Tidal Tea Farm & Pool: Low Tide → Agricultural Research & Planting

Tidal Tea Farm & Pool: High Tide → Recreational Activities & Harvesting

CHATHAM'S TIDAL TEA FARM

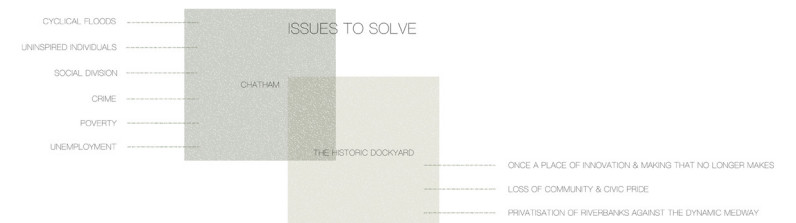## Dissolving The Interior For New Ecologies

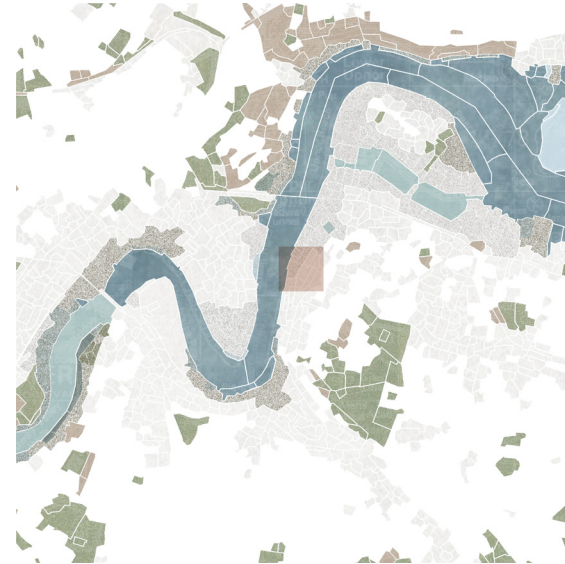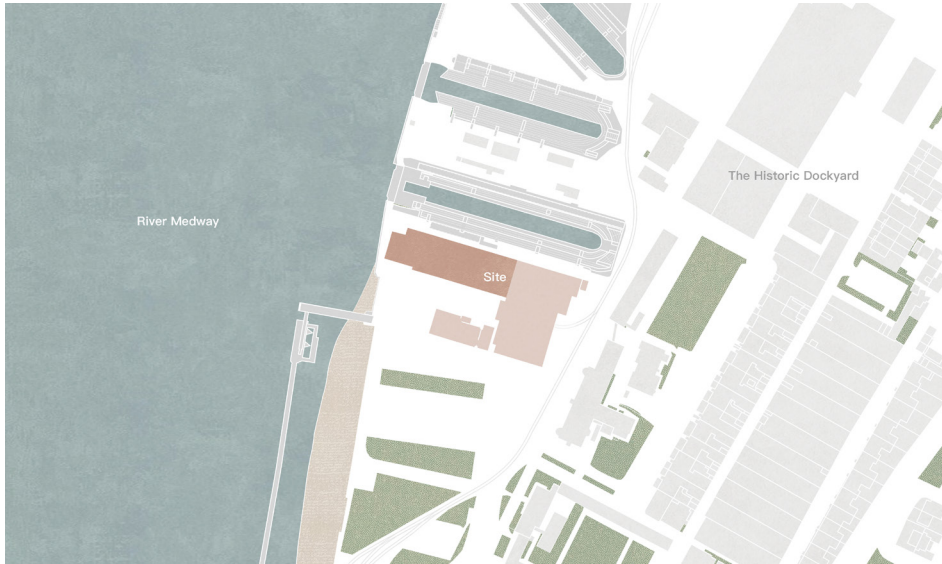*Revitalise Chatham: Embrace the Tide, Reimagine the Pride*

Chatham, once a united community that thrived as an industry along The Medway, has seen its civic pride, identity, and employment opportunities fade, leading to a town now divided by wealth and devoid of community values. The Historic Dockyard, previously a hub of innovation and making, now houses static objects. My goal for this project is to rejuvenate the site with innovative and sustainable programs that adapt to environmental changes, fostering a dynamic and evolving space.

The Medway experiences silting and cyclical flooding every 15 years, and with the effects of global warming, flood walls are built to protect surrounding areas. However, urbanisation and floodwalls degrade landform diversity, reducing agriculture and ecosystem benefits. Historically, riverbanks formed civilisations and provided strategic resources like nutrient-rich silt, essential for agriculture. Traditional terraced embankments would restore floodplains naturally, stabilising soil and preventing erosion. Located in Kent, "The Garden of England," The Medway supports 32% of national biodiversity but is largely privatised and underutilised.

Embracing floodplains' dynamic nature through flexible, adaptive design can transform Chatham into a vibrant, inclusive space that celebrates the interplay between water, land, and community. Innovative design and collaboration between local farmers and charities can turn flood-prone areas into cultural, ecological, and recreational assets. The integration of native medicinal plant cultivation with tide cycles creates a living laboratory of ecological resilience, cultural heritage, and community engagement, offering educational programs and hands-on experiences, further fostering a circular future for the community of Chatham and reimagining The Historic Dockyard as a hub of craftsmanship and innovation.

The project reuses neglected components of The Historic Dockyard, fitting new sustainable functions.
Changes in floor and ceiling heights respond to tide levels, creating distinct atmospheres for various activities.

CYCLICAL FLOODS
UNINSPIRED INDIVIDUALS
SOCIAL DIVISION
CRIME
POVERTY
UNEMPLOYMENT

ISSUES TO SOLVE

CHATHAM

THE HISTORIC DOCKYARD

ONCE A PLACE OF INNOVATION & MAKING THAT NO LONGER MAKES
LOSS OF COMMUNITY & CIVIC PRIDE
PRIVATISATION OF RIVERBANKS AGAINST THE DYNAMIC MEDWAY

Site Plan

River Medway

The Historic Dockyard

Site

Floodplain Oppourtunities in Chatham

Saltwater

Grassland

Freshwater

Woodland

Inland Rock

The Historic Dockyard

Low flood risk

High flood risk

2023 Chatham Tide Recordings:

SPRING (1st March):
Low Tide: 1m at 00:30h & 13:00h
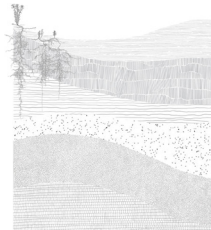High Tide: 5m at 07:00h & 20:00h

SUMMER (1st June):
Low Tide: 1m at 05:30h & 17:30h
High Tide: 5m at 11:30h & 23:30h

AUTUMN (1st September):
Low Tide: 1m at 08:30h & 21:00h
High Tide: 5m at 02:00h & 14:30h

WINTER (1st December):
Low Tide: 1m at 09:00h & 21:00h
High Tide: 5m at 02:30h & 15:00h

Riverbed Materials

Water
Native riparian flora
Clay
Silt

Sand

Sandstone / Gravel

Bedrock

Low And High Tide At Site

Floodwall along The Medway in Chatham
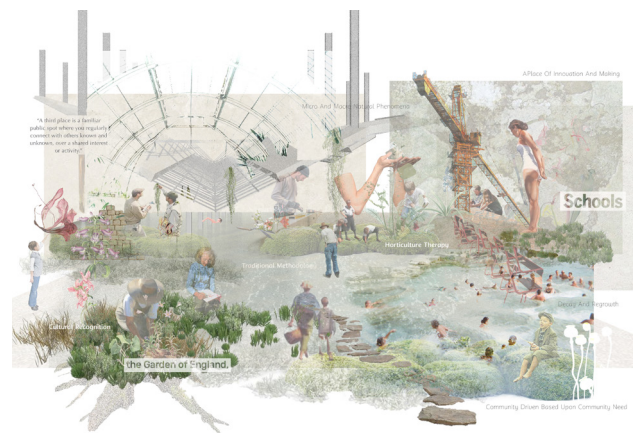

Natural floodplain

Target Audience

THE ELDERLY

THE UNINSPIRED STUDENT

THE YOUNG FAMILY
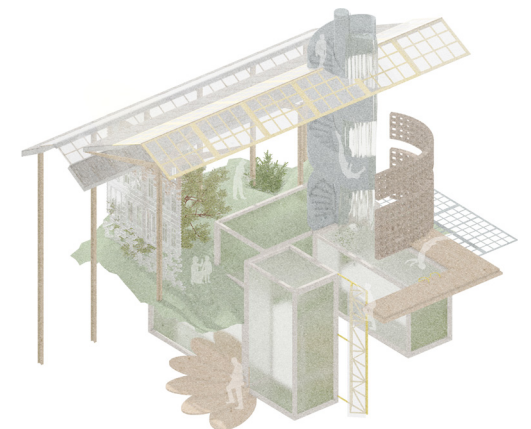
THE EARTH CONSCIOUS
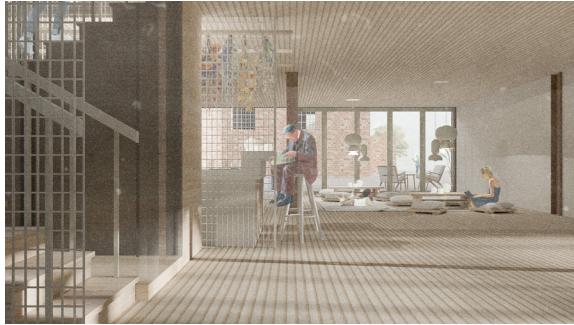
THE HOMELESS

Concept Collage

Synthesis Model

Main Entrance

Tea Room

Main Workshop

Children's Workshop

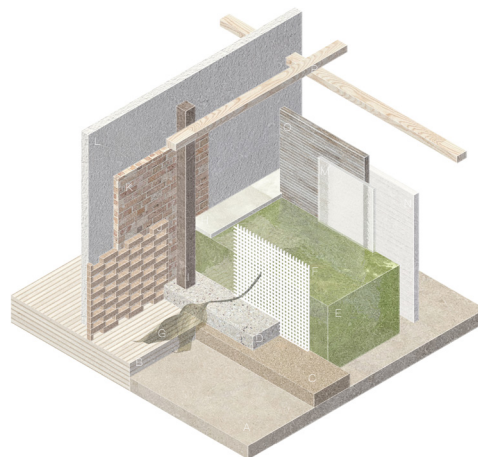Perspective Section & Activity Map

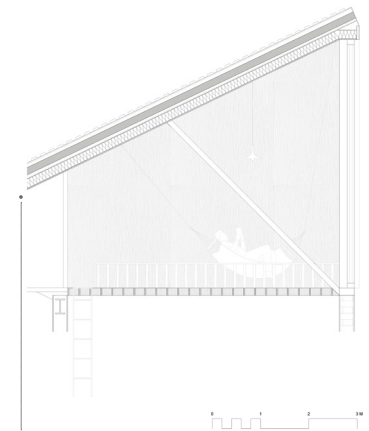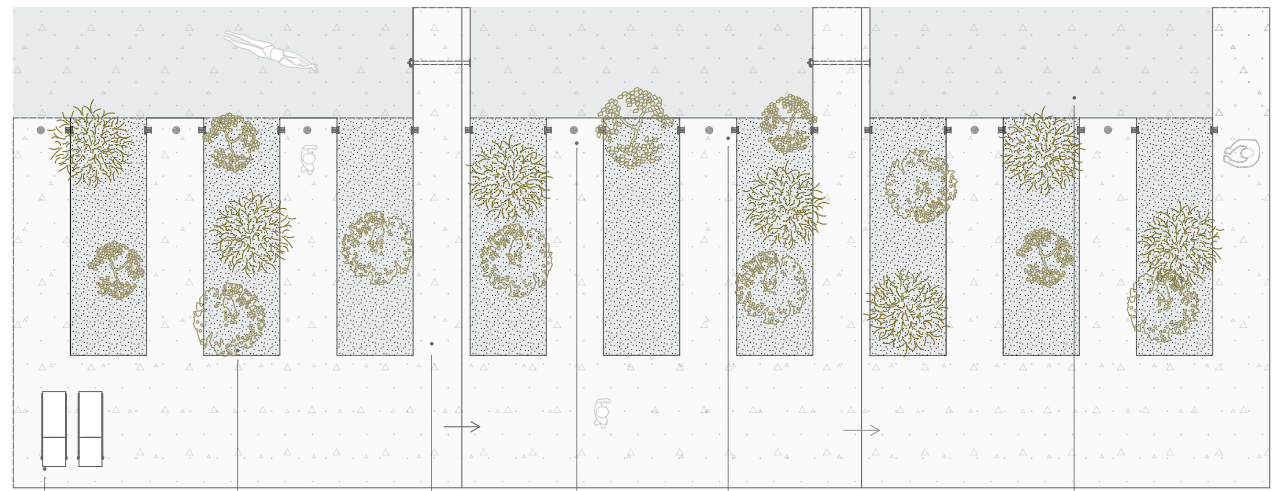TO GROW   TO SWIM   TO HARVEST   TO LEARN   TO CONSUME   TO REST
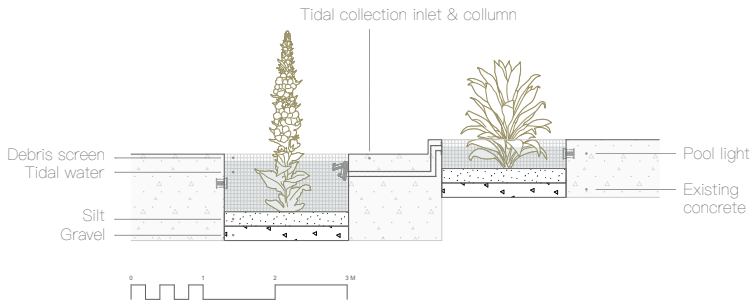

Material Palette & Junctions

STRUCTURE

A: Existing concrete

B: Reclaimed timber pannels from The Historic Dockyard

C: Silt waste from the Medway for insulation

D: Gravel

E: The Medway

F: Metal mesh debris screen

G: Dried plant waste material for insulation

H: Green metal accents

I: Existing metal structure

ACCENTS

J: Repurposed perforated existing brick for ventilation, privacy and optimum light within the tidal farm interior

K: Existing brick

L: White plaster

GROUND LEVEL

M: Existing double glazing glass

N: Polycarbonate sheet for optimum light and insulation within the tidal farm interior

O: Existing corrugated metal

P: Reclaimed timber pannels from The Historic Dockyard

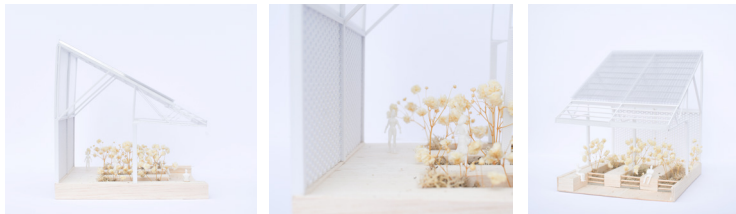Silt & Plant Waste Sustainable Insulation Within Residential Section

Tidal Energy Focus Area

Tidal collection inlet & collumn

Debris screen
Tidal water
Silt
Gravel

Pool light

Existing concrete

0   1   2   3M

The deepest tidal pool is lowered to the highest tide height measurement beneath ground level, minimising mass excavated concrete. Once the high tide appears, the tidal collumns provide tidal energy and transfer water to the level above, forming natural flood buffers whilst utilising the floodplains and their sustainable beneficial resources. The three interior levels within the tidal farm reference the three alternate wetland zones and tide heights that dynamically alter twice a day.

Focus Area Physical Model

Focus Area Location Map

0   1   2   3   4   5M

Pool side   Tidal wetland planters   Gardening path   Pool lights   Tidal valve & pipe   Communal tidal pool & agricultural research area

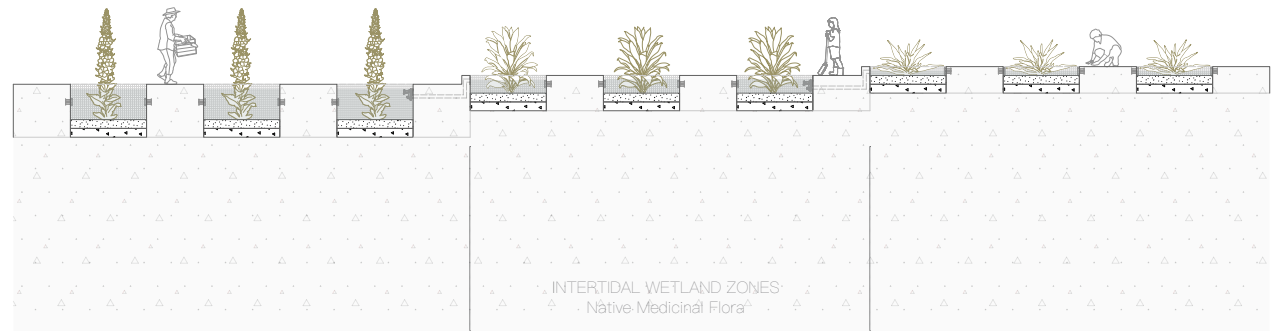INTERTIDAL WETLAND ZONES
Native Medicinal Flora

EMERGENT
700mm planter depth, 1100mm pool depth

WET MEADOW
300mm planter depth, 700mm pool depth
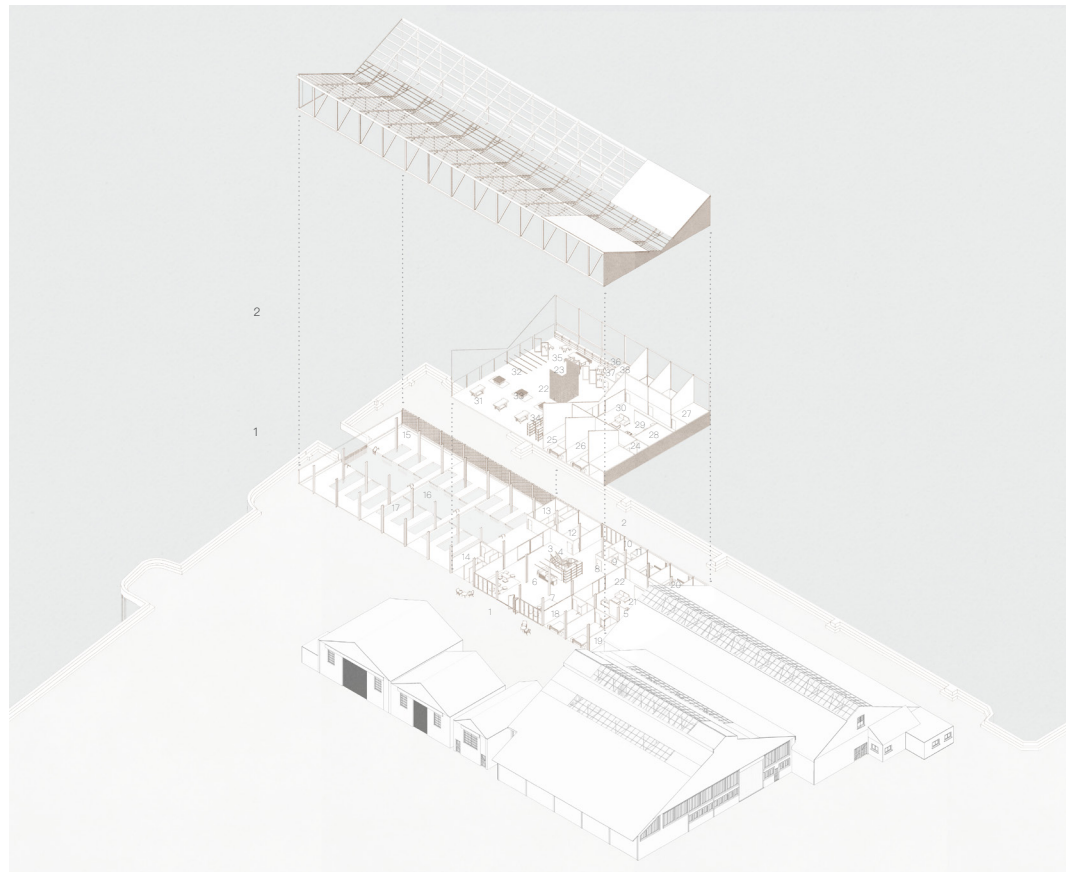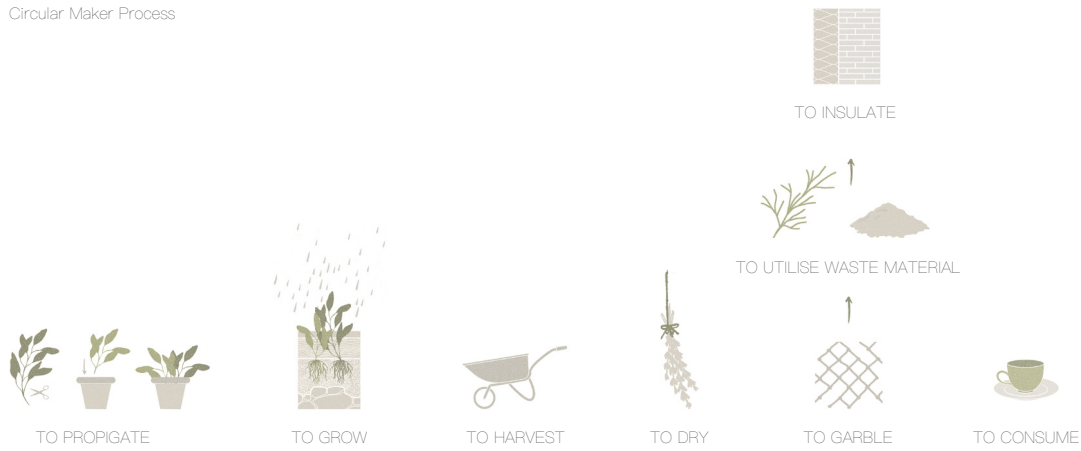
SHRUB
100mm planter depth, 500mm pool depth

Yarrow   Marshmallow   Wild Mint   Meadowsweet

Elderberry   Greater Plantain   Hawthorn   Dandelion

Nettle   Chammomile

Circular Maker Process

TO INSULATE

TO UTILISE WASTE MATERIAL

TO PROPIGATE   TO GROW   TO HARVEST   TO DRY   TO GARBLE   TO CONSUME

Exploded Isometric

KEY

1   **Circulation**
1. Main public entrance
2. Staff entrance
3. Main staircase
4. Elevator
5. Fire escape

Tea Room
6. Counter
7. Seating area
8. Public toilet
9. Accessible toilet
10. Staff room/ Pantry
11. Staff toilet
12. Storage/ Garden shed & Plant propigation

Tidal Tea Farm & Pool
13. Male changing room, Toilets & Showers
14. Female changing room, Toilets & Showers
15. Tidal pool side
16. Tidal pool
17. Tidal tea farm

Accomodation
18. Bedroom
19. Bathroom
20. Laundry room
21. Kitchen/ Dining room
22. Social space

2   **Circulation**
22. Main staircase
23. Elevator
24. Fire escape

Accomodation
25. Bedroom
26. Mezzanine
27. Bathroom
28. Laundry room
29. Kitchen/ Dining room
30. Social space

Workshop
31. Work benches
32. Plant drying area
33. Garbles
34. Storage of dried plants
35. Children's workshop
36. Mens toilet
37. Female toilet
38. Accessible toilet

BB   CC   DD

AA

1F Plan

GF Plan