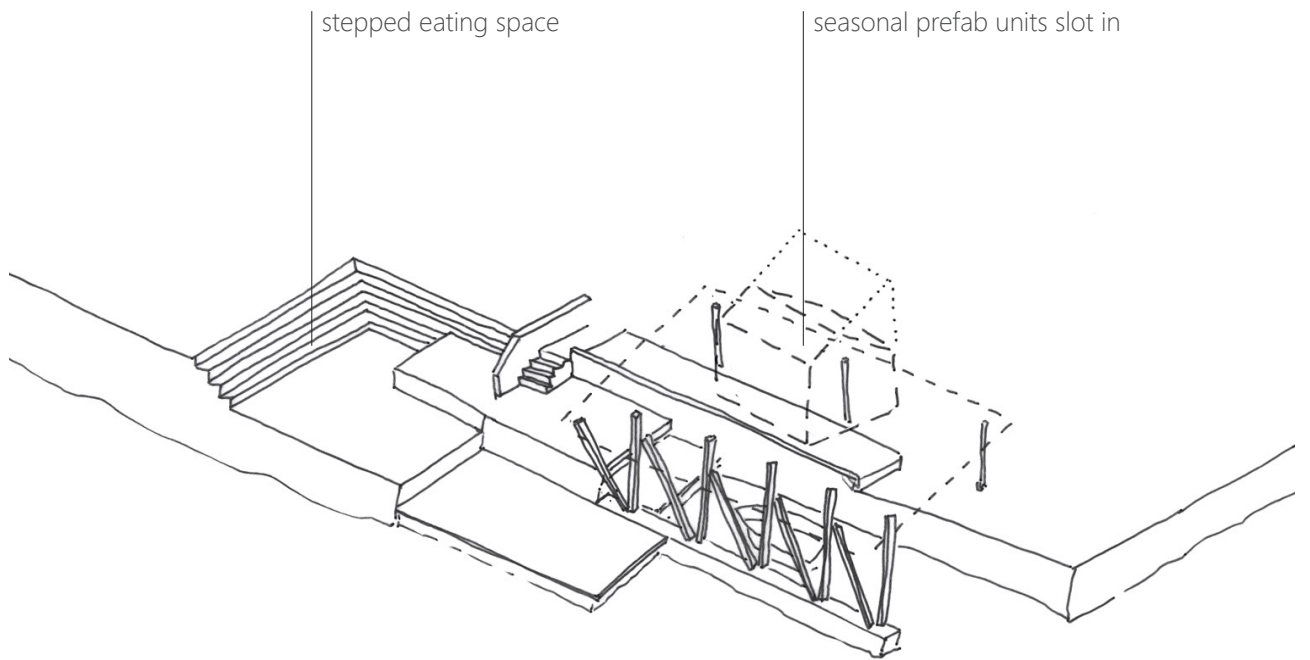
Invite | marketplace

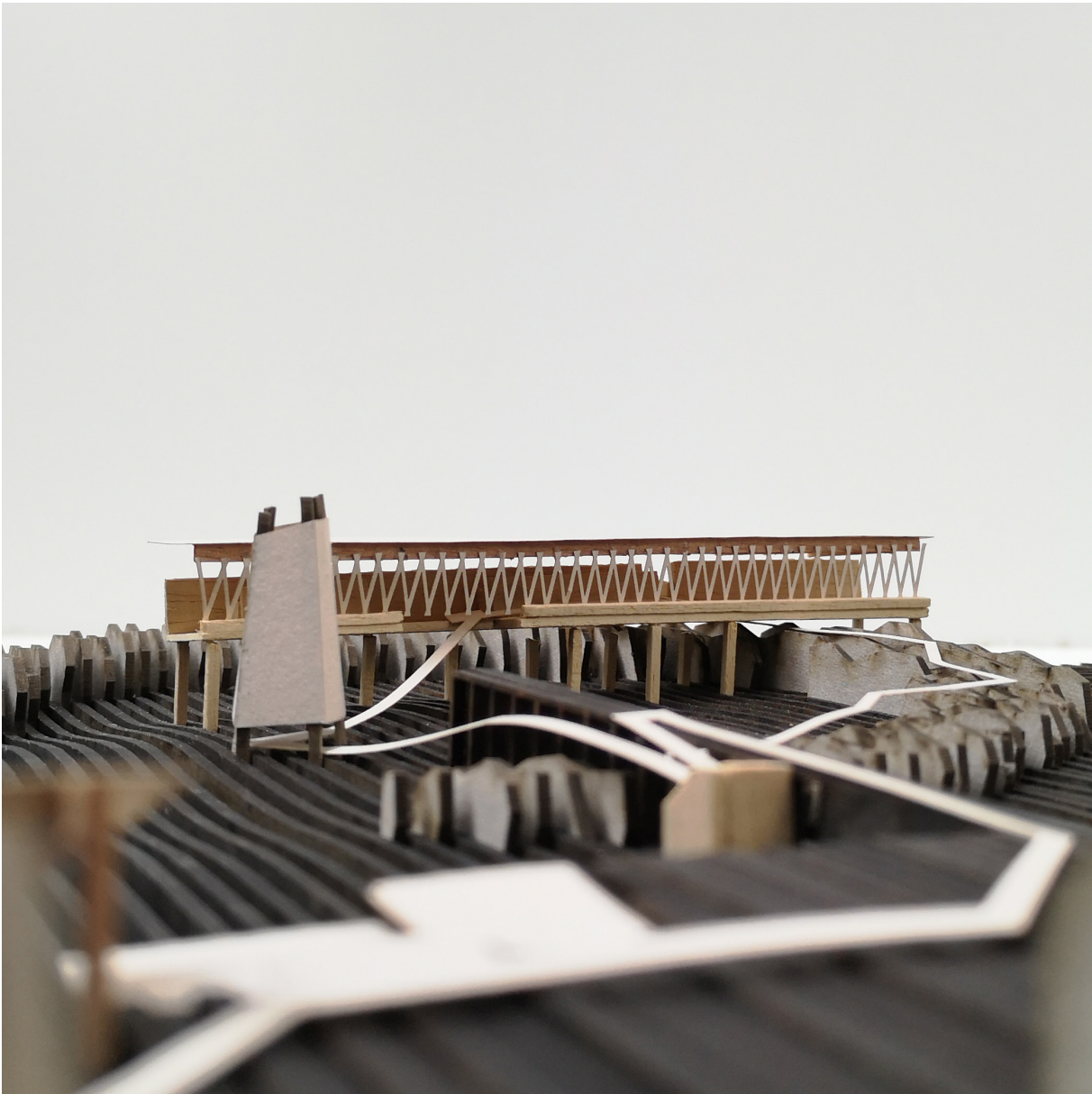
showcase





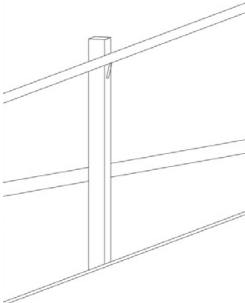
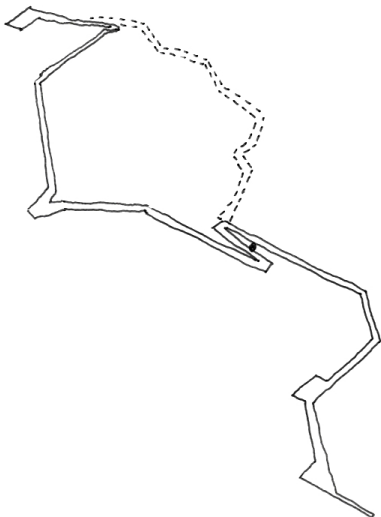
They pass through, smells of food enveloping them from the new kitchen below as they descend from the street to the ground. A view of the sea opens out in front of them, salty wind hitting their faces. A glimpse of the tower and production process opens in the distance beyond. Small market stalls and food trucks invite them to samples and product tests, its hard to believe it all starts with seaweed. After a quick browse, they turn towards the pier, a twisting ramp and gently descending pathway inviting them ahead.

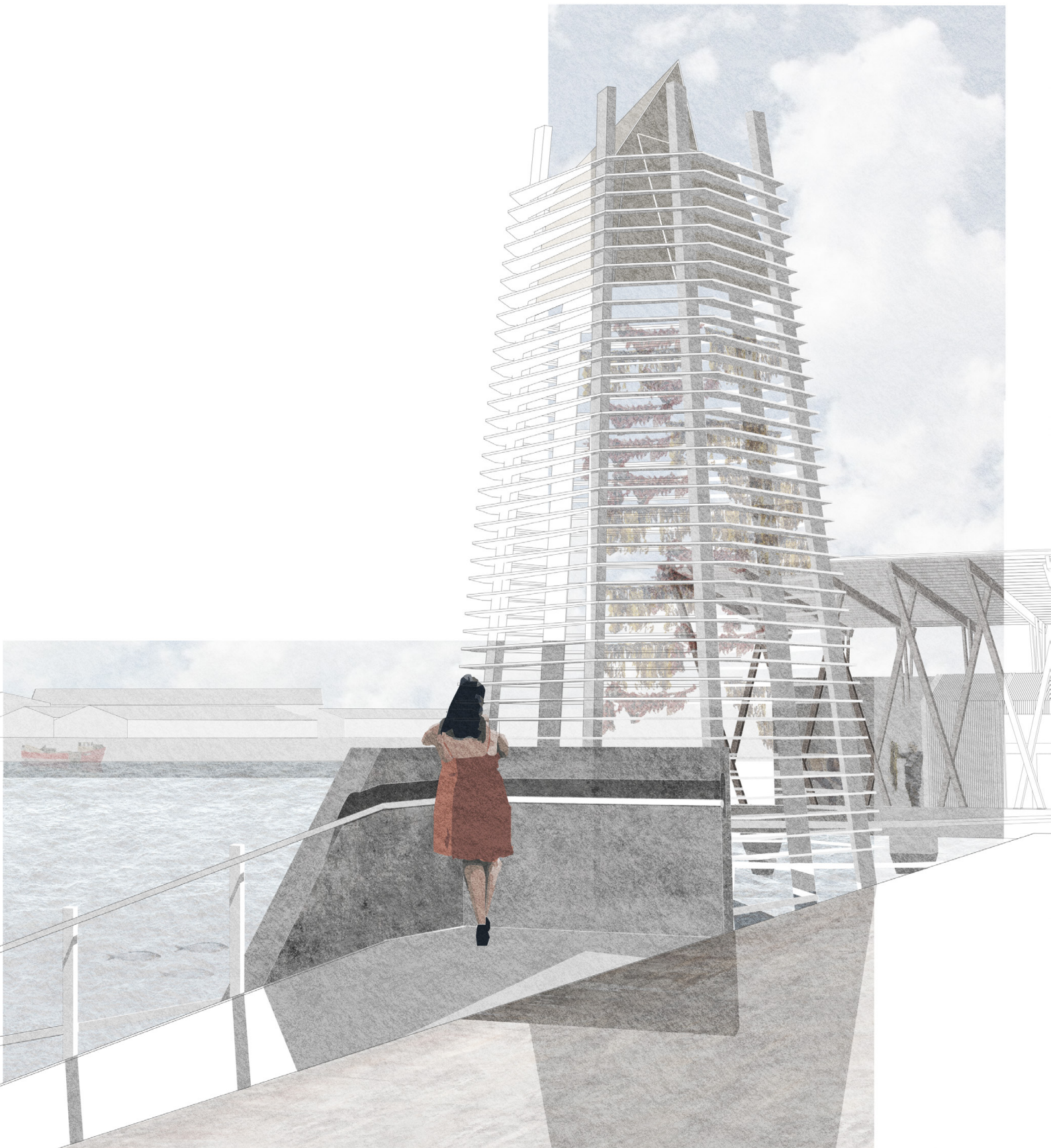




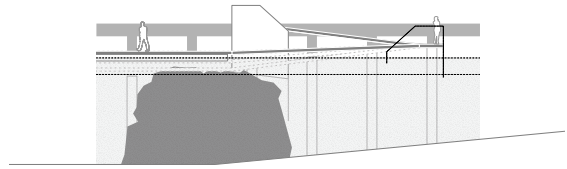
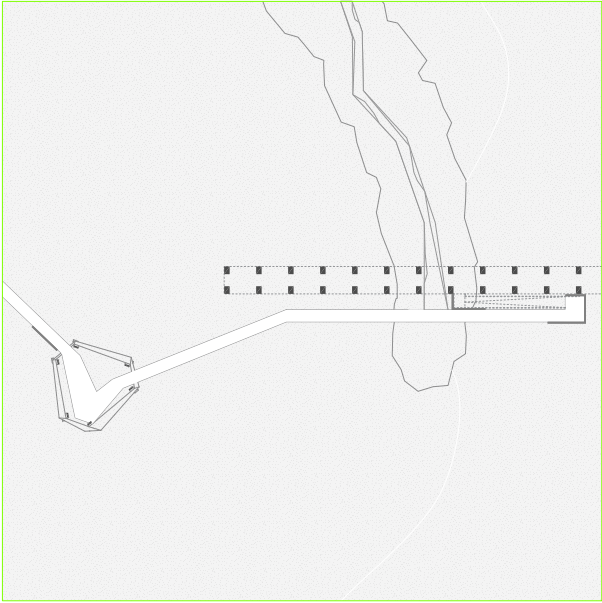
Defamiliarise | pier

from land to sea

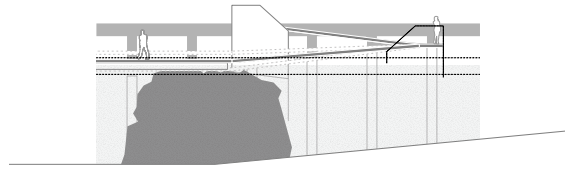
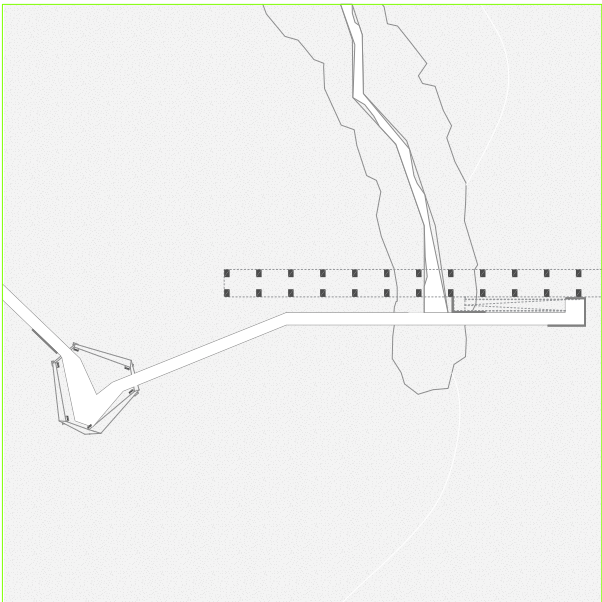




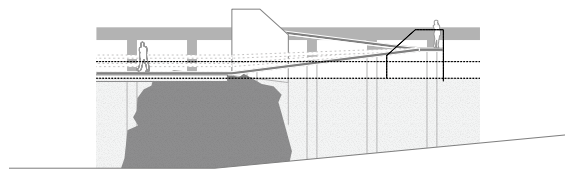
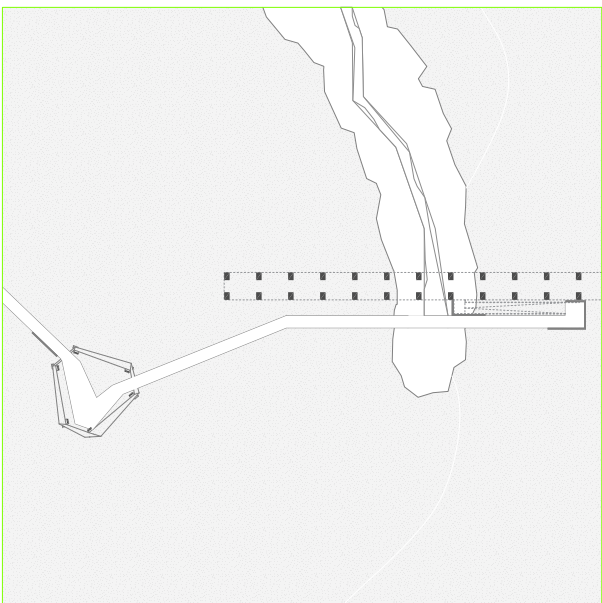
As they begin to leave the land, the ramp doubles back on itself, a glance back at home, the familiar. A soft timber handrail nests into the concrete walls which bookend the ramp, before snaking away towards the tower ahead, the reds, greens and browns of drying seaweeds catching their eye between the louvres. They pause for a moment to take in the old industrial peninsula, its closed warehouses and piles of fishing nets suddenly reframed.



Access | tide in



Access | tide halfway

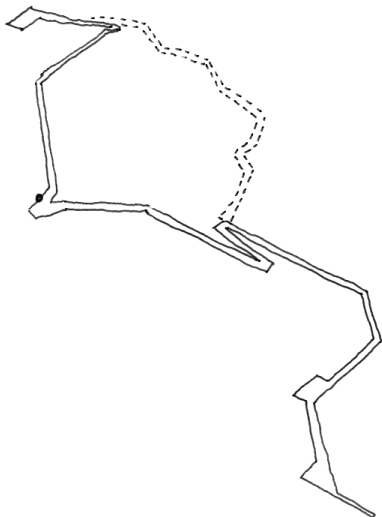


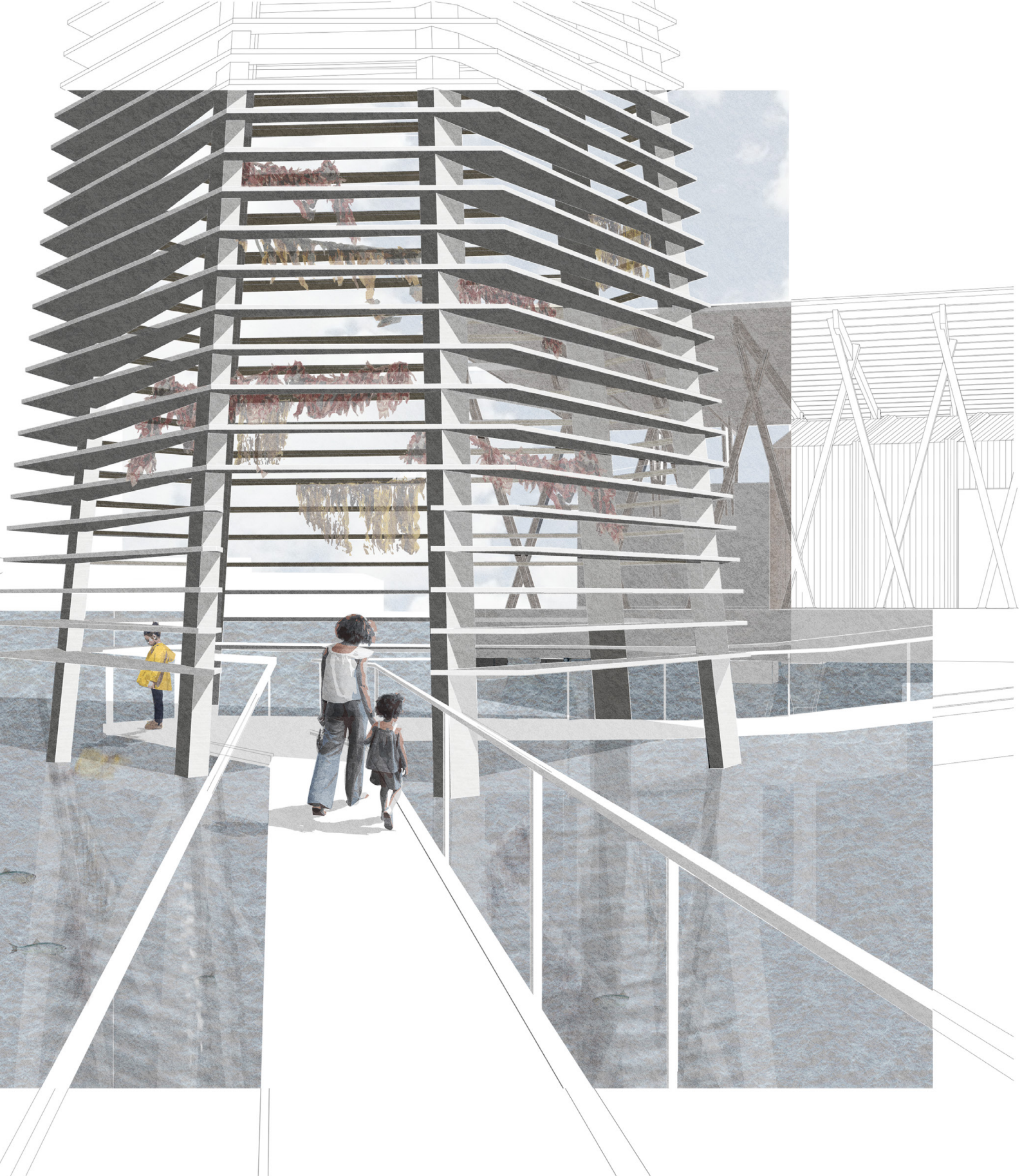
Access | tide out



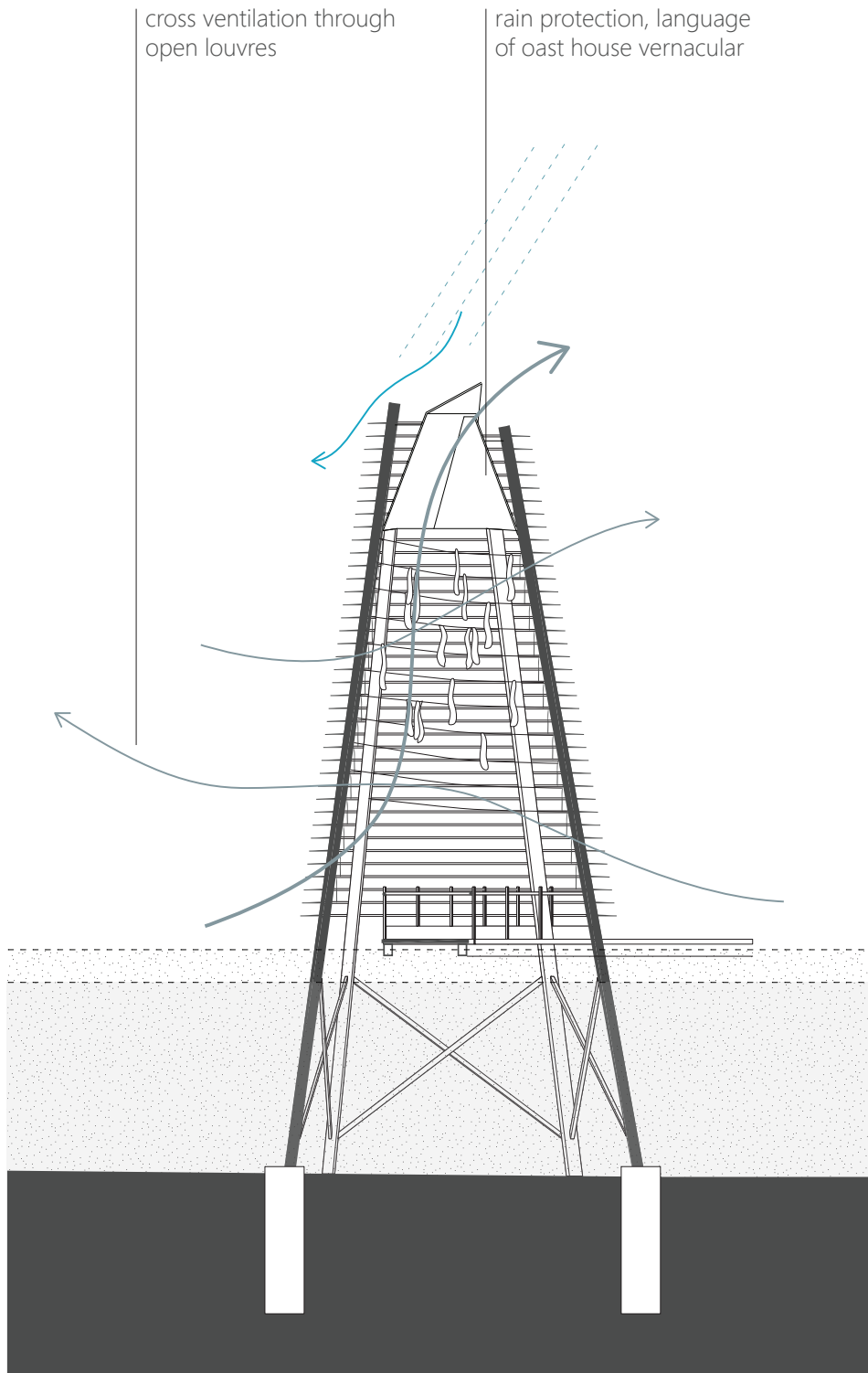
Reorient | tower

ripples & reflections





The path meets the water, floating on the surface and twisting through the base of the tower. Such a distinctive landmark from the town, its height from afar is broken down up close, views through the louvers merging, reflecting and changing as they move. The path pulls away from the enclosure of the tower, revealing glimpses of the fish living below. They pause, holding the handrail to stabilise them as they look through the oculus above, feeling suddenly small in comparison to the world living around them.

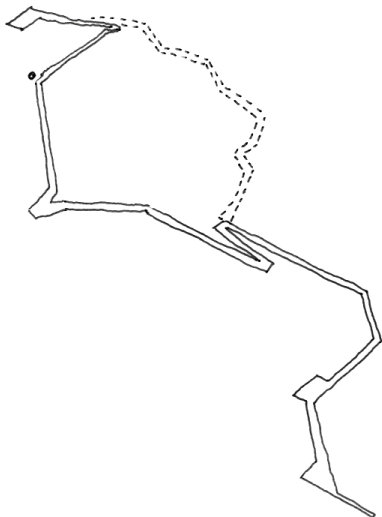


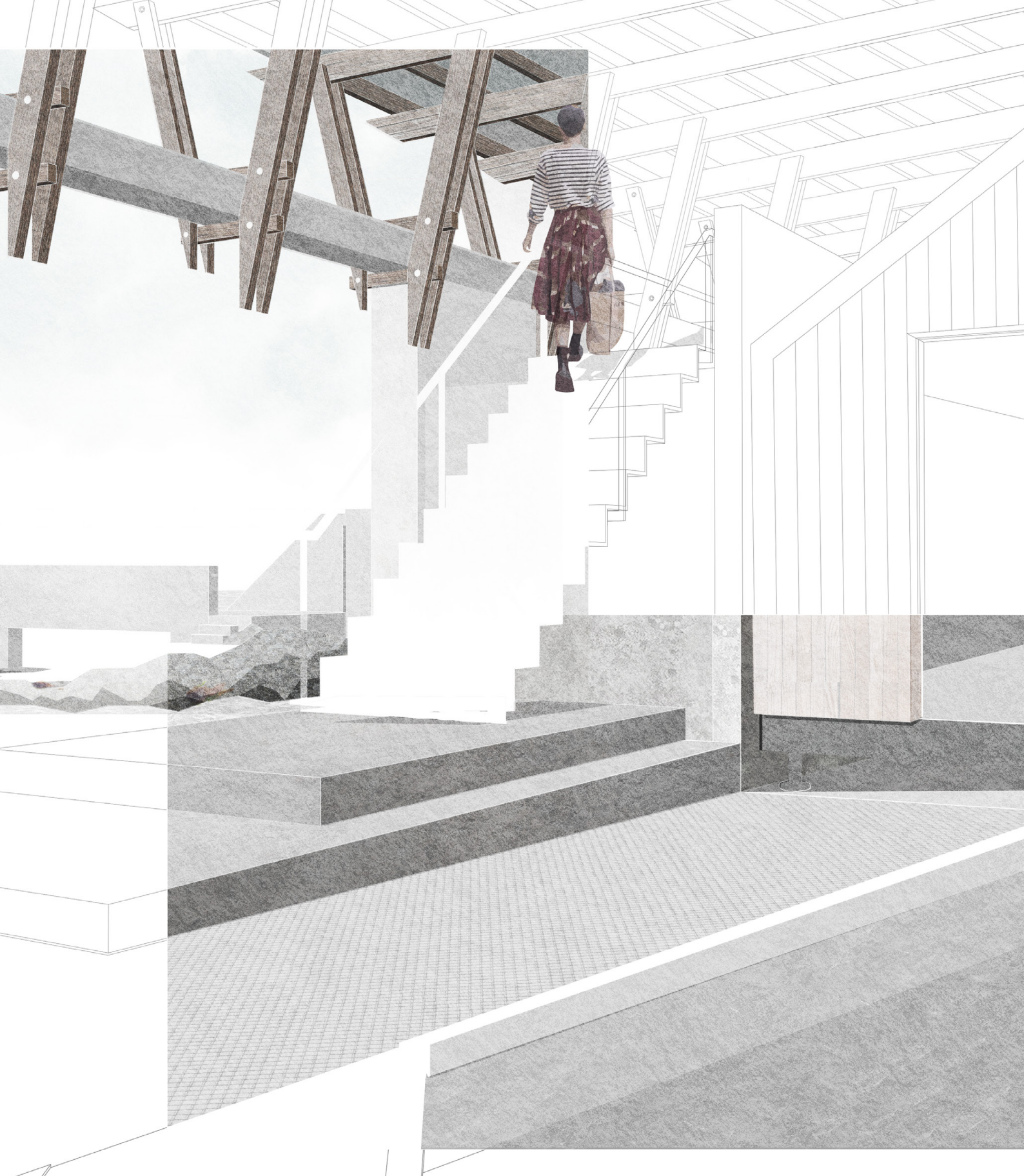
Drying Tower | climate



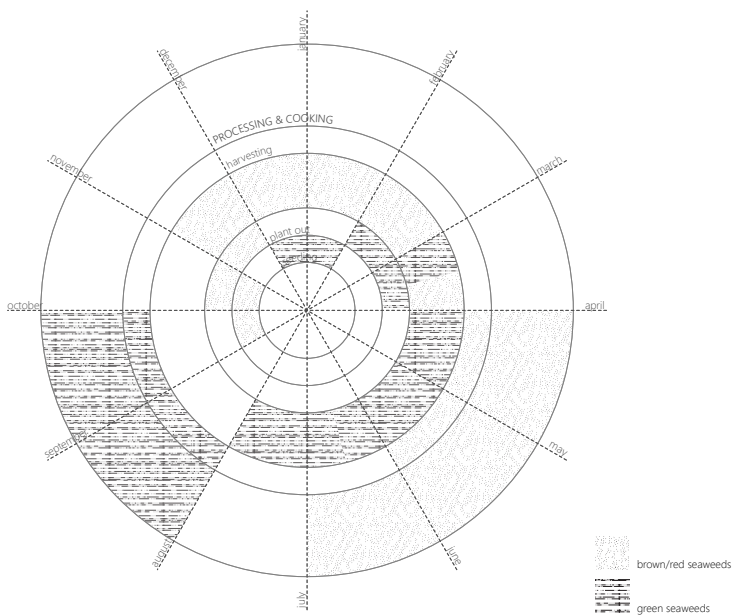
Present | processing

meet the producers



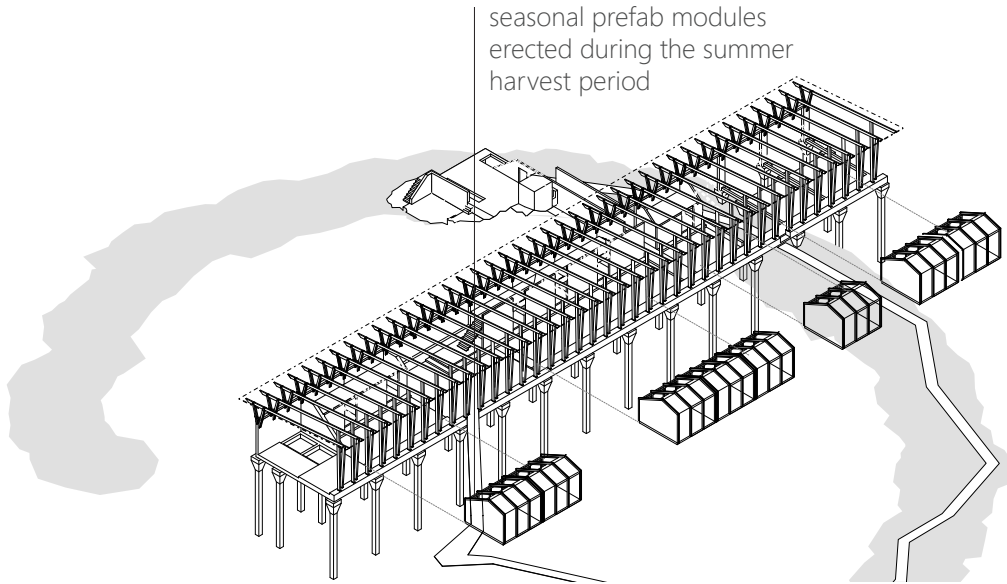


Heading now towards the long colonnade of the processing area, a recessed entrance and staircase spilling out from the timber structure above bring a bodily scale to the production. To their right, glazing provides a peek into the food preparation, and they stop to look, curious as to what happens behind the usually closed doors. The roof structure perches on a concrete beam, framing a view towards the terraces and projecting concrete balustrade of the teahouse ahead. The tide is half in, but a child plays in the shallow pools of the uppermost terrace.



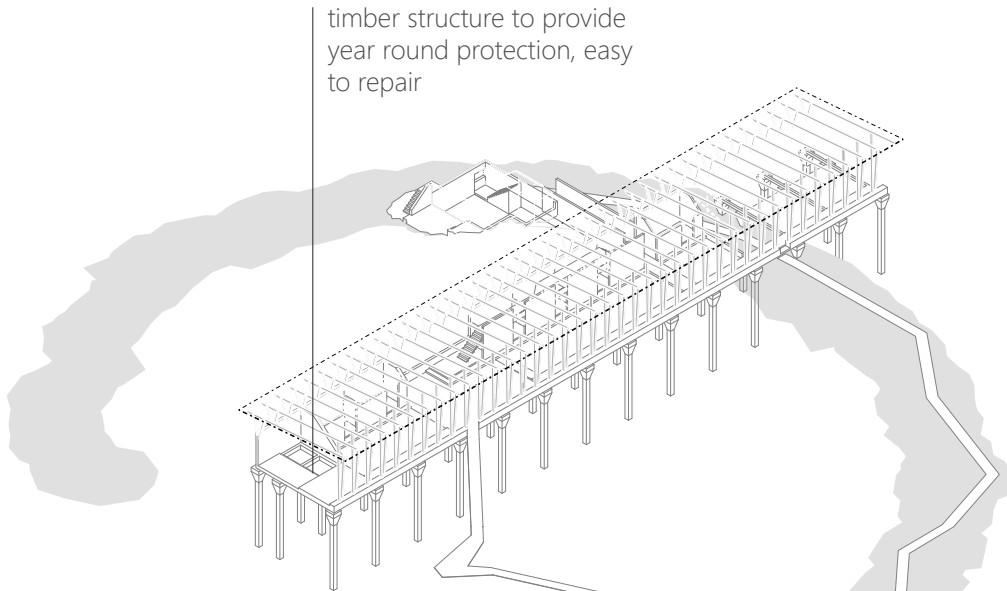
seasonal production patterns | varying requirements

seasonal prefab modules
erected during the summer
harvest period



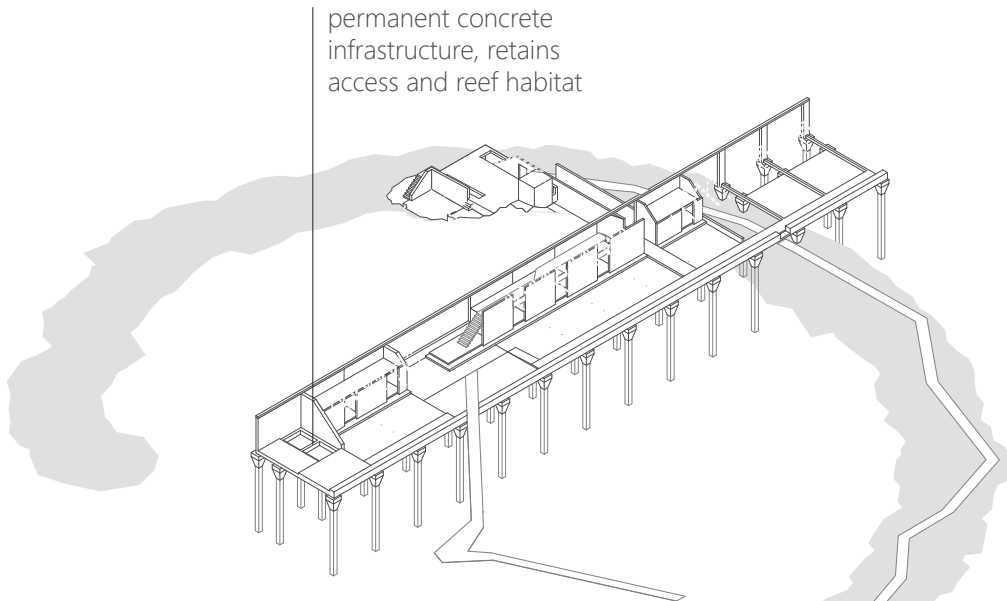
Longevity | seasonal infrastructure

timber structure to provide
year round protection, easy
to repair



Longevity | transient infrastructure

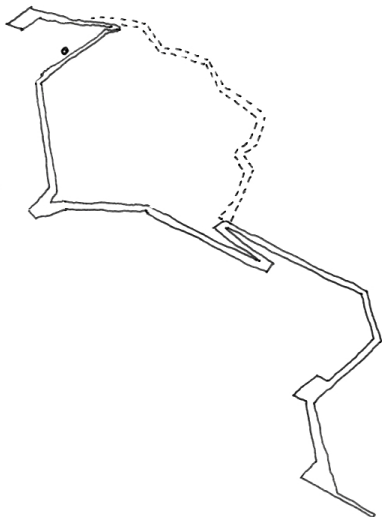
permanent concrete
infrastructure, retains
access and reef habitat

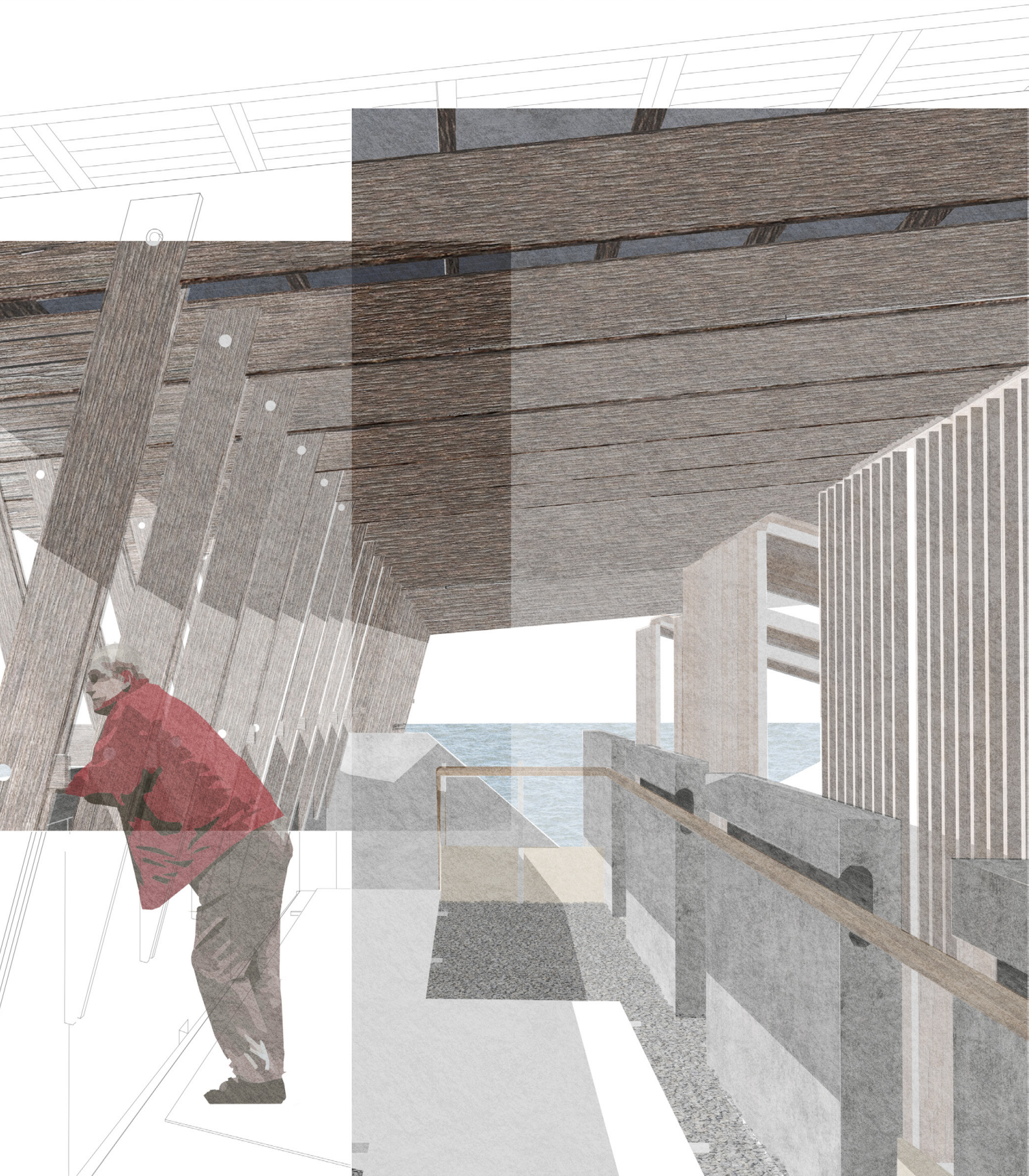


Longevity | permanent infrastructure

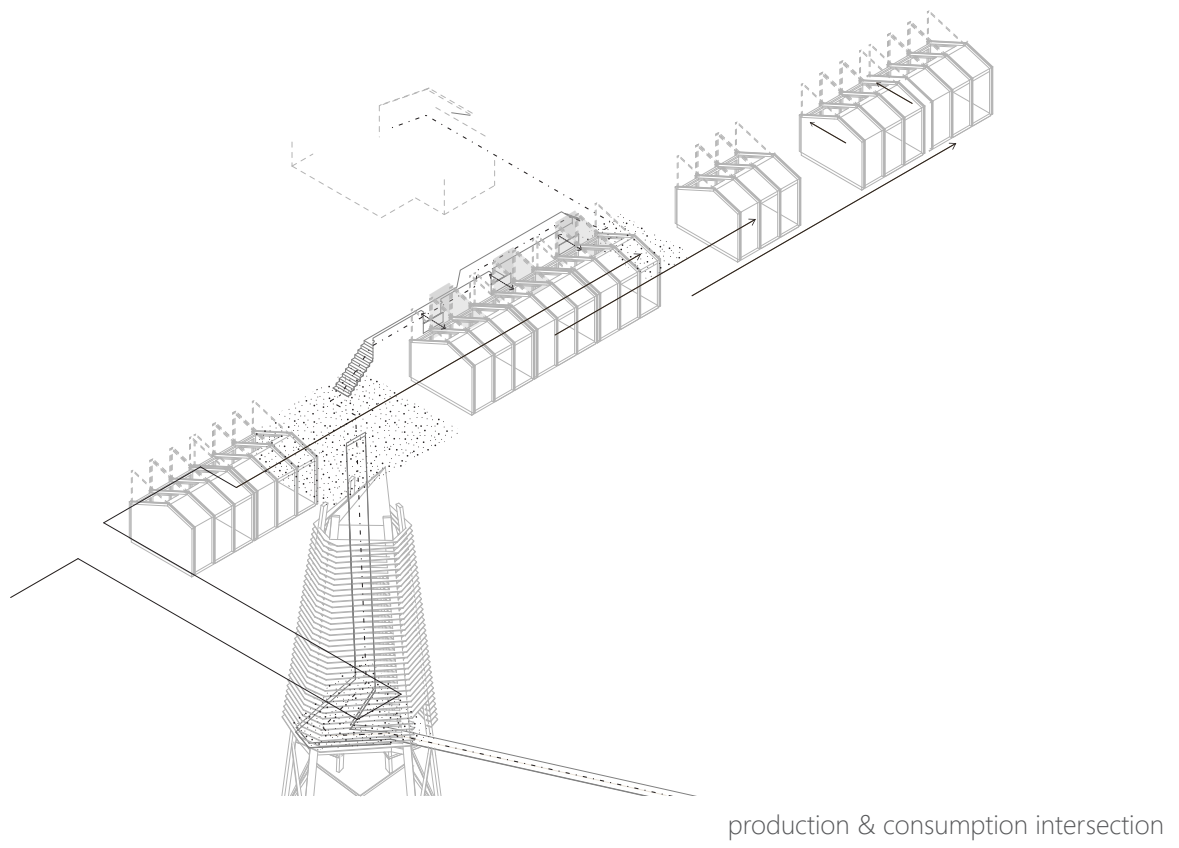
Expand | walkway

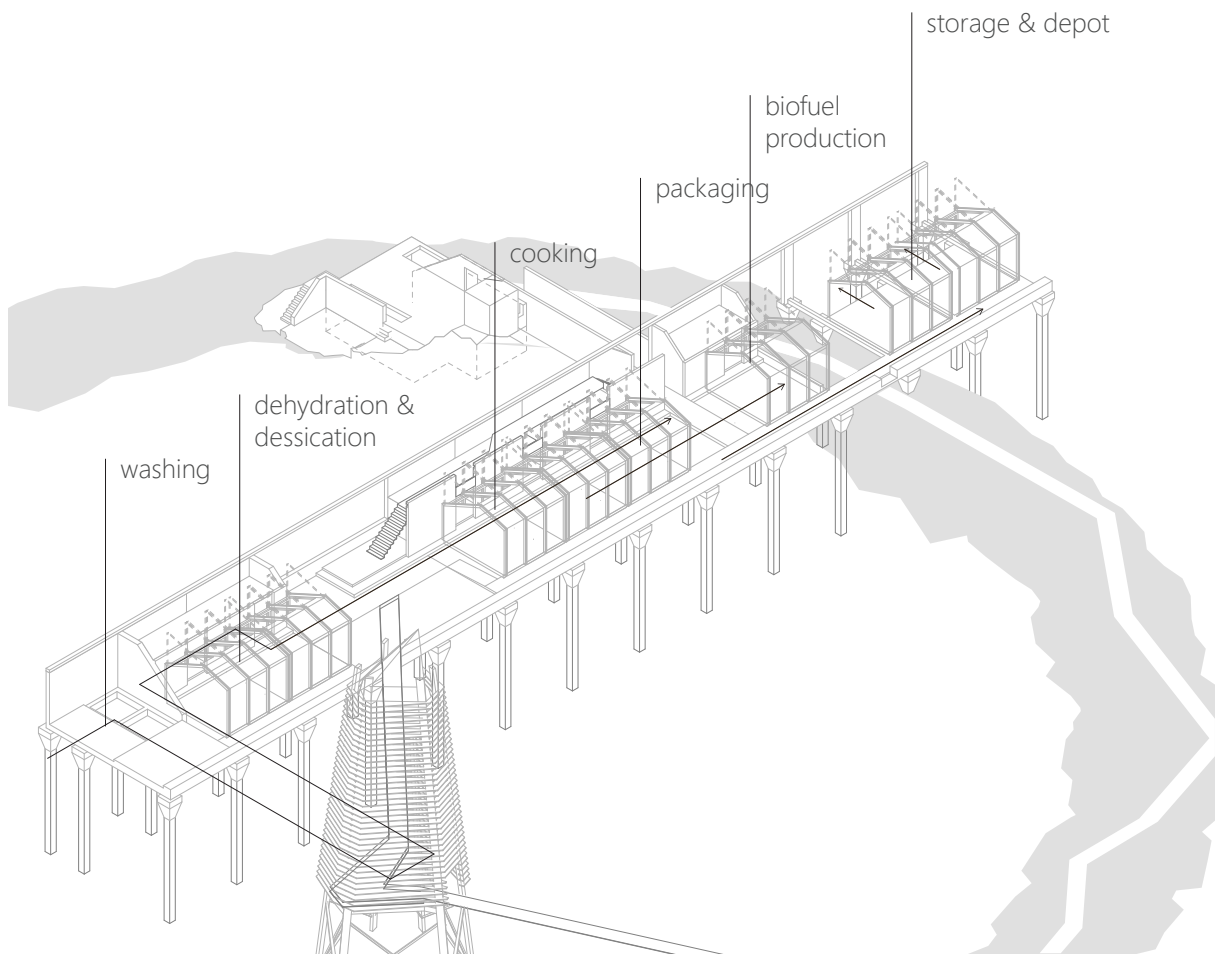
knowledge through experience



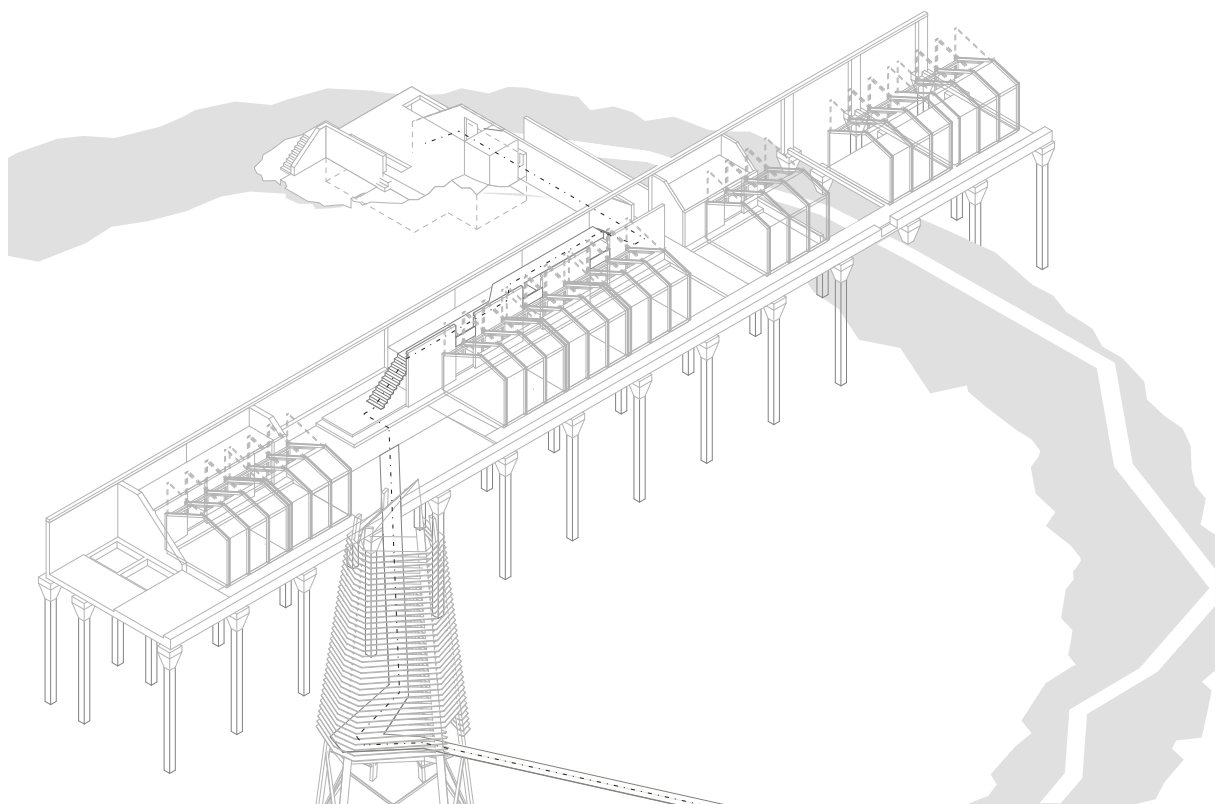


Ascending the stairs, the walkway continues at first floor, sheltered by the roof but never enclosed, immersing them in multiple senses. The path hugs the innermost side of the walkway at first, the balustrade punctuated by openings, revealing views through the slatted timber louvres of the production units below. Ahead the path widens, and they accept its slowing, enjoying the sea air on their face as they look out to the teahouse, embedded in the reef below. The wall gestures down, following the steps into the sea itself.





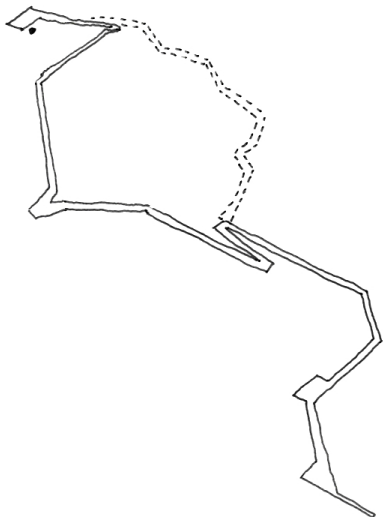
Access | production route

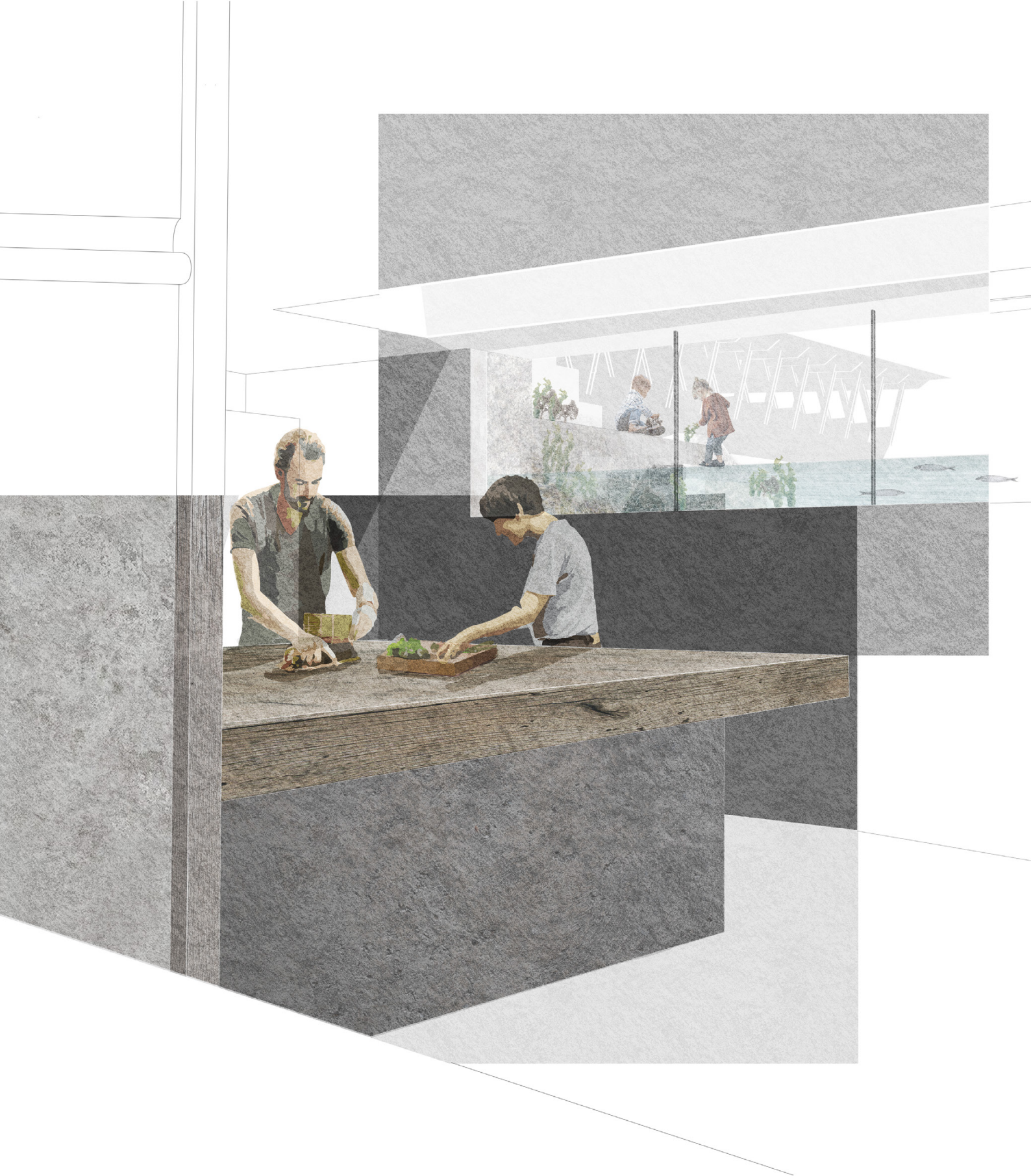


Access | visitor route

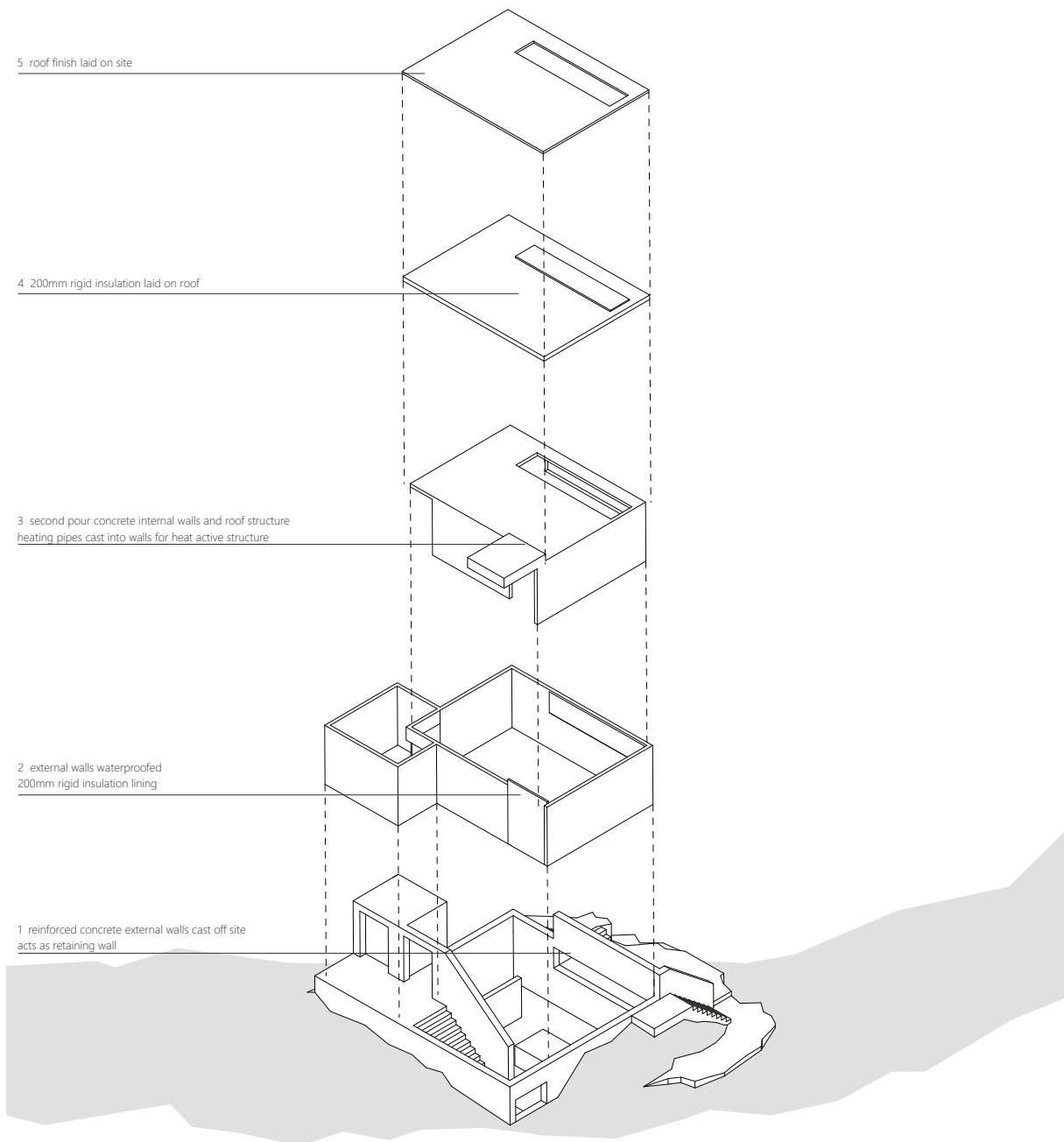
Participate | teahouse

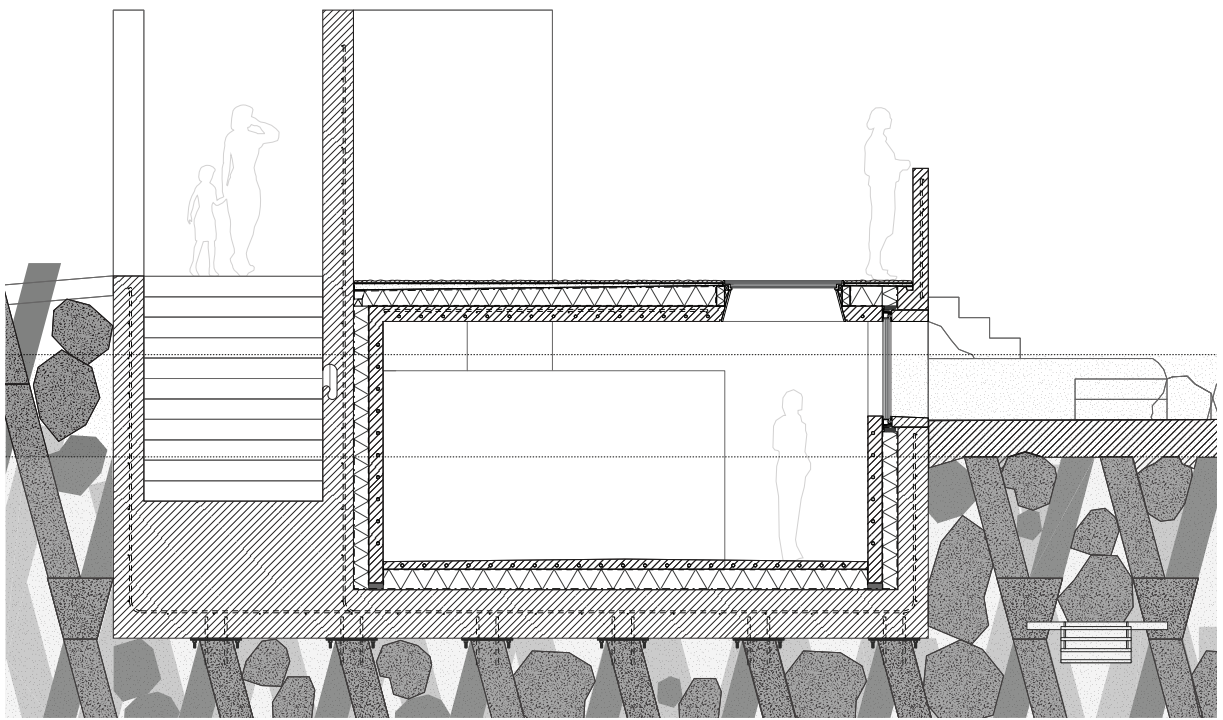
collective action





In the teahouse, a small group of local residents is hosting a communal meal for the opening event and invite Susan and Jonathan to join. A long window showcases the rise and fall of the tide, the only marker of time they need here. The whole space embodies the character of the reef, unpolished, still bearing marks of the last time the sea took over the space. The tideline is slowly dropping away and talk is turning to the prize nori they need for their sushi roll.

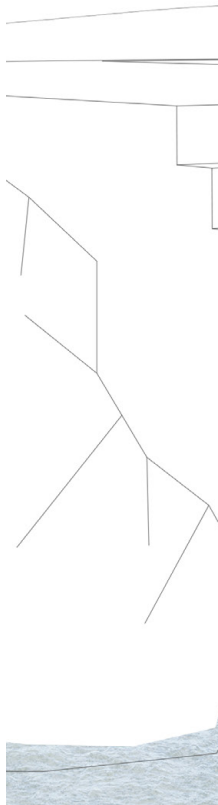
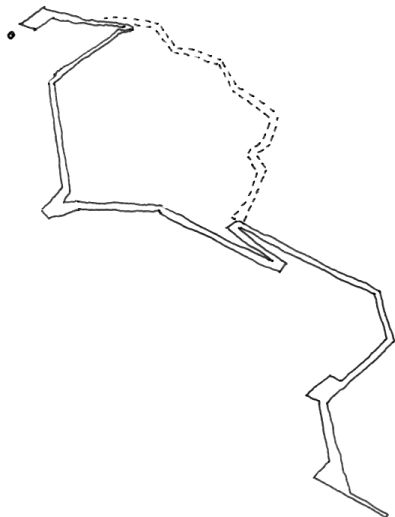


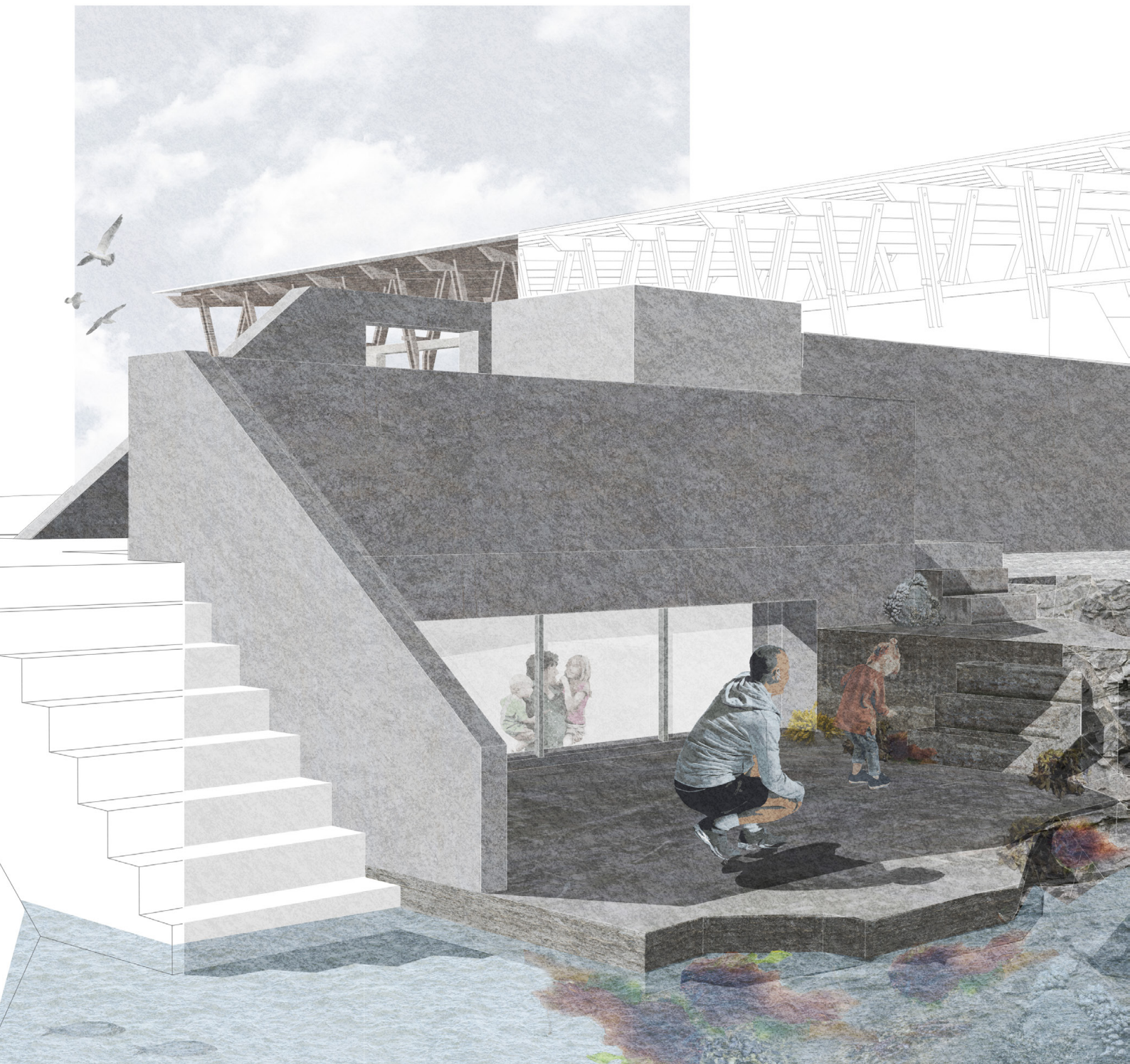


Teahouse | key section

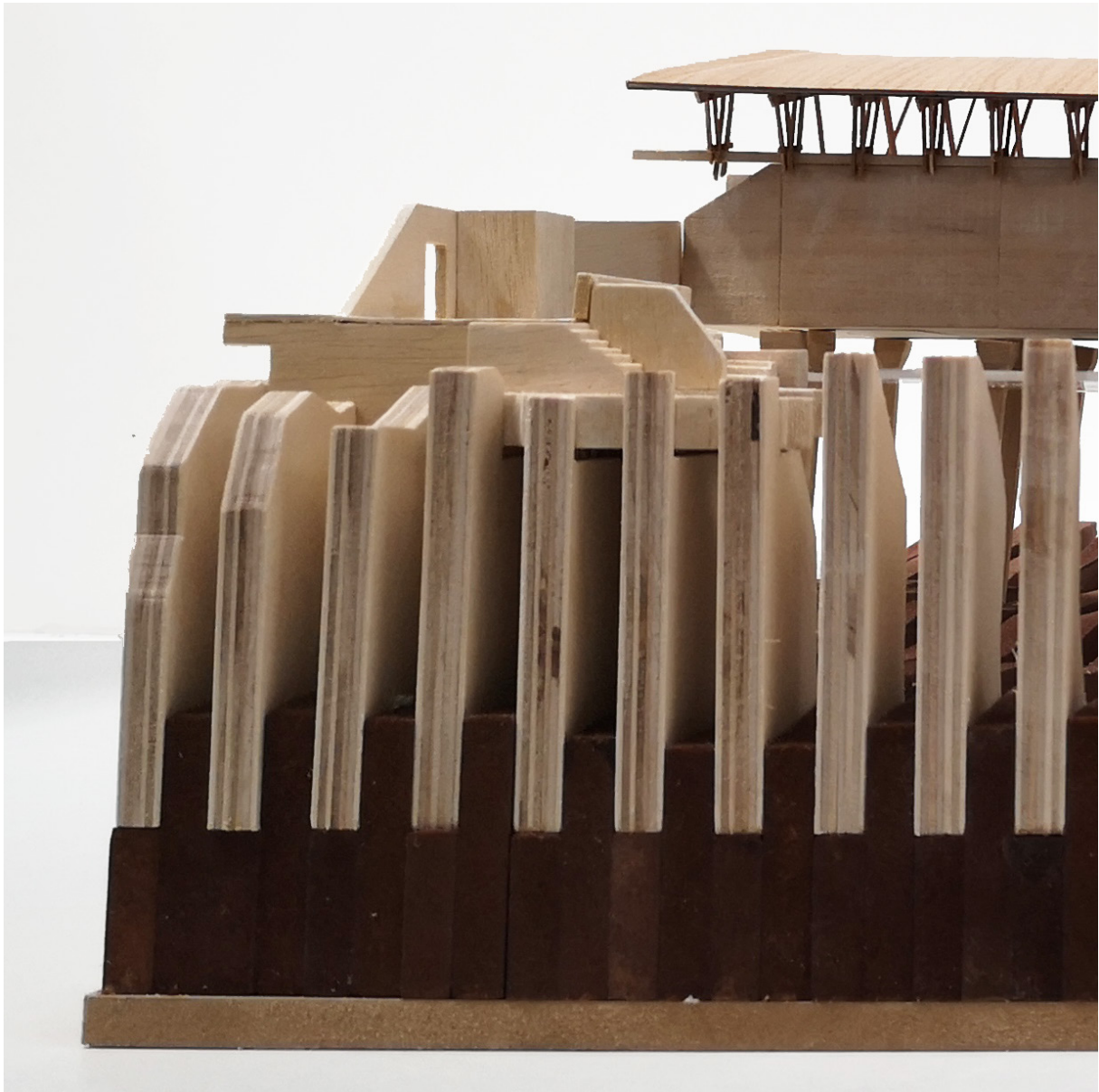
Integrate | terraces

embedded knowledge



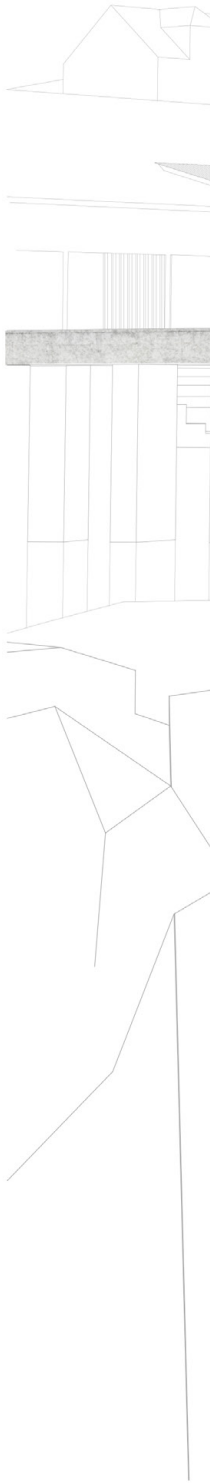
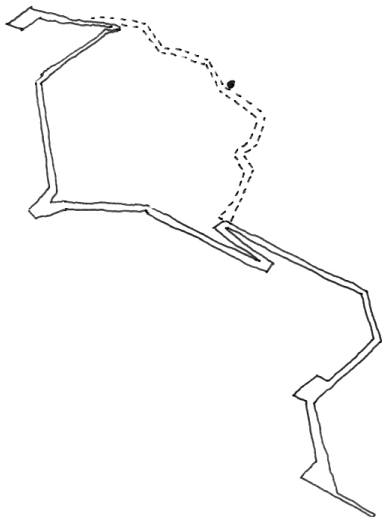


Just one hour from low tide, the reef is almost completely exposed. Four of the group head out with a local expert to identify and harvest some of the wild seaweeds growing among the terraces. It is a calm day, but the waves still crash in and out over the lower terraces on the outer side of the reef, the seaweed moving with the water. After a couple of splashes, they laugh and gain confidence, venturing away from the path between the rocks.



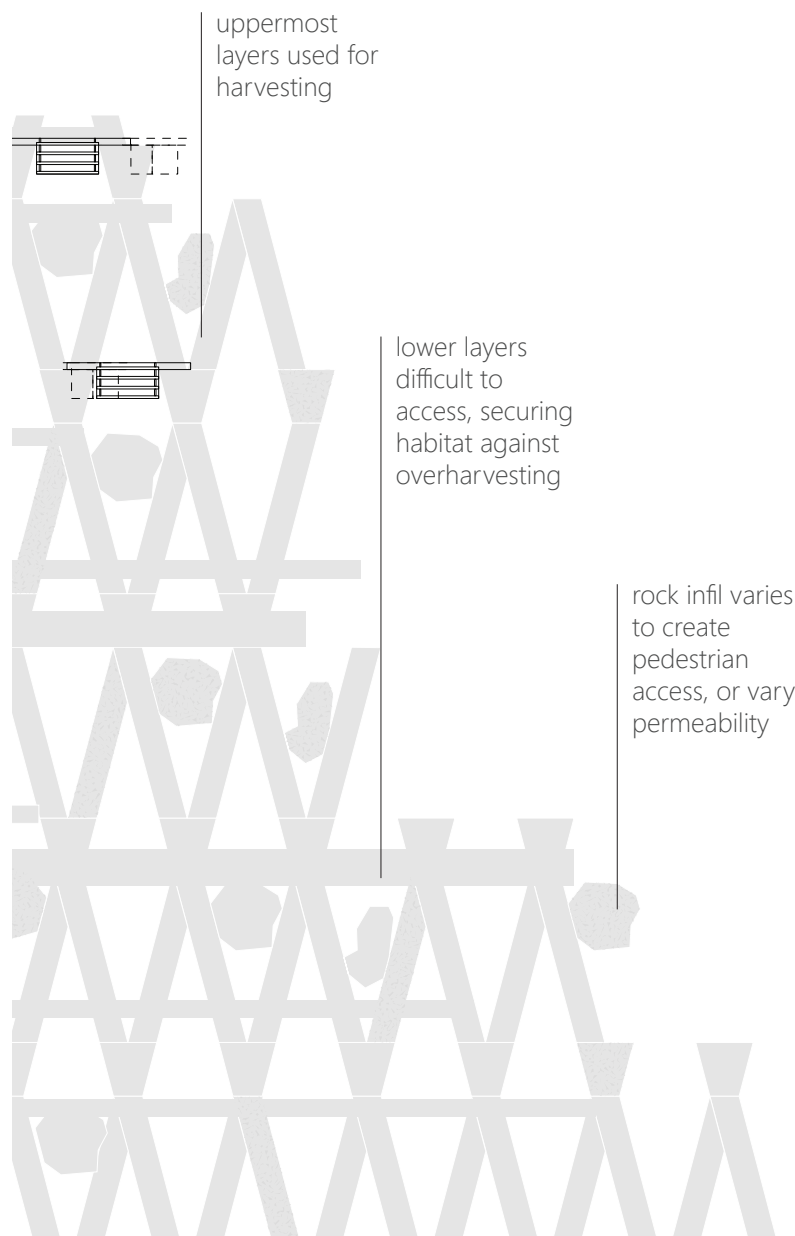
Reflect | reef

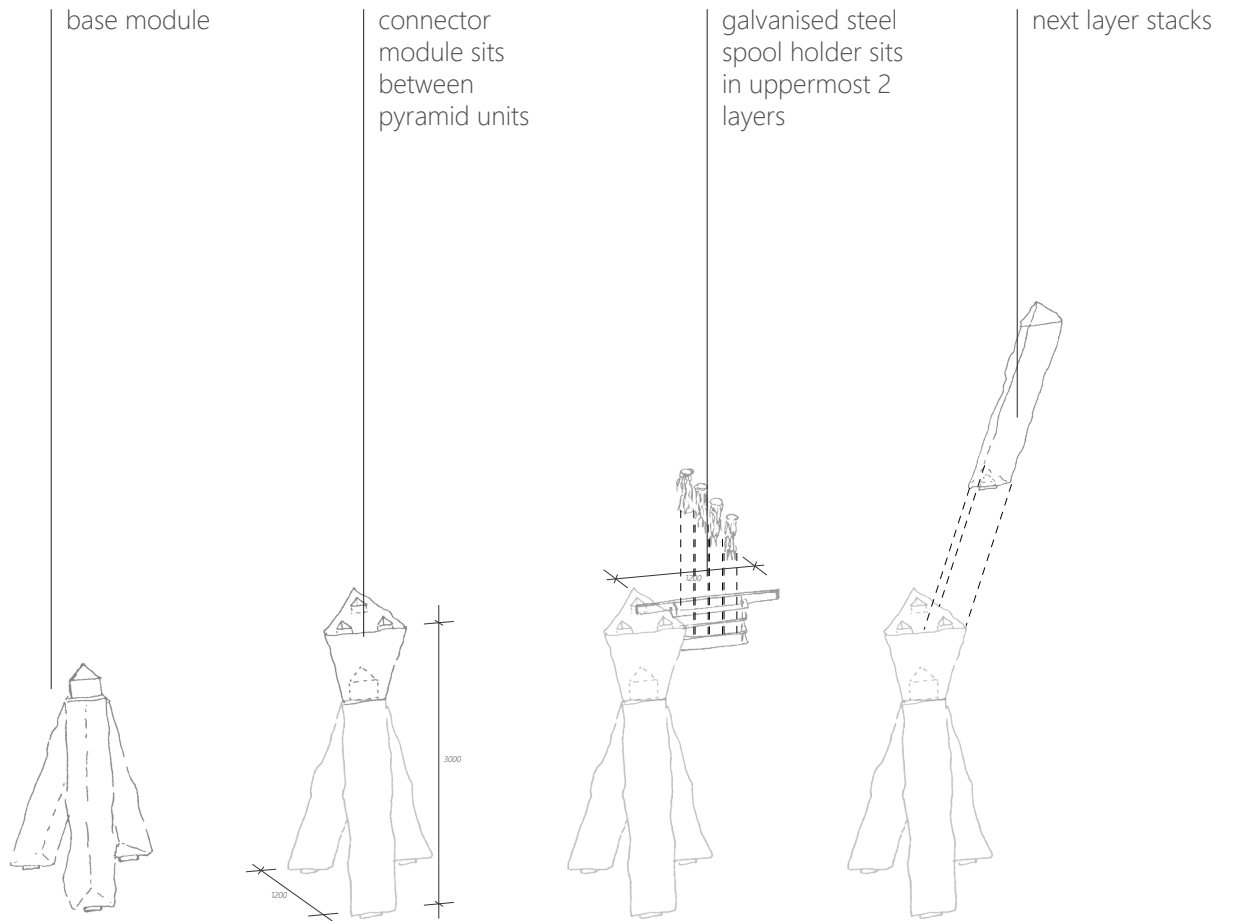
time to talk





After a tasty meal and some thought provoking conversations, they take advantage of the low tide to meander back via the reef path. Rocks, production modules and pathway merge and and out of each other, spools of seaweeds visible just below the surface and shoals of fish darting in and out. As they walk back towards the familiarity of the land, they discuss everything they have experienced, the potential it holds and ways they can bring it into their lives at home.

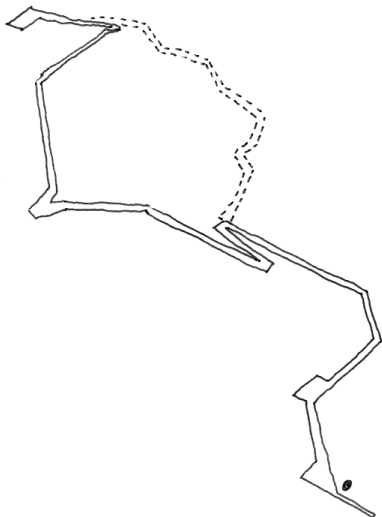




Reef Module | components & functionality

Recalibrate | bar

solidify





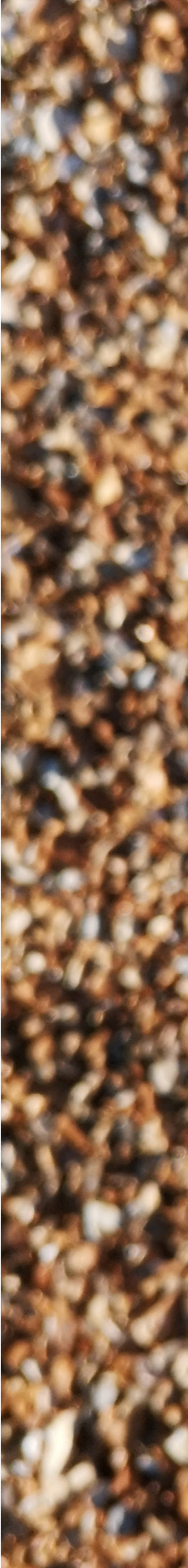
Walking back up the ramp to the base of the pier, they stop for a drink, hotly discussing everything they have experienced. Susan's friend serves them, inviting her to join again next week for their cooking workshop the first in a series of events she has planned for their new spaces. Surrounded by planting, open kitchens and celebrations of the production around them, she excitedly accepts. There is a lot to learn from the sea.

6/ Reflection & Relevance

the bigger picture

6/ Reflection & Relevance

the bigger picture





"Behind the power of every movement we have seen, every call for change, every group is made up of each of us"

- Deborah Francis-White, 2018

The application of intersectional vegan theory to architecture and spatial design is very seldomly approached. The majority of current research and literature addresses ecological concerns via a very broad lens, the conversation centring around increasing biodiversity and reducing species loss. The architectural outcome therefore reflects this, treating and representing members of other species as one mass. This spatial treatment inevitably feeds into our perception of other animals as one commodity rather than complex, varied and sentient individuals, ultimately further alienating them from our awareness.

On the other hand, the impact of spatial design, and therefore its potential as an instigator of change, is frequently undervalued in philosophy and theory outside of the architectural profession. The intersection and overlap of these two disciplines is therefore a highly important lesson, research and design challenge to be undertaken.

In a time of transition, we are facing critical pressure on the climate, human and non-human populations, as well as a growing movement towards social justice. The urgent need to find new, sustainable forms of food production is highly relevant. The agricultural industry - the animal agriculture industry in particular -- contributes an unignorable proportion of global greenhouse gas emissions, land and water use. With its complicity in the perpetuation and acceleration of inequality between humans and between humans and other animals alike, the scientific relevance of exploring new options for food production is clear.

Alongside the emancipation of other animals from our current infrastructures and cultural norms, the active inclusion of coexisting living environments must be accommodated, both for physical inclusion within our spaces, but also to tackle the erasure of other animals from our consideration and values. The exploration of new spatial forms, actively targeting the design of affordances to prioritise space reservation for other animals, is an area that will need continued exploration as global urbanisation rises.

The reality of not only technical transition, but also cultural transition, illustrates the relevance of this research in terms of how to encourage consumer change, recognise the agency of human culture as a mechanism for positive change and reinforce the value of spatial design in cultural development.

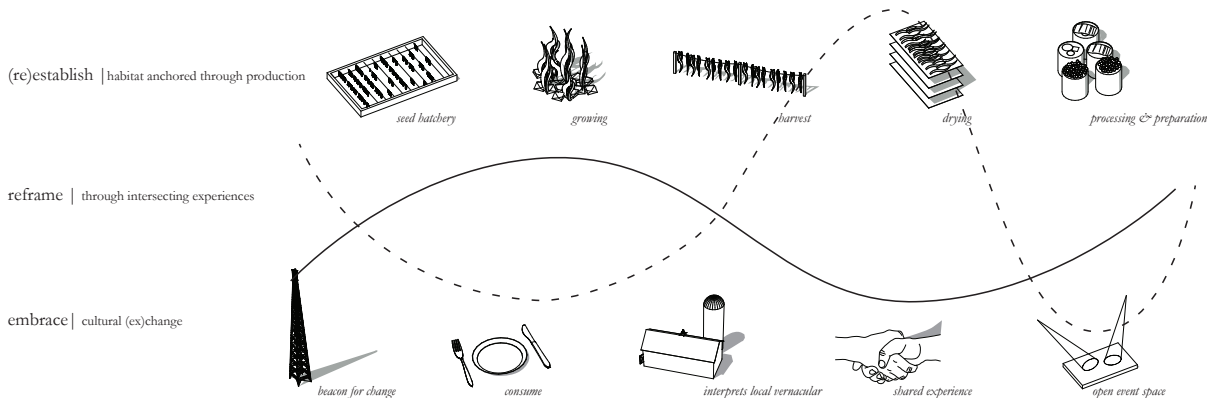
The intervention in Scalloway serves as a research by design, example project to inform a wider strategy of transition across the territorial and global scale.

A number of key ingredients can be identified from this example, which serve as a catalogue of strategies for adaptation and application across a variety of environments, contexts and scales.

The combination of elements of production & habitat establishment with elements of consumption & culture is fundamental. Therefore, the site specific infrastructural and architectural challenges centre around the effective marrying of producer with consumer.

Initial exploration of differing socio-environmental conditions within the territory of the North Sea identifies and represents potential variations in which aspects are prioritised, as well as differing compositions.

For instance, locations in the South region, affected by post-industrial decline and pollution may emphasise aspects of ecological regrowth, whilst huge fishing ports, where the intervention faces comparably scalar challenges, may emphasise a cultural beacon of change, providing an alternative and integrating local vernacular to challenge the idea of alternative as exclusive.



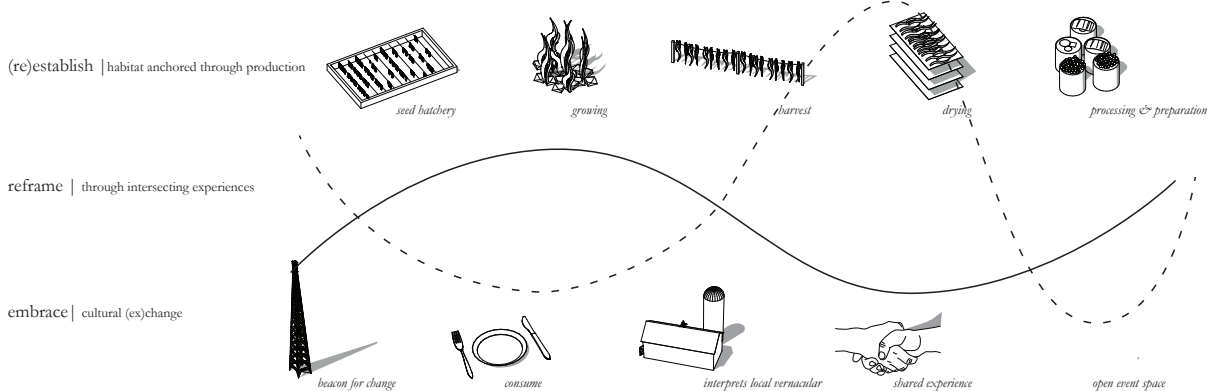


The temporal scale speculates on the continued resilience and relevance of the essence of the proposal through changing climatic and societal conditions. As climate change continues to accelerate, the urgency of transition will increase, pressurising consumer food choices ever further.

Pressure on land for other uses, as well as loss of land due to sea level rise will create an increasing reliance on the sea for food. Inundation due to sea level rise will drastically change large proportions of our coastlines, opening up new opportunities for food production at sea.

Diversification into production for use as biofuels, emerging plant-based plastic alternatives and medicinal/cosmetic use may also grow, both providing good incentive for habitat establishment through plantations, but also placing demand pressure with risks of mismanagement.

Speculating that trends towards an increased importance on ethics and social justice continue, the relationship between consumption - and encouraging changing patterns - and production - enabling alternative methods - may be in constant flux.





Summary | *research by design*

Using this site and strategy as a test bed has enabled me to produce initial ideas around alternative, more sustainable production methods, both by moving to a plant-based alternative, but also by moving away from monocultured production and over-harvesting via the reef module design.

Though the approach has been very site specific, it has also produced many ideas which could be taken forward in other locations. The overall strategy, looking at a series of moments of intervention, can easily apply in most other instances, adapting the form and articulation of the elements to suit.

Interesting ideas such as the seasonal production units could also be developed further and become a mechanism for extending the reach of the project beyond the site.

My approach throughout has been from the point of view of the individual experience, a narrative style approach. It creates a series of places which change as you move through them, change with you, are most accessible and understandable upon interaction. I believe this is the way to instigate the shift we need in our thinking, perception and behaviour.





