

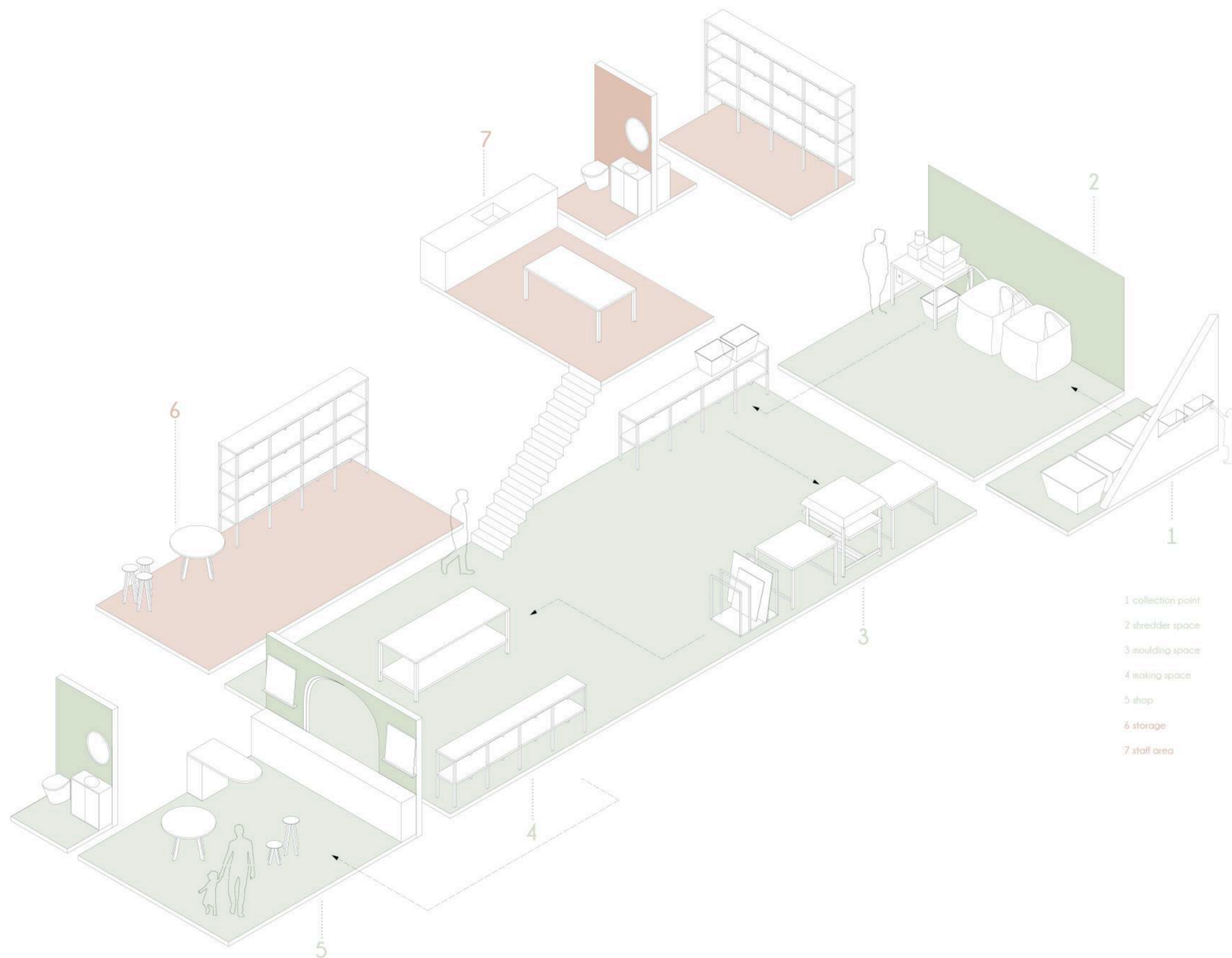
# The Plastic Project

The Plastic Project is a micro-factory that recycles the plastic of Lewes into new products with the aim to put a stop to single use plastic altogether, a goal that Plastic Free Lewes has already pledged to achieve.

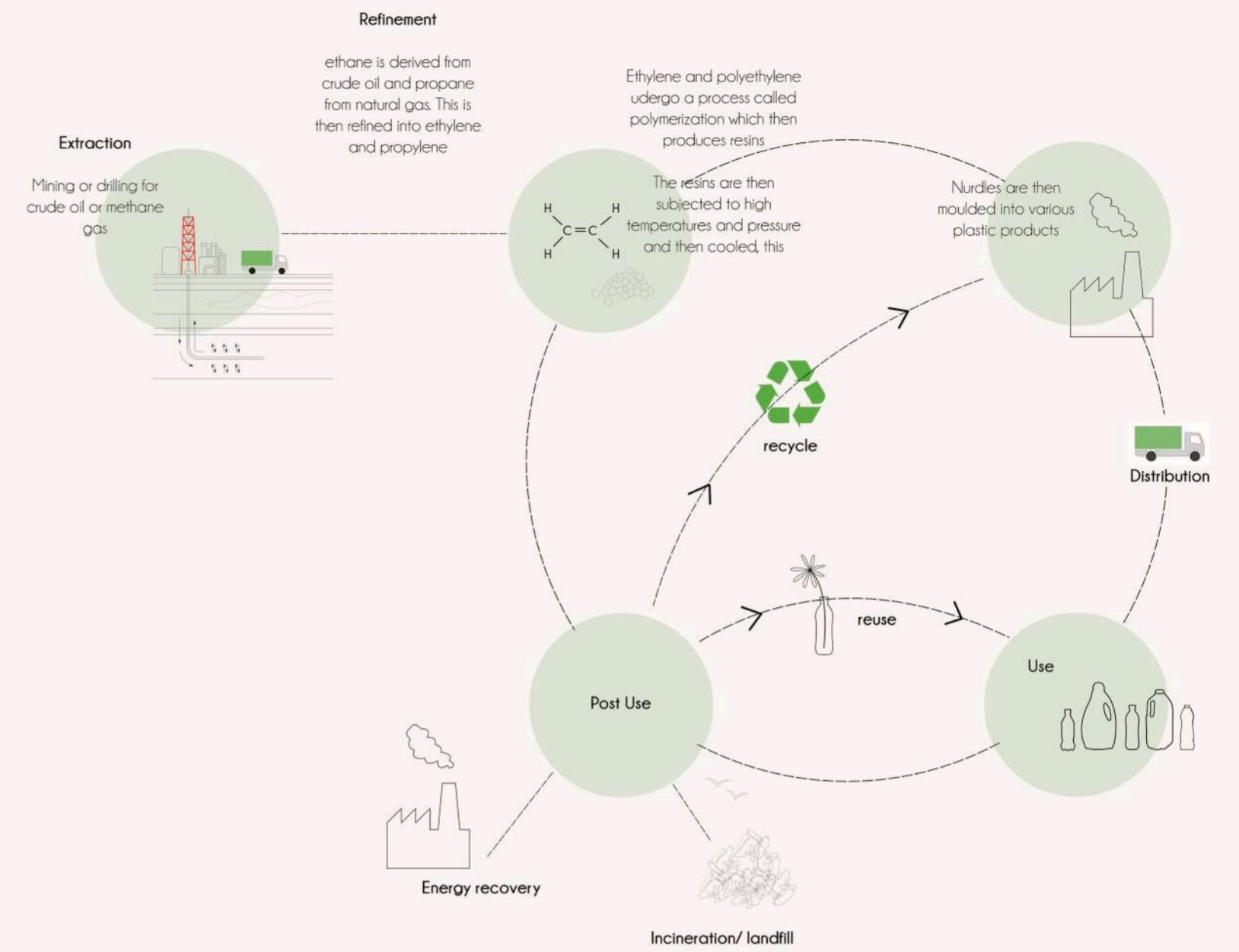
By turning a cradle-to-grave industry into a circular, cradle-to-cradle one, we can start to diminish the need for virgin plastic products and ultimately use the resources we have already got (plastic) to produce new products. Although ideally the long term goal is to eliminate the production of plastic altogether, it seems wasteful to not use the resources we already have.

The Plastic Project is a community lead intervention with a focus on educating the people of Lewes through workshops. The simple idea is that people can bring their household waste and turn it into something functional and beautiful that they can then take home with them or use to benefit the community.

During this project I used various mediums to explore potential ideas and avenues. Creating a physical model of the existing site was the start of this journey and led me to producing a digital 3D model which helped me to analyse the structure of the building and also how the sun interacts with it. Further to this, I also experimented with making my own recycled plastic out of milk bottle tops that I had collected from a local coffee shop, this exploratory process helped me to understand how this might work on a larger scale.



3D Spatial showing how the spaces need to interact

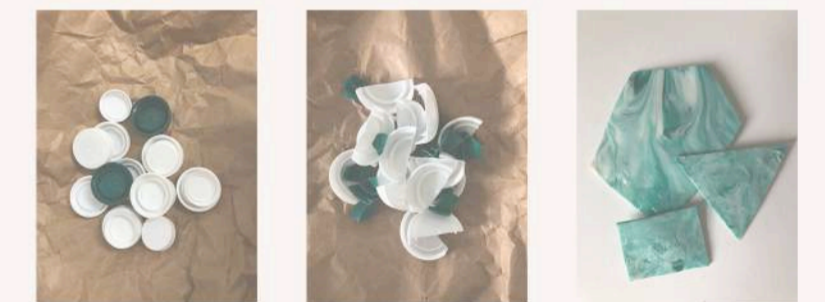


The Process

## müll



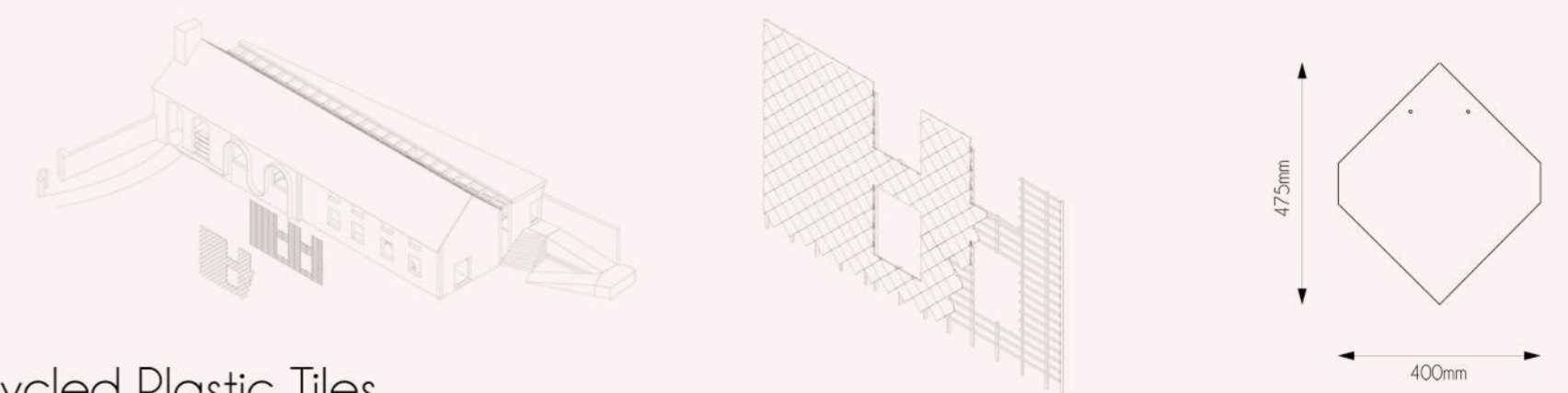
The Müll Klub is a London based practice that aims to recycle London's plastic into useful products. Currently they recycle type 2 (HDPE) and type 5 (PP) into products such as combs and soap dishes. They are also a refill shop, further helping to reduce the amount of plastic waste created.



These were made by "shredding" the milk bottle tops and arranging them between parchment paper on a sandwich press, the heat then melts the plastic and creates this marble effect

The Inspiration

Experiment: Homemade Recycled Plastic

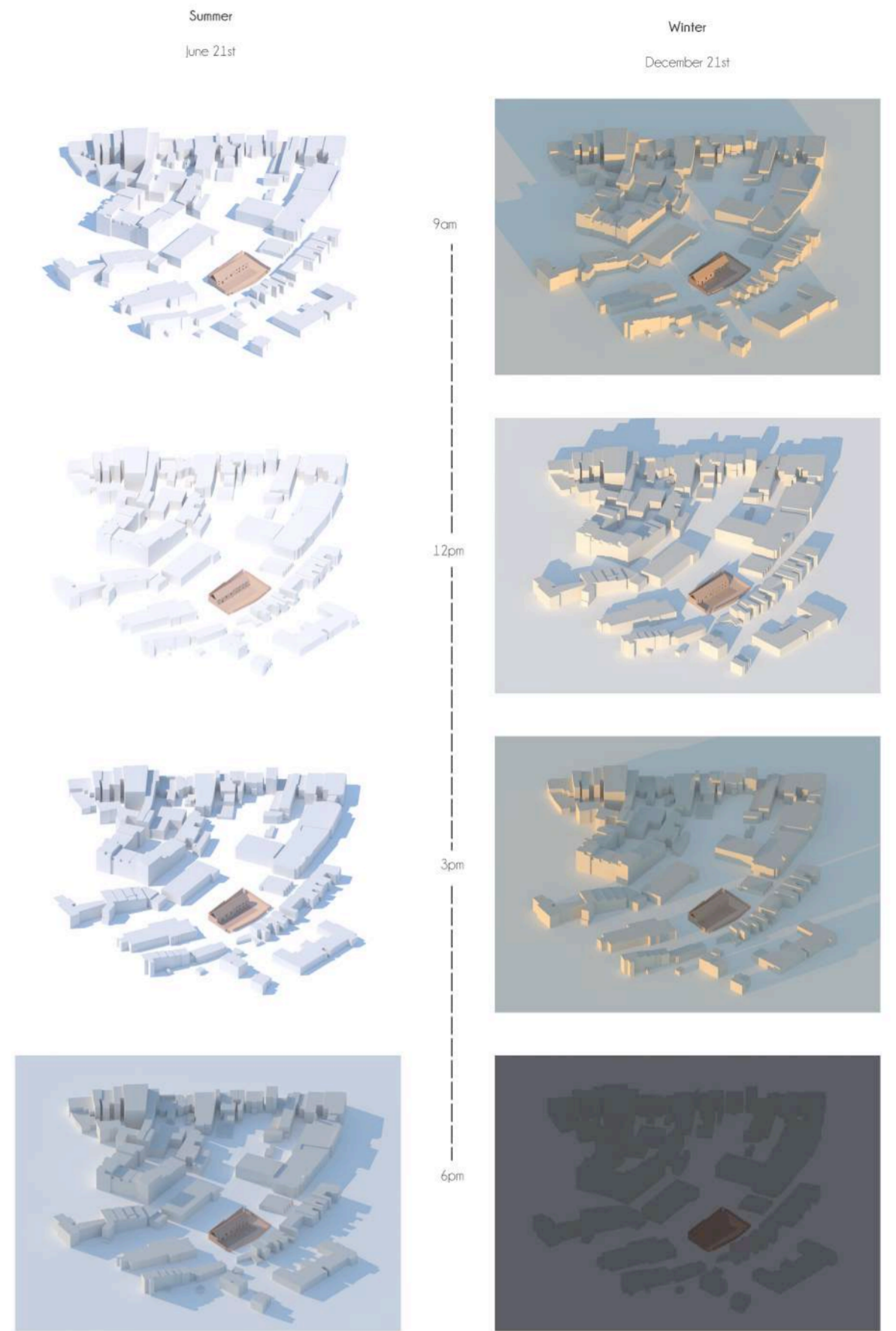


Recycled Plastic Tiles

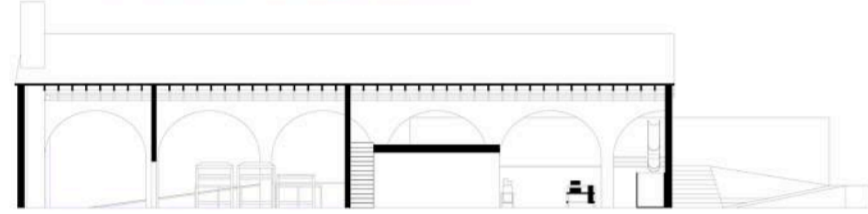
The recycled plastic tiles made within the micro-factory will be used to clad the walls and roof of the building. The wall tiles will be made to blend in with the current terracotta mathematical tiles, while the roof tiles will be translucent to allow light into the spaces below.



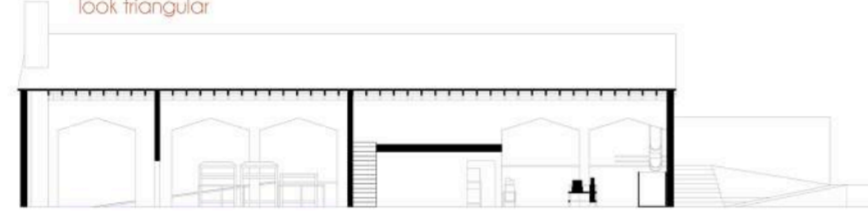
Here I have experimented with using physical and virtual models in order to develop my design. The virtual model also allowed me to analyse the sun path.



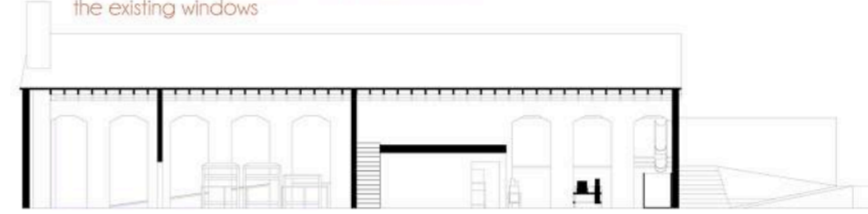
Initial design had some problems due to where the walls and floors ended up being placed.



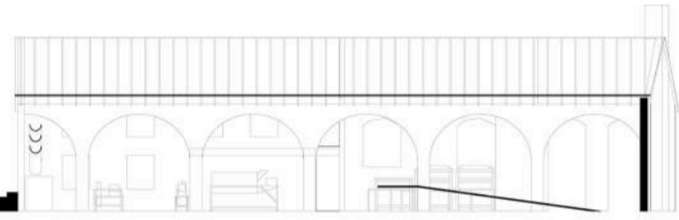
Actually an arched design but the render has made it look triangular



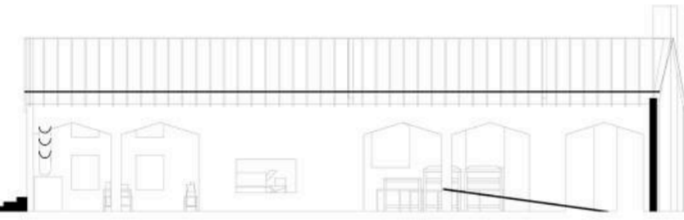
I wanted to stick with the arch design as it mirrored the arches of the existing windows, this design was based on the dimensions of the existing windows



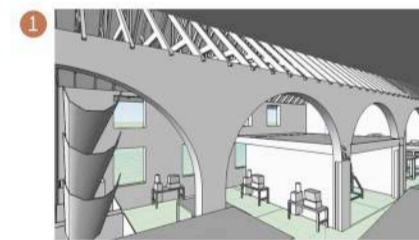
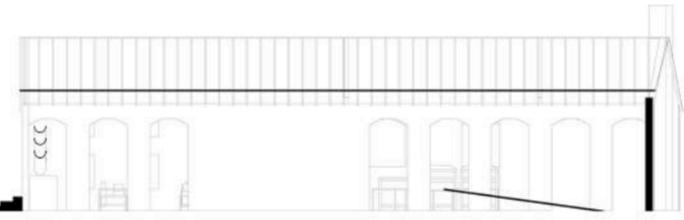
These two arched in particular didn't work, due to the second floor and the placement of the existing stone staircase which I wanted to keep so that a new staircase was not required.



Got rid of the arches that contained the second floor and staircase, and instead inputted a viewing window into the cleaning room.



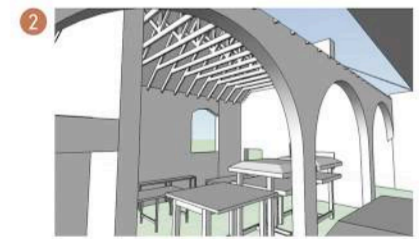
This section has been left without arches as it didn't work with the second floor or staircase placement.



1 the second floor placement makes this arch feel awkward



1 big arches and window allow for the public to view the process



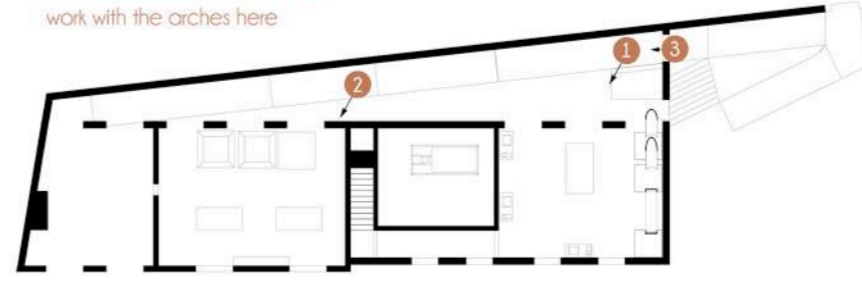
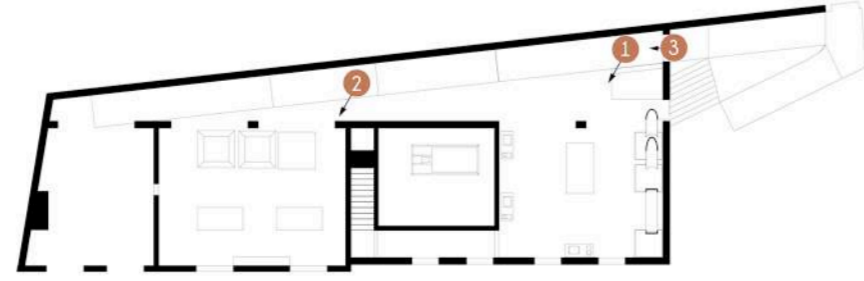
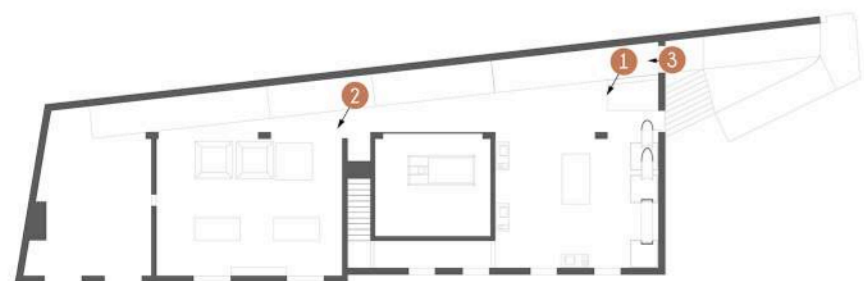
2 large arches allow for optimum views of the plastic recycling process



2 busy looking, not ideal for viewing



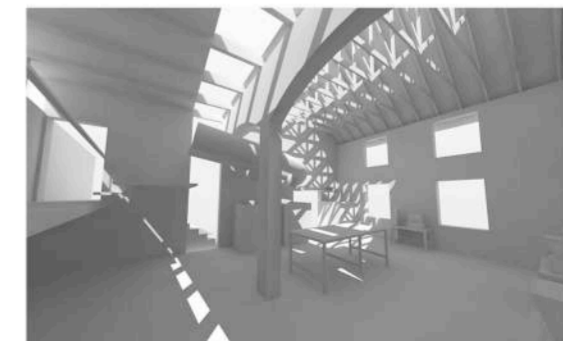
placement of the ramp doesn't work with the arches here



Summer 9am



Winter 9am



Summer 3pm



Winter 3pm

The lighting in a workshop should be between 300 and 500 lux to ensure maximum comfort for workers.

By removing part of the first floor and tiling the roof with translucent plastic tiles it allows light to pass through the space. The images above show how the space is illuminated during the summer and winter solstice.

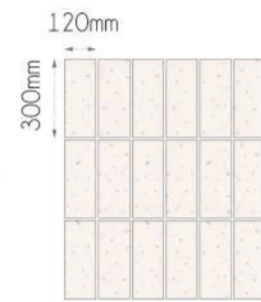
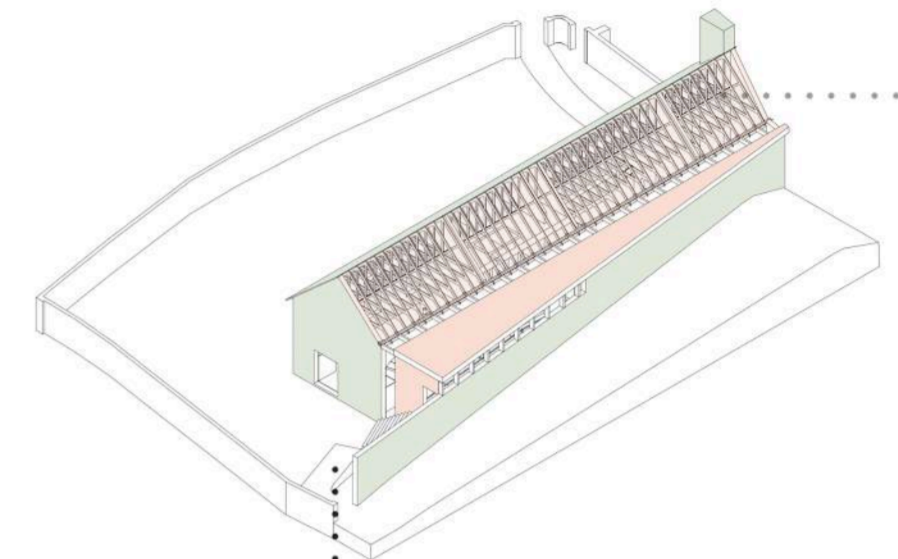
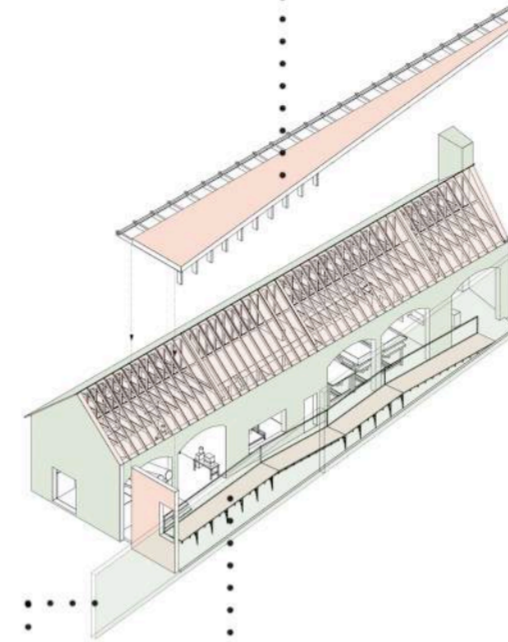
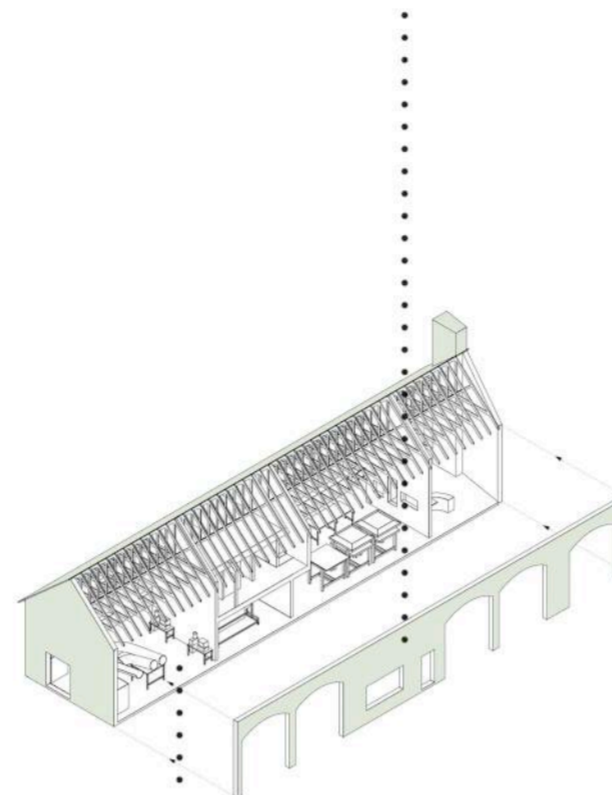
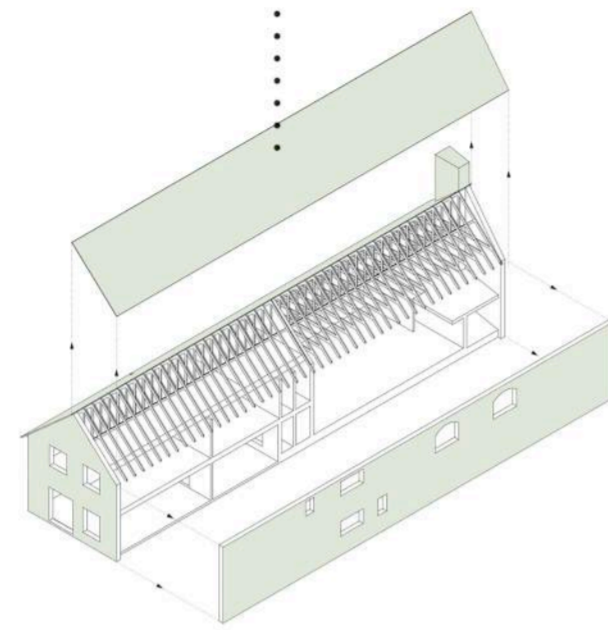
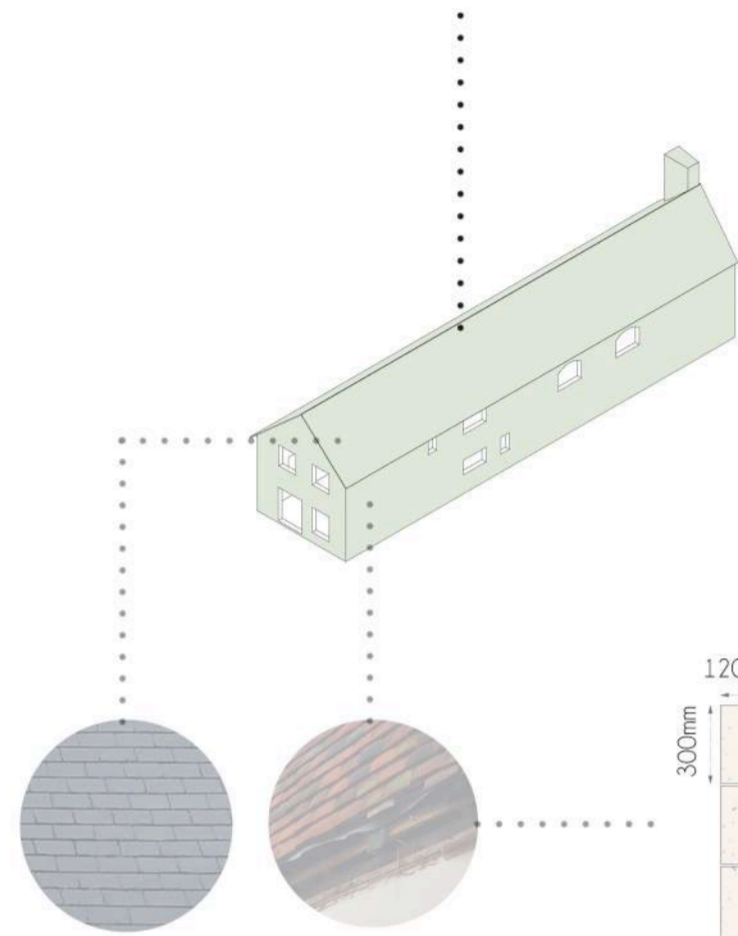
Much of the existing building remains in order to reduce embodied carbon.

The existing roof tiles are removed and replaced with translucent recycled plastic tiles to allow natural light into the spaces below, especially into the work spaces below to allow for the comfort of workers.

Arches are cut out of the rear wall to allow the public and private zones to be integrated, the arches frame the various stages of the plastic recycling process.

An aluminium sandwich panel and roof lights are added to the extension.

Translucent recycled plastic tiles will clad the roof at the back, allowing light into the workshop spaces and shop below.



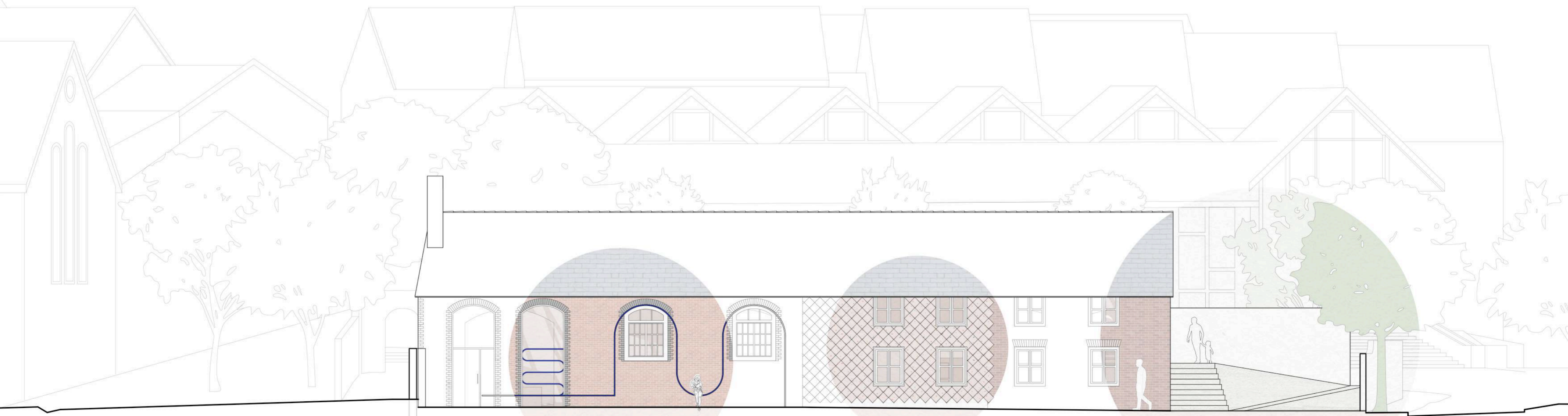
The existing roof tiles and vertical tiles will be recycled into a new floor tile that will run through the entire ground floor, using the company *Stone Cycling*.

Part of the first floor is removed to allow more light into the area. It also means that the collection point tube system can be accessed from a greater height.

A viewing ramp is installed to allow the public to see the process of recycling plastic, this leads down into the shop.

An exterior ramp and stair system is installed to allow access to the internal collection point. Accessibility is a key focus of the proposal.

••• The existing retaining wall remains.



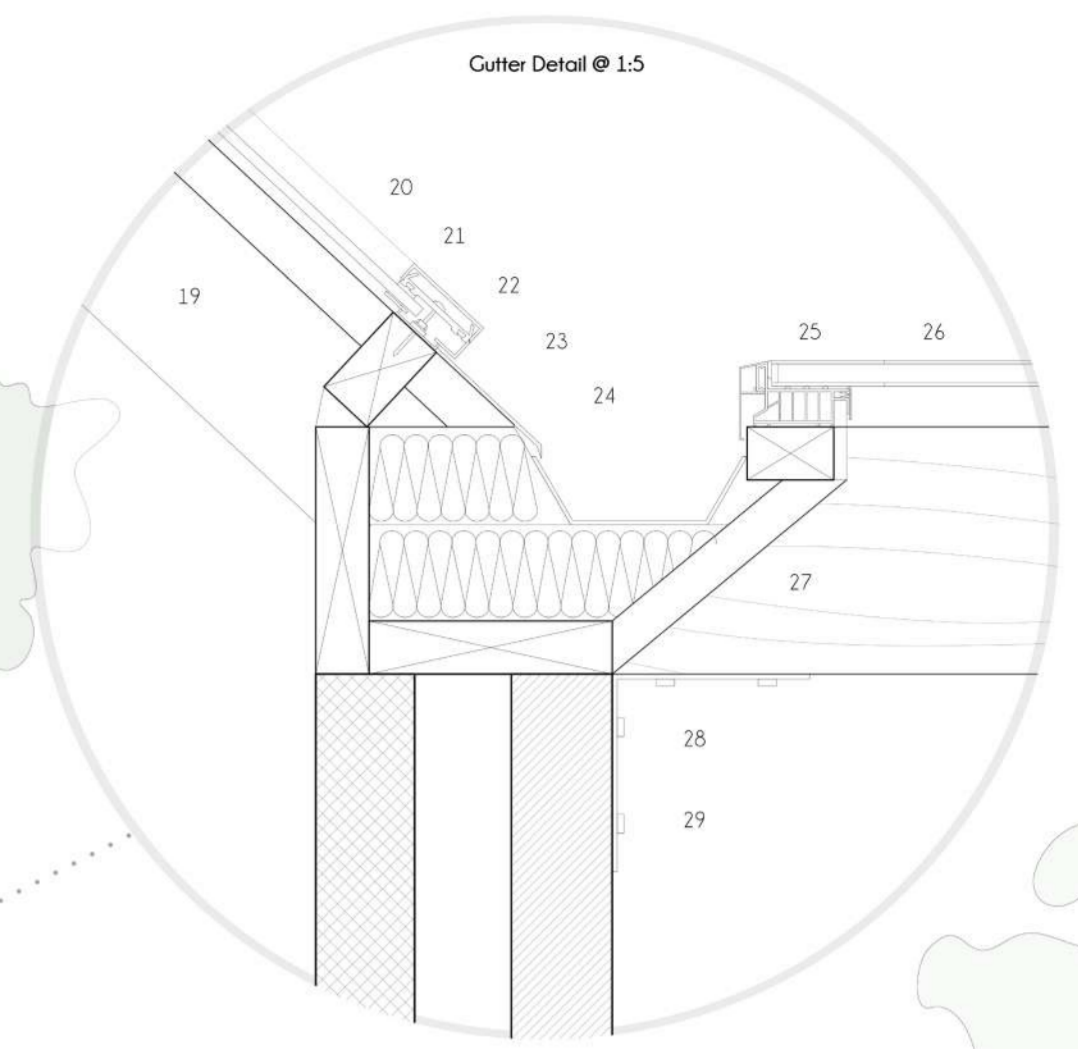
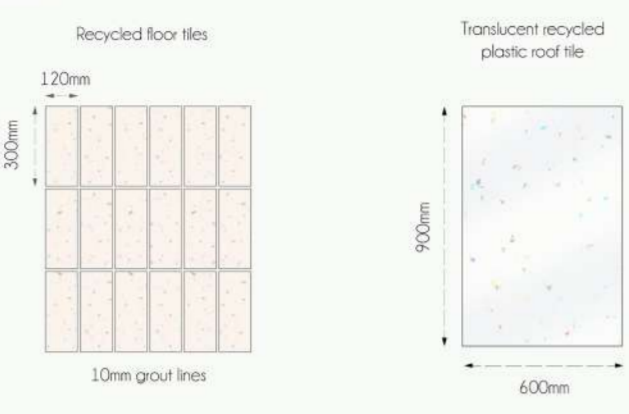
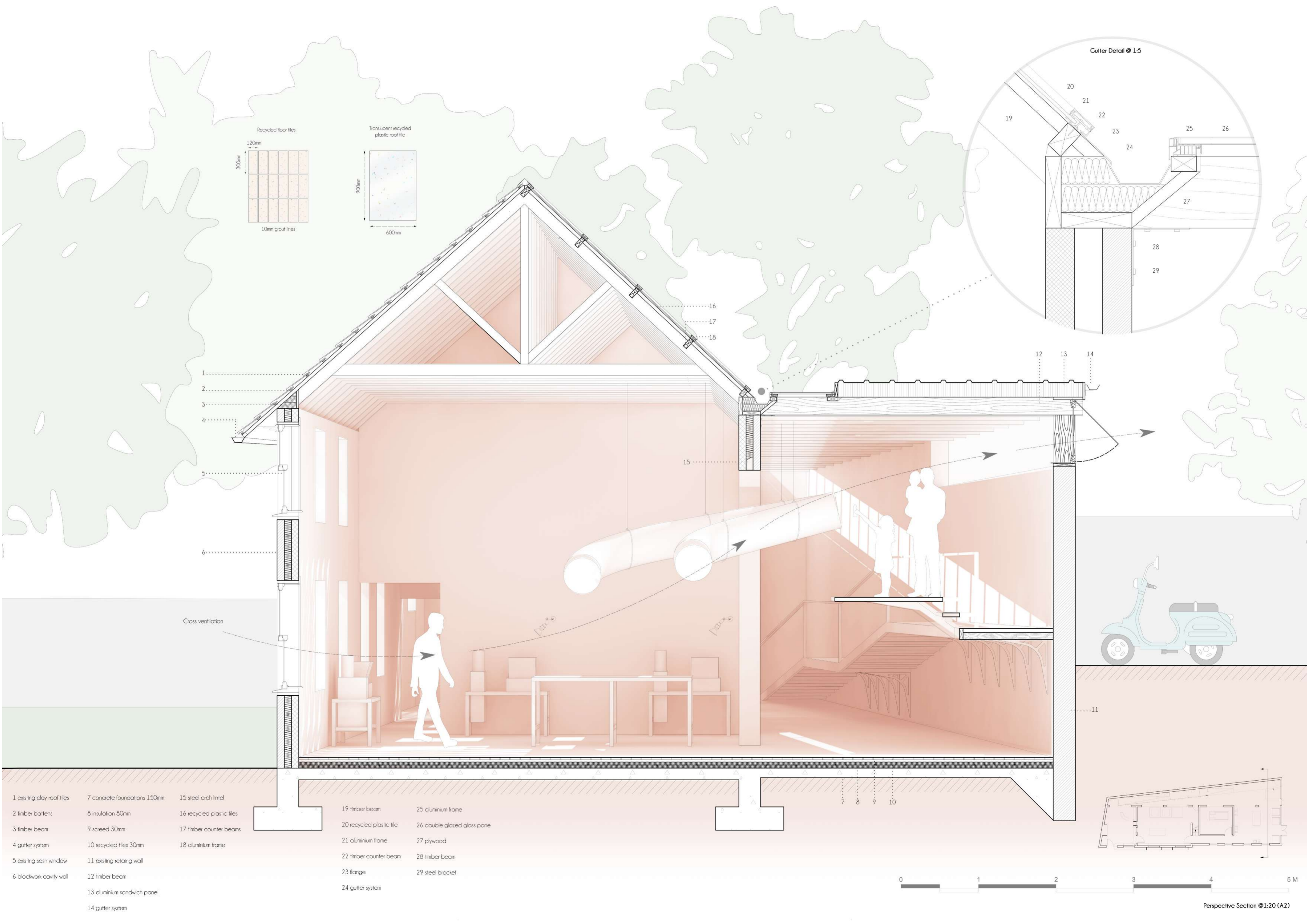
Recycled plastic bench in a contrasting blue colour stands out from the terracotta tiles and draws the public in with its continuous form.

Recycled plastic tiles made to blend in with the adjacent terracotta mathematical tiles and hang like vertical tiles.

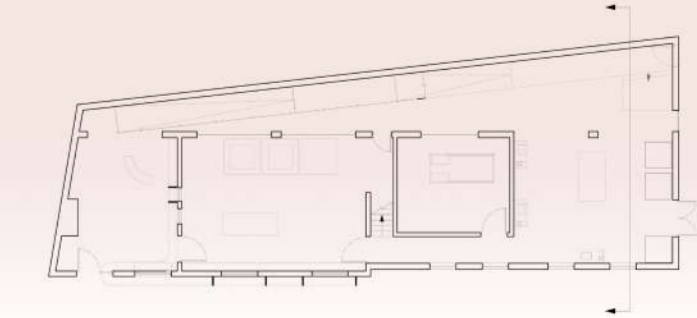
Rammed chalk ramp as an alternative to concrete- chalk is an abundant material in Sussex



RECREATION & EDUCATIONAL VERSION



- 1 existing clay roof tiles
- 2 timber battens
- 3 timber beam
- 4 gutter system
- 5 existing sash window
- 6 blockwork cavity wall
- 7 concrete foundations 150mm
- 8 insulation 80mm
- 9 screed 30mm
- 10 recycled tiles 30mm
- 11 existing retaining wall
- 12 timber beam
- 13 aluminium sandwich panel
- 14 gutter system
- 15 steel arch lintel
- 16 recycled plastic tiles
- 17 timber counter beams
- 18 aluminium frame
- 19 timber beam
- 20 recycled plastic tile
- 21 aluminium frame
- 22 timber counter beam
- 23 flange
- 24 gutter system
- 25 aluminium frame
- 26 double glazed glass pane
- 27 plywood
- 28 timber beam
- 29 steel bracket



Perspective Section @ 1:20 (A2)