

WATERSHED

A FUTURE THAT FLOATS



WATERSHED (*noun*): an event or period that is important because it represents a big change in how people do or think about something.

CLIMATE EMERGENCY & SUSTAINABILITY:

Watershed explores the use of floating architecture as a response to rising sea levels and the danger it poses to our coastal communities. Encompassing both residential and community spaces, the concept looks at ways in which architecture can be adapted to the water, and how sustainability can be incorporated as an integral part of community lifestyle.

A collection of floating modules, green spaces and hydroponic greenhouses form a residential area, powered by renewable energies. An industrial waterside building, currently being 'swallowed' by the sea, plays host to the community aspect of the project; with a modified floating ground floor, to extend the life of the building. This community hub reimagines the 'highstreet', with adaptable spaces that include a farm shop, co-working space, café/bar/restaurant, and other amenities. With sustainability at its core, this modular concept provides flexibility, with an architectural blueprint that can be adapted and reproduced on a global scale.

BUDGET FRIENDLY



SUSTAINABLE LIFESTYLE



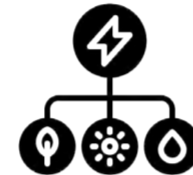
COMMUNITY FOCUS



ACTIVE LIFESTYLE



CLEAN ENERGY



ADAPTABLE LIFESTYLE



INNOVATIVE DESIGN



01 | LAND

A community land-based building acts as a 'local high street', offering flexible spaces, including a café/bar/restaurant, organic farm shop, co-working space, post office, bakery, activity spaces, etc.

02 | SEA

Floating modules, green spaces and hydroponic greenhouses form a gated residential community on the water, connected via pontoon walkways. A modified ground floor in the community hub also allows it to float when sea levels rise.

SUSTAINABILITY

- The concept uses rising sea levels to its advantage by harnessing **floating technology**, to provide residential accommodation to the local community at an affordable price, and to extend the life of an existing waterside building, into a community hub.
- The floating residential modules are **built on-site** in a separate construction space within the land-based building, substantially reducing embodied carbon emissions.
- Floating greenhouses containing **hydroponic farms** provide self-sufficiency in the community, thanks to their increased yield, faster growing pace, and lower waste, (requiring less water than traditional farming methods).
- Textured recycled concrete tiles will line the underside of the floating plinths and pontoons to encourage **marine biodiversity** in the area.

ADAPTABILITY

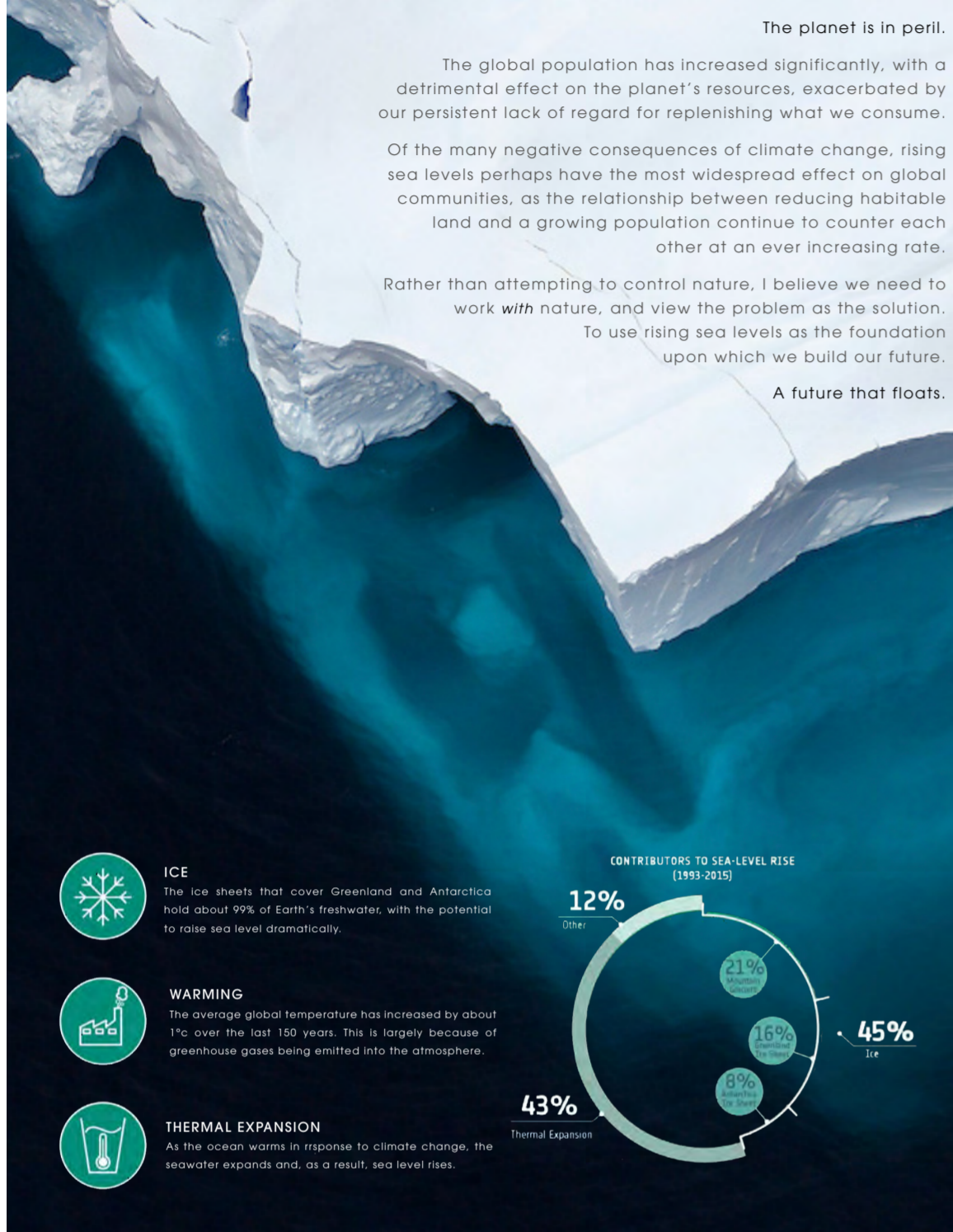
- An existing waterside building, otherwise doomed to be engulfed by the sea, uses pontoon technology to 'float' the ground floor, allowing the building to be **adapted** as a **community hub**.
- Floating pontoons connected to the land offer detached, **modular housing**, available in various sizes and layouts, to suit a broad demographic with individual requirements.
- A design suite forms part of the community hub, where prospective and current owners can **custom design** their floating modules to suit their specific needs with a dedicated team.

COMMUNITY

- The community hub acts as a '**local high street**' offering flexible spaces, featuring a café/bar/restaurant, organic farm shop, co-working space, post office, bakery, activity spaces, etc.
- Additional **floating** plinths offer outdoor **green space** for the community to enjoy, designed to improve residents' health & wellbeing.
- Only members of the local community can acquire a floating module on this site. However, individual modules are available to purchase for personal use at an increased price, to ensure **affordability** within the local community.

THE ISSUE

IN AN AGE OF ENVIRONMENTAL CRISIS, COULD FLOATING COMMUNITIES BECOME THE FUTURE OF ARCHITECTURAL DESIGN?



The planet is in peril. The global population has increased significantly, with a detrimental effect on the planet's resources, exacerbated by our persistent lack of regard for replenishing what we consume.

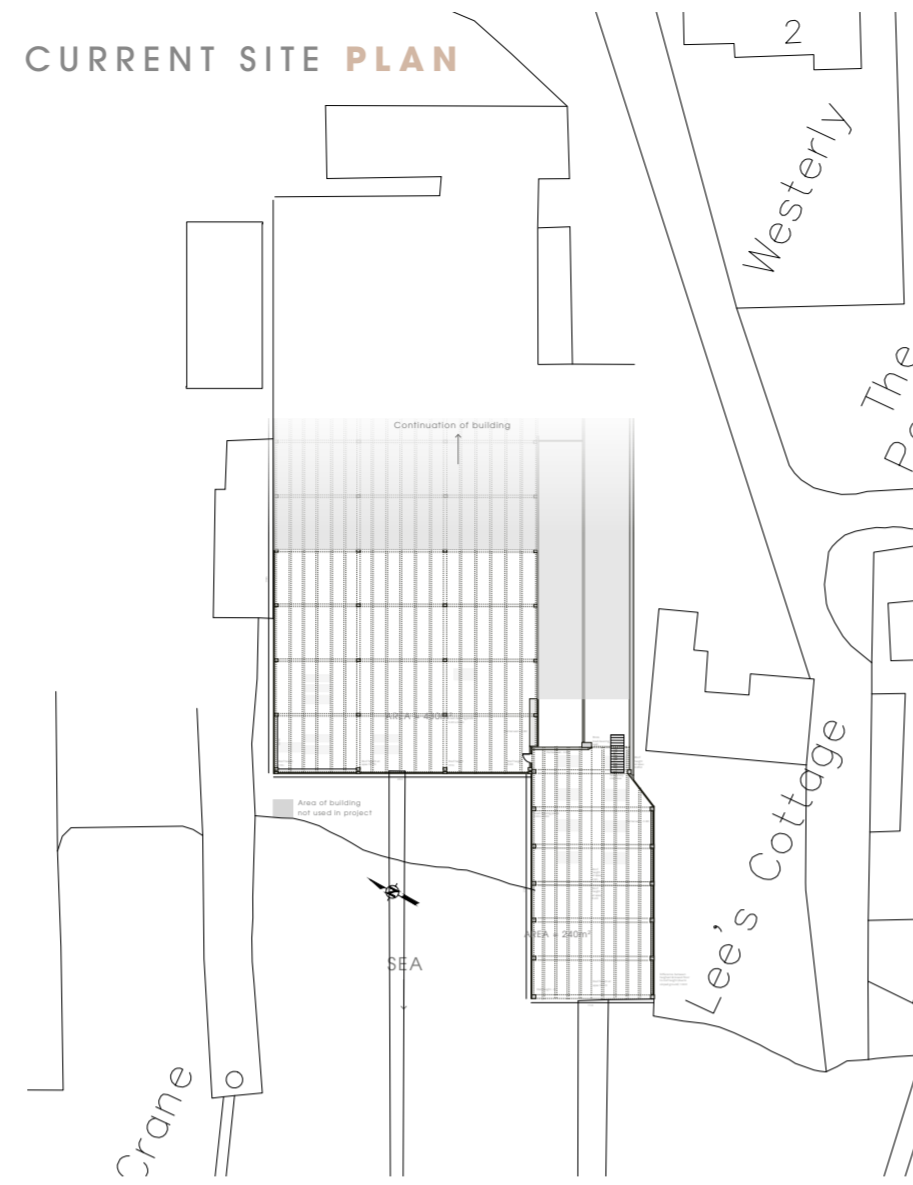
Of the many negative consequences of climate change, rising sea levels perhaps have the most widespread effect on global communities, as the relationship between reducing habitable land and a growing population continue to counter each other at an ever increasing rate.

Rather than attempting to control nature, I believe we need to work *with* nature, and view the problem as the solution. To use rising sea levels as the foundation upon which we build our future.

A future that floats.

CONTRIBUTORS TO SEA-LEVEL RISE (1993-2015)

- ICE: 12% (The ice sheets that cover Greenland and Antarctica hold about 99% of Earth's freshwater, with the potential to raise sea level dramatically.)
- WARMING: 45% (The average global temperature has increased by about 1°C over the last 150 years. This is largely because of greenhouse gases being emitted into the atmosphere.)
- THERMAL EXPANSION: 43% (As the ocean warms in response to climate change, the seawater expands and, as a result, sea level rises.)



SITE ANALYSIS



KEY FEATURES

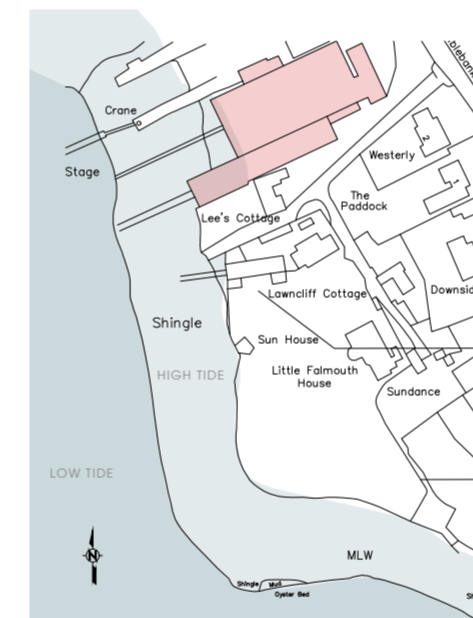
- Waterside location - partially floods at high tide. HIGH RISK SITE DUE TO RISING SEA LEVELS
- Site sits on a 3° slope
- Southwest facing aspect
- No grade listing
- Calm/sheltered position, in a small bay, slightly set back from general water traffic.
- Existing space is approx. 1750m². Phase One will use around 600m².



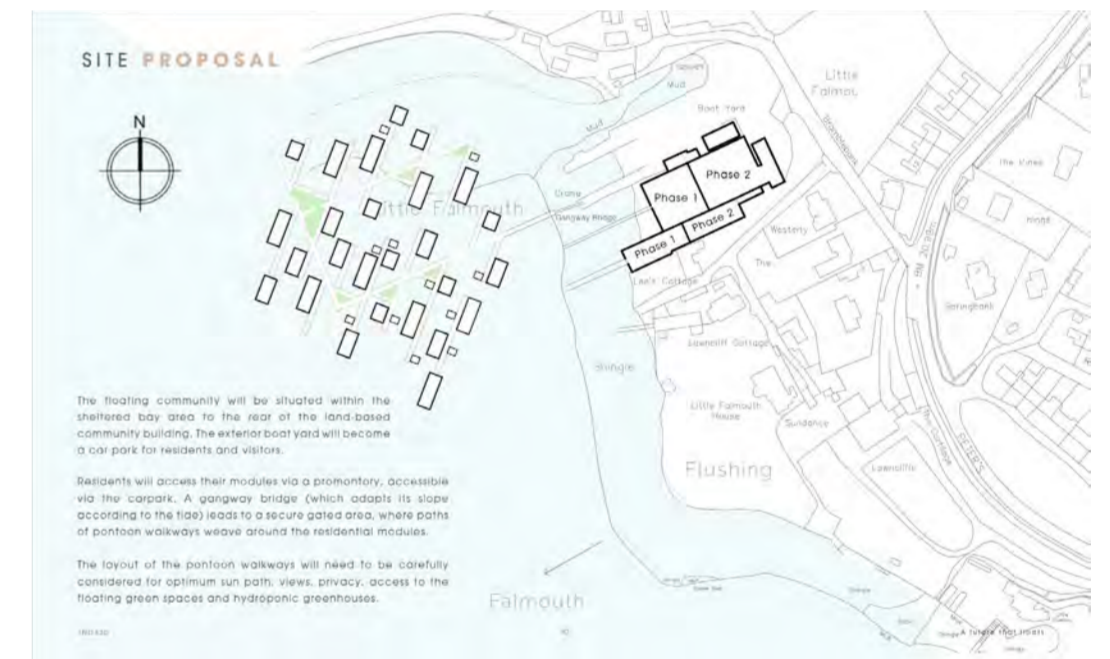
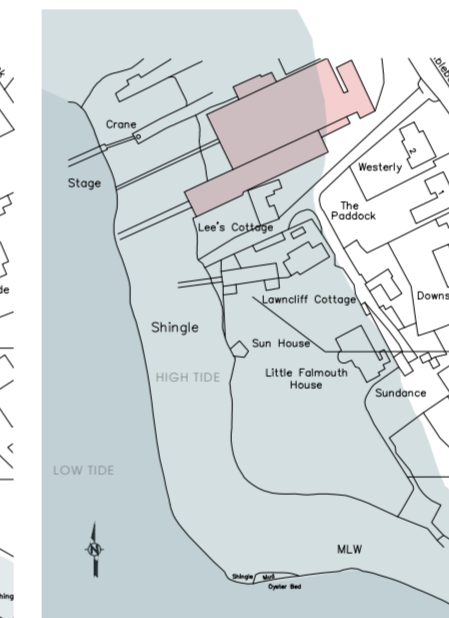
CURRENT SITE ELEVATIONS



CURRENT TIDE MAP



FUTURE TIDE MAP (2050)



CONCEPT NARRATIVE

A BLUEPRINT FOR SUSTAINABLE COMMUNITIES OF THE FUTURE

MODULAR



COMMUNITY BUILT



AN ODE TO SIMPLICITY & CRAFTSMANSHIP



A NEW LIFESTYLE



REDUCE, REUSE, RECYCLE



COMMUNITY GROWN



DESIGN FOR HUMAN & PLANET HEALTH

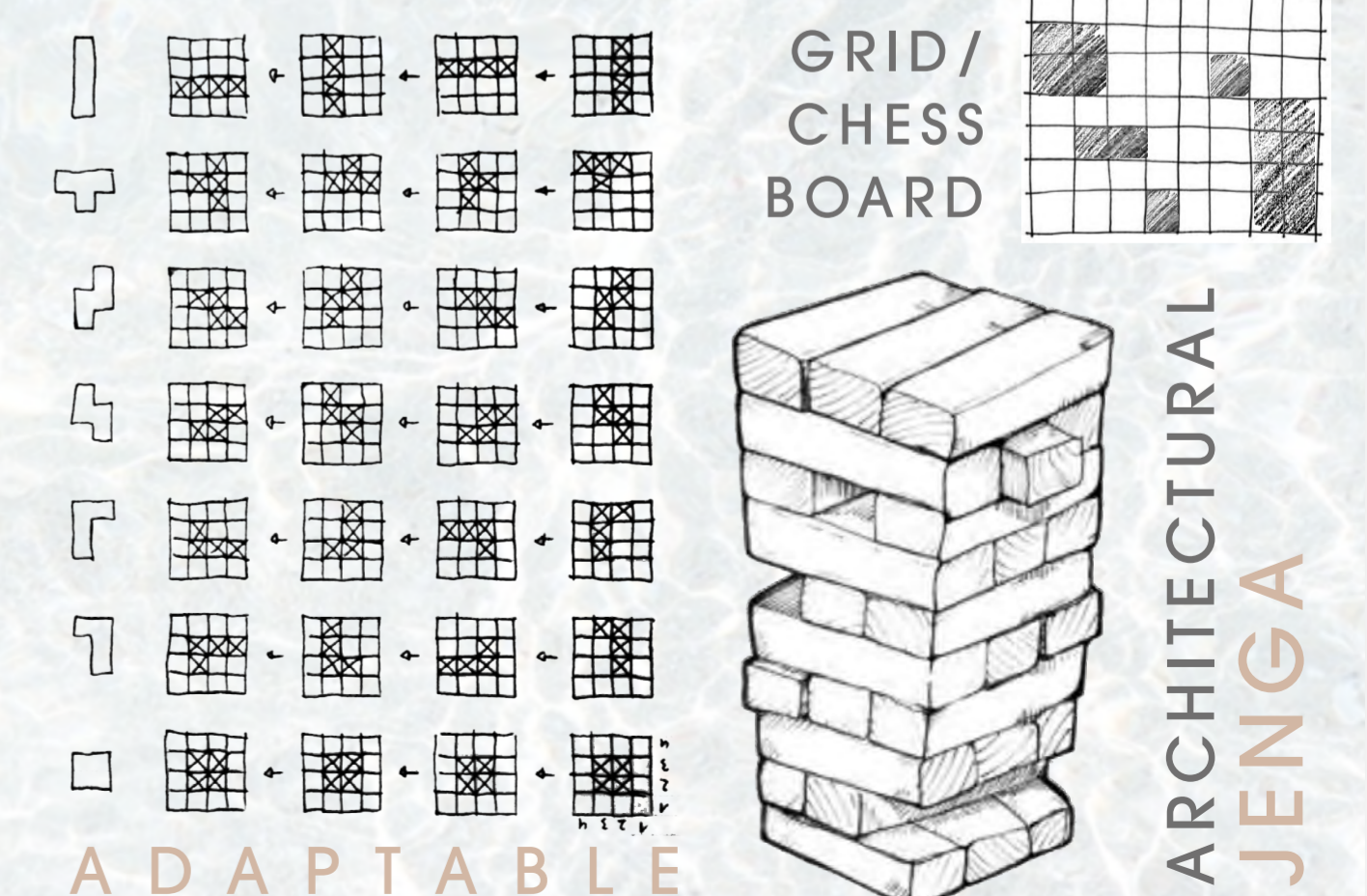


SUSTAINABLE DEVELOPMENT GOALS

- 3 GOOD HEALTH AND WELL-BEING**
- 6 CLEAN WATER AND SANITATION**
- 7 AFFORDABLE AND CLEAN ENERGY**
- 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**
- 11 SUSTAINABLE CITIES AND COMMUNITIES**
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION**
- 13 CLIMATE ACTION**
- 14 LIFE BELOW WATER**

MODULAR STRATEGY

GRID/CHESS BOARD



ARCHITECTURAL JENGA

ADAPTABLE

COMMUNITY HUB



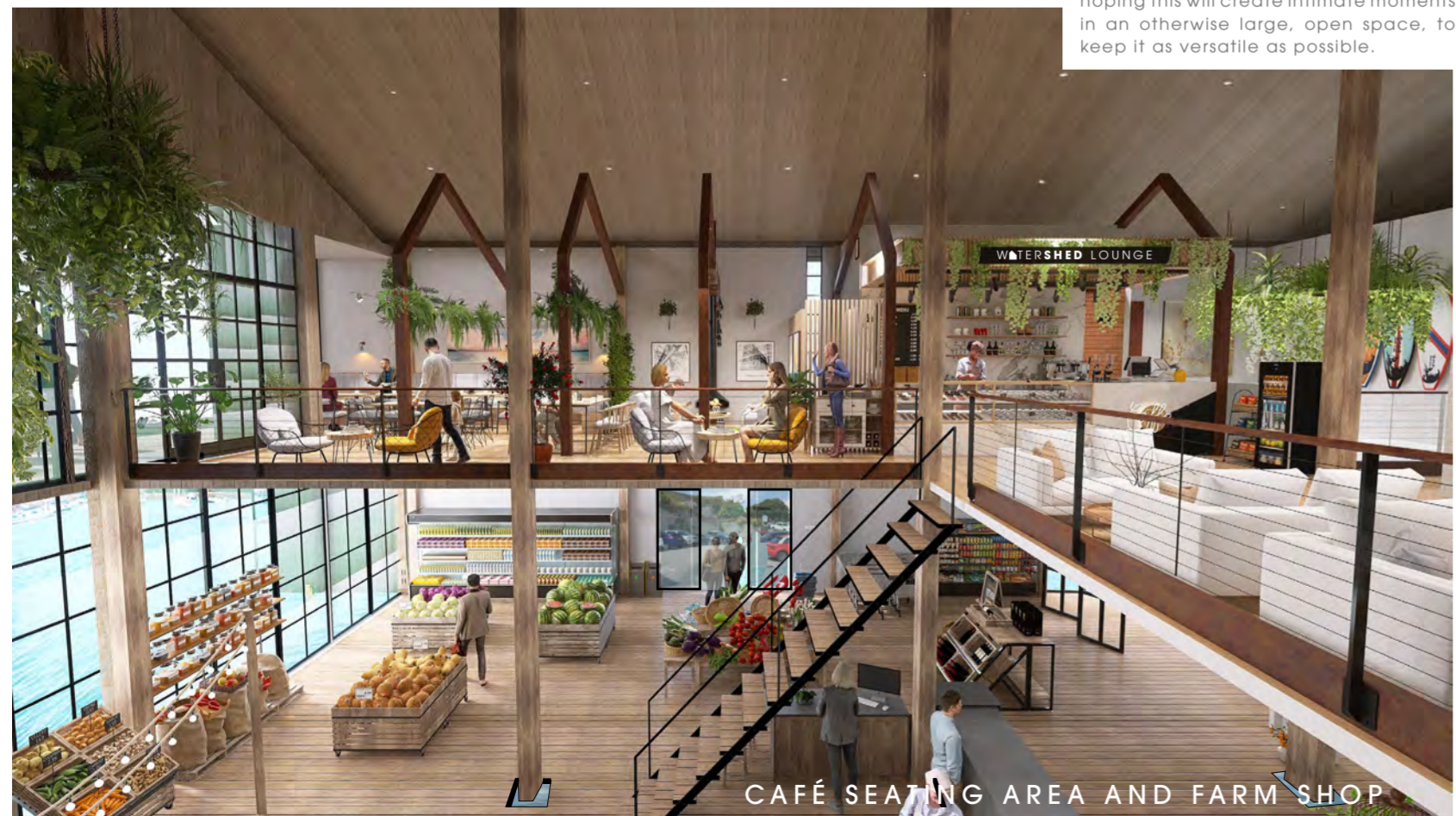
FARM SHOP & VIEW TO FLOATING COMMUNITY

I wanted to create a focal point, celebrating the area that the community have actively contributed to. The fresh produce is grown by the locals in the floating hydroponic greenhouses and the display area takes pride of place in the central void, with a great view of the floating modules in the background.

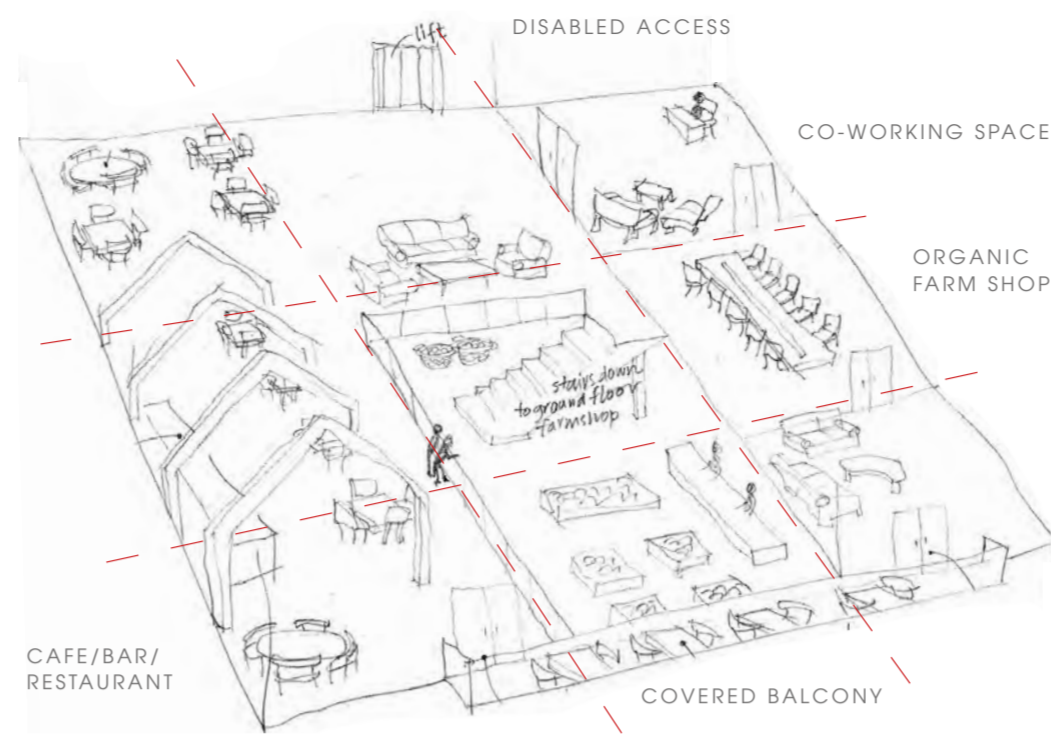


FARM SHOP BAKERY

I have tried to keep the community hub open, whilst sectioning areas off, using structural shapes and screens. I am hoping this will create intimate moments in an otherwise large, open space, to keep it as versatile as possible.



CAFÉ SEATING AREA AND FARM SHOP



A DAY IN THE LIFE OF... A RESIDENT



Wake up and eat breakfast, admiring your sea view



Grab a coffee from the 'Watershed Lounge' and head to the co-working space.



Pick up some groceries during your lunch break from the organic farm shop



Help out with building new modules for the community and catch up with friends & neighbours



Get some sup-boarding in and paddle to a floating green space for some quiet time



Grab veggies & herbs from your hydroponic greenhouse for this week's meals & enjoy the sunset from your alfresco dining spot

A DAY IN THE LIFE OF... A VISITOR



Head to the co-working space for a morning of productivity.



Grab a bite to eat for lunch at the 'Watershed Lounge' and get talking to a resident.



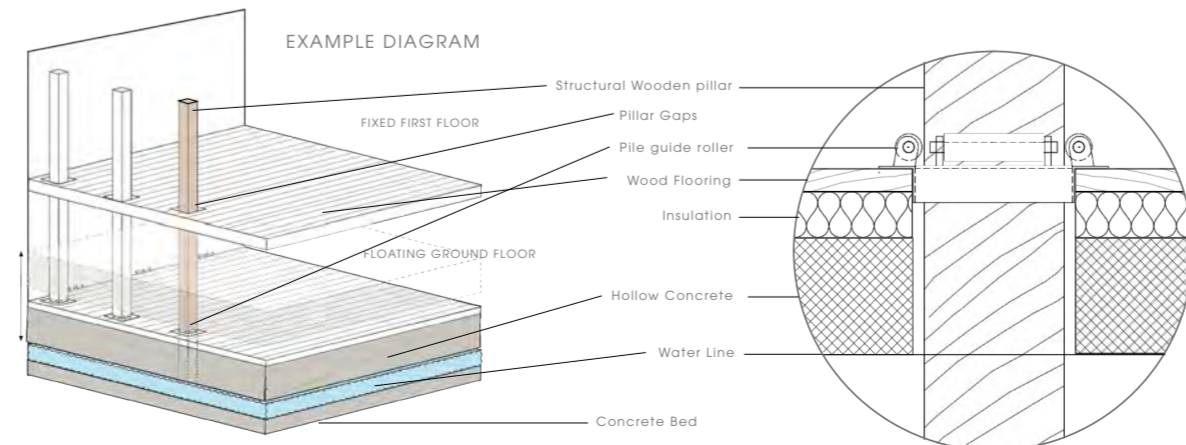
Find out from the resident that anyone can hire sup-boards or sign up for classes like yoga



Sign up for one of the classes, pick up some basics from the shop and head home

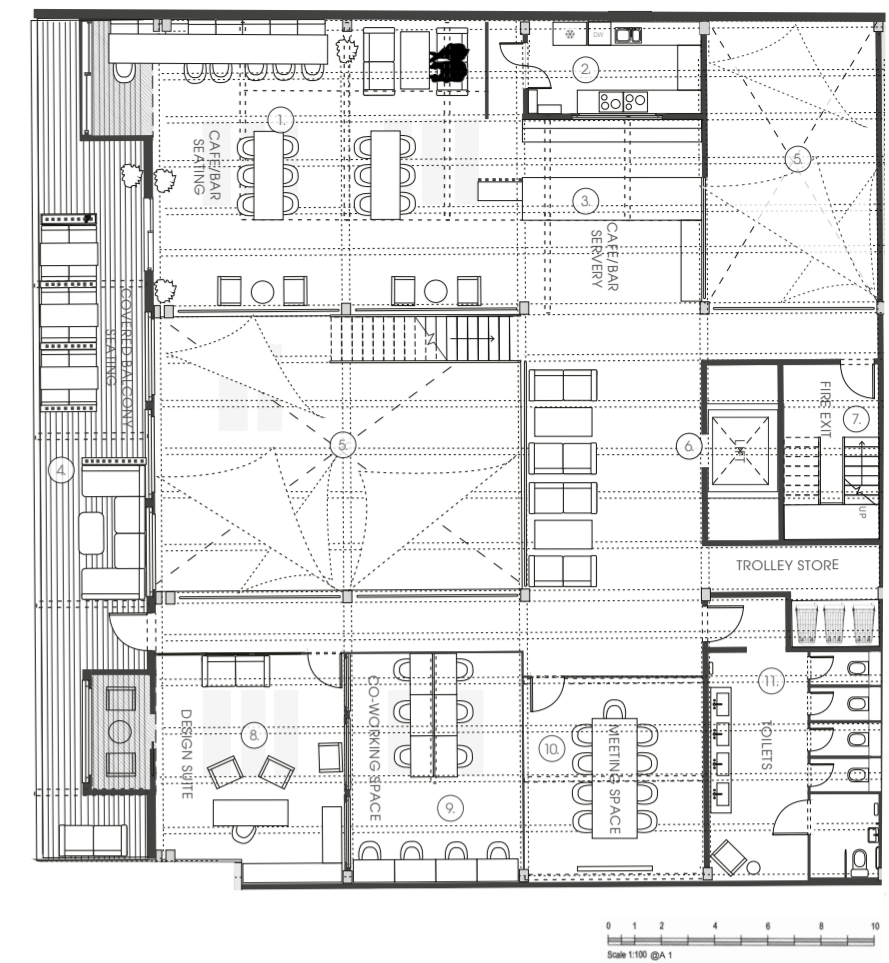
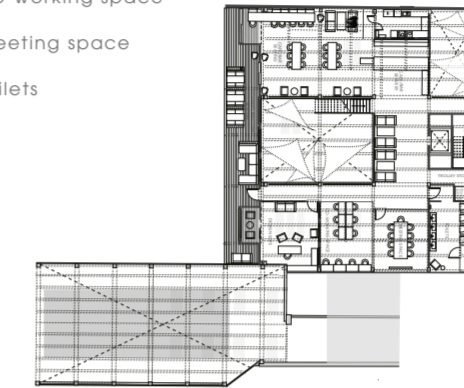
FLOATING FLOOR DETAIL

The floating floor will behave the same way as a pontoon, using piles and guide rollers. The metal plates will be attached to the surface of the floor over the 'gap', which is around 25mm wider than the pillar (300mm x 200mm) to allow for smooth movement. The rollers attached to the plate act as a guide, keeping the 'pontoon' stable. The pillars are in a grid layout, adding to the stability of the floating structure. There will be a gap between the floating floor and the walls, with a number of rollers lining the outer edge to guide it up, so no swaying will be felt, as can often be experienced on outdoor pontoons.



COMMUNITY HUB FIRST FLOOR

- 1 Café/Bar/Restaurant seating area
- 2 Kitchen
- 3 Café/Bar/Restaurant servery
- 4 Covered Balcony
- 5 Void
- 6 Lift
- 7 Fire Exit Stairs
- 8 Module Design Suite
- 9 Co-working space
- 10 Meeting space
- 11 Toilets

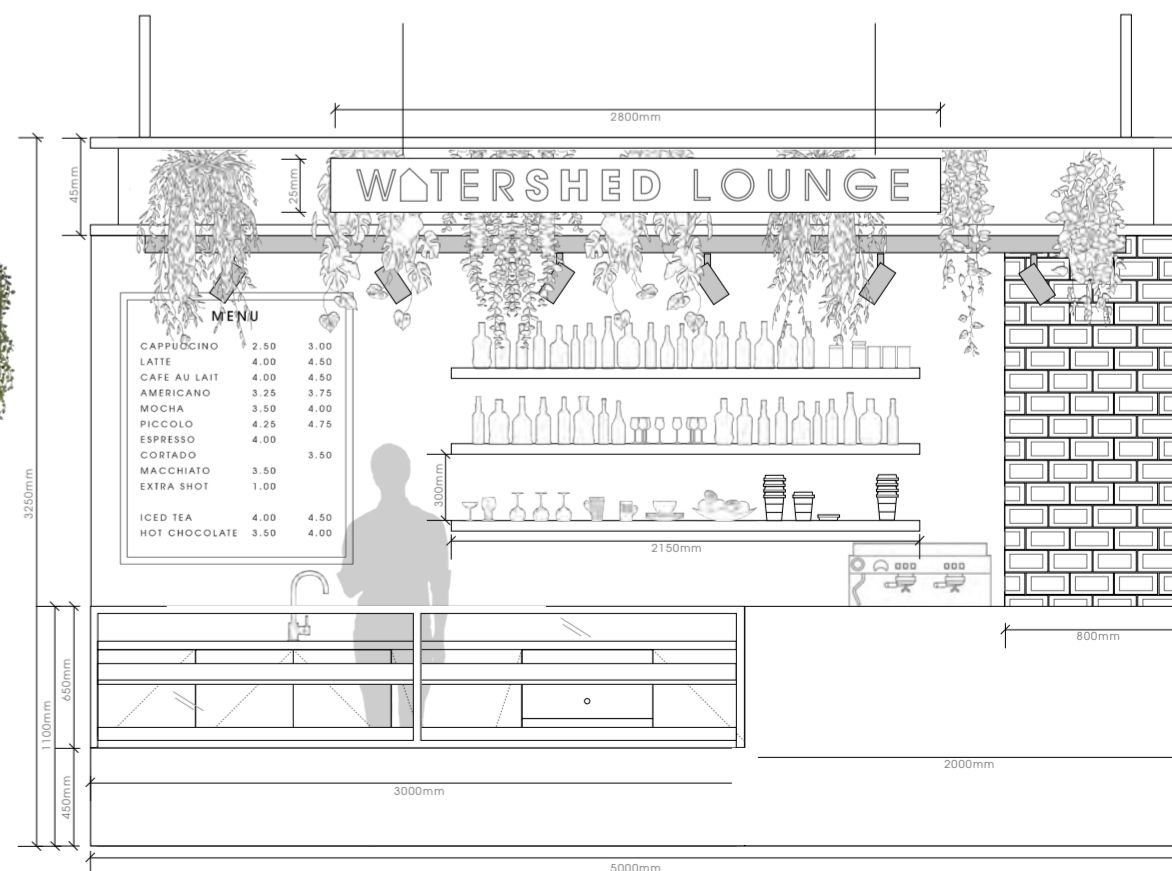


COMMUNITY HUB GROUND FLOOR

- 1 Ground Floor Entrance
- 2 Adaptable space for local artists
- 3 Organic Farm Shop
- 4 Lift
- 5 Fire Exit Stairs
- 6 Community Room (yoga studio)
- 7 Bakery
- 8 Post Office
- 9 Double Height Construction Workshop
- 10 Construction Workshop store



BAR DETAIL

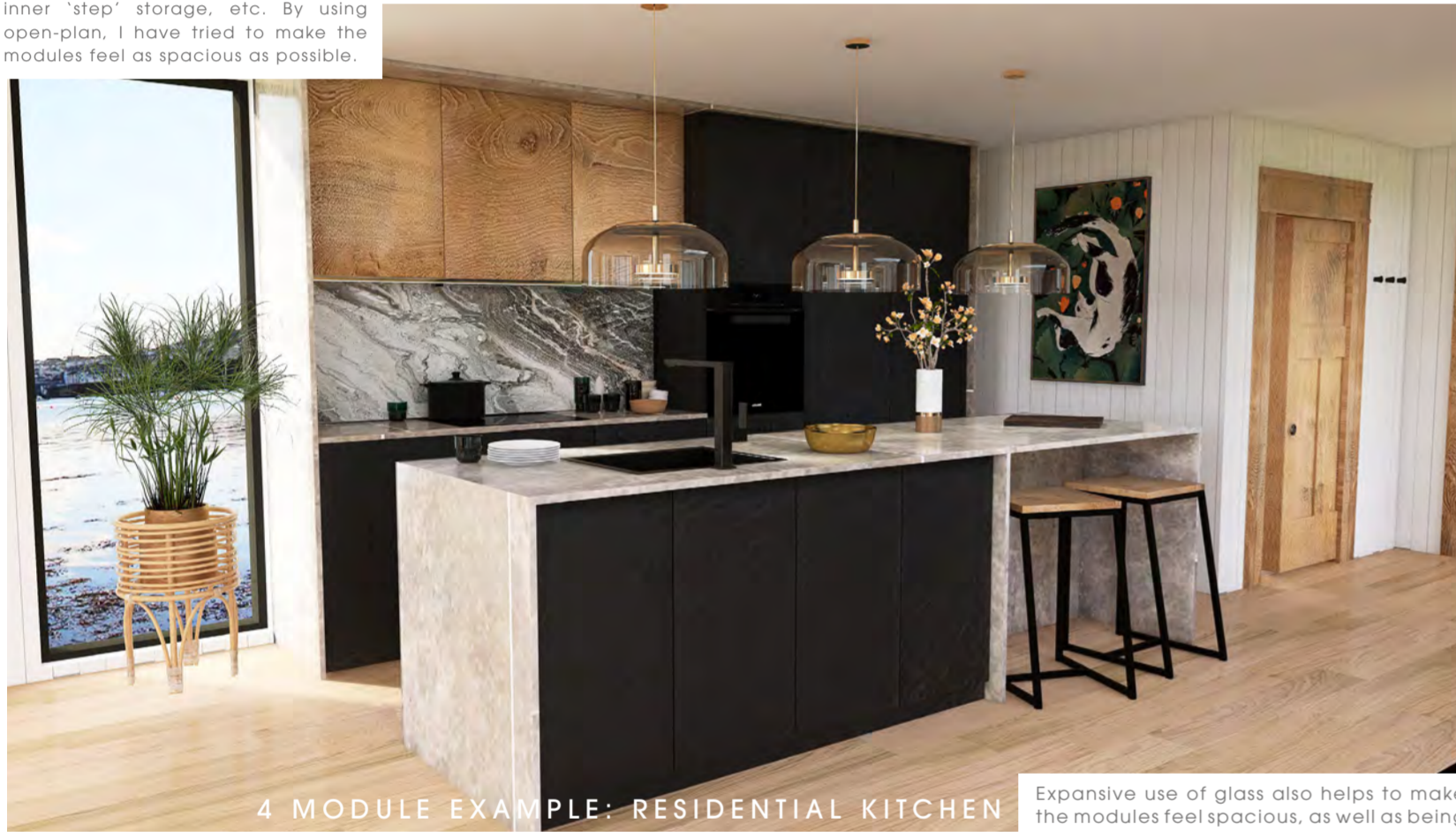


FLOATING RESIDENTIAL MODULES



4 MODULE EXAMPLE: RESIDENTIAL OPEN-PLAN SPACE

Microliving is key to the success of floating homes. Clever layouts and use of storage is paramount. I have used techniques, such as pocket doors, inner 'step' storage, etc. By using open-plan, I have tried to make the modules feel as spacious as possible.



4 MODULE EXAMPLE: RESIDENTIAL KITCHEN

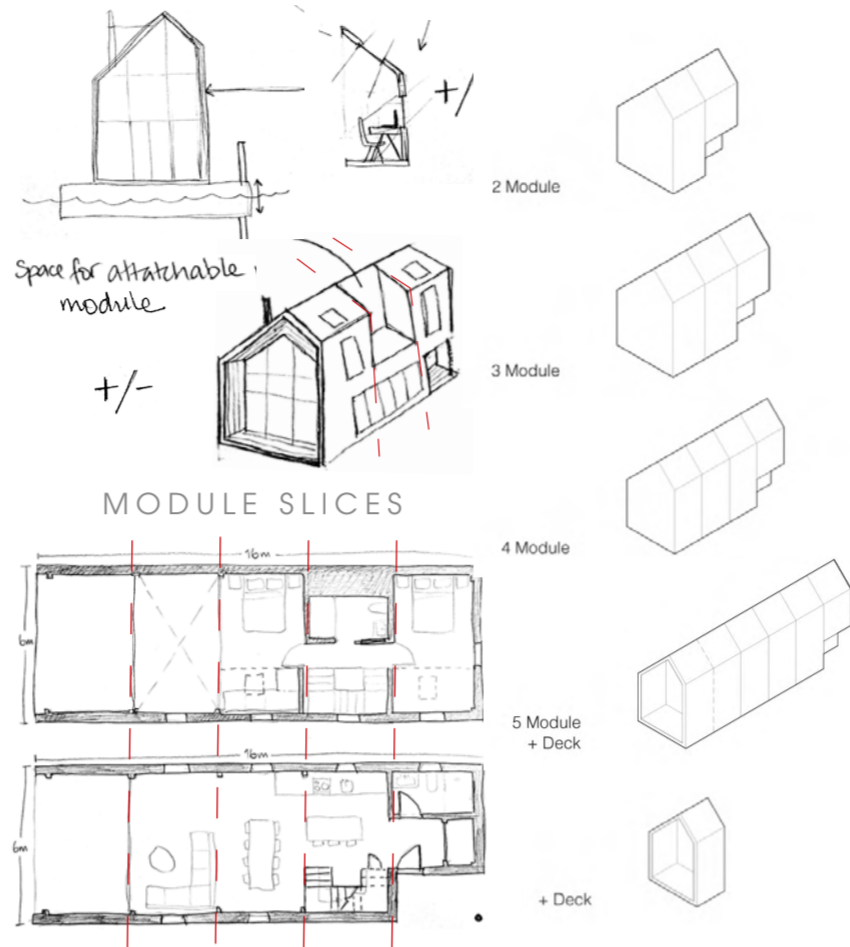
Expansive use of glass also helps to make the modules feel spacious, as well as being close to the water. The floating modules should help to encourage connection to nature, and in so doing, improve the health & wellbeing of the inhabitants.



4 MODULE EXAMPLE: DINING AREA

STRATEGY DIAGRAMS

RESIDENTIAL MODULES - ADDITIVE +/- SUBTRACTIVE



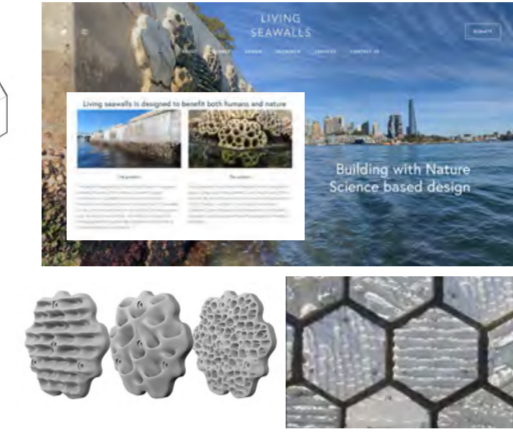
HYDROPONIC SYSTEMS

The floating neighbourhood will have access to hydroponic greenhouses, providing self-sufficiency and fresh produce to the wider community.



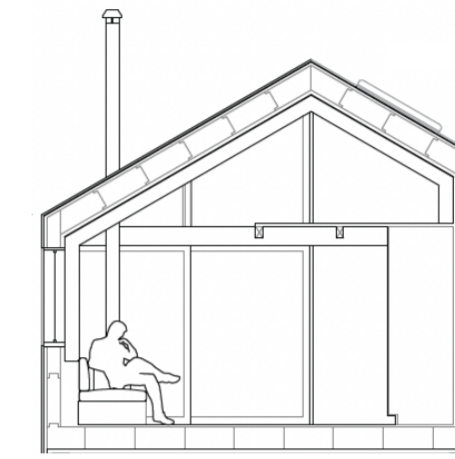
MARINE BIODIVERSITY

Textured recycled concrete tiles will line the underside of the floating plinths and pontoons to encourage marine biodiversity in the area.

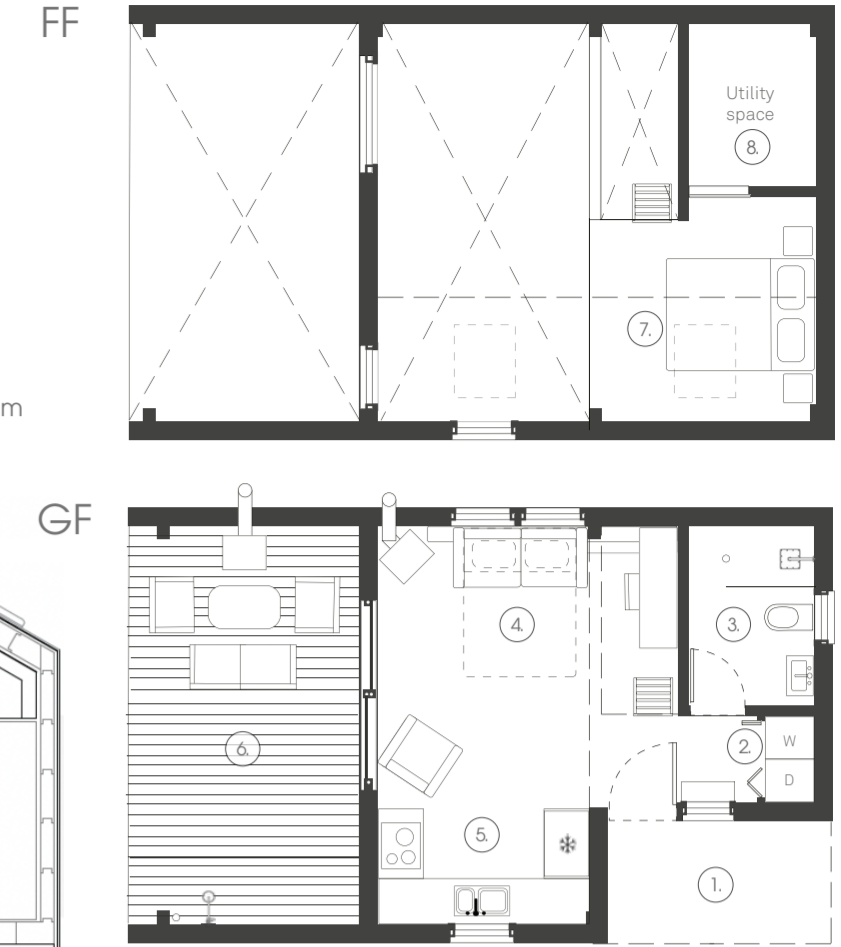


FLOOR PLANS

1. Covered Porch
2. Utility/Laundry
3. Bathroom
4. Living Space/sofa bed
5. Kitchen
6. Covered Deck
7. Reduced height bedroom
8. Storage space



2-MODULE 1.5 STOREY (+deck) EXAMPLE

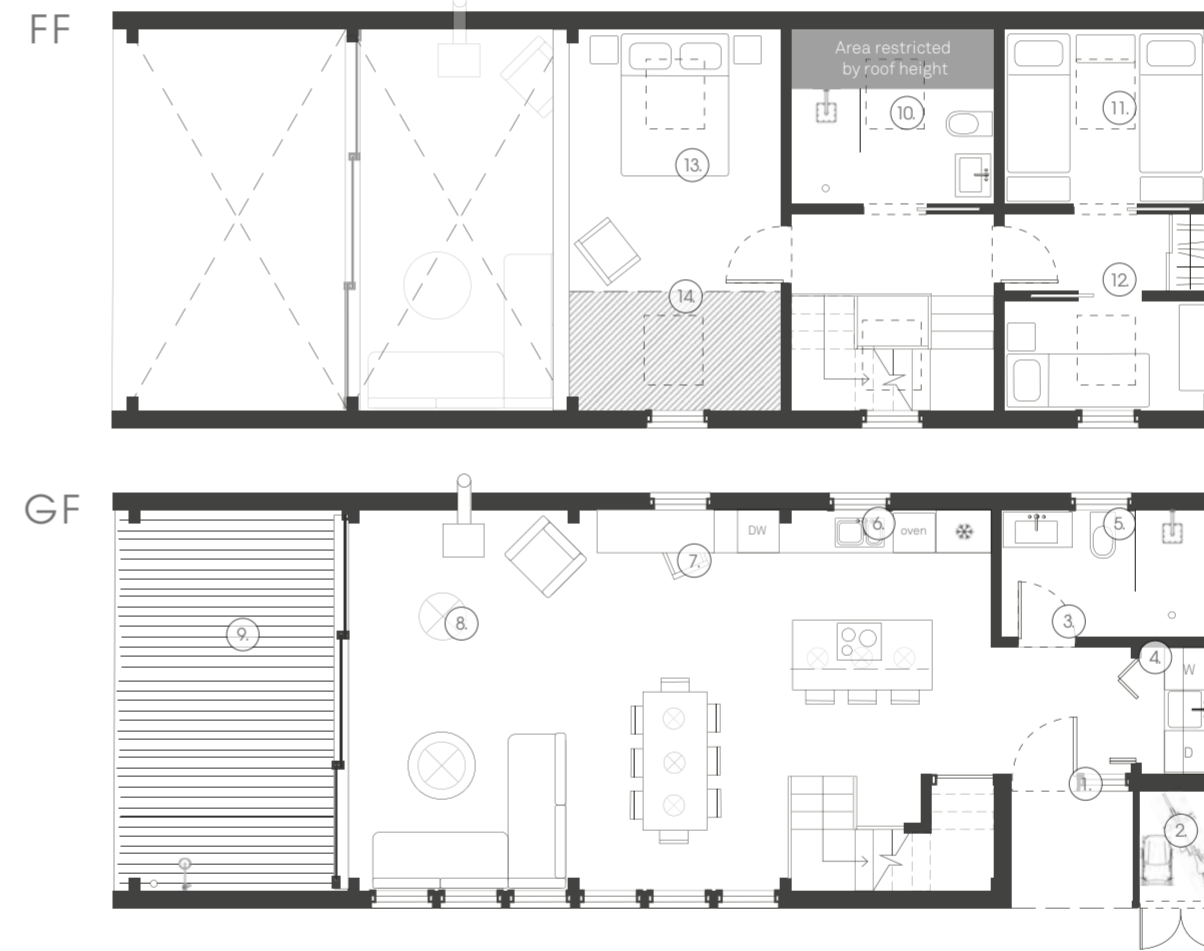


FLOOR PLANS

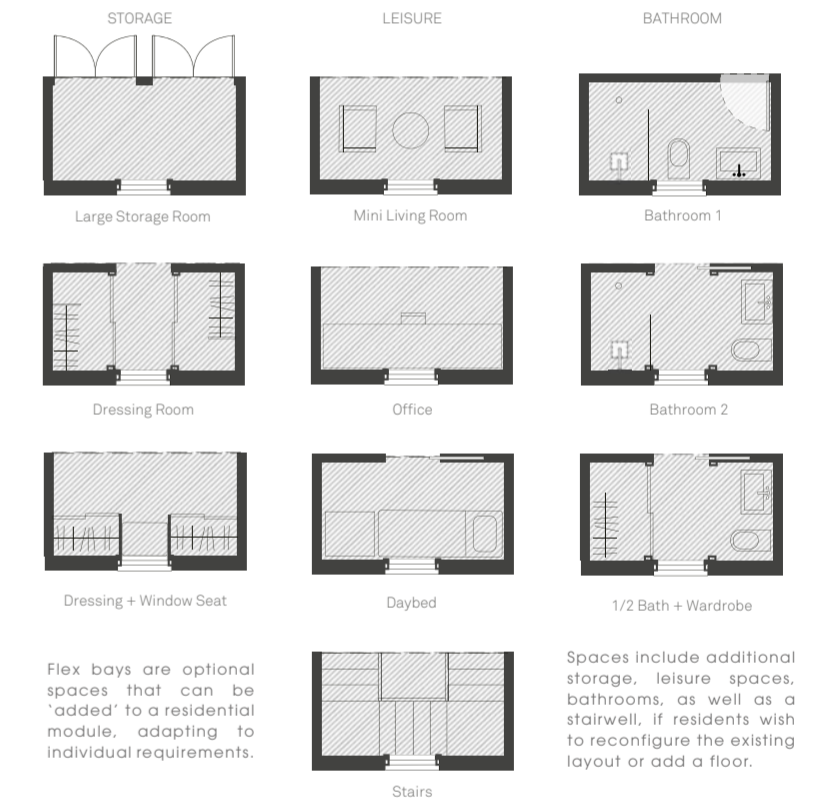
1. Covered Porch
2. Outside Storage
3. Entrance Hall
4. Utility/Laundry
5. Bathroom
6. Open-plan Kitchen
7. Open-plan dining/office
8. Living Space
9. Covered Deck
10. Bathroom
11. Twin bedroom
12. Single bedroom
13. Double Bedroom
14. Flex Bay



4-MODULE 2 STOREY (+deck) EXAMPLE



FLEX BAYS



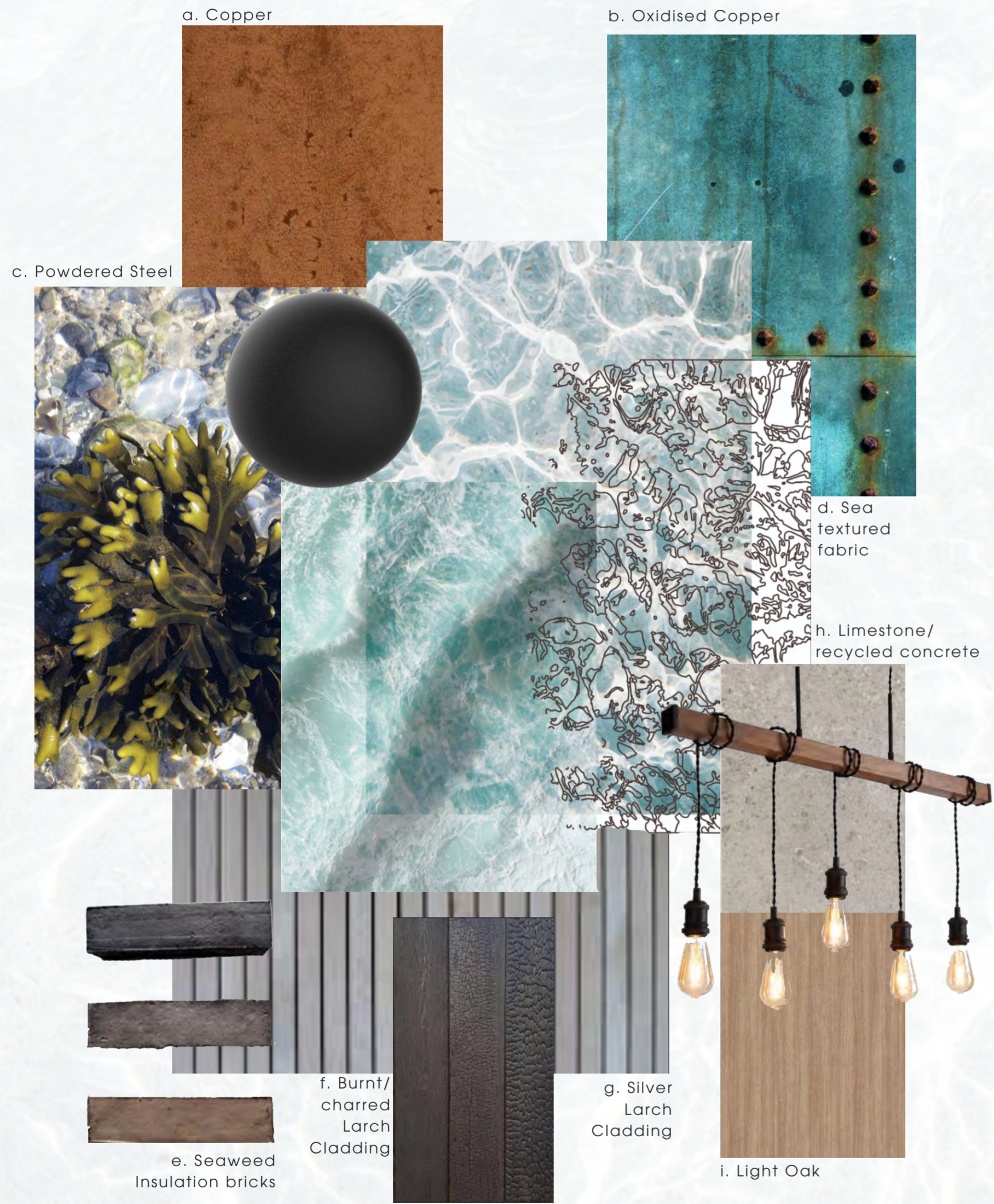
Flex bays are optional spaces that can be 'added' to a residential module, adapting to individual requirements. Spaces include additional storage, leisure spaces, bathrooms, as well as a stairwell, if residents wish to reconfigure the existing layout or add a floor.

RENDERED INTERIOR SECTION



COMMUNITY HUB - MATERIALITY

Paying homage to the site's original function as a working ship yard, the community area will take on an **industrial** aesthetic, taking existing materials from site, as well as additional second-hand pieces. This will give a **raw aesthetic** of **corroded metals** and **weathered wood**, lending a **patina of age** that will contrast with newer elements of powdered steel, glass, recycled concrete and **greenery**. This will create an interesting relationship between the old and new, reflecting our need as a community, to embrace both old and new methods of sustainability, whether upcycling, recycling, or integrating technologically innovative energy systems into our lives and our homes. The industrial aesthetic and use of bright colours and greenery feels appropriate for a community space, to encourage energy, positivity and a community spirit.



RESIDENTIAL MODULES - MATERIALITY

Site inspired finishes in the residential modules will focus more on the **natural elements** of the sea, rather than the industrial aesthetic of the community hub, and will be guided by the **psychology of space**. The aim is to create a **nurturing atmosphere**, designed to allay the fears in the community regarding the climate crisis and the concept of floating - through decorative finishes and styling, a **'home-from-home'** environment will be created, to help people adjust. Through materiality and FF&E, a **luxury aesthetic** will encourage people to see this new lifestyle is an 'upgrade', rather than 'the only option'. The spaces will be inspired by Japanese and Scandinavian practices; where **nature, craftsmanship, refinement** and **minimalism** are key to their design ethos - a **light, calm, neutral colour palette** will be paramount in achieving this.

