common territory

combined thesis report

robyn davis & paddy mcelroy

common territory

Combined Thesis Report
Sheffield School of Architecture
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PREFACE

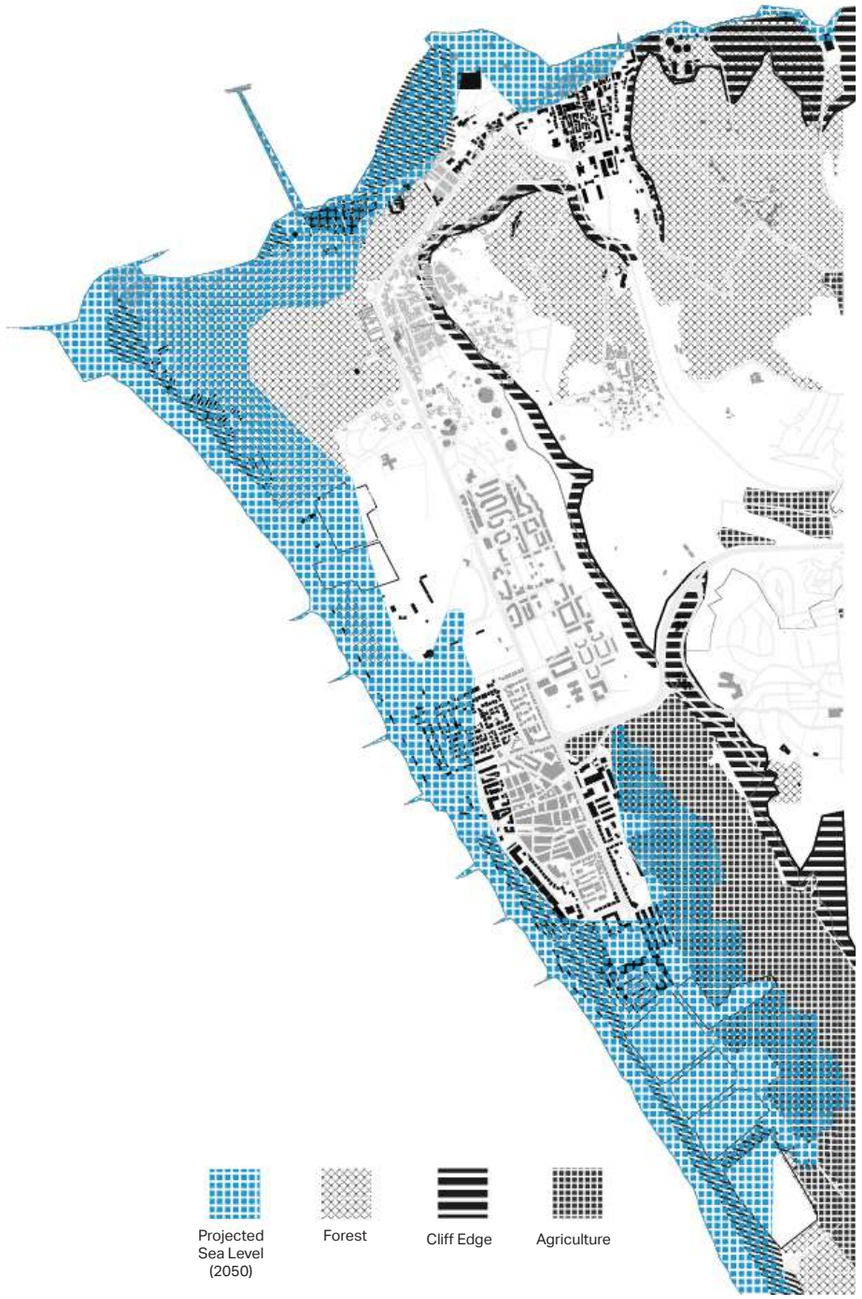
This Combined Thesis Report has been created as part of our collaborative thesis project at the University of Sheffield. Our thesis combines our individual interests and values, working methods and ethos, into an architectural proposal which seeks to address the condition of displaceability of informal settlements surrounding Lisbon, Portugal.

↑
Paddy and Robyn

Part i - Design Manifesto

Part ii - Environment + Technology

Part iii - Management + Practice



Introduction

Historic flooding along the Almada coastline is projected to become more frequent in the following years due to climate change and sea level rise prediction of 4.7 meters by 2050. This new sea level will have implications on existing boundaries; transforming, migrating or erasing juridical, technical, political and everyday practical borders. This is likely to put pressure on existing land-uses, where conflict of interests are likely to follow. As suggested by Wiberg, these disputes can stem from individual house owners with considerations on parking spaces and front yard aesthetics, local communities, organisations, utility companies, municipality and up to a federal level of environmental protection where legislation forces action and change in practices.[1]

In order to afford cooperation out of such conflicts of values and interests, one could look for conceptions of the common good to bridge gaps between differing priorities. However, such an approach can place too much priority on large scale public infrastructure, ignoring priorities of citizens. In response, Common Territory proposes contested land is awarded to a newly formed Community Benefit Society, where stakeholders are those who reside on the land, including human settlements and natural ecosystems. In doing so, shared sustenance becomes the priority for the contested land, supporting collaboration and measures with both short and long-term perspectives when adapting to the inevitable effects of climate change.

← Location of sea water and degree of erasure at a 4.7m level rise

[1]Katrina Wiberg, Values, Watersheds and Justification: On the Handling of Water in the Urban Landscapes of Climate Change, Abstract from Architecture and Resilience on a Human Scale, Sheffield (Denmark: Aarhus School of Architecture, 2015).

part i

design manifesto

GLOSSARY

ARRIVAL CITY: an urban transitory space manifested by the global population shift of the twentieth century.

THE CONDITION OF DISPLACEABILITY : Further to the actions of evictions and displacement, the condition of displaceability refers to 'the susceptibility of people, groups and developments to be removed, expelled or prevented from exercising their right to the city.'[1]

ECOLOGICAL RESILIENCE: 'the ability of an ecosystem to maintain its normal patterns of nutrient cycling and biomass production after being subjected to damage caused by an ecological disturbance.'[2]

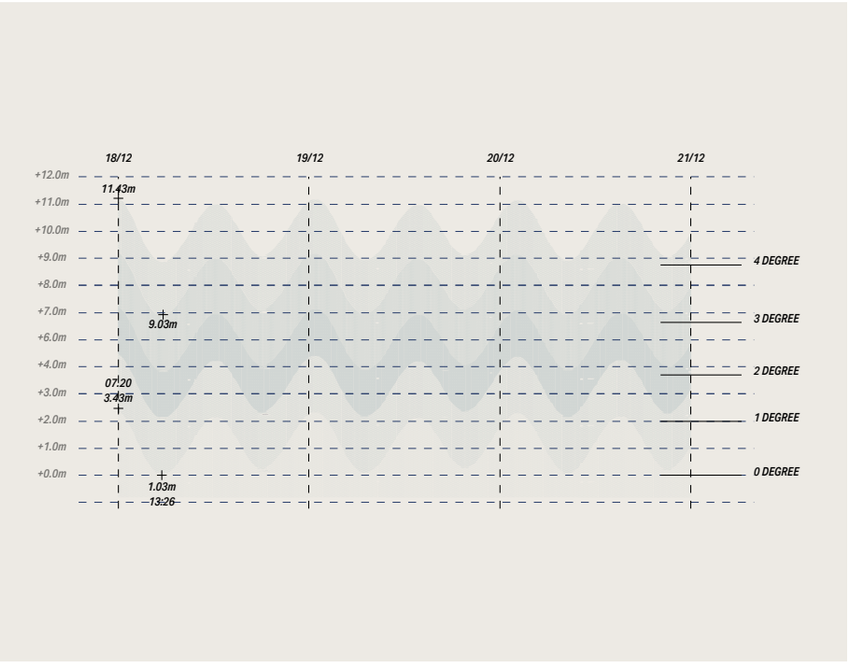
THE COMMONS: to stand for relationships of reciprocity and mutual co - creation'.[3]

RHIZOME (PHILOSOPHY) : based upon philosophical theory by Gilles Deleuze and Felix Guattari, the rhizome is ' non-hierarchical, heterogeneous, multiplicitous, and acentered.'[4]

↑
Meeting Segundo Torrao Housing Association

Introduction

The constant tidal cycles and sea level rise uncover a free space which creates new transitory borders. Such borders provide opportunities for new ownership rights, human waves of immigrants and the potential for new ecosystems.
This speculative space is in permanent cycle between the low and high tides, always in motion, creating new opportunities that could be lost, but then again the space is transformed as a new cycle begins.[1]



↑
Finding new ways of organising in the spaces created between tidal cycles

The Collective

The Portuguese constitution states that 'everyone shall have the right for himself and his family to a dwelling of adequate size satisfying standards of hygiene and comfort and preserving personal and family privacy'[2]. Nevertheless, thousands of families are still living in homes which lack the minimal habitability conditions.

In addition, pressures by severe climate transformations are demanding national and indeed global adjustments of the built environment. For Portugal, and in particular the municipality of Almada, it is not hard to recognise the collective effort required to counteract these forces, as well as the limitations of private land ownership, public policy and current economic models.

The Collective is a direct response to this, referring to a group of like- minded individuals, who bring together a variety of resources and skills. They take precedent from the SAAL process, a unique collaboration between state, architect and city - dweller, providing underprivileged sections of the population with the means to design and build their own resilient houses and communities.

In the municipality of Almada, the Collective reflect upon how the constant tidal cycles of politics, economics and ecology have created space for new transitory borders. Whether in reference to the waves of immigration catalysed by the independence of Portuguese colonies in the 70's, or in reference to the rapidly shifting coastline; this speculative space provides new opportunities for organisation.

The Collective seek to invent new ways of organising this space sustained by values other than productivity, marketability and profitability. To do so, the knowledge and labour of the architect, the scientist and the lawyer are matters of the common. Their shared goal is the creation of a resilient coastal landscape, remaining home to the communities who reside there and responding to the inevitable tidal cycles of the future.

←
Eating lunch together in Trafaria Prison,
December 2019

Setting the Scene

↑
'Stop Evictions' sign, held as part of the Lisbon demonstrations in June, 2019

↑
The Informal vs. Formal aspects of Lisbon

The Arrival City

Historic flooding along the Almada coastline is projected to become more frequent in the following years due to climate change and sea level rise prediction of 4.7 meters by 2050. This new sea level will have implications on existing boundaries; transforming, migrating or erasing juridical, technical, political and everyday practical borders. This is likely to put pressure on existing land-uses, where conflict of interests are likely to follow. As suggested by Wiberg, these disputes can stem from 'individual house owners with considerations on parking spaces and front yard aesthetics, local communities, organisations, utility companies, municipality and up to a federal level of environmental protection where legislation forces action and change in practices.'

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←
Site Location - The Municipality of Almada

↑
Three Urban Settlements - Cova do Vapor, Segunda Torrao and Trafaria form part of the coastal landscape.






↖ Silos of Trafaria
← Cova do Vapor Dunes
↙ Cova do Vapor Parking

Silos of Trafaria ↗
Trafaria Typical Home →
Sea Defence at Costa da Caparica ↘





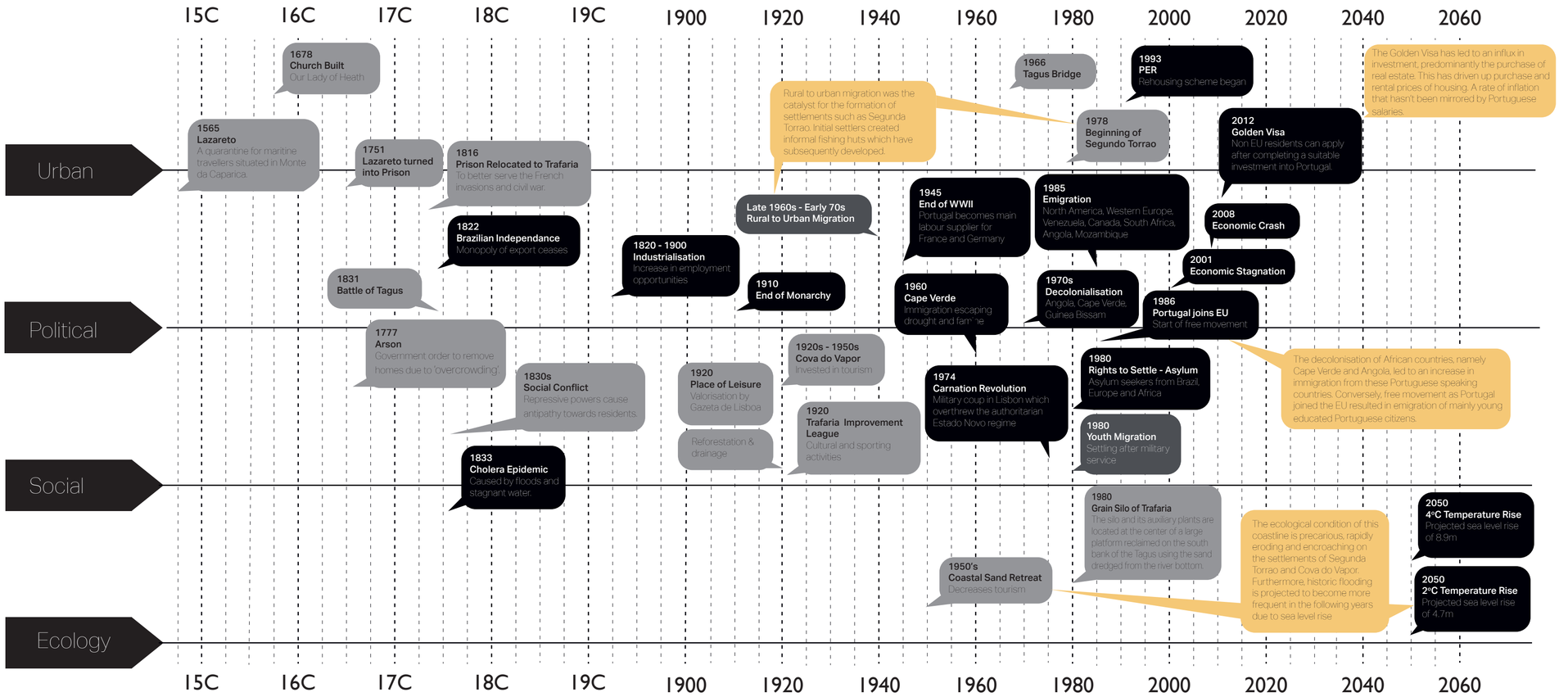

↖ Segunda Torrao
← Behind Cova do Vapor Beach
↙ Walking by the Silos of Trafaria

Allotments at Costa da Caparica ↗
Holiday Homes at Costa da Caparica →
Behind Costa da Caparica Centre ↘

Situated Timeline

This situated timeline looks at key historic moments at three scales; Portugal, Lisbon Metropolitan area and Trafaria. Each moment documented here can be viewed through the lenses of an urban, politcal, social, ecological context, demonstrating the complex and multi faceted aspects of the Arrival City studio site.

We then highlight, the moments that for us feel most important, exploring them in further detail in the following pages.

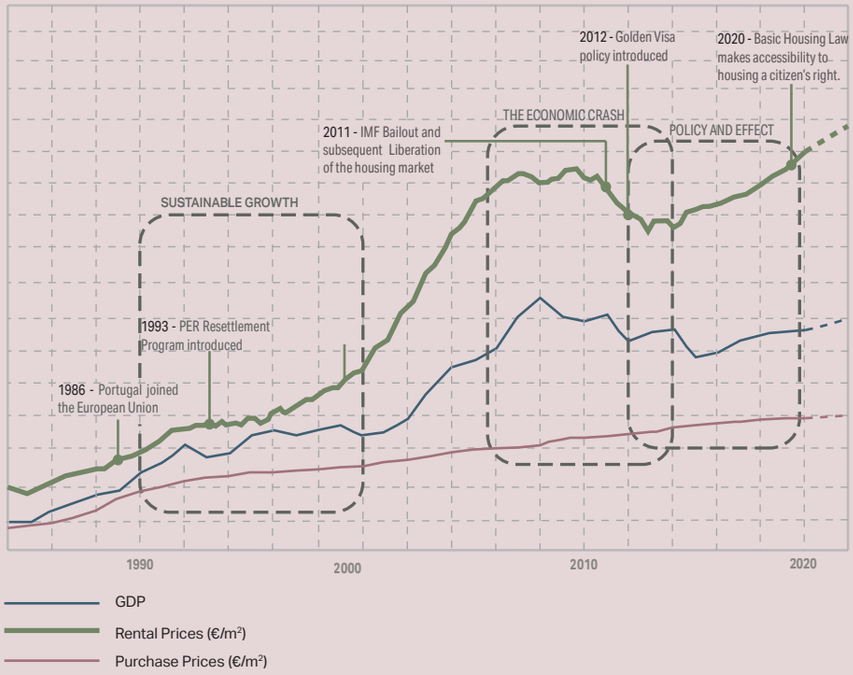


↑
Minority resistance against evictions

Housing Context

The current housing market in Portugal, and in particular the major cities of Lisbon and Porto, is having a substantial effect on the formation of informal neighborhoods.

Since the liberation of rental freezes when Portugal joined the EU in the 80s, rental prices have been steadily increasing in line with GDP. However, attempts by the government to restore financial stability after the economic crash in 2008 have had an unpredicted effect on the housing market, increasing prices to dramatic highs which the population can't afford. This increase has led to widespread evictions across the capital, forcing more people to make a home in one of the cities informal neighborhoods whilst they wait to be rehoused into a state social housing scheme. Nonetheless, often these housing estates have poor access to travel infrastructure, lack community cohesion and come with negative societal connotations. As a result, Portugal are seeing more residents of established informal settlements choosing to remain there instead of being rehoused into one of these schemes.



Special Resettlement Program

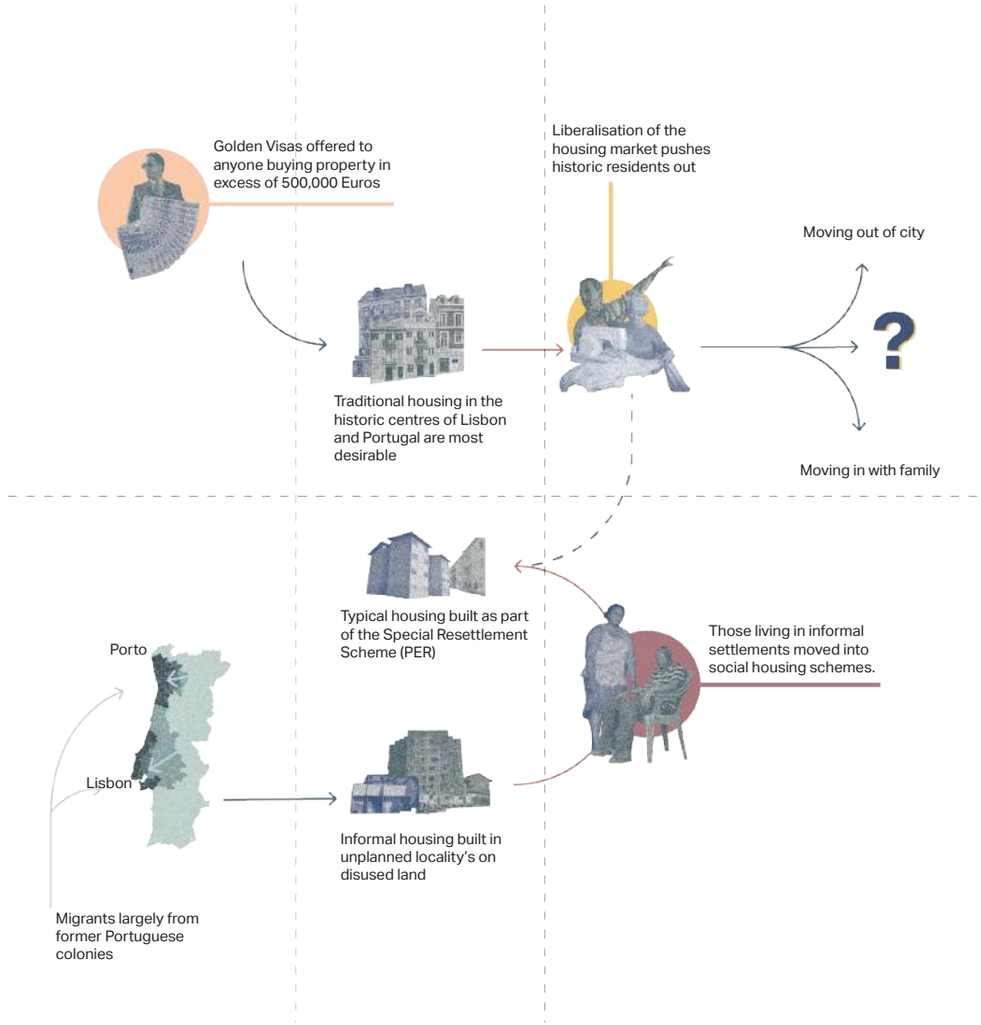
In 1993, the Portuguese government established the Special Resettlement Program (PER Scheme) which lead to large scale forced evictions from informal settlements.

Liberation of Housing Market

As part of the financial bailout in 2011, Portugal were required to abolish fixed price rent. This causes prices to rise drastically, forcing many existing residents from their home.

Golden Visa

A visa and therefore access to the EU, is offered to anyone who purchases property above the value of €500,000. However, visa holders are not required to stay in the country for more than 14 days per year. As a result, many desirable properties in the city centre stay vacant or are rented out to tourists.



↑
Who is getting evicted?
←
Comparison of Rental Prices (€/m²), Purchase Prices (€/m²) and GDP[3]

↑
Portugal's hypocritical migration strategy

Political Context

Significant historic events and political movements have shaped Portugal's population flows largely from a country largely affected by emigration in the 1960's, to a country much sought after by immigrants to live and work by the 90's. To a great extent, these movements were a result of decolonisation, rural to urban migration, and joining the EU. As a result, net flows were consistently positive between the years of 2000 and 2010.

At present, 'Portugal is in a situation of demographic fragility'[4] due to migratory outflows that exceed migratory inflows and birth rates. As a result, Portugal have created a Strategic Plan for Migration, asserting an open policy to legal migration and rejecting the notion of Europe as a fortress. They do so with the development of the strategic plan based on five priority political axes:

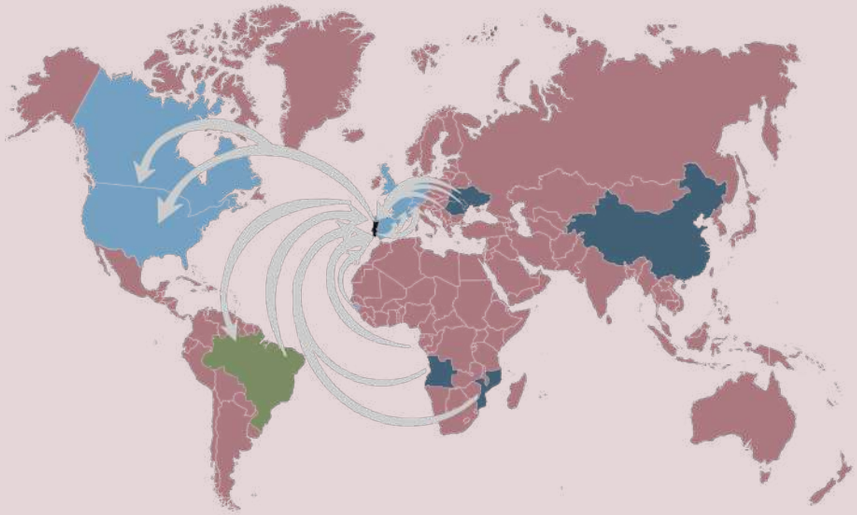
i) 'Axis I – Immigrant integration policies'[4] (Integrate)
ii) 'Axis II – Policies to promote the integration of new nationals'[4] (Identify)
iii) 'Axis III – Coordination policies of migration flows'[4] (Retain)
iv) 'Axis IV – Policies strengthening the migratory legality and quality of migration services'[4] (Attract)
v) 'Axle V – Policies to foster the monitoring and support of the return of national emigrant citizens'[4] (Monitor)

However, in our studio interrogations of Portugal's public policy, we have found significant oversights regarding the integration of migrants into Portugal - lack of affordable housing, right to public infrastructure and services are commonplace for migrants within Lisbon and neighbouring Almada.

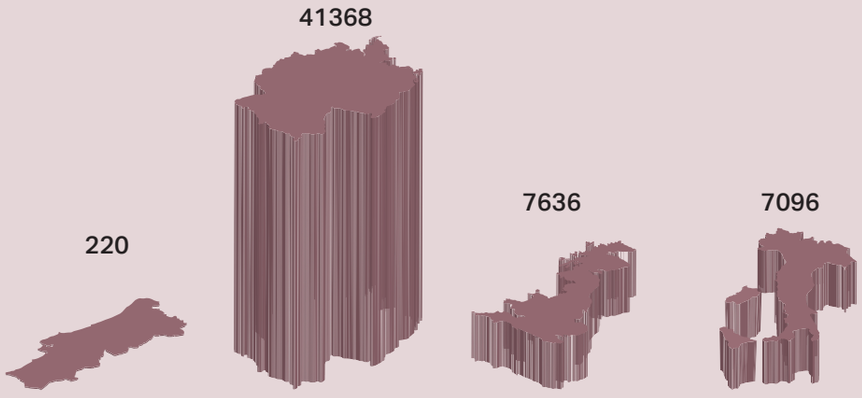
Furthermore, peripheral Arrival Cities have the essence of a place of passage, a space for temporary permanence, a forgotten hinterland. The precarity of these living conditions impacts on what David Harvey refers to the Right to the City.

'The right to the city is, therefore, far more than a right of individual or group access to the resources that the city embodies: it is a right to change and reinvent the city more after our hearts' desire.'[5]

This concept relies upon the exercise of collective power to shape processes of urbanisation. However, for migrants they are rarely afforded this right, resorting to unconventional forms of organising and sustaining themselves that circumnavigate bureaucratic limitations placed upon them. In the context of Cova do Vapor and Segunda Torrao, these include activities such as tapping energy sources or arranging their own refuse collection. Situations such as these raise questions about the systemic marginalization of migrants and the limited social capital afforded to them by the state of Portugal.

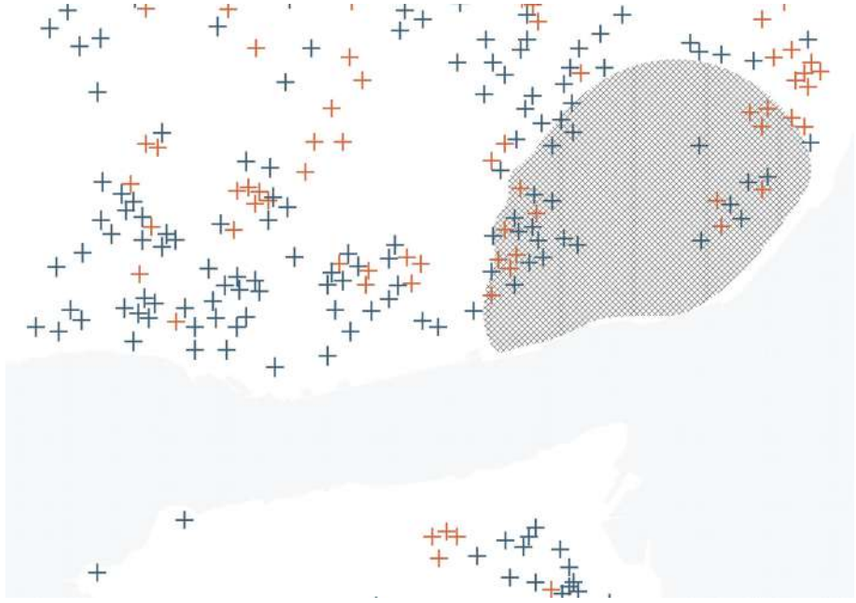


Destination Countries
Arrival Countries
Destination & Arrival Countries

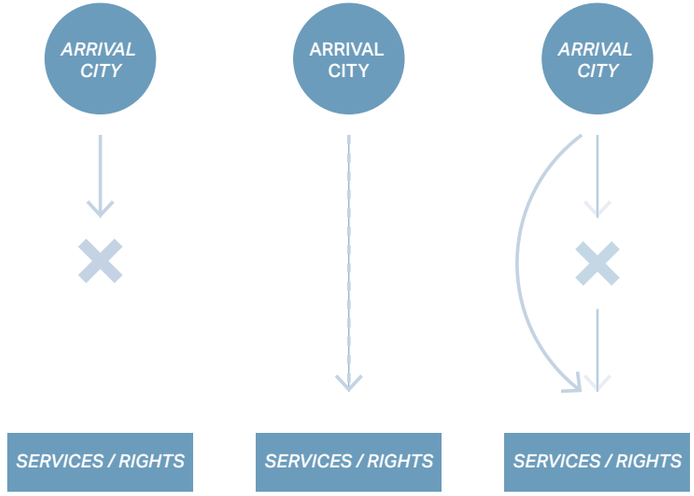


↖ Migrancy Flows
↙ Number of migrants accepted by country[6]

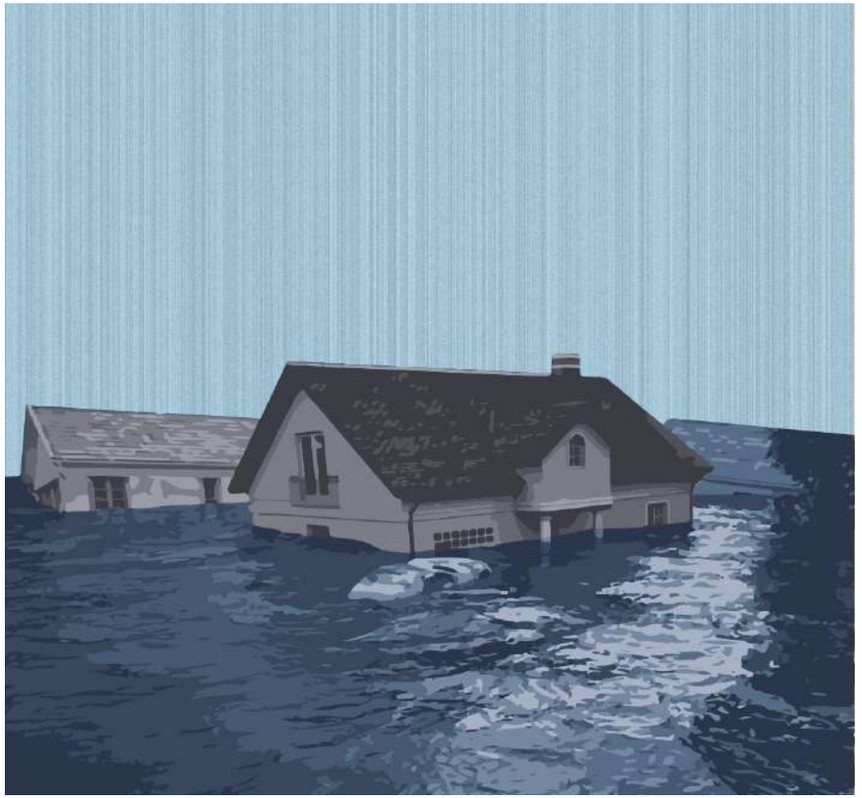
The Arrival City located on peripheries ↗
Limited or no rights to the city ↘



PER Schemes
Informal Settlements
City of Lisbon



Inaccessible
Weak
Circumnavigate



↑
Future flooding is predicated to become more common

↓
Changing coastline

Ecological Context

The coastline of the Municipality of Almada has two contrasting characteristics. The flat west faces the Atlantic Ocean and is characterised by beaches and dune ecosystem, whereas the hilly north coast facing Lisbon and the River Tagus, is a busy shipping route. Consequently, the north coast is dominated by industrial activities and the west by tourism. Situated between these low lying coastal conditions and the cliff faces lies a thin, but far reaching, stretch of agriculture extending along the Tagus Estuary.

The current ecological condition of this coastline is precarious, beaches have been rapidly eroding, forming a new coastline that is encroaching on the settlements of Segunda Torrao and Cova do Vapor. Furthermore, historic flooding is projected to become more frequent in the following years due to sea level rise prediction of 4.7 meters by 2050.[7] This sea level increase will affect the existing ecological systems along the coastline and into the Tagus Estuary, with salinity encroachment altering the natural ecosystems on both land and in water. These include marine flora and fauna as well as the agriculture able to grow along the estuary.

Furthermore, the sea and waterways have become polluted due to waste water from urban, agricultural and industrial activities. In conjunction with overfishing, these large scale human activities driven by forces of profitability and productivity have damaged ecological habitats.


Oyster Banks
Intertidal Areas
Saltmarsh
Saltplane


Forest
Agriculture
Cliff
Sand Dunes

'We live in a world, after all, where the rights of private property and the profit trump all other notions of rights'[8]

↑
Interrogating the studio context through a intersubjective system of inquiry

Studio Methodology

The conceptual framework in which the Arrival City Studio is situated relies on an intersubjective system of inquiry. This system of inquiry makes the broad ontological assumption that although there are multiple viewpoints regarding the realities of the critical factors we're exploring, it is nevertheless possible to achieve a shared understanding of these realities.

To reach these shared understandings, the studio employed a hermeneutical phenomenology methodology which placed focus on the use of narrative to understand lived experience. The following pages highlight some of the tactics we have used to do so.

Hermeneutical Phenomenology

'...research as orientated towards lived experience and interpreting the "texts" of life...'[9]

Phenomenological Techniques

Desk Based Research

Identifying Shared Phenomenon

Understanding the common experiences of the Arrival City as a means to develop appropriate practices and to develop a deeper understanding of the features of migrancy in Portugal.

Qualitative Data Collection and Second Hand Interview

Recognising Broad Assumptions

Identifying objective reality and individual experiences and how they combine to describe how those affected view the phenomenon.

Contrasting and Supporting Narratives

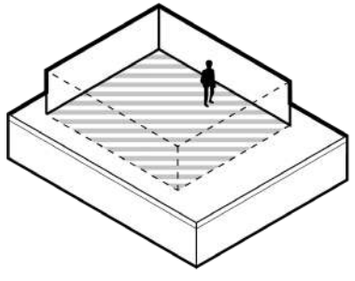
Textual and Structural Descriptions

The overlaying of multiple complex narratives, to draw threads of common experience.

Shared Phenomena

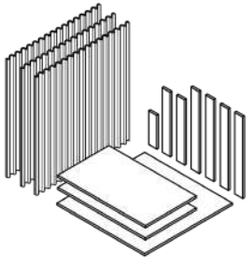
Through desk- based research, we begun to draw together a ‘micro - history’ of the neighbourhoods of Cova do Vapor and Segunda Torrao. In doing this research, parallels could be drawn between the lived experiences of the inhabitants of the Arrival City. As an example, the following demonstrates how immigration and settlement processes have underpined the way that individual dwellings were built in slum neighbourhoods surrounding Lisbon.[10]

1



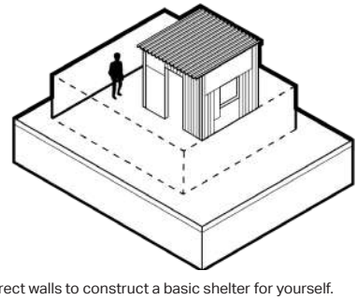
Acquire a plot of land and construct a boundary fence.

2



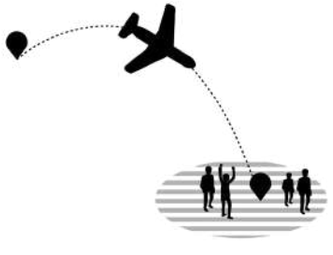
Source any available materials.

3



Erect walls to construct a basic shelter for yourself.

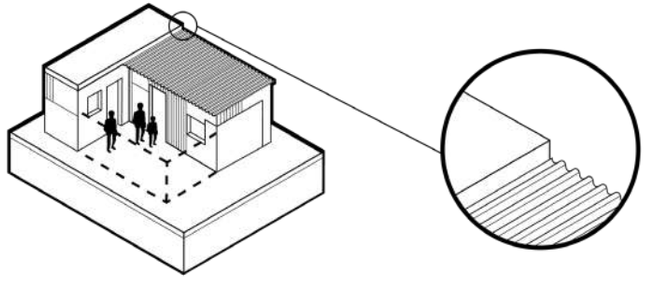
4



Family friends join and bring increased capital.

↑
Movement from a shelter to a home of architectural significance

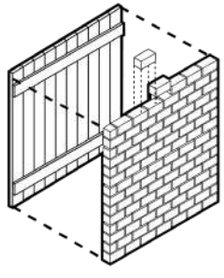
5



Build extension to home by extending corridor to add new rooms that work with the existing layout.

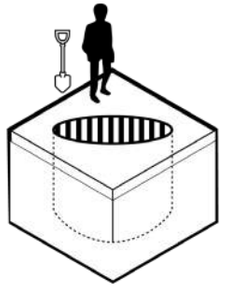
NB: Two different roof materials correspond to different internal finishes and represent initial lack of resources and access to materials.

6



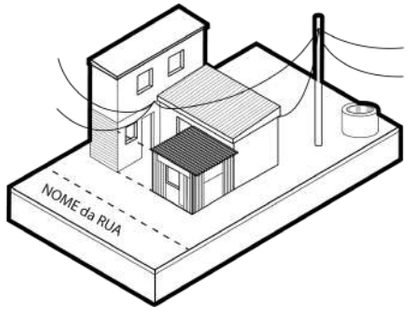
Upgrade from a wooden shack to a brick wall house.
NB: Lay the bricks from the inside using the wood walls as support as a ‘bricklayers line’, will also protect built form from municipal surveyors looking to proceed with demolition on fixed or permanent shacks.

7



Dig a deep cesspit with a spade – possibly part of wider network that is divided up, each part for a different house.

8

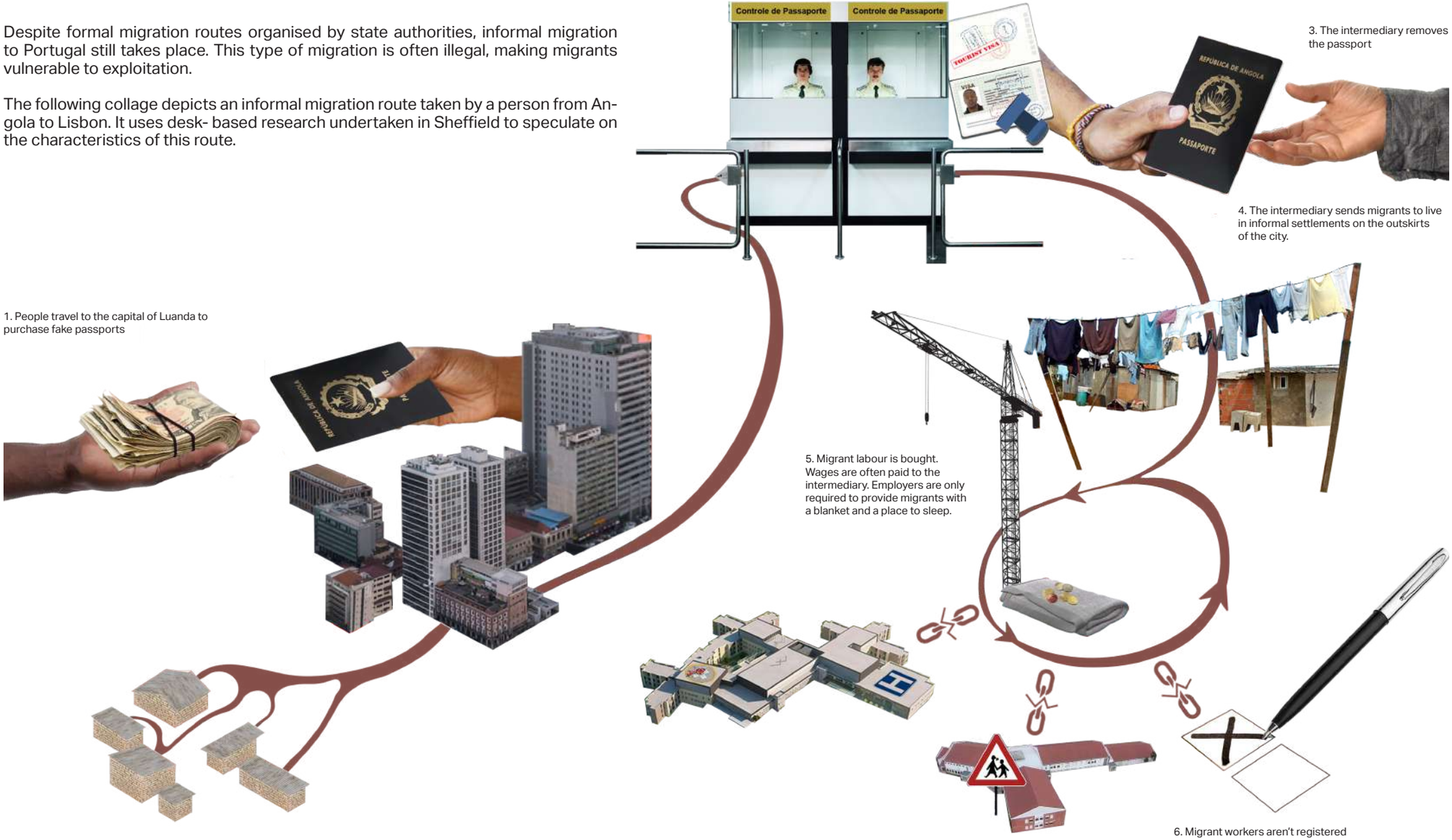


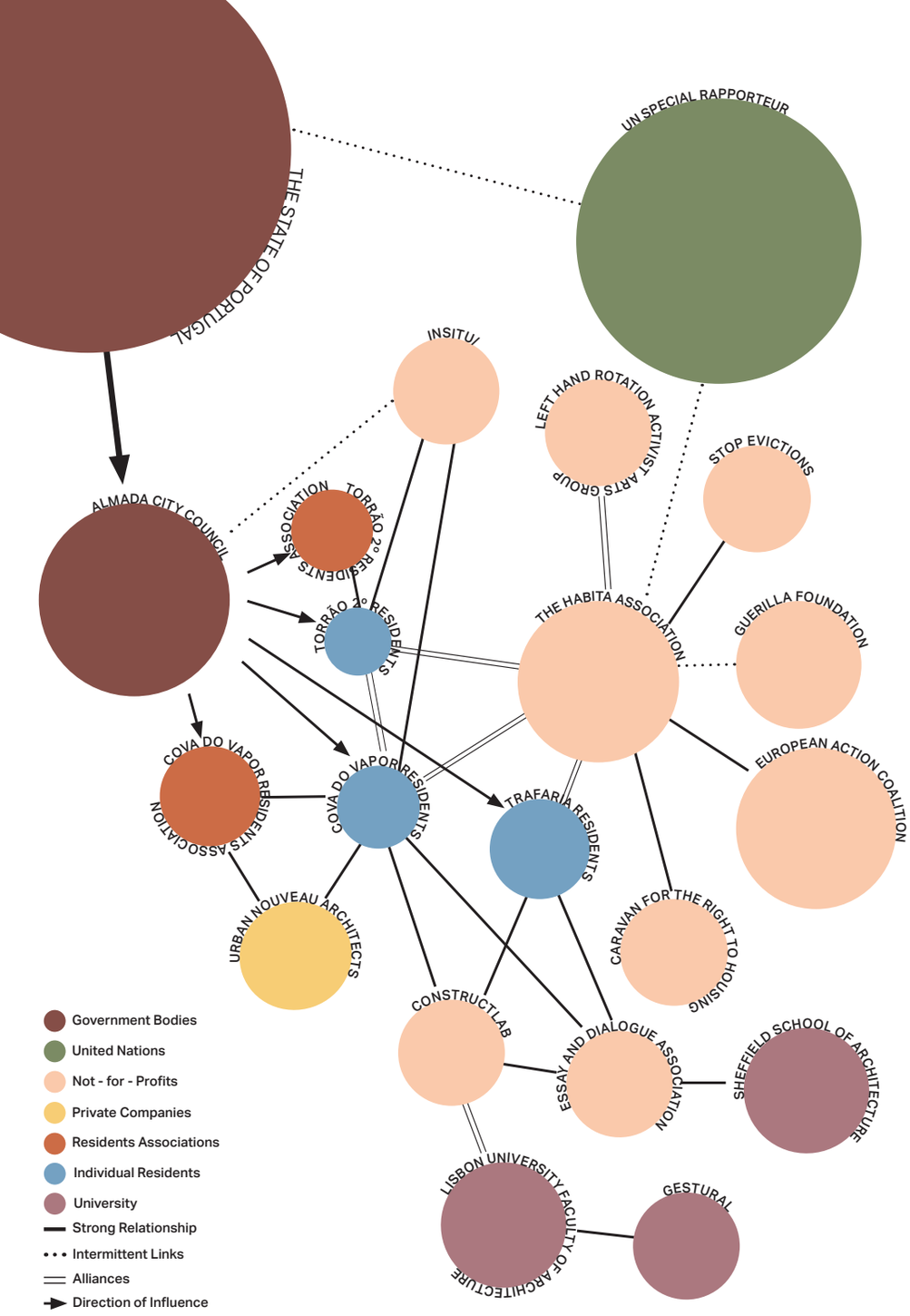
- Illegally tap electricity from local source.
- Offer up some leftover space to incoming migrants and facilitate first set-up of settlements.
- Build a secondary floor extension on existing rooftop
- Establishing collective amenities such as communal wells
- Opening of streets from pathways
- Devising a system of street names and house numbers

Broad Assumptions

Despite formal migration routes organised by state authorities, informal migration to Portugal still takes place. This type of migration is often illegal, making migrants vulnerable to exploitation.

The following collage depicts an informal migration route taken by a person from Angola to Lisbon. It uses desk- based research undertaken in Sheffield to speculate on the characteristics of this route.

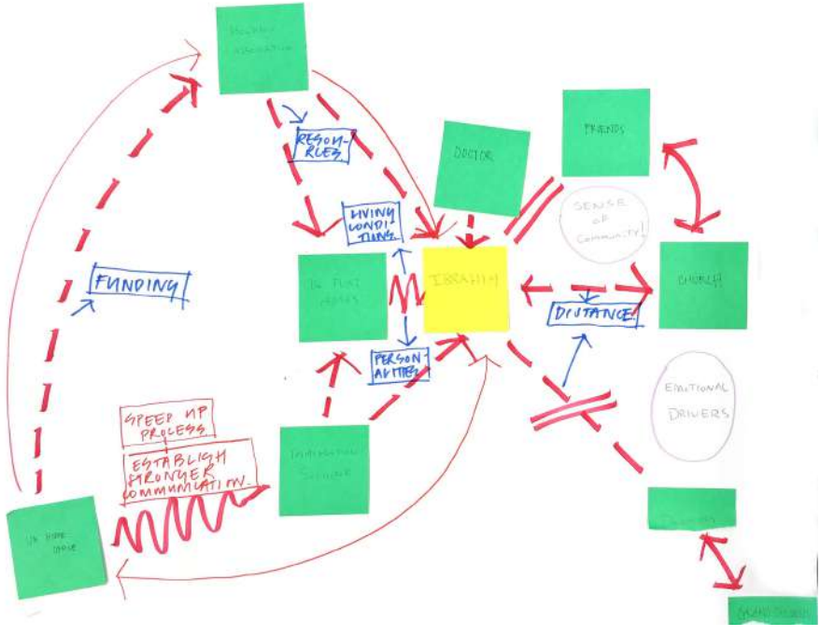




Textural and Structural Descriptions

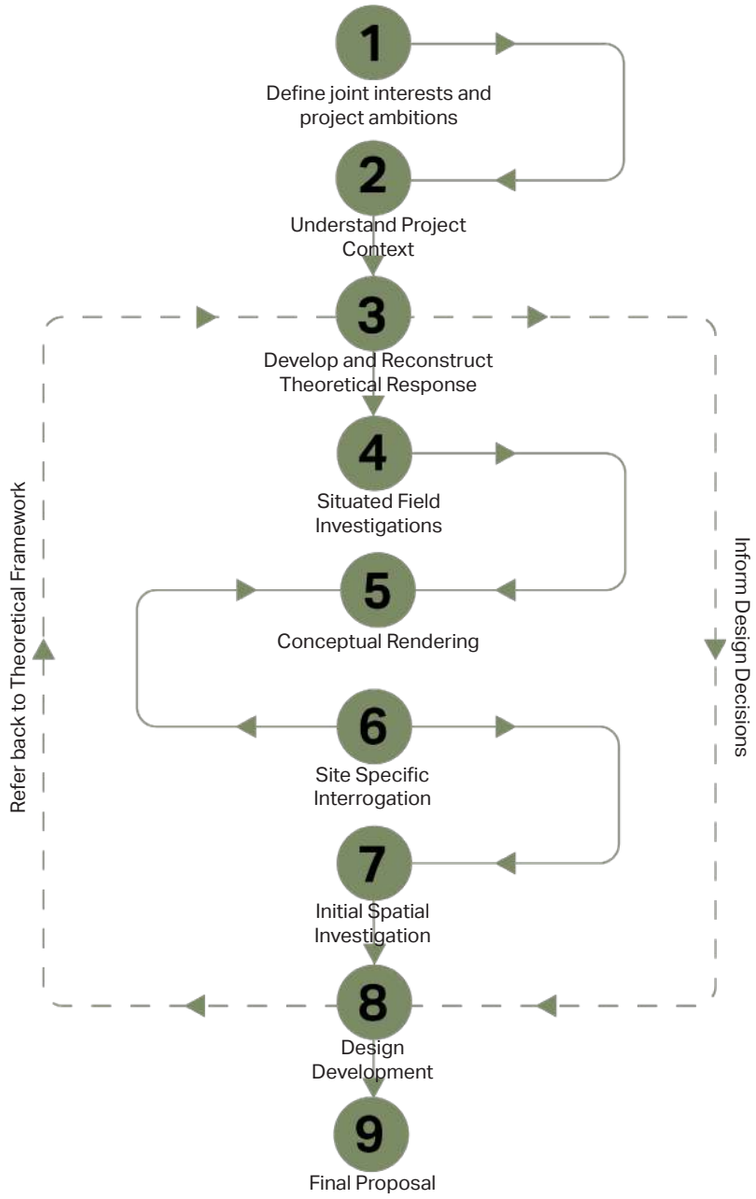
To explore the multiple and diverse narratives we found as part of the studio research, we employed the tactic of conflict mapping.[11] Conflict mapping is a visual technique for showing the relationships between parties in conflict and enabled us to better understand the overlap and perspectives of different viewpoints. This understanding included:

- relationships between parties
- where power lies
- the balance of one's own activities or contacts
- to see where allies or potential allies are
- to identify openings for intervention or action



←
Conflict mapping of the relationships between stakeholders in Segunda Torrao, Cova do Vapor, Trafaria and the Portuguese State

↑
Practicing conflict mapping at a workshop with Architects San Frontiers



↑ Thesis Design Process

→ Grounded Theory Ethnography Methodology

Thesis Methodology

This manifesto outlines our methodological approach to our joint thesis project and the methods we have employed to enable our investigations. From this point forward, this document will demonstrate the tactics used to do so, including the creation of a theoretical framework and situated context analysis that have allowed us to make initial spatial proposals.

GROUNDED THEORY ETHNOGRAPHY

'...grounded theory ethnography gives priority to the studied phenomenon or process- rather than to a description of a setting."[12]

GROUNDED THEORY METHODOLOGY

RECONSTRUCTING THEORY

Placing priority on the phenomena of a study to reconstruct theory around how and why participants construct meanings and actions in specific situations.[13]

STRATEGY CREATION OF A THEORETICAL FRAMEWORK

TACTICS
DESK - BASED RESEARCH
READING AROUND INTERESTS
LECTURES

AXIAL CODING

Creating categories around a core phenomena. These categories consist of casual conditions (factors causing the phenomenon), strategies (actions taken in response to the core phenomenon), intervenening conditions (situational factors that influence strategies) and consequences (outcomes from using the strategies).[13]

STRATEGY SITUATED CONTEXT ANALYSIS

TACTICS
WALKING NEW COASTAL BOUNDARY
DESK- BASED RESEARCH
PHOTOGRAPHS

CONCEPTUAL RENDERING

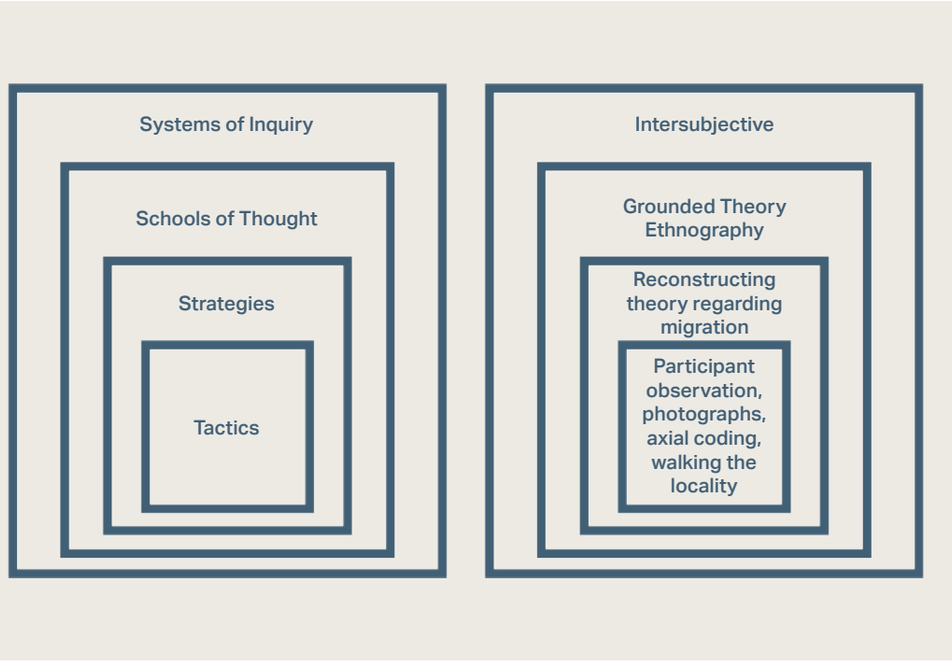
Identifying and studying what is happening in the setting, before creating a conceptual rendering of the phenomenon. [13]

STRATEGY SITUATED CONTEXT ANALYSIS

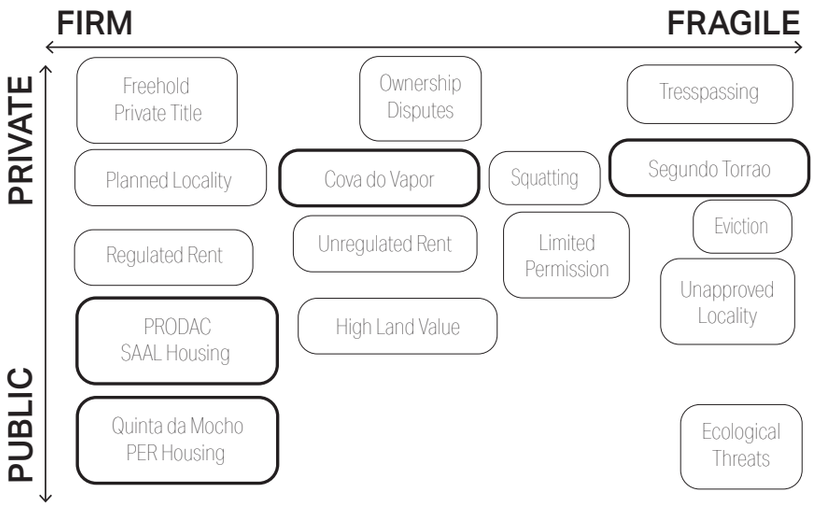
TACTICS
WALKING ROUTE TO WORK
PARTICIPANT OBSERVATION
PHOTOGRAPHS

How can Urban and Ecological Resilience Challenge the Condition of Displaceability within the Arrival City?

Theoretical Framework



↑
Using our thesis system of inquiry to reconstruct our theoretical framework[1]



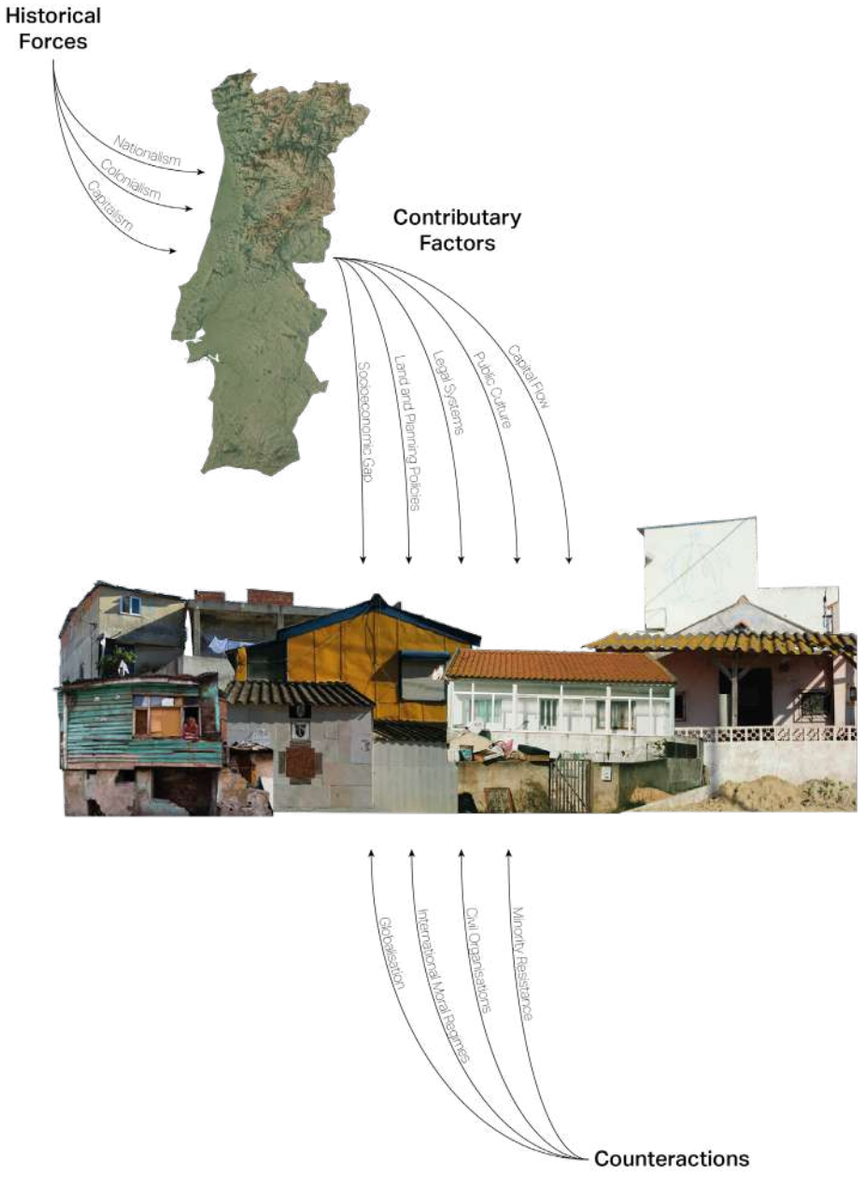
The Condition of Displaceability

'The documentation and analysis of evictions and displacements – important as they surely are – may not be enough for a new critical conceptualization of the contemporary city. I suggest here that an additional step should frame the phenomenon within the broader condition of displaceability. That is, the susceptibility of people, groups and developments to be removed, expelled or prevented from exercising their right to the city.'[2]

This concept shifts understanding of displacement as an act, to one of a condition, demonstrating how power is exerted from the state through policy and legal systems. As a result, displaceability can be viewed in various depth, from the patterns of ownership, possession and debt, often associated with the act of displacement; to diverse issues such as territorial struggles and threat of environmental disaster.

Mapping this condition of displaceability in context of our site can provide us with insight into the power of the communities situated there, aiding us in identifying areas in which progressive intervention is most urgently needed.

←
Mapping the condition of displaceability



Inverse Colonialism and 'Gray Spacing'

The concept of 'gray spacing' is the 'practice of indefinitely positioning populations between the 'lightness' of legality, safety and full membership, and the 'darkness' of eviction, destruction and death.'[3]

The amplification of this practice sheds light on modern urban colonial relations. Historically, colonial powers sought to extend the reach of their power across the globe. In the context of Portugal, this resulted in countries such as Brazil, Angola and Cape Verde becoming part of the Portuguese Empire. In contrast, today colonial powers act as magnets, drawing migrants to urban areas in search of opportunity and stability in a modern and accessible global economy. This can be referred to as inverse colonialism.

The ethnonationalism present in historic colonial relations still exist. Whilst maintaining the facade of democracy, nations institutionalise the expansion of power of a dominant group.[4] For example, in the UK, this can be seen in the systemic privileges afforded to British- Caucasians (the charter group). Such a system relies heavily on support and immigration from external ethnic resources as a key mechanism in maintaining dominance over minority groups. Labour markets, development, access to capital and economic mobility is ethnically segmented, creating an ethnoclass structure, trapping certain groups in a societal underclass.

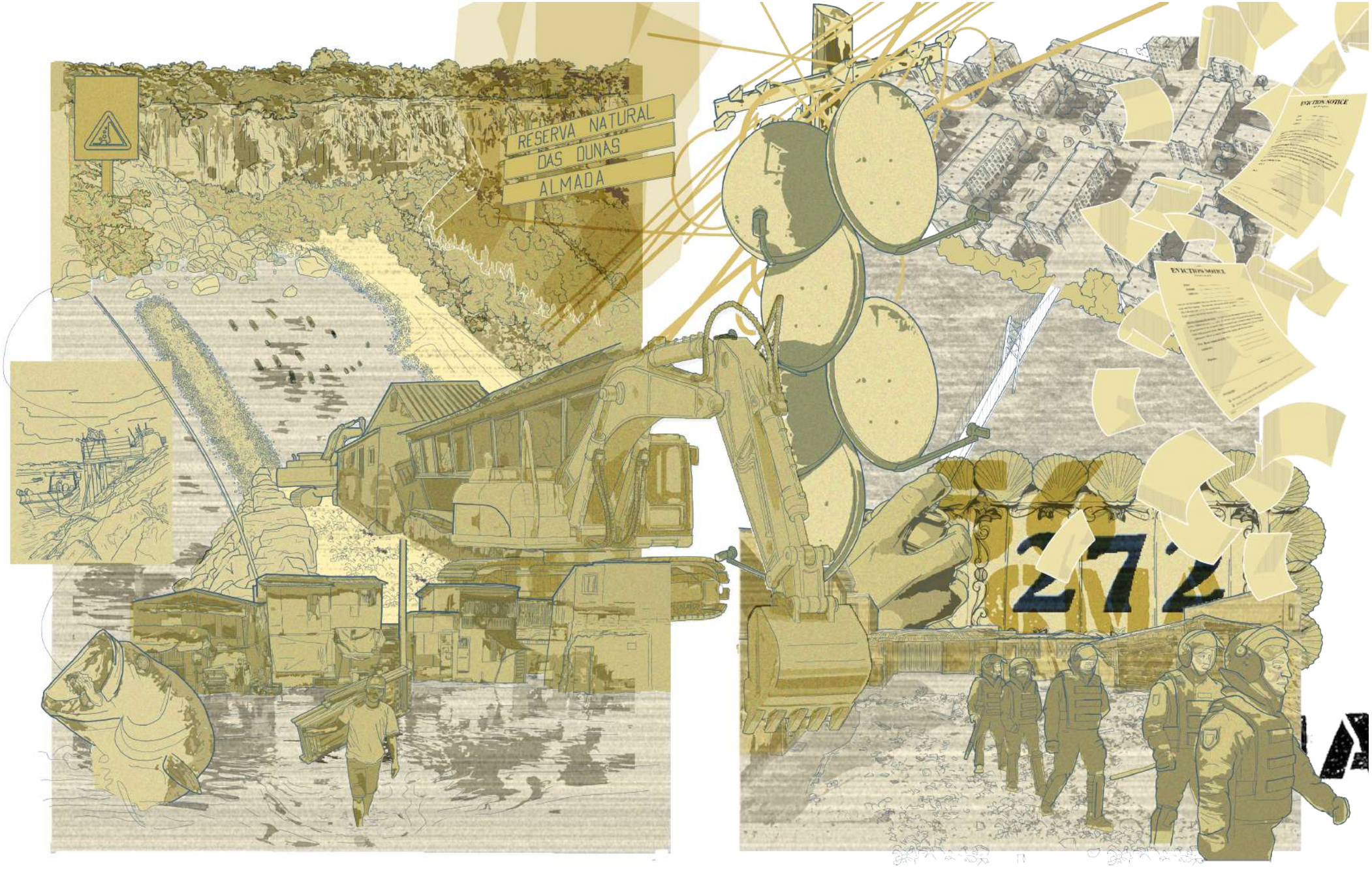
This too can be seen in Portugal, where ethnonationalism has played a prevalent part in the formation and growth of informal living conditions around major urban areas. These 'gray spaces' 'are neither integrated nor eliminated, forming pseudo-permanent margins of today's urban regions, which exist partially outside the gaze of state authorities and city plans.'[5]

Nonetheless, communities surrounding Lisbon subject to 'gray spacing' are not powerless recipients of urban policies. It is clear they uses gray spaces as opportunities for self - organisation, negotiation and in some cases, empowerment. In many instances, they are quietly tolerated by urban policy, creating blurred boundaries between 'accepted' and 'rejected'. This continual shift reflects the notion of the tidal cycles, creating speculative space for new opportunities of organisation.

←
The creation of 'gray space'

ECOLOGICAL DISPLACEABILITY

SOCIOPOLITICAL DISPLACEABILITY





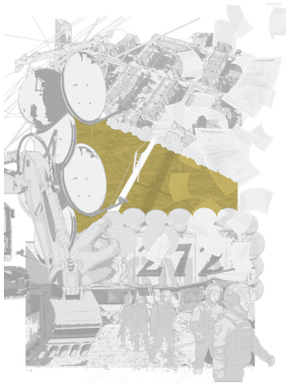


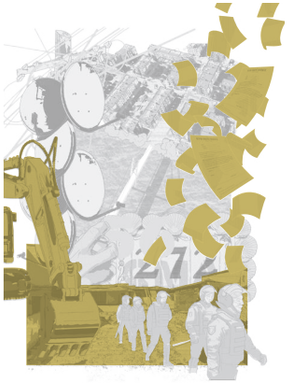

↖ Overfishing has put pressure on ecologies and fishing industry

← Poor coastal defence strategy
Overlapping of protected environments and urban settlements increases risk of
↙ forest fires

Ecological precariousness used as reason for demolition and eviction ↗

Urban inhabitance exacerbates local ecological fragility →
Risk of flooding increases with the effects of climate change ↘





↖ Authorities allocate houses using spray paint. Discounting existing numbering and blurred boundaries between houses

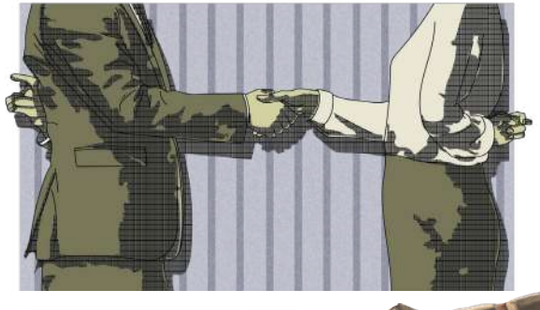
← Telecoms companies provide utility bills which facilitates securing homes
Over representative police force within
↙ informal settlements

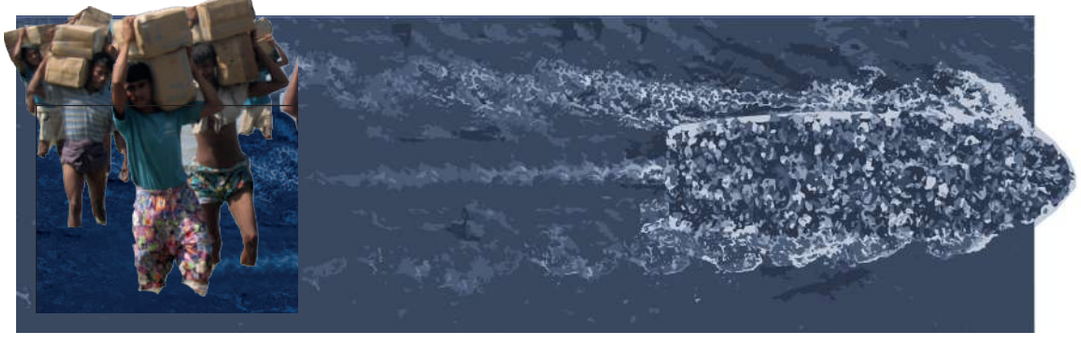
Tagus estuary acts as a physical and symbolic barrier between Lisbon and settlements ↗

Threat of eviction and demolition is an ever-present reality →

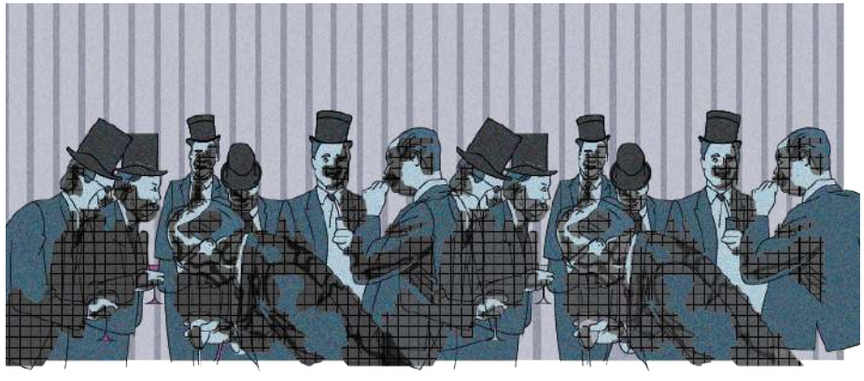
Alternatives are rehousing and relocation in PER , government, housing schemes ↘

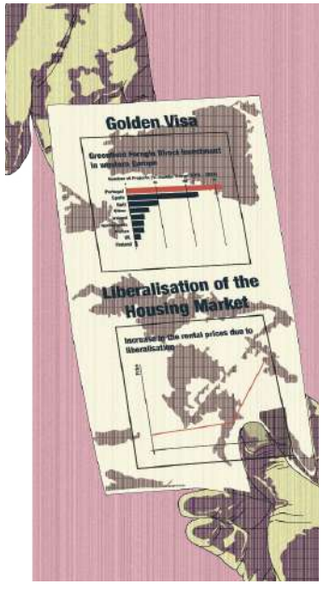
GLOBAL CLIMATE INACTION

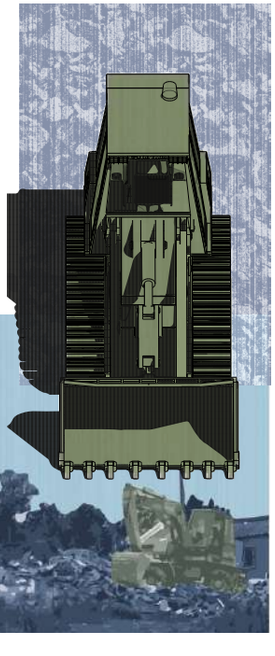




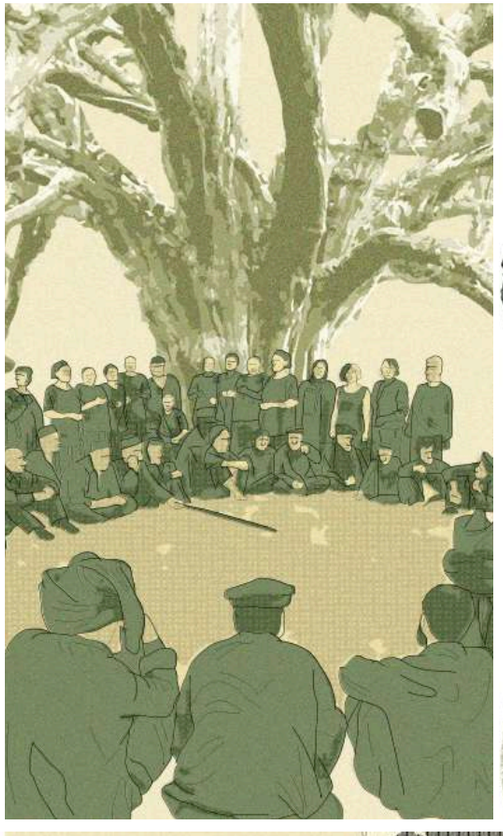
GLOBAL INEQUALITY

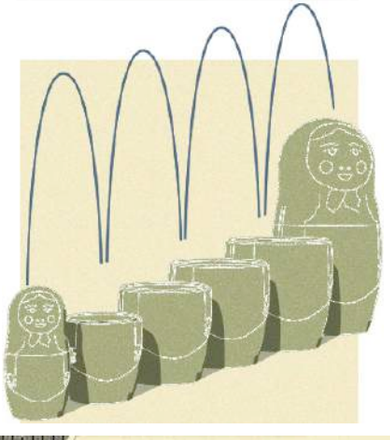


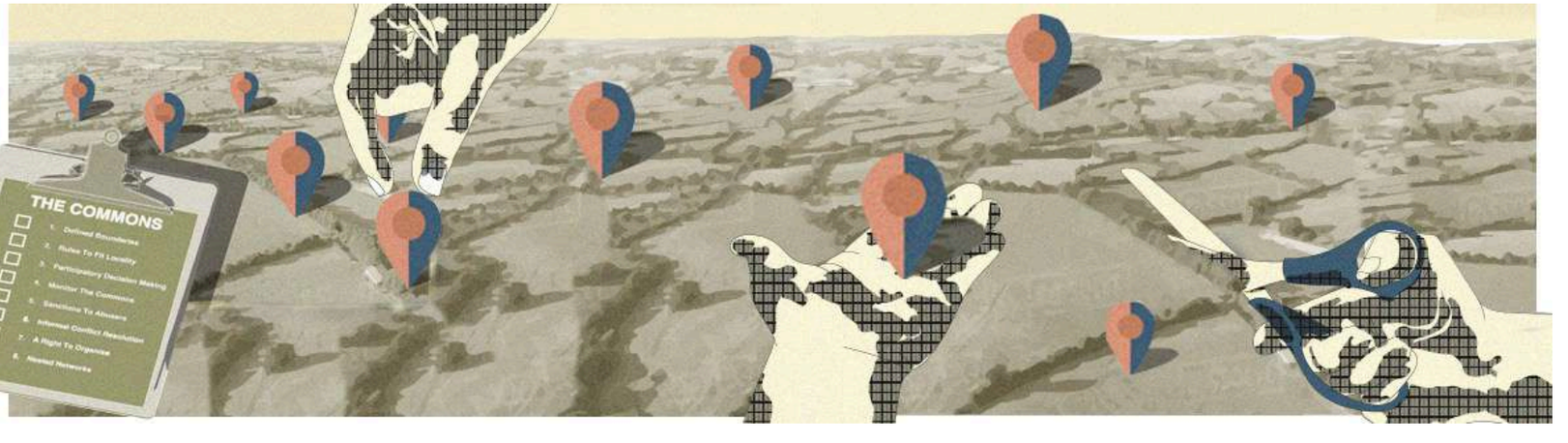




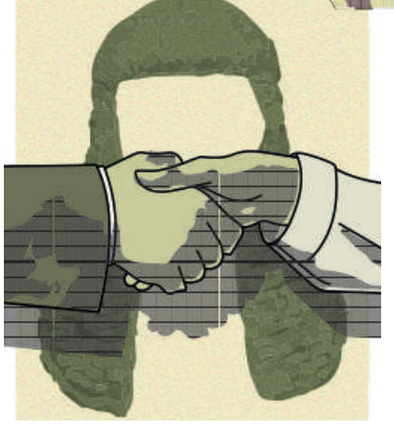
LOCALISED ACTION

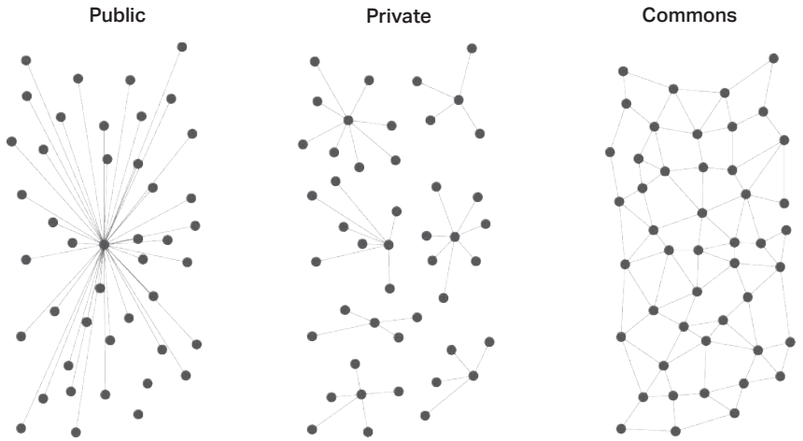


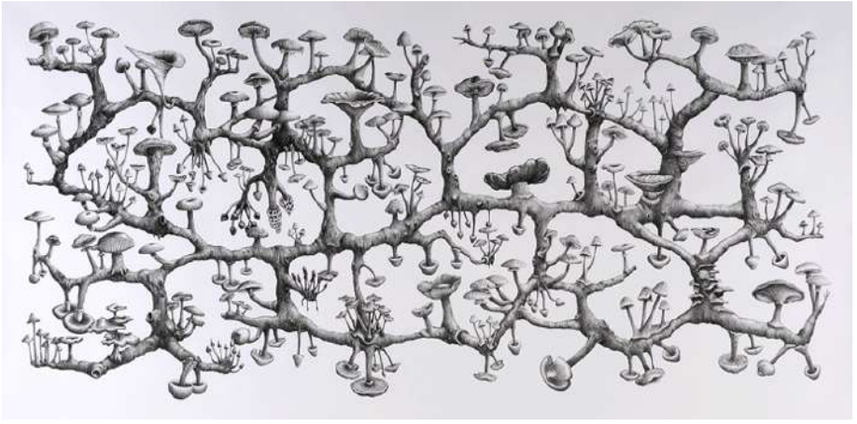




SHARED COMMONS







'A rhizome ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles.'[6]

↑
The commons uses a rhizomatic approach to organising itself.

↓
Mycelium Rhizome (2008) by Richard Giblett demonstrates semiotic chains between organisations and powers.

A Polycentric Approach to Climate Change

'Given the decades-long failure at an international level to reach agreement on efficient, fair, and enforceable reductions of greenhouse gas emissions, continuing to wait may defeat the possibilities of significant adaptations and mitigations in time to prevent tragic disasters.'[7]

Waiting for a single worldwide solution to climate change is problematic. The 2016 Paris Climate Change agreement commits governments to submit plans to cut greenhouse gas emissions in order to keep global temperature increase below 2°C above pre - industrial times. However, whilst there are 197 signatories to the agreement, major emitters Turkey and Iran have yet to sign. In addition, the United States have begun formally withdrawing from the deal, set to be complete by November 2020.

Elinor Ostrom suggests that instead a polycentric approach to climate change should be adopted. This polycentric order can be described as 'one where many elements are capable of making mutual adjustments for ordering their relationships with one another within a general system of rules where each element acts with independence of other elements.'[8] In the context of climate change, this refers to the formation or sustaining of global, national, local and individual commitments to reducing emissions. Ostrom suggests that building such commitments, and trusting that others are also taking responsibility is a more effective way to approach climate change than a monocentric global approach.

↑
Living Creatures and Nature In Symbiosis
(2019) by Al Mefer

The Commons

'Its primal characteristic is that it does not distinguish between users and objects, but binds all agents together in a vast interconnected network of giving and receiving...'[9]

Historically, the commons referred to a stretch of nature used and protected by a certain group of humans. As an example, rural commons of pre- industrialised Britain allowed peasants to take sustenance from common land, grazing cattle according to a set of rules and preventing overuse. Today, commons economies such as this exist in rural communities throughout the world. For example, irrigation systems in South America and the distribution of hunted down prey in Southern Africa.

In this thesis, we move away from the commons as an economic model, but use it as philosopher and biologist, Andreas Weber does: 'to stand for relationships of reciprocity and mutual co - creation'.[10] As such, living beings do not 'use' the commons but become a part of it, digesting the commons and providing nourishment for it simultaneously.

Situated Framework

↑
Walking the locality as a research method

↑
Trafaria Grain Silos

↑
Walking the locality route, showing where we traveled by foot, ferry and bus.

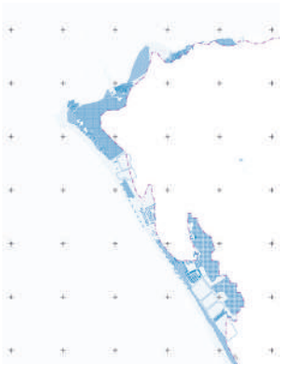
Walking the Locality: The Arrival City to Lisbon

The coastal communities of Trafaria are poorly connected to Lisbon. A single bridge across the estuary serves as the single physical connection, and as a result the city feels disconnected and distant. For those living in the neighbourhoods of Segundo Torrao and Cova Do Vapor the figurative separation between their lives and the city is compounded by the physical and temporal distance between work and home, with many finding work in Lisbon's construction and hospitality industry.

For this walk we simulate one of the journeys taken from Segundo Torrao to Lisbon. By taking the bus and ferry the walk captures the changes in urban landscape and takes into consideration the condition of time and separation between transportation transitions. The journey becomes an experience of fluxes between movement and staticism.

Documenting the journey from a Lisbon hotel to Segunda Torrao. The journey emphasises the length of time taken for a resident of Segundo Torrao to get to work.

Erasure



taking things away, making space

Transformation

change between two states of an object of situation

Migration

movement from one point to another, things that leave and don't return, of which sometimes traces remain

Origination

?

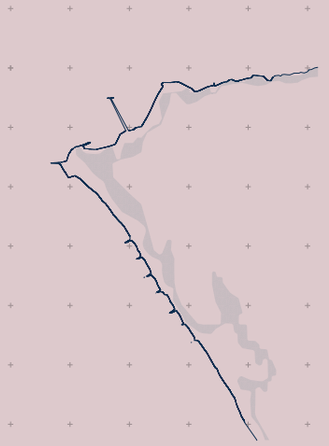
speculation on where something new begins to happen, it is the basis for reaction

Walking the Locality: New Coastal Boundary

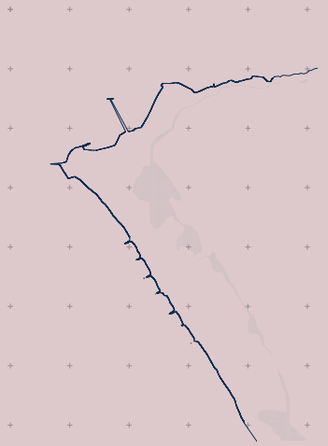
The Earth is expected to experience temperature increases of ~4°C or more above late 20th century levels by 2100[1] if no action is taken to curb the current use of fossil fuels. A more conservative, but not necessarily more realistic assumption, is a rise of 2°C[1], if current climate commitments are upheld. Whilst rising sea levels are a certainty there is an uncertainty regarding the landscape and territories that will remain as a product of global warming.

The walks through the coastal landscape of Caparica and Trafaria start by considering the potential shift in the coast line. Walks along the 2°C and 4°C sea rise coastline look at investigating these new landscapes, their current condition and use as well as the transformations and potentials for future inhabitance.

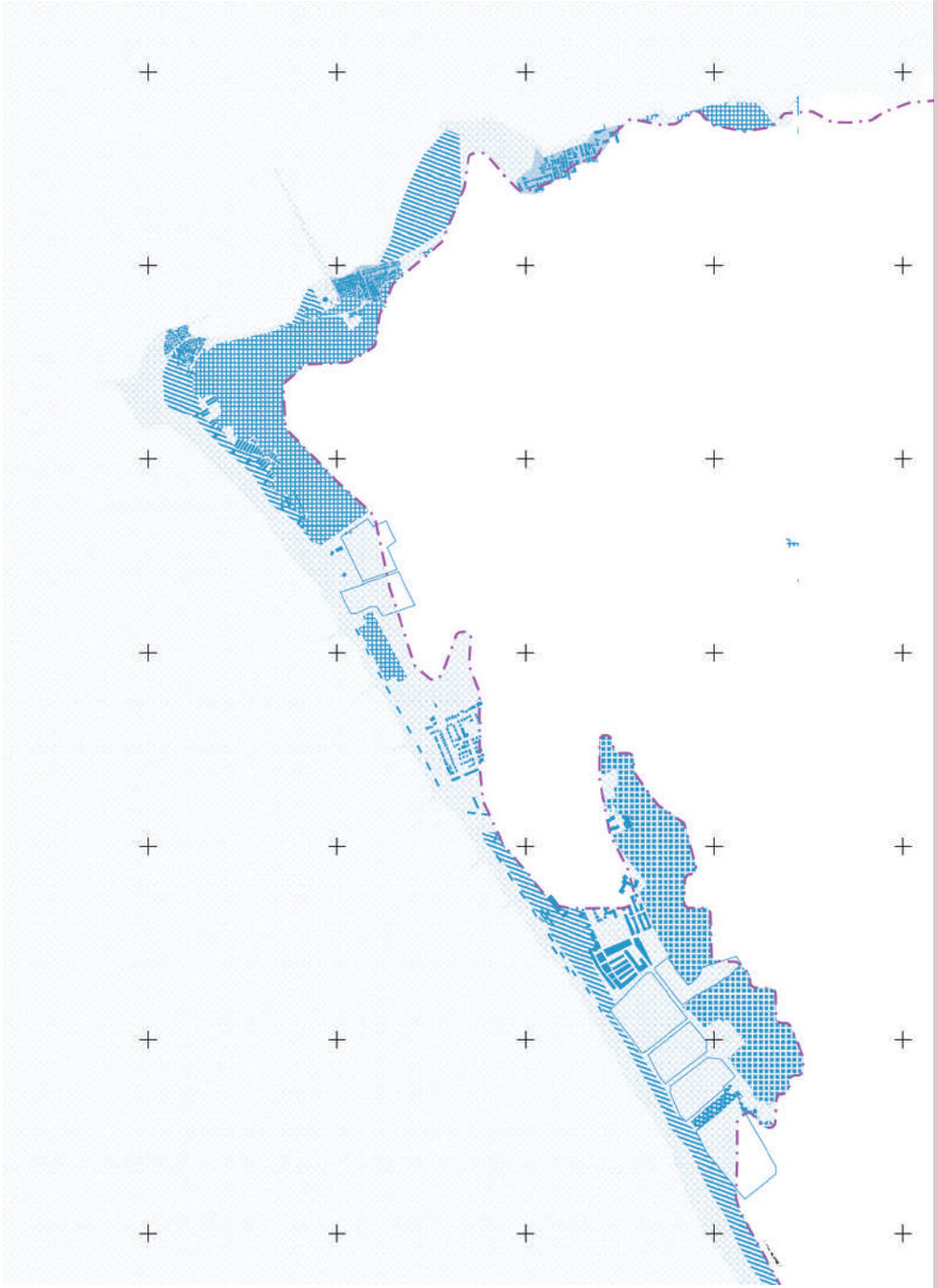
Throughout the walk, the landscape was observed through a series of lenses which prompted the uncovering of current and potential threshold conditions between coast, agriculture, ecology and urban settlements. Erasure, Transformation and Migration[2] act as mechanisms to categorise and assess the conditions of displaceability that exist throughout this landscape.



2 Degree
+4.7m

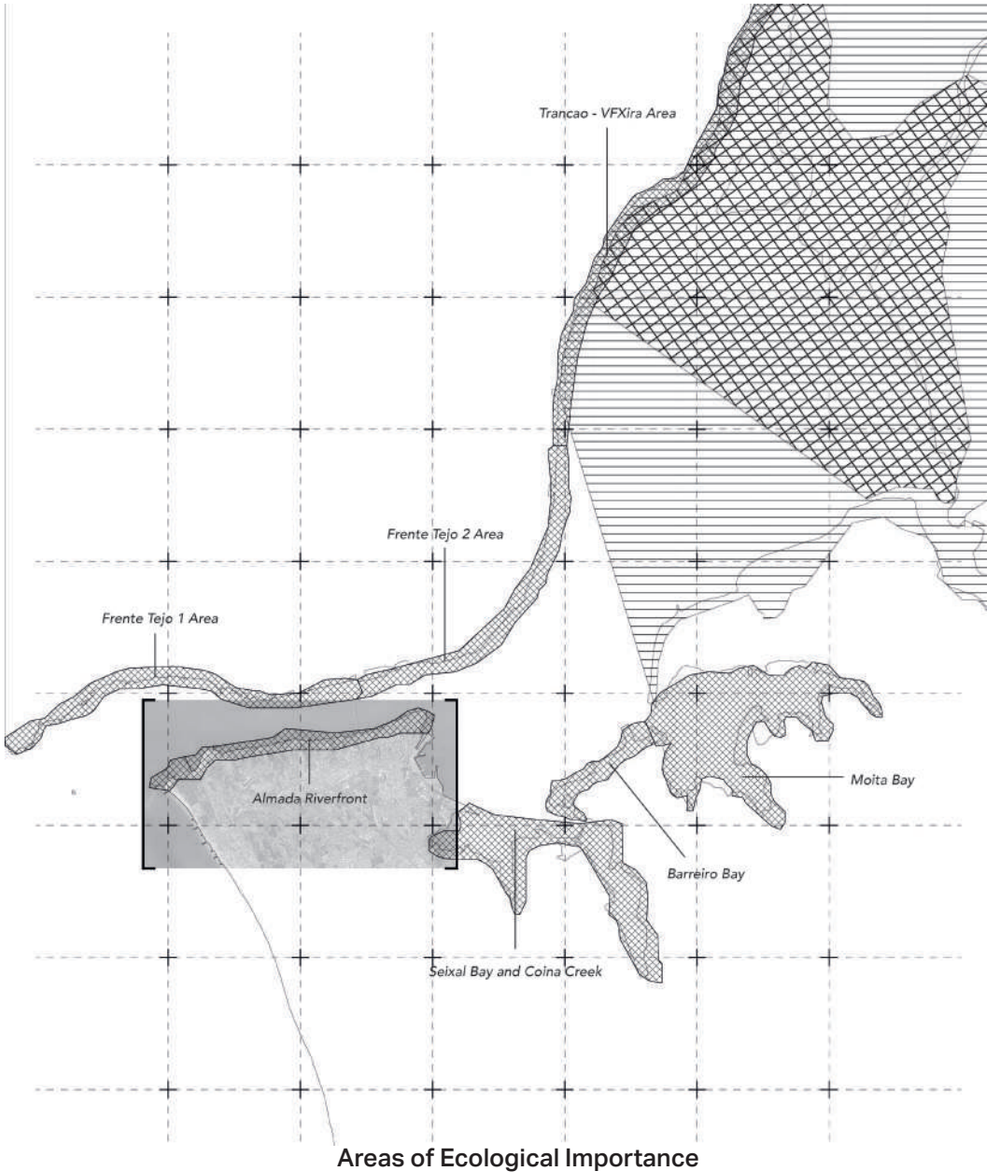


4 Degree
+8.9m

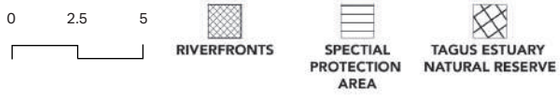


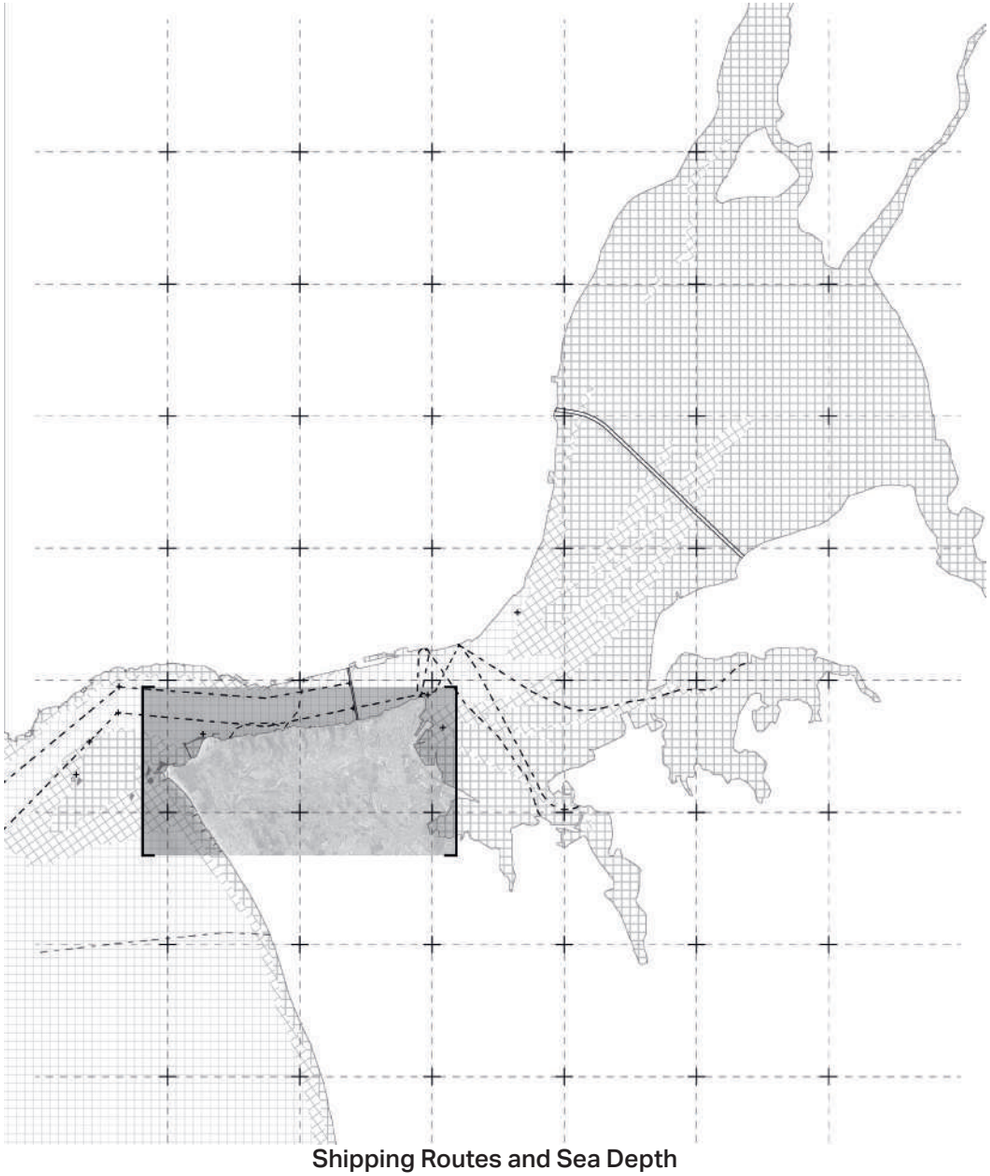
Erasure

The 2 degree frontier proposes the opportunity for the renewal/change in coastal landscape. Erasure maps the chasms and voids left by the rising sea level, altering the hierarchy of coastal systems and making space for re-imaginations.

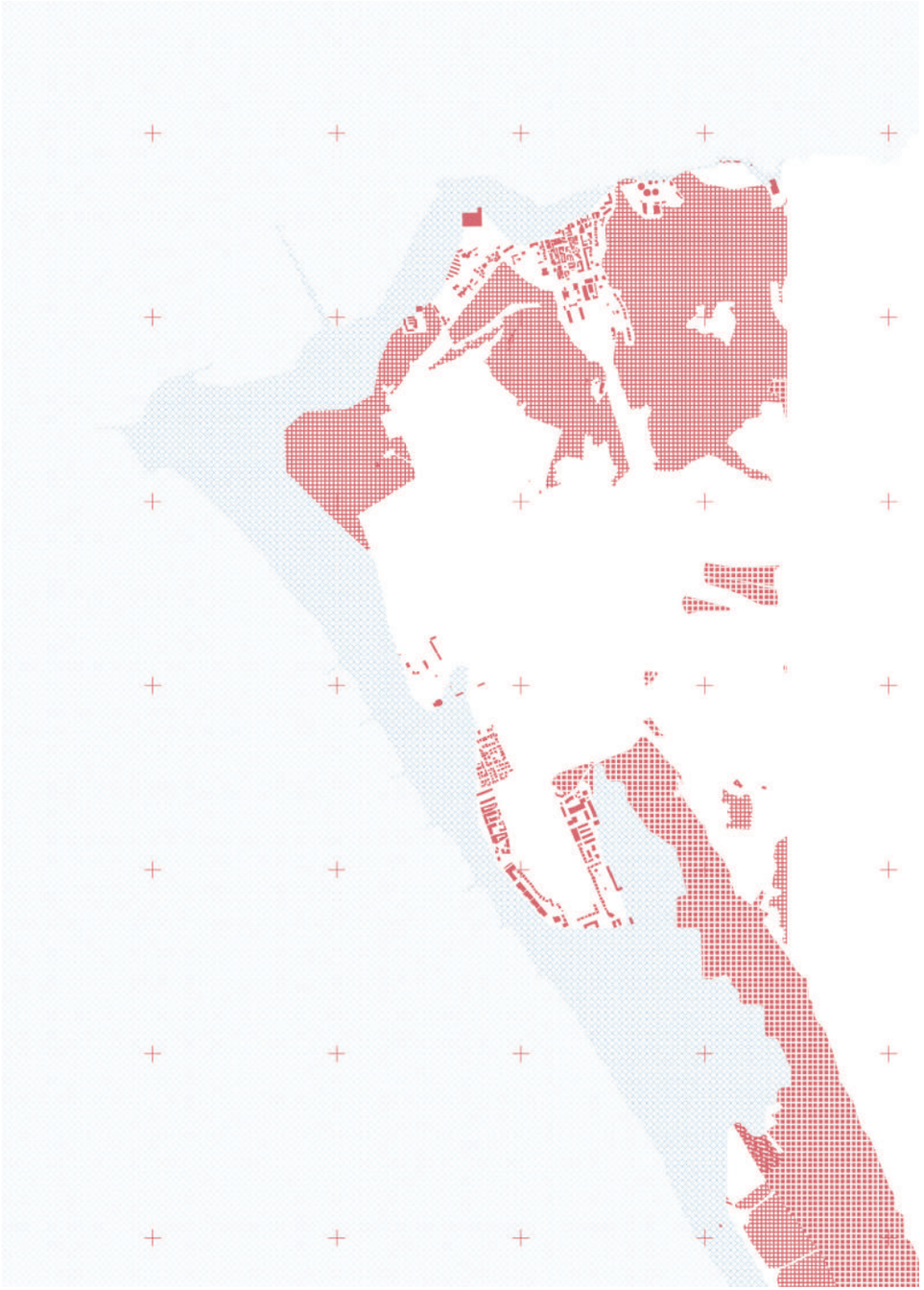


Areas of Ecological Importance



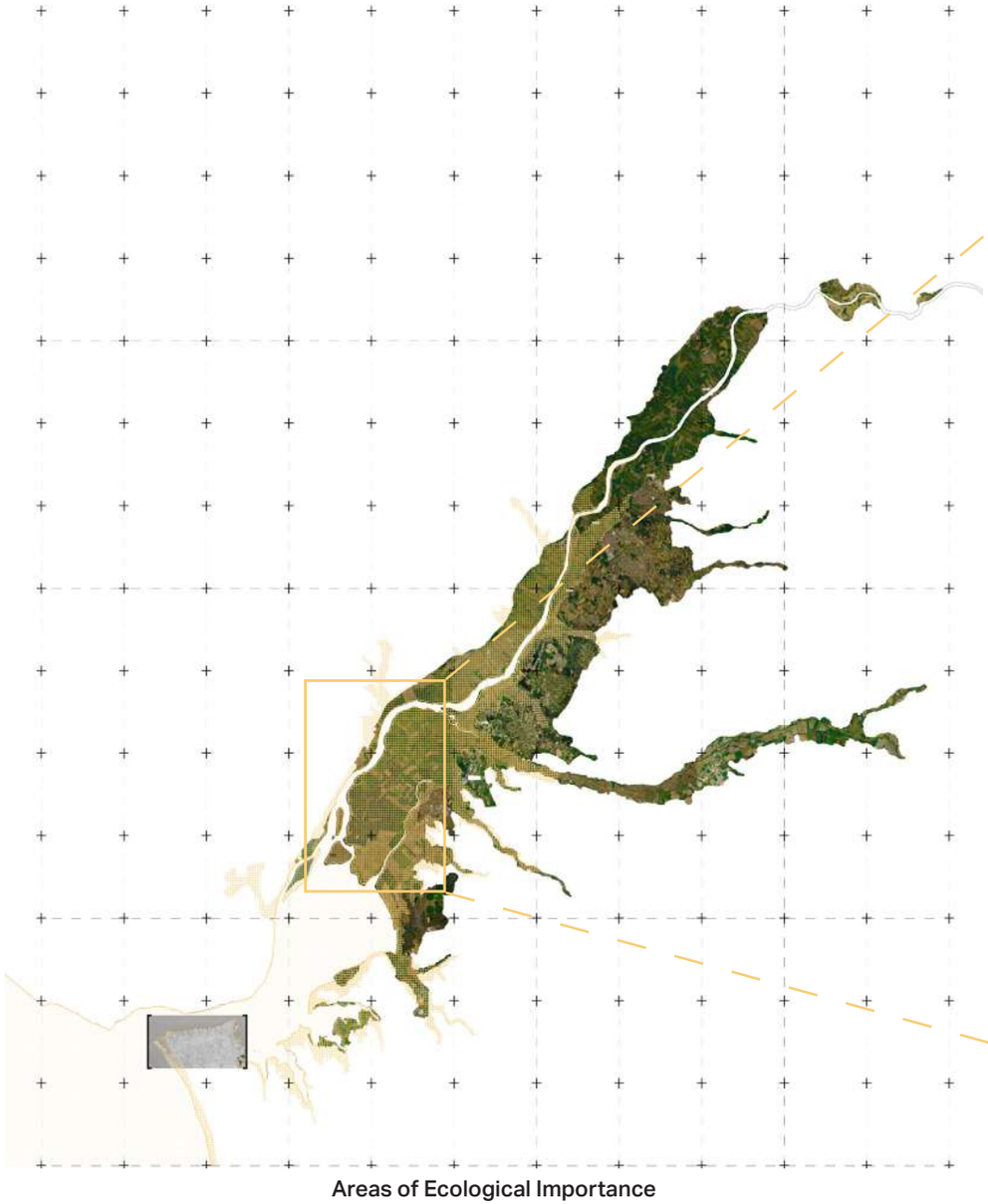


Shipping Routes and Sea Depth



Transformation

Transformation is indicative of reorganisation as new orders of daily life are established within the new context. As ecosystems and ways of life either adapt or migrate, the process of morphology is visible within the new territory. Those objects and uses that lie on the new coast line are subject to the outcome of resilience or migration as new uses are established.



Areas of Ecological Importance

0 5 10 20

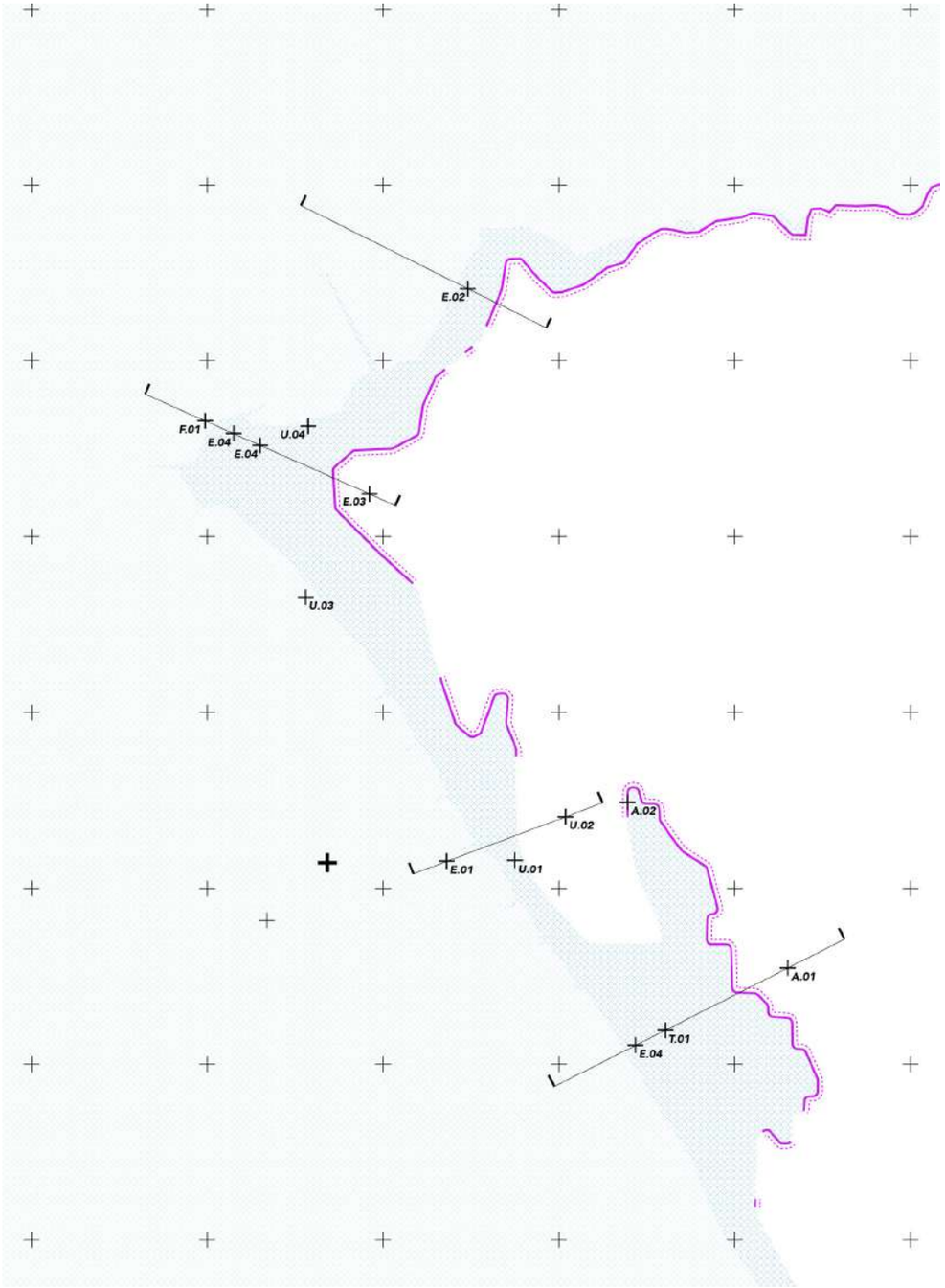
Sea Level
4 Degree Temperature Rise

Estuary Agriculture

TOMATO CORN SORGHUM RYEGRASS MELON PEPPER

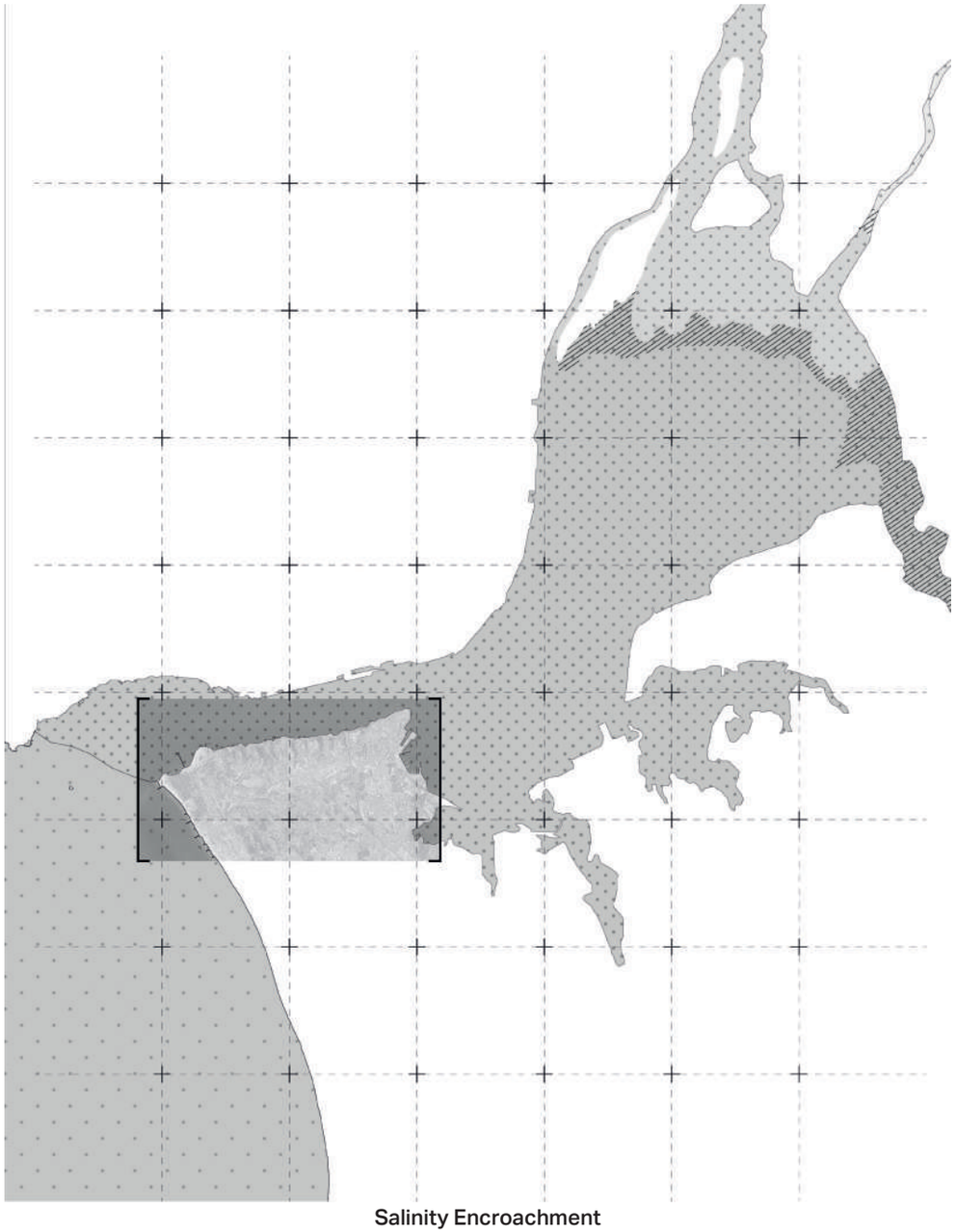
0 2.5 5

PUMPKIN PUMPKIN PUMPKIN PUMPKIN MELON



Migration

The walk uncovered the existing threshold conditions and transitions in the landscape; gradual transition of coastal ecosystems, or the abrupt boundary between urban and agriculture. These thresholds were considered to be migratory with sea level rise and imagined as dynamic conditions which adjust/alter the identity/character of the landscape.

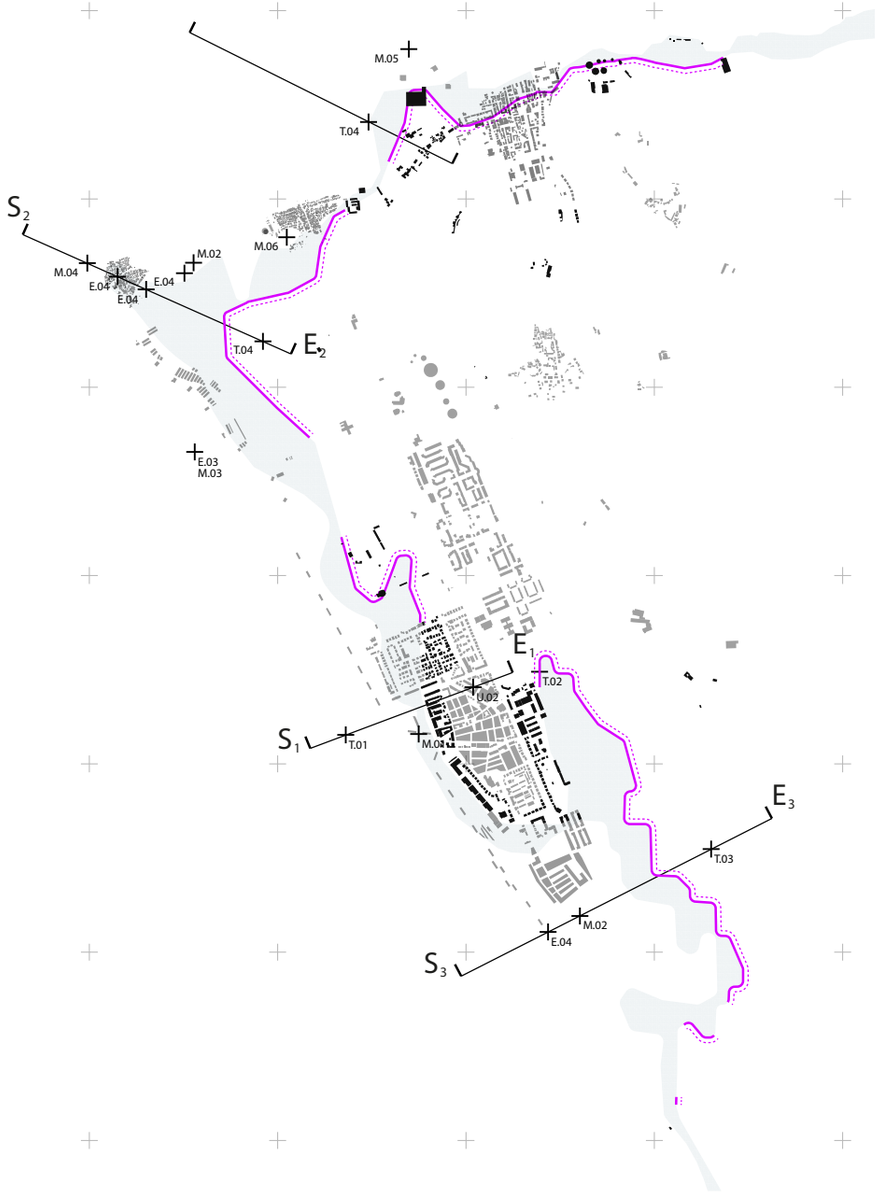


Salinity Encroachment

ATLANTIC OCEAN
TAGUS ESTUARY
SALINITY 30 - 25
SALINITY 25 - 5
SALINITY 5 - 0
SALINITY ENCROACHMENT (0.5m sea level rise)

Sea Depth

DEPTH 0-16m
DEPTH 17-32m
DEPTH 32m +



New Frontiers

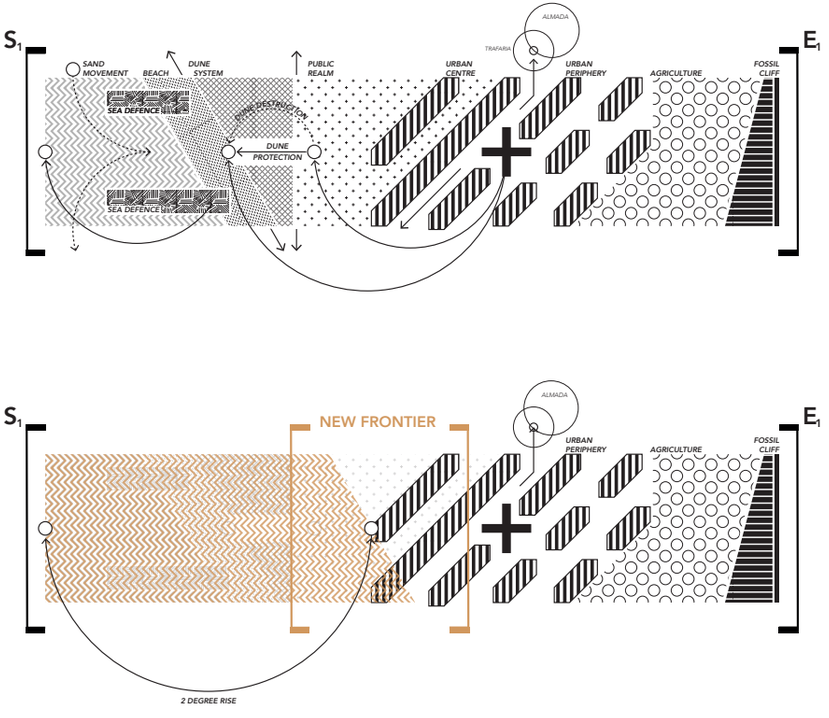
When sea levels rise, urban and ecological attributes will be displaced. The resultant landscape now appears differently, with new boundaries and layering of conditions becoming apparent.

The following identifies sections of the landscape where this has occurred, demonstrating the new frontiers that have been created.

Once a tourist destination, known for its surfing and beaches, situated between the bast Atlantic and dramatic cliffs, the town of Costa Da Caparica exists under a condition of ecological displaceability.

As sea levels rise the beach-town relationship is erased, along with the associated tourism. The town must deal with a transformed relationship between land and water, as tidal forces encroach on private land and alter ownership.

Sea level encroachment threatens the existing agriculture. However new opportunities arise through the adoption of technology and alternative farming methods that attempt to adapt industry and retain local identity.



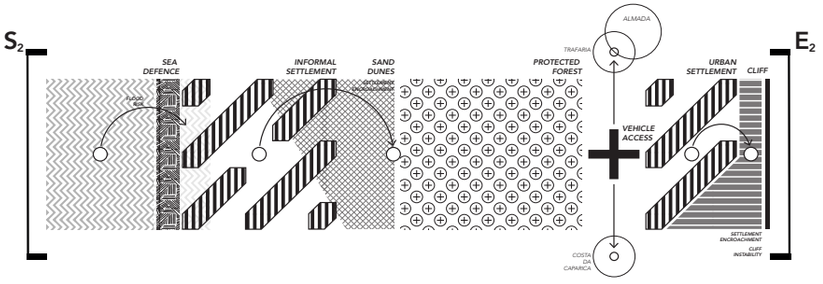
↗
Existing and Transformed Frontiers

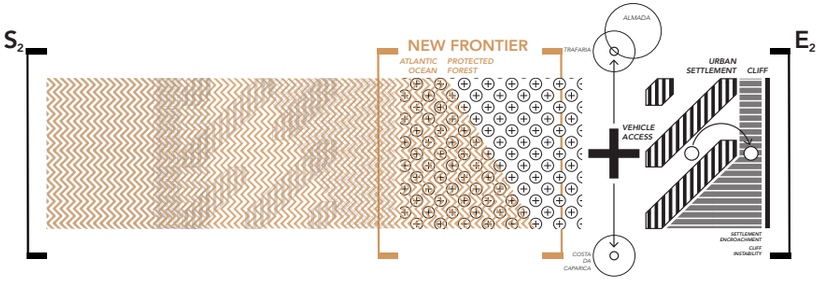
↓
Frontier characteristics post 4.7m sea level rise.

Thresholds across the landscape shift with the rising sea level. Gradual change across dune systems become short and immediate, whilst thresholds between coast and housing might migrate altogether from the context.

As thresholds retreat objects and lifestyles are erased, leaving artefacts which act as mnemonic devices of past identities.

New thresholds offer a potential for an alternative approach between ecological agents, such as the sea and dunes.



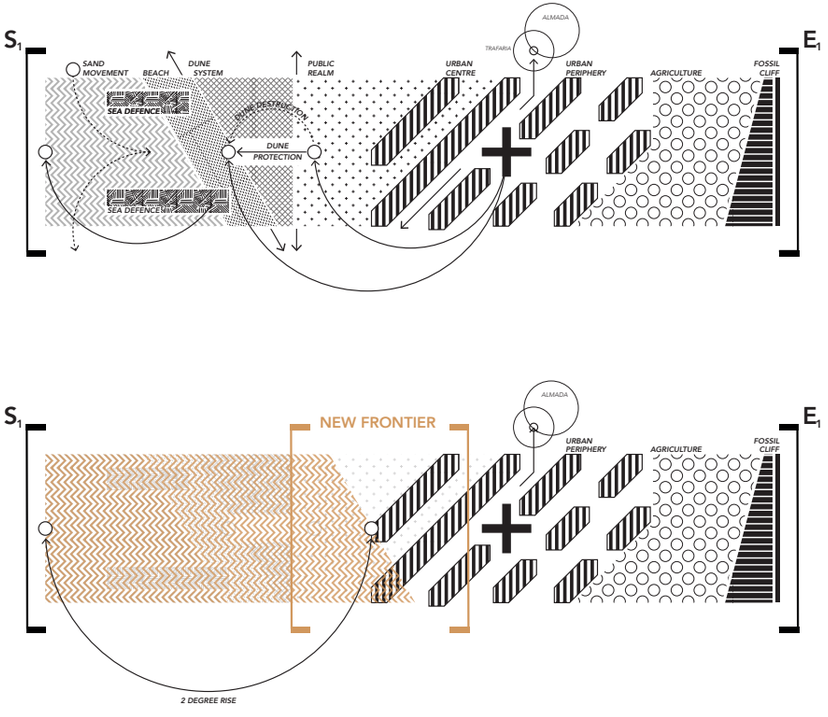


↗
Existing and Transformed Frontiers

↓
Frontier characteristics post 4.7m sea level rise.

Sea level rise places lifestyles and ecologies into a position of displaceability, threatening the erasure, transformation or migration of their individual and collective existence.

New frontiers are an opportunity within this landscape to re-conceive the relationships between human - human and human - non-human actors. There is potential for new relationships and new experiences within a landscape that has accepted nature as a co- contributor to society.



↗
Existing and Transformed Frontiers

↓
Frontier characteristics post 4.7m sea level rise.

SUMMARY OF KEY FINDINGS AND PROJECT RESPONSES

GLOBAL TEMPERATURE RISE BY 2050

2°C

GLOBAL SEA LEVEL RISE BY 2050

4.7 m

ADDITIONAL CLIMATE MIGRANTS BY 2050

200,000,000

NUMBER OF REFUGEES ACCEPTED (2018)

220

NUMBER OF REFUGEES PLEDGED TO THE EU

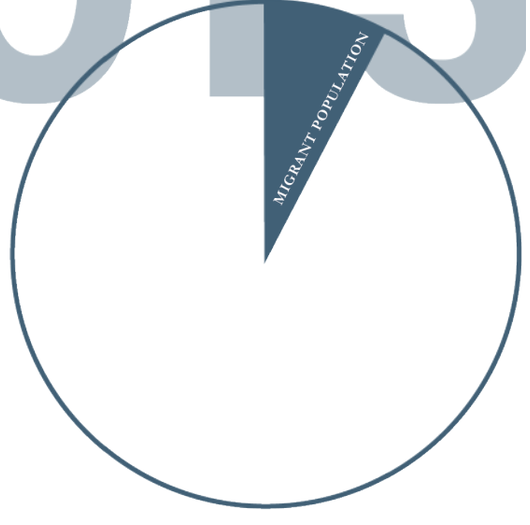
10,000

NUMBER OF EVICTIONS SINCE 2013

2968

MIGRANT POPULATION IN PORTUGAL

8%



FACTS

THESIS PROJECT INTENTIONS

01. CHALLENGE THE CONDITION OF DISPLACEABILITY

02. MAINTAIN STATUS AS AN ARRIVAL CITY IN THE WAKE OF CLIMATE MIGRANCY

03. UTILISE THE COMMONS AS A SYSTEM FOR RECIPROCITY AND MUTUAL CO - CREATION

YEAR SET

2050

PROJECT SIZE (HECTARES)

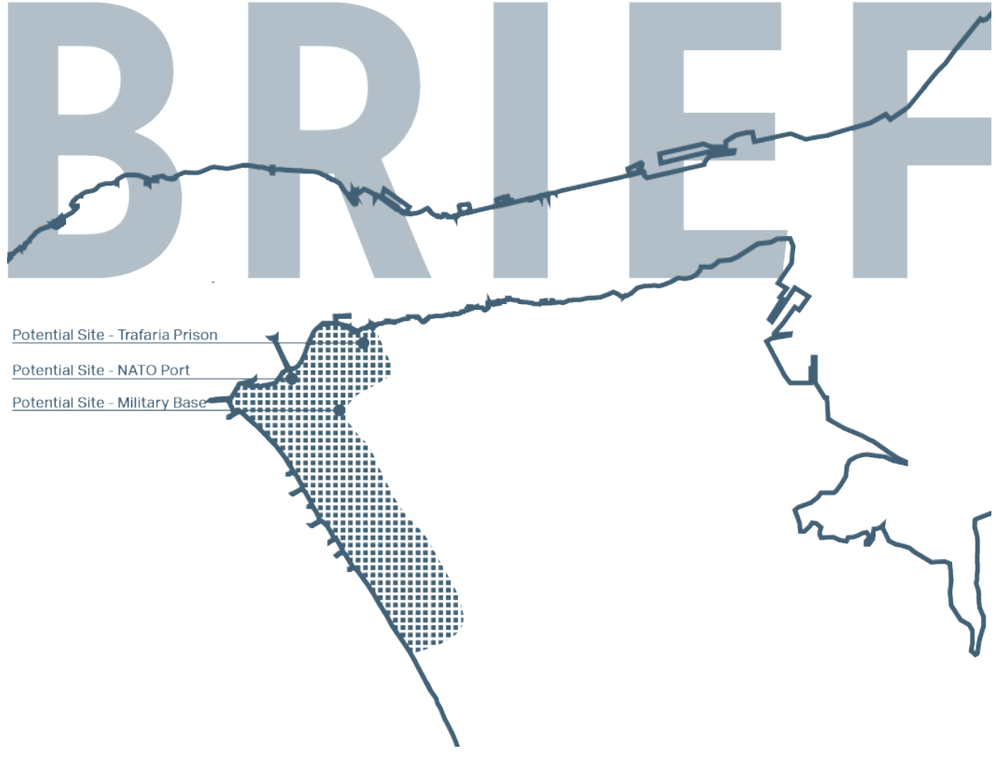
300,000

PROJECT LOCATION AND APPROACH

01. MASTERPLAN DEMONSTRATING SEVERAL HIGH LEVEL INTERVENTIONS

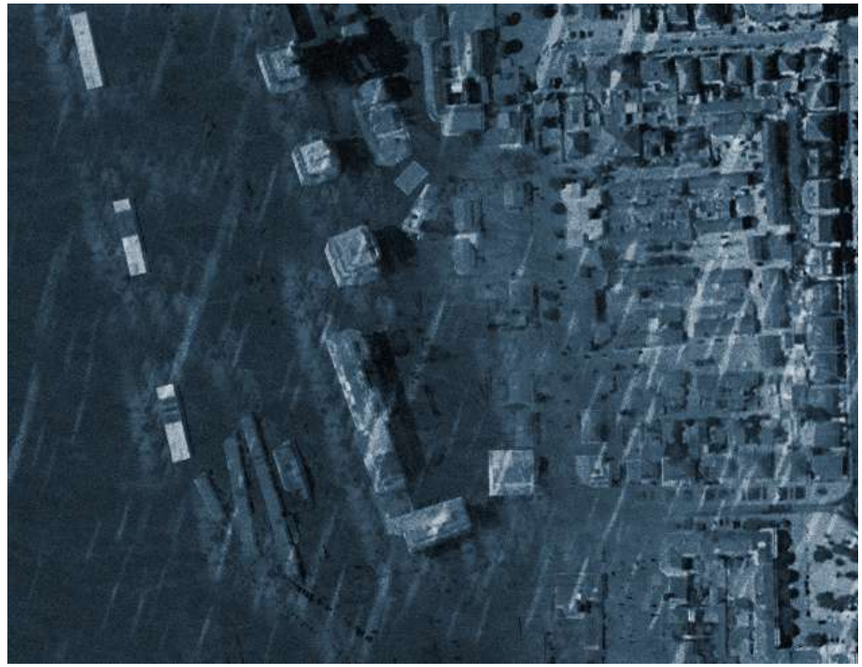
02. IN- DEPTH ARCHITECTURAL PROPOSAL AT BUILDING SCALE

BRIEF

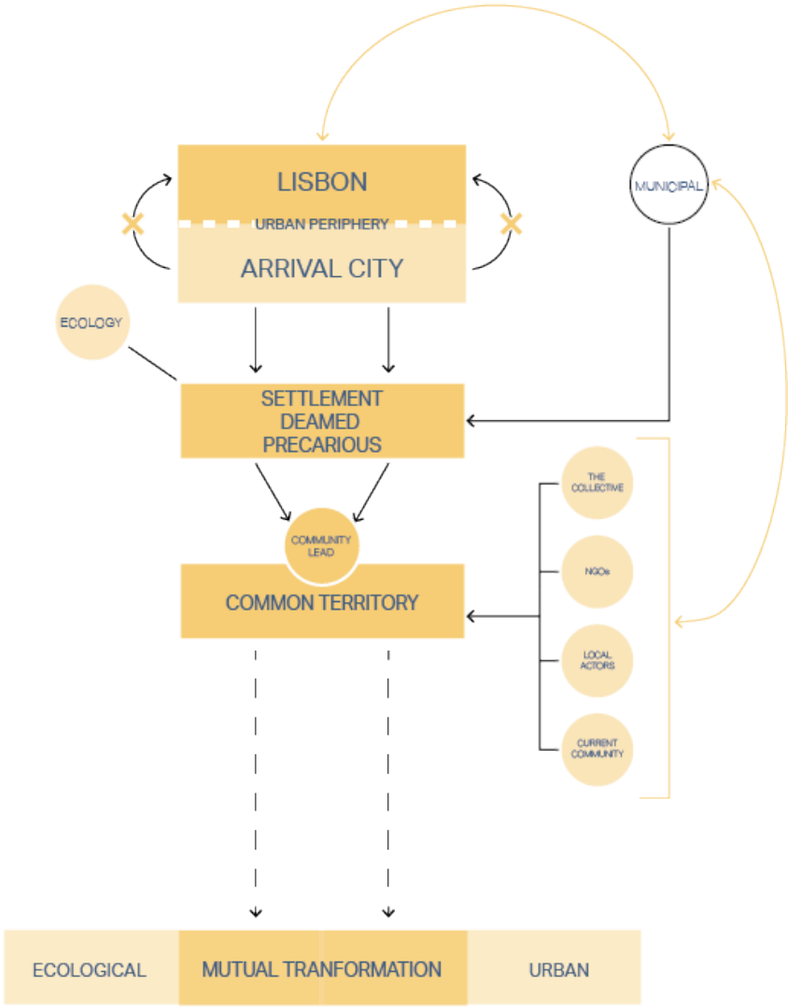


2050

The year is 2050. Sea level rise has squeezed the land between sea and the Almada cliffs, erasing borders of land ownership and blurring the boundary between land and water.
For the past 30 years, the Collective have been using the creation of these new boundaries to make a series of interventions, enabling humans and ecological functions to work in symbiosis. This mutual transformation creates a common territory.



↑
Flooded condition of existing landscape due to sea level rise.



The Concept of Common Territory

'The individual's existence and the commons as a system are mutually interdependant. They cannot be set apart - just as you cannot differentiate body and embodied meaning, nor gesture and the signification expressed through it.'[1]

The common territory is a place of mutual transformation between human beings and the natural world. It appreciates how ecosystems have developed patterns that exist in an ingenious and complex system, plausible to us as human beings but never fully understood. As a result, the common territory rejects the notion of the anthropocene - a geological era in which humans have manipulated the earth and climate for largely economic gain, and instead advocates for a system in which 'living beings do not "use" the commons that are provided by nature. Instead, they are physically and relationally a part of it.'[1]

This concept of common territory frames the way in which we are approaching the new spatial opportunities created by sea level rise. Rejecting strategies of control, architectural interventions are situated within the landscape in a way which enables shared sustenance but not concepts of marketability or profitability. The thesis intention is that these new modes of shared sustenance will evoke inner experiences of safety, stability and permanence for those will reside within the common territory, challenging their current condition of displaceabilty, and maintaining the area as an Arrival City.

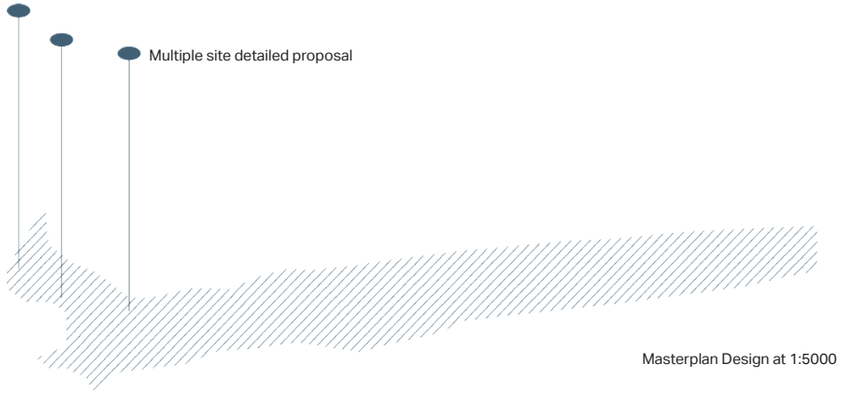
←
The formation of the common territory

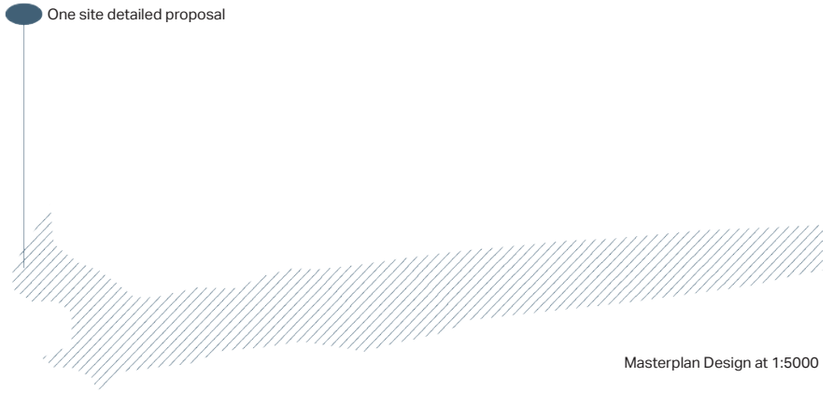
Approach to Site

Due to the large scale of the Common Territory, we are planning on making suggestions of interventions at a high level masterplan scale (1:5000). We will then design a detailed architectural proposal for an aspect of the programme. This could be a singular building or a number of smaller buildings situated throughout the landscape.

Whilst this is still to be decided, we have identified three sites which we feel are suitable locations for our project. They have been chosen due to the following selection criteria:

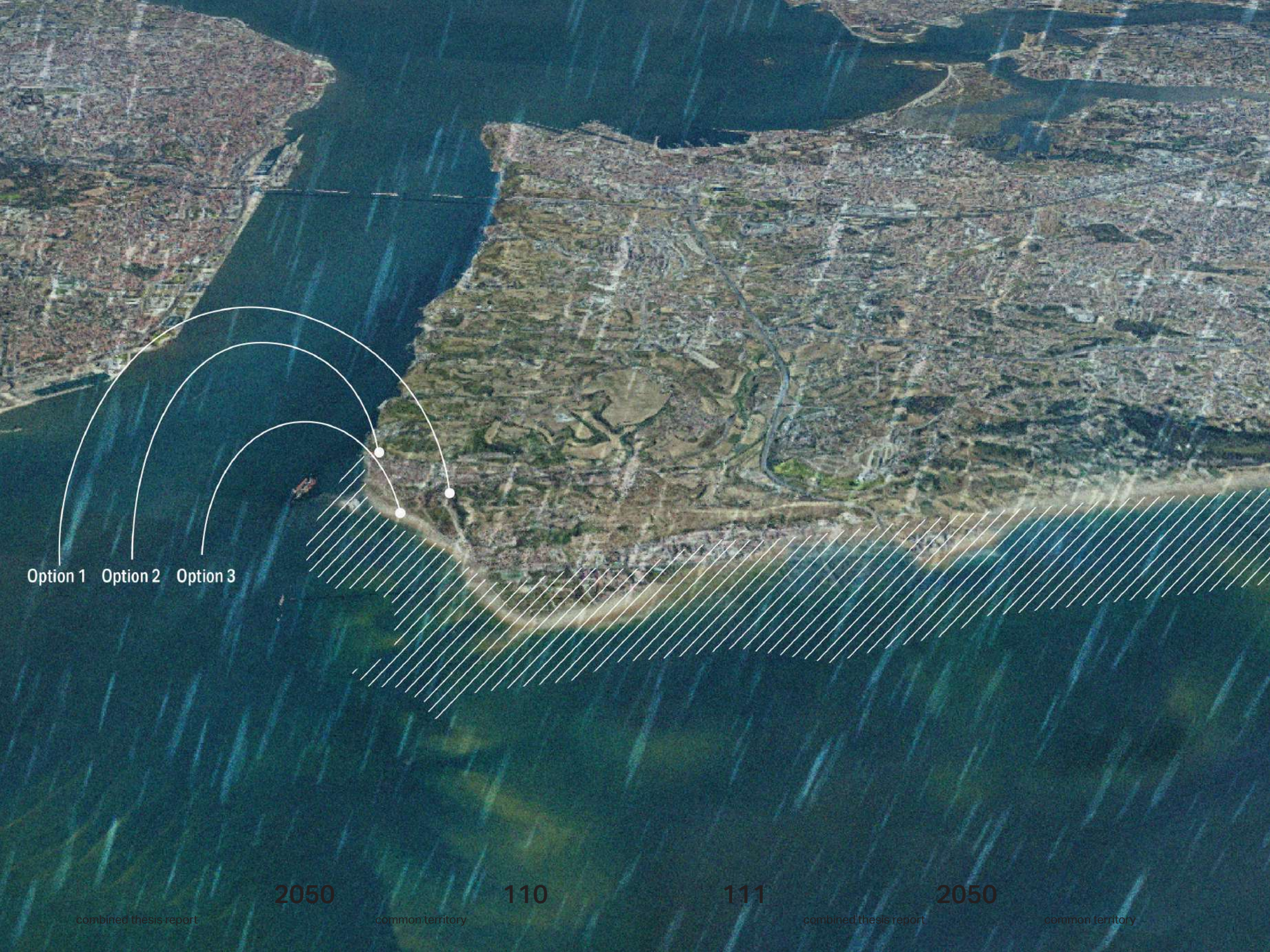
- Potential to reuse an existing building
- Existing architectural context
- Location within the masterplanning area
- Landmark sites, identifiable from afar
- Scale of approximately 4000sqm





→

What if we do a detailed proposal for a singular building or a number of smaller buildings situated throughout the landscape


Option 1
Option 2
Option 3

Option 1 - NATO

Set adjacent to Segundo Torrao, the NATO warehouses currently service as port and distributer of fuel, to Lisbon airport. The facilities are owned by the Portuguese Navy, but are currently managed by a private fuel company, Entity for the Fuel Market (ENMC). The current infrastructure consists of a port terminal, pontoon, fuel stores and small scale outhouses. The facilities also encompass a network of pipes which could be integrated into the wider masterplan.

The site sits on a prominent position within the current landscape, with an immediate relationship to the estuary. 2050 forecasting indicates that the site will most likely be submerged.

Pros

- Existing infrastructure
- Potential to retrofit
- Relationship to estuary
- Adjacency to Segundo Torrao

Cons

- 2050 sea level forecast
- Low density
-

↖ Site options within the flooded site

Site characteristics; views ↗

Plan of site showing prominence along the estuary and proximity to Segundo Torrao →

Option 2 - Trafaria Prison

Trafaria prison has had a historically distant relationship with Lisbon. Situated across the river from Lisbon's Tower of Belem, the prison was used as a space for quarantine and those unwelcome in Lisbon. The prison is now abandoned, whilst still owned by the municipality, an art collective activate the site through the installation of small scale interventions.

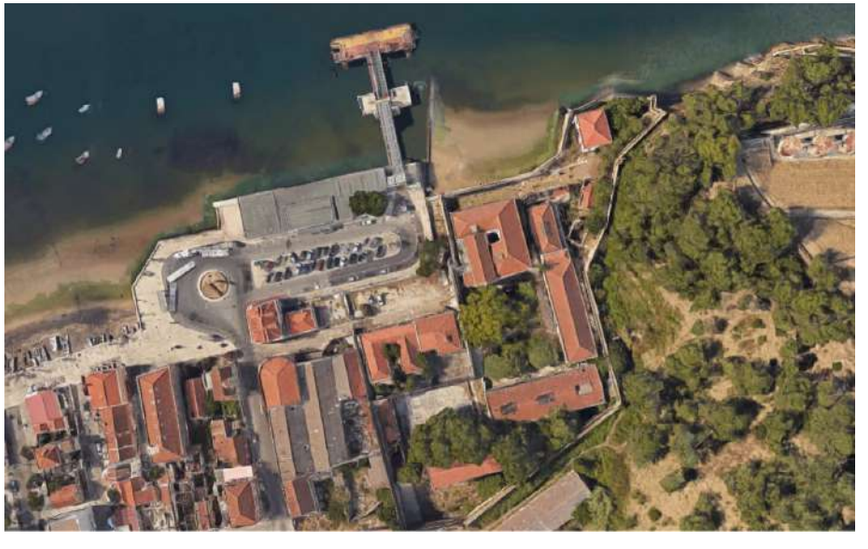
The prison, paired with the Tower of Belem, are gateways to the estuary. In a prominent position and elevated above sea level the prison is safe from sea level rise. Proximity to the ferry and bus terminal contribute to the visibility of the site.

Pros

- Potential to retrofit
- High density
- Elevated from sea level
- Transport node

Cons

- Edge of masterplan
- Walled and exclusionary



↖ Site options within the flooded site

Site characteristics; internal, aerial ↗

Plan of site showing prominence along the estuary and proximity to ferry terminal →

Option 3 - Disused Military Base

The 5th Battery of Coastal Artillery, built in 1893, once acted as a tactical coastal defence system. Placed at the top of Trafaria's Fossil Cliffs, the base overlooks the lw lying coast land and guards the mouth of the Tagus estuary.

The site, still owned by the Portuguese government, is now abandoned. Subterranean bunkers, barracks and panoramic views allow for observation of the entire coast land below. The site is poorly connected to its context, accessible only by a single steep track, from Trafaria.

Pros

- Potential to retrofit
- High density
- Elevated from sea level
- Transport node

Cons

- Poor accessibility
- Distance from rest of master-plan
- Constrained site
- Low density

↖ Site options within the flooded site

Site characteristics; views, infrastructure ↗

Plan of site showing poor visibility and hidden architecture →

Learning from Precedent

Reclaim the Beach

The foreshore of the Thames was officially opened to the public in 1934, with over 500,000 people using the banks as an urban beach. Proclaimed by King George to have “free access for ever” the banks of the Thames are now controlled by the PLA Port of London Authority, who have commercial interests for the banks.

During the tidal shifts of the Thames, a small piece of land, beneath Festival Pier is revealed. Reclaim the Beach are a movement which capitalise on the transient forces of the tide in order to reclaim part of the city for collective action and a place for small scale interventions.

Reclaim the Beach highlights the relevance of interstitial spaces within the city. Spaces which exist within transient and moving thresholds, such as the fluid boundaries of coastal systems or river banks, have the opportunity to become spaces of activism. To reclaim the city in the way Reclaim the Beach have this parcel of Thames beach, is to question the city as a territory available for contestation and reappropriation of space.

- The ability and power of small scale interventions and or events to activate spaces.
- Capitalising on the tidal systems to activate temporary spaces
- Using intervention or architecture to question land ownership

Materials yard - collection of disused and recycled materials use for building collective projects. ↗

Workshop with Fionn Stevenson, (University of Sheffield) - collaborations with research platforms support creation of international networks, new forms of praxis, digital methodologies and building. →

Learning from Precedent

R -Urban

R-Urban is a grassroots organisation which attempts to strategise urban resilience through the creation and management of ecological systems and cycles. By attempting to create circular systems of production and consumption which provokes a “shift in the power relationships revolving around services and production.” [3]

The project response is an urban farm within which local associations and enterprises control the management of materials and waste. R urban questions the condition of resilience through a method of co-production, whereby co-production is “the necessity to engage citizens personally in the provision of public services.”[4] By shifting the supplier of service from the state to the responsibility of the individual the right to the city is questioned. Individuals transform from passive citizens to active participants in the management and development of urban space.

- Question the right to the city through the redistribution of services
- Circular systems including waste management and energy production
- Phased interventions

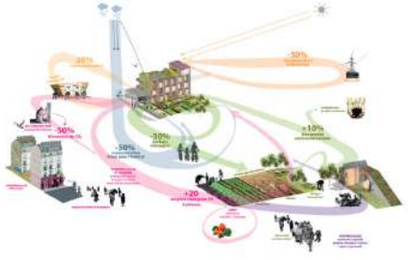
↖ Rhyzom and Eco Nomadic School - a collaborative practice designed to understand cultural productions in local contexts. In understanding this productions, they can be developed to create a cultural platform for mutual learning, support and trans - local sharing.

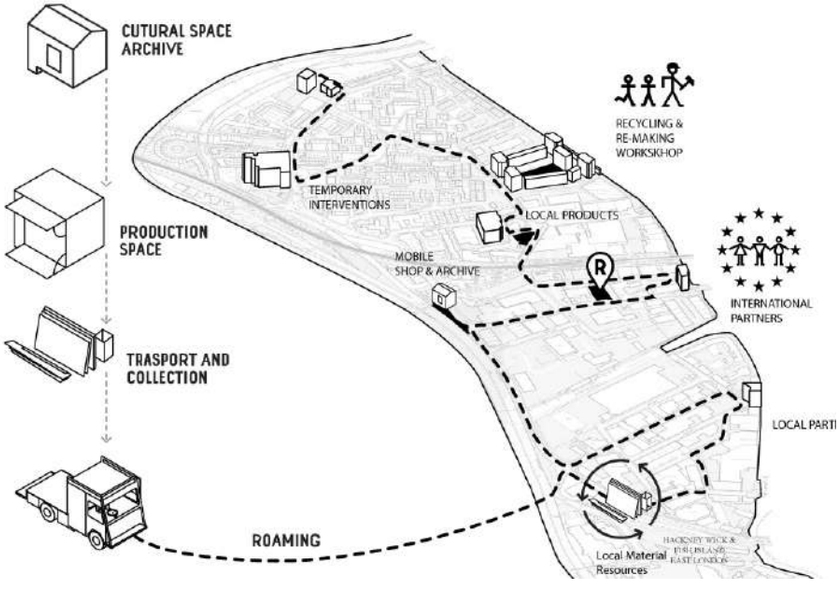
← Agrocité - project designed to introduce and support the dynamics of urban agriculture. This includes intense urban agriculture, education provision, shared garden and greenhouse. These elements are not privately owned but to the residents of the City of Colombes.

Materials yard - collection of disused and recycled materials use for building collective projects. ↗

Workshop with Fionn Stevenson, (University of Sheffield) - collaborations with research platforms support creation of international networks, new forms of praxis, digital methodologies and building. →

R - Urban in Hackney Wick is a two phased project aiming to encourage a collective and participatory design approach. In its second phase the project aims to use disused land to establish a Transferable Recycling Centre. This will be a skillshare on eco - construction. ↘





Learning from Precedent

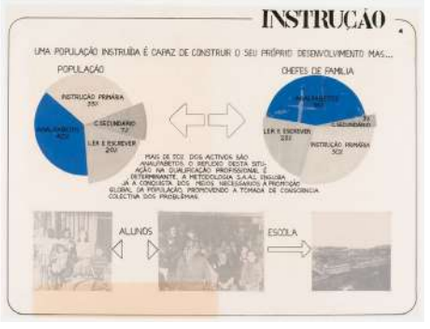
SAAL

Following the Carnation Revolution of 1974, the housing conditions in Portugal were contradictory to the countries constitution which states “Everyone has the right for himself and his family to have an adequately sized dwelling that provides hygienic and comfortable conditions and preserves personal and family privacy.”[5]

SAAL(translated as Mobile Local Support Service) were a government body which provided architecture and construction services to housing associations in order to enable to the in situ redevelopment of housing schemes across Portugal. SAAL offered an alternative to the traditional capitalist means of redevelopment, which focus on the attributed value of land. Instead SAAL focuses on in place redevelopment through a transparent process of collaboration, in doing so resisting the forces of gentrification and relocation

The SAAL projects aimed to reposition the architect as a service provider to an enabler and facilitator of design. Disassociating the profession from market forces enables us “to envision a system where people own the means of production of their own time and space; and under which the architects’ knowledge and labour are matters of the common.”[6]

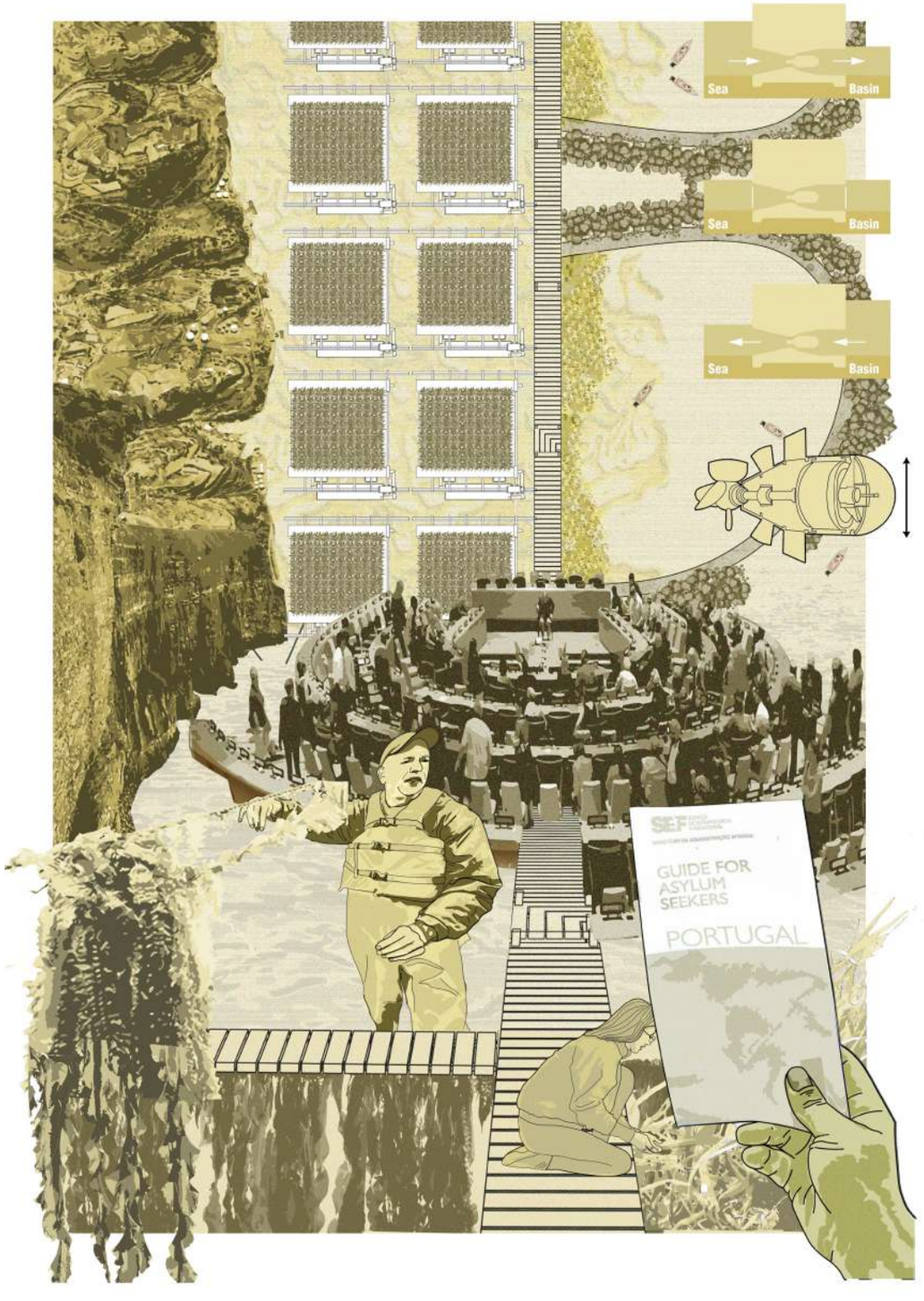
- Reposition the architect
- Utilise multi-disciplinary and cross-profession knowledge
- Grounded research and experimentation
- Commoning knowledge of the architect and other professions
- Reconsider the capitalist condition of architecture

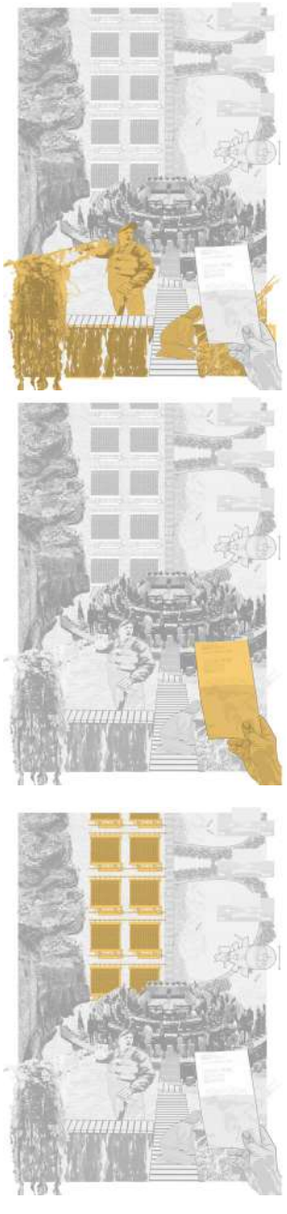


↖ José António Paradela and Luís Gravata Filipe. Presentation panel “Education no. 4” made as part of a study of the Curraleira-Embrechados neighbourhood, Lisbon, c. 1975

André Cepeda. View of the São Victor neighbourhood, Porto, 2014 ↗

SAAL architect Álvaro Siza at the site of the then unrealised São Victor social housing project 1974-77 →





↖ Alternative methods of agriculture such as kelp farming capitalise on the management of salt water irrigation

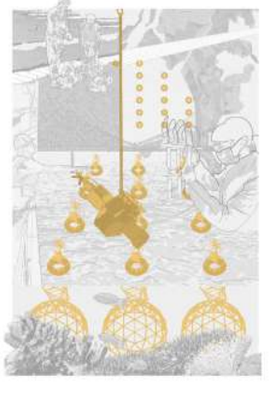
← Asylum process is integrated into the ecological and social explorations of site

↙ Over representative police force within informal settlements

↗ Democratic councils provide representation for the housing association, climate council and the commons

→ Tidal systems provide renewable energy and protected ecosystems for the vision

↘ Walkways connect functions across new marshland and wetlands



↖ Walkways connect functions across new marshland and wetlands

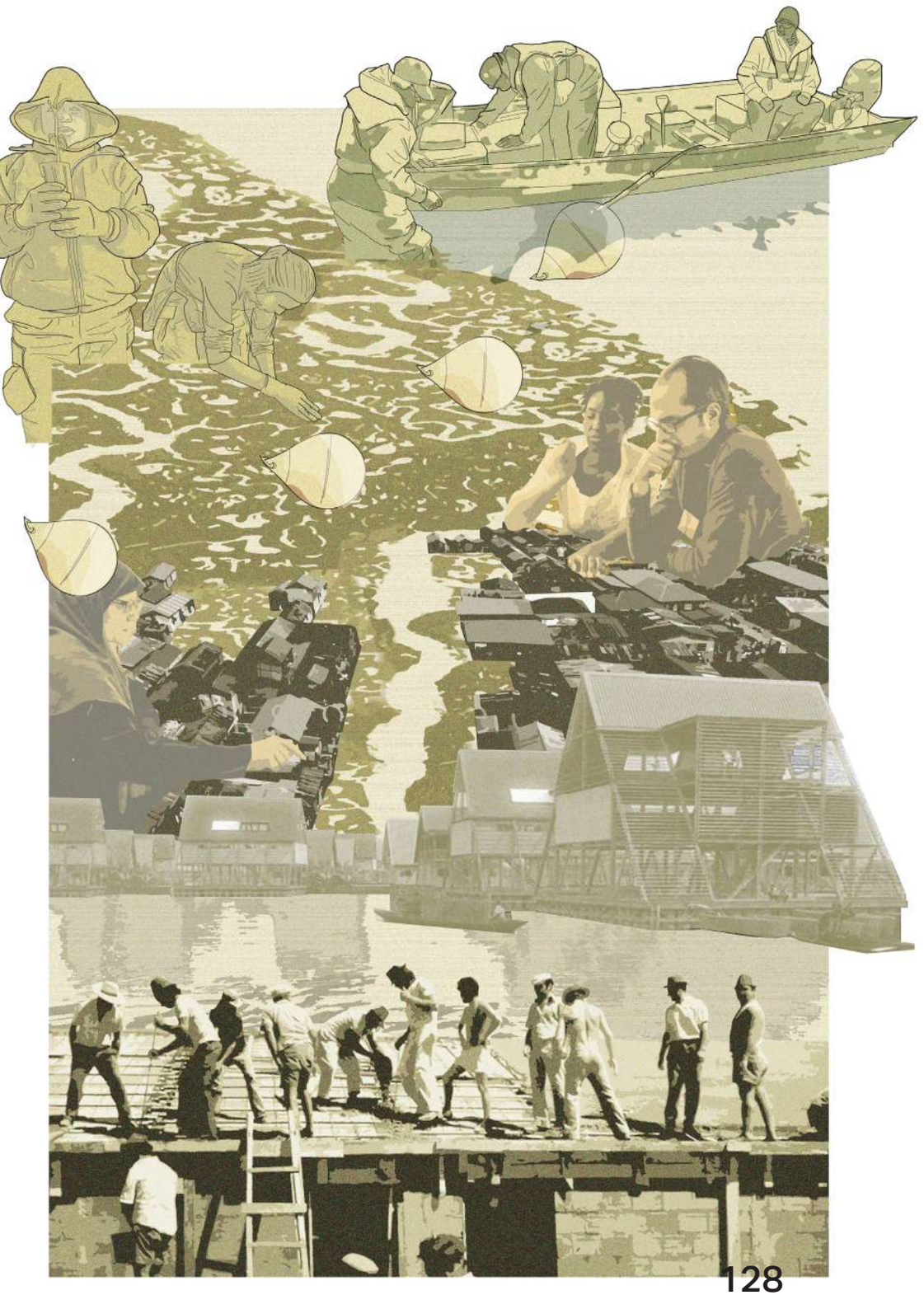
← Saltwater agricultural education supports the conversion of traditional techniques

↙ Graphene filters provide structures which promote new ecosystems to emerge

↗ The scheme recognises the importance of agriculture within the estuary, and protects the fertile alluvial planes

→ Scientists monitor the transformation of the estuary and collect data

↘ Graphene filters monitor and filter the salinity level of the estuary



↖ Managed salt water encroachment provides biodiverse saltmarshes

← New housing schemes have a more appropriate relationship to water

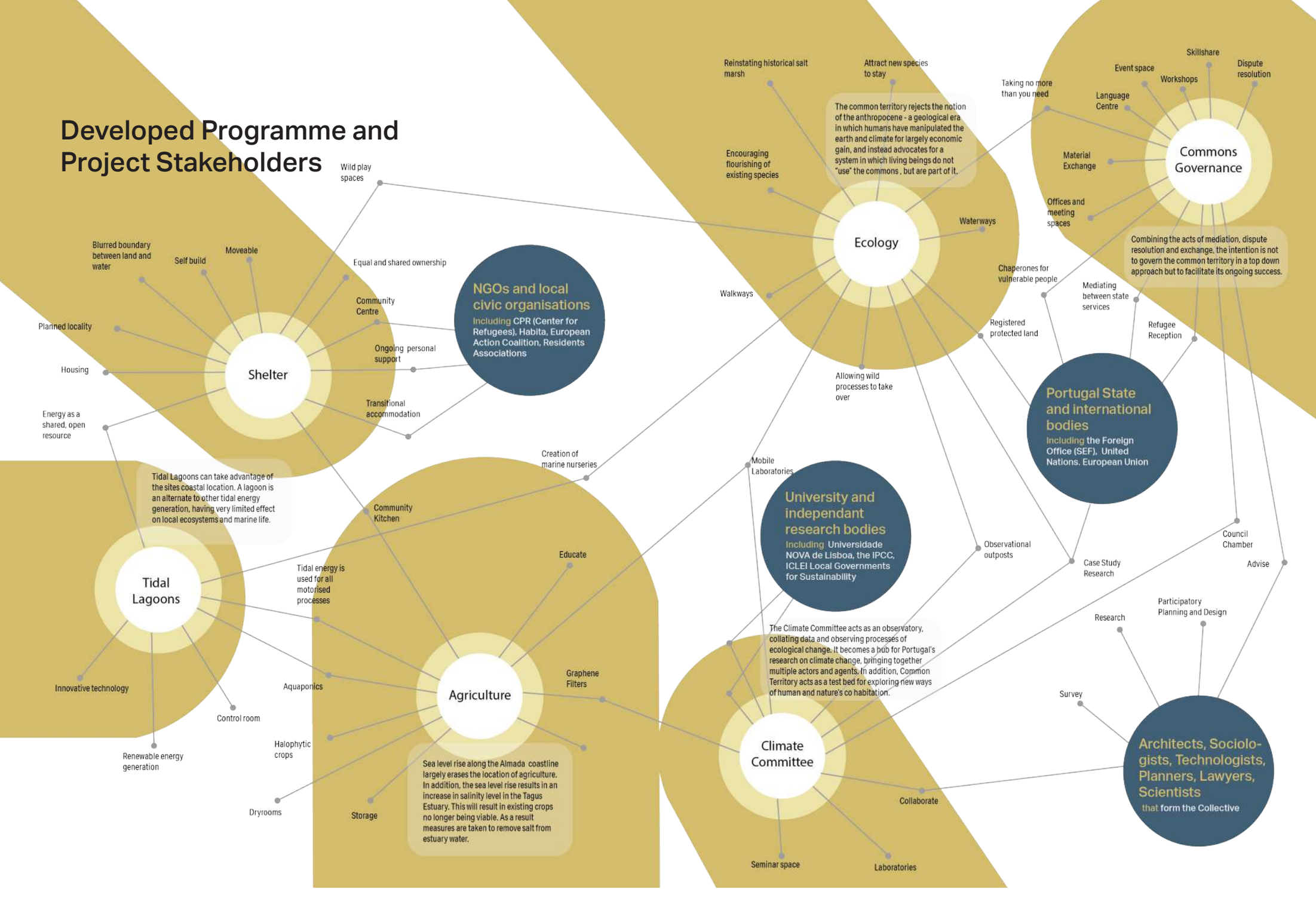
↙ Collaborative construction takes precedent from SAAL movements

Monitored experiments of marshlands protect new and emerging ecosystems ↗

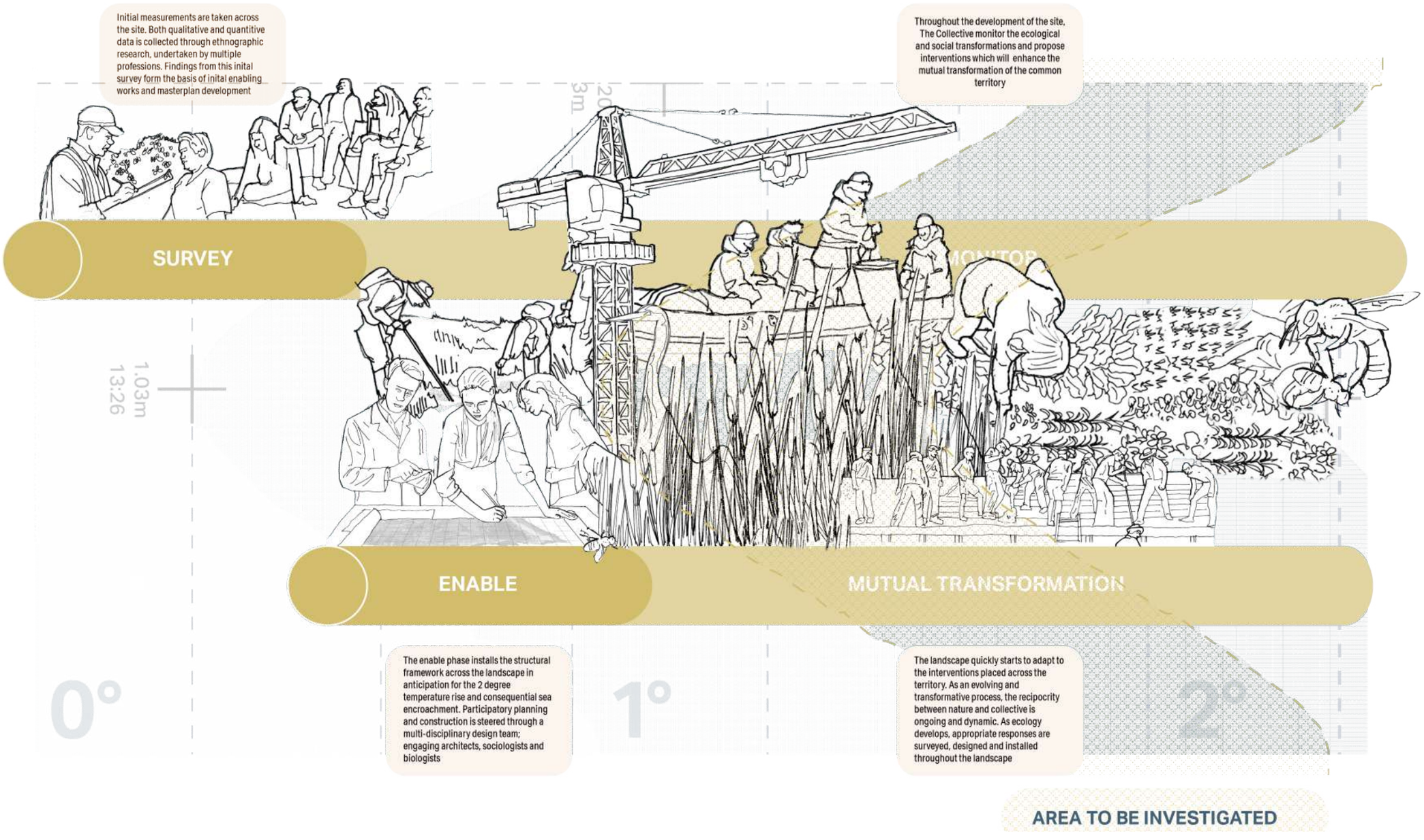
Participatory designing of scheme is a central theme to the commons →

Educational programs promote experiential growth through nature ↘

Developed Programme and Project Stakeholders



Project Timeline



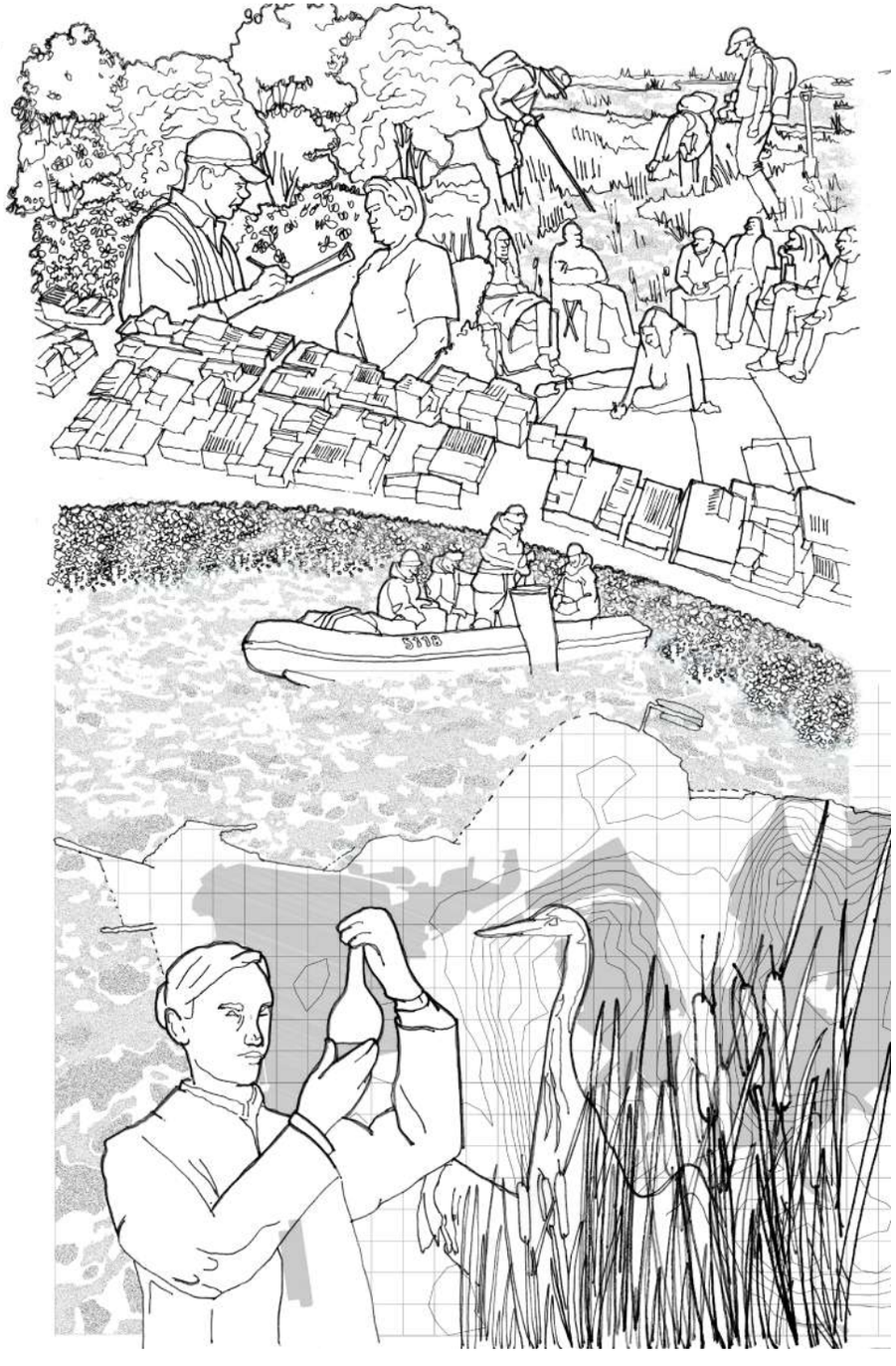
2050 combined thesis report

132 common territory

133 combined thesis report

2050 common territory

SURVEYING THE COMMON TERRITORY



ENABLING THE COMMON TERRITORY

Romanticism 2.0

Romanticism 2.0 refers to the attempt to understand the character of the world through its appearances.

We suggest that physical manifestation of phenomena can shed light on its underlying processes. A beautiful and sustained landscape, reflects the successful symbiosis of humans and nature, demonstrating the mutual transformations of the Common Territory.

Joint Practice

↑
Working on a drawing together as part of our design process

1993

Robyn Davis

1993
I was born in Cape Town, South Africa, moving to a leafy London suburb at the age of 6. As a child, through my regular visits back to Cape Town, I became gradually more aware of the informal settlements and the extravagant villas that made up the urban environment. My observations piqued my interest into the sociology of urban environments.

Family home in Epsom, Surrey

1999
Moved to Epsom, Surrey

Family home in Tokai, South Africa

2012
Attended the University of Manchester to study Politics, Philosophy and Economics.
Studying PPE consolidated my interests in government policy, sociopolitical relationships and political and philosophical theory. These interests have informed my architectural projects throughout university and have formed the backdrop for our initial investigations regarding the Arrival City.

2012

2013
Changed courses to study Architecture.

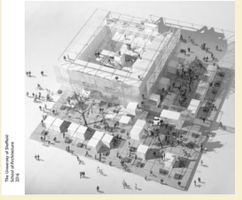
Paddy McElroy

1993
Born in Birmingham

2010
Interest in the macro and micro scale effects of economic theories and policies has stayed with me throughout my architectural education. My projects have offered me an opportunity to study the macro and micro affects of the built environment and to develop solutions that are grounded within a process that considers the socio-political and economic contexts.

2012
Attended Sheffield School of Architecture.
How might urban farming be used as a temporal event to address health concerns in Barnsley?
This project capitalised on the existing masterplan developments of Barnsley. The program acted as a meanwhile space, filling the entirety of the site and slowly contracting and condensing as the original masterplan developed, into a hub of shared learning, seed store and bank for local farmers and event space.

2016
Graduated from the University of Sheffield.



2017

2016
Graduated from the University of Manchester
Stockport Social Architecture
The project addresses how the modern working environment negatively affects our mental health. I likened our role within a capitalist society to that of an ant - we are part of a superorganism, or a cog in a larger machine, contributing to society in our own specific way but never reaping the benefits of seeing something through from start to finish.

2016

2016
Started working at CCEA MOBA, Prague.
Project: In 2012, CCEA identified the area of urban wasteland that surrounded the historically significant Negrelli Viaduct. They proposed to the City of Prague and District Councils that the space should be re-appropriated to one of public use.

2017
Joined Bennetts Associates.
The practice culture at Bennetts Associates has afforded me the unique opportunity to work as a contributing member on the design execution of a number of cultural projects. Enjoying my role within a small team has influenced me in embarking on a joint thesis.

2017
Part 1 Experience BDP.
Large scale projects and working inter disciplinary has encouraged me to think and work collaboratively for the benefit of projects and my own education. My time at BDP has inspired me to join the Collaborative Practice MArch and in turn do a joint thesis project.

2018
Collaborative Practice Project: JIC, Urban Plant Science Institute
What if the city could inspire modifications in food? This plant science institute transports JIC from a field in Norwich to a dense, constricted and urban site in central London. By placing research within the city questions such as food scarcity, transportation processes and education are overlayed with architectural questions like transparency, sustainability and retrofit whereby the GMO process of selecting DNA and putting into a host is investigated architecturally.

2020

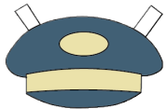
2018
Started on the Collaborative Practice Course
As a CP student, I was able to use practice based experience to inform my work at university. By observing, recording, interviewing and researching I sought to unravel how the ethos and behavioural culture of architectural praxis informs the contingent and evolving role of the architect in today's practice and future. The successful cultural behaviours I observed have been utilised in our professional relationship.

2019
Started a joint thesis project together in the Arrival City Studio

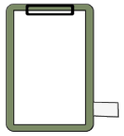
Personal Attributes

Whilst we thought that our personal attributes were similar, we decided to use a team roles personality quiz[1] to confirm if this was the case. The quiz gives you a percentage score of the following traits: Expert, Driver, Executive, Innovator, Analyst, Chairperson, Explorer and Completer. We found that are assumptions were largely correct with Robyn scoring highest in the Driver, Innovator and Explorer categories and Paddy scoring highest in the Explorer, Executive and Innovator categories.

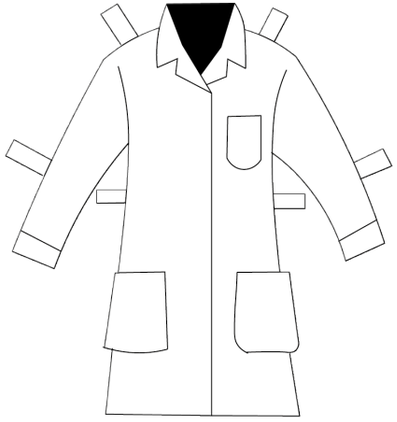
Expert



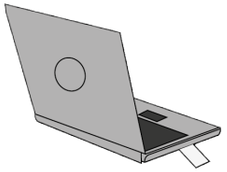
Driver



Executive



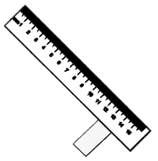
Innovator



Analyst

Chairperson

Explorer

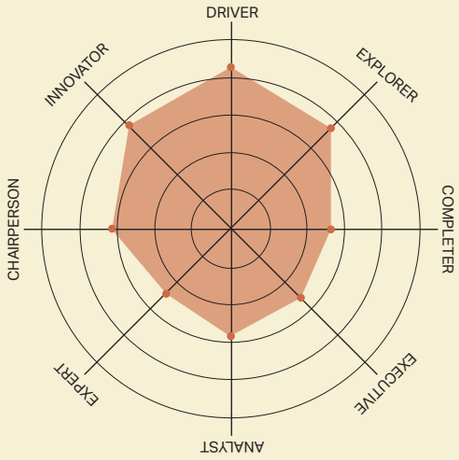


Completer

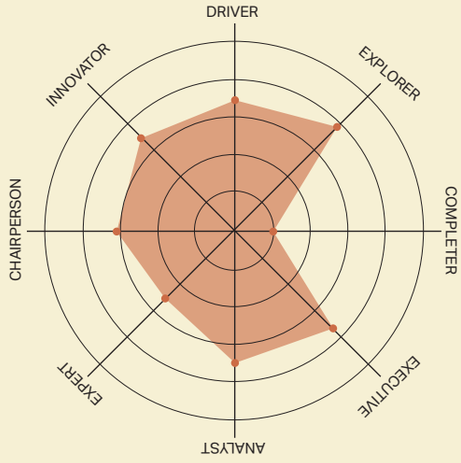
↑
The traits included in the team roles quiz

↗
Mapping and comparing our quiz results.

ROBYN



PADDY



Driver: Ambitious, Impulsive
Innovator: Imaginative, Creative
Explorer: Gregarious, Investigative

Explorer: Gregarious, Investigative
Executive: Organised, Systematic
Innovator: Imaginative, Creative

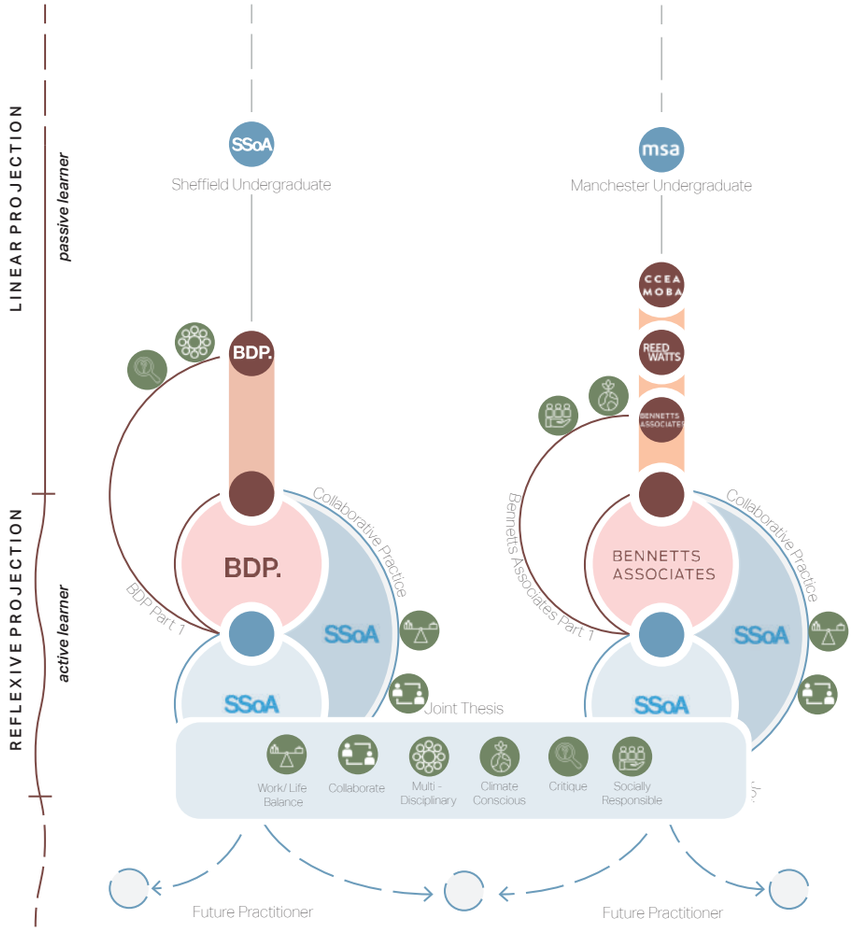
Developing a Practice Ethos

'Ethos' should be used to describe 'the characteristic spirit of a culture, era, or community as manifested in its attitudes and aspirations'[2].

Throughout our experience as both practitioners and university students, we have consciously and unconsciously been developing our personal practice ethos.

Whilst studying on the Collaborative Practice course, we became increasingly reflexive, purposefully selecting the ethos' upheld by our educational and professional environments that resonated with us and the way we'd like to practice. This has culminated in our combined ethos, setting out the tacit social beliefs of our thesis project.

'Based on collaboration and, to some extent, containment of ego in favour of team spirit, we have an increasing conviction about a method which is far less reliant on individualism...'[3]- Rab Bennetts



Creating a positive practice ethos

The development of our practice ethos [4]

Practice Ethos = Culture?

In order for us to incorporate the positive ethos we identified, it was imperative that our working culture reflected these values. We recognised how it is often too easy for an organisation to tout a certain ethos that they do not abide by in practice, especially as working culture is an elusive attribute to pin down as it is anchored in often unspoken behaviours and mindsets. To mitigate this, we established a working charter which aimed to specify certain behaviours we would adhere to.

Working Charter

1. To listen to and respect eachother's views and opinions

2. To take a step back, before responding in times of conflict

3. To always communicate fully

4. To refer to work as 'ours' instead of 'my'

5. To make sure we have at least one day off every week

6. To respect and allow time for eachothers other professional and personal commitments

7. To make time to socialise outside of the professional environment

→
What Practices Say vs. What Practices do [5]

WHAT PRACTICES SAY

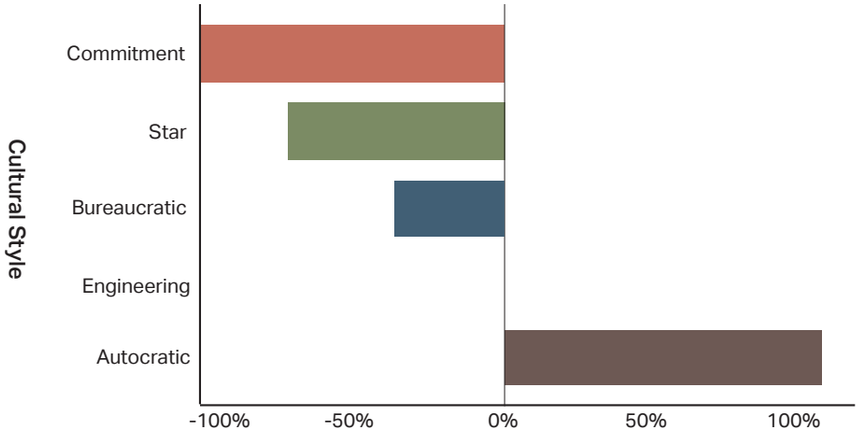
WHAT PRACTICES DO

Commitment Culture

'When properly aligned with personal values, drives, and needs, culture can unleash tremendous amounts of energy toward a shared purpose and foster an organisations capacity to thrive.' [6]

A 2002 Stanford University study sought to identify if certain behavioural cultures could give companies a competitive edge.[6] Researchers Baron and Hannan suggested that of the five cultures they identified, a commitment culture was the most likely to succeed, creating an emotional tie between the organisation and employee.

For us, this meant creating a commitment to a set of core values, reinforced by corresponding behavioural norms. As an example, our ethos of a healthy work/ life balance was reinforced by cooking together, and making time for socialising and exercise. Strategising in this way 'provides clarity and focus on collective action and decision making.'[7]



↑
The likelihood of failure for varying cultural styles

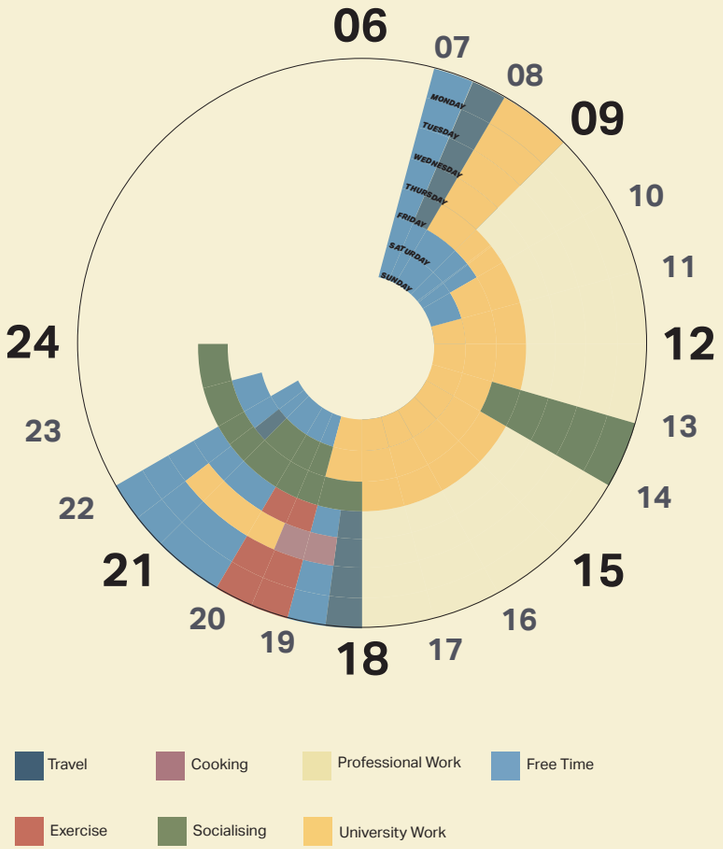
→
A Taxonomy of Commitment Behaviours

1- Cooking Together
2 - Socialising
3 - Copious Pastel de Natas
4 - Communal Snacks
5 - Environmental Activism
6 - Attending Architecture Exhibitions
7 - Making Time for Exercise
8 - Listening to Music Whilst we Work
9 - Sharing Resources
10 - Making Eachother Drinks
11- Eating Vegetarian
12 - Drawing Together

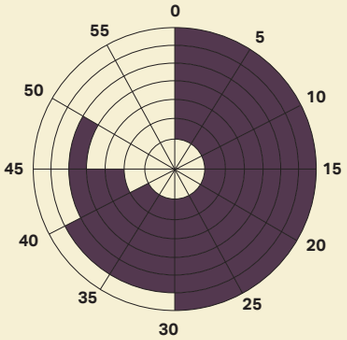
Tools for Setting up a Practice

Whilst studying on the Collaborative Practice route last academic year, we worked in practice 4 days a week and studied 1. This year, we are doing the opposite, working 1 day a week and studying 4. In order to complete university work last year we needed to be more efficient, completing modules in less time than those on the MArch route.

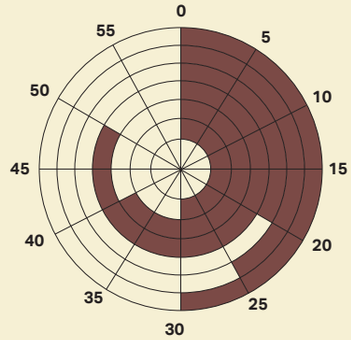
Since being in the university environment full time, we have noticed that our working methods haven't been as efficient. Initially, this concerned us , however, on reflection we have come to realise and appreciate how the university environment allows time and space for testing, critique and original thought. As a result, it has been important for us to note it is a new mode of learning which is positively informing our thesis project.



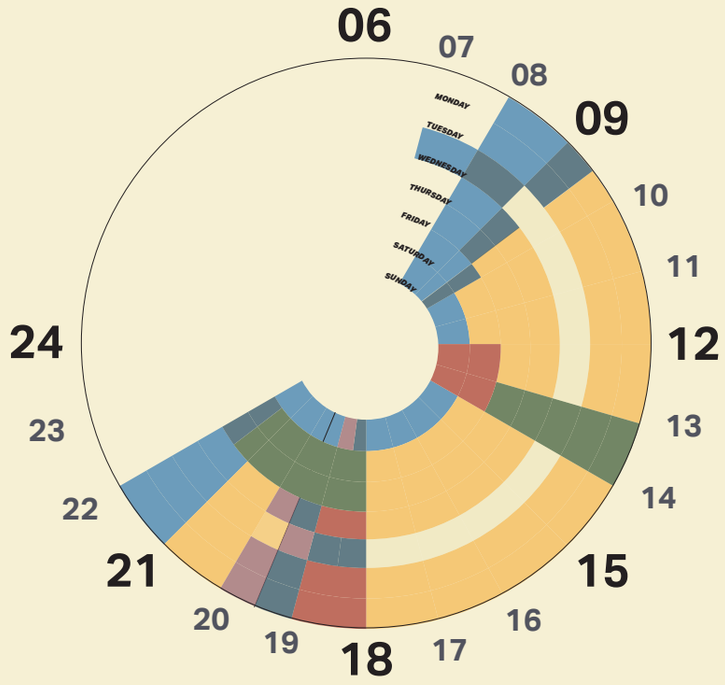
↑
Average week time breakdown when studying on the Collaborative Practice study route (18/19 academic year)



MArch Students



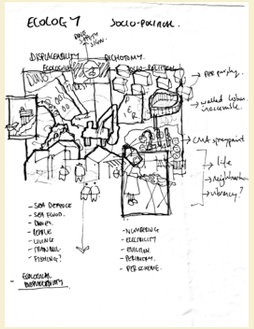
CP Students



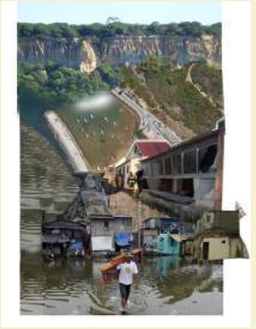
↑
Time taken for students to complete MPL module

↑
Average week time breakdown when joining the traditional MArch study route (19/20 academic year)

Working Processes



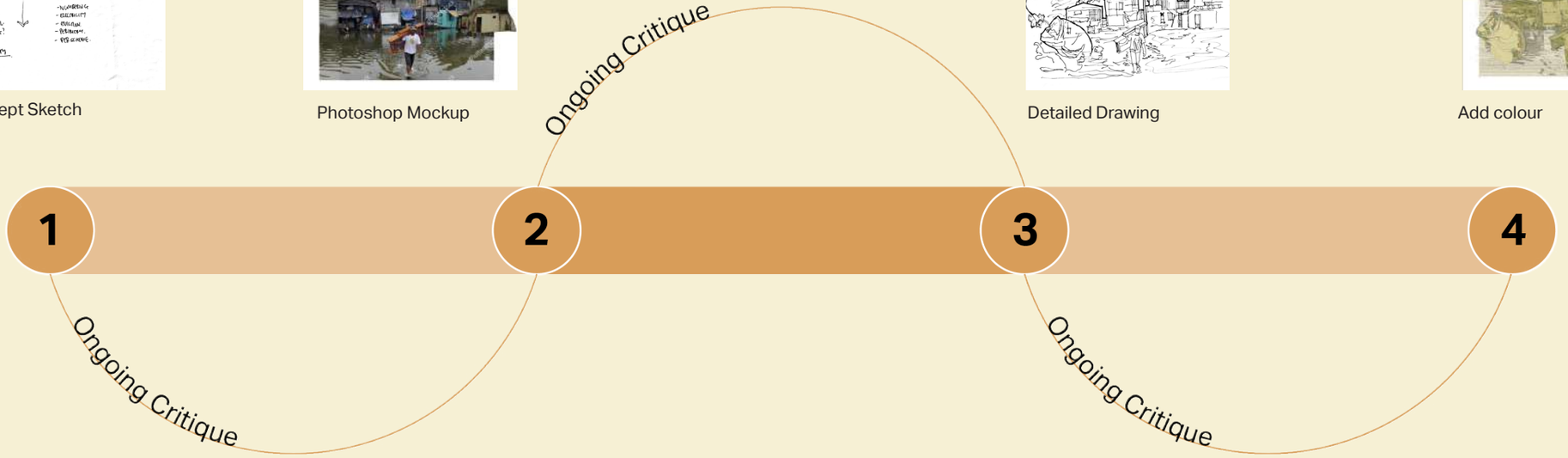
Concept Sketch



Photoshop Mockup

Detailed Drawing

Add colour

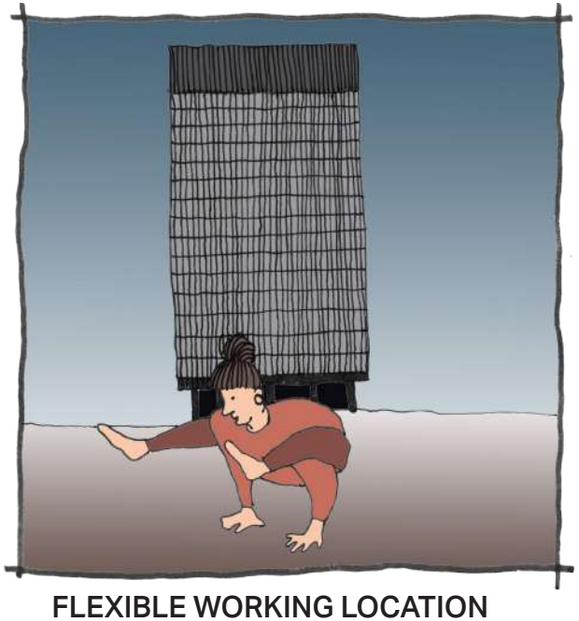


↑
This timeline depicts how we have constructed our drawings throughout the Manifesto. After each stage we would review, critique and modify the drawings accordingly.

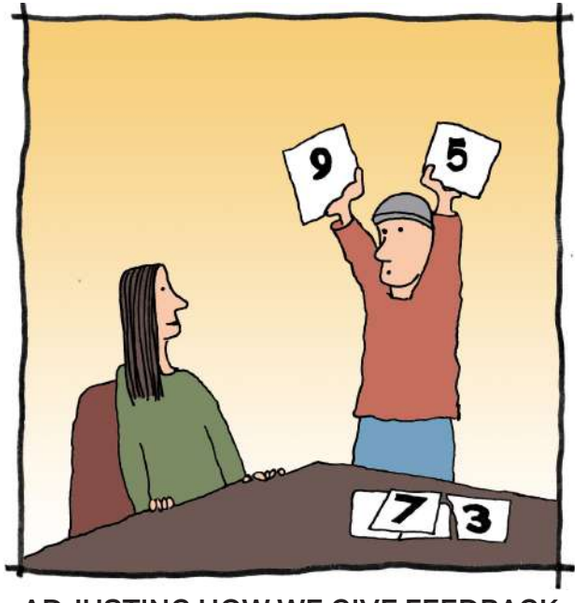
Lessons for Future Practice

As well as coming to appreciate the differences and benefits of our current mode of learning, we have also been reflecting upon how to improve our working relationship, practice ethos and culture for the year ahead.

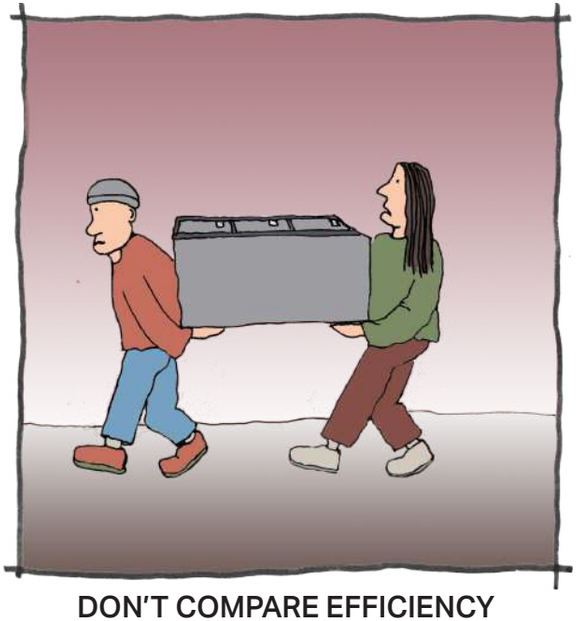
We have noticed that we enjoy working in different locations and often to slightly different timetables. By instilling trust in eachother to contribute equally to our thesis we're able to better fit our university work around our other personal and professional requirements. It's also been suggested when this is done right, 'flexibility results in a happier, healthier, and more productive workforce.'[8] In addition, we've noted the importance of letting eachother know how we'd like to be given feedback on our work. In doing so, we can maintain high quality work, less stress and consistent positive levels of engagement.



FLEXIBLE WORKING LOCATION



ADJUSTING HOW WE GIVE FEEDBACK



DON'T COMPARE EFFICIENCY

Notes

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2050

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part ii

environment + technology

Specific Personal Approach

Development of Personal Approach

The Arrival City studio seeks to address the profound implications of mass migration and urbanisation on the lives and well-being of migrants and the global geopolitical landscape. This condition is widely predicted to be exacerbated by a further 200 million climate migrants by 2050.[1]

Our environmental and technological approach has emerged through our understanding and interpretation of this mass migration and global climate crisis. As a consequence, our learning has been shaped by global sustainability agendas, the Arrival City Studio and our personal experiences, including the student strike for climate change.

UN Sustainable Development Goals

Arrival City Studio Approach

The Right to the City	Climate Action	Urban Inequality	Mass Environmental Migration	Deep Retrofit
Individual liberty to access urban resources and ability to alter the city. This is largely dependant on upon the ability to exercise collective power	An active approach to mitigating climate change impact in areas of comfort and energy performance, construction and water management.	Challenging societal power structures that marginalise and exclude certain groups from participating fully in urban economies and accessing services and resources.	How can cities prepare for an influx of climate migrants in the forthcoming years, integrating them fully into a cities' societal, economic and political structures?	Capitalise on embodied carbon present in existing buildings by using a systems thinking approach to evaluating interactions between isolated components.

↑ Global Climate Agendas

↑ Arrival City Studio Approach

→ Personal Interests

Personal Interests

Resilient, not Reactionary Approach

Designing for the ability of an architectural system to maintain its normal patterns of use after being subjected to damage caused by an ecological disturbance.

Yanweizhou-Park, China

Lo - TEK Design

Lo - TEK explores the intersection with design and radical indigenism, reframing the modern world as life in symbiosis with nature, and generating climate resilient infrastructures.

Knowledge, Practice, Belief

Rewilding Urban Sites

Restablishing natural processes where they have been removed due to human activity, creating increased biodiversity and increasing carbon capture.

Lost Effra Garden, Lambeth

Principles of Co- production and Commoning

Alternative methods of sustaining communities, devolving power from the state in order to give communities ownership and autonomy.

Commons Water Irrigation, Peruvian Andes

Creative Re- use

Designing for to include the innovative re-use of waste material and by products of material production.

Tiles Produced from Consumer Plastic Waste

Participatory Design Processes

An approach to design that actively involves stakeholders in a field laboratory context, creating opportunities for experimental learning, knowledge transfer and the formation of interdisciplinary networks.

Floating University, Berlin

The Common Territory Approach

We situate the focus of our project in 2050, assuming a 2°C global temperature increase[1] and resulting 4.7meter sea level rise.[2] This sea level rise has erased borders of land ownership, and blurs the boundary between land and water. In response, we propose a collective effort to reorganise space created by these new boundaries, making a series of considered and researched interventions that promote symbiotic human and ecological processes.

Common Territory thus has an evident environmental focus, placing priority on the use of low - tech technologies that repair the unhealthy disconnect between humans and nature. This environmental approach is currently under-emphasised in the emerging era of the high tech smart city; one in which has heavy reliance on technology and data collection. As an alternative, Common Territory looks to reinstate the indigenous resilience of the landscape which has been gradually erased through urban development and human activity.

The following depicts four questions that create an initial point of inquiry for our project. The tactics we will employ to do so use five specific precepts, interrogating them using Systems Thinking - a method which perceives phenomena as interconnected and dynamic, occurring at scales ranging from building to regional.

→
Informed Common Territory approach

Radical Indigenism	Self Governance & Co - Production	Circular Material/ Resource Systems	Retrofitting
How can we reinstate the indigenous resilience of the Common Territory by restoring and protecting natural processes?	How can self governance and co-production provide communities with increased stability in the wake of climatic uncertainties?	How can building usage, construction and processes be adapted for circular material and resource life cycles?	How can existing buildings be adapted to suit the requirements of a new programme and to be resilient to climate change? For example, increased air temperature and flooding.
  *Landscape Rewilding Programme, Finland* *Snowchange Cooperative, Rewilding Europe and the European Investment Bank*	  *Recyclab, Paris* *R- Urban* *Co - production with local communities to form spaces that provoke shifts in power relationships in the built environment.*	  *The Reclaimed Circular Pavilion, Paris* *Encore Heureux Architects* *The Pavilion follows the circular economy principles, whereby the building materials are taken from construction sites, erroneous orders or unused stocks.*	  *Whitney Musuem, New York* *WTM Engineers International* *Flood resistance retrofit to new mitigation level on existing Renzo Piano building.*

Project Specific Precepts of Sustainable Design

Design for community resilience and adaptability in the face of unpredictable change

As a result of longstanding, unsustainable overconsumption supported by greenhouse gasses, human and natural systems are under threat from the risk of unpredictable changes. The IPCC claims that 'extreme weather events have become more frequent over the past 36 years, with a significant uptick in floods and other hydrological events compared even with five years ago.'[1] Whilst sea level rise and global surface temperature rise are fairly certain, the interaction of these changes on inter related and co dependent systems is uncertain. Therefore, designing resilience through program and building systems offers the opportunity to alleviate the stresses that climate change will place upon systems of energy, ecology and governance.

We propose a holistic approach to community resilience which allows cross-scalar systems to adapt and capitalise on change. The utilised systems intend to collective buy-in through 'continuous learning and experimentation; high levels of participation; and polycentric governance.'[2]

For the Common Territory to work most effectively, resilience will be considered across a number of nested scales; the building, the neighbourhood and the region. By considering the interaction and scale of systems the proposal intends to build distance/remove dependency on typical systems of energy, production and waste management, all of which may become under stress through climate change.

↗

Osthang Project Summer School, raumlabor - The immediateness of forming spaces through informal and temporary structures provides a platform for community discussion and embodies the resilience of groups to appropriate and manifest structures adapted to own needs through methods of simple construction.

←

Building Local Resilience - Resilience requires a holistic approach to design and requires consideration of nested systems. Common Territory will look at systems ranging from the building scale up to societal tactics of building resilience such as circular systems.

Building
High performing, air-tight and energy efficient spaces will provide resilience against unpredictable weather conditions. By relying on passive methods of heating and ventilation independence from mechanical systems and resilience against power outages is achieved.

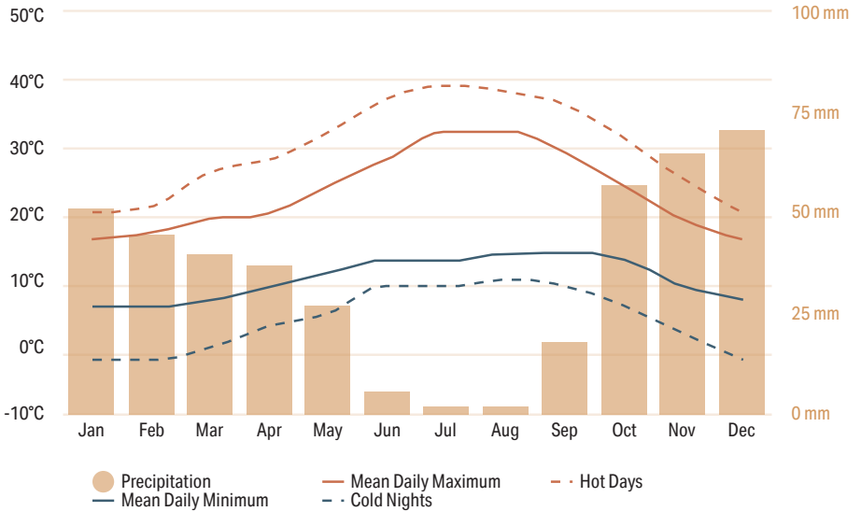
Neighbourhood
Co-production will build resilience at a neighbourhood scale. By shifting the provision of services to the collective, local groups have the ability to respond rapidly and appropriately to their locality. Commons based resilience will utilise ground source heat pumps ,circular systems of production and waste management to remove reliance on state or third party provision.

Region
Capitalising on the tidal energy of the Tagus estuary will provide electricity and remove dependency on external fuel suppliers. To avoid lags in intermittency, ground source heat pumps will be used in key buildings to provide a consistent renewable energy supply.

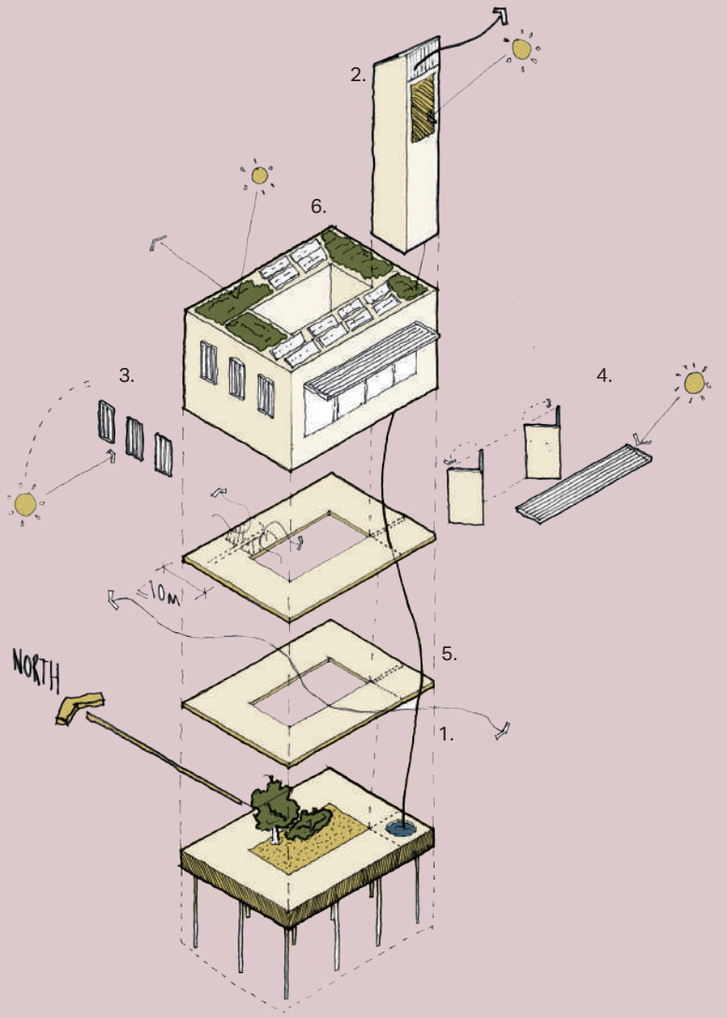
Design with climate/microclimate to minimise energy use/overheating

The coast of Almada, Lisbon, sits within Köppen-Geiger's climate classification of Csa[3], a Mediterranean climate whereby the city experiences warm summers and mild winters. Due to the site's adjacency to the Atlantic, the region experiences large variances in temperature throughout the day and night, with a range of 15 - 19°C during the summer. Strong winds from the Atlantic may also exacerbate these differentials. Lisbon's proximity to the Atlantic also means that the region experiences intra-annual variability in precipitation as cooler months are characterised as rainy seasons with large amounts of rainfall.

A number of tactics will be used to maintain comfort within our built proposals throughout the day. Resilience and adaptability will be achieved through passive building systems to reduce dependency on mechanical cooling in summer and heating during the evening.[4]



Bar graph depicting average annual precipitation (mm), and mean daily temperature compared to particularly hot and cold nights (°C)



Designing for a Mediterranean Climate - Exploded Axonometric suggesting passive strategies.

Designing for a Mediterranean Climate

1. Use of courtyards/solariums to bring sun into the building during the winter, and to promote ventilation during the summer. Courtyards can be utilised as climate modifiers through the use of ground surface greenery or water features to cool central space. (cross ventilation)

2. Passive ventilation strategies remove dependency on mechanical systems and improve resilience. Use of wind towers with the opening facing prevailing wind can be interlinked with systems such as pools or glazed windows to promote the vertical movement of air through the building.

3. Small openings on the east and west to avoid summer sun in the morning and afternoon. Alternatively vertical shading devices could be used.

4. Horizontal shading devices used on south façades, to prevent the overheating of spaces due to intense solar radiation throughout the year. The use of shading devices will reduce the necessity to mechanically cool the spaces, and minimise the stresses on passive systems.

5. The use of thermal mass can help to moderate temperature differences between day and night. In order to minimise the dependency on high carbon materials such as concrete, the project will utilise phase changing materials such as paraffin wax tiles.

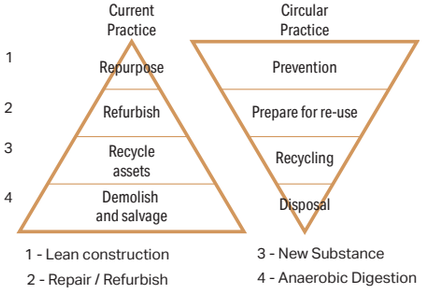
6. High performance building envelopes will be employed to retain energy within the building. Consideration will be made to the roof as a composite part of the envelope which contributes to large amounts of solar gain. Vegetation can reduce heating from solar radiation , enough to reduce temperatures by up to 20°C.

Evaluate environmental impact of specifications including minimising embodied energy, minimising pollution at source and minimising waste in production, recycling and landfill

Globally, buildings and construction account for 36% of global final energy use[5]. Therefore minimising the embodied carbon and building techniques can aid in the reduction of the industry's impact on global climate change. Pelsmaker states that manufacturing, processing and extraction of materials from factory to site accounts for "10% of a buildings carbon footprint"[6] therefore we recognise the necessity to adopt principles of retrofit, re-use and recycle , utilising circular systems in order to match the EU's Waste Framework directive to recycle 70% construction waste[7].

The proposal considers in detail the materials and sourcing of materials for this project and takes into account Pelsmaker's recommendation that primary materials should be sourced "within a 100km radius of the site."[8] The site comprises of a number of existing buildings set for demolition, therefore a process of disassembly, sorting and processing will be considered. In doing so the pre-existing embodied carbon on the site is used most effectively rather than being removed to landfill.

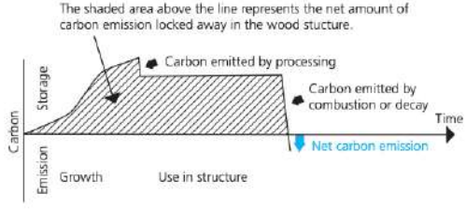
Our project will look at using a waste hierarchy in order to reduce landfill and embodied carbon within the project. Designing lean reduces material in manufacture and a process of recycling and recovery will be used across the site to relinquish as much available and usable building material as possible.



↑
Comparing current and circular practice

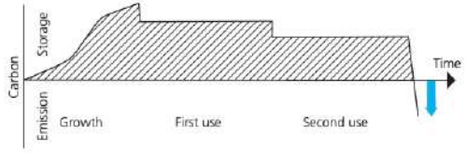
↗
Bathing Culture, raumlabor (Precedent)- this project capitalises on the traditional models of product to trash, typical of a linear system of production and consumption. By intervening in waste streams the world is seen as a "world of flows and transfigurations and out interventions in it as a moment of diversion of these flows."[9]

→
Life Cycle Analysis, Oneclick - Throughout the design process assessment systems such as One-Click LCA will be used in conjunction with BIM in order to assess and quantify the total embodied energy of materials. This will allow us as designers to make more informed decisions.

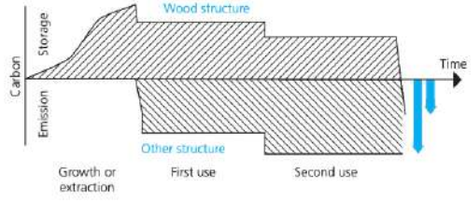


Carbon cycle for wood structures
The net amount of carbon locked away is reduced by process energy and finally by decay or burning in a biomass energy system at the end of its life cycle.

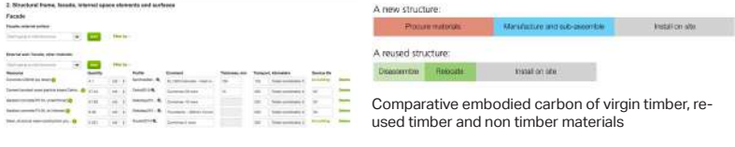
This ignores transport and reprocessing energy at the end of life.



Carbon cycle for reused wood structures
Note how the second use of a wood structure increases the time that carbon is safely locked away in the wood.



Carbon cycle for other materials
Other materials do not absorb any carbon. And in most cases, the amount of energy needed for the extraction, processing and construction processes far exceeds what is needed for an equivalent wood structure. That is why other materials end their life cycle with a greater emission of carbon.



Comparative embodied carbon of virgin timber, re-used timber and non timber materials

Design for lean construction, repair, re-use, flexibility & disassembly

Pelsmaker states that “the most significant contributor to construction waste is material and product packaging, followed by timber, plastic products and concrete”[10]. Therefore the project will look to maximise efficiency and minimise waste through the use of lean construction methods in order to ““strive for efficient use of resources through the reduction of waste.”[11] Inspired by the cradle to cradle methodology we question the role of architecture to be versatile and reusable in order to provide flexibility and reduce reliance on landfill.

The project looks to promote the phenomenological transfer of knowledge between nature, user and technology. Through the use of technology the Lo-TEK approach will “hybridise and scale”[12] traditional technologies “to exponentially shrink the ecological footprint of humankind and mitigate the forecast collapse.”[13] Therefore the project promotes the mutual transformation between nature and society. For this reason the construction of the project is not discrete, instead is conceived as an additive and incremental process whereby the use of flexibility and disassembly are key to ensure a process of continuous morphology between building, nature and program.

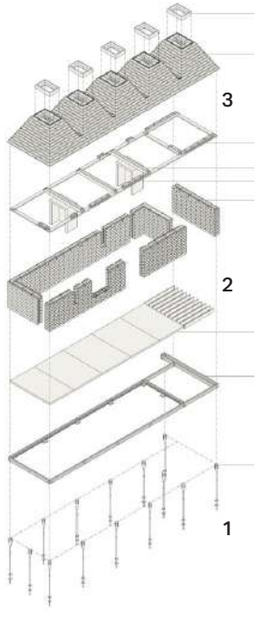
In order to design for disassembly a number of tactics will be investigated. The project will combine a hierarchy of disassembly, which considers “service life and the expected time till obsolescence”[14], with parallel disassembly to facilitate the removal, repair and replacement of individual parts in a system without compromising the whole.

By adopting a holistic, biological and technological, approach to the cradle to cradle system a material ecology can be established which minimises the need to rely on new materials whilst also caring for and sustaining ecosystems.

↗ Cork House designed for disassembly and re-use

→ Proposing a Cradle to Cradle systems which utilises ecology and technology in symbiosis

Cork House, MPH Architects

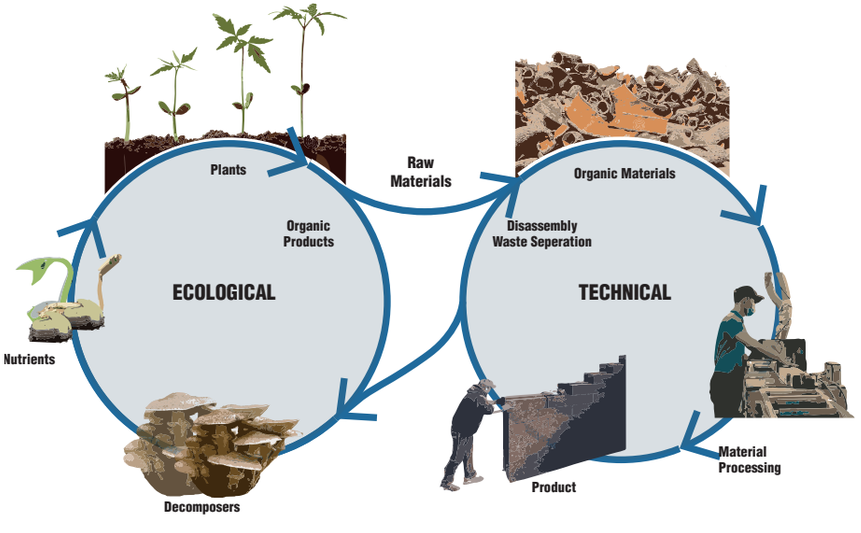


1
Steel screw pile foundations can be used to return the site to it’s original condition. Leaving no trace and being able to be re-used, unlike traditional concrete pile foundations

2
Cork blocks are the main structural element within the building, transferring vertical loads to the slab and piles.

3
Cork blocks are held together through friction connections and tied together through a bolter timber header.

4
Cork, once used can be granulated and added to soil as a fertiliser and is completely bio-degradable.



Promoting Biodiversity on the site, within limits

Rapid urbanisation of our planet puts pressure on surrounding landscapes and threatens existing ecosystems. Common Territory looks to not only consider the role of biodiversity but to acknowledge the potential to learn and foster ways of co-existence between nature and society, which turns away from the anthropocenic methodology of human control over nature. Instead the project looks towards natural succession and rewilding as a process of reinstating ecosystems to promote ecosystems and natural methods of coastal protection.

Brownfield sites are important to consider before development due to risk of pollutants or contaminants, especially from agro-industrial industries. Therefore the use of ecosystems will be considered as a process of bioremediation - "cleansing certain pollutants from using plants such as willows and reeds"[15]. It is important to develop a framework for development which incorporates ecosystems at a range of scales in order to "integrate climate change concerns into spatial planning policies and, therefore, may contribute to increasing territorial resilience and reducing uncertainty regarding brownfield regeneration."[16]

1. Cowperplatz

2. The Piazza

4. Seasonal Colours

5. Superstructures

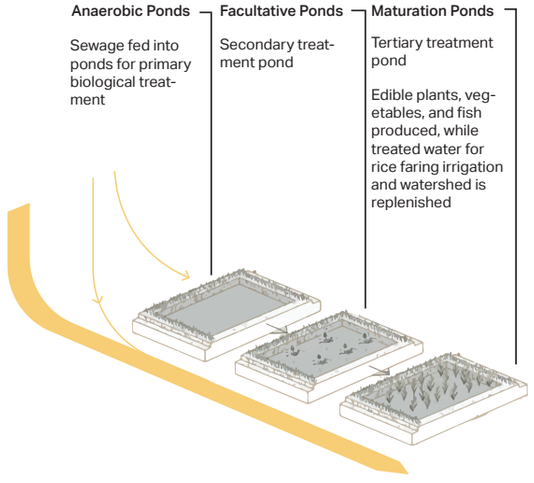
7. Areas for Wilding

8. Decaying Process

↑ Landscape Park Duisburg -Nord by Peter Latz, shows the reclamation of a post industrial landscape through methods of natural succession.

↗ Process of sequential filtering through natural systems

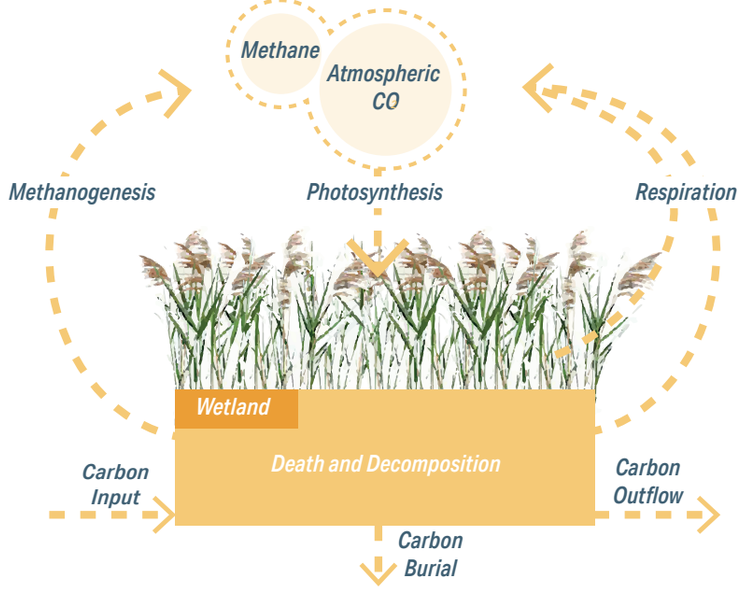
→ Schematic overview of carbon capture within wetlands



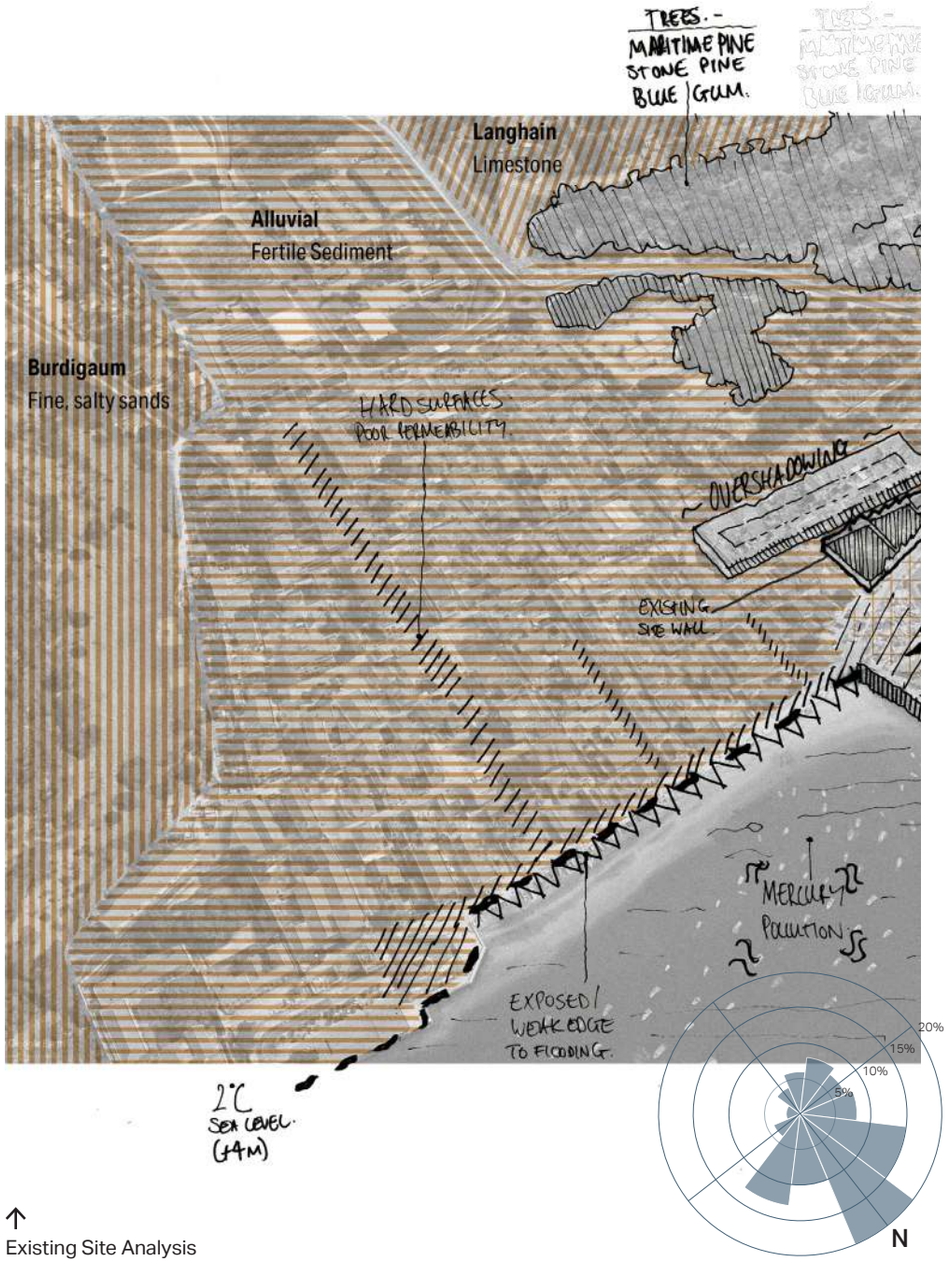
Building
The use of planting can reduce "surface temperatures by 10-20 degrees"[17] and can be used as part of seasonally appropriate solar shading strategies. Promoting planting and green infrastructure in the building can provide up to "80% reduction in solar gain"[18], using deciduous planting in the summer.

Neighbourhood
Integrating natural systems such as reeds and ponds; aerobic, facultative and maturation can be used to clean sewage water before releasing back to the wider water system. This could be coupled with grey water systems to retrieve water to be reused back in the building for heating.

Region
Sequestering carbon is an active way of combating rising levels of CO2 and greenhouse gasses. At a regional scale the project will investigate reinstating the natural system of carbon capture such as wetlands and marshlands which "have been net sinks of atmospheric CO2 since the Last Glacial Maximum."[19]

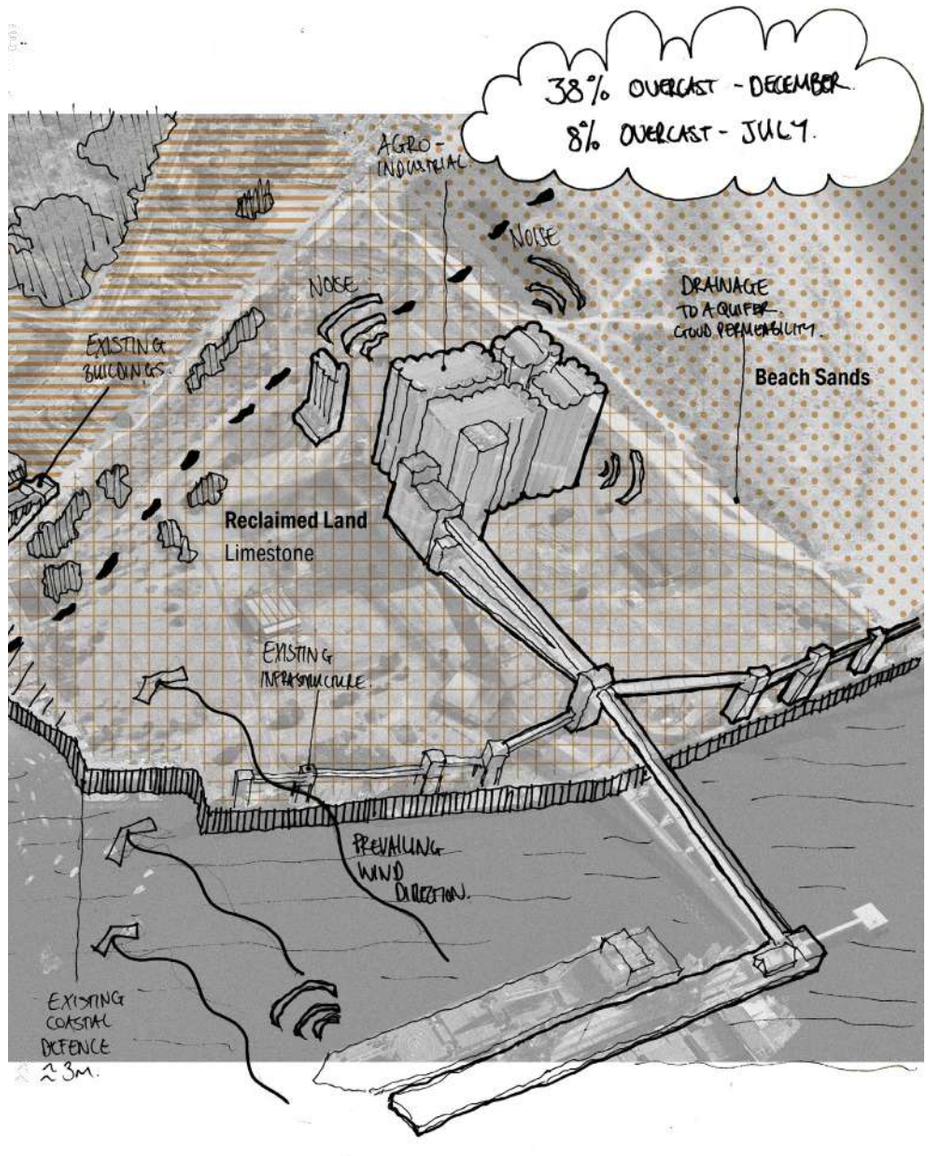


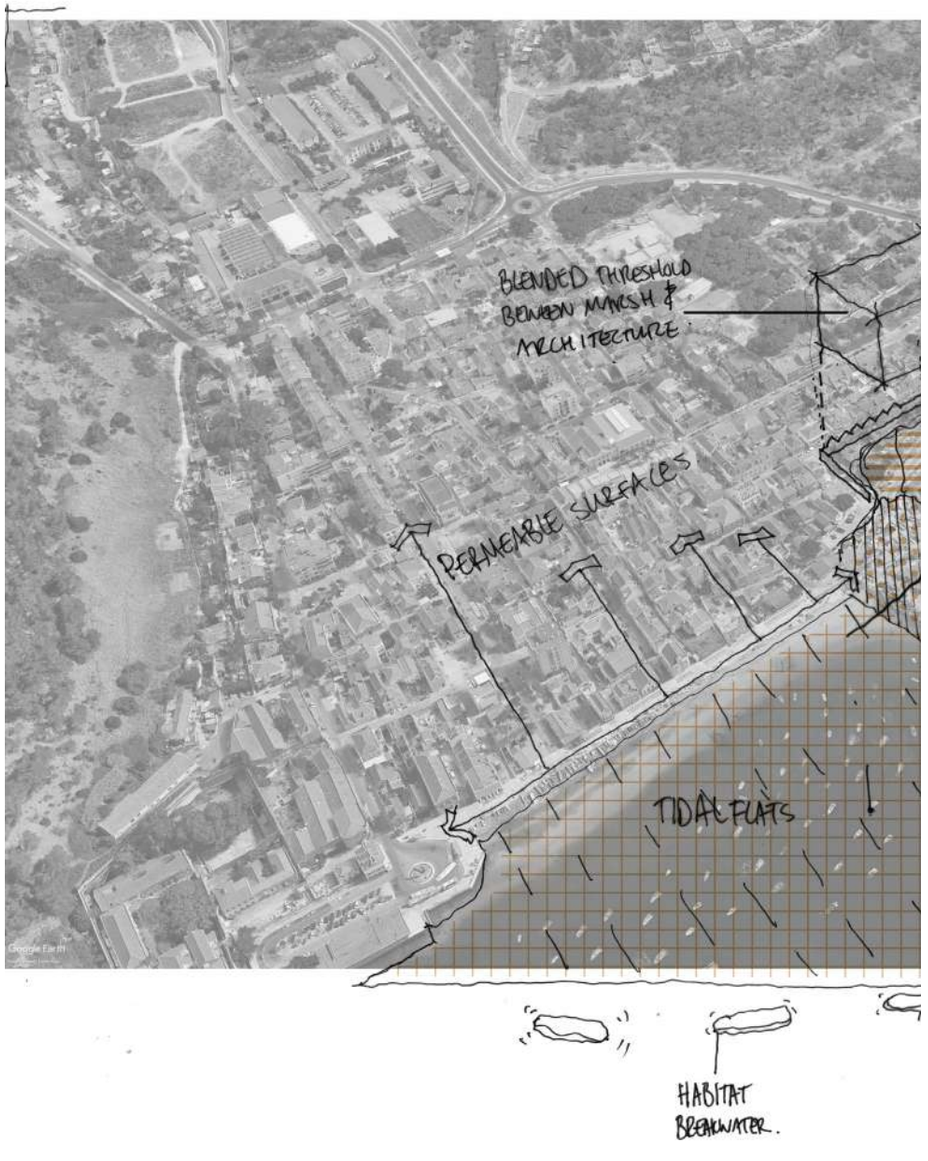
Site Specific Technology Issues: Existing and Proposed

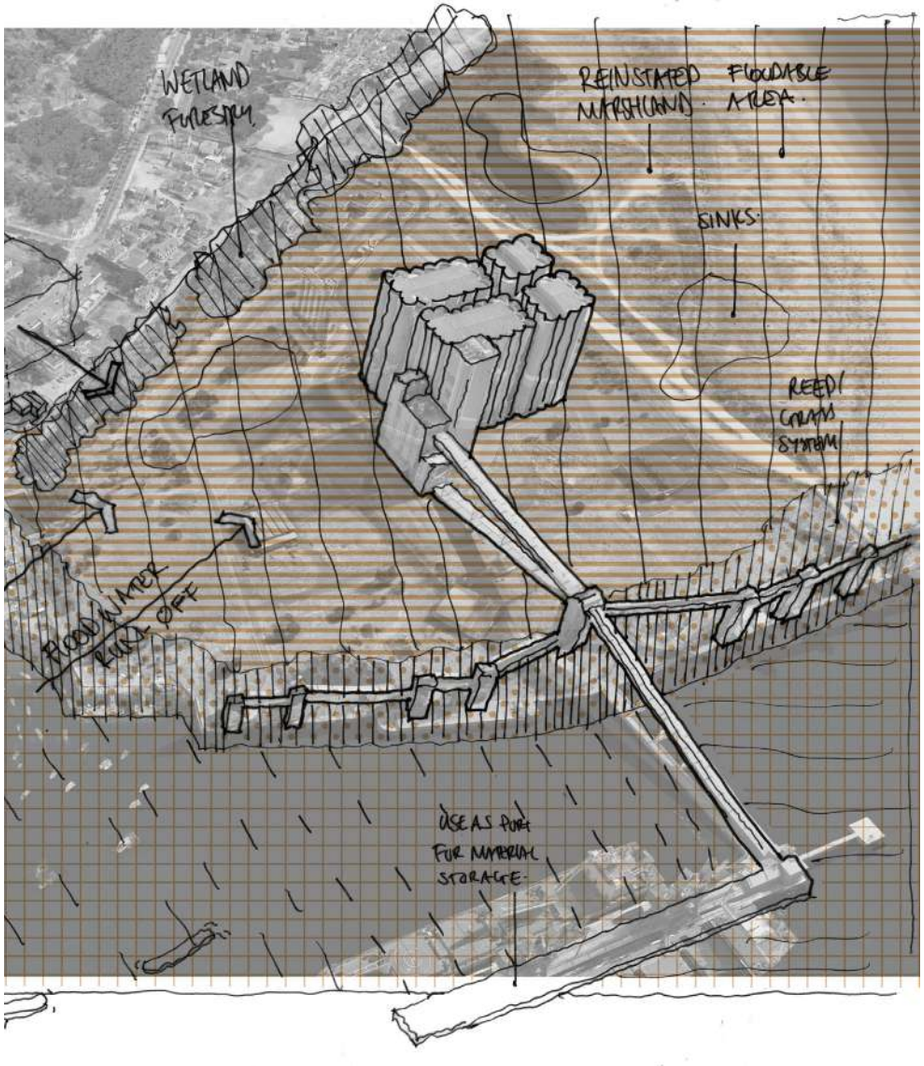


↑
Existing Site Analysis

→
Wind Frequency Rose





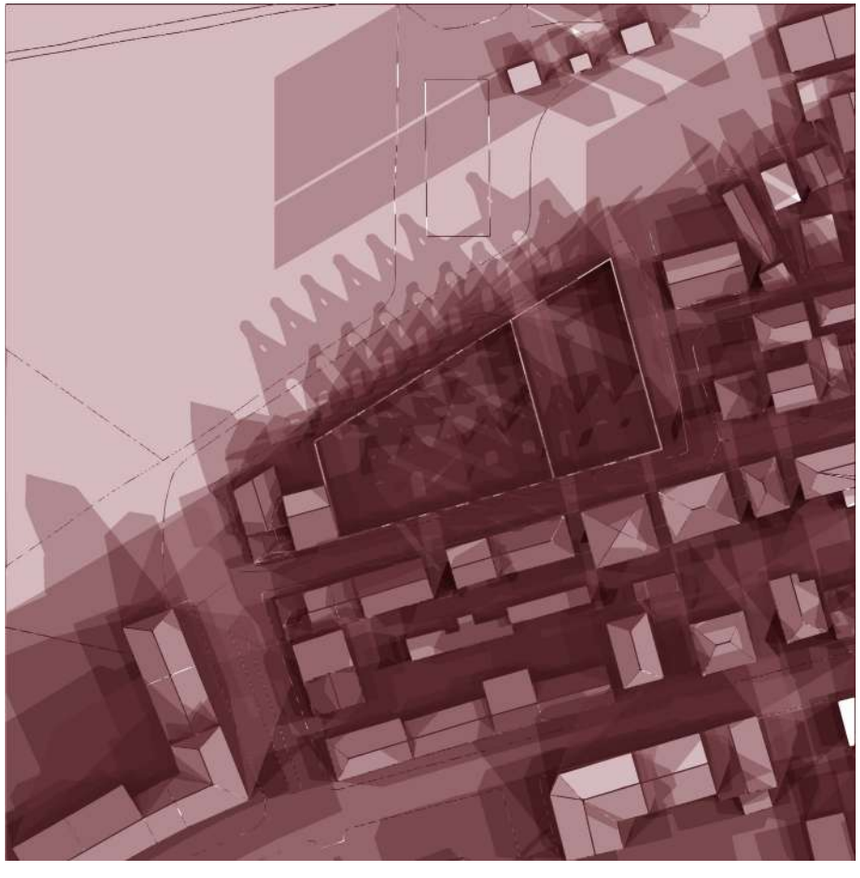


↑
Proposed Site Analysis

Site Strategy Overview

The site sits at the threshold between Trafaria's urban fringe and an open (now) industrial space which is intended to be reinstated as marshland. The site is overshadowed throughout the day by surrounding 3-4 storey buildings, and by a 13m perimeter wall. Design for the site will have to consider the volumetric impact on surrounding buildings but due to the open space to the North of the site, overshadowing of neighbouring buildings will only be an issue in the evenings.

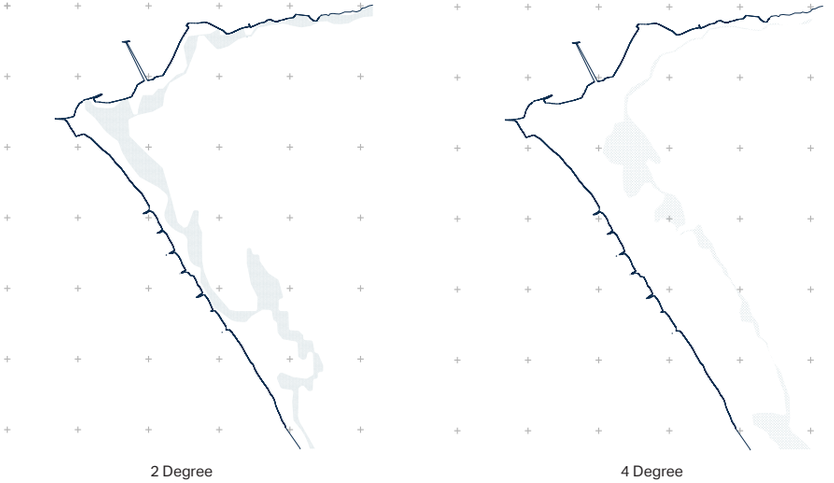
Due to the orientation of the site, the building will incur high levels of solar radiation throughout the year and so a number of passive design tactics will be utilised in order to reduce the reliance on mechanical cooling, such as; solar shading, green walls and thermal mass.



Summer Solstice - 12:00 Equinox - 12:00 Winter Solstice - 12:00

Low-lying areas of the Portuguese coastline such as estuaries, coastal lagoons, and wetlands are considered areas of high vulnerability to the impacts of accelerated sea level rise.

Viewing this high level of vulnerability to sea level rise in association with urban settlements defines areas with high potential for coastal hazard. 'For Portugal, these areas are the most occupied and exploited coastal lagoons (Ria Formosa and Aveiro) and the most populated large estuaries (Tagus and Sado)'.[1]



2 Degree
+4.7m

4 Degree
+8.9m

↑
Solar Analysis - Key Dates

↑
Projected sea level rise

←
Solar Shading Site Overlay

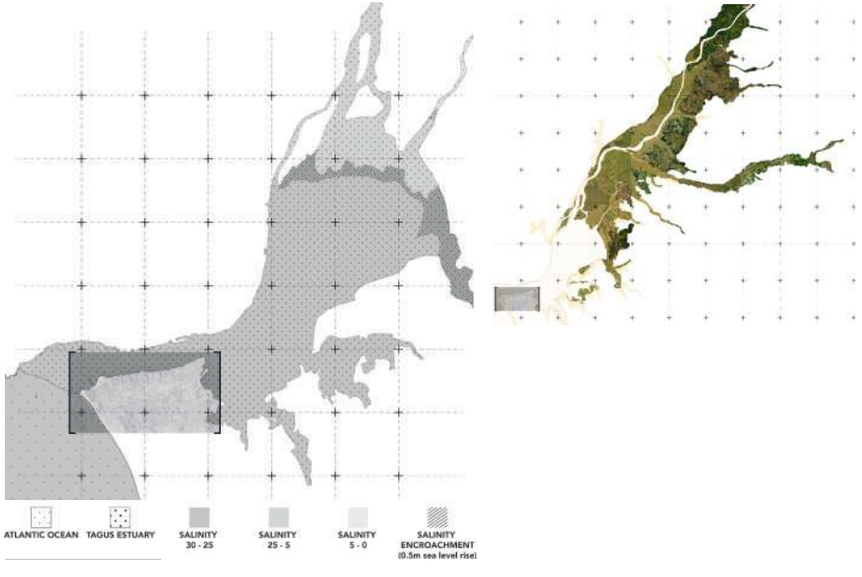
Physical Site Characteristics

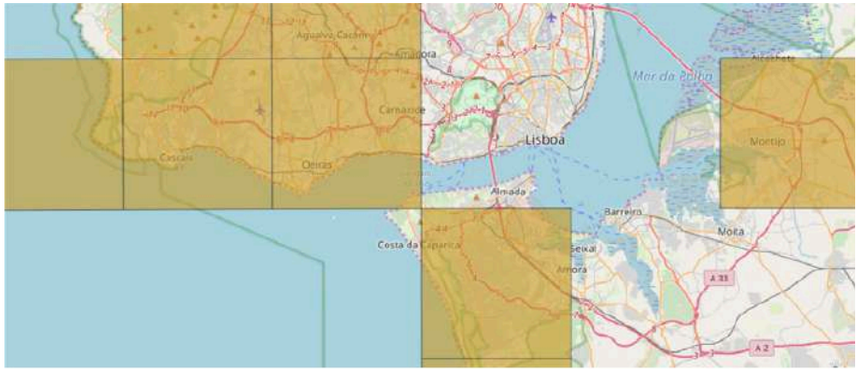
Tagus Estuary

In the Tagus Estuary, droughts are becoming increasingly common, reducing freshwater availability and affecting public water supply, agriculture and freshwater ecosystems. This is compounded by salinity encroachment caused by periods of low river discharge and sea level rise. Research undertaken by the Portuguese Research Institute for Civil Engineering suggests that holding freshwater in basins could help manage these risks. This is a key consideration for the management of flood water on our site in order to sustain and generate new freshwater ecosystems. This is particularly as the desalination of water is extremely energy intensive, with desalination plants 'consuming an average of 10-13 kilowatt hours (kwh) per every thousand gallons.'[2]

A study commissioned by the European Commision and carried out by the International Union for the Conservation of Nature has found that 'more than half of all European amphibians (59%) and 42 % of reptiles are in decline.'[3] This is of particular concern in Southern Europe, an area particularly rich in these species. The study finds that climate change, pollution and urban sprawl have placed their freshwater habitats under severe stress, leading to the vulnerability of these species.

The regional context of our site demonstrates significant areas where threatened reptile species occur as well as endangered bird species. As a result, design responses need to mitigate the effects of human habitation. This can include the provision of nesting spaces within buildings, the creation of brown and green roofs and the creation of plant diversity.[4]





↖ Agricultural Areas affected by salinity encroachment

↑ Critically Endangered and Endangered Bird Species

← Salinity encroachment within the Tagus Estuary

↑ Critically Endangered, Endangered, and Vulnerable Reptiles

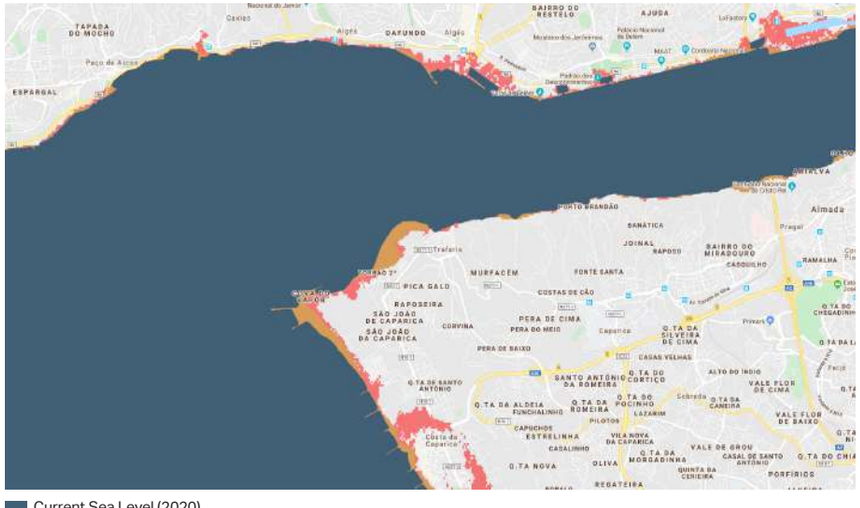
Physical Site Characteristics

Flood Risk

The current ecological condition of the Common Territory is precarious. Beaches have been rapidly eroding, forming a new coastline that is encroaching on the settlements of Segunda Torrao and Cova do Vapor. Furthermore, historic flooding is projected to become more frequent in the following years due to sea level rise. As a result, the Common Territory needs to be resilient to flood risk now and in the future, following predictions of annual flooding.

Due to the site's adjacency to the Tagus estuary, the project will investigate the option of utilising tidal energy as an alternative and renewable energy supply for the masterplan. The recommended tidal difference for an economically viable tidal energy plant is 7 meters.

Although the Tagus estuary has a tidal difference short of the recommended minimum of 7m, for an economically viable tidal energy plant, the Tagus' features of a narrowing mouth creates a naturally occuring Venturi effect which increases the speed of the water and consequently the energy potential of the tidal forces. According to Simões (2019) this effect is enough for a tidal farm to power electricity for 2400 homes; removing the potential of 29 thousand tonnes of CO2 from the atmosphere.[5]



Current Sea Level (2020)

Projected Sea (2050)

Land at Risk to Annual Flooding (2050)

Projected sea level rise effect on the coast of Almada, including site

Sea level projections and land at risk from annual flooding

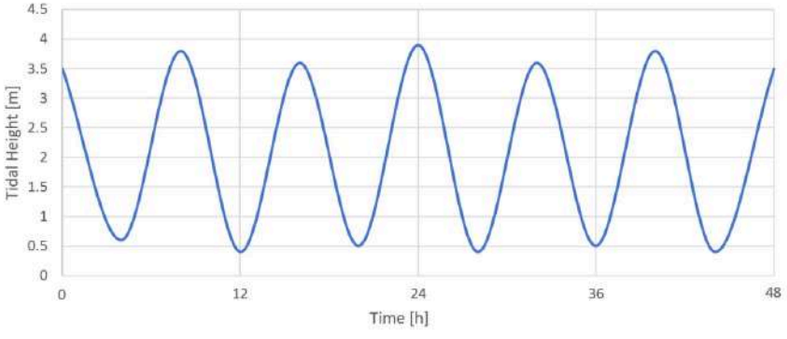
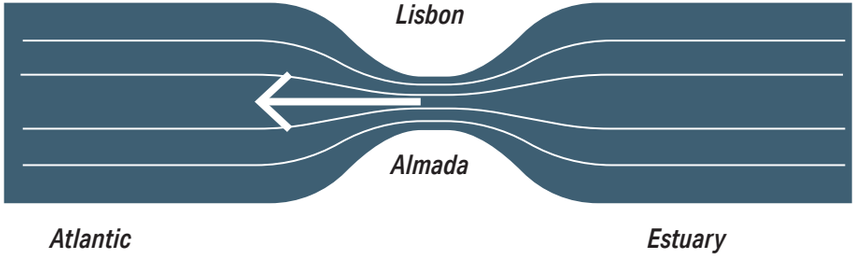


Figure 23 - Tidal profile on the days with the highest tidal amplitude



Tidal profile on the days with the highest tidal amplitude

Simplified diagram of naturally occurring Venturi effect

Sourcing Local Materials

Existing

'It is estimated that around 10% of a building's total carbon footprint comes from the industrial manufacturing of materials and their transportation from extraction, to factory and finally to site.'[6]

As a result, it is important consideration for our design proposals to prioritise the re-use and recycling of existing materials present within the site. Where this isn't possible, it is suggested that construction projects 'aim to source all virgin, primary or new materials within 100km radius.'[7]

A significant Cork Oak Forest is located approximately 30km from our site. 'The life span for stripping the bark from a cork oak is between 150 and 200 years, the equivalent of 13 and 18 extractions.'[8] Each extraction can generate up to 25kg of cork. Furthermore, in the cork products manufacturing process, 100% of the material resource is used and the production residues are re-used for cork agglomerates.

By setting our project in 2050 and accepting the sea level rise, we can speculate on the building stock that can be de-constructed and reclaimed for re-use as part of our design proposal.

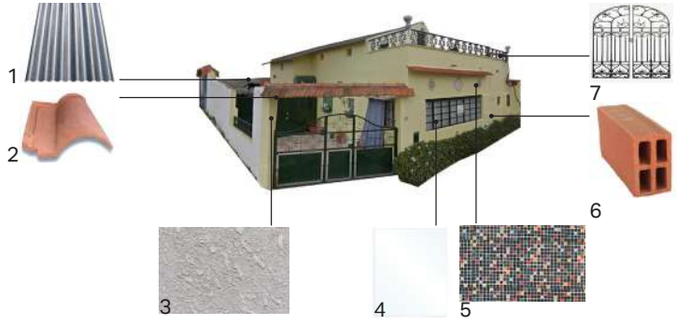
The informal and unplanned localities which constitute the building stock affected by sea level rise, use hollow clay brick construction bound with a portland cement, water and sand mixture. The interior and external walls are then plastered and painted, and often adorned with colourful tiles characteristic of Portugal.

↑
Location of cork forests, 30km from shown site

↗
Material breakdown of existing building stock

→
Granby House - Material breakdown + re-use

→
Studio Bark - Cork Studio London



1 Corrugated Steel Sheet
The recycling and reuse of steel results in approximately 6 $kgCO_2$ per meter run of reduction in embodied carbon. [9]

2 Clay Roof Tiles
Reusing the clay roof tiles from the deconstructed building stock, results in an embodied carbon reduction of 8.5 $kgCO_2$ per meter.[9]

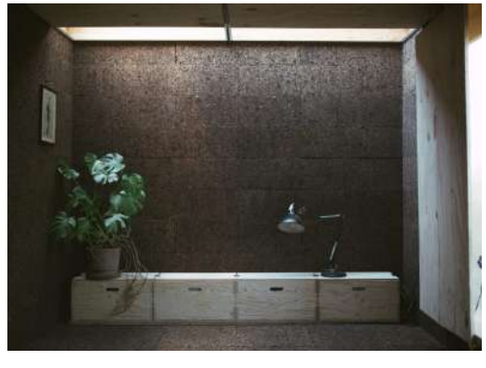
3 Cement Plaster Finish
Inability to be recycled and difficult to remove from bricks.

4 Glass Window Panes
Reuse on site is unlikely due to specific site requirements, however, glass can be dismantled and recycled in glass furnaces.

5 Ceramic Tiles
Potential to creatively re-use on site as aggregate as will likely break will removing from cement

6 Hollow Clay Bricks
Potential to creatively re-use on site as aggregate as will likely break will removing from cement

7 Steel Fencing and Gates
The recycling and reuse of steel results in approximately 6 $kgCO_2$ per meter run of reduction in embodied carbon.[9]



Sourcing Local Materials

Proposed

In promoting ecological succession along the coastline, previously existing ecosystems such as coastal wetlands will be introduced. These wetlands could provide opportunities to source material. As an example, the Uros people of Peru, use reeds to create floating islands in their wetland home that support construction of their homes. These mimicking floating islands achieve buoyancy by amplifying processes of decomposition. Similarly, the Ma'dan, Iraq create floating islands in the Mesopotamian Marshes, using living reeds as the foundation for the islands. Dried reeds and dredged mud is then layered on top of the living reed fence until the island is solid.

The Common Territory can utilise these indigenous methods of construction to inform how we can utilise naturally occurring materials such as reeds that characterise the new wetland environments. This could be as floating wetland islands, thatched construction elements such as roofs, or insulation material. One of the main benefits of using reeds in construction, is that the heat conductivity (λ) of reed is low 0.055 W/mK and as a result normally requires no extra heat insulation in comparison to a clay- shingled roof.[10]

↑ Using local reeds in thatched roof construction, Casa Areia, Aires Mateus Architects

↗ Island Construction, Uros, Peru

↗ Existing Reed Wetland, Algarve, Portugal

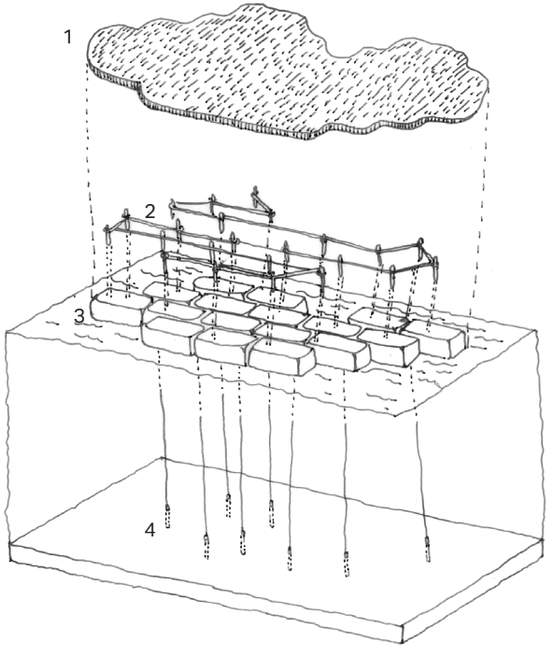
→ Four Stages of Construction of an island or *dibin,* Ma'dan, Iraq

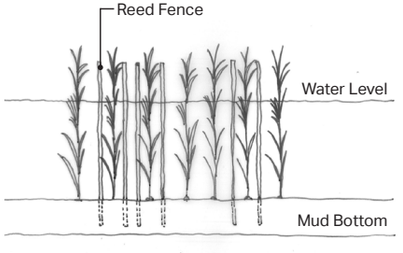
1 Layering of reed matting

2 Wooden stakes, roped together

3 Mud and Peat Root Brick Modules

4 Bricks anchored to lake bed using rope, stakes and rocks.





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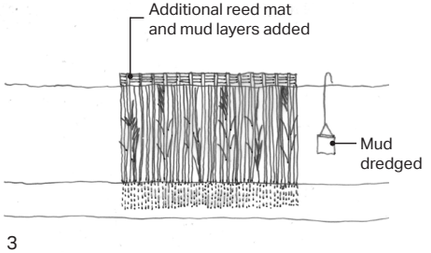

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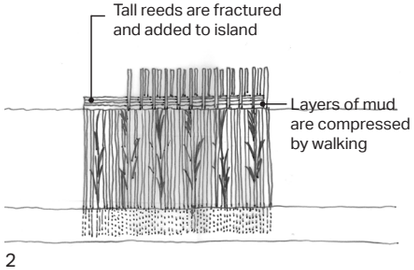

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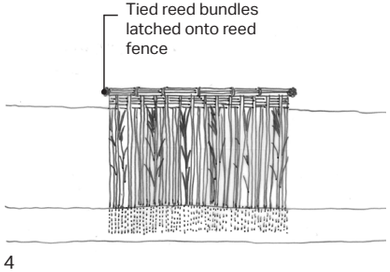


4

Project Energy Strategy + Climate Change Adaptation

Utilising Ecological Infrastructure

The approach of the Common Territory utilises ecological processes to create resilience of the coastal landscape to future climatic changes. Where appropriate this involves the reintroducing of natural processes that have been removed due to human activity. Such an approach takes precedent from 'The Shallows' an ecological infrastructure project along the Hudson River, New York which 'overlays coastal resiliency infrastructure with habitat enhancement techniques and environmental stewardship models, deploying a range of layered strategies that link in-water protective forms to onshore interventions.'[1]

Common Territory speculates on new coastal boundaries created by a 4.7meter sea level rise and how these new frontiers can create opportunity for a landscape incorporating hard and soft surfaces, blurred edges of land and water an the symbiosis of human- made and natural habitat.

Absorptive Edges

The absorptive edge expands the interface between land and water, creating more surface area for friction plantings and wave dissipation, mimicking the function of the beach.

Wetlands

Coastal wetlands can absorb surge waters and reduce wave impacts. They can also provide opportunities for natural water filtration.

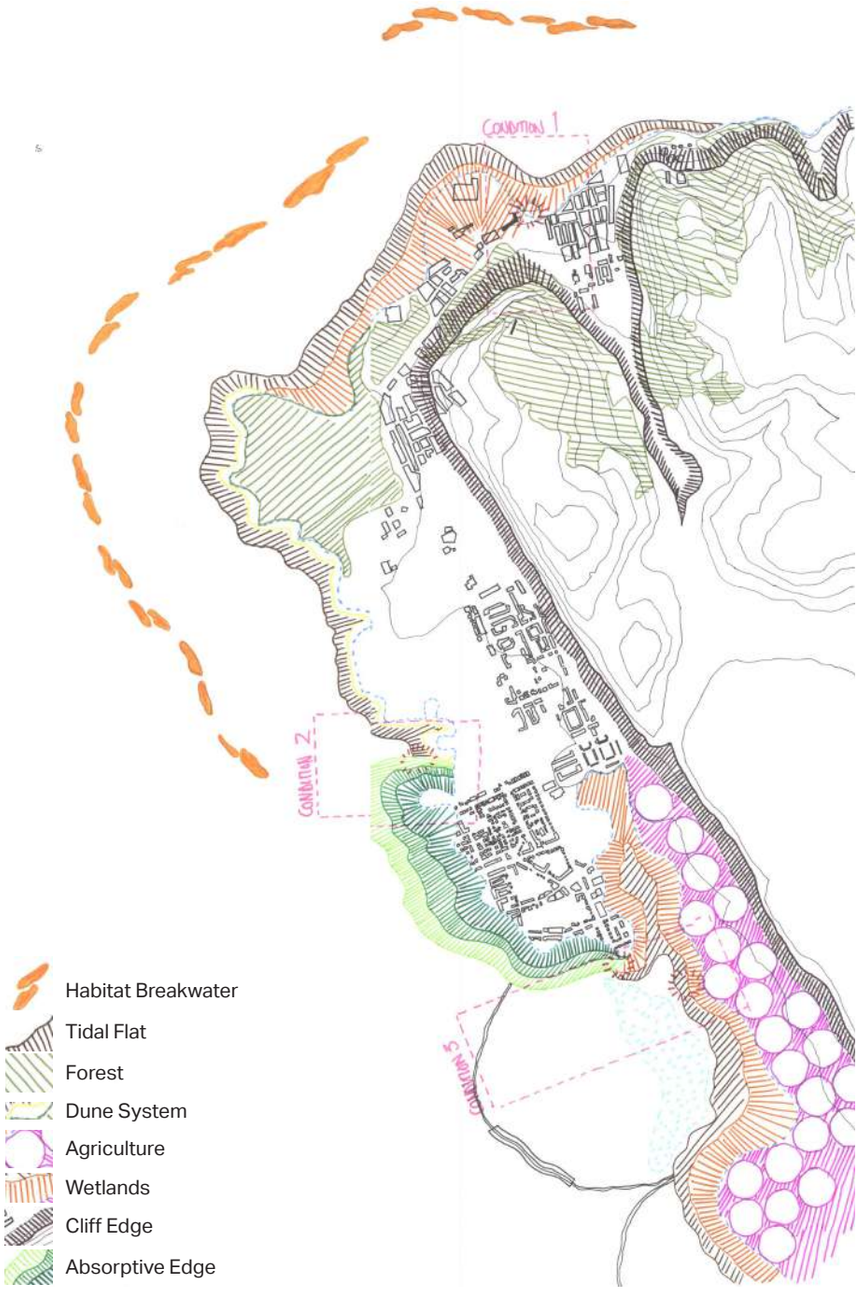
Tidal Flats

Tidal flats can dissipate wave energy and slow water, making coastal environments more suitable for habitation.

Habitat Breakwaters

Habitat breakwaters absorb wave energy and catalyse growth of protective ecosystems.

↑ New ecological infrastructure typologies



↗ Sketch Common Territory masterplan showing ecological infrastructure locations

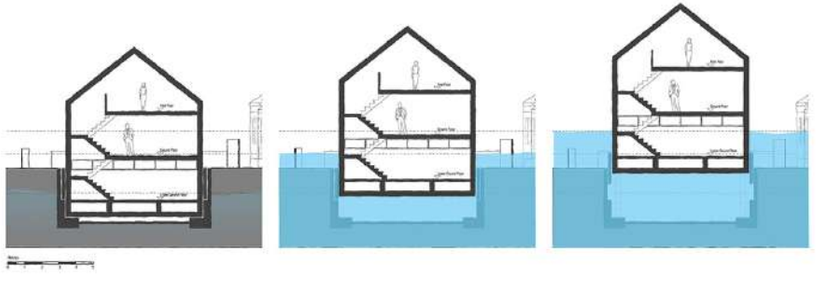
Flood Resilience in Buildings

In proposing a blurred boundary between land and water, Common Territory proposed architectural interventions in areas of the landscape that could be of medium flood probability (less than 1 in 200 annual probability) or high flood probability (greater than 1 in 200 annual probability)[2] of sea flooding. As a result, various flood mitigation strategies should be considered when designing building typologies that can work with water.

This refers to the 'wet- proofing' of buildings, designed with future flooding in mind, This can be achieved through tactics such as raising the ground floor level above predicted flood levels, using water-resistant floor and wall materials and situating M&E systems and appliances at high level.

A precedent that we have found particularly interesting is Amphibious House by BACA Architects. The can - float basement is displaced by flood water, raising and lowering the house as water level changes.

This could be particularly relevant for the Common Territory, allowing structures to raise and lower with the ebb and flow of the tide as well as with increasing sea levels. Using historic coastlines as an indication of this rapid erosion, demonstrates the necessity of these kinds of design considerations.

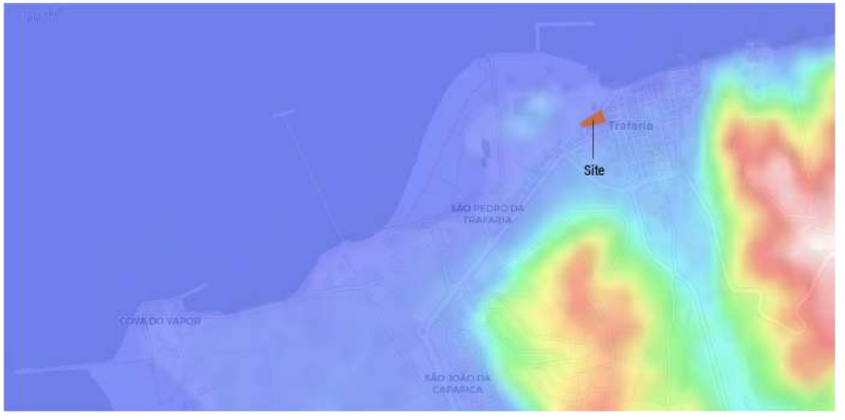


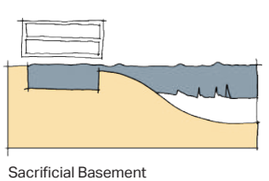
↑
Rapidly eroding site coastline

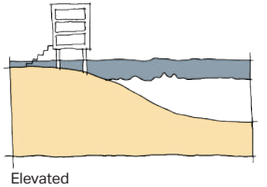
↑
Amphibious House - BACA Architects

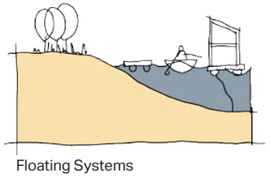
↗
Site flood zones

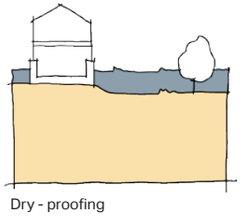
→
Flood resilient building strategies

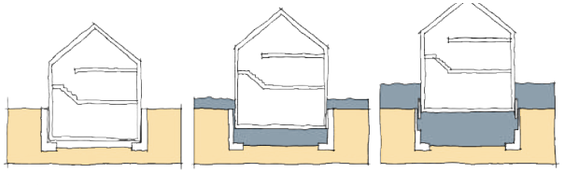



Sacrificial Basement


Elevated


Floating Systems

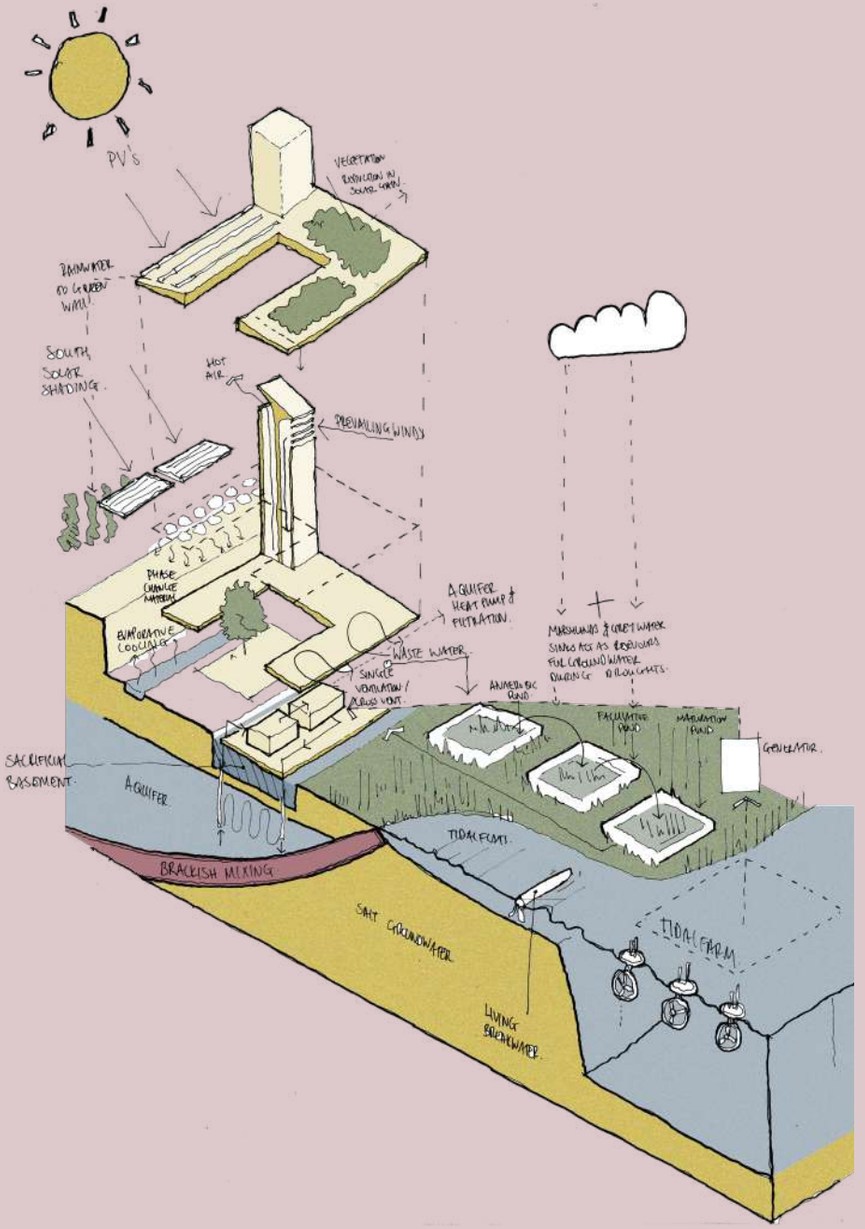

Dry - proofing


Amphibious

Project Energy Strategy

The project looks to capitalise on research and technological intentions outlined in the project precepts. Integrating nature throughout the building and maximising the potential of natural systems in providing resilience against climate change and independence from external systems.

Engaging passive systems of maintaining comfort is a philosophy that will run throughout all spatial development.



Notes

Specific Personal Approach

[1] IPCC, Climate Change 2014: Synthesis Report, Summary for Policymakers (Geneva, 2014), p.11

[2] 'Sea Level Rise', Before the Flood <https://www.beforetheflood.com/explore/the-crisis/sea-level-rise/> [accessed 23 January 2020].

Project Specific Precepts of Sustainable Design

[1] European Academies' Science Advisory Council, Leopoldina - Nationale Akademie der Wissenschaften. 'New data confirm increased frequency of extreme weather events: European national science academies urge further action on climate change adaptation.' *ScienceDaily,* 21 March 2018. <www.sciencedaily.com/releases/2018/03/180321130859.htm>.

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[7] European Comission. Directive 2008/98/EC on waste (Waste Framework Directive) - Environment - European Commission, (2008) [online] Available at: https://ec.europa.eu/environment/waste/framework/ [Accessed 7 Feb. 2020].

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[11] Michael Horman, Lean and Green: Integrating Sustainability and Lean Construction. 16th CIB World Building Congress, 01 May 2004 - 07 May 2004. (2004)

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[13] Julia Watson, Lo–TEK: Design by Radical Indigenism (Cologne: Taschen, 2019). p. 18

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Site Specific Technology Issues: Existing and Proposed

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part iii

management, practice, law

DISCLAIMER

To date the majority of Portuguese project finance transactions do not use concession- based construction contracts that follow any standard form, such as those issued by the International Federation of Consulting Engineers (FIDIC), the Joint Contracts Tribunal or the Institution of Civil Engineers. As a result, construction contracts have varied greatly depending on the industry sector and the parties involved. Therefore, it would be imperative to seek legal advice from a lawyer with experience practicing in Portugal to advise on the appropriate construction contract.

Nevertheless, this report seeks to develop an understanding of the complexities of project delivery in a UK context, satisfying ARB and RIBA Part 2 accreditation criteria. We will thus explore the responsibility of the architect, including their influence on project cost, inclusivity and procurement on design proposals; as well as their relationship with the client, end user and contractor within the framework of a UK situated design project.

↑

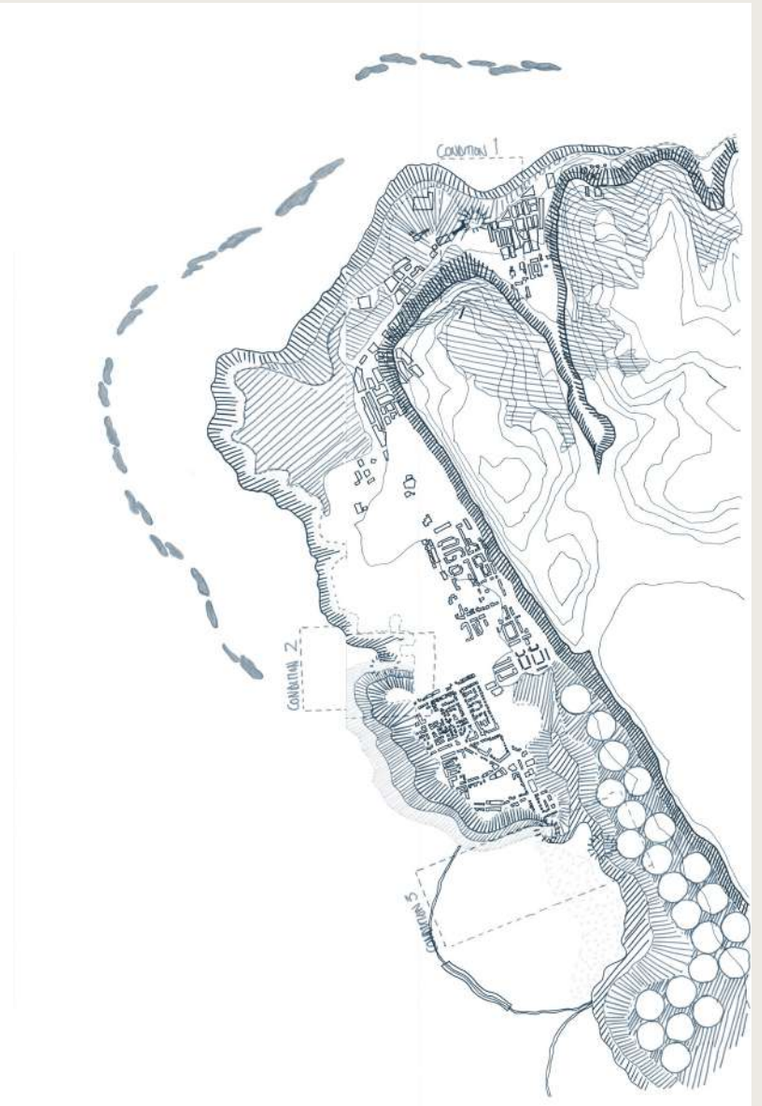
Paddy and Robyn - This Management and Practice report combines our individual interests and working ethos to explore the complexities associated with project delivery. In doing so, we intend to demonstrate our shared understanding of the influences of cost (capital and lifecycle), health and safety, inlcusivity and procurement on our design proposals. We will also reflect upon working culture in the construction industry and the role of the architect.

Introduction

Our thesis project, Common Territory, addresses new spatial opportunities created by sea level rise.

Rejecting strategies of ecological control, architectural interventions are situated within the landscape in a way which enables shared sustenance for those who reside there, challenging their current condition of displaceabilty, and maintaining the area as an Arrival City.

This report reflects upon the management and practice issues related to, and within the framework of this project, including the effects of level changes in waterscapes on jurisdictional boundaries, challenging traditional appointment routes and strategic approaches to large scale ecological infrastructure projects.



↑
Sketch proposal of the new ecological infrastructure of the Common Territory

Project Timeline

The Common Territory design project proposes a new way of approaching the spatial opportunities created by sea level rise. Rejecting strategies of control, architectural interventions are situated within the landscape in a way which enables shared sustenance but not concepts of marketability or profitability. The project intends that these new modes of shared sustenance will challenge the current condition of displaceability, which characterises the Arrival City.

This project ethos is further characterised by the Collective's approach to procuring projects, choosing to actively challenge spatial conditions and proposals when the opportunity presents itself. This highlights an alternate processes of appointing an architect, as demonstrated by the contrast between Advocacy and Common Territory Projects.

↑

Precedent - In 2012, CCEA MOBA identified the urban wasteland that surrounded the historically significant Negrelli Viaduct. They proposed to the City of Prague and District Councils that the car parks that existed on either side of the viaduct should be removed, and the space re-appropriated to one of public use. Their proposal was accepted and the project is currently on site.

ADVOCACY PROJECT

STEERING GROUP

A group of like-minded individuals hold an initial meeting, concerned regarding the condition of ecology and housing in the territory

COMMUNITY MEETING

Initial thoughts are shared with the community to gain support and share ideas. New volunteers join the programme

COMMUNITY BENEFIT SOCIETY

Community Benefit Society is formed to give residents a common voice through a democratically elected board

EDA LIABILITY
EDA DESIGN
EDA BUILD

APPROACH EDA

The CBS need a space to hold meetings, events and to be based in the community. They approach a local architect who has worked extensively in the area already. The architect specialises in design and construction.

TEMPORARY WORKS
Design and Build Contract

EUROPEAN ARTS COUNCIL FUND

Temporary events space is designed and constructed on site. A temporary use permit is granted by the council to activate empty space through a meanwhile project. See Appendix

MARKETING

The CBS through a variety of methods work with architects to develop ways of marketing the work and events that are happening in the space. Photobombing, AR installments and social media gain the attention of officials and investors

LAUNCH PARTY
Registered as a Charity

The launch event celebrates the CBS registering as a charity. Funds raised from the event are invested in schemes and research that directly supports the charities outlined objective. See Appendix for charity certificate

MULTI-DISCIPLINARY COLLECTIVE

A group of architects, landscape architects, ecologists, biologists and climate scientists form a consortium to investigate the Trafaria coastline in the wake of it's status of ecological precarity. (Design Manifesto p. 11)

CONDUCT SURVEY

Over a number of months surveys are conducted across the landscape, collating qualitative and quantitative data.

PRESENT FINDINGS

Report is put forward to the municipality to counter their in place local plan. The Municipality agrees with the report findings and seeks develop a more appropriate plan for the area.

Municipality creates Almada Land Trust to act as custodians of the landscape. They will act as the client for the competition

LAND TRUST

OPEN COMPETITION

Municipality posts an OJEU competition to tender conceptual designs and management of the landscape, including masterplanning and constituent buildings.

SYMPOSIUM

Shortlist of 4 designs are exhibited at the town hall, showcasing the alternative ideas for the landscape to the general public.

COMMON TERRITORY PROJECT

WIN COMPETITION

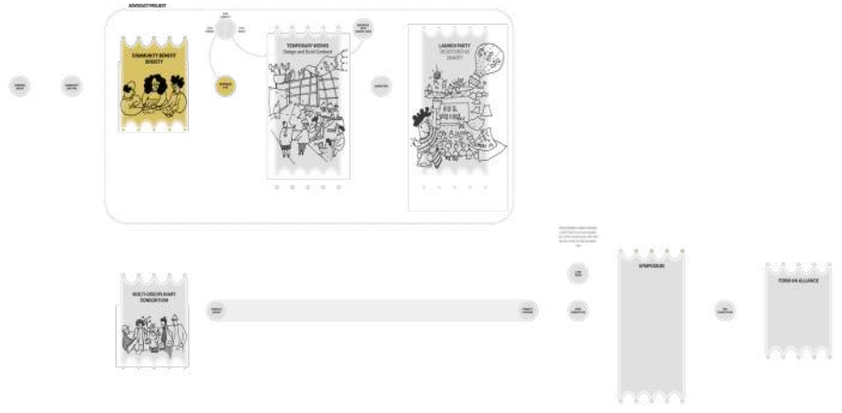
The Collective Consortium are announced as winners of the competition

FORM AN ALLIANCE

The Consortium form an alliance with client and selected contractors to undergo the design and construction of the masterplan programme and constituent schemes

SEE APPENDIX FOR PROJECT PROGRAMME

Advocacy Project



Appointment of Architect for Temporary Structure

13:26 (1 hour ago)

Antonio Cotrim
to: Miguel Magalhaes
cc: Paddy McElroy; Robyn Davis

Dear Miguel Magalhaes,

Following our positive meeting last week we would like to invite you to review our project brief for the design and construction of a new temporary events space. After receiving funding from the European Cultural Foundation we have the intention of developing a new, temporary, multi-use events and meeting space in Trafaria, Almada.

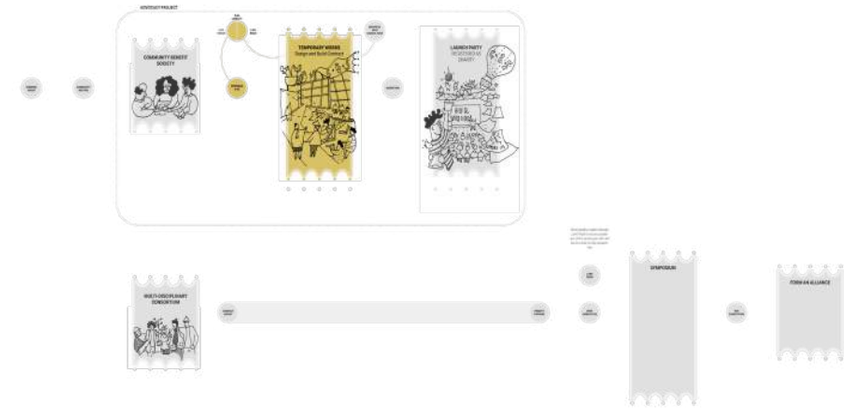
We have attached a project brief to this email, outlining our design intentions. We would like you to review our expression of intent and we would be grateful for your advice on the method of procurement that best suits this type of construction due to your expertise and experience in similar types of work.

Many thanks,

Antonio Cotrim

Chair of Trafaria Benefit Society
Av. 25 de Abril 78, 2825-893 Trafaria, Portugal

Reply | Reply to all | Forward



Procurement Advice - Temporary Structure

13:26 (1 hour ago)

Miguel Magalhaes
to: Antonio Cotrim; Community Benefit Society
cc: Paddy McElroy; Robyn Davis

Dear Antonio,

With regard to your request for advice on the most appropriate form of building contract we have compiled an overview of procurement methods alongside an assessment of your needs.

Selecting contract profile: time / cost / quality

In the UK there are three main procurement methods to consider. It is important when deciding the most appropriate method to consider the time, cost and quality requirements that may influence your decision.

Due to the restrictions of the temporary use permit, time may be a limiting factor. Therefore we would advise choosing a contract which develops design and construction co-currently in order to maximise the amount of time the building can be in use. We understand that your budget is definitive and applying for more funding may be inappropriate within the timeframe. As a result an important consideration would be - what is most important; the lowest possible cost or the most certain cost? Finally, we are sure of your commitments to creating a beautiful space for your future operations therefore it is important to outline who is in control of design. Quality and control are intrinsically linked and you may wish to retain full control, outsource to a consultant, or relinquish to a contractor. However, each option would incur a varying degree of cost and experience.

The three main procurement methods available to you are as follows; we outline each in respect to time, cost and quality as outlined above. :

Traditional Procurement

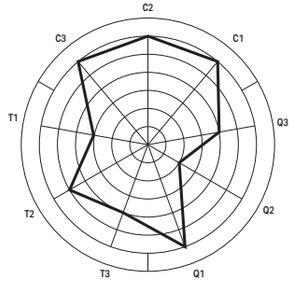
In this procurement method the design and construction have a clear division as construction is typically tendered after RIBA Stage 4. Although this does give certainty on cost at the tender stage (as developed designs can be cost with reasonable accuracy) and a high degree of design control, we believe that this would result in an elongated process undesirable for a scheme using a temporary use permit.

Design and Build

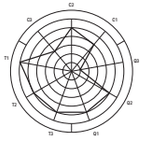
Due to the time pressures surrounding the project it may be appropriate to consider a contract which allows for construction and design to progress in parallel. In this method the client transfers most design responsibility to the contractor, tendering the contract after initial drawings or concept design is provided for by an architect. However, this approach could be at the potential expense of quality and control. In order to mitigate these risks and obtain a greater degree of design control, an architect could be novated to the contractor throughout the construction stages. However, novation is an additional legal procedure and may be inappropriate for the scale of work and budget.

Management Procurement

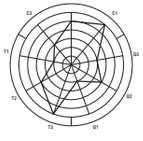
Management procurement requires the client to have prior knowledge and experience of construction as the client would either be expected to coordinate contracts for individual work packages or to hire a management consultant. We would advise that due to the simplicity of the structures being created, as well as this being your first venture, that the management contract may be overly complex and bear too much client risk. The benefit however, is that quality can be closely monitored by yourselves.



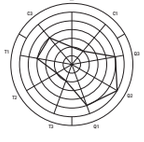
Criteria			1	2	3	4	5
COST	C1	Lowest possible capital expenditure					■
	C2	Certainty over contract price, no fluctuation					■
	C3	Best value for money overall					■
TIME	T1	Earliest possible start on site			■		
	T2	Certainty over contract duration				■	
	T3	Shortest possible contract period			■		
QUALITY	Q1	Top quality, minimum maintenance					■
	Q2	Sensitive design, control by employer					■
	Q3	Detailed design not critical, leave to contractor			■		



Traditional



Design and Build

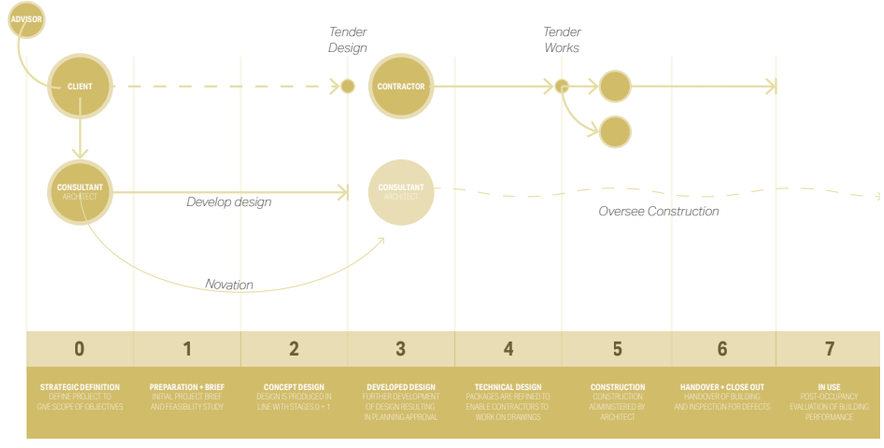


Management

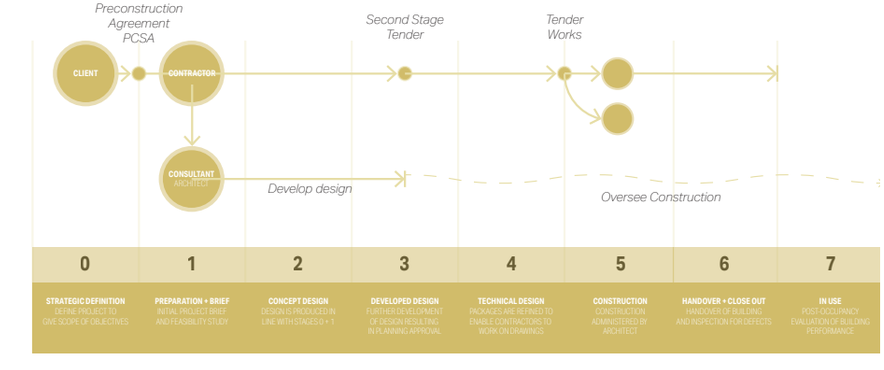
Suggested Route

We think that a design and build contract is a methodology that fits your needs and that it may be appropriate to consider EDA's design and contractor supply model. We have outlined below a number of procurement approaches that provide the framework for EDA to act as both designers and contractors of the temporary events space. It is important to recognise that there are limitations to both approaches, and that EDA holds professional indemnity insurance for both EDA Design and EDA Build. This will allow us as designers to retain full control over the process and to effectively develop detail designs whilst on site following a strong conceptual design development.

1 - EDA Design could be appointed to design to RIBA Stage 3. At this point the project is tendered and EDA Build is appointed as the contractor. In order for you, as the client, to mitigate any conflict of interest between the two branches of EDA we would suggest that you appoint a client advisor who can provide impartial guidance on project developments and maintain that we are adhering to the employees requirements, stated in the contract.

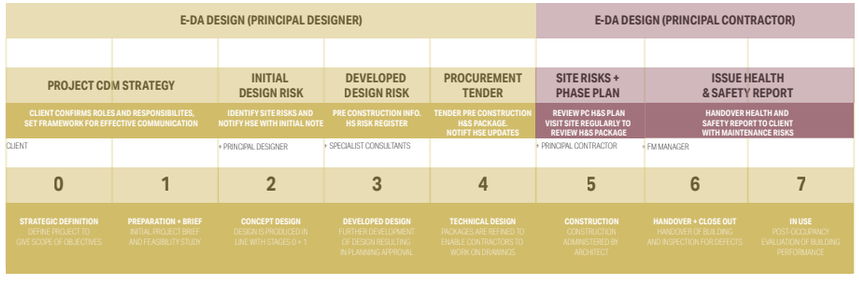


2 - EDA Build is appointed early in a two stage design and build, through the use of a pre-construction services agreement (such as JCT PCSA16). At this point EDA Design can be appointed as a consultant designer aiding the contractor in the design. Once a design has been agreed this could go to tender through competition or agreed negotiation with the EDA Build. You may wish to tender the design to a number of architects.



If you are to proceed with appointing EDA as contractor and architect we would like to re-assure you of our obligations towards the construction design management of the project. Principal Contractor (PC) and Principal Designer (PD) are established roles to mitigate and control any potential risks arising from the the construction of the project. As the PD on the project we are to ensure that any foreseeable risks are highlighted and registered in order to reduce the chance or limit the effect of risks arising. This has been compiled through an initial risk register which shall be updated as the project progresses which we have attached to this email (see appendix).

Due to the nature of the site as brownfield there are a number of risks regarding ground conditions, integrity of existing structures and asbestos in abandoned buildings, these risks will be investigated through surveys and their progress fed back to you and the appointed PC. It is important for us to recognise how Construction Design Management (CDM) can be integrated into the design of the project in order to remove unforeseen costs arising when on site for the construction phase.



Appointment

Despite your decision on the approach, we will perform the services outlined in any contractual agreement in accordance with RIBA Standard conditions for the appointment of an architect. We have attached a copy of this for your review. If you agree, please return the memorandum signed and we shall proceed with decisions on contract type.

Best Wishes,

Miguel Magalhaes
Av. Bulhão Pato 1, 2825-879 Trafaria, Portugal

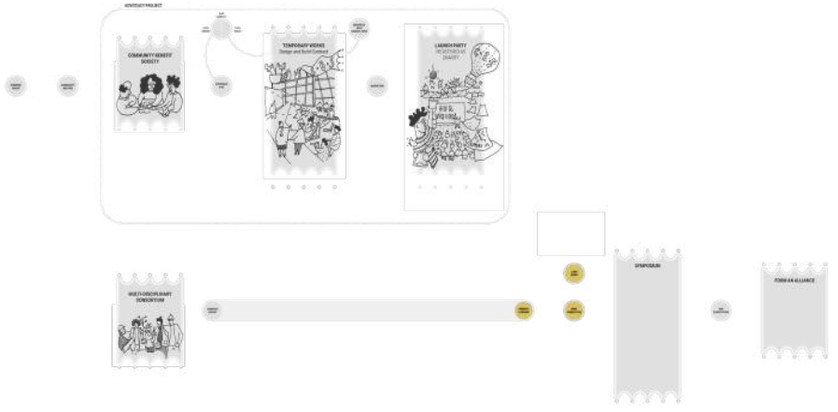
Collaborative

Contract	Use	Appointment	Certainty	Risk	Summary
Partnership	Partnership agreement or consolidated ACA PPC 2000	Individual contracts are supported with an agreement. Consultants and Contractors are encouraged to adhere to collaborative behavioural codes	Contractual complexity can occur with no certainty of collaborative behaviours. Project may be at risk to disputes or liability claims	Risk is balanced dependent on the type of contract used underneath the agreeement	Does not suit the complexity and longevity of works for the Common Territory competition
Framework	ACA Framework	Framework appointment means no further tendering process required. Administrative simplicity for client.	No certainty in teams across schemes as client has ability to choose from the consultants within the framework	Client assumes risk through the seletion of the supply chain	Simplicity in process and diverse options in supply chain may give multifaceted expertise for selecive schemes. Framework may result in typical short term vision from supply team if no certainty in future work.
Alliance	NEC4 Alliance	All works are contained within a single contract. Alliance team are defined within the contract	Alliance is defined and set out from outset. Longevity in collaboration is instilled in contract and financial risk or reward	Risk is shared as a proportion of the fee. Reward is also shared as a proportion. Each member gains a single vote towards design decisions	Simplicity throguh singular contract. Client relinquishes control for the expense of collaboration and a fully integrated design team

Conventional

Contract	Use	Appointment	Complexity	Risk	Summary
Traditional	Standard RIBA contract	Architect and Contractor are appointed seperately	Simple contracts which are relevant for small works. Complications can occur when liabilities fall between architect and contractor	Risk is balanced between contractor and client	Simplicity in contract is not enough of a benefit due to the time pressures on site. Client is able to retain control however may not be appropriate with an inexperienced client
Design and Build Opt 1	Standard RIBA contract	Contractor is appointed after the design developed to RIBA stage 4	Single contract removes contractual complexity however appointment of architect as overseer through novation is a complex legal procedure. Collateral warranties must be put in place	Contractor takes on risk of design past stage 4	Efficiencies in time are at the expense of quality however use of a standard form of appointment means architect and design can be monitored through pre-construction
Design and Build Opt 2	Standard RIBA contract	Contractor is appoined early through two stage process. Archiect is then appointed through competition or tender	Single contract removes contractual complexity with a single point of liability. Appropriate for a client with little experience of on first venture	Contractor takes on all risk as design and construction they are fully liable for	Control and quality are relinquished for the time savings on site
Management	Standard RIBA contract	Management Contractor appoints sub contractors or consultants for discrete packages of works	Most complex form of contract with individual contracts being arranged by each package of work.	Client assumes almost all risk when assigning contracts	Expensive as a form of contract due to the management. Scale of project and complexity of contract do no align in this case

Common Territory Project



Competition Tender

13:26 (1 hour ago)

Inês de Medeiros
to: Miguel Magalhaes;
cc: Paddy McElroy; Robyn Davis

Dear Miguel Magalhaes

In light of your innovative plans for the coastline between Costa Da Caparica and Trafaria we, the Municipality of Almada, have reviewed the POLIS 2020 plans and are inviting you, The Collective, to take part in an open competition of which will follow standard OJEU procedure.

In launching the open Almada Land Trust Competition, we start our search for an integrated, multi-disciplinary design team to develop the conceptual design for the reimagining of the use and management of the Almada Coastline, between Costa Da Caparica and Trafaria.

Integral to our ambitions is the consideration of ecological sensitivity. The proposals should seek to create an environment in which human habitation and ecological systems can learn from each other in order to harbour a sustainable relationship in the light of rapid and certain climate change. It is therefore important to state the significance of the SROI and environmental performance indicators that we have outlined in clause 1.4. These will be used as important measures in the assessing of competition entries along with the prioritising of community led management of the territory.

Please see the attached competition brief and timeline (See appendix). We look forward to seeing your entry.

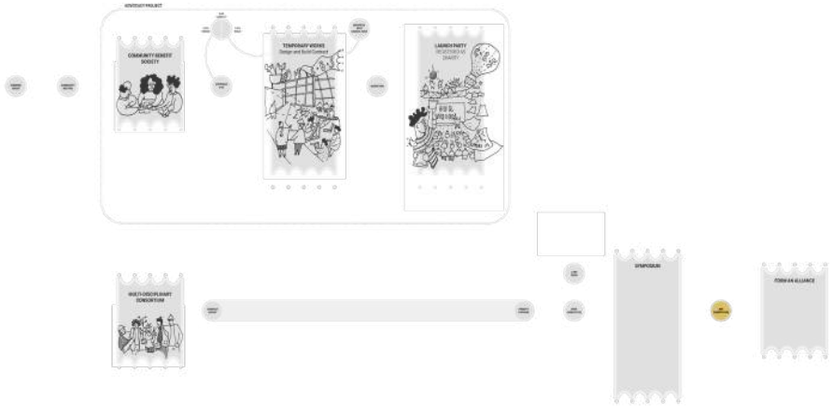
Many thanks,

Inês de Medeiros
President of The Municipality of Almada

Brief — See Appendix

Reply | Reply to all | Forward

OJEU Timeline



Collaborative Procurement Recommendations

13:26 (1 hour ago)

Miguel Magalhaes
to: Inês de Medeiros
cc: Paddy McElroy; Robyn Davis

Dear Inês de Medeiros,

Due to the nature of the venture that we are about to embark on together we have made a number of considerations that you may wish to review when choosing the procurement method for such a large and complex suite of works.We recommend that you consider a collaborative procurement approach in order to maximise collective expertise through joint working, transparency and common objectives.

There are a number of factors to consider before deciding on a type of collaborative procurement approach; scope, depth, duration and intensity (Eriksson 2015). It is important to outline who will be involved in the organisation and what kind of collaborative roles they will perform, this will help determine the scope of the collaboration. A collaborative venture also provides an opportunity to capitalise on the expertise of other professions by considering their hierarchy and integration within the framework. The intensity of the procurement will be determined by the utilisation of collaborative tactics and behaviours and how effectively they can be applied across the supply chain. Finally, the duration of the venture and its legacy should be considered alongside the need for flexibility required for any phasing.

.A number of options are available to you if you wish to adopt this approach. We have outlined below an explanation of the benefits and limitations of each option:

Partnering

As the client within a partnership you will retain authority over decisions. However, with the complexity of the project comes uncertainty, and as partnerships are typically agreements associated with conventional contracts there is a risk of reverting to adversarial behaviours if disputes arise. As the client you may wish to retain authority over decisions however, due to the complexity of the project you may wish to adopt a contract with a truly collaborative structure which affords equal risk and decision making weighted to each member.

Furthermore, as the complexity of the project predicates a number of parties the contractual management of the partnership could become cumbersome to manage. Therefore, a contract

which simplifies the number of contractual arrangements could be useful. The ACA PPC2000 is an example of this.

Frameworks

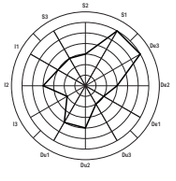
After organising a competition to select consultants to sit on your framework, future schemes may be awarded to suppliers on the framework without the need to tender schemes individually. This can reduce contractual and administrative procedures, particularly useful in the case of this brief which stipulates a programme of works containing a number of discrete schemes.

As the client you may also wish to remain flexible and agile during this programme of works in order to adapt the supply chain to your best needs. By selecting the best fit consultant for each programme you are able to maintain competition throughout the programme. However, due to the limited post occupancy monitoring requirements of the schemes, a framework may not harbour a truly collaborative approach as suppliers on the framework may still be focused on short term profit gain rather than sustainable longevity. This is exacerbated by there being no guarantee that suppliers will be awarded the next scheme in the programme.

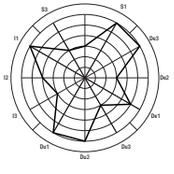
Alliance

The longevity of the programme along with the overlap and interaction between individual schemes would suggest an approach in which consultants remain active for the duration of the programme in order to promote active post occupancy and contractual relationships is beneficial. The alliance, once tendered, forms an equally accountable and democratic project team. The alliance will reduce your authority as the client as decisions must receive unanimous approval from all members of the alliance, however, we would recommend this sacrifice in order to fully integrate the expertise of contractors and consultants from an early stage. In doing so, it is easier in our experience to reduce operational and construction costs in the long run. By focusing on project delivery and building management rather than individual liabilities the alliance promotes legacy and collaboration within projects associated with high levels of uncertainty and overlapping complexities.

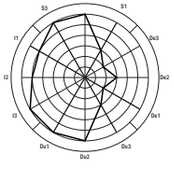
Partnership



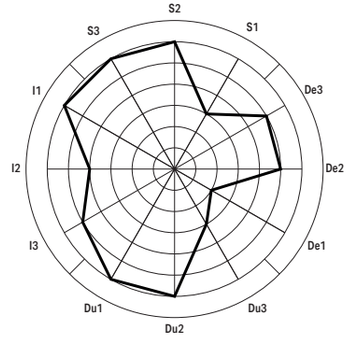
Framework



Alliance



Client Brief



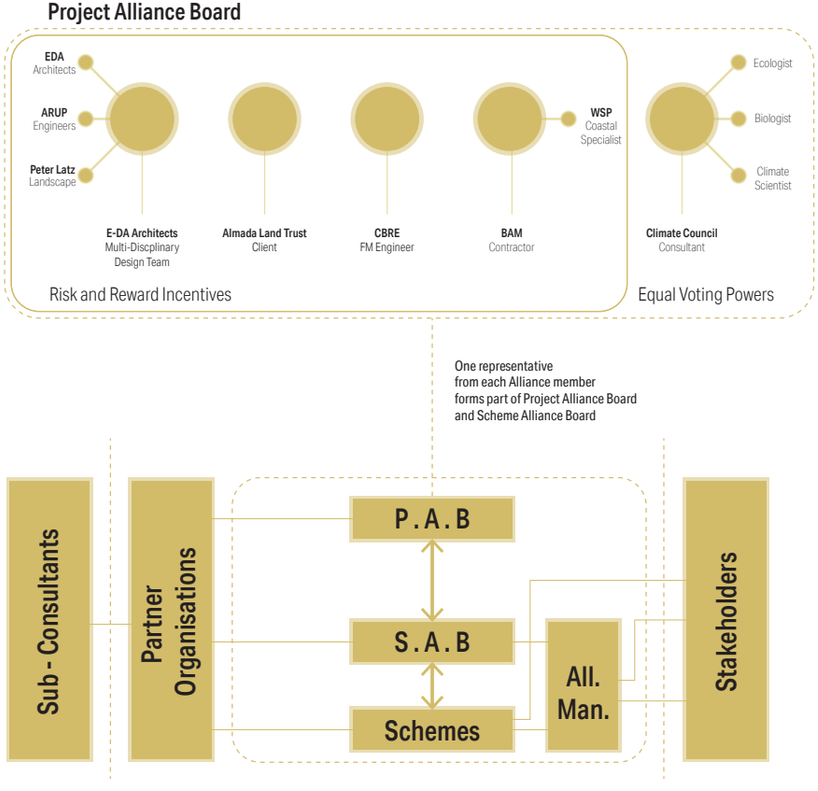
Criteria			1	2	3	4	5
SCOPE	S1	Client Control	■				
	S2	Level of collaboration afforded					■
	S3	Contractual obligation to collaborate					■
INTENSITY	I1	Complexity of works					■
	I2	Level of collaboration throughout supply chain			■		
	I3	Contractrual collaboration obligation				■	
DURATION	Du1	Length of programme					■
	Du2	Flexibility of phasing					■
	Du3	Post completion responsibility					■
DEPTH	De1	Contractual complexity		■			
	De2	Partner hierarchy and integration			■		
	De3	Flexibility and adaptability of structure			■		

Suggested Route

Based on the requirements outlined in the project brief and the need to mitigate risk and uncertainty associated with the climate emergency we would recommend the use of an NEC4 Alliance contract. The NEC4 ALC recognises that successful design decisions rely on the formation of a unified group, with holistic professional experience. We recognise that the project will need to rely on specialists such as climate scientists, ecologists, architects and infrastructure specialists who have the professional experience required to best mitigate risk associated with climate data uncertainty. These skills include, but are not limited to, the following:

- Climate Change Expertise
- Dynamic Modelling
-Whole-Life Costing
-Coastal Flood Management
- Risk Assessment
-Probablistic Interpretation
- Cost-Benefit Analysis
-Ecological Systems Monitoring

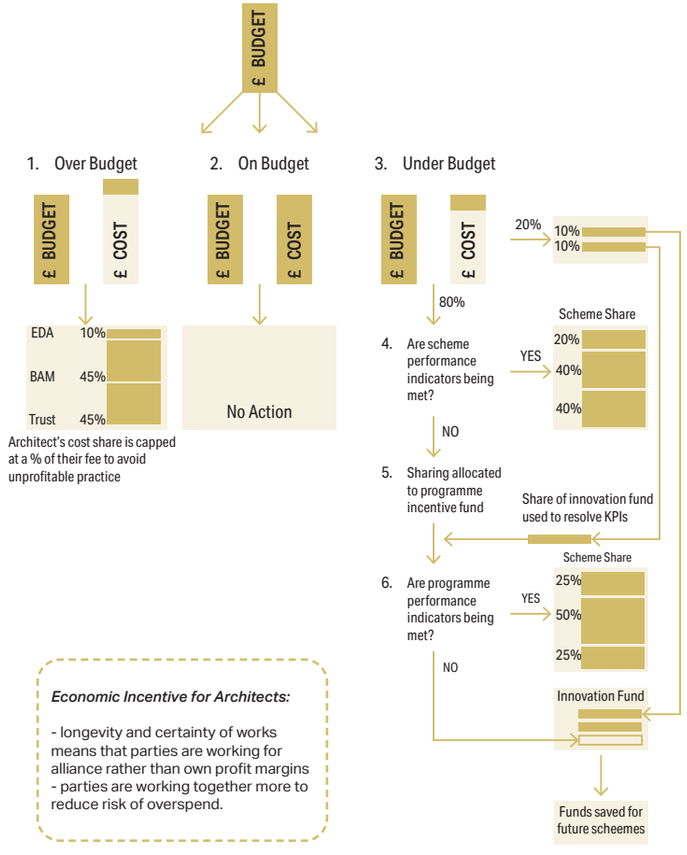
The alliance contract affords each member equal weighting in decisions through the entirety of the project whilst also sharing risk, proportionately to each party's fee. The benefits of this are twofold; firstly, no one parties agenda will take precedence over another and secondly, the equal distribution of risk can empower projects to innovate new responses to climate change even in uncertain contexts. Furthermore, through the use of a single contract, a multi-party agreement creates an egalitarian management structure between alliance members. The diagram below indicates how this structure may operate, along with the contractual obligations.



In a NEC4 Alliance contract, a single contract encompasses all of the works; a programme of works outlines the masterplan whilst nested schemes describe constituent parts of the programme (see appendix). Programme Board and Scheme Boards contain a representative from each Alliance member who each vote on design, cost and construction proposals. As a client this will mean your decisions are not definitive. However, due to uncertainty regarding the climatic effects on the project there is a need to remove the potential for individual liability claims. The suggested procurement route establishes a no claim culture, clause 94.1:

> *"The members of the Alliance agree that any failure by a member of the Alliance to comply with their obligations stated in these conditions of contract does not give rise to any enforceable right or obligation at law except for an event which is a Client's or Partner's liability. Any disputes between the members of the Alliance arising out of or in connection with the contract are only resolved in accordance with these conditions of contract." (NEC Contracts, 2018)*

Between the alliance no claims can be made, as members are incentivised to resolve defects or disputes unanimously through a shared pain and gain system, as claiming would directly affect individual profit. The diagram below illustrates a potential approach to pain and gain highlighting the eventualities of overspending as well as the individual and alliance incentives to meet performance indicators and resolve all defects. We would recommend that the Alliance would set up an innovation fund, whereby a proportion of the cost saving would be set aside for investing in future technologies for subsequent schemes.

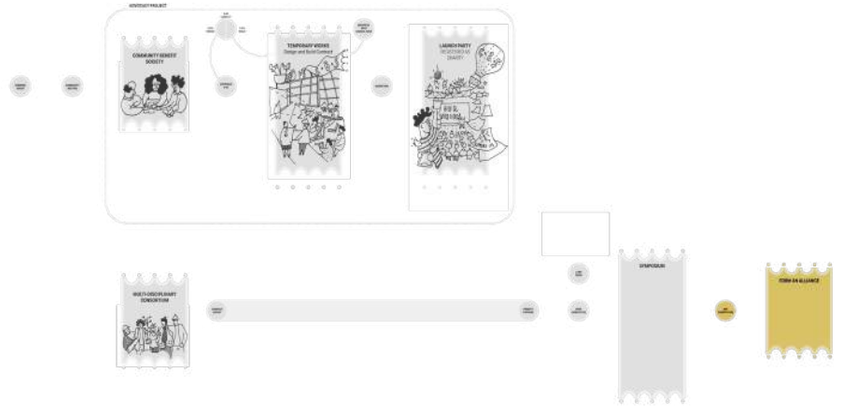


We think that the uncertainty of the project will require a more integrated and active role for designers, contractors and consultants, to better inform initial concept design and post occupancy. We recommend this contract because early contractor and consultant input will improve cost forecasting as well as limiting the number of potential defects through collaborative design. The length of the project and the overlapping schemes would benefit from invested and integrated post occupancy monitoring and evaluation. The Alliance encourages members to remain active in the client use of completed schemes and not to absolve responsibility after the defect period, due to the individual and collective benefits of maintaining a collaborative relationship.

Best Wishes,

Miguel Magalhaes
Av. Bulhão Pato 1, 2825-879 Trafaria, Portugal

Reply Reply to all Forward



Proposed Fee and Benchmarking Methodology

13:26 (1 hour ago)

Miguel Magalhaes
to: Alliance Board
cc: Paddy McElroy; Robyn Davis

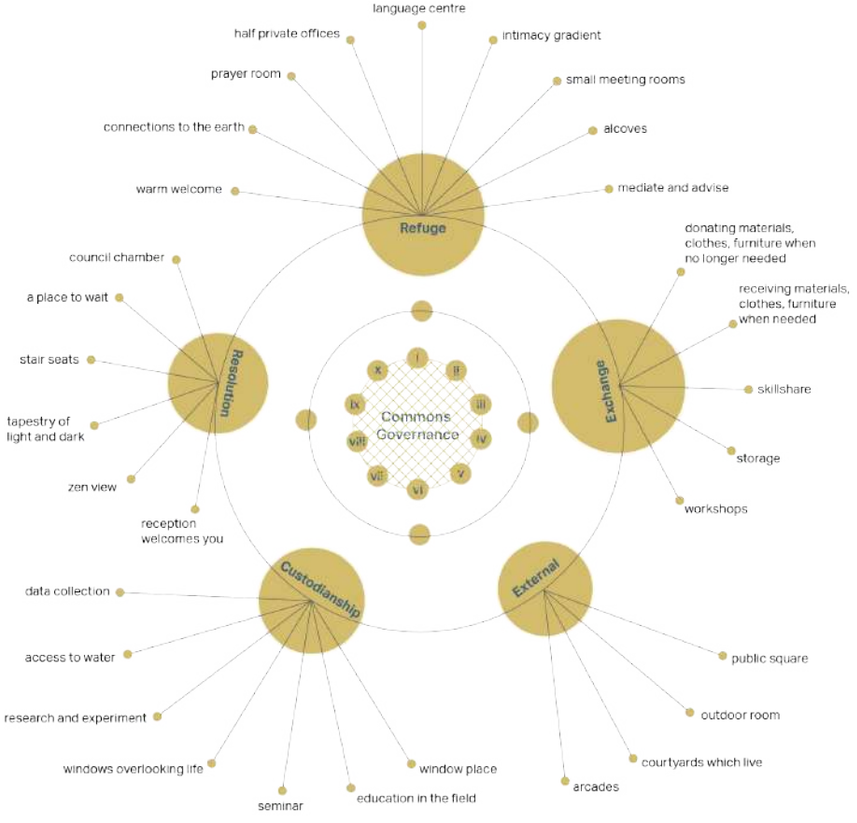
Dear Alliance members,

Following on from our Validation Stage meeting last week, a number of considerations have been made in regards to the phasing and costing strategy of the programme. We believe that the programme's success is dependent on accurate costing and an open book policy will encourage trust across the alliance in order to limit any cost 'creep'.

Therefore we have compiled an example of our benchmarking analysis and hourly rates. The benchmarking values the building at a cost of £21.89 Million, based on your supplied brief.

Total Net Internal Area	5865
Total Gross Internal Area	**8042**
Total Cost	**£21,890,714**
Architect's Fee Percentage	5%
Architect's Fee	**£1,094,535**

We have organised the supplied project brief around 10 principles which may affect the construction systems and material types utilised in the project. This exercise underpins the principles which will be further developed in line with a more detailed costing at RIBA Stage 4 once the design has successfully integrated the principles.



i - Re - use and recycling of existing site materials
ii - Sourcing virgin materials from within 100km radius
iii - Reinstating ecological infrastructure,
iv - Passive heating and cooling strategies
v - Design for disassembly
vi - Promotion of biodiversity
vii - Designing for flood resilience
viii - Poor ground conditions require raft foundation or deep pile foundations
vx - On site construction
x - Renewable energy use

We have also put forward our two-pronged methodology to calculating architects' fee based on work stage percentage, according to RIBA Stages, and our proposed hourly rate and forecasting (see appendix). By providing both we hope to give transparency, simplicity and fairness to our fee proposal and to remove the issues and shortfalls of fee calculations.

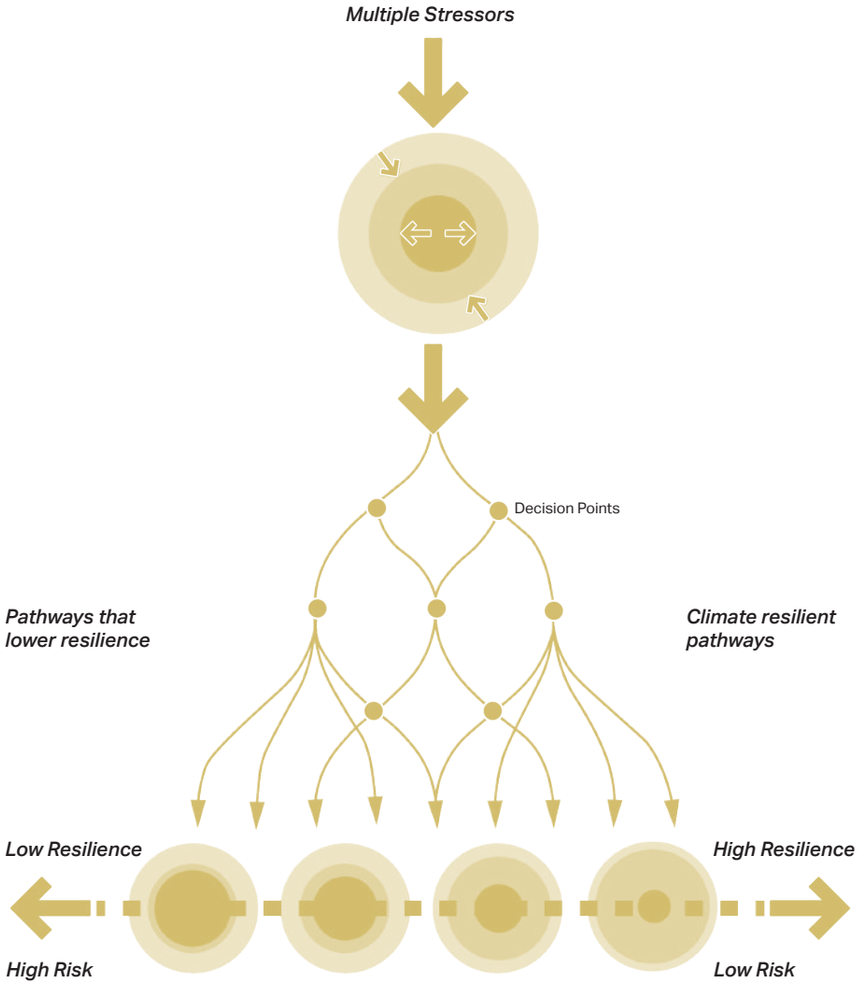
We recommend that calculated lump sums are the most appropriate method of scheduling payment of fees. We have calculated our fee for each work stage, dependent on estimated cost at the end of the previous stage and our forecasted hours. This option encourages members of the alliance to engage in a dialogue regarding realistic time requirements and a collaborative review of design decisions, that will need to be voted on, which may influence the costs to the alliance. Any additional time required from the architect will be subject to review by the alliance board and cost to the programme adjusted.

Many Thanks,

Miguel Magalhaes
Av. Bulhão Pato 1, 2825-879 Trafaria, Portugal

Project Specific Challenges

How can you Mitigate Risk Associated with Climate Change Uncertainty?



Biophysical Stressors

Resilience Space

Social Stressors

Designing for Climate Uncertainty

In using climate projection predictions for the year 2050, it is widely agreed by the intergovernmental panel, the IPCC and non profit Climate Central, that further biophysical stressors will be placed upon the Almada coastline, including sea level rise and mean temperature increases. In conjunction with social stressors such as increased climate migrancy, loss of homes and human health this landscape has the potential to become one of low resilience and high risk.

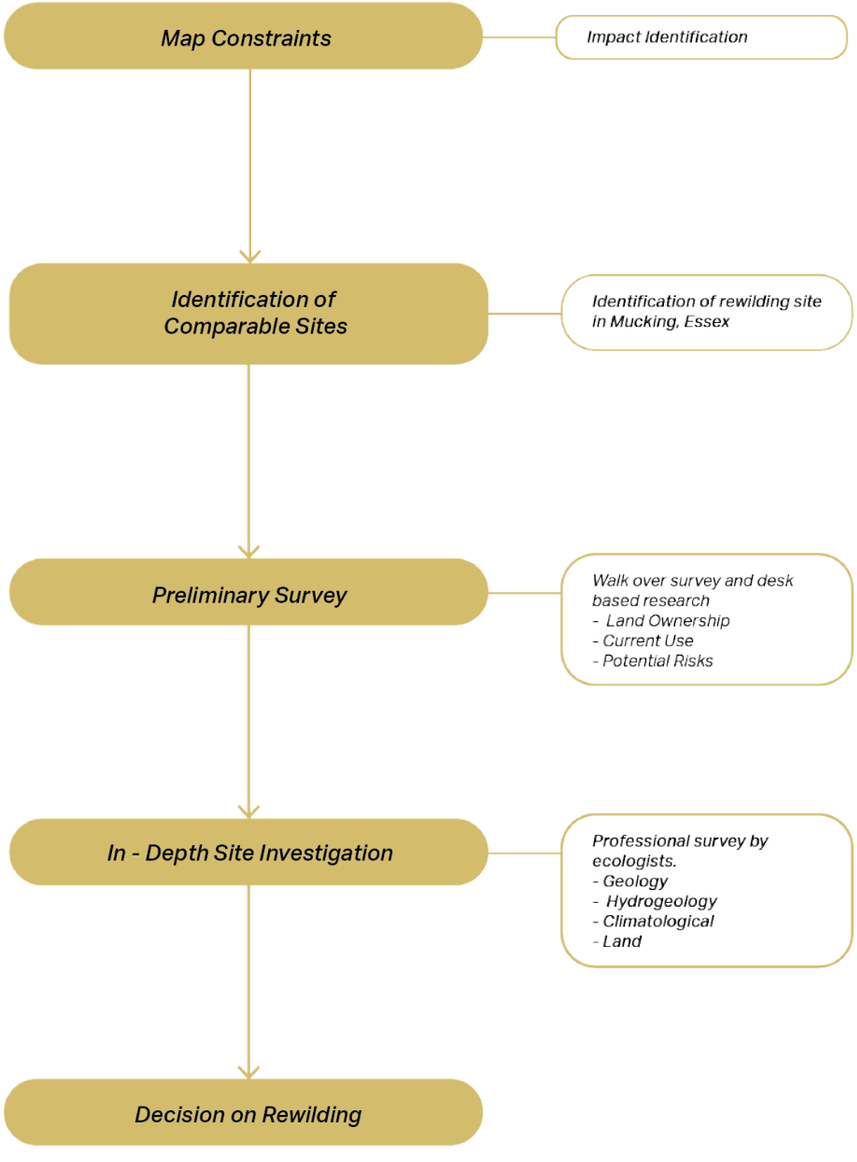
To reduce the likelihood of this scenario, we propose utilising opportunities for climate resilient pathways - the most significant being the reinstating of ecological infrastructure previously removed by human activity. Nonetheless, design proposals such as these raise potential challenges for the procurement and subsequent management of the Common Territory as the project relies on future climate predictions based upon weather averages that create complex and potentially uncertain results. As an example, designers are often faced 'with a daunting range of combinations of parameters to consider when deciding on design criteria to use to explore the impacts of climate change on a building design'. This coupled with climate models such as that published by the IPCC use probabilistic ranges to demonstrate scenarios, often of which are unfamiliar to built environment professionals. This demonstrates interpretation difficulties compounded by available information that 'doesn't have the granularity to drive an investment decision at the level of a site', or give designers the rationale to persuade clients to appoint projects with progressive climate agendas.

This uncertain future creates a series of risks related to landscape, building, the alliance and user experience. In part, this risk can be mitigated by the range of professional skills present in the alliance, however additional design criteria will also be required to adequately manage risk to an acceptable level. The following, outlines this design criteria required for rewilding at a masterplan scale and flood risk at building scale.

←
Formation of future environments - resilience vs. risk

Predominant Risks	Owner of Risk	Reason/Cause	Effect	Level of Risk	Design Response
Rewilding Risks (Masterplan Scale)					
Contaminants present within post - industrial landscape	Local Ecosystems and the Alliance	The landscape has been subjected to industrial use, agriculture, ports and used as a landfill site.	Reduction in effectiveness of rewilding projects, leading to areas of abandonment.	**Moderate**	Carry out a detailed survey to assess areas in which rewilding will be most appropriate.
Rewilding can reduce landscape variety	Local Wildlife	Current land conditions could be removed, altered or reduced in scale due to rewilding	Animal species which rely on a certain landscape variety might struggle for survival in new conditions	**Moderate**	Allow rewilding to take place using mulitple approaches to management to maintain landscape variety.
Abandonment of human activities from a landscape can result in negative ecological interactions	Local Ecosystems	Removal of human activities such as agriculture can result in the loss of open habitats.	Removal of human activities such as agriculture can result in the loss of open habitats.	**Moderate**	Retention of human activities that can aid diversity of habitats whilst adapting activity to become more resilient.
Rewilding can change the formation of animal communities,	Endangered birds and reptiles	Rewilding can alter animal habitats	Vulnerable and endangered birds and reptiles could become increasingly endangered.	**High**	Detailed survey of habitats required for vulnerable and endangered species. Creation of additional habitats
Difficulty associated with managing negative biotic interactions	The Alliance	The character of rewilding projects explicitly seek to reduce the role of human control over ecosystems.	Conflict of interest between degrees of human control. Potential source of conflict between alliance members.	**Low**	Allow rewilding to take place using mulitple approaches to management and human control.
Difficulty monitoring and reporting on successes of rewilding landscapes	The Alliance	Monitoring and reporting relies on the identification of performance indicators for complex, wild ecological systems.	Difficulty in establishing indicators of design success. Potential conflict with contractual obligations.	**Moderate**	Find and agree upon a reference ecosytem to help formulate quantification of success.
Flood Risks (Building Scale)					
Soil instability	The Alliance	Flooding could increase the likelihood of soil subsidence. Slopes and retaining structures could become less stable.	Foundations might need to be built with extra insurance measure in mind, resulting in cost uplift	**Moderate**	Steel screw piles can be removed and replaced if condition requires. They do not leave a scar on the landscape
Reduced accessibility	The Alliance	Flooding might restrict access by both foot and by vehicle.	This could affect deliveries and fail Part M requirements. Experience of the building negatively affected	**High**	Innovative accessibility solutions suitable for a condition in flux. Cost uplift for research hours.
Building thresholds become lost or altered	The Alliance	Flooding can alter the threshold condition for building users.	Difficulty accessing the building or the requirement for multiple thresholds with differing degrees of water protection	**Moderate**	Designing a gradient approach to water protection, from important watertight spaces to outdoor rooms.
Flooding can affect building usability	Building Users	Flooding conditions could negatively affect the experiential qualities of the building.	The use of the building with be able to support the programmatic requirements of the building.	**High**	Design measures integrated from the start which aim to mitigate the effect of flooding ie sacrifical basements
Potential to damage building operationally	Building Users and the Alliance	If water infiltrates the building, mechanisms that operate the building can be damaged.	Energy generation, heating and cooling mechanisms and other M&E fittings could be damaged and stop working.	**High**	Designing plant and M&E fittings to be located above projected flood levels.

↑
Risk matrix showing key risks and relevant design responses at masterplan and building scales. These are explored on the following pages.

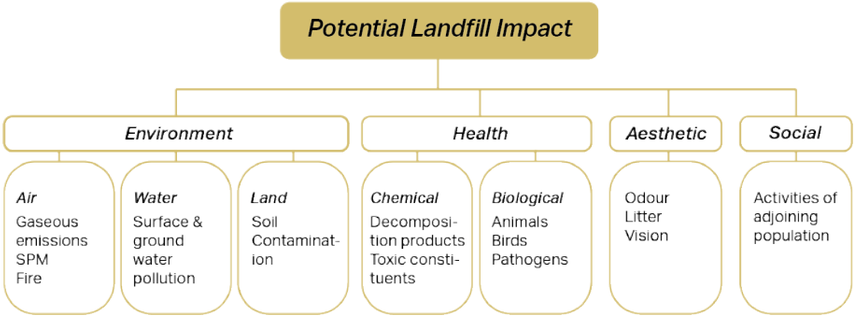


Rewilding Risks

Post - Industrialised Landscape

Due to the use of the landscape for industrial, agricultural and landfill purposes, a detailed site survey will be undertaken to interrogate opportunities for rewilding. Despite the potential for pollutants in the groundwater and soil, precedents such as the successful rewilding of landfill sites in Essex suggest rewilding of the site is possible.

Nonetheless, the design will need to address the legacy of these detrimental activities. The following highlights the potential landfill risks identified in relation to environment, health, aesthetics and social aspects of the site. This forms part of the 5 step process for formulating a researched and reliable design response to rewilding.

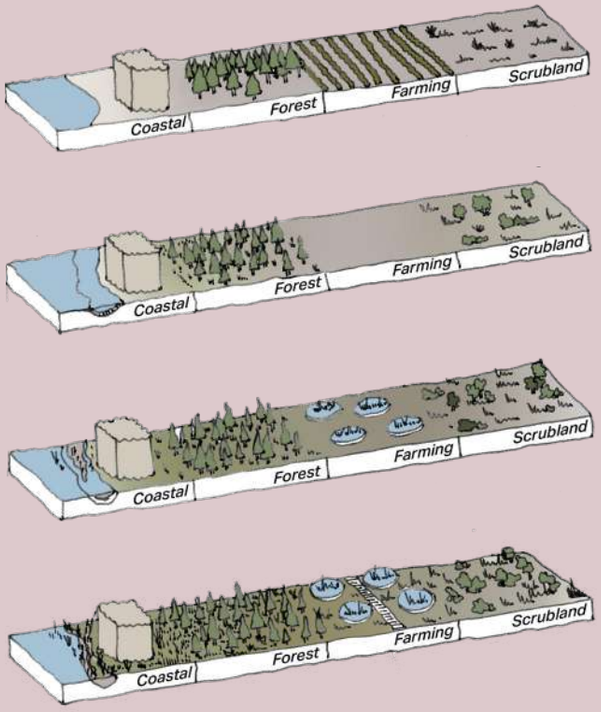


↑ Potential landfill impacts on design decisions

↖ Thurrock Thameside Nature Park, Essex as a former landfill site (pre 2010)

← 5 step process for Rewilding on post-industrialised landscapes

↑ An aerial taken of Thurrock Thameside Nature Park, Essex (2020)



0 Years
Existing Conditions

5 - 7 Years
Growth

10 - 15 Years
Limited Productivity

30+ Years
Full Productivity

The following demonstrates the contextual response to rewilding in four identified landscape conditions:

Coastal - Active Rewilding
Depositing silt from existing saltmarshes upstream in the Tagus Estuary to help catalyse the process of wetlands creation

Key Considerations
Industrial landfill along coastline, water pollution, cost implications, structural impact on existing infrastructure.

Forest - Passive Rewilding
Remove human activity to allow rewildng to spontaneously occur

Key Considerations
Management of fire, through access requirements.

Farming - Active Rewilding
Removal of traditional farming for more sustainable hydroponic systems. Complimentary planting surrounds for ecological diversity.

Key Considerations
Temporary loss of habitat for animals and insects, phased removal of traditional farming to mitigate

Scrubland - Active Rewilding
Reinstating pre- existing flora removed by human activity, creating more habitat variation.

Key Considerations
Maintenance, control and protection over scrubland to prevent future damage, require community buy in

↑
Landscape rewilding phasing
→
Rewilding - differing degrees of intervention

Rewilding Risks

Multiple Approaches to Rewilding

In order to mitigate the indentified risks of rewilding such as lack of landscape variety and loss of habitat typologies, the design will use multiple approaches to rewilding. These strategies use various degrees of human control and management.

Passive Rewilding

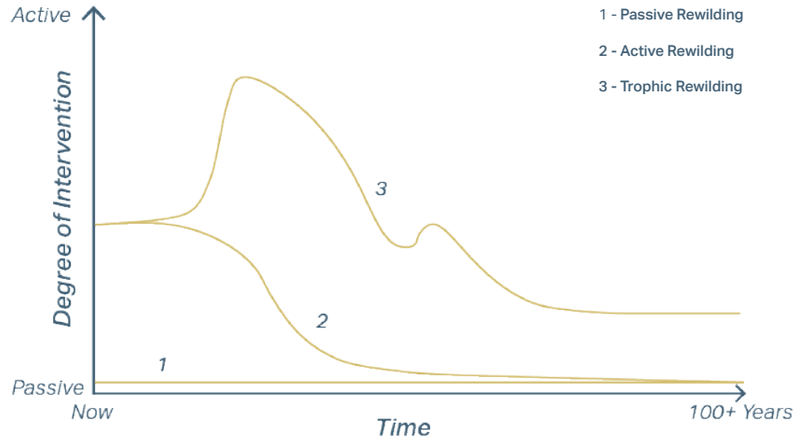
Passive rewilding reasserts ecological processes by the lessening of human intervention. For example, passive rewilding would spontaneously occur after agricultural land abandonment. This approach could be well suited to large areas which are already largely ecologically intact with the opportunity for missing species to recolonise. This reduces risks of the homogenisation of landscape and habitat typologies.

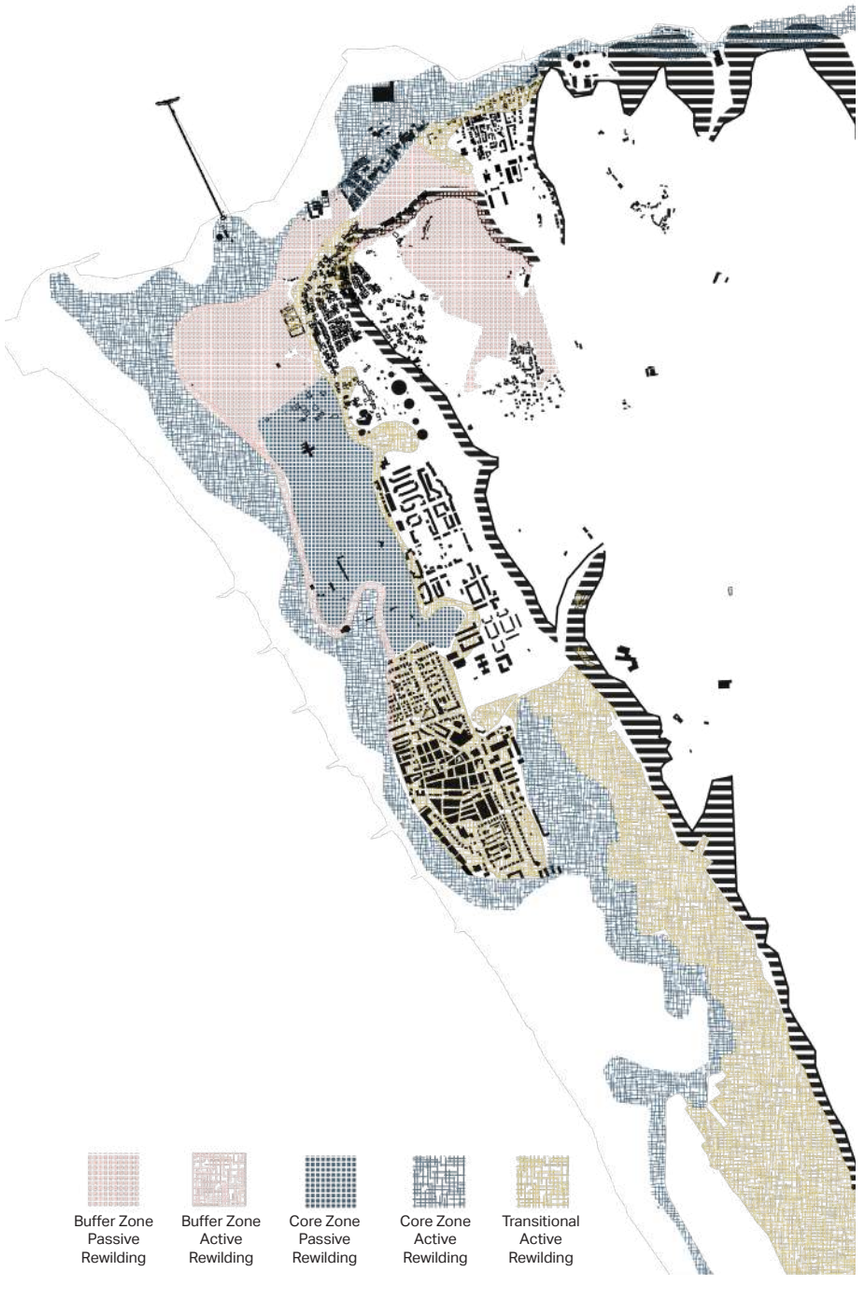
Active Rewilding

Active rewilding includes a front loading of ecological system interventions. The aim of these interventions is to restore ecosystems to more functional states, before they are followed by passive rewilding strategies. This approach could be well suited to areas in which ecosystems have been removed by human activity, but could have potential to be reinstated. For example, a salt marsh could be left to rewild passively once human interventions had ceased. These would include the depositing of fertile silt from existing salt marshes further up the Tagus estuary.

Trophic Rewilding

Trophic rewilding uses species introductions to facilitate a top down approach to promote self- regulating biodiverse ecosystems. This approach is most appropriate when a pre-existing endangered species could be restored or reintroduced into an ecosystem.





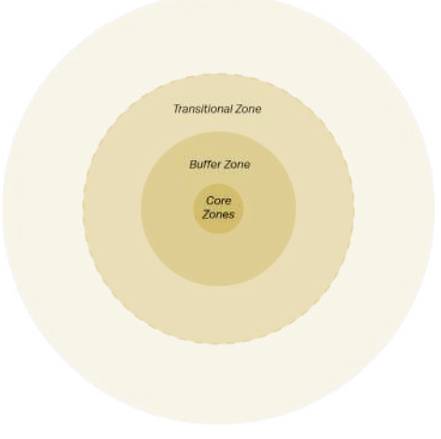
Rewilding Risks

Zoning Human Intervention

Once rewilding approaches are agreed, the design needs to address levels of human intervention within various areas of the site. This is particularly important considering the location of existing urban centres within the Common Territory Landscape. These degrees of human intervention will be zoned using ‘Core’ wilderness areas, ‘Buffer Zones’ and ‘Transitional Zones’.

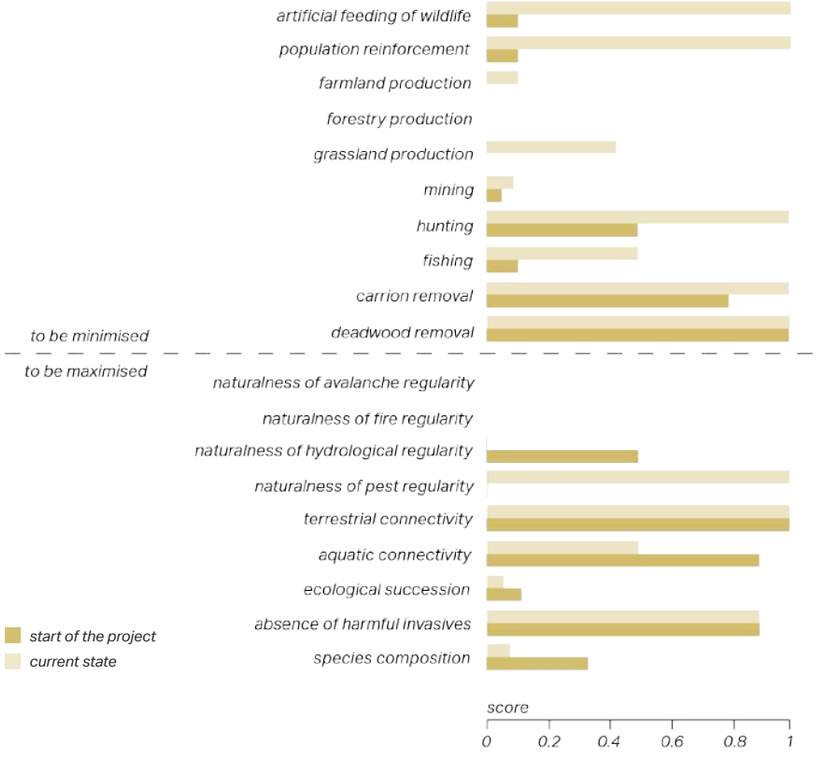
In core wilderness areas the design will not incorporate any extractive programmes such as forestry, fishing or major construction projects. Here, human impact on ecological systems should be either completely removed or kept to an absolute minimum.
In surrounding protective buffer zones, emphasis is placed on keeping human impact low, phasing out built structures and high impact extractive programmes. These buffer zones should ultimately be incorporated into the Core zones and expand outwards into adjacent transition zones.

Within transition zones, human activity can take place. However, these activities should not include major infrastructure projects that can alter the landscape or natural environment. An example of a transition zone could be sustainable forestry or organic agriculture.



↑
Rewilding zoning
←
Potential location for Common Territory rewilding zoning

Millingwaard Rewilding Project



Rewilding Risks

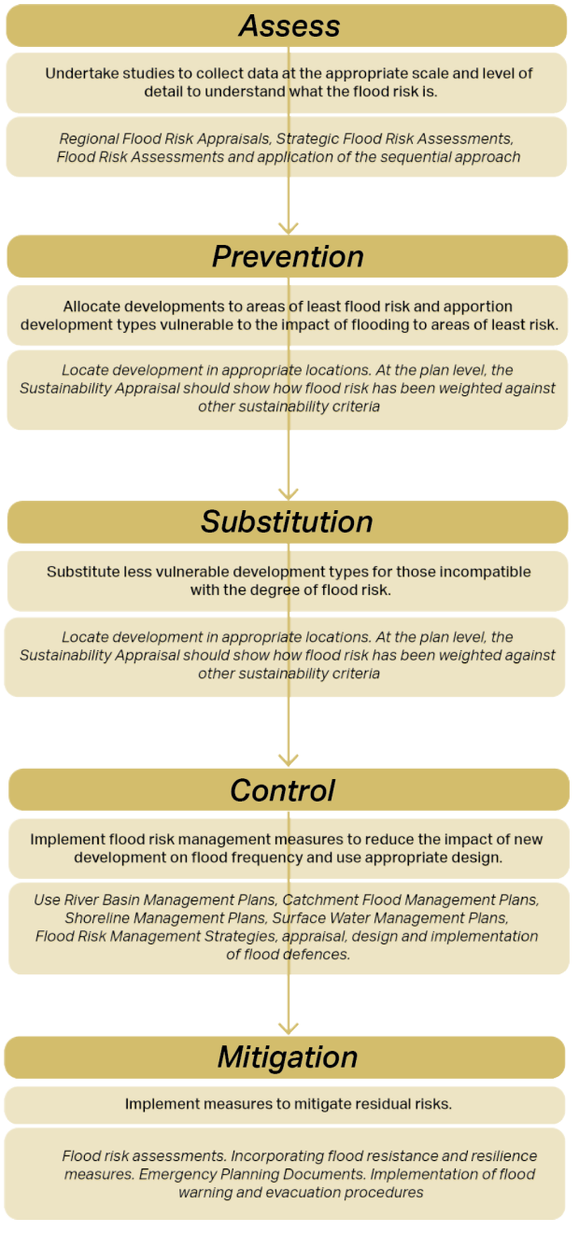
Monitoring and Reporting

Within projects in the industry, design teams are often able to set out a project ethos and performance requirements based on quantifiable data of energy, embodied carbon and operational costs. However, there are distinct challenges in monitoring and reporting on the success of reinstating ecological processes using rewilding and natural succession. Such uncertainty can decrease practical implementation, reduce the frequency in which these tactics are employed, and decrease the effectiveness of conservation and restoration outcomes.

In response to these challenges the Royal Society has developed a rewilding assessment framework. The design will use this framework in order to inform which variables in the landscape we should be designing to minimise and which to maximise. The resultant score will be used as a performance indicator included in the contract.

↑
The Royal Society Report on the creation of a rewilding assessment framework

←
Rewilding assessment framework

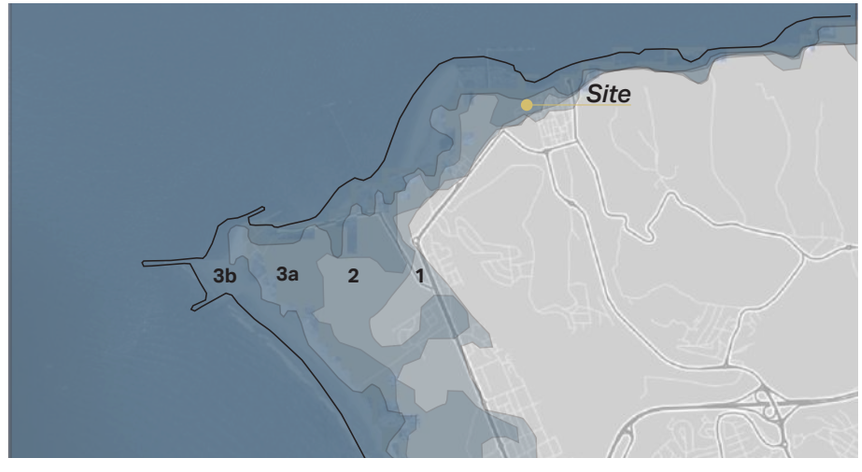


Flood Risks

Strategy

In the wake of the implications of climate change on increased flood risk, Planning Policy Statement 25 outlines the requirement for a series of scale appropriate flood risk assessments for development in flood zones. The site is situated in flood zone 3a, an area of high flood probability (1 in 200 or greater annual probability of flooding from the sea) which can be suitable for less vulnerable development such as the Commons Governance building housing programmes including office space, professional services and workshops.

Accepting high flood probability of the given site, Planning Policy Statement 25 provides an overview of how the spatial planning process can manage flood risk strategically. Our Common Territory design will use this flood risk management hierarchy to assess, avoid, substitute, control and mitigate risks associated with flooding and climate uncertainty.



Flood Zone 1 - Low probability flooding (less than 1 in 1,000 annual probability of flooding).
Flood Zone 2 - Medium probability flooding (between a 1 in 200 and 1 in 1,000 annual probability of flooding).
Flood Zone 3a - High probability flooding (1 in 200 or greater annual probability of flooding)
Flood Zone 3b - Functional Flood Plain

↑
2050 Speculative Flood Zones

←
Spatial Planning Approach to Managing Flood Risk

Design Sequence	Key Issues	Strategies	Design Response
1.0 Flood Risk Assessment	Flood risk assessment Risk = probabiliy x consequence	Flood risk zones Factors for climate change Flood design height	
2.0 Land Use Planning	Risk/vulnerability matrix	Substitute Reinstate Land use transformation	Spatial planning of use zones and resilience plan Hierarchy of vulnerability Temporary or time limited uses
3.0 Control: Reducing the Risk	Flood sources: Tidal (sea level rise) Tidal (storm surge) Surface water	Natural flood resilience strategies; rewilding, ecological reinstatement Raising Floor Levels Land use transformation	Natural coastal defences Rewilding Reinstated Marshland Artificial basins Man-made SUDS Permeable surfaces Integrate flow paths into landscape design
4.0 Mitigation: Minimising the Consequences	Occupants Building Public Realm Infrastructure	Safety Strategy Robust designs: Resistance Resilience Adaptability Robust designs: Resilience Design for recovery	Awareness and contingency plan Safe refuge areas Safe refuge areas Resilient building structures Amphibious buildings Retained accessibility Maintain accessibility Resilient high impact utilities Maintain accessibility Resilient transport infrastructure Emergency accessibility
5.0 Post Occupancy Monitoring	Environmental Impact Climate Change Effective Strategies Monitor and maintain	Proposals not successful Proposals cause unknown stress on infrastructure/ ecosystem Knowledge share	Return to design sequence 2.0 Respond to new conditions

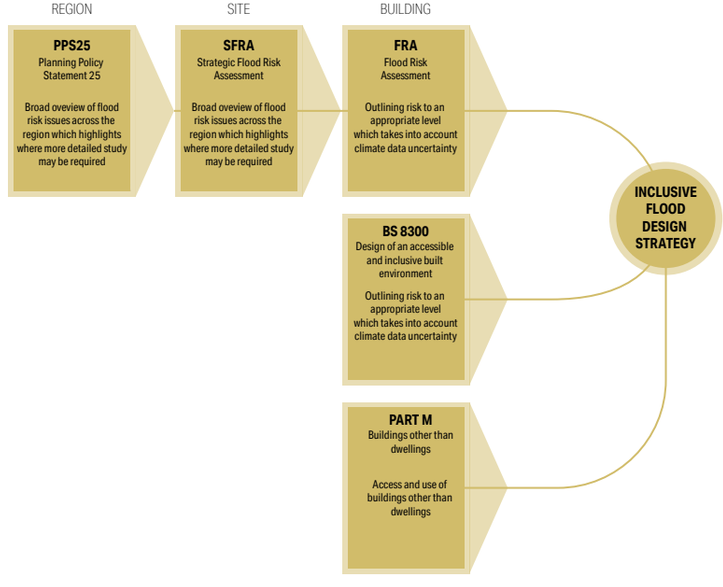
Flood Risks

Integrated Mitigation Measures

'Flooding can benefit a region if it is anticipated' (Watson, D /Adams, M, 2011)

The impact of flooding will significantly influence the design process of the building. In order to effectively assess the impact of sea level rise, the Alliance will commission a series of reports to identify the risks across a number of appropriate scales. In order to create an inclusive flood design strategy, the risks outlined in the assessments will be used with requirements and considerations made in relevant accessibility documents.

Designing for flooding will utilise mitigation over prevention approaches whereby the building is able to continue its function during flooding events by incorporating resilient design decisions. However, design decisions must be considered as part of a whole system and a number of design risks may arise through the application of flood resilient measures. Thresholds and accessibility will need to be sensitively designed to incorporate resilient strategies whilst also maintaining equal access.

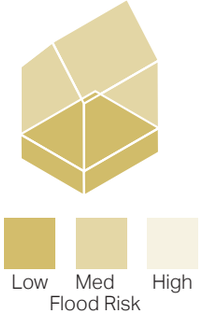
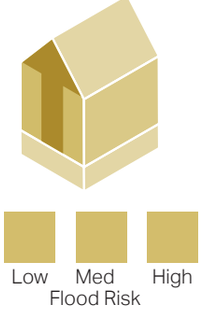
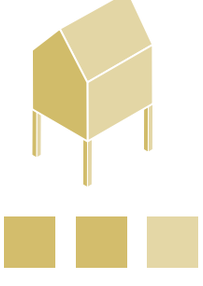


↑
Inclusive flood design strategy

←
Design approach to flood risk, adapted from RIBA design sequence

Flood Risks

Building Form

Flood Approach	Risks	Accessible Design Decision
Wetproof		
	Building is flooded to prevent structural damage	Groundfloor is inaccessibe so use of ramps to upper floors is required
	Sacrificial ground floor	Provision for accessible parking or drop off in non flood zone
		Maximise use of contours surrounding site
Amphibious		
	Building moves up and down with flood level - affecting thresholds	Ramped routes to elevated entrances above flood line
	Conditions between tectonics is not fixed	Adaptive internal thresholds for when flooding affects internal layout
	Ground floor accessibility	Maximise use of contours surrounding site
Elevated		
	Elevated building from flood line	Ramped routes to elevated entrances above flood line
	Accessibility	Ramped entrances to building
	Ground floor accessibility	Maximise use of contours surrounding site

Low Importance *High Importance*

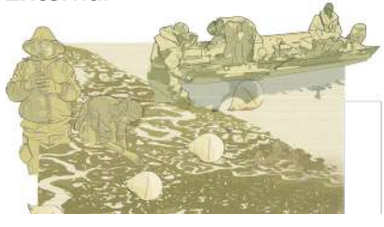
Refuge

Identity :
Privacy and Safety:
Health Concerns:
Accessibility:
Open Spaces Feature:
Aesthetic:

Exchange

Identity :
Privacy and Safety:
Health Concerns:
Accessibility:
Open Spaces Feature:
Aesthetic:

External

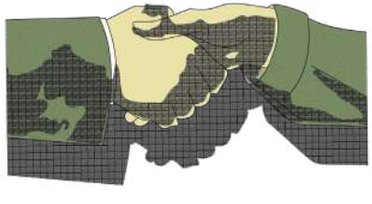


Identity :
Privacy and Safety:
Health Concerns:
Accessibility:
Open Spaces Feature:
Aesthetic:

Custodianship

Identity :
Privacy and Safety:
Health Concerns:
Accessibility:
Open Spaces Feature:
Aesthetic:

Resolution



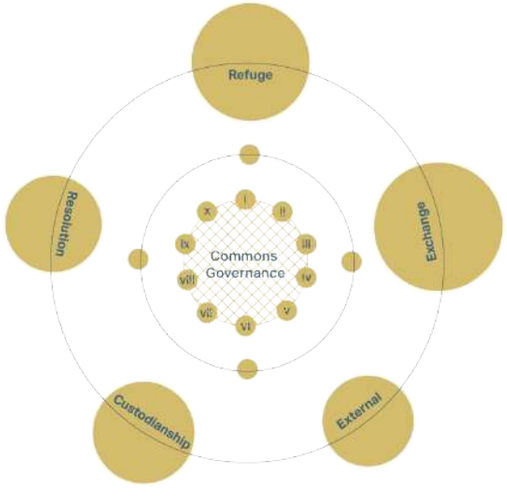
Identity :
Privacy and Safety:
Health Concerns:
Accessibility:
Open Spaces Feature:
Aesthetic:

Flood Risks

Building Experience

Levels of watershed on the site will be in flux throughout the year and in addition access routes could also become covered by water in periods of extreme flooding. Furthermore, the Commons Governance building has sensitive programmatic requirements, offering professional services to potentially vulnerable people. As a result, the design will incorporate in depth considerations on the effects of flooding on building access and escape, wellbeing and user experience.

To do so, we will assemble a sequential model of the building based on programmatic requirements, spatial and experiential quality and health and safety referring to building regulations Approved Document K - Protection from falling, collision and impact, and Approved Document M - Access to and use of buildings. The following parameters will be considered when formulating this sequential model: Identity, privacy and safety impacts, health concerns, accessibility degree, open spaces feature, aesthetic.



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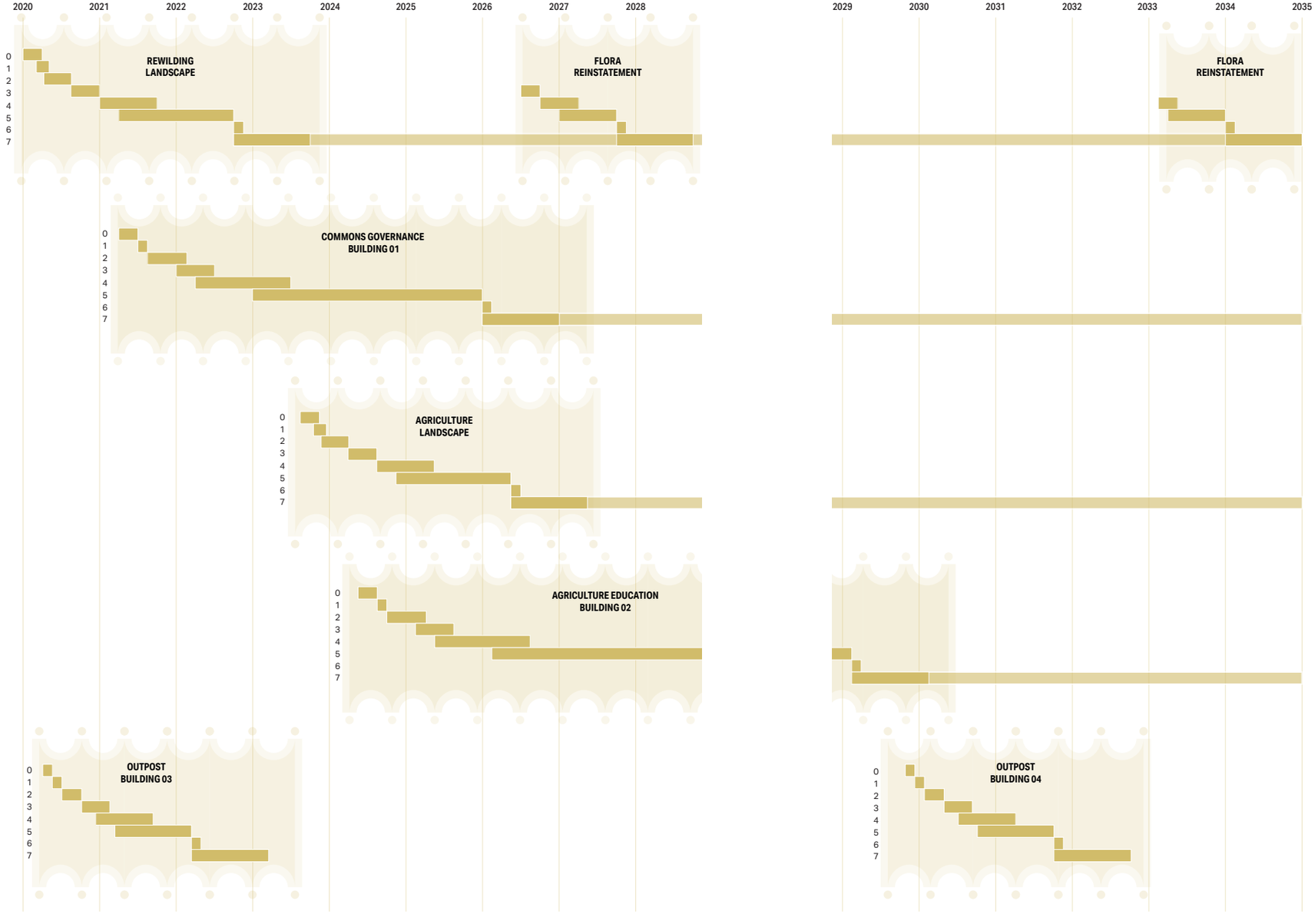
5 programmatic areas of the Commons Governance building

←
Using parameters to establish requirements, quality and health and safety of 5 programmatic areas

Appendix

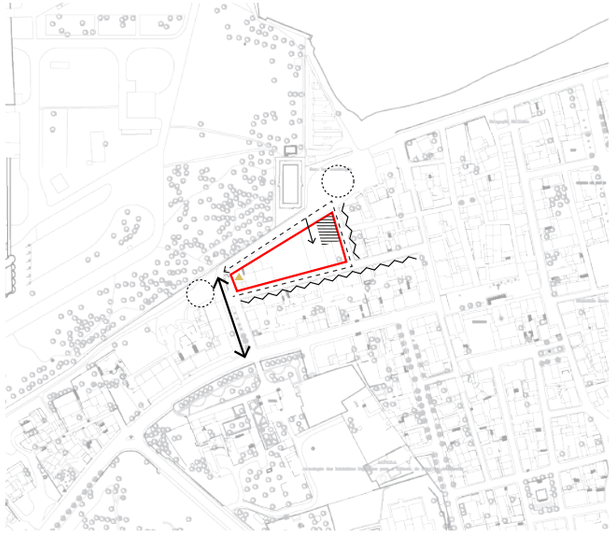
APPENDIX 1 - Programme



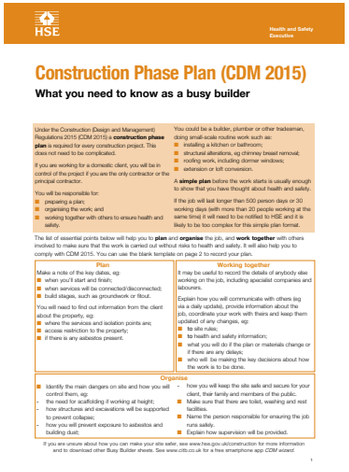
APPENDIX 2 - Risk Register

	Risk Ref.	Risk Identification	Design Control Measures	Persons at Risk	Tolerability	Completion
Pre Construction	R-00-01	SITEWIDE ISSUES	Issues affecting site layout and approach to design. List of all surveys to be compiled and registered with H&S package	All design team	HIGH	
	R-00-02	Contamination of ground conditions due to proximity to industrial activities	Survey of site for contaminants and soil testing.	Architect, Contractor, Client	HIGH	
	R-00-03	Existing services	Coordinated survey information required of entire site and surrounding roads. Underground services should be overlaid with building footprints to view clashes	Architect, Contractor, Client	MED	
	R-00-04	Existing structures	Structural survey of existing structures on site perimeter.	Architect, Contractor, Client		
	R-00-05	Toxic substances	Asbestos survey of existing structures. If found enact safe asbestos removal issue R-00-06	Architect, Contractor, Client	HIGH	
	R-00-06	Asbestos removal	Asbestos survey instigated if contaminant survey highlights. Construction delayed			
Construction	C-00-01	CONSTRUCTION SITE	Issues that affect the management and use of the site throughout construction. Issues must be notified to HSE as public may be at risk	Contractors, Public	LOW	
	C-00-02	Site Access Proposals	Ingress and egress to be defined by PC and PD. All deliveries will need to comply with HSE and awareness of public safety. Securiry to be maintained at entrance to site. Considerations to surrounding domestic context	Contractors, Public	LOW	
	C-00-03	Structural Sequencing	To be confirmed			
	C-00-04	Outline Demolition Plan	To be confirmed			

APPENDIX 3 - Construction Phase Plan



Main access route
HGV Turning Circle
Dust and Noise Pollution
Site Boundary
One Way System
Site Offices
Asbestos Risk



HSE
Health and Safety Executive

Construction Phase Plan (CDM 2015)

What you need to know as a busy builder

Under the Construction (Design and Management) Regulations 2015 (CDM 2015) a **construction phase plan** is required for every construction project. This does not need to be complicated.

If you are working for a domestic client, you will be in control of the project if you are the only contractor or the principal contractor.

You will be responsible for:
- preparing a plan;
- organising the work; and
- working together with others to ensure health and safety.

You could be a builder, plumber or other tradesman, doing small-scale routine work such as:
- installing a kitchen or bathroom;
- structural alterations, eg chimney breast removal;
- roofing work, including dormer windows;
- extension or loft conversion.

A **simple plan** before the work starts is usually enough to show that you have thought about health and safety.

If the job will last longer than 500 person days or 30 working days (with more than 20 people working at the same time) it will need to be notified to HSE and it is likely to be too complex for this simple plan format.

The list of essential points below will help you to **plan** and **organise** the job, and **work together** with others involved to make sure that the work is carried out without risks to health and safety. It will also help you to comply with CDM 2015. You can use the blank template on page 2 to record your plan.

Plan

Make a note of the key dates, eg
- when you'll start and finish;
- when services will be connected/disconnected;
- build stages, such as groundwork or fitout.

You will need to find out information from the client about the property, eg:
- where the services and isolation points are;
- access restriction to the property;
- if there is any asbestos present.

Working together

It may be useful to record the details of anybody else working on the job, including specialist companies and labourers.

Explain how you will communicate with others (eg via a daily update), provide information about the job, coordinate your work with theirs and keep them updated of any changes, eg:
- to site rules;
- to health and safety information;
- what you will do if the plan or materials change or if there are any delays;
- who will be making the key decisions about how the work is to be done.

Organise
- Identify the main dangers on site and how you will control them, eg:
  - the need for scaffolding if working at height;
  - how structures and excavations will be supported to prevent collapse;
  - how you will prevent exposure to asbestos and building dust;
  - how you will keep the site safe and secure for your client, their family and members of the public;
- Make sure that there are toilet, washing and rest facilities.
- Name the person responsible for ensuring the job runs safely.
- Explain how supervision will be provided.

If you are unsure about how you can make your site safer, see www.hse.gov.uk/construction for more information and to download other Busy Builder sheets. See www.citb.co.uk for a free smartphone app *CDM wizard*.

PC will provide a filled out initial CPP in time for the first CDM meeting

Access	Site operations should consider the entrance to the site on the North road and the implications of the one way route around the site. Turning circles for HGV will need to be assessed in case reversing is required
Disassembly	Storage and removal of component parts after disassembly will need to be phased and coordinated. Safe storage will be required for security and integrity of components
Damage	Site operations must be light touch. Temporary use permit does not allow for permanent changes to the site condition therefore adjacency with existing structures must be highlighted in design stage.

APPENDIX 4 - Competition Brief

1.1 - Client
Department of Infrastructure and Municipal Works
Av. D. Nuno Alvares Pereira No. 67, 2800 - 181 Almada

1.2 - Type of Competition
An open and public competition. Competition entry should be in accordance with the competition invitation, project brief and accompanying documents outlined in the OJEU process.

1.3 - Type of Contract
Services

1.3 - Subject of Competition
The Municipality of Almada (AM) is seeking to secure a multi-disciplinary design team to co-develop a masterplan for the Almada Future Coastline Site(lol dunno). The overarching scope of services should include but not be limited to:

- Leading the development of a masterplan which guides the future use and management of the site
- Providing long term advice on the site's transformation
- Outlining the integration of resilient ecological systems to improve the longevity of the site and preserve inland boundaries /reword

The masterplan must be capable of outstanding development which provides flexibility and innovation in awareness of the changing circumstances as the area is affected by climate change over the next 50 years. This role will require significant collaboration between AM teams, community interest groups and a wider consultant team.

The masterplan is envisaged to identify key spatial interventions and should provide a framework of key design, use and management principles which promotes the experience between ecology and inhabitation.

1.4 Assessment Criteria
Social and ecological impact of the proposals will be recognised and assessed through a series of Social Return on Investment(SROI) and Environmental Performance indicators which will allow for a better recognition of the social and environmental value of each proposal
The competition aims to re-imagine the governing structures of the site and will prioritise those entries which place the community at the centre of the developments and which prioritise the social and ecological value over its economic profitability.

1.5 Eligibility
As determined at the selection questionnaire an architect must be included in the design team who has the right to practice in the country where he/she is qualified , with relevant qualifications and or registration. UK based applicants should therefore be registered with ARB.

1.6 Procurement timetable
Diagram outlining the two stage process
Invitation to tender 3 month competition process
Confirmation of contract awarded
Public announcement of result

1.7 Supporting Information
Local plans
Polis 2020

APPENDIX 5 - Fee Forecast

Space Type A

Civic Building

Roscommon County Civic Offices
ABK Architects

Cost	£10.8 Million
Area	6600m²
Blended Rate	1650£/m²

Space Type A

Civic Building

Buddhist Retreat
Walters and Cohen

Cost	£4.1 Million
Area	1350m²
Blended Rate	3025£/m²

Space Type B

Workshop

Royal College of Art Woo Building
Haworth Tompkins

Cost	£8.2 Million
Area	2662m²
Blended Rate	3080£/m²

Space Type B

Workshop

Vitsoe HQ
Vitsoe and Martin Francis

Cost	£5.75 Million
Area	3600m²
Blended Rate	1600£/m²

Space Type C

Laboratory

Sainsbury Laboratory
Stanton Williams

Cost	£65 Million
Area	11000m²
Blended Rate	4975£/m²

Space Type C

Laboratory

Paleontology Research Centre
H arquitectas + dataAE

Cost	£8.2 Million
Area	8237m²
Blended Rate	1100£/m²

Space Type D

Landscape

Duisburg Nord Landscape Park
Peter Latz Landscape

Cost	£100 Million
Area	200ha
Blended Rate	19.47£/m²

Space Type D

Laboratory

Nordstern Landscape

Cost	£65 Million
Area	100ha
Blended Rate	25.71£/m²

Climate Gov	Council Chanber		300
	Viewing Gallery		150
	Antechamber		60
	Reception		180
	Canteen		200
	Small Disputes		180
	Total Net Internal Area		*1070*
	Uplift	30	459
	Total Gross Internal Area		***1529***
Workshop	Workshop		210
	Loading		210
	Exchange		200
	Seminar		80
	Office		20
	Total Net Internal Area		*720*
	Uplift	20	180
	Total Gross Internal Area		***900***
Refuge Centre	Community Kitchen		140
	Multi Faith		50
	Wellbeing		50
	Language Centre		300
	Meeting Rooms		220
	Offices		320
	Reception		180
	Study Hall		40
	Work Rooms		60
	Library		220
	Total Net Internal Area		*1260*
	Uplift	30	540
	Total Gross Internal Area		***1800***
Science	Laboratories		325
	Lab Prep Space		300
	Office		150
	Seminar		90
	Meeting Space		150
	Event Space		220
	Total Net Internal Area		*1235*
	Uplift	40	823
	Total Gross Internal Area		***2058***
Outdoor Space	Merchants Yard		880
	Public Square		500
	Outdoor Room		200
	Total Net Internal Area		*1580*
	Uplift	10	176
	Total Gross Internal Area		***1756***
	Total Net Internal Area		5865
	Total Gross Internal Area		**8042**
	Total Cost		**£21,890,714**
	Architect's Fee Percentage		5%
	Architect's Fee		**£1,094,535**

Space Type A
Civic Building

Area	1529m²
Blended Rate	3000£/m²
Cost	***£4,585,714***

Space Type B
Workshop

Area	900m²
Blended Rate	1500£/m²
Cost	***£1,350,000***

Space Type A
Civic Building

Area	1800m²
Blended Rate	3000£/m²
Cost	***£5,400,000***

Space Type C
Laboratory

Area	2058m²
Blended Rate	5000£/m²
Cost	***£10,291,666***

Space Type D
Landscape

Area	1756m²
Blended Rate	150£/m²
Cost	***£263,333***

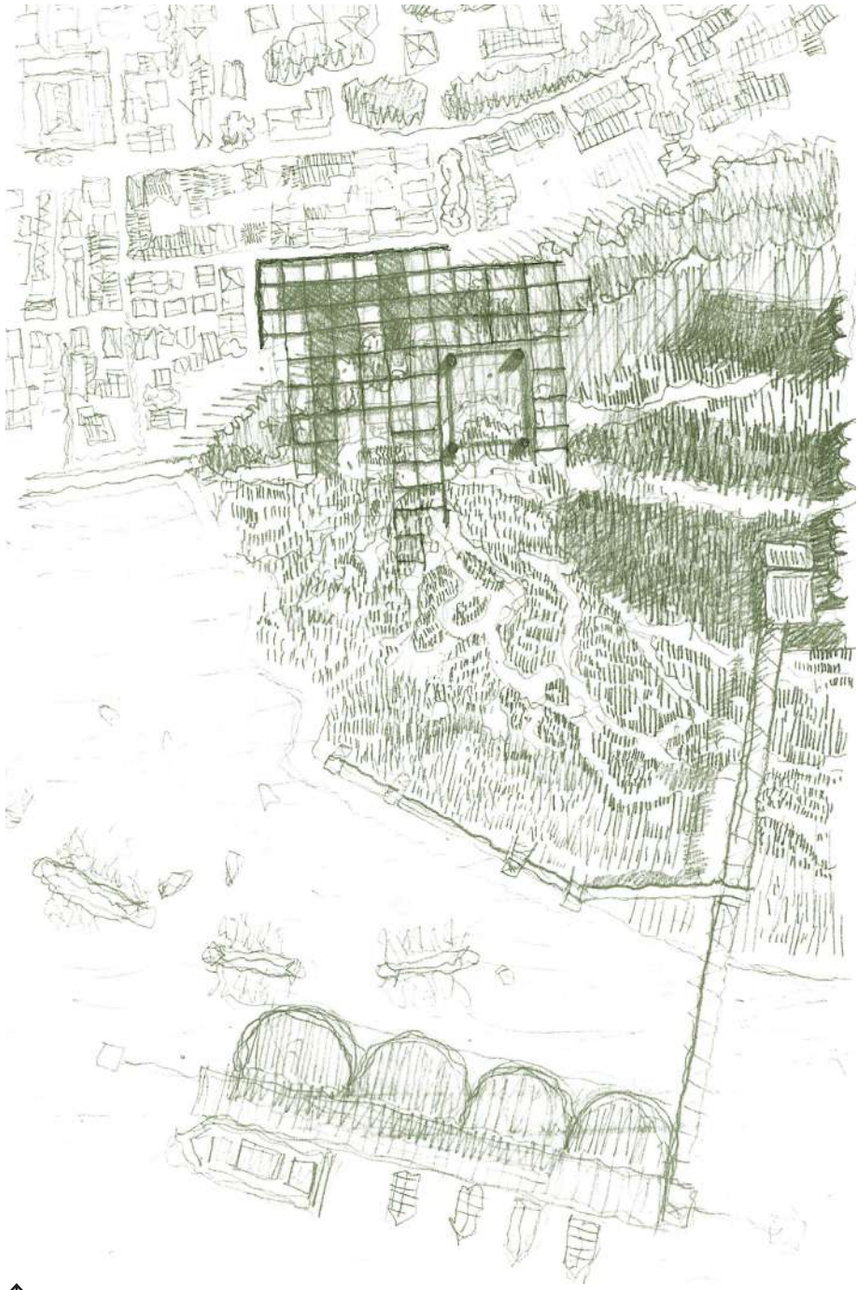
APPENDIX 5 - Fee Forecast

Hourly Rate		Architect	Landscape Archiect	Mechanical Engineer	Electrical Engineer	Civil Engineer	Average	Median
Category	Description	Hourly Rate (£)	Hourly Rate (£)	Hourly Rate (£)	Hourly Rate (£)	Hourly Rate (£)	Hourly Rate (£)	Hourly Rate
Partner/Director	Controls policy and conduct of associate's organisation. Whom is able to commit consultants to undertake commissions	90	75	115	95	115	98	95
Associate	Has relevant and approved experience obtained over a number of years and via number of relevant projects	75	65	95	95	95	85	95
Consultant (Architect)	Has relevant and approved experience obtained over a number of years and via number of relevant projects	55	50	65	65	65	60	65
Graduate	Typically will have gained a degree but is working towards professional competence with relevant body	40	35	55	55	55	48	55
Tecnhician	Relevant experience and technical ability but is not recognised by professional body	45	45	40	40	40	42	40

Forecast Hours		RIBA Stage 1	RIBA Stage 2	RIBA Stage 3	RIBA Stage 4	RIBA STAGES	RIBA Stage 5	RIBA Stage 6	RIBA Stage 7	RIBA STAGES	RIBA STAGES
Category	Description	Preparation and Brief	Concept Design	Developed Design	Technical Design	Sub Total	Construction	Handover and Close Out	In Use	Sub Total	Total Hours
Partner/Director	Controls policy and conduct of associate's organisation. Whom is able to commit consultants to undertake commissions	20	120	210	300	650	250	20	20	290	940
Associate	Has relevant and approved experience obtained over a number of years and via number of relevant projects	40	560	800	1250	2650	1200	115	50	1365	4015
Consultant (Architect)	Has relevant and approved experience obtained over a number of years and via number of relevant projects	50	390	1025	1800	3265	2000	260	85	2345	5610
Graduate	Typically will have gained a degree but is working towards professional competence with relevant body	32	610	780	2200	3622	1850	180	30	2060	5682
Tecnhician	Relevant experience and technical ability but is not recognised by professional body	0	129	100	800	1029	650	80	10	740	1769
		142	1809	2915	6350	11216	5950	655	195	6800	18016

Forecast Fee		RIBA Stage 1	RIBA Stage 2	RIBA Stage 3	RIBA Stage 4	RIBA STAGES	RIBA Stage 5	RIBA Stage 6	RIBA Stage 7	RIBA STAGES	RIBA STAGES
Category	Description	Preparation and Brief	Concept Design	Developed Design	Technical Design	Sub Total	Construction	Handover and Close Out	In Use	Sub Total	Total Hours
Partner/Director	Controls policy and conduct of associate's organisation. Whom is able to commit consultants to undertake commissions	1960	11760	20580	29400	63700	24500	1960	1960	28420	92120
Associate	Has relevant and approved experience obtained over a number of years and via number of relevant projects	3400	47600	68000	106250	225250	102000	9775	4250	116025	341275
Consultant (Architect)	Has relevant and approved experience obtained over a number of years and via number of relevant projects	3000	23400	61500	108000	195900	120000	15600	5100	140700	336600
Graduate	Typically will have gained a degree but is working towards professional competence with relevant body	1536	29280	37440	105600	173856	88800	8640	1440	98880	272736
Tecnhician	Relevant experience and technical ability but is not recognised by professional body	0	5418	4200	33600	43218	27300	3360	420	31080	74298
		9896	117458	191720	382850	701924	362600	39335	13170	415105	1094535

Concluding Summary



↑
Initial Sketch Plan for Commons Governance Site

The Combined Thesis Report

This combined thesis reports draws together our research, critical analysis and project design intent to date. This is demonstrated within the three preceding reports which set out the project research question and theoretical underpinning; environmental agenda; and the complexities associated with project delivery.

The Design Manifesto

The design manifesto interrogates the context of the Arrival City Studio site in Almada, Portugal through an ecological, sociopolitical and housing lens. In regards to these factors, we have made the broad ontological assumption that it is possible to achieve a shared understanding of the multiple and diverse realities concerned.

This research helped formulate the thesis research question, 'How can Urban and Ecological Resilience Challenge the Condition of Displaceability within the Arrival City?' which was subsequently explored through the creation of a theoretical framework and situated framework. The theoretical framework drew predominantly upon concepts of displaceability, 'gray spacing' and commons governance, with the situated framework interrogating the effect of climate change on the locality through a series of walks. As a result, three thesis intentions formed: Challenge the condition of displaceability, maintain status as an Arrival City in the wake of climate migrancy, and utilise the commons as a system for reciprocity and mutual co - creation. These thesis intentions have served as a springboard for the design, informing an approach to the landscape at a masterplan and building specific scale.

During further discussion, we have felt the Commons Governance building was the programme most appropriate for further design development. However, the site choices outlined in the design manifesto remain disconnected from the new communities formed at crossovers of ecological thresholds. As a result, the site explored in depth within the environment and technology report and the management and practice report is the new site location we will be taking forward.

To conclude, the manifesto makes suggestions of the spatial response to the site through a series of programmatic collages, phasing timeline and visual, suggesting the proposals character. With the site specific understanding gleaned through the environment and tech report and management and practice report, these spatial responses will be further developed and interrogated in the ongoing design thesis.

Environment and Technology

Our environmental and technological approach has emerged through our understanding and interpretation of mass migration and global climate crisis. The interests we have explored within the report have been shaped by global climate agendas, the approach of Sheffield School of Architecture, and our personal experience reflecting on the sustainability approaches of our respective practices during our collaborative practice year.

In addition to this knowledge we have been interested in exploring the use of lo - tech technologies and rewilding that can repair the unhealthy disconnect between humans and nature identified in the manifesto. Whilst the environment and technology report begins to explore using this approach in the context of our thesis project, this will be developed further as the design thesis progresses. We are particularly interested in how we might supplement, compliment or enhance these lo - tech technological approaches to suit a large building and infrastructure projects.

Management and Practice

The management and practice report aims to reflect the design ethos we have explored within our manifesto and environment and technology report. To do so, we have characterised the progressive climate agenda and collaborative design approach within our project procurement strategies, contract choice and project management.

This has included the analysis of the NEC4 Alliance contract and the demonstration of its suitability for use in a large phased masterplan project as well as its comparison with other collaborative construction contracts. In addition, we have utilised this report to develop 10 design principles which reflect project ethos and make suggestions of their effect on construction systems and material types.

The final section of the report demonstrates our understanding of mitigating risk within a project in the face of climate uncertainty. We highlight the challenges for design teams in relying on climate projections within design and suggest how we might mitigate these risks by utilising the range of professional skills present in the alliance and the establishment of a design criteria. We then use this design criteria to identify and address risks through design strategies for rewilding at a masterplan scale and flood risk at building scale.

Conclusion

In its entirety, this combined thesis report demonstrates a conceptual response to the right to the city, urban equality and climate change in the context of the Arrival City. Our future design thesis will strive to transform this theoretical approach to one of operational architecture, creating a masterplan overview (1:5000 scale) and designing the Commons Governance building (1:50). We intend that our design approach will place focus on the experiential qualities of space and what might mean for mutual co - creation between humans and wider ecological systems.

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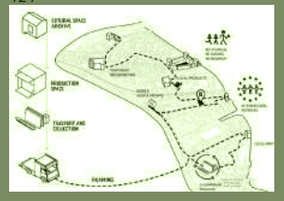

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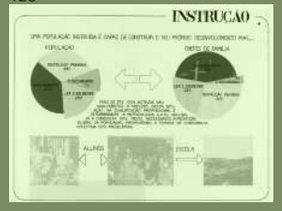

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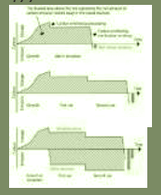

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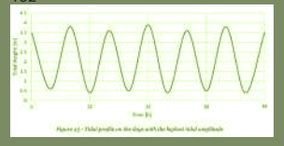

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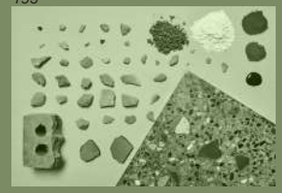

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