

Polytunnel

covered area

Polytunnel

storage

kitchen

wash area

WC

shop storage

Café

study

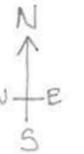
Shop

outdoor dining

shop display

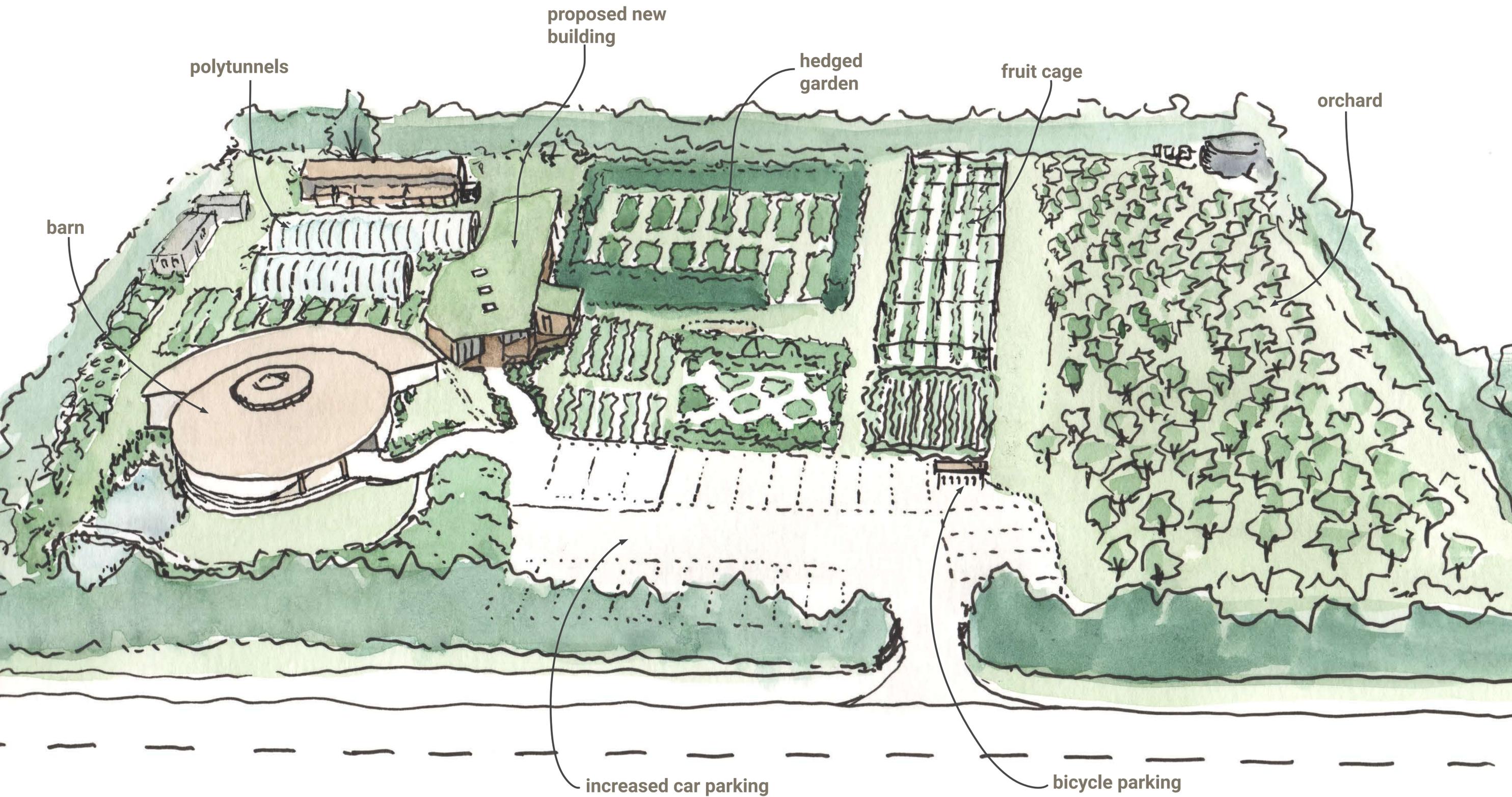
sloped path

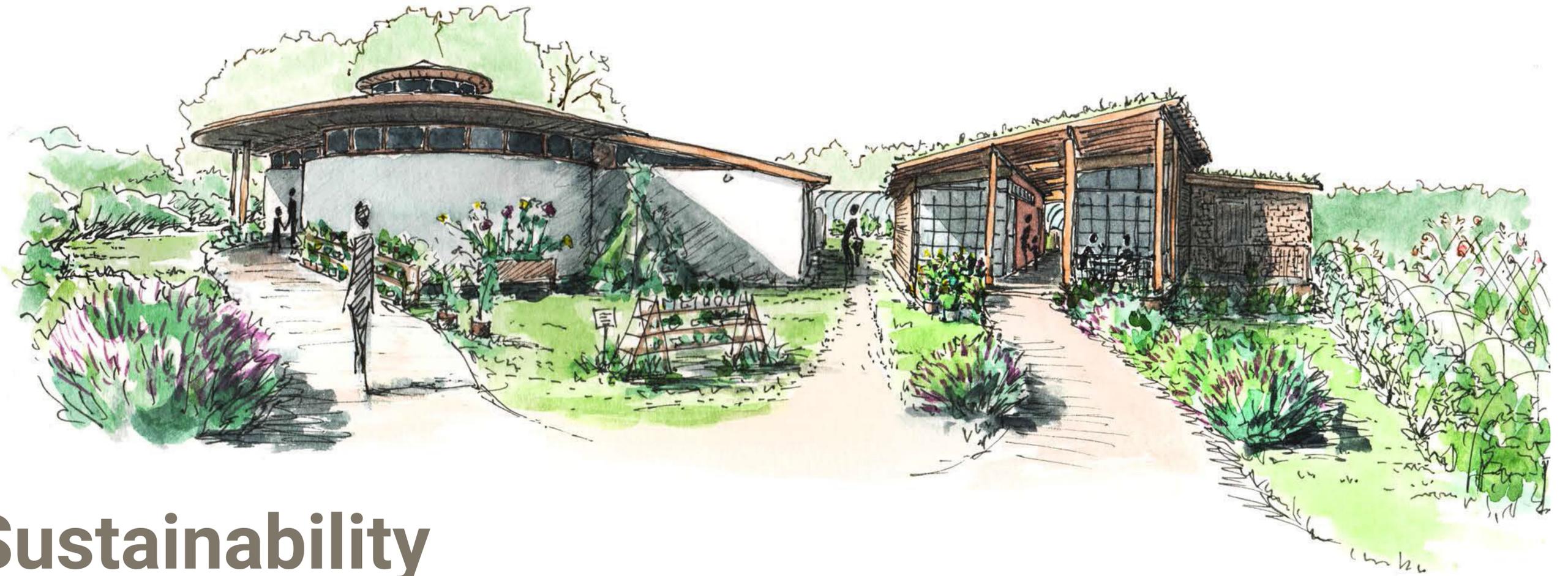
Barn



New Shop & Cafe Floor Plan

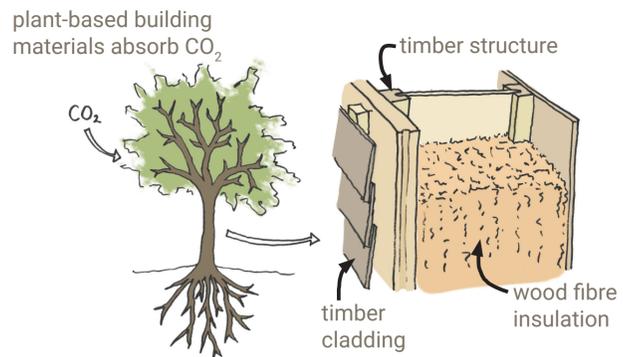
Site Birds-Eye View





Sustainability

Carbon footprint



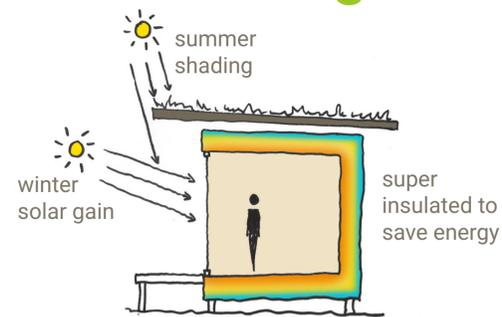
The new building will be constructed predominantly with natural low-carbon materials, including local timber and wood fibre insulation.

These plant-based materials soak up CO₂ whilst they grow, and they store it in the building (called carbon sequestration) until the materials are eventually composted or burned.

The building work will avoid the use of energy-intensive materials (such as plastics/cement/steel) as much as possible, keeping the carbon footprint (or embodied energy) extremely low.

Instead the structure will be made from timber and filled with wood fibre insulation.

Efficient design

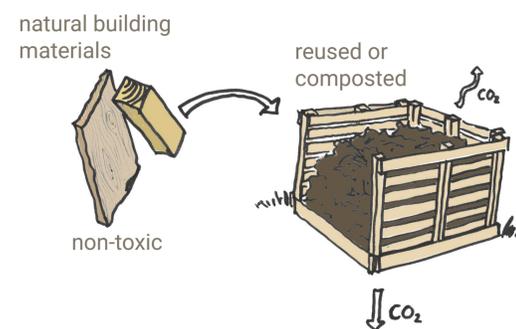


The building will be extremely well insulated all over using natural insulation products, giving it excellent thermal performance. This will reduce heat loss and therefore keep energy demand very low.

Options for renewable energy generation on site (such as an air source heat pump and/or solar panels) will be explored to provide any energy required to heat the space and give hot water. The building will therefore aim to be 'zero-carbon' (using net zero energy from the grid).

The large roof will provide shading from the high summer sun, but south facing glazing allows the building to benefit from solar gain in the winter.

End of life

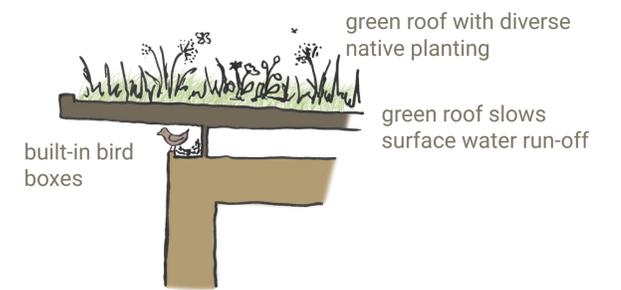


The building will be highly durable and can last a long time. When it is eventually dismantled, all the materials and components can either be reused, recycled, or composted.

Waste is a huge issue in the construction industry, but the materials used for this building, such as natural timber and wood fibre insulation, can be composted, which helps return CO₂ and nutrients to the soil feeding new growth and completing the material cycle.

The materials used will also be non-toxic and breathable (vapour-open) which will help keep a healthy indoor air quality.

Ecology



Buildings aren't just for humans. With this building we want to provide comfortable habitats for birds and bugs as well as humans.

Bird nest boxes and bat boxes can be easily incorporated into the eaves of the building, without getting in the way of people or blocking ventilation spaces.

The green roof will be planted with a wide variety of local native plants, encouraging bees and other wildlife by providing an undisturbed habitat.

Green roofs can also incorporate solar panels on raised frames, and in fact the plants often improve the efficiency of PV panels by keeping the underside cool.



Shop & Cafe

From the car park a paved path will lead you gently up to the shop and cafe, with planting and shop flower display areas to the sides. The green roof will extend over a deck, providing covered outdoor dining space, with seating for 6-8 people. This large roof will also provide shade from the midday summer sun.

A central covered walkway with rooflights gives access to the shop on the left and cafe on the right. The shop will offer a range of products including a zero-waste refill station.

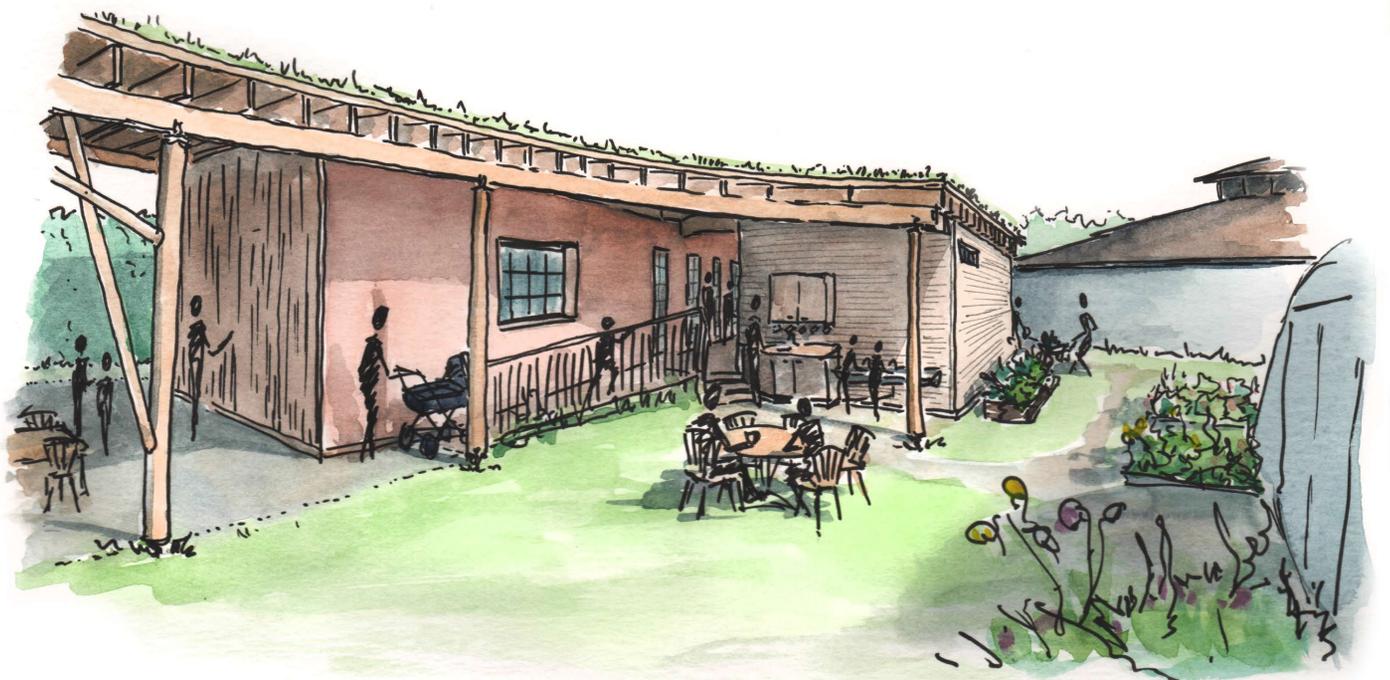
The cafe will have a door that can fold back to a large opening in the summer, inviting you in. Inside there will be space to seat at least 14, plus a large counter with window behind into the kitchen, visually connecting visitors with the food preparation process.

Extra spaces

A study room connected to but separate from the cafe provides a private space for small groups. This room will have a large window seat looking onto the vegetable garden to the east, and will be clad externally in tactile timber shingles.

At the end of the central walkway will be a spacious WC for all users, and beyond this, down the steps, will be a wash area under the roof cover with large sink and storage for a variety of uses for the gardeners and groups.

The roof to the side curves away to frame an open space between the new building and the polytunnel, connecting all the structures. A side window gives views through to the kitchen.



Covered area

At the north end of the new building will be a large area under cover of the roof, with the deep timber rafters, beams and braces fully exposed. This will be a multi-functional space, with a large cupboard built into the timber wall with storage for enough chairs and tables to fill the space when needed.

This zone could be used for private groups, gardener's gatherings, presentations, functions and more.

The angled timber braces between the roundwood posts reflect the arched opening in the hedge to one side and the curve of the polytunnel to the other, linking the two.

Overall, the new building will provide a mix of spaces for wide ranging uses, each part sensitively detailed to invite users in and around the building, and to feel cosy but connected when inside.

The aim of the design is to compliment the existing site and round barn, and to take the ethics of Tuppenny Barn through to the core.

