

CULTIVATING AN APPRECIATION FOR URBAN FOOD PRODUCTION

Bethan Evans

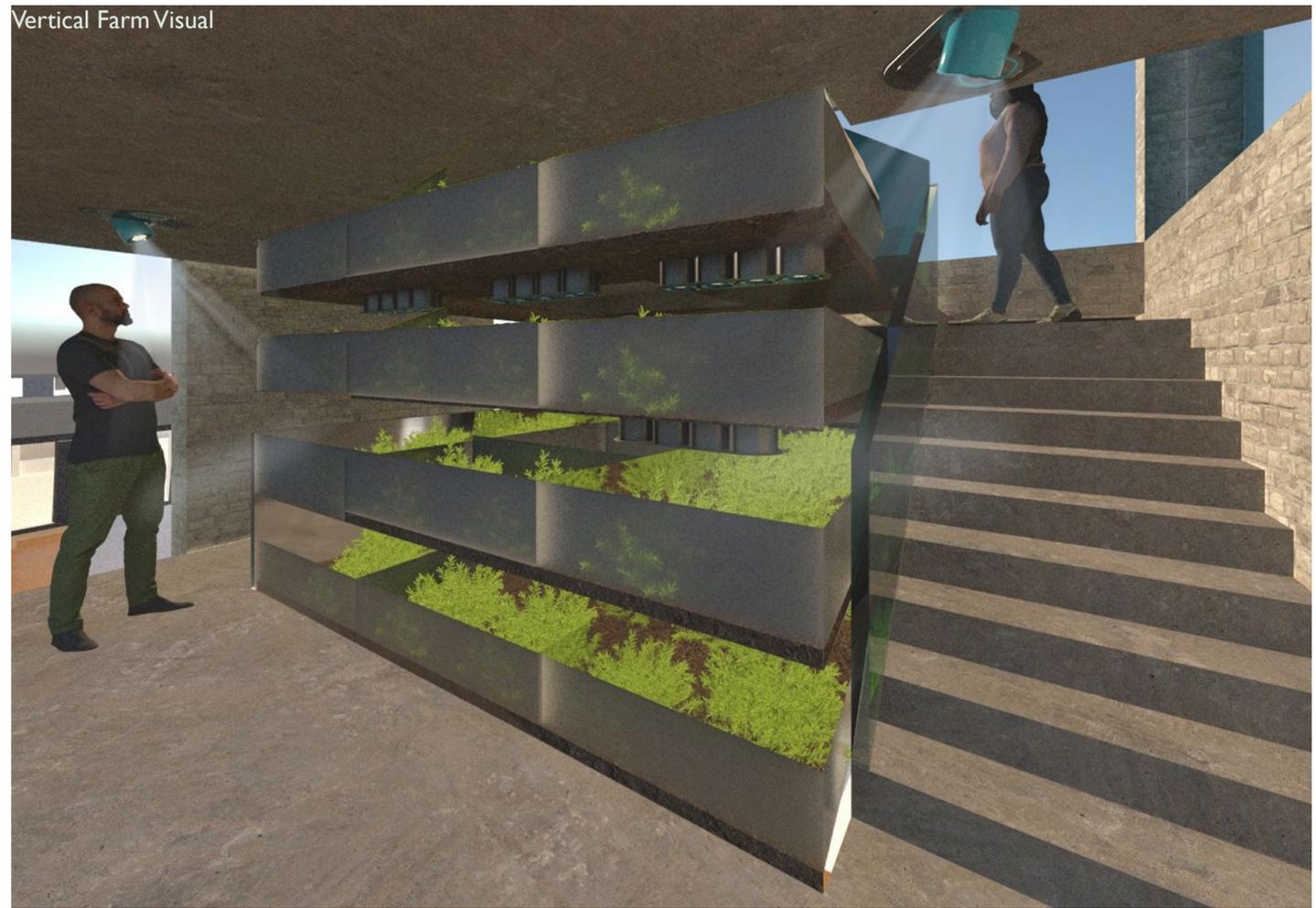
'Lus', Gaelic for 'Plant', is a centre for growing, cooking and eating plants in Edinburgh's existing McDonald Road Fire Station. The project aims to tackle current health issues and offers an approach to the future of food security.

The centre's community greenhouse, outdoor plant beds and vertical farm grow produce to be used in the restaurant and cookery school, whilst encouraging inter-generational interaction and an appreciation for nature. The restaurant only serves plant-based food in response to the role played by meat and dairy in climate change, and also has a self-service system to help tackle food waste. The cookery school also teaches children and young people how to prepare fruit and vegetables in a simple and appealing way.

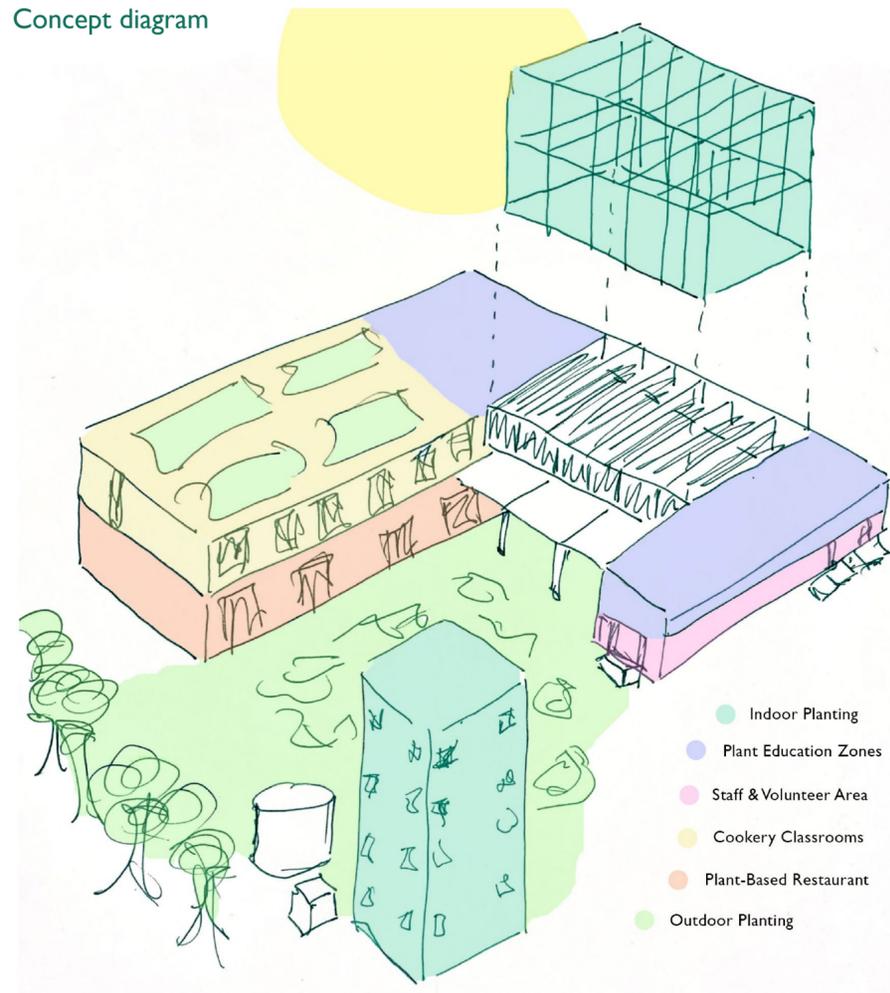
The design incorporates water recycling and contributes to the urgency of climate change action with carbon capturing from the plants. The existing fire drill tower has been transformed into the centre's 15-metre high vertical farm, which is not only a spectacle for visitors but also functions to grow large yields of vegetables in a built-up urban area.



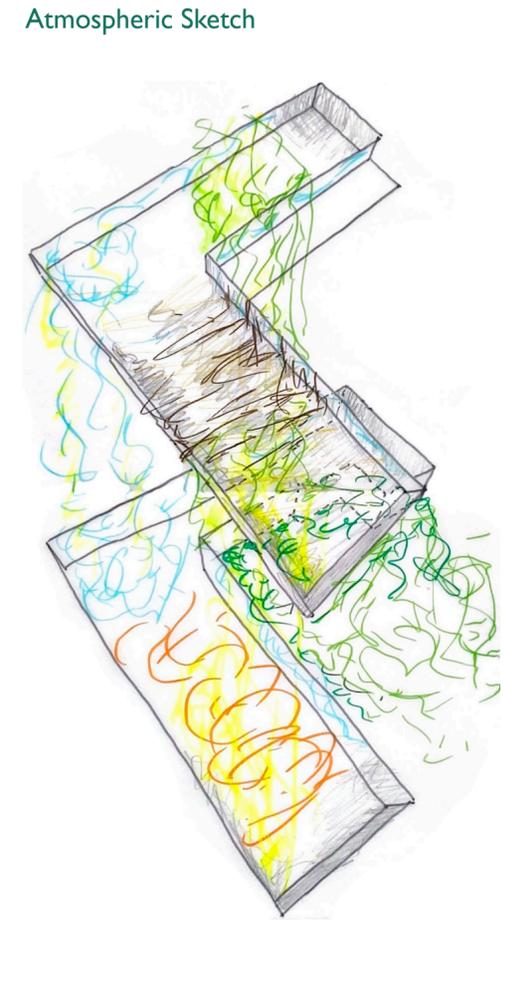
Vertical Farm Visual



Concept diagram



Atmospheric Sketch



Greenhouse Room Visual

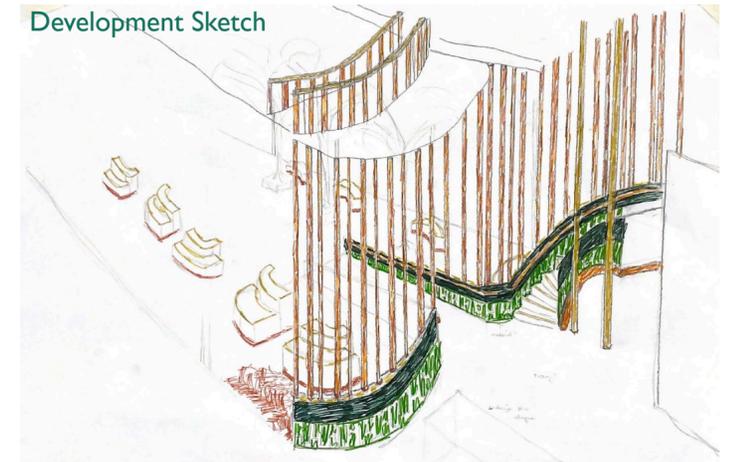


Structural Sketch Model

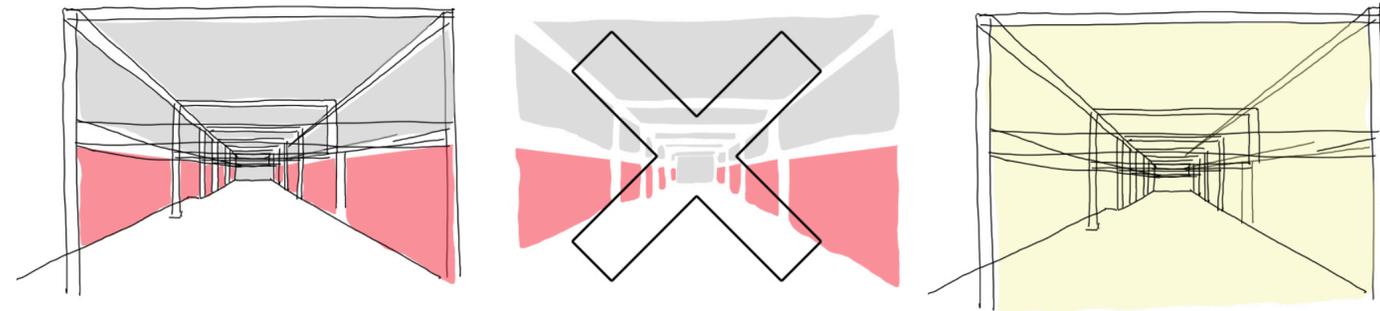


The main space in the design is the double-height Greenhouse Room, in the existing fire engine bays. This had the most significant structural intervention, with skylights introduced, walls turned into glazing and the floor turned into walkways. As a result, daylight is abundant in the space, allowing plants to grow indoors, protected from the outside elements.

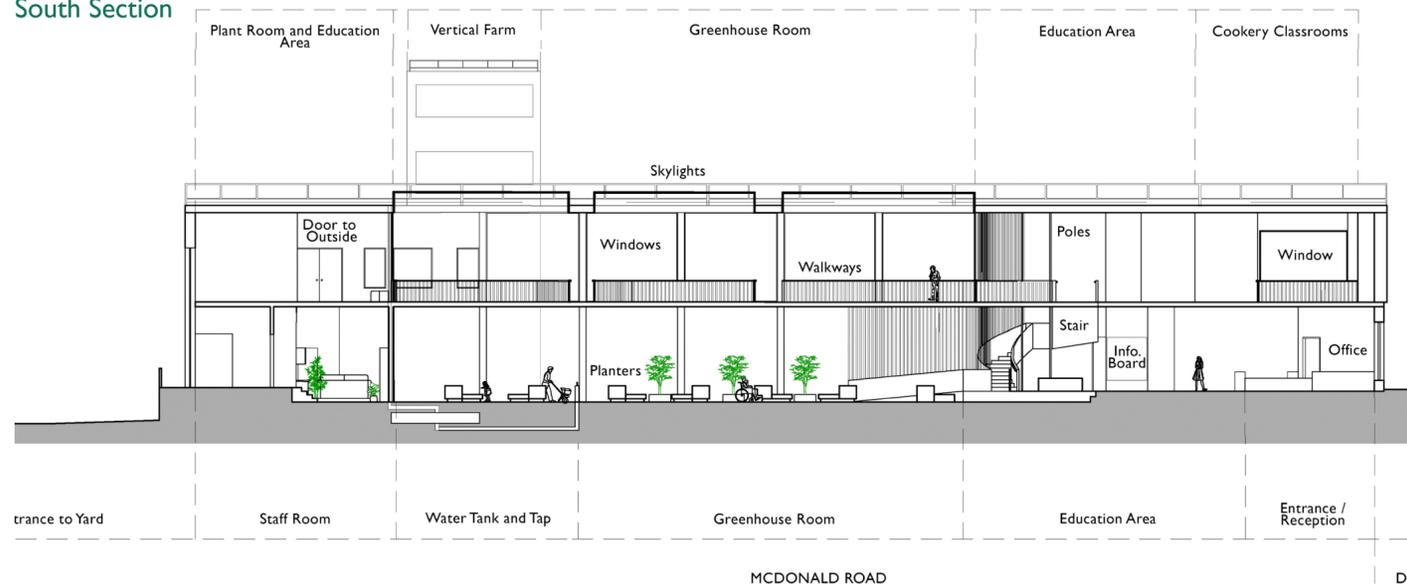
Development Sketch



Structural Concept Diagram

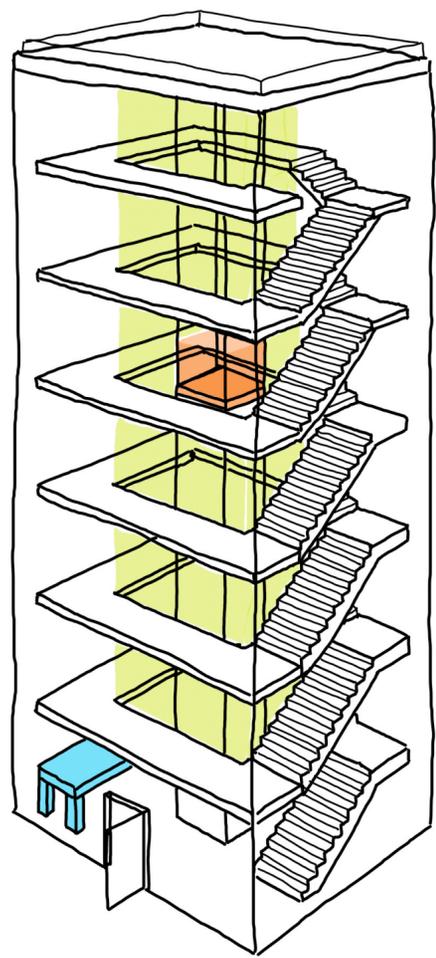


South Section



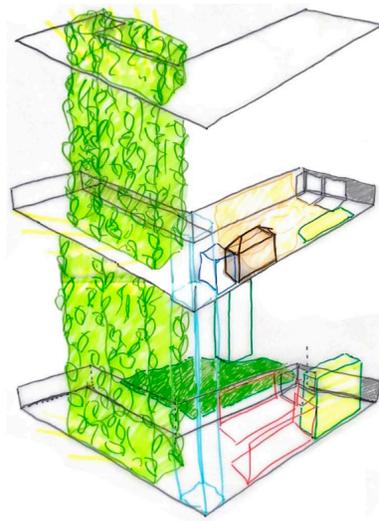
Ground Floor Finishes Plan



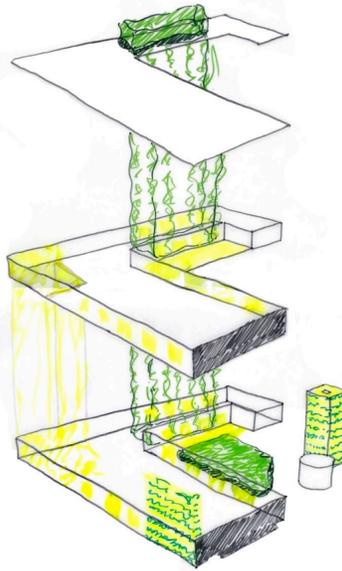


Vertical Farm Concept Diagram

- Stacks of planting & LEDs
- Platform lift
- Preparation, harvesting & washing area

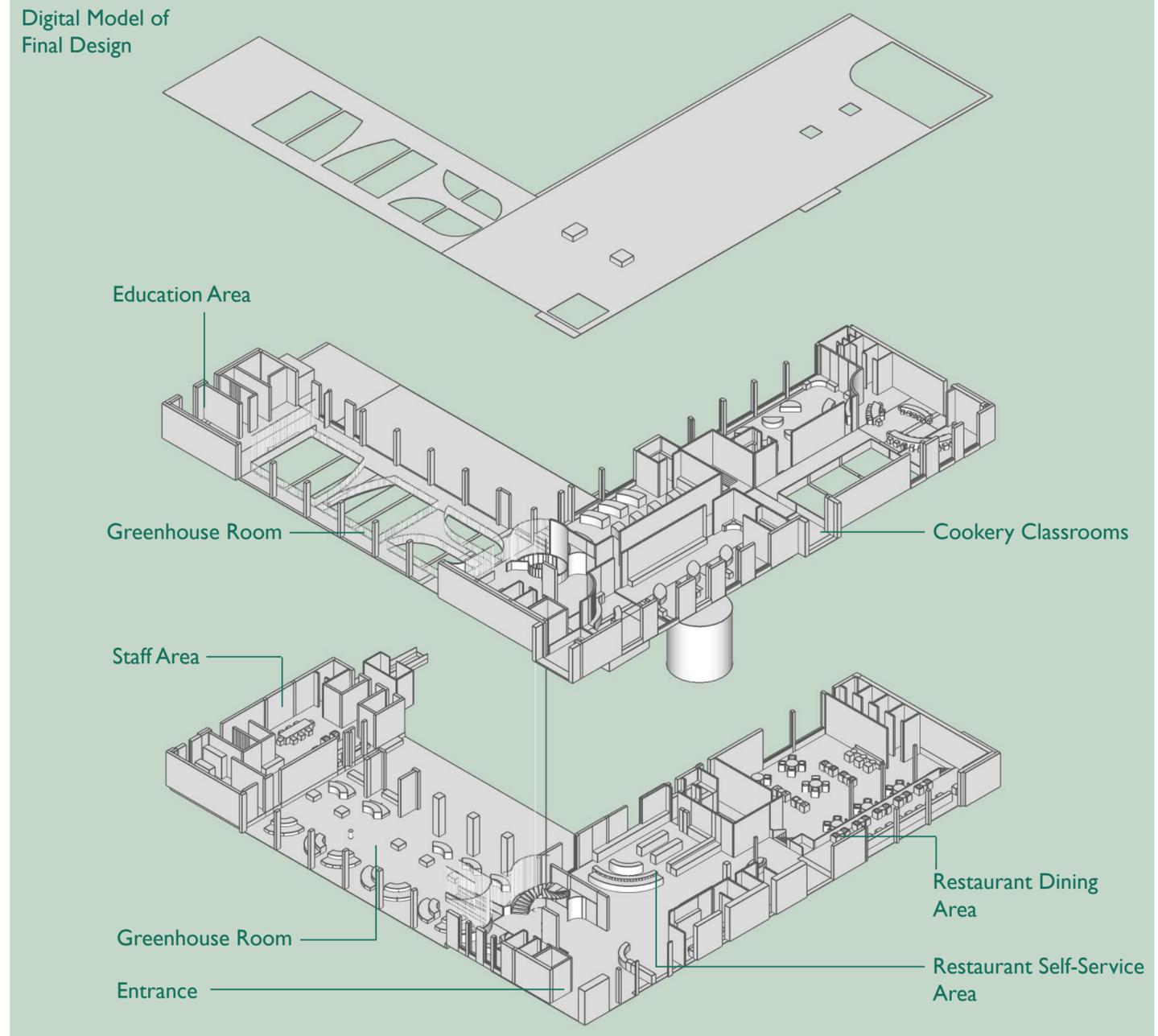


Zonal Development Sketches



Designing vertical connections in the design with these isometric sketches, as well as considering the location of daylight. This prompted research into the lighting and atmospheric requirements for different types of plants, allowing their positioning to be organised.

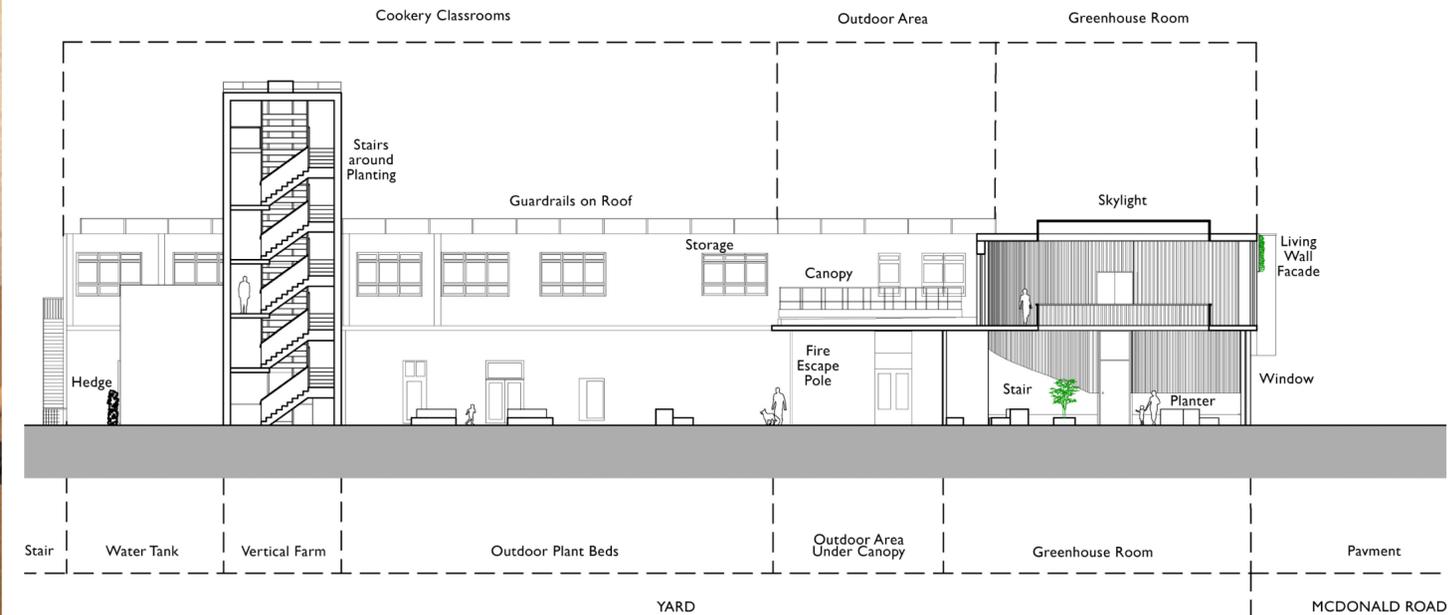
Digital Model of Final Design



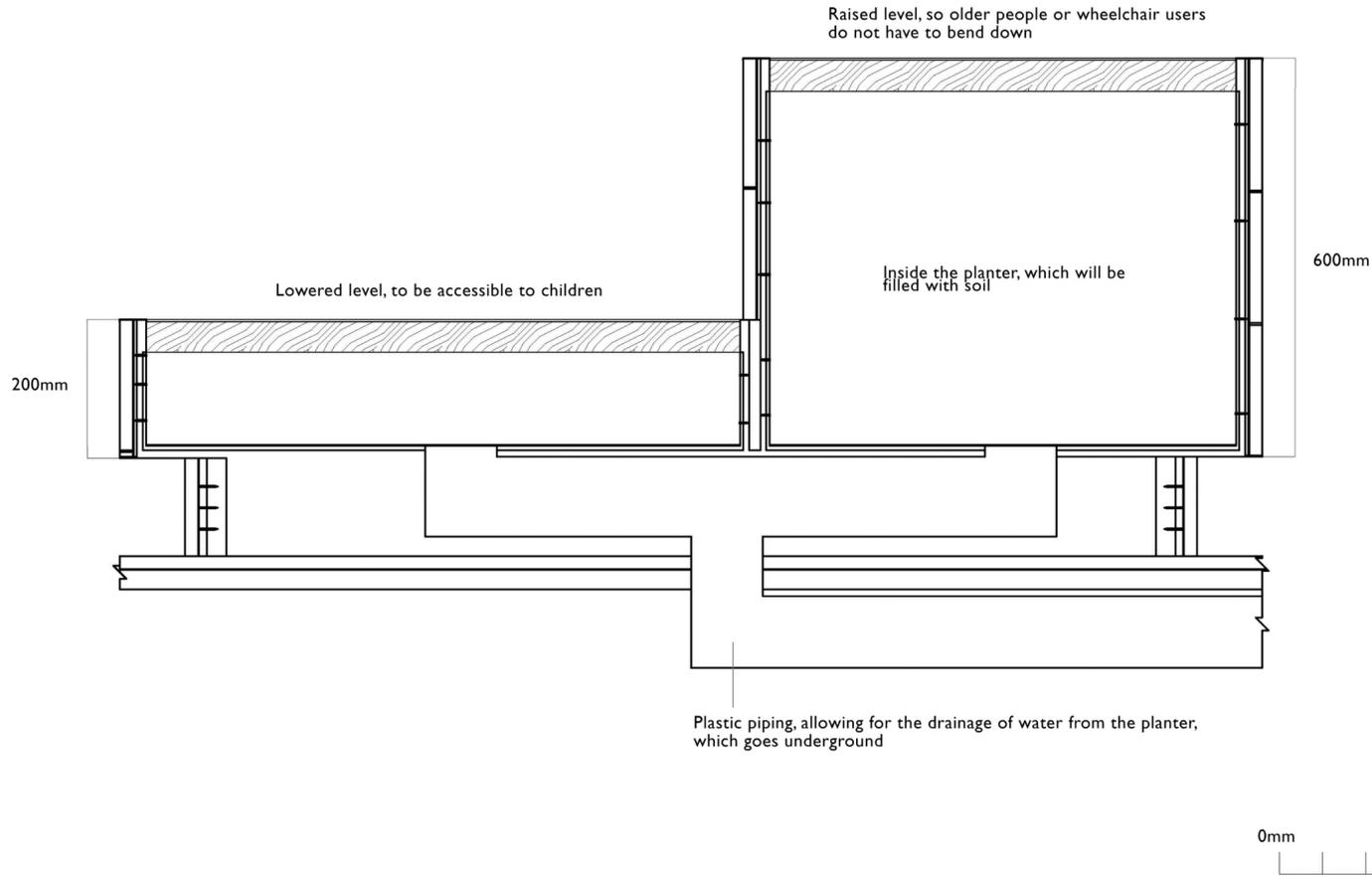
Restaurant Visual



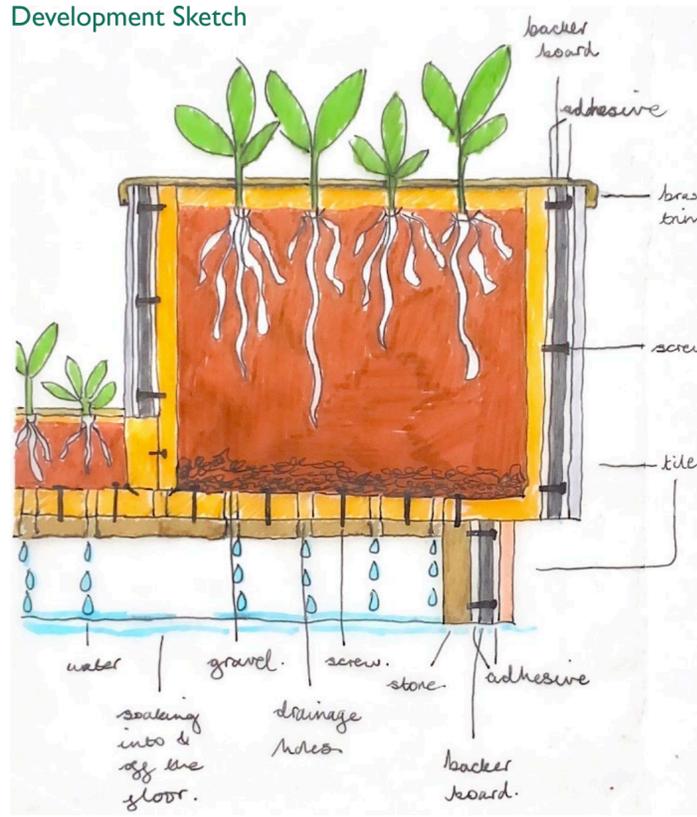
West Section



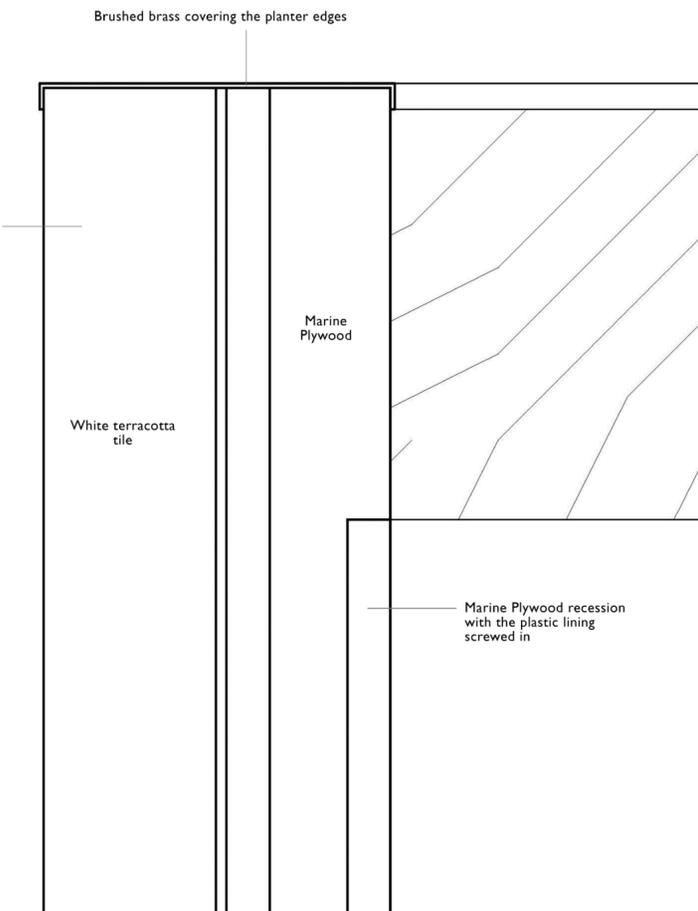
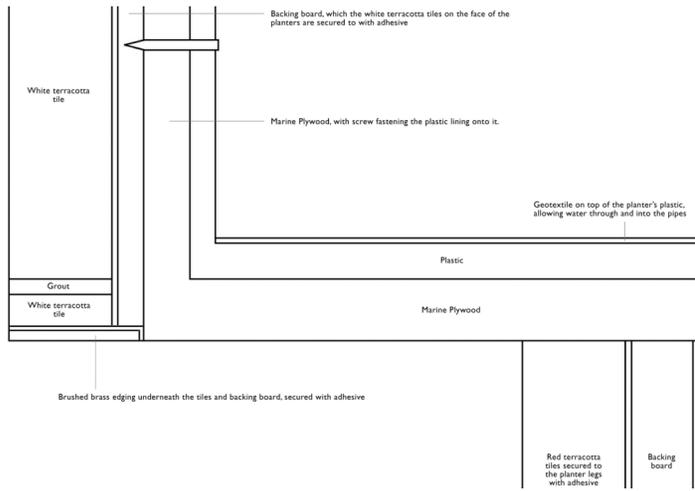
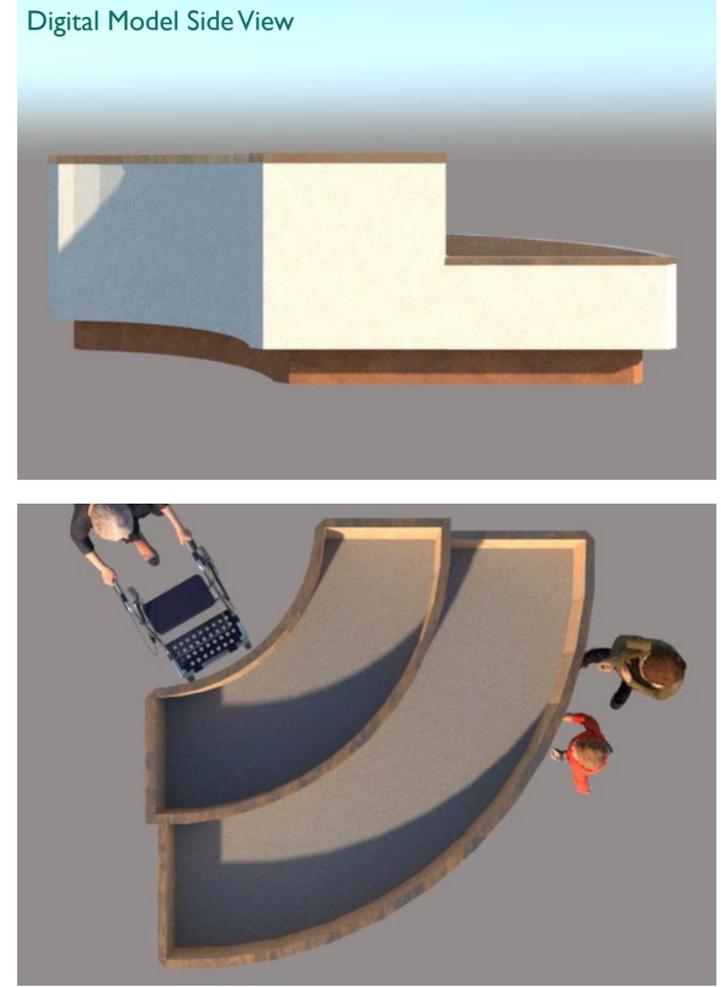
Planter Section



Development Sketch



Digital Model Side View



Detail drawings of the planter design, as part of the Greenhouse Room.

These were designed to be used for the community and therefore have a raised and lowered section - for older people and children.

Excess water is drained underground into the recycled water system, ready to be treated and pumped back up into the building.

Digital Model - in use



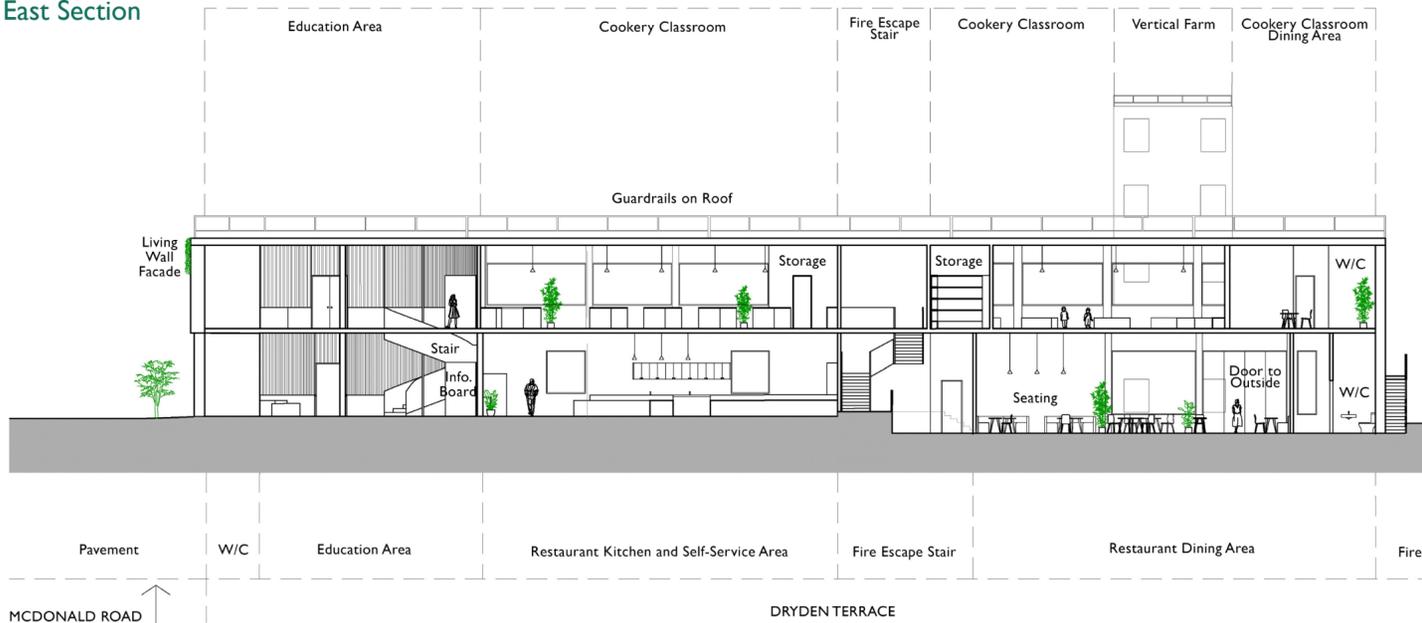
Entrance and Reception Visual



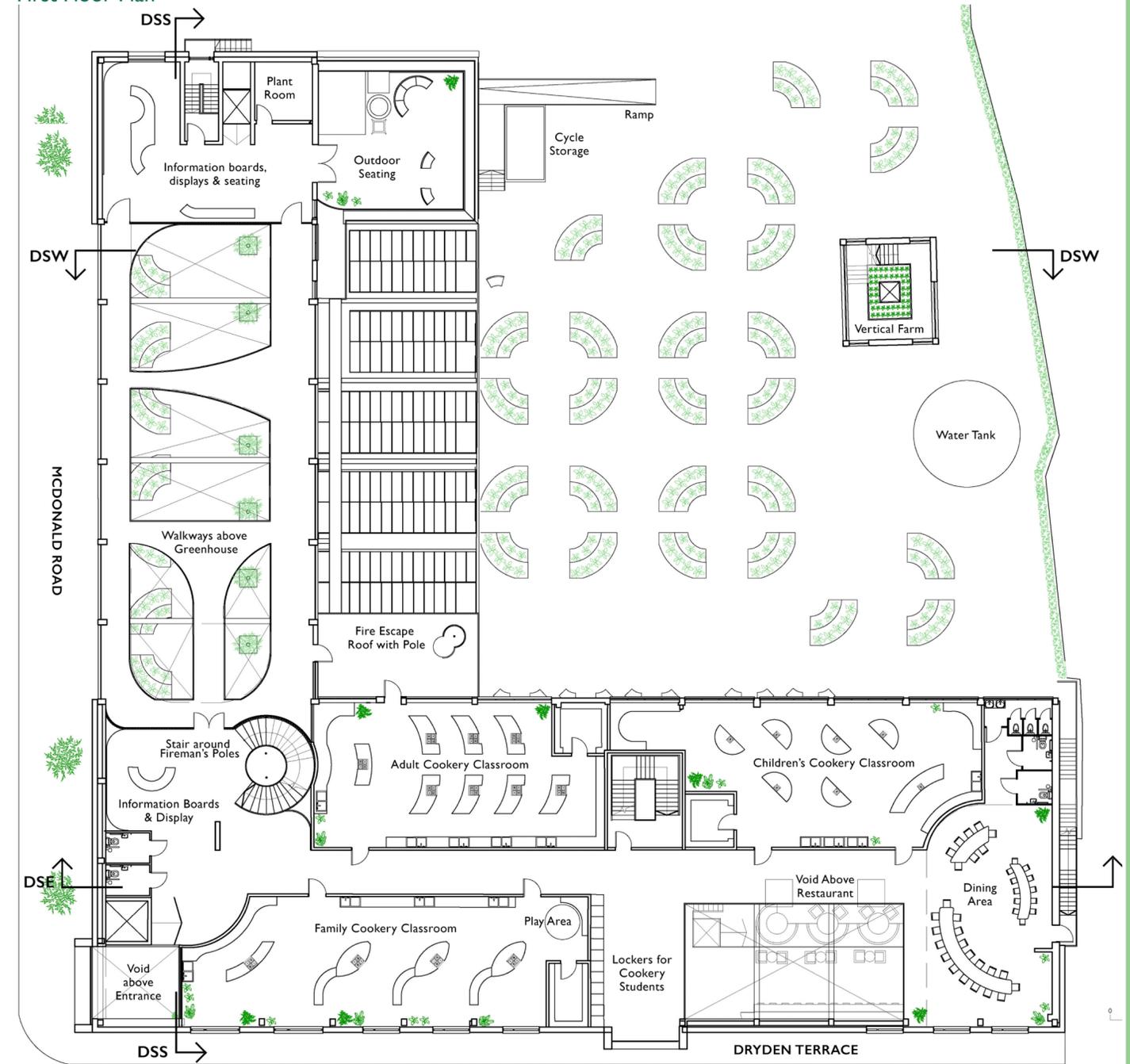
Materials



East Section



First Floor Plan



Elevation

