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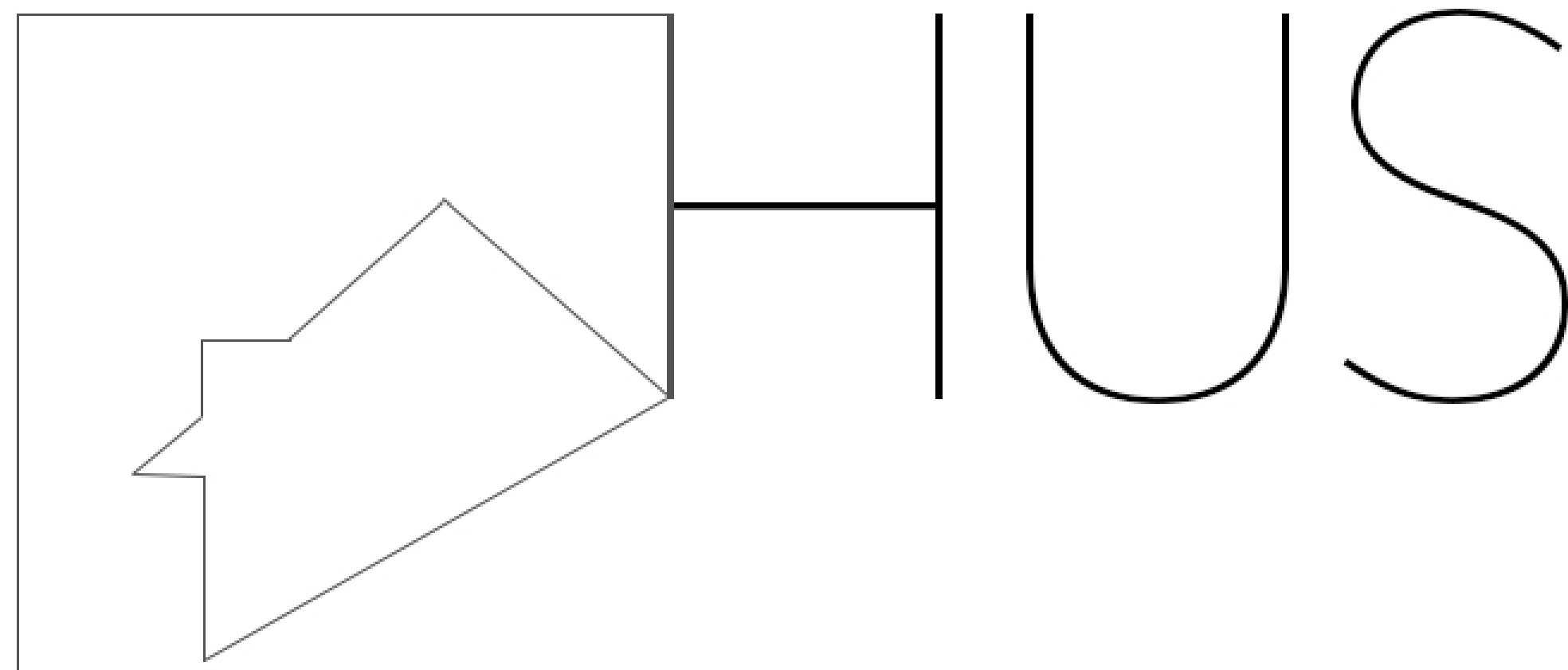
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Hus is a home constructed of 3X3m square modules built to the user demands, in this case a family of 2 parents and 2 children. The modules are fabricated offsite using standardised and readily available materials - reducing cost and waste. Modules are bought in a 'mix and match' style and range from king sized bed with ensuite 'packs' to roof gardens and outdoor planting. The inclusion of integrated storage and furniture, sliding walls and open plan living reduces the footprint of the house, and enables the finished home to be easily adaptable. This can vary on a day to day basis, such as working from home and entertaining guests, and in the long term as the children grow up, and the parents age towards and beyond retirement. Future technologies are integral to the design and are included to aid the functioning of the home, and improve the wellbeing of the residents.

Dronefield Sheffield

-  Train Connection
-  Road Networks
-  Areas of interest for development
-  Residential
-  Educational
-  Leisure
-  Local Authority



Technology

There are a number of technologies that can be integrated into a new home, ready for it to develop into the future. ‘Smart’ items such as thermostats, shades, lighting etc can be connected to phones to make daily life easier for those with limited mobility and other disabilities.

Climate Impact

Weather Proofing is one of the best ways to avoid damage caused by the changing climate. This both makes a home much more resilient, and reduces costs and waste in the long run, as materials and parts will not need to be replaced as often. Techniques include

- Insulation (loft, cavity wall, sound, floor, partition wall)
- Roof overhang to reduce wall wetting
- Shading and ventilation systems including tactically planted trees.
- Triple glazing
- Green roofs
- Flood mitigation

Other energy saving and off grid systems also reduce the impact the house has on the environment, and reduce long term costs

- Ground Source Heat Pumps
- Photovoltaic solar panels
- Wood burning stoves
- Masonry heaters
- Underfloor heating
- Open concept design to coincide with single point heaters, reducing temperature differences across the house.
- Incorporating thermal mass into the construction of the building.

Quality of living

In the future careers and retirement will look differently, and there will be new demands for technologies, products and services, including new care, technologies, new housing models and innovative saving products for retirement

- Where you live and how you live matters
- Size, space, and comfort matters
- Work/private space at home matters
- A home that is adaptable, flexible, accessible, easily altered and extended will be part of the requirements
- Healthy building materials are important to consider

Other aspects that improve the quality of living, and in turn health and wellbeing of residents,

- Connectivity and community, as sense of belonging,
- Accessible green spaces and other green infrastructure
- Healthy and safe living environments (working smoke alarms, socialising areas etc)
- Stimulating environments for children
- Housing suitable for older people.

Construction

The construction of a building can affect the overall cost and quality greatly and there are certain techniques that improve these factors.

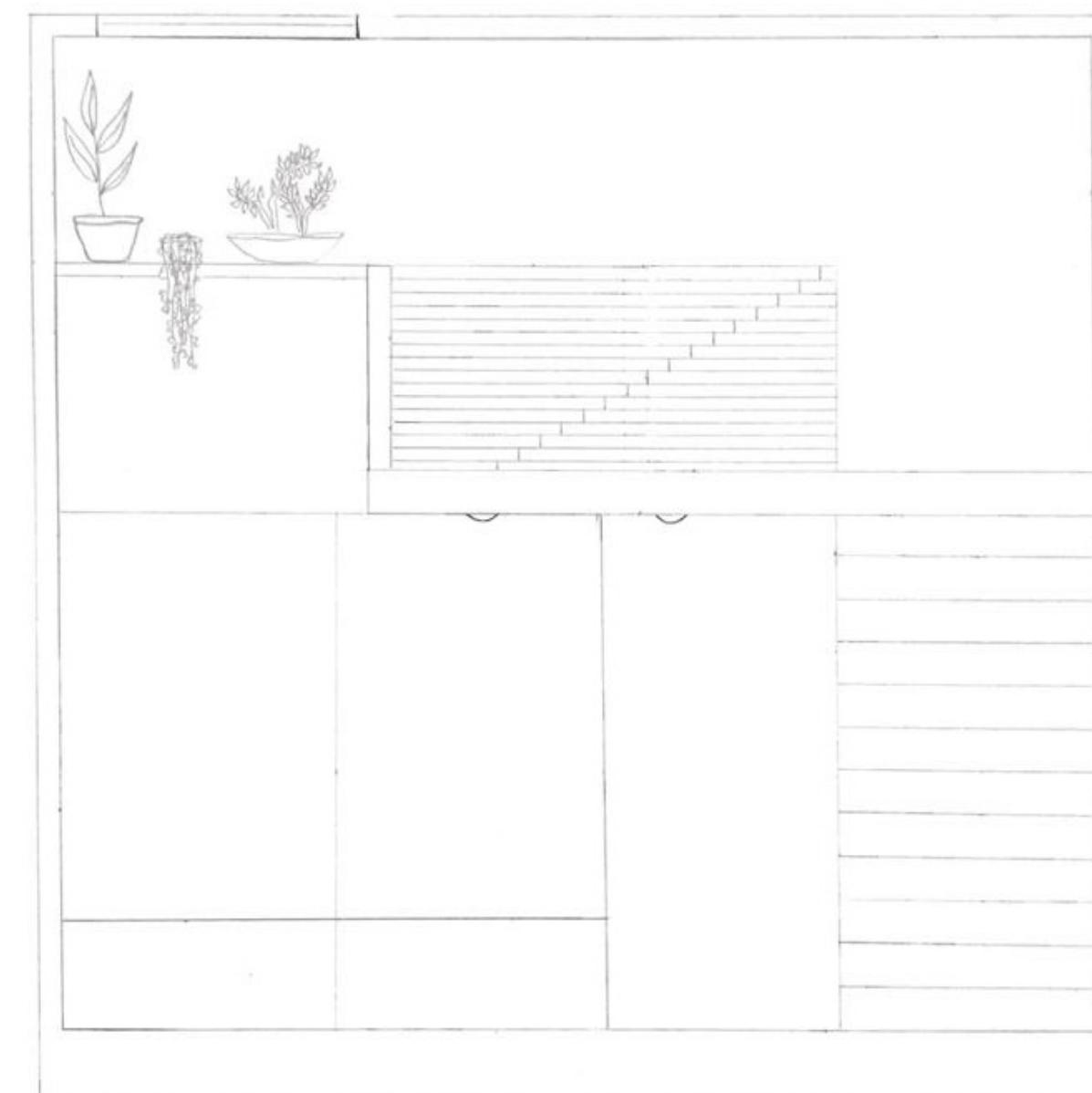
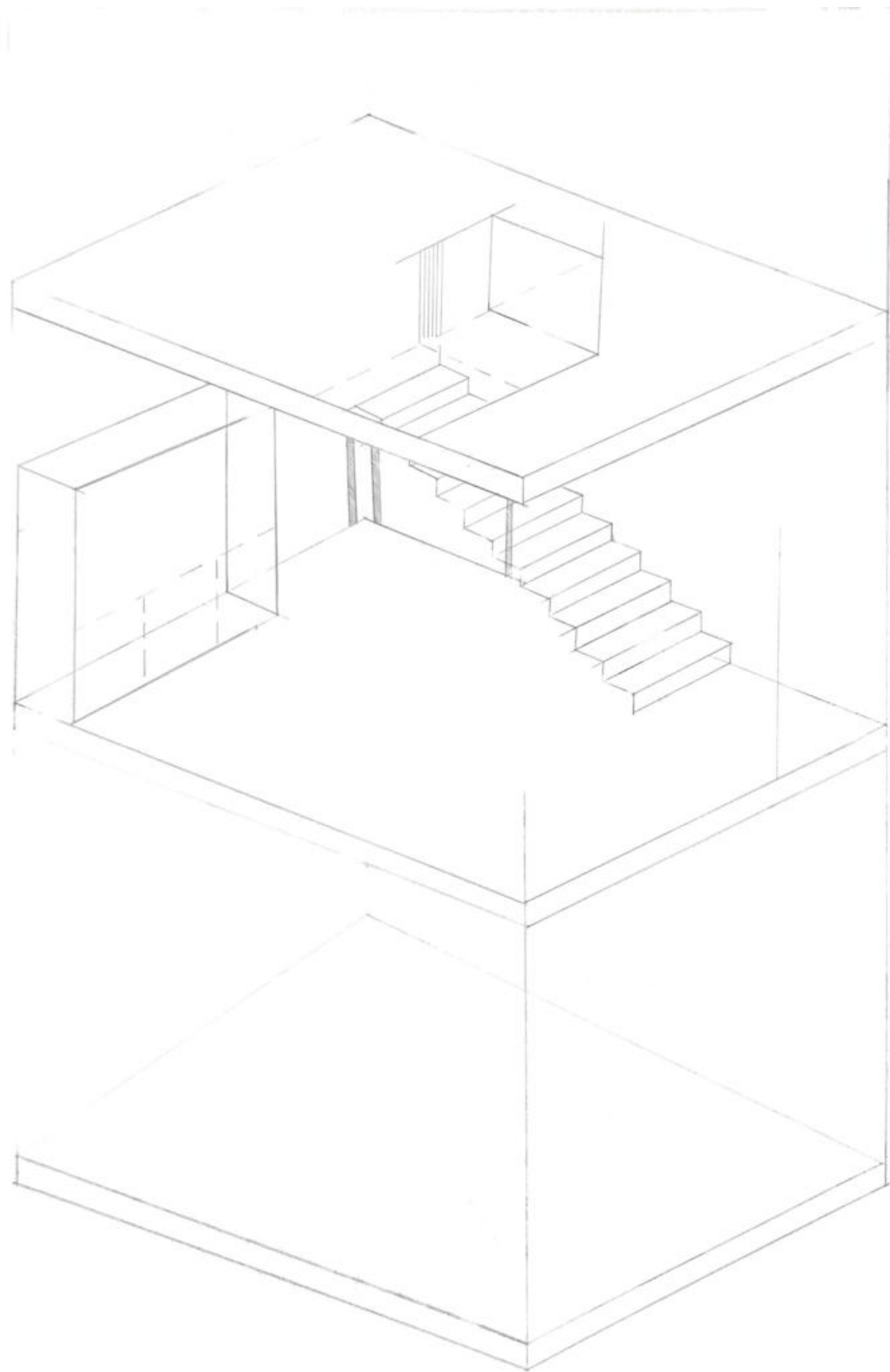
- Ventilation
- Lighting, daylighting and natural light.
- Use of materials and their monetary costs
- Prefabrication

Affordability

Houses can be made affordable by

- Keeping geometry simple
- Being mindful of materials and construction
- Being efficient with use of floor area
- Space planning



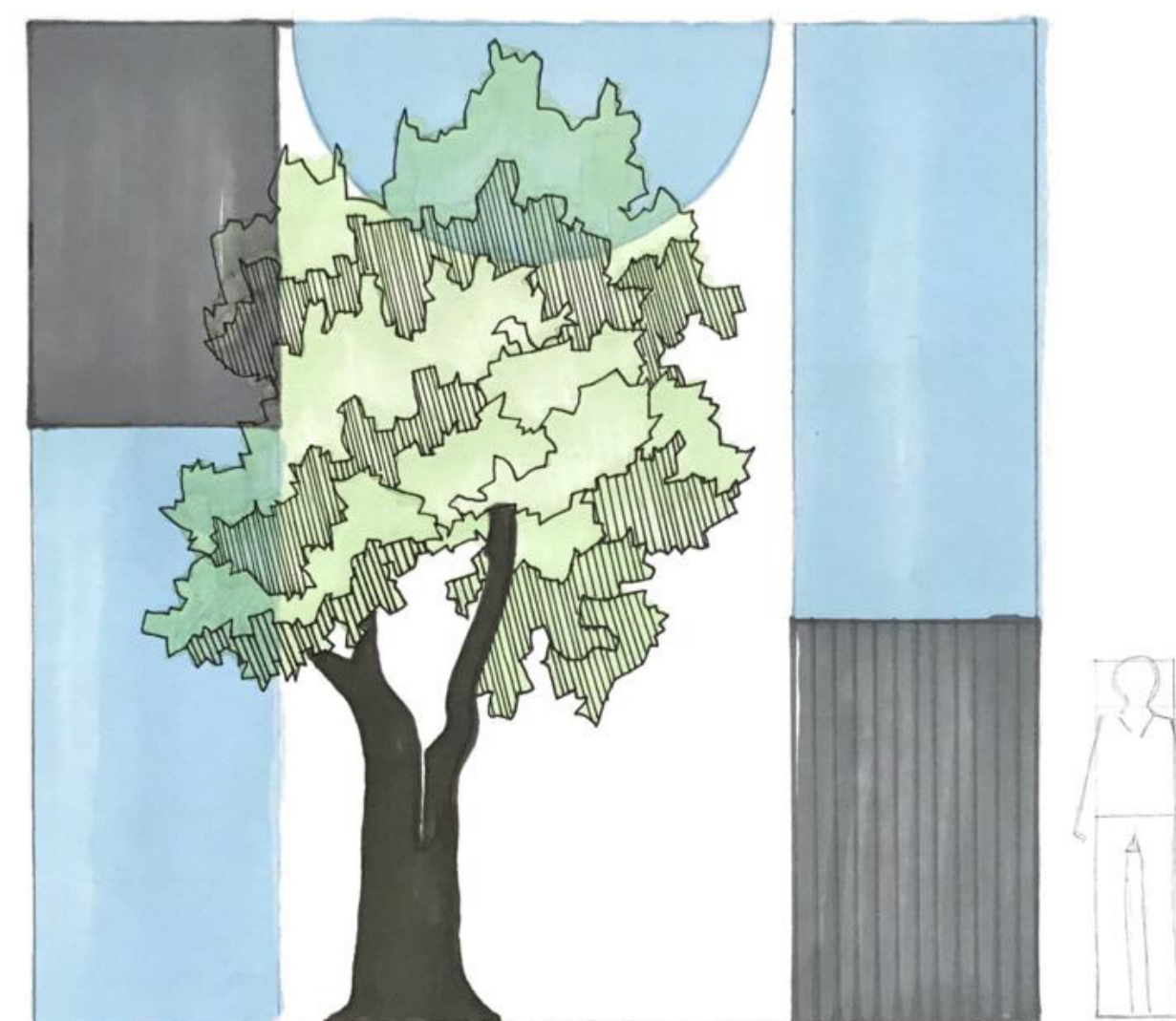


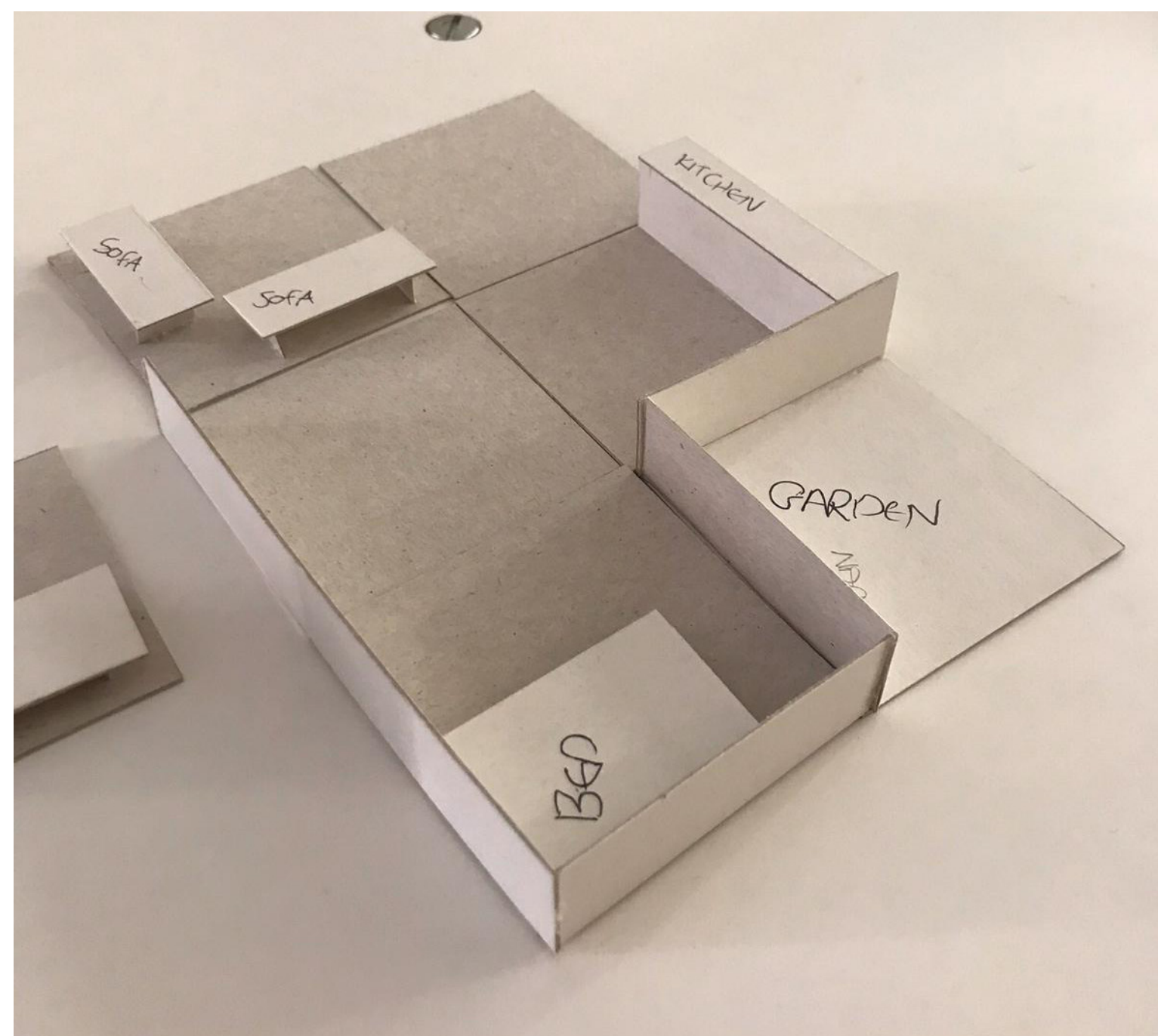
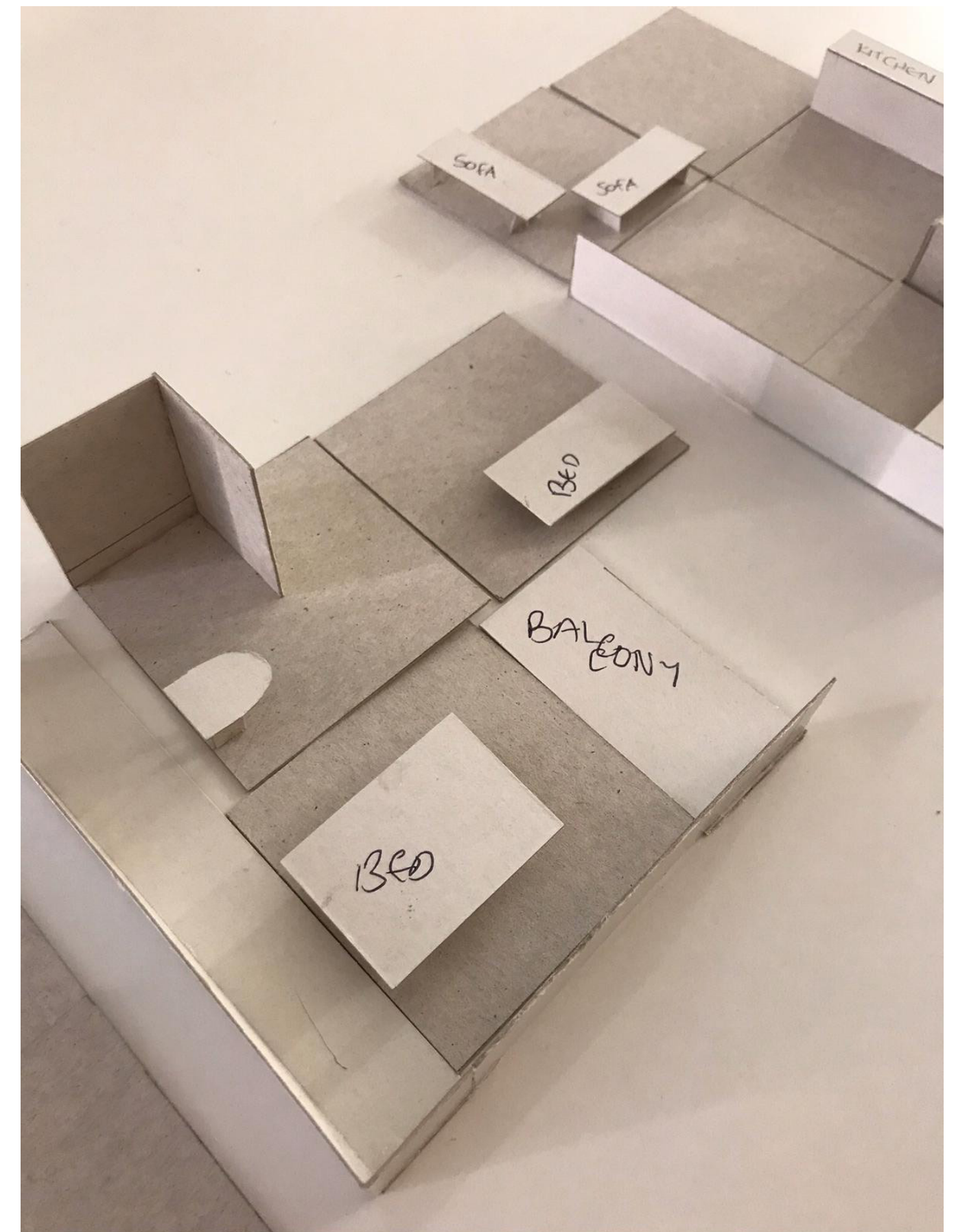
Initial sketches and drawing exploring the space and form of our Home, directly influenced by our early research.

Including plants, and breathable, open spaces helps to make a healthy home and improve the health and wellbeing of the residents.

Using deciduous trees around south and west facing windows helps to create shade in the Summer to prevent overheating. When the leaves fall in the Autumn, the natural sunlight can help with natural heating.

to show

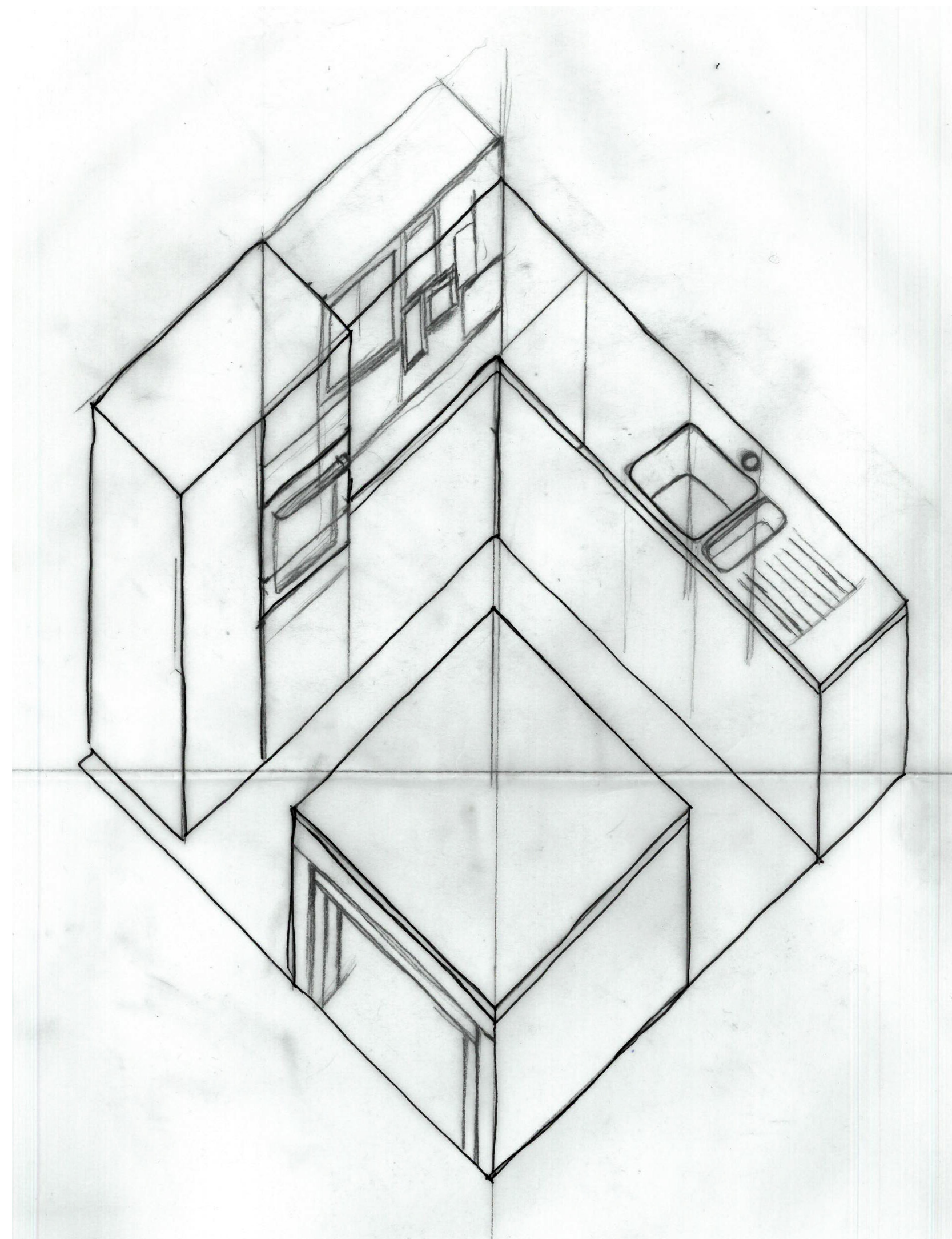
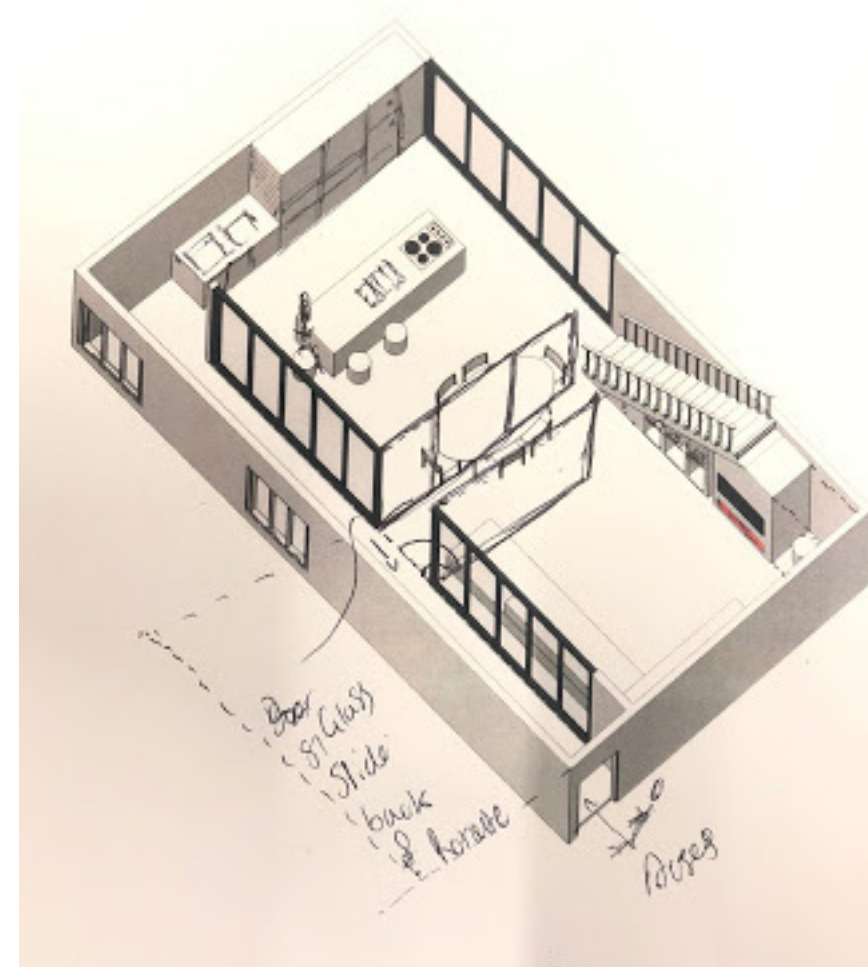
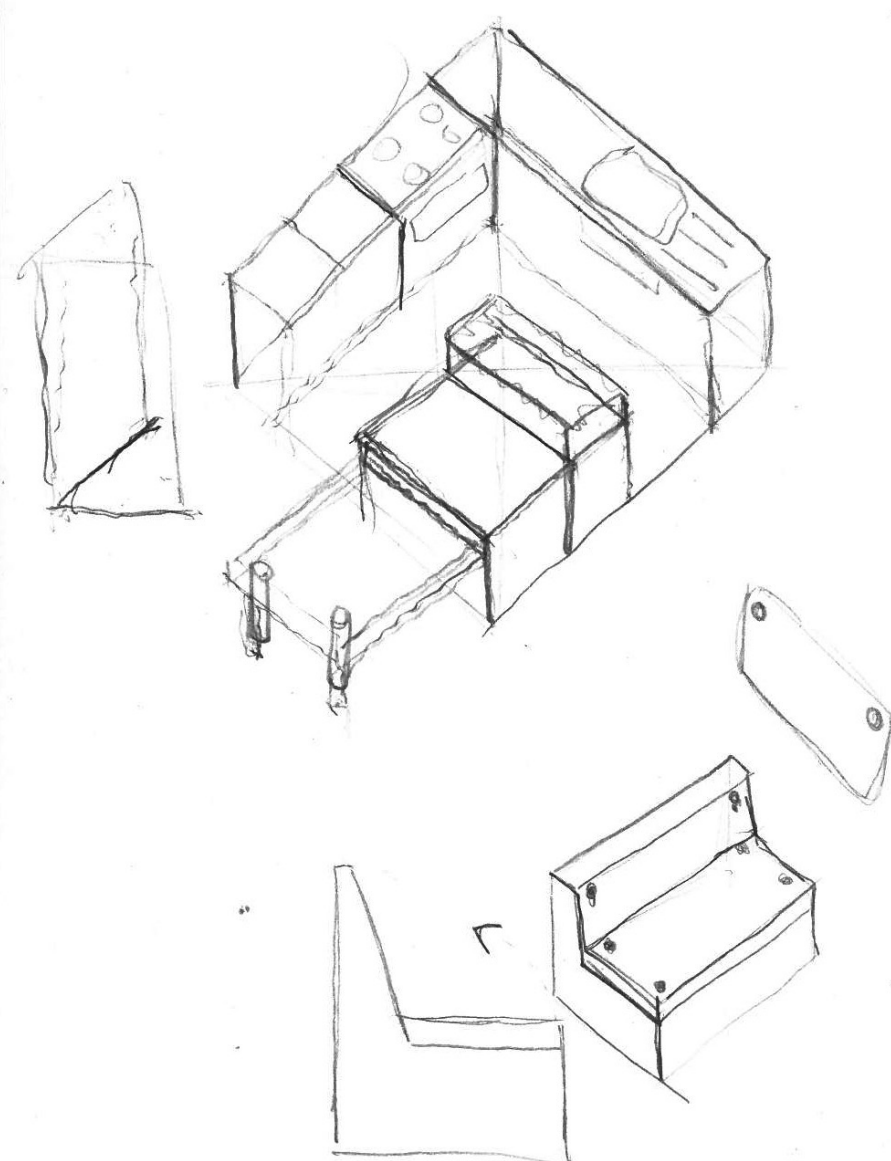
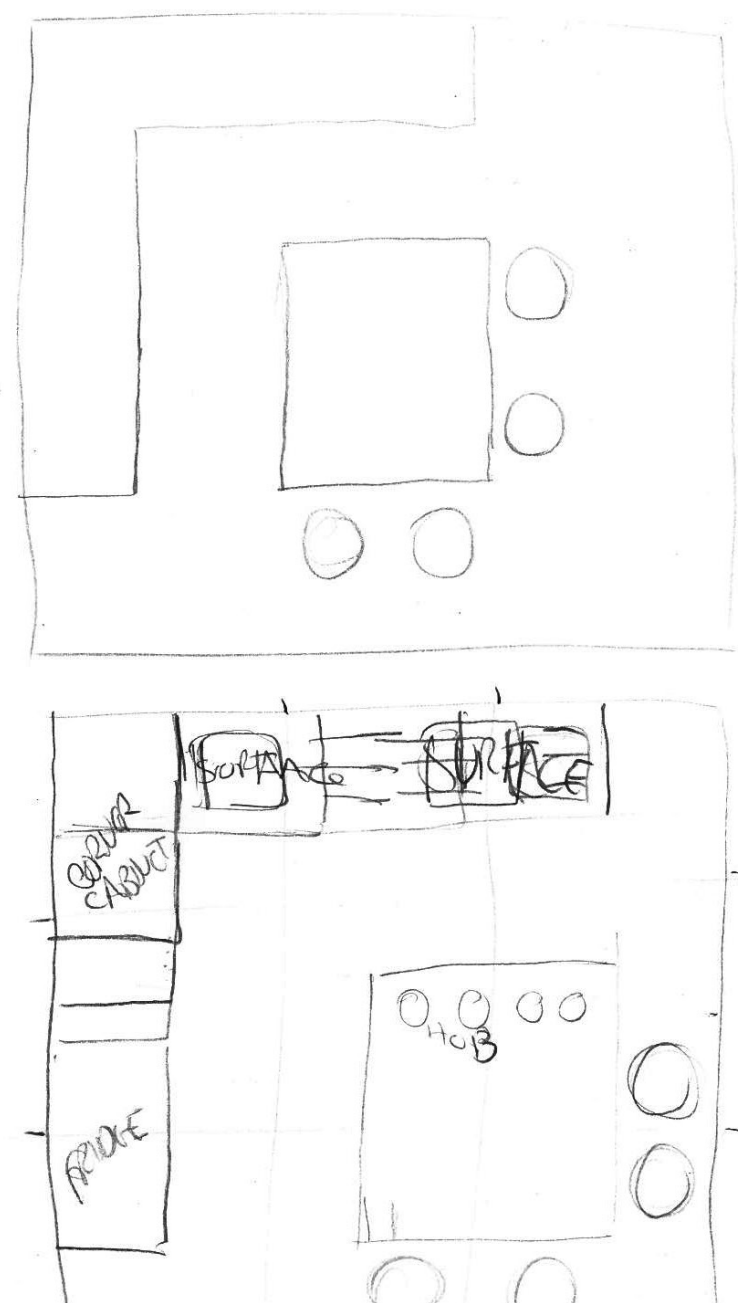




Our initial sketch model explored the idea of creating our Home out of individual 'modules' that could be pieced together at the request of the buyer. We then explored how we could piece the house together using said modules.

Creating a house in this fashion allows for the prefabrication of the modules, which helps to reduce costs, and waste from building materials.

Using 3X3 metre squares, with 2.4m height walls allows for the main structure of the house to be built from standard sized and easily available materials, again reducing cost and waste.



To keep the footprint of our Home to a minimum, we explored the idea of an adaptable and interchangeable kitchen, living and dining area. By turning the kitchen island into a dining table, there is no need for extra floor space to accommodate for a permanent dining table. The idea then developed into integrating the table within the island, for it to then be pulled out and removed, with legs that unfold from within the table. Multipurpose sofas that can be transformed into benches can be moved around the table to provide extensive seating for the family, as well as visiting guests.



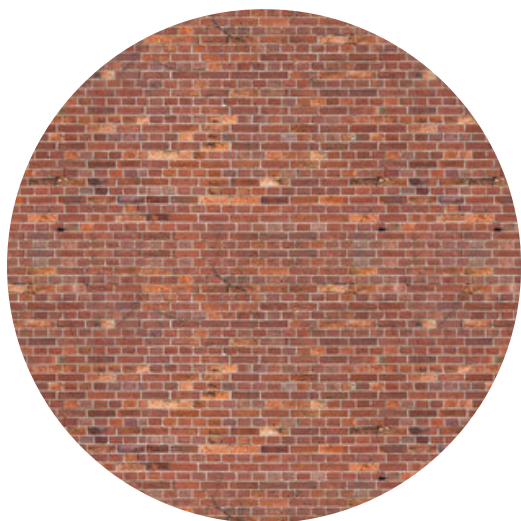
OSB 3

OSB is a sustainable and easily and cheaply sourced material. Tongue and groove boards are easy and quick to install as a base construction material, and is hard wearing and long lasting, reducing the need to be replaced.



PLANED TIMBER

Planed timber is another standard sized and readily available material to be used in the fabrication of the main structure of the house.



BRICK

Red brick is central to the identity of Sheffield, being a former industrial town packed with converted mills and factories. Using this classic cladding will keep our Home a part of the city.



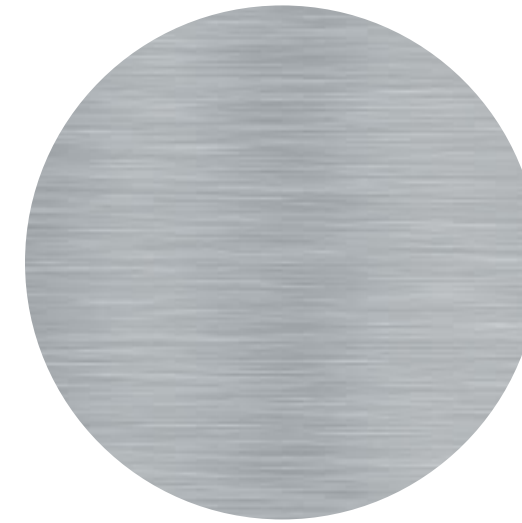
TILES

Tiles are readily available and cheaply sourced when bought in bulk, helping to produce a beautiful finish in a short amount of time.



BAMBOO

Bamboo is a fast growing and sustainably sourced material, reducing the impact on the environment.



STAINLESS STEEL

Stainless steel is hard wearing and easy to maintain as it doesn't rust or tarnish easily. It is also cost effective, and can be recycled at the end of its life.



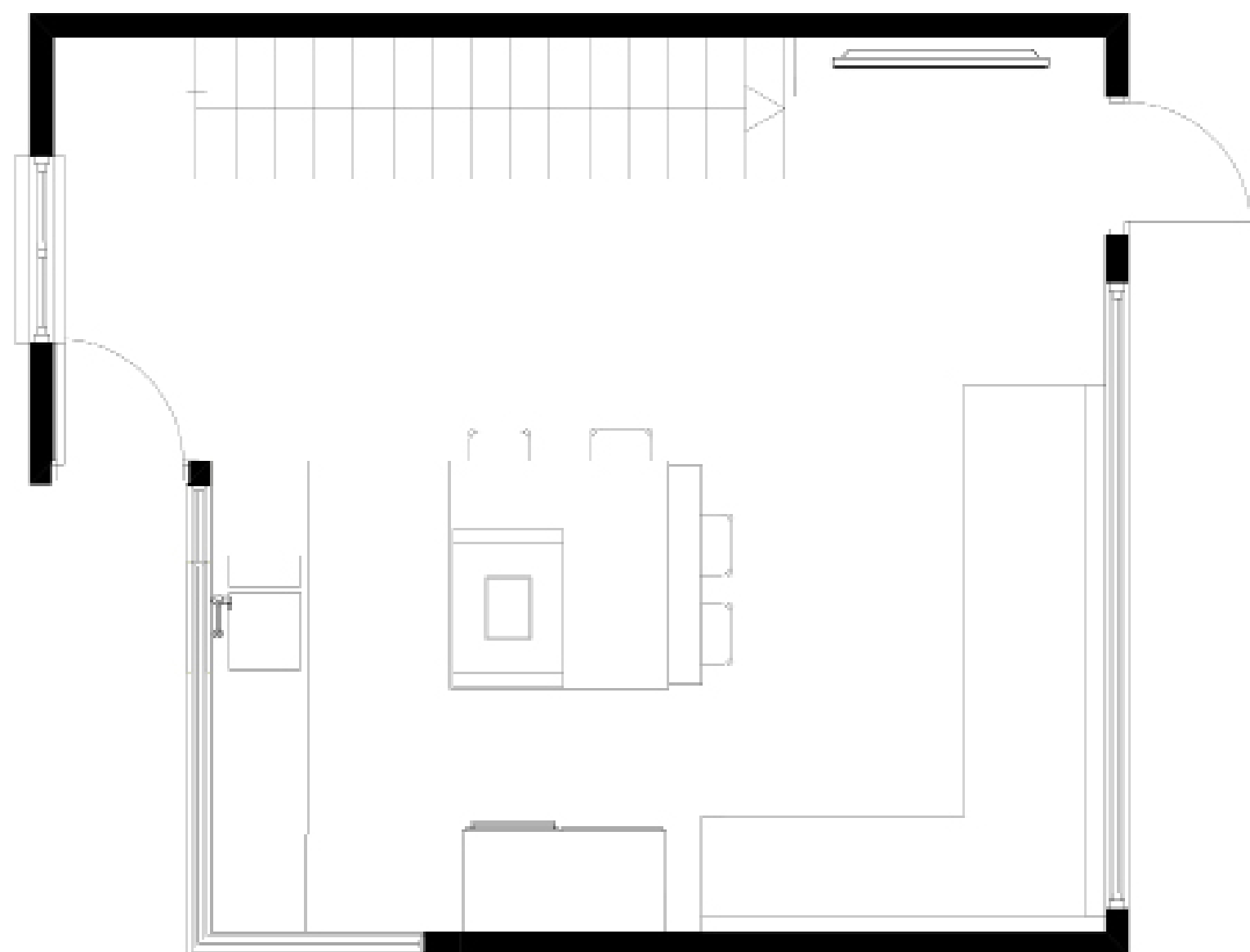
RECLAIMED WOOD

Reclaimed wooden flooring helps to reduce the cost of buying new wood, and helps to reduce the environmental impact of the construction of the building.



POLISHED PORCELAIN

Porcelain is highly durable and impermeable, meaning it will need replacing very infrequently. Being impermeable it is very easy to clean, and can help support a hygienic and healthy living environment.



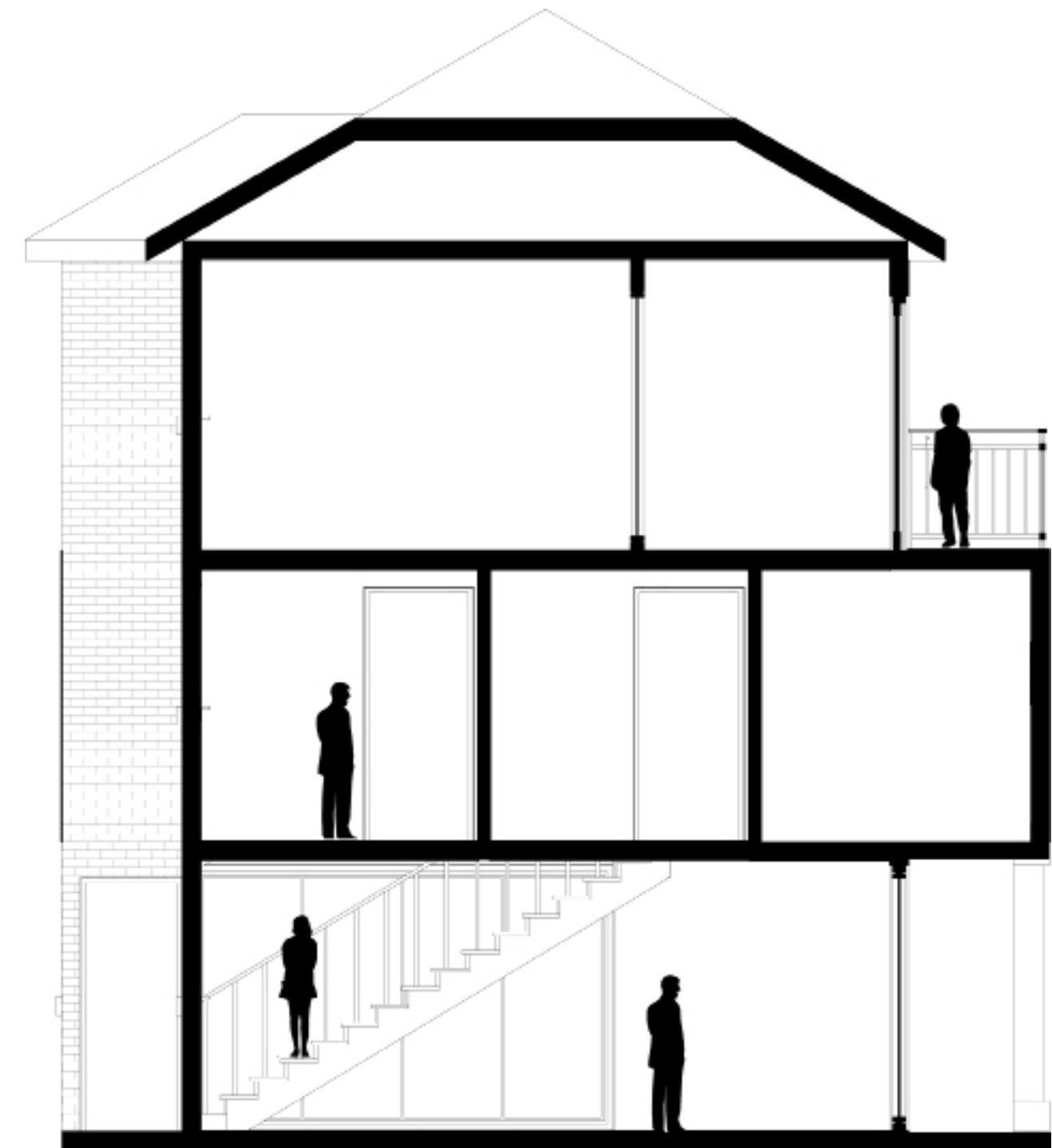
GROUND FLOOR
SCALE 1:50



FIRST FLOOR
SCALE 1:50



SECOND FLOOR
SCALE 1:50



INTERIOR SECTION
SCALE 1:50



The kitchen includes a huge amount of integrated storage, including drawers and a pull out corner cupboard. The full length built in smart fridge freezer provides plenty of fresh food storage and can be connected to an app that suggests healthy recipes and monitors the contents of the fridge. The dining table pulls smoothly out from within the kitchen island with legs that fold out from within the bottom of the tabletop, meaning it can be placed anywhere within the living area, and comfortably seat at least 6 people. Open wall shelving and magnetic wall strips keep clutter off of the kitchen surfaces, and stop the corner area from feeling cramped. The hob integrated into the island allows for the user to be looking into the living area to keep the whole downstairs space feeling connected.



The bathroom follows on with bringing simple and tasteful design elements. The design allows for easy access to wheel chairs due to the size, with a bath that can be easily progressed into a walk-in. We proposed the idea of simple yet elegant storage solutions all using touch mechanisms that would compel the units to open as well as a mirror that possesses health monitoring capabilities for the whole family; the frame of the mirror draws back to adding a family element into the design.



The master bedroom on the top floor opens out to the balcony roof garden, tying in the crucial element of the outdoors, helping to keep the residents connected to nature, and improving mental health and wellbeing in the long term. Outdoor spaces within homes also help to stimulate young children, and helps to foster a respect for the environment, and provides an opportunity to learn about local wildlife and nature. Green roofs are also greatly beneficial to a building, as they require little maintenance and provide natural insulation, reducing heating costs.

