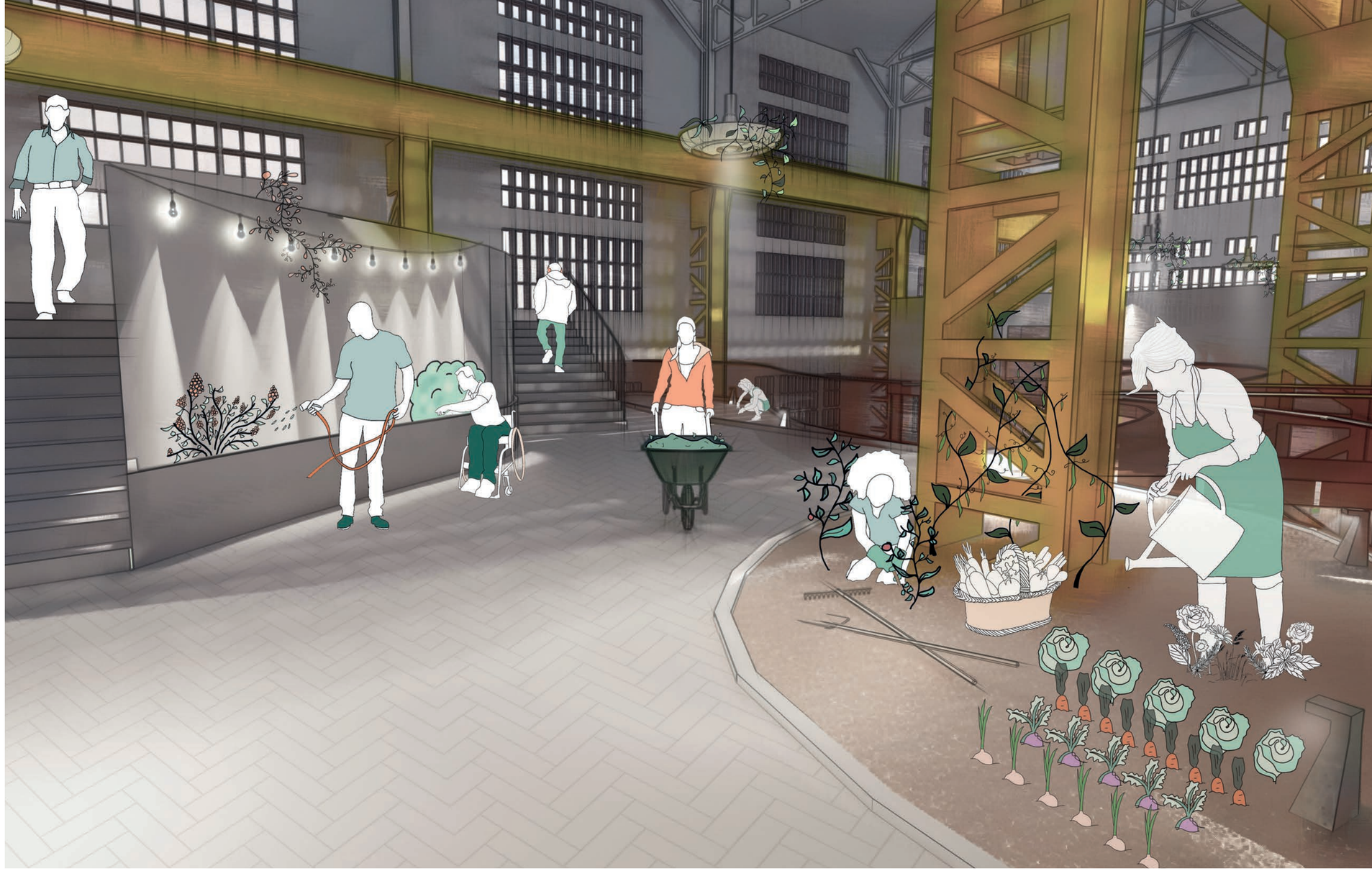
Industrial Bloom

The Future of Community Gardens

Industrial Bloom aims to create its own circular economy that supports the community and aims to be a sustainable solution for agricultural and food waste. The project is located in Boat House 4 in Portsmouth's Historic Dockyard. The site has a rich military history and industrial background. It also lacks a connection to nature. My concept is to create an accessible community garden that supports a variety of other schemes that will be based in the same building. These would either charity-based or social enterprise. The circle is then closed with the waste products from the site being recycled and used to improve the existing building or to build more projects like it. This project is as much about the community being able to grow as it is about the project and economy being able to grow along side the users.



Key Theroies

Circular Economy

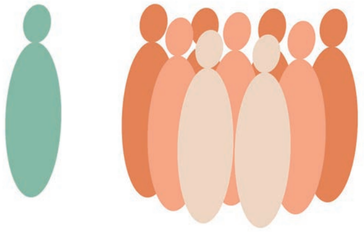
The overarching purpose and context of my project revolves around creating a circular economy that benefits the local community as well as helping to improve the world around us. This is linked to finding materials that aim to recycle and reuse the waste and unwanted materials within the project to build new projects.

Biophilic Design

Part of this project is about how natural growth can lead to human growth and development. By introducing greenery into an otherwise industrial building exemplifies the positive impacts that being around nature can have on the human body. Furthermore the research carried out shows that by being exposed to sustainable practices in communal spaces makes us more likely to use these strategies in our own homes.

Site Location

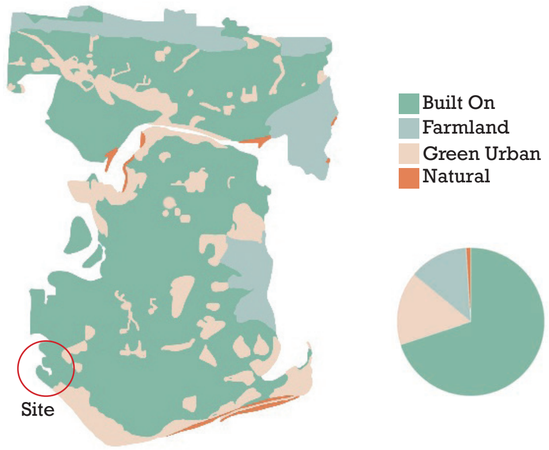
Food Poverty



1 in 10 people in Portsmouth are considered to be in Food Poverty and could require the use of a food bank. The amount of food banks accessible to residents in Portsmouth doesn't match this statistic. The aim is to not only provide a food bank but also a space for cooking lessons as well as a community soup kitchen and eating area.

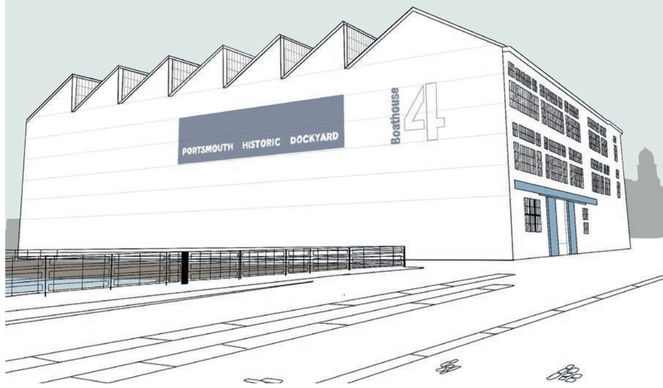
Green Space

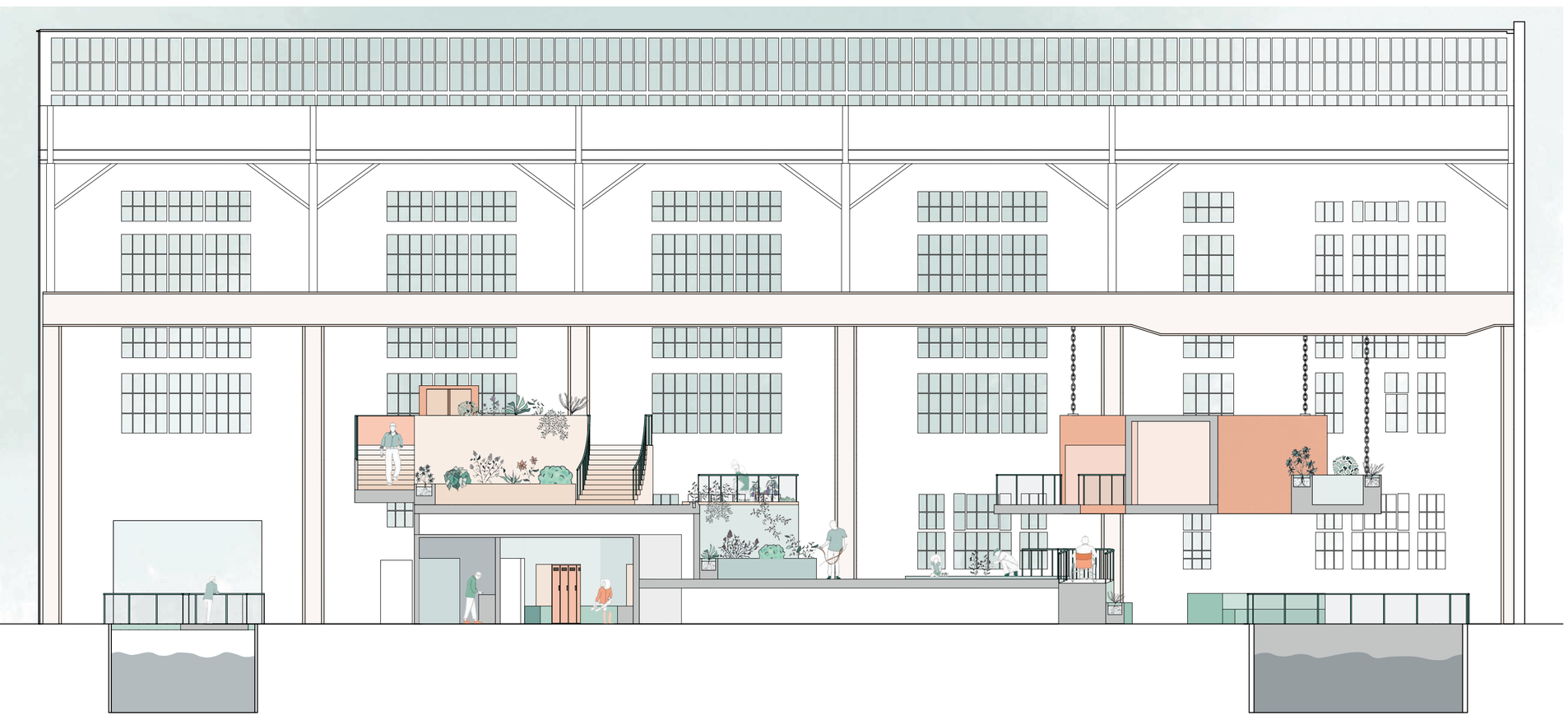
Portsmouth is a densly Populated city island that is predominatly covered with urban housing and commercial properties. There is a lack of greenspace, farmland and natural land within Portsmouth. You can see from the map to the left that Southsea, Portsea and the dockland area where my site is located are particularly urban areas. This lead to my project breif being about bringing nature into the industrial building of Boat House 4, it also links to design theories I explored relating to biophilic design and the positive impacts of bringing nstural

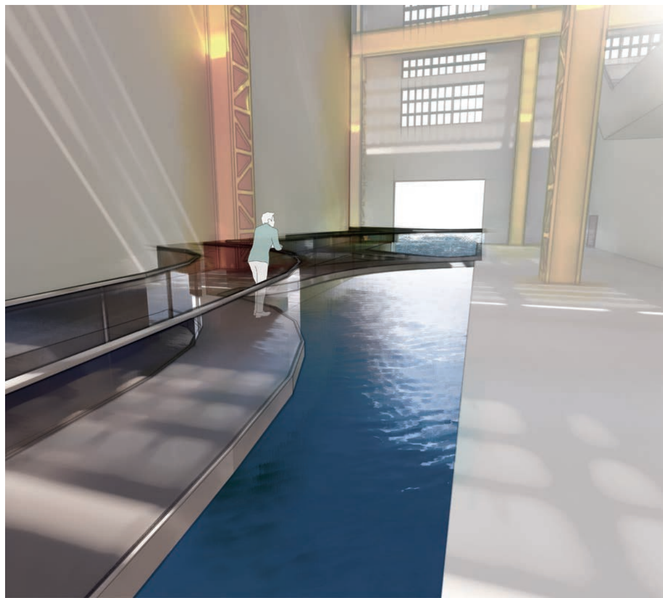


Site and Context

Boat House 4 is located in Portsmouth's Historic Dockyard, in the South West of Portsmouth. The site is currently accessible as part of the ticketed attraction but is still part of the functioning naval base that is connected to the tourist attraction. The building was built in 1939 as part of the response to a rapid rearmament program prior to the start of WW2. Parts of the building remain in the state the building was when WW2 hit, the North elevation which is made out of corrogated metal was supposed to be develpoped further but has been left and bullet holes still remain in it. Since the end of the war it was used mainly for storage until 2015 when it was renovated to house the Portsmouth Boat Building College.



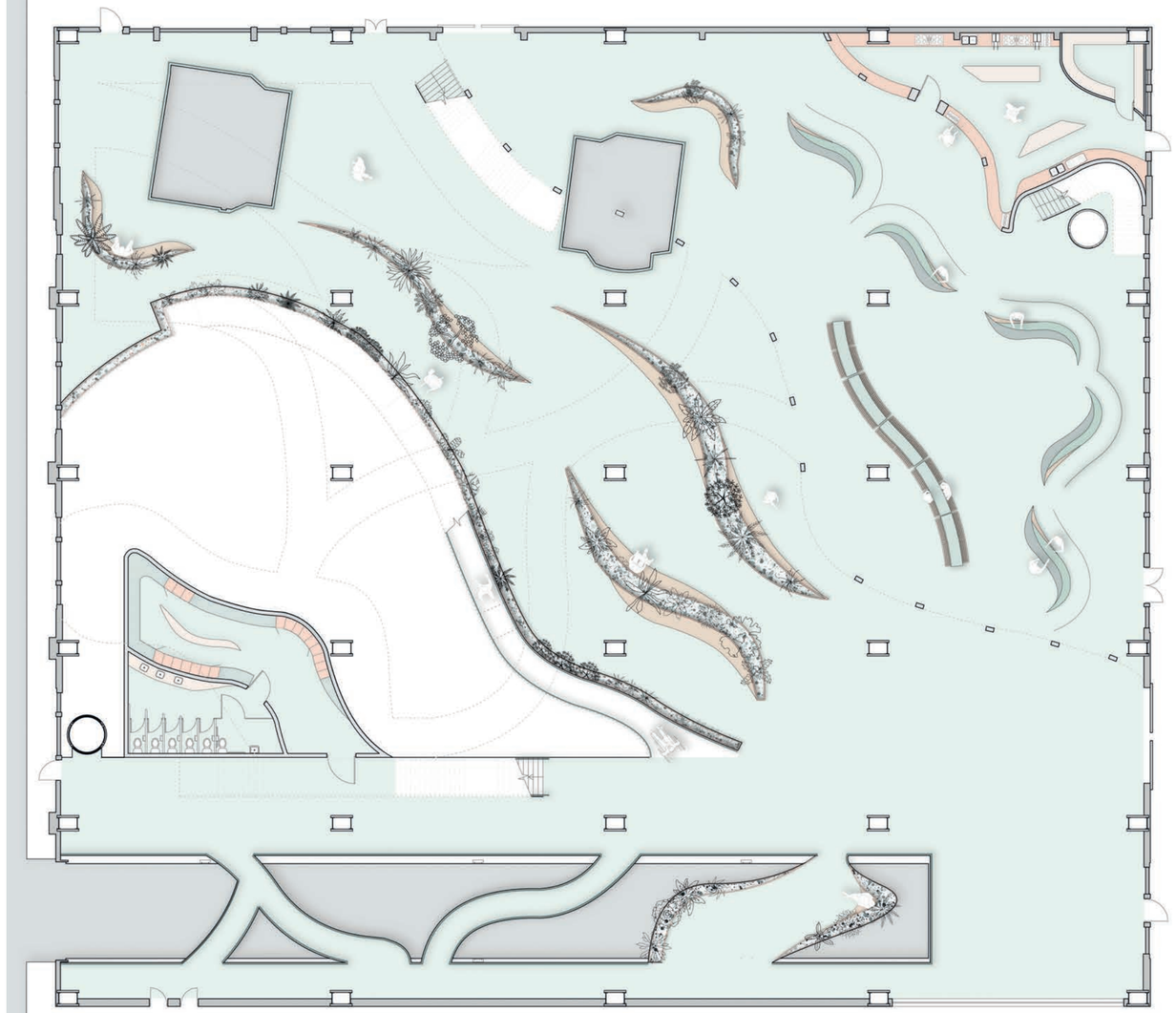


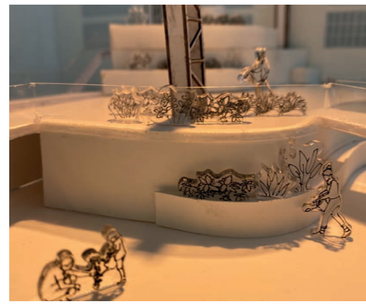


Self Sufficient

The first part of creating a successful circular economy is to be able to be able to provide a source of income that is self sufficent and continous this is the use of the gardening space that is part of my project. By planting a variety of different seasonal crops periodically throughout the year there is a constant source of produce that can be used to create revenue.
The vast majority will be edible crops while some will be grown specifically for craft projects so there is no waste an alocation of produce will be set to the side for donations to food banks leaving the rest to be sold at the market or to small buisnesses using the premisses as there base.

The project also aims to reduce waste by recycling it where possible and using it to either create new materials or to make compost to use in the gardens.





The internal projects that support the circular economy include a food canteen and market stalls on the ground floor and then a teaching kitchen and craft workshop space on the second floor.
All the buisnesses that use this space will be part of a recylcing and waste management scheme that reduces waste to landfill and helps to maintain the project.

It is mainly food waste and argicultural waste that can be collected and then reused in other areas of the project ranging from compost to creating new bio-materials.

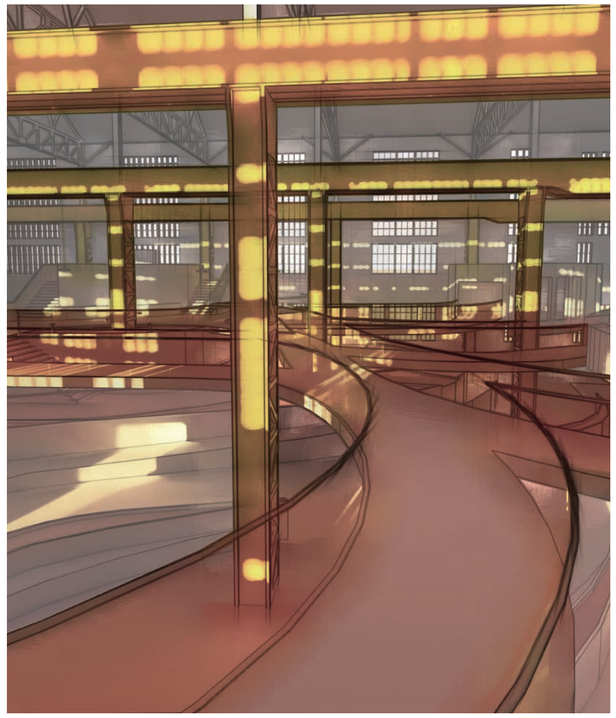
Bio-Materials

Eggware
Made using dried out and crushed eggshells

Woodcrete
Made out of sawdust

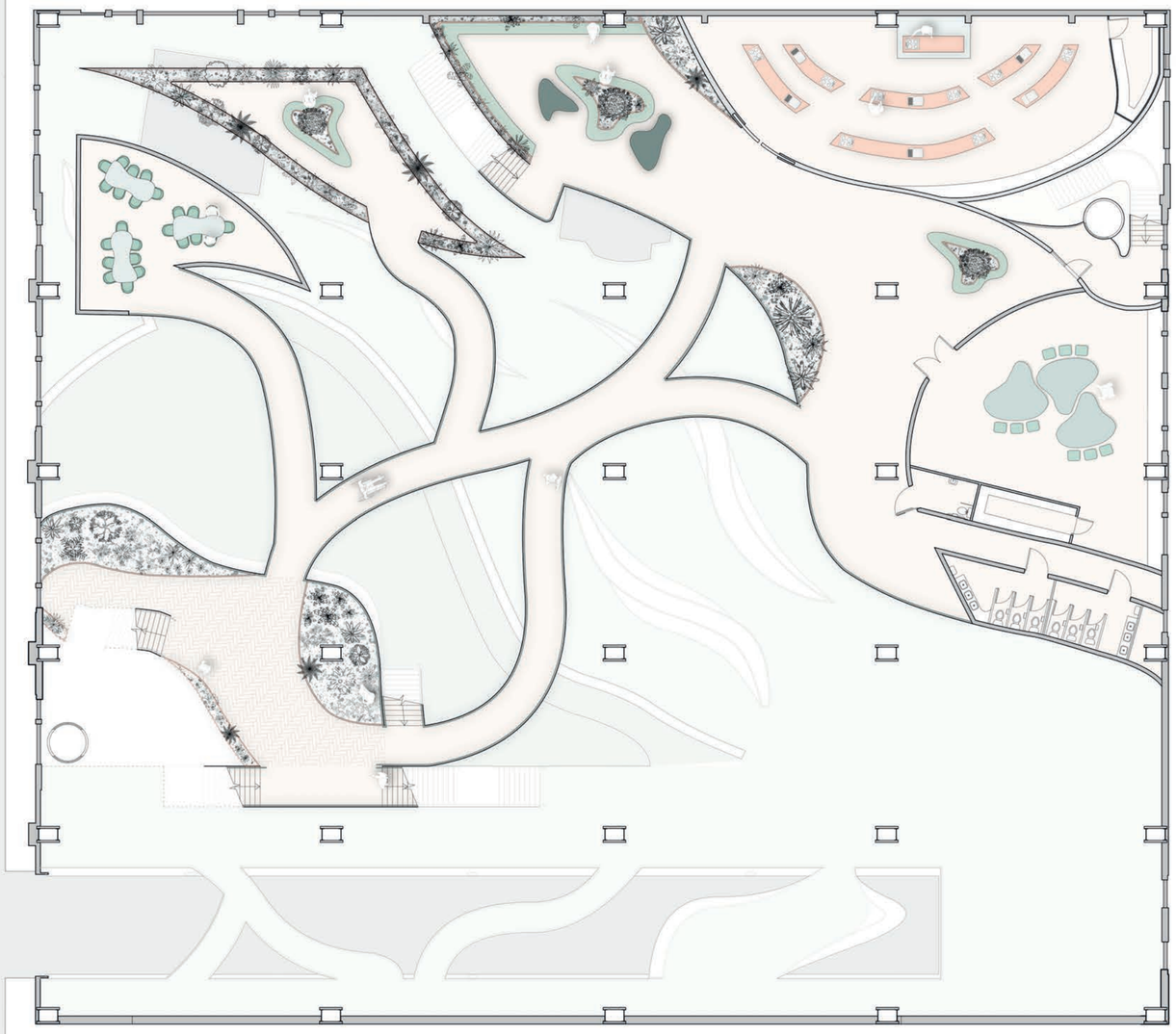
Coffeecrete
Made using dried coffee grounds

As part of my circular economy narative I aimed to find materials that could reuse agricultural and food waste to produce new building materials that could be used within my IMP product.
I explored a combination of natural chemical mixes that when combined created solid materials with varying material properties. All of the waste products where recycled from my own home or local businesses. These included dried coffee grounds and saw dust. When combined with natural chemicals such as alginate (derived from seaweed) the result is a hard tough material similar to concrete.



Recycling Waste

The waste that is collected and not used for composting can be processessed to create new materials to maintain this project and then in the future expand to other sites in portsmouth or beyond using materials made on site with the waste produced.
In particular I researched how food waste can be reused in alternative ways and came across bio-materials. A bio-material is created when the substance has been engineered to create an alternative to materials considered to be harmful to the planet due to the toxic componants. In this case I looked at how you could combine natural chemicals with food waste and other waste materials that would normally end up in the bin to create a new material that is sustainable and good for the planet.



Reusing

Besides being able to use the compost to help grow new crops of produce the bio-materials that can be made using the food and agricultural waste can be used to improve the existing building or to construct whole new projects.

This step completes the circular economy and allows the project to regenerate. It also allows the project to be sustainable and reduces the buildings carbon footprint by reducing the need for manufacuraded products and reduces the amount of waste going to landfill.

I trialled using these bio-materials to create a seating area in my project. By using a mould I was able to cast both the egg shell material and saw dust material into the correct shapes to form the seat then used card to illustrate how the seating could be reinforced using a minimal amount of wood. This design solution could be used to cast larged areas or to build structures in future projects or to repair the existing structure to reduce the amount of man made harmful materials that are used.
Furthermore all the additional materials used to make these materials are compostable and could be recyled again once they where worn out.
These elements would be made in the workshop space and then a team of employees would be able to construct/repair the desired area.