

“a place to call home”

AI715: Design Thesis | **Scott Clampin** | M.Arch 02

Abstract

Aptly named “**a place to call home**”, the M.Arch 02 design thesis project located in the rural realm of Berwick, East Sussex, addresses societies most vulnerable groups of people (those without a home, individuals with drug or alcohol dependency, people with financial and / or unemployment difficulties) proposing an agricultural based community-led retreat where individuals voluntarily enrol themselves into it in order to begin the process of rehabilitation back into society with the skills to succeed.



Microworld

My microworld, created a for an edited imagined rural context, displays a post-apocalyptic future where 'rubbish', from our urban areas, takes over the rural environment.



Precedent Study: **Slab City**

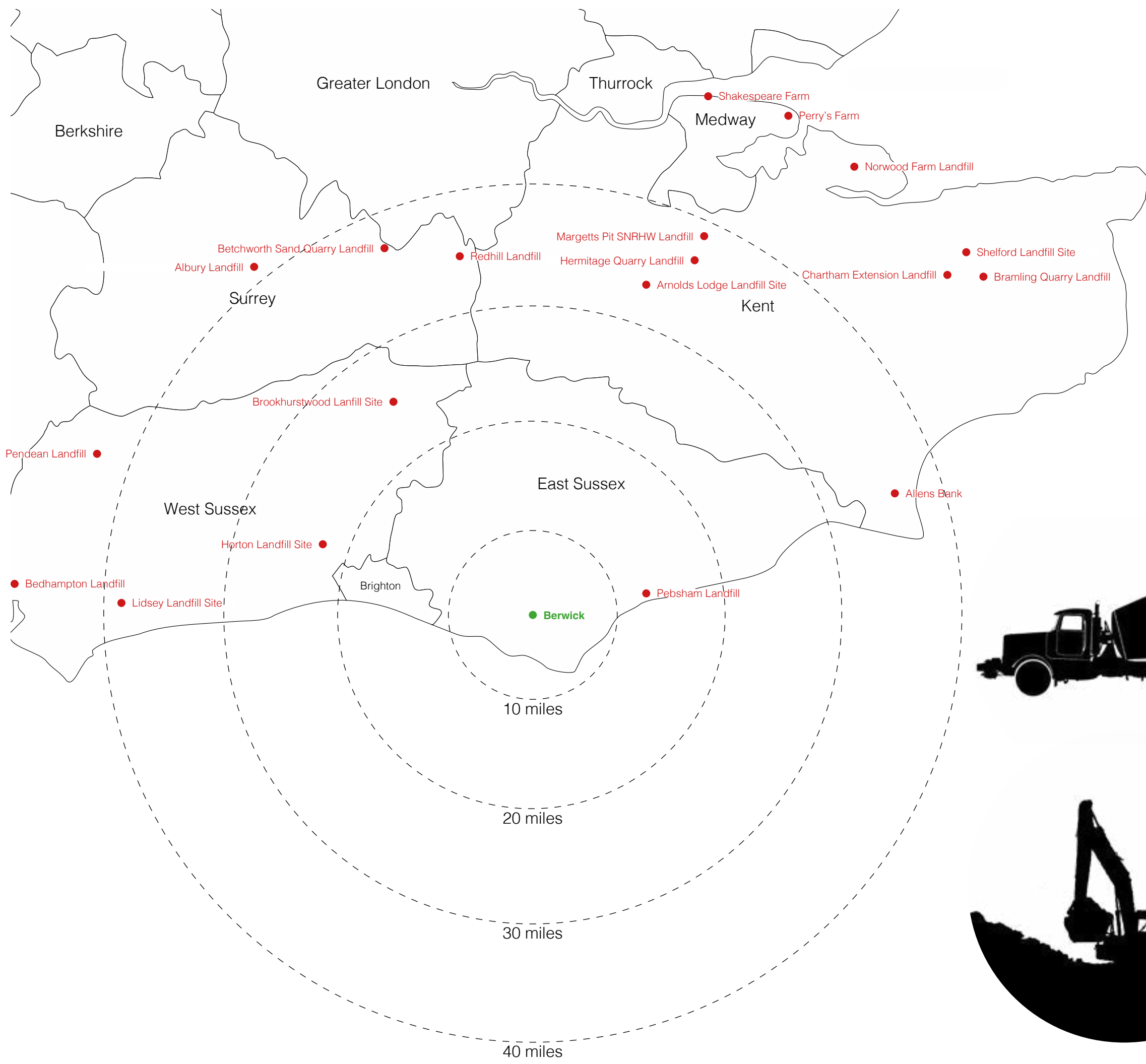
In Southern California's Colorado Desert lies Slab City, a community of squatters, artists, migrants, survivalists, and homeless people, called by some "the last free place" and by others . Slab City is also the end of the road for many. Without electricity, running water, sewers, or trash pickup, Slab City dwellers also live without law enforcement, taxation, or administration. The re-use of everyday items used within the 'city' both as building materials and as everyday items intrigued me following on from the first brief, microworlds.



Precedent Study: **ByFusion**

One of the planet's biggest challenges is the devastating mismanagement of plastic waste. Plastic shouldn't be a single-use item destined for landfills, ByFusion highlight that plastic as a material isn't the problem; it's the lack of planning for its lifecycle. ByFusion's ByBlock can consistently convert all types of plastic waste into a high-performing, advanced building material enables, corporations, and governments to put their plastic waste to work in their local communities while cleaning up the planet.





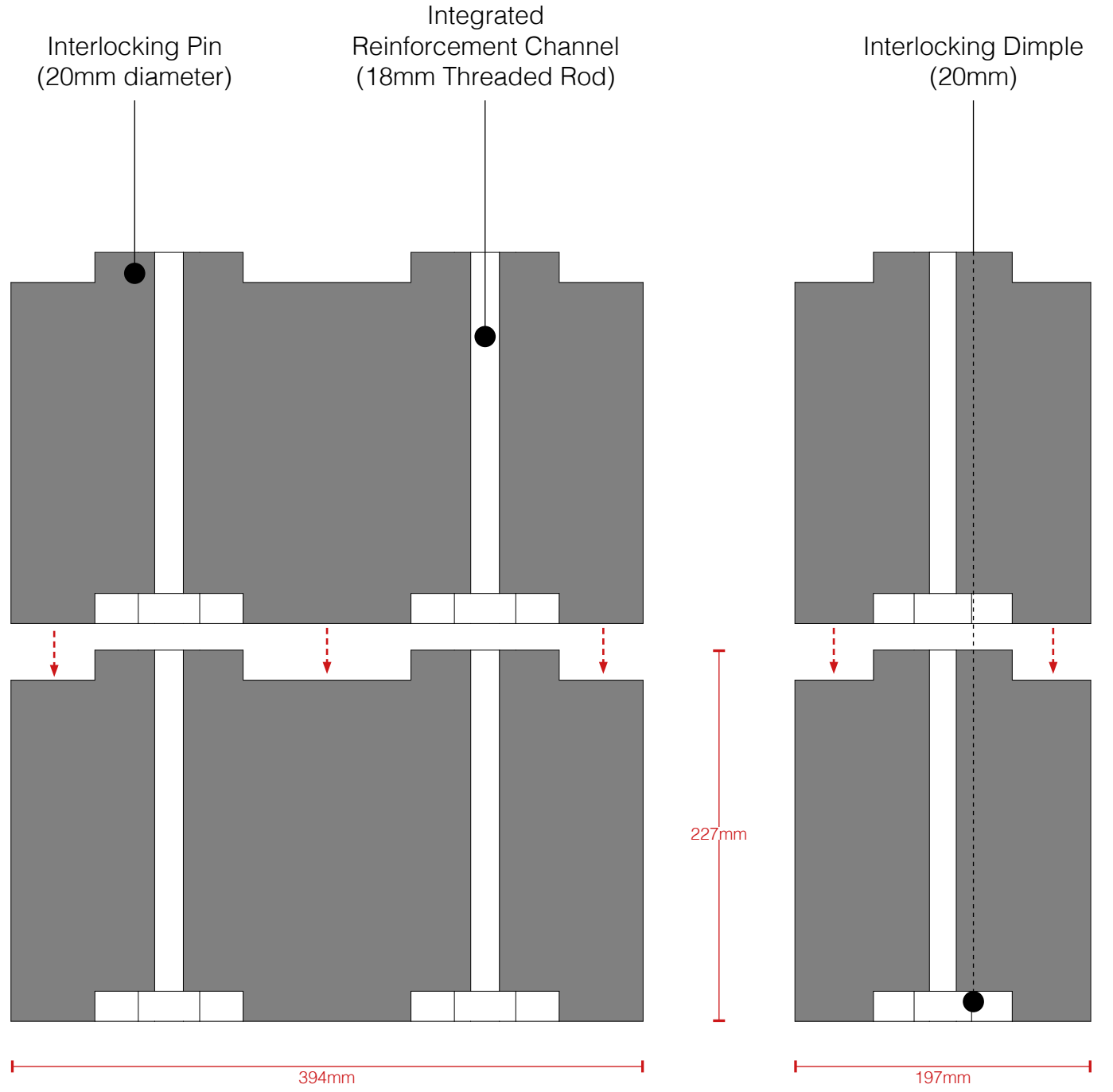
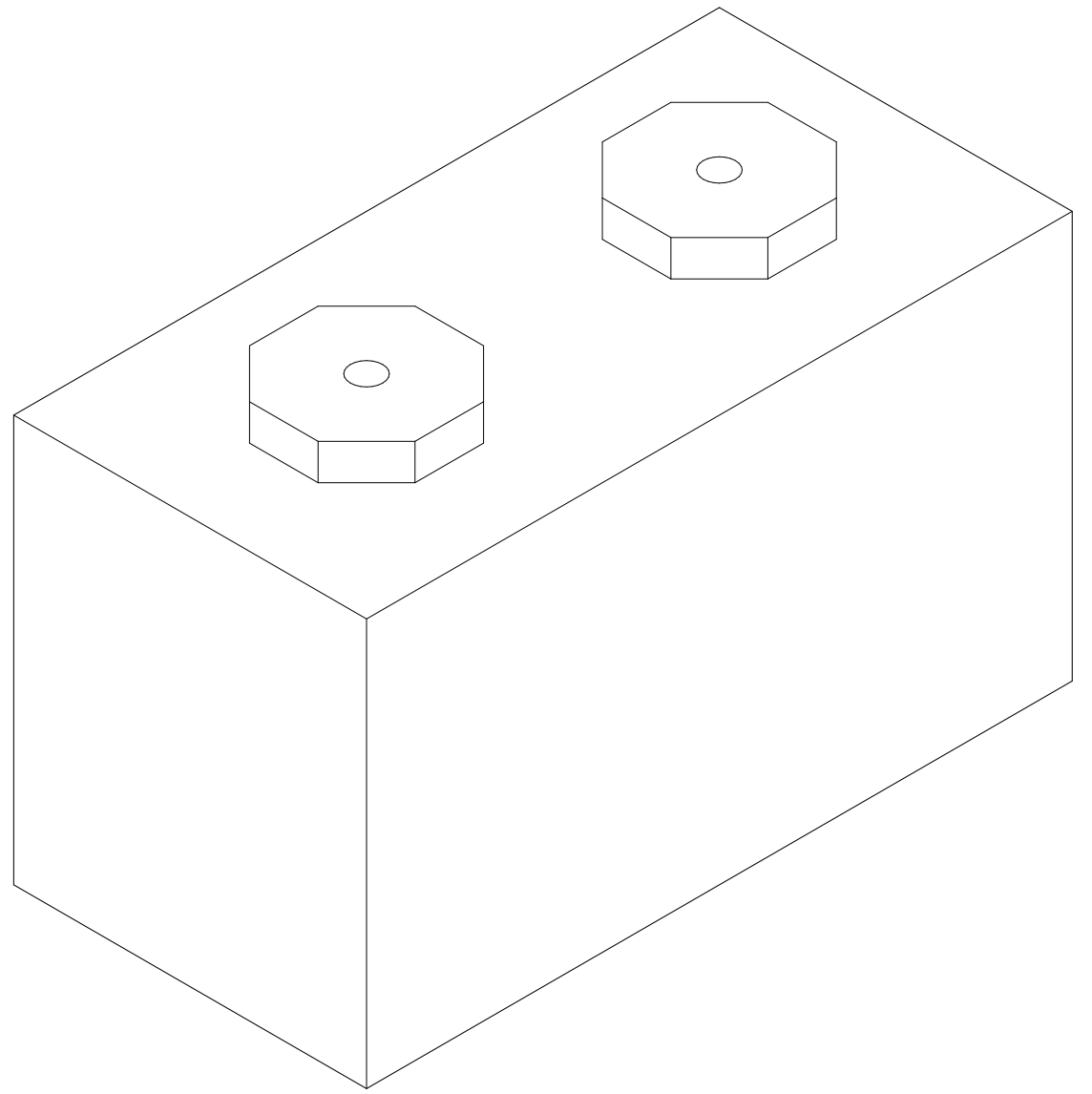
**Construction
accounts for 1/3 of
the world's waste**

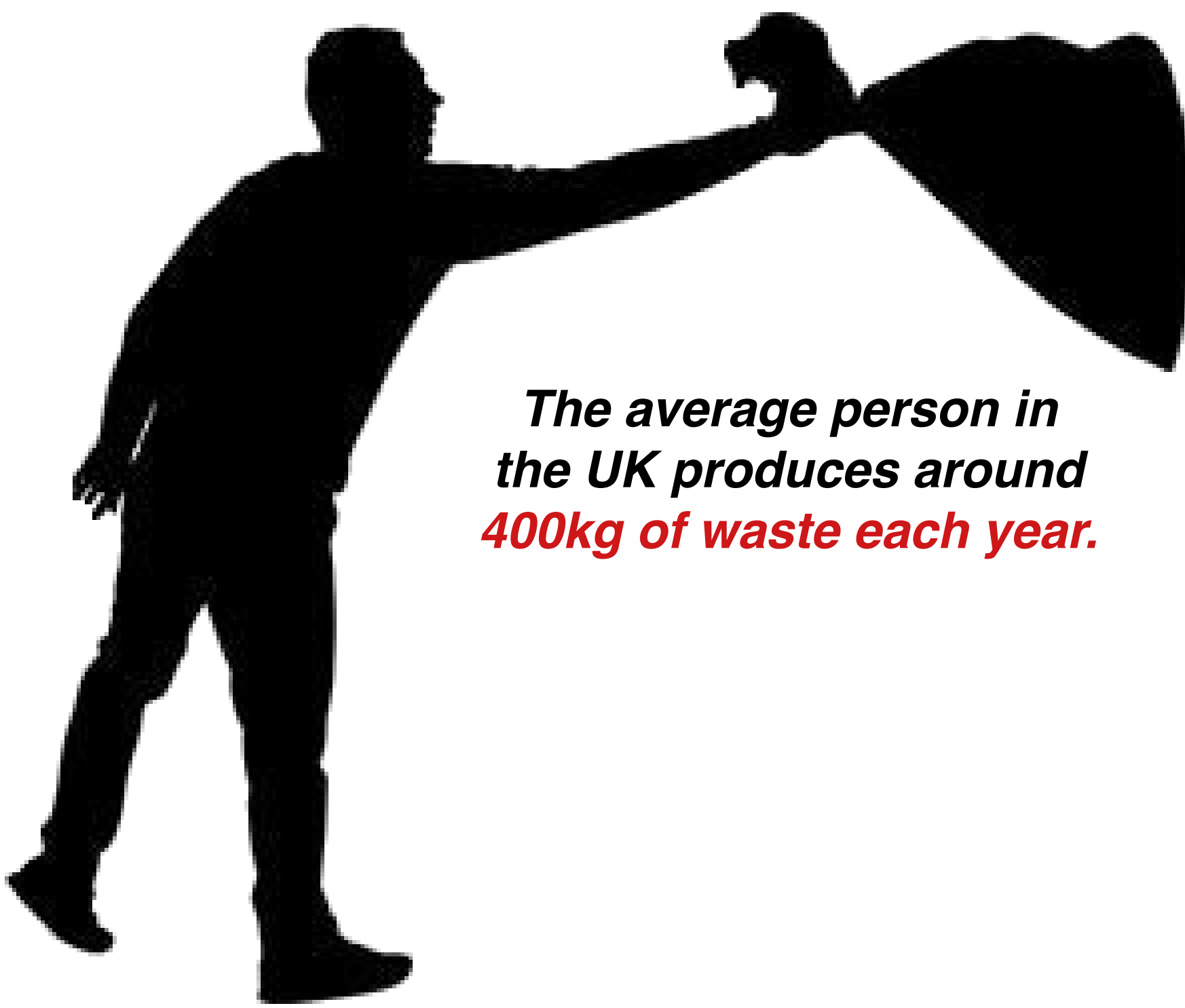


**6.1 million tonnes
of waste was sent
to landfill in 2020
(gov.uk)**

Berwick Block - Made from 100% recycled materials)

Dimensions - 394mm (W) x 197mm (D) x 227mm (H)
Weight - 10kg (per block)





The average person in the UK produces around 400kg of waste each year.

kg of annual waste per person (Sussex)

30.68kg of plastic

28.48kg of glass

82.24kg of paper & card

Total useable 'waste' materials = **141.40kg**

Population of Local Areas:

Berwick (**380**)

Alfriston (**890**)

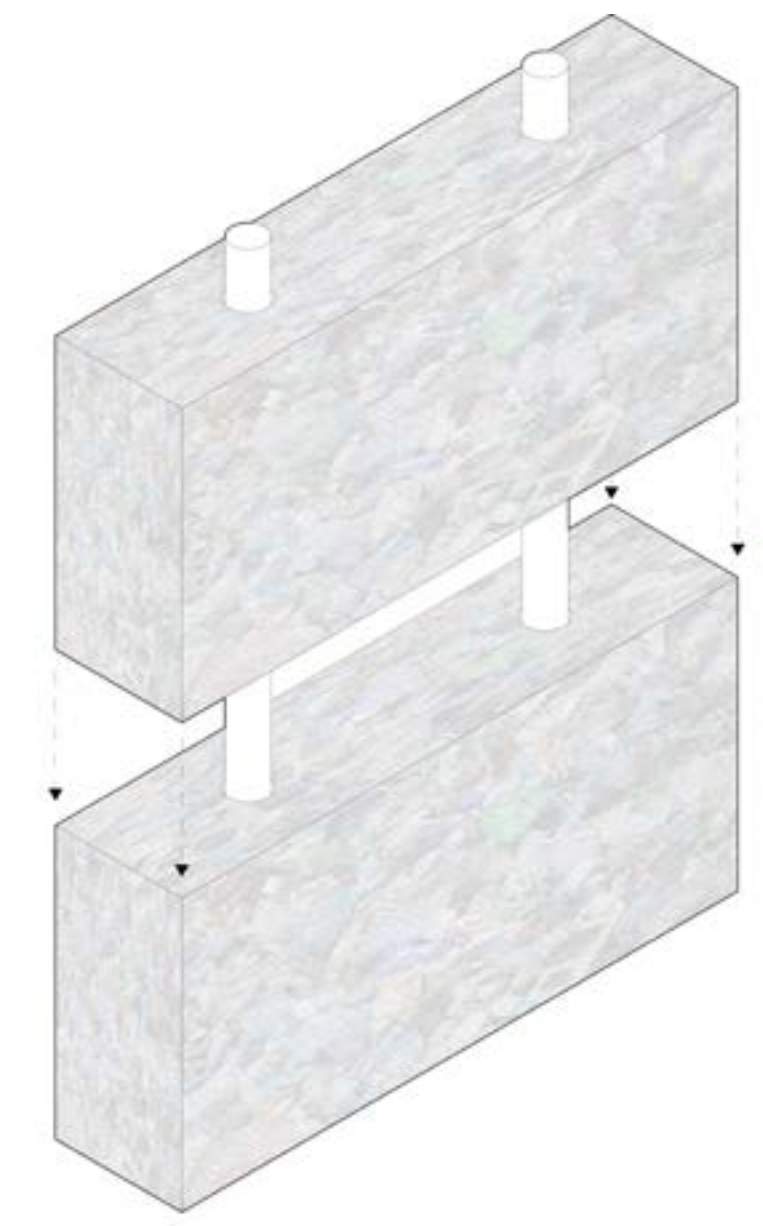
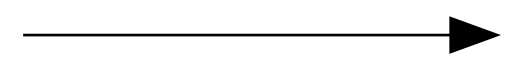
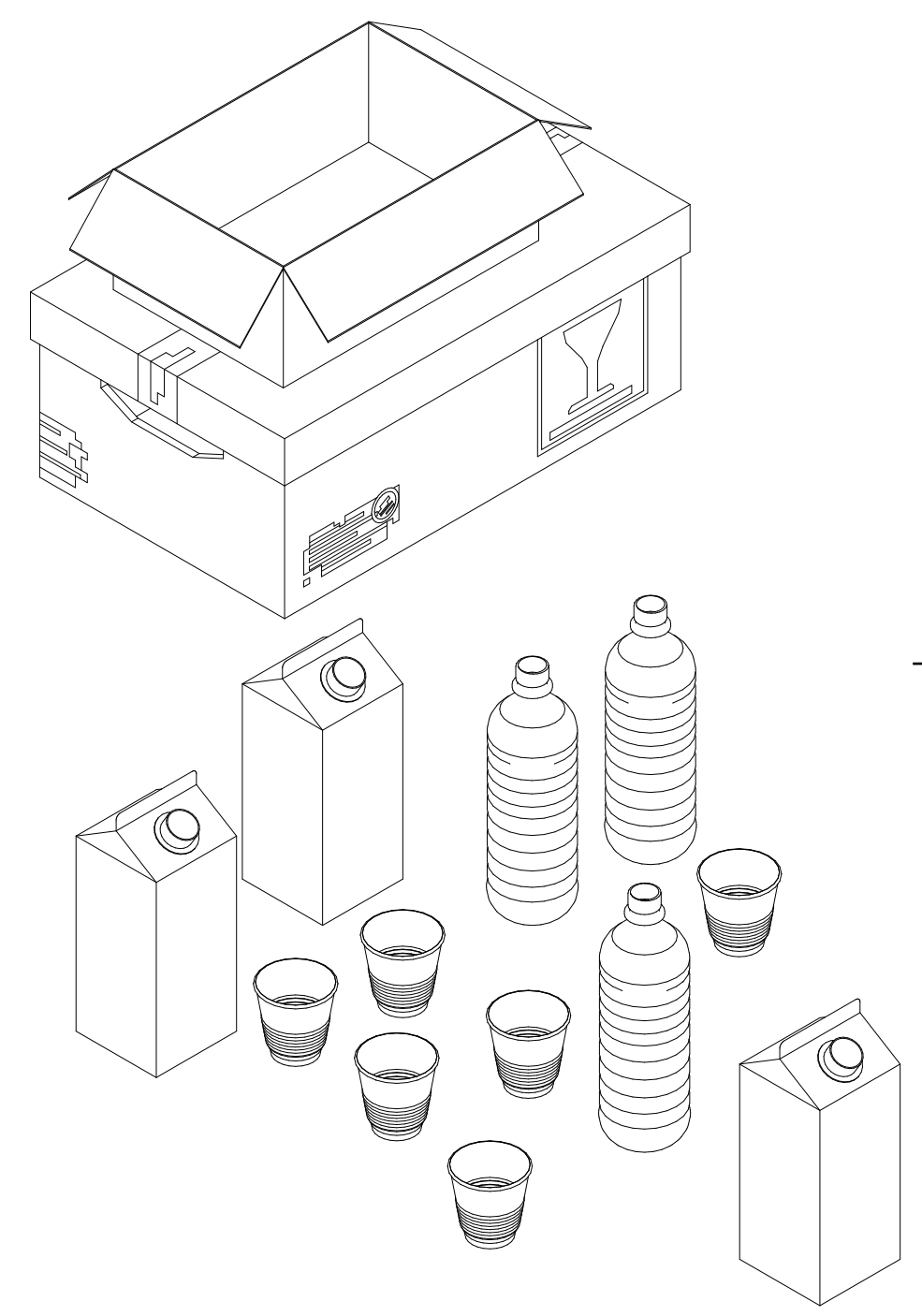
Polegate (**10,777**)

Eastbourne (**103,745**)

Brighton (**293,452**)

Total = **409,244**

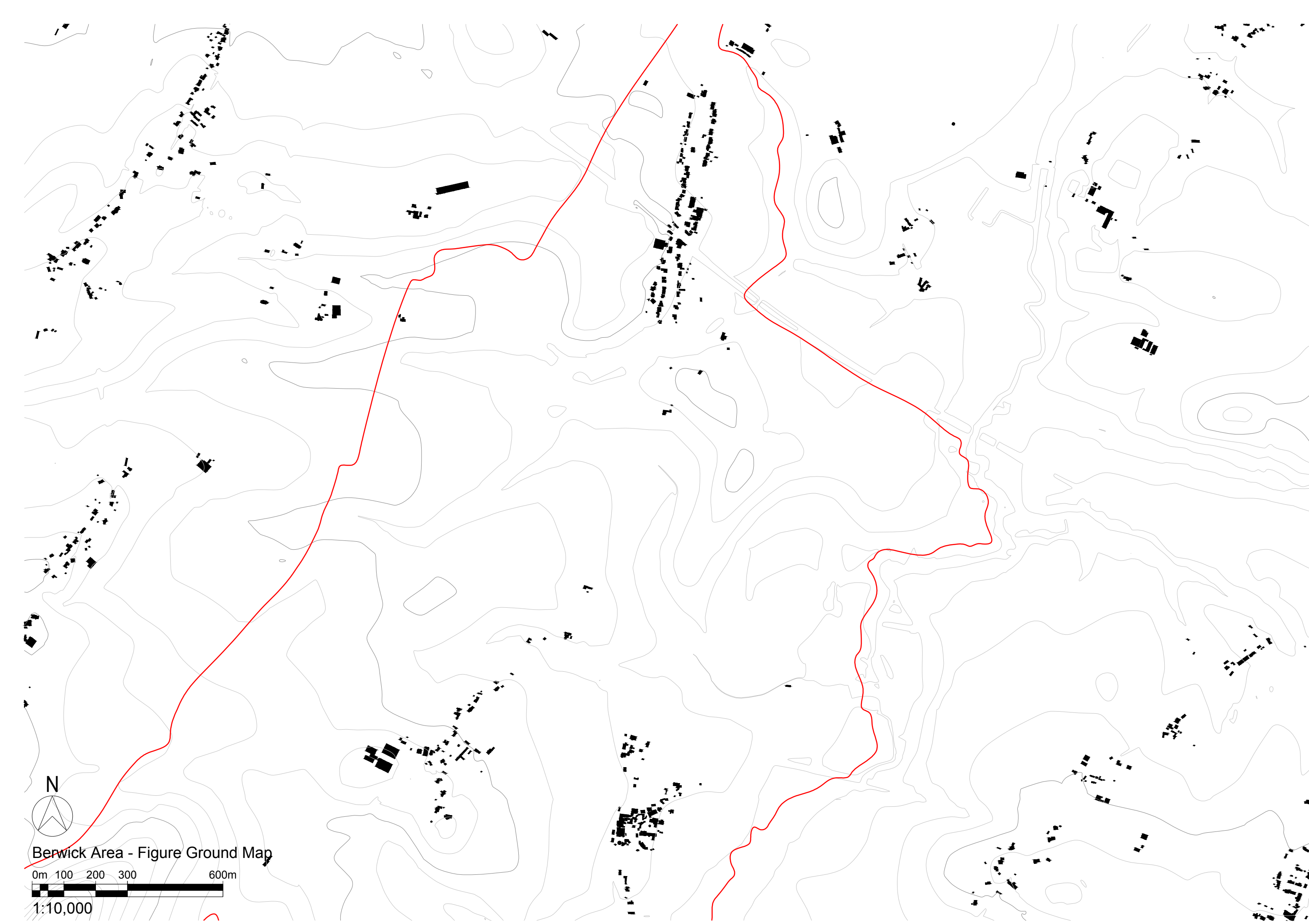
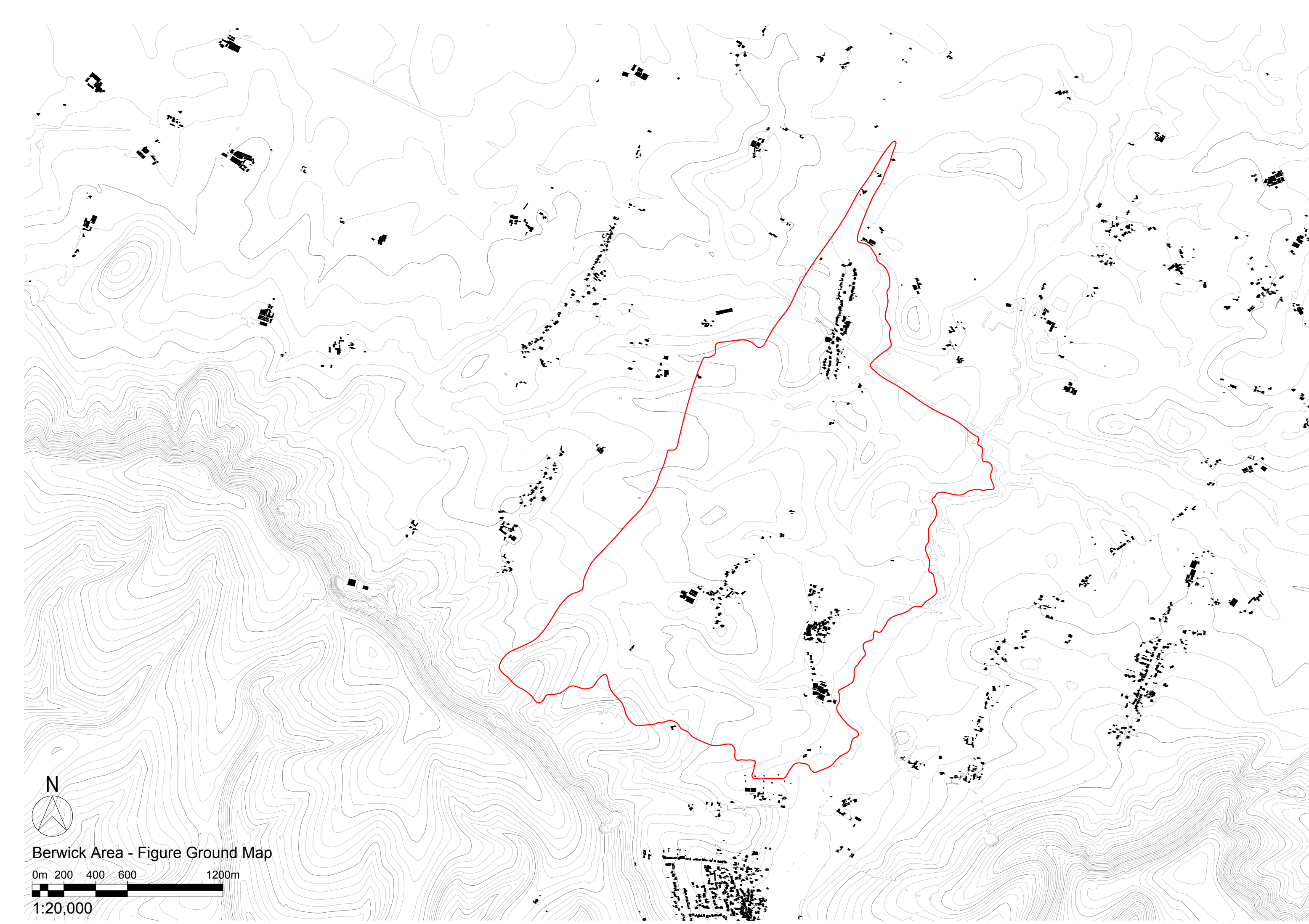
Potential materials available in local area (per annum)
141.40kg x 409,244 (persons)
= **57,000 tonnes.**

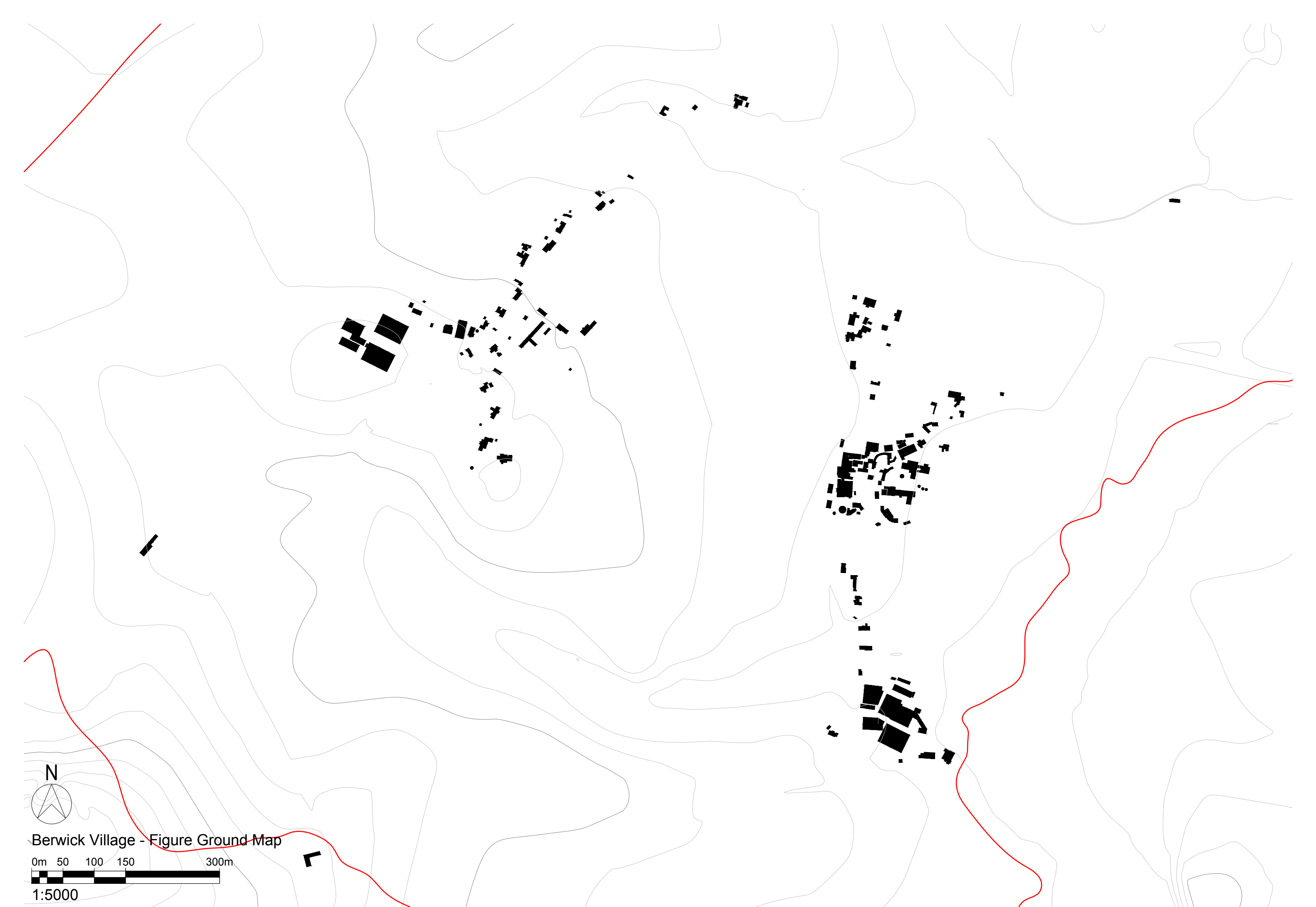
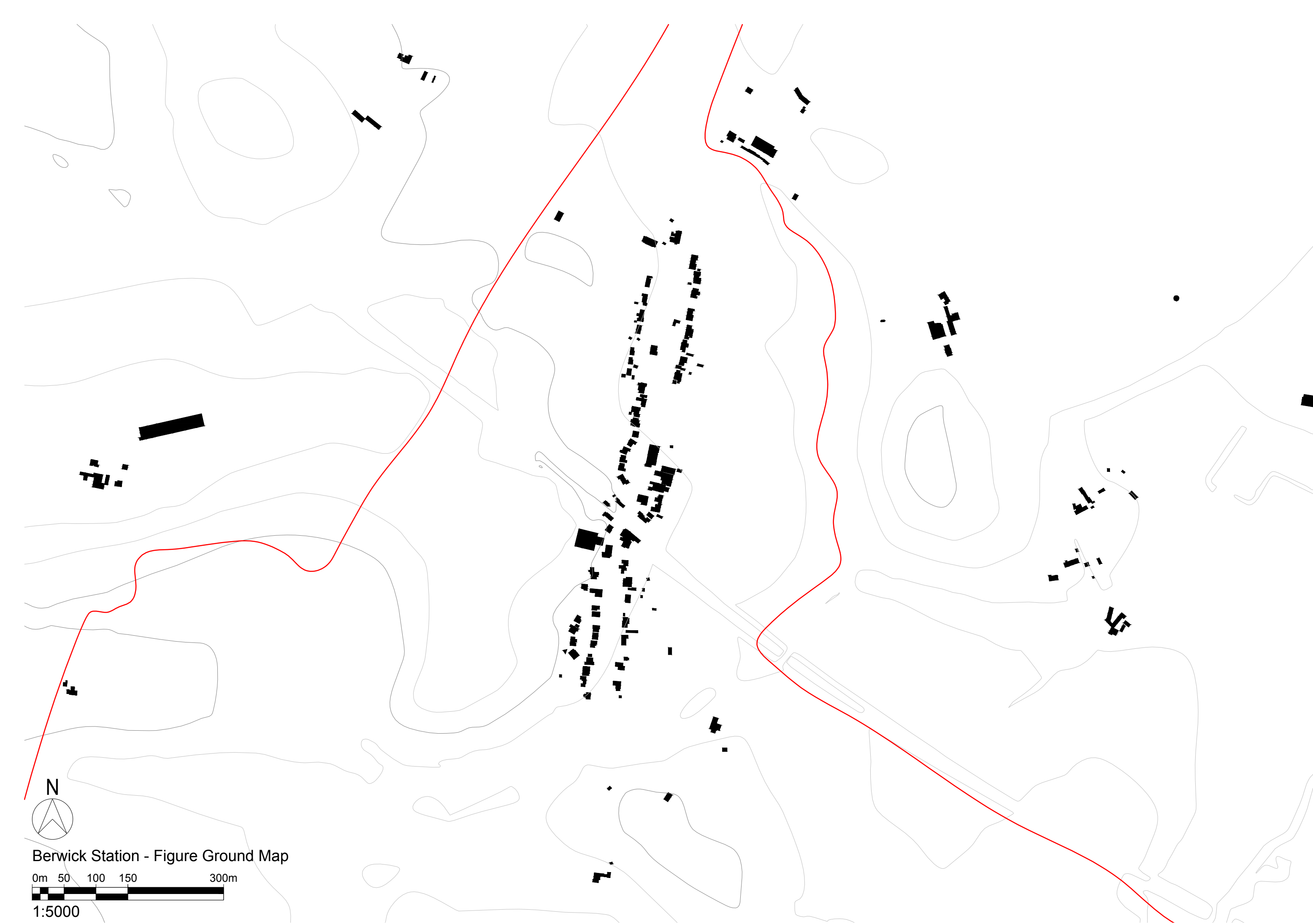


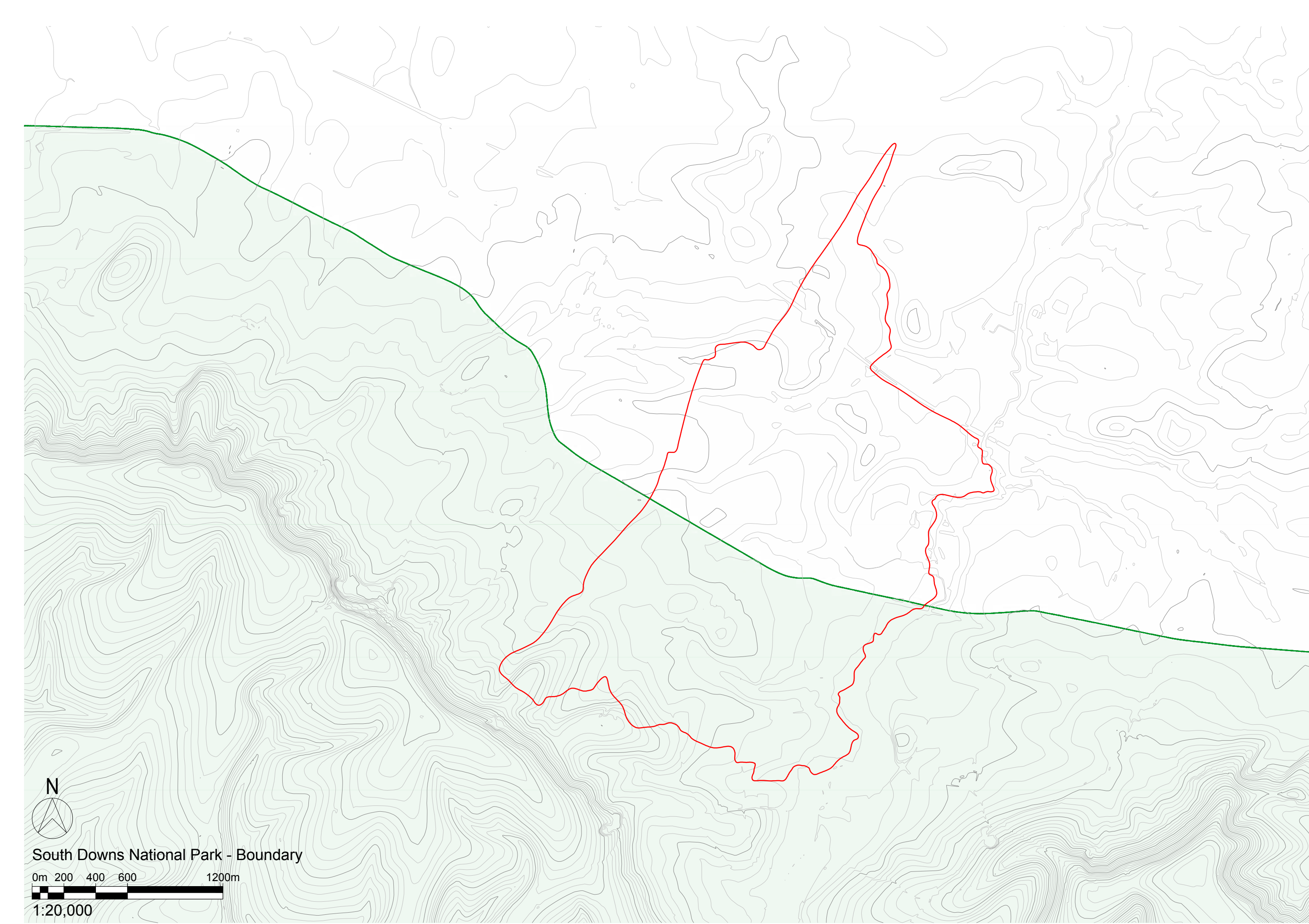
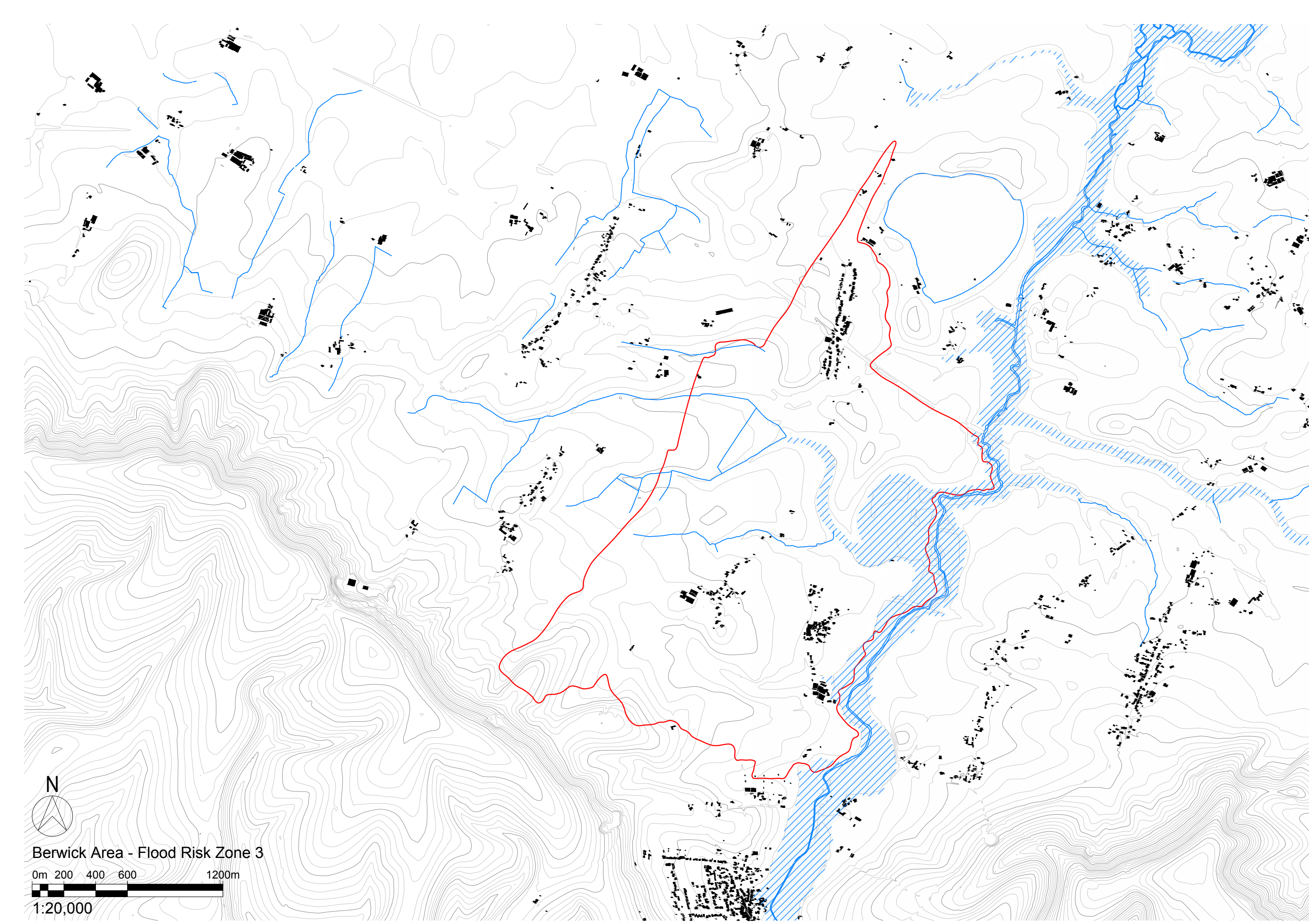


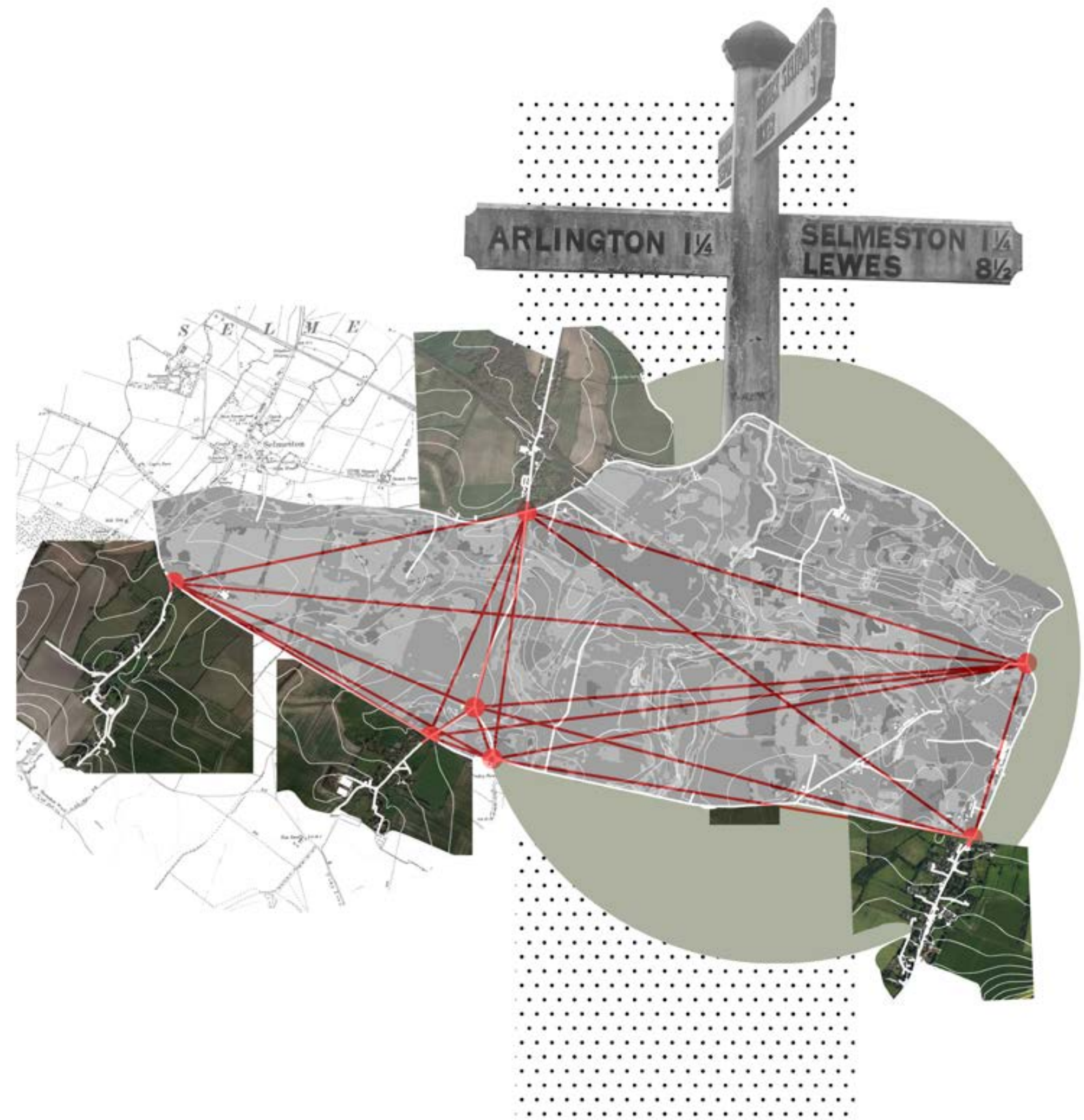
Berwick, East Sussex

Located between Lewes and Polegate, geographically split by the A27, Berwick is home to roughly 400 residents across the two divided settlements. 'Berwick Station', the larger of the two areas is linked to both London and the South East of England by the railway line and 'Berwick Village', the older and smaller of the two settlements, is situated roughly 1.5 miles to the south.



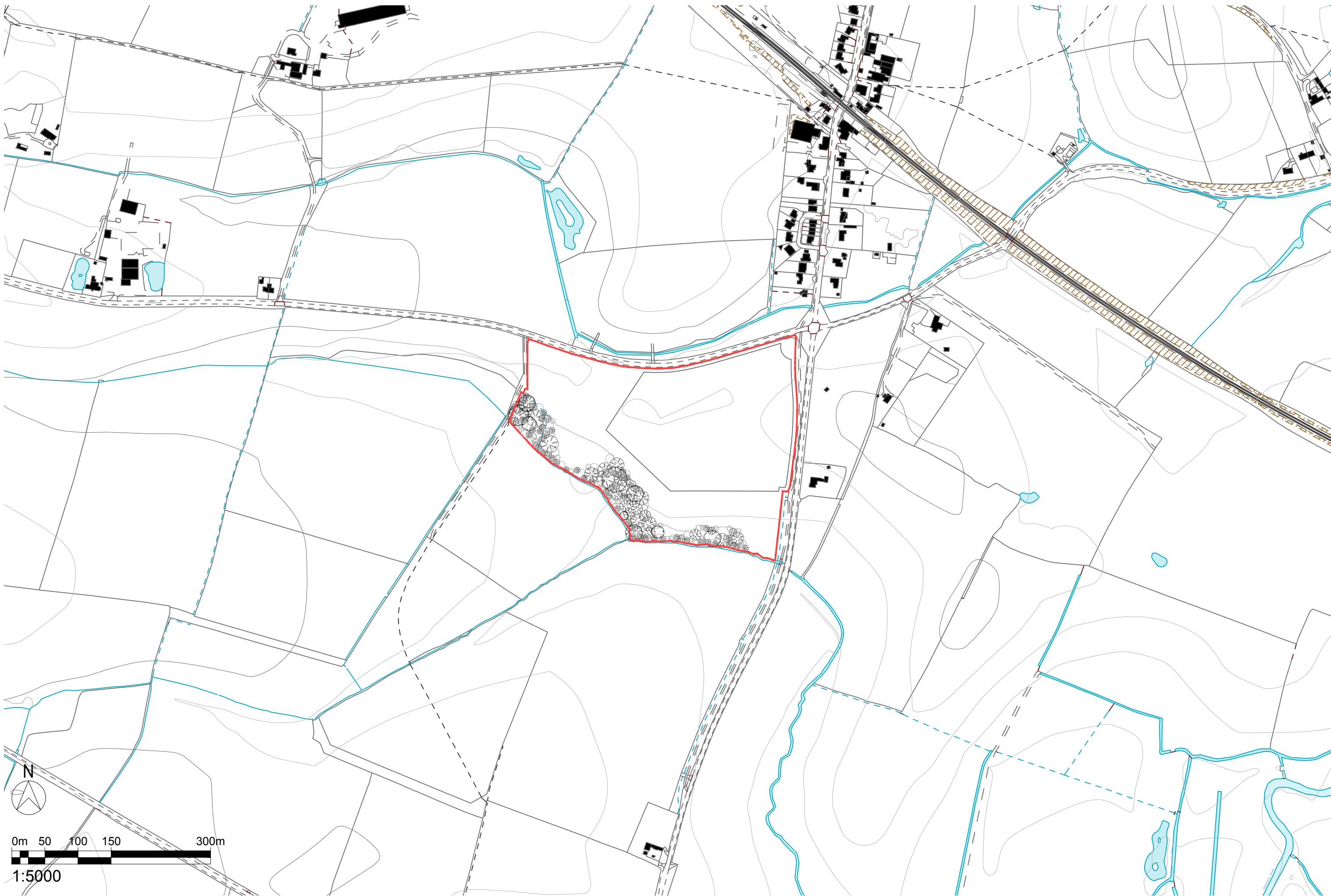






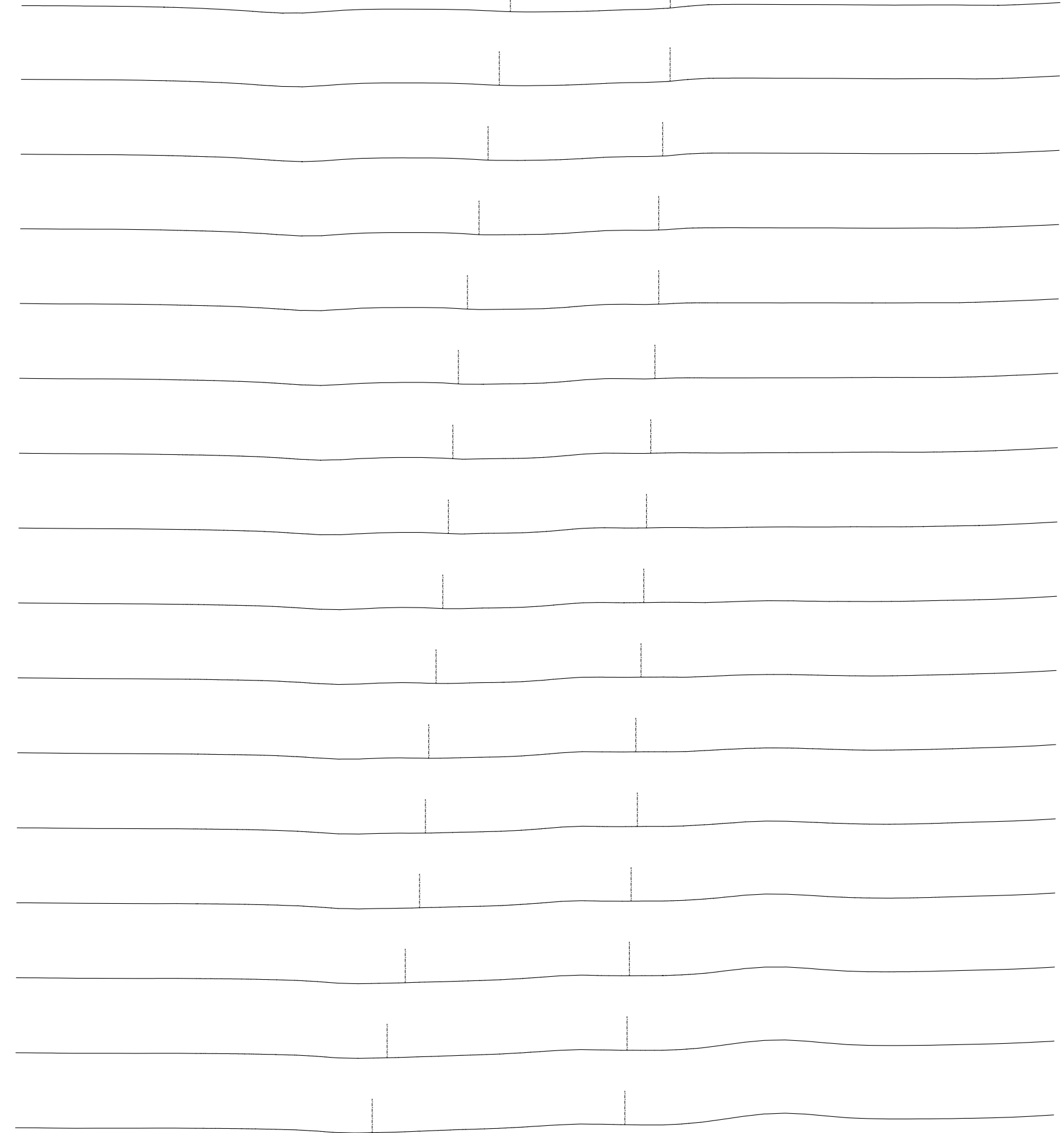
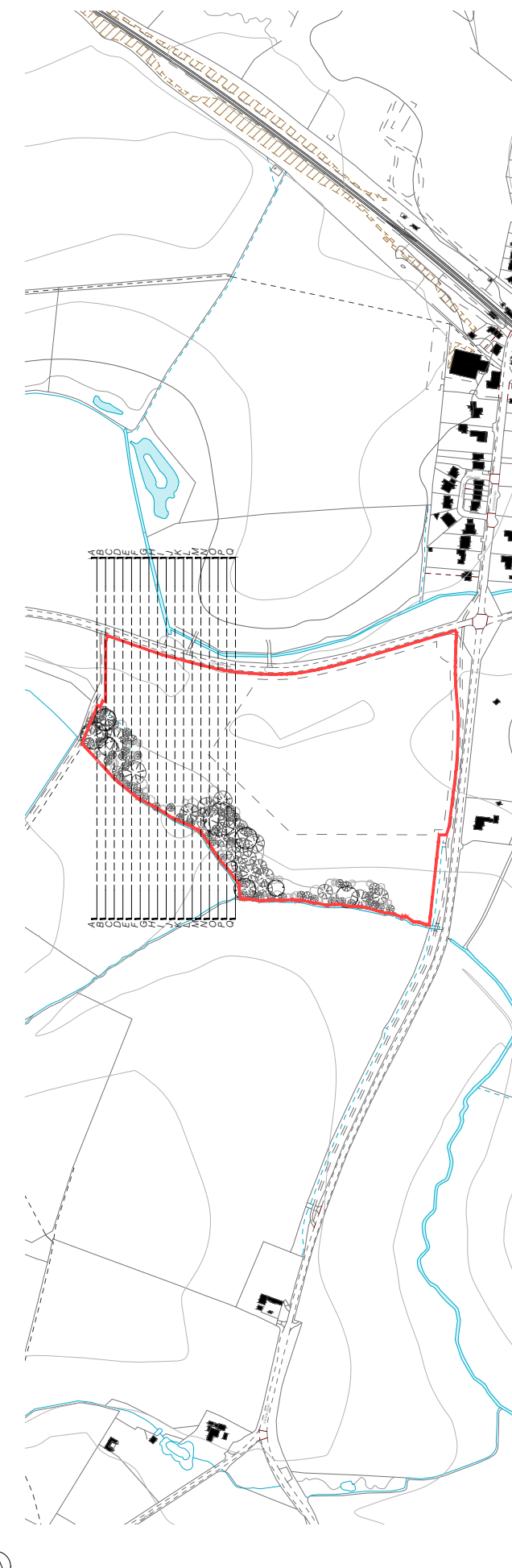
Rural Fabrications

The Rural Fabrications collage speculates Berwick (of the future), a node for development, extremely well linked with other nearby settlements through both physical and social connections. Present day Berwick could be argued to be a place divided physically (by the A27) and also socially (by the lack of connections between the two settlements).



Collective Spatial Strategy

Following on from intensive research on the studio thematic, wider site context, and speculative ideas on the rural realm my spatial strategy identified a site located just to the south of the 'Berwick Station' area adjacent the intersection of Station Road, Common Lane, and Chilver Bridge Road a prominent junction as you enter the northern part of the town from the south.



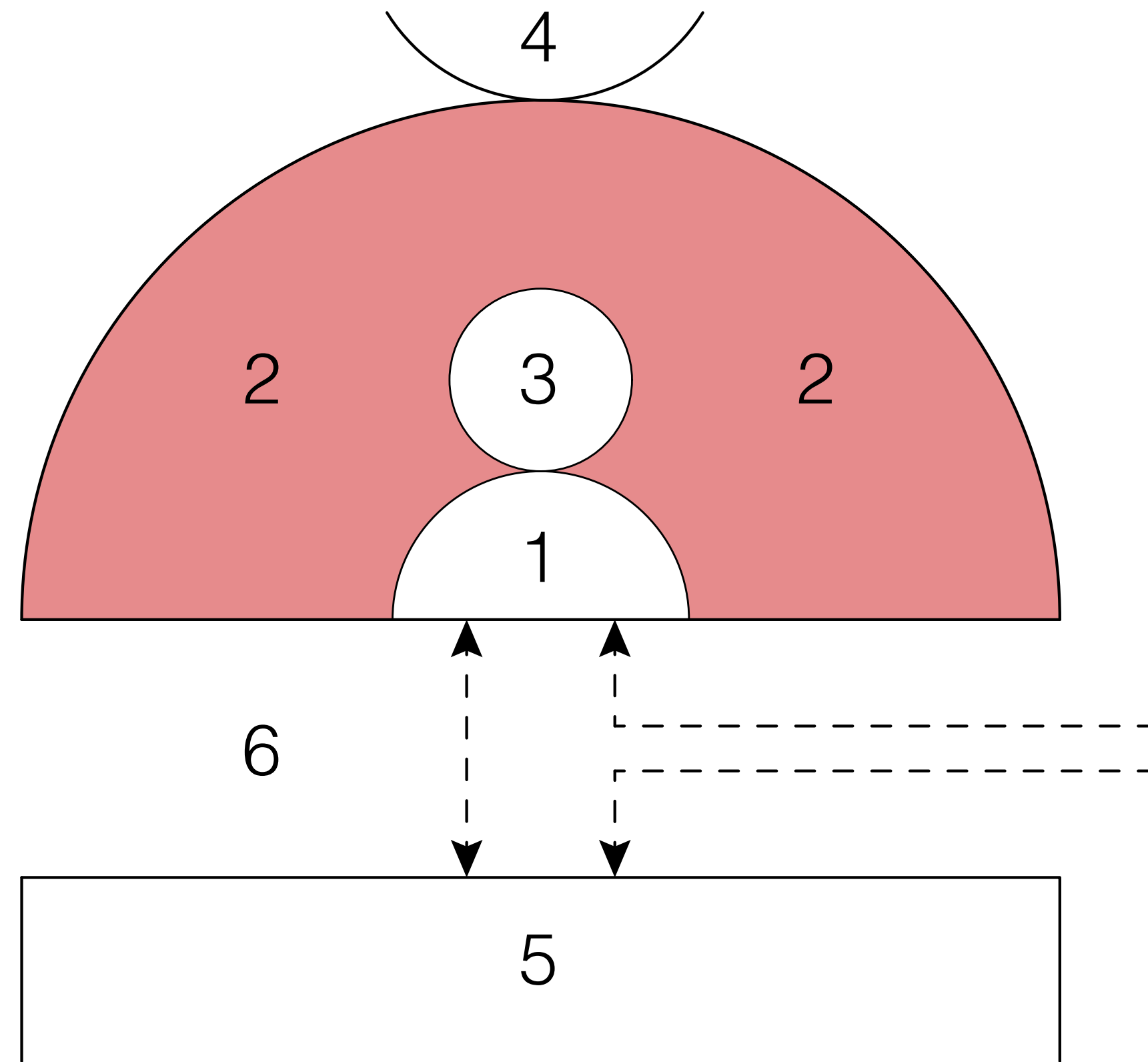
- Site Section A-A
- Site Section B-B
- Site Section C-C
- Site Section D-D
- Site Section E-E
- Site Section F-F
- Site Section G-G
- Site Section H-H
- Site Section I-I
- Site Section J-J
- Site Section K-K
- Site Section L-L
- Site Section M-M
- Site Section N-N
- Site Section O-O
- Site Section P-P



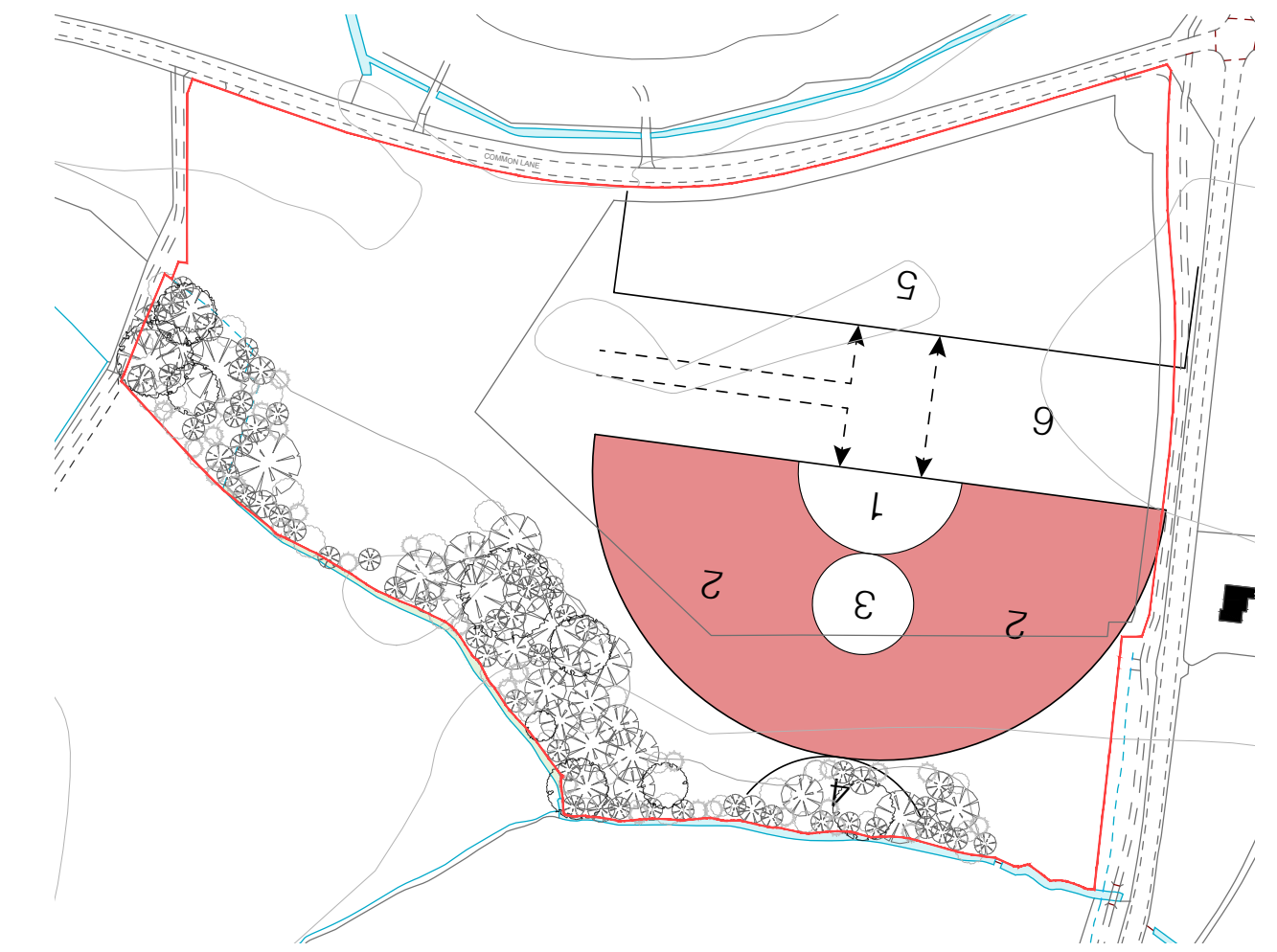
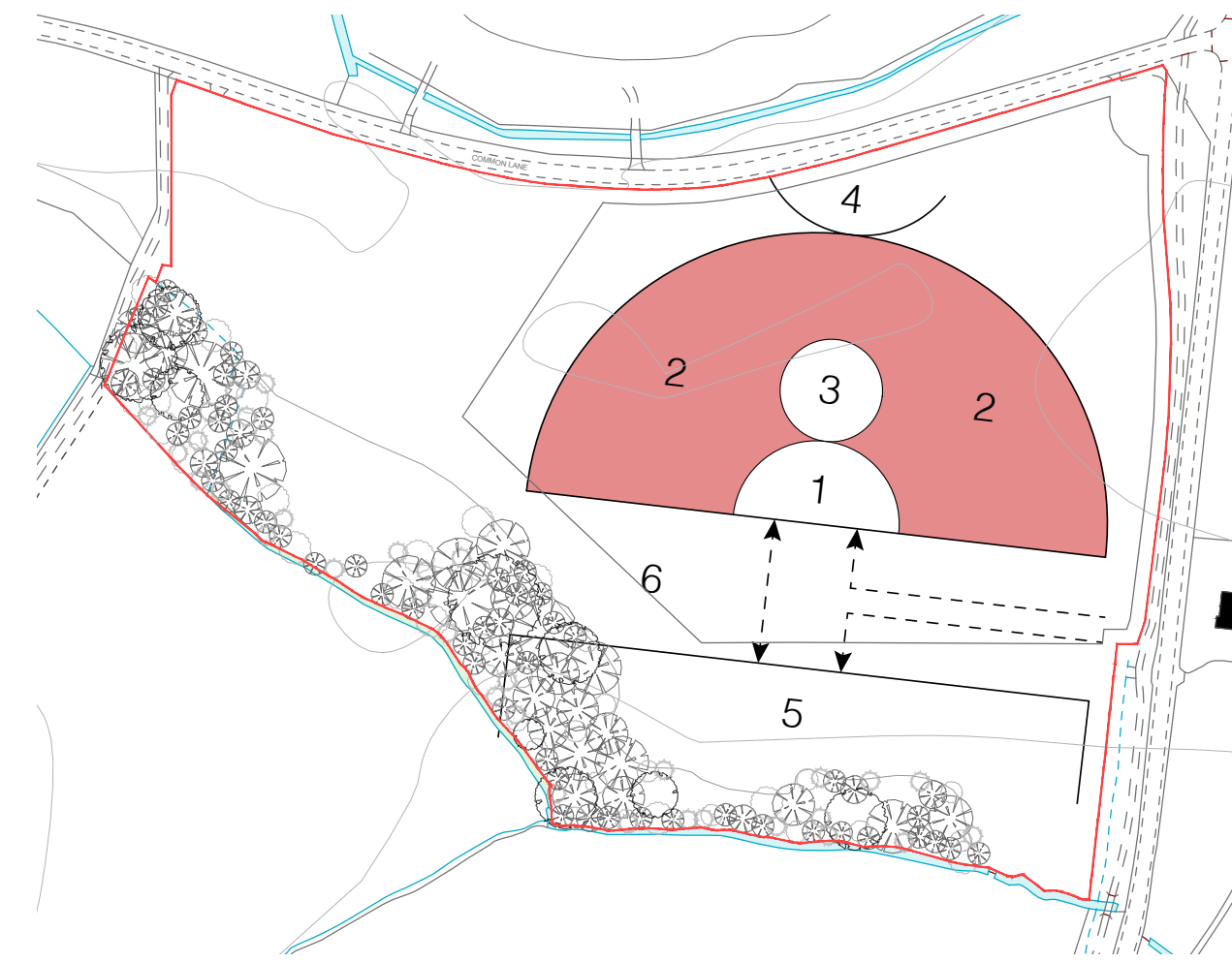
Precedent Study: **Kibbutzim**

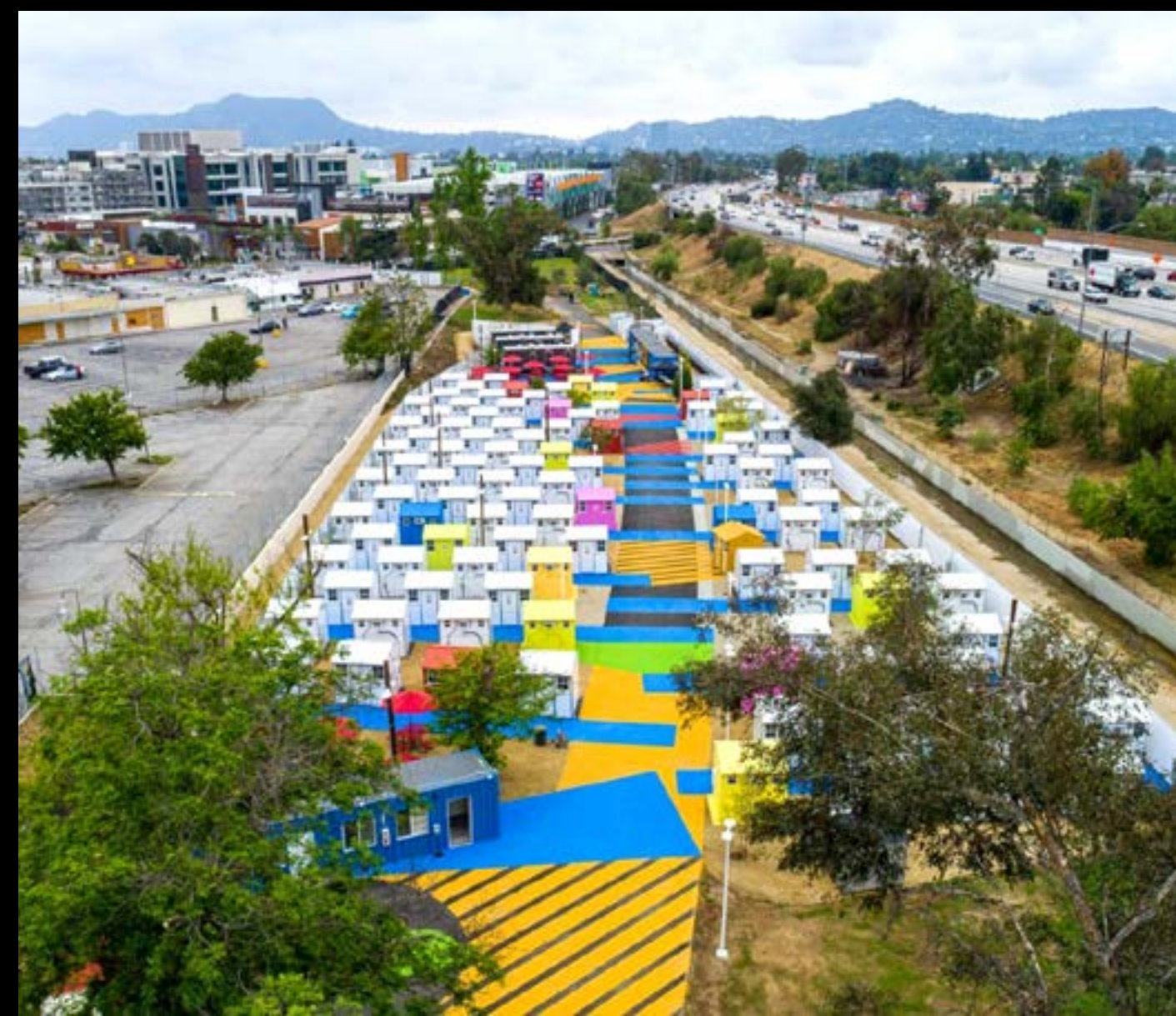
A kibbutz is a particular type of settlement which is historically unique to Israel. A collective community, traditionally focusing on agriculture. Kibbutzim were initially almost universally agricultural settlements, not economically motivated where the residents of the communes shared everything and worked as members of a collective. The infrastructural footprint of a kibbutz can be seen to be identical across almost all Kibbutzim with areas for housing, production and education clearly segregated.

The Basic Structure of the Kibbutz



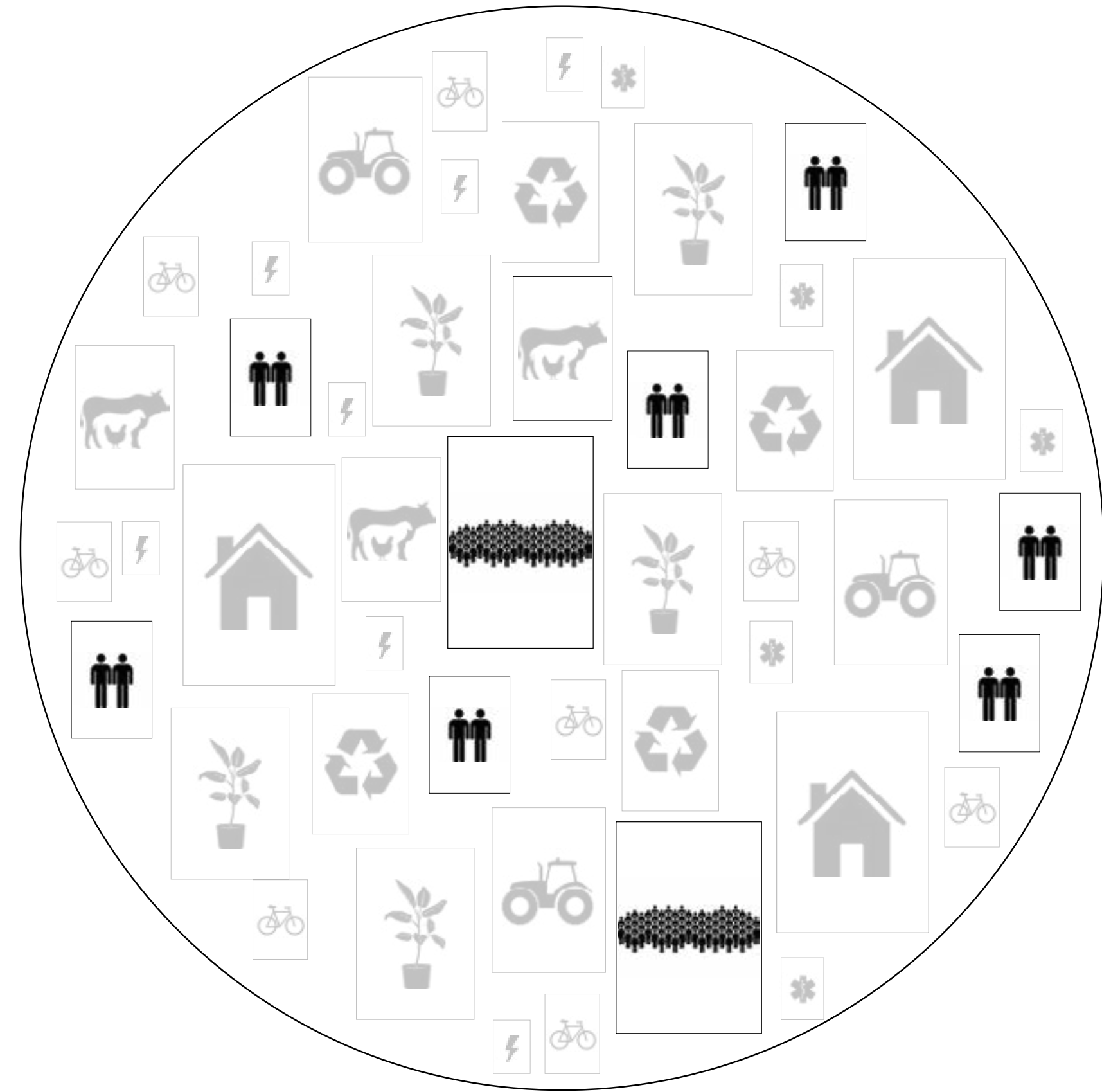
- 1** The central sector
- 2** The housing sector
- 3** The educational sector
- 4** The sport and recreational sector
- 5** The production sector
- 6** Infrastructure services, landscape and garden



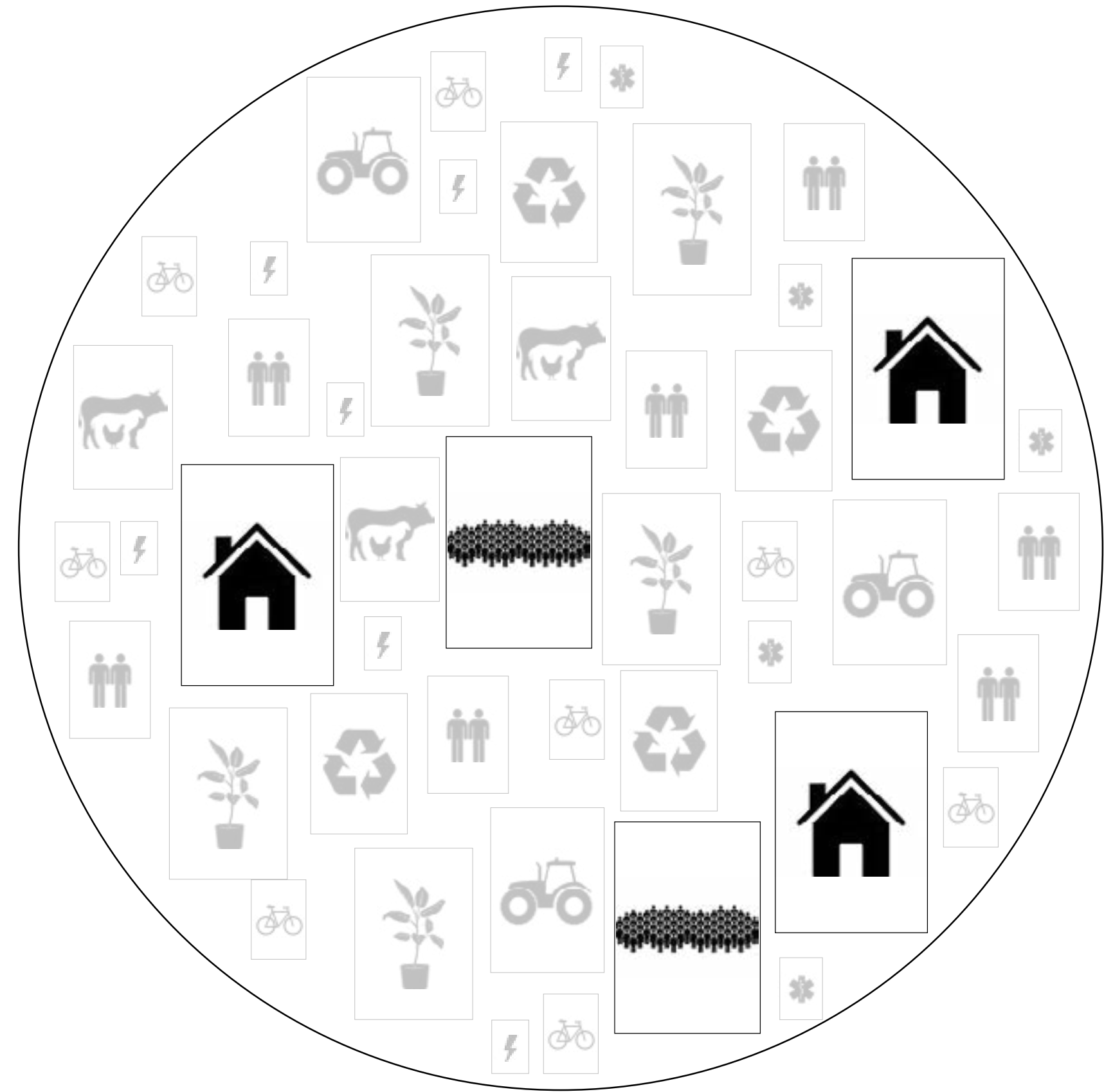


Precedent Study: **Tiny Homes Village, Los Angeles**

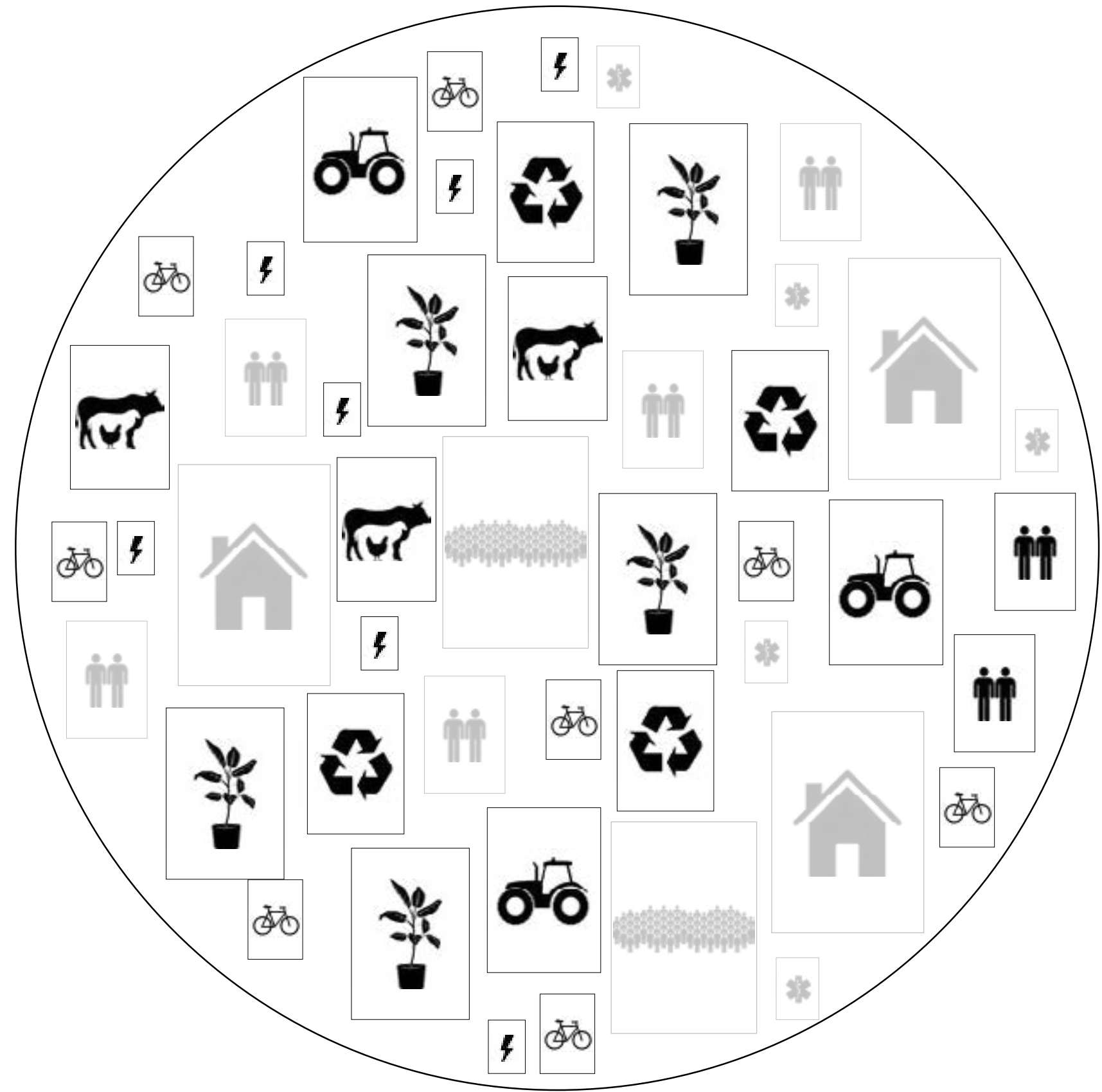
Alexandria Park Tiny Home Village is a development of 103 micro homes designed by Lehrer Architects to provide homeless housing in Los Angeles. Arranged like a residential neighbourhood, with cabins arranged in rows on either side of a main street style thoroughfare. Thinking about the tagery audience of my site, vulnerable individuals, I was interested in this precedent especially in terms of massing, creating such a dense community on a relatively small site.



Camaraderie | Community | Self-Sufficiency



Camaraderie | **Community** | Self-Sufficiency



Camaraderie | Community | **Self-Sufficiency**

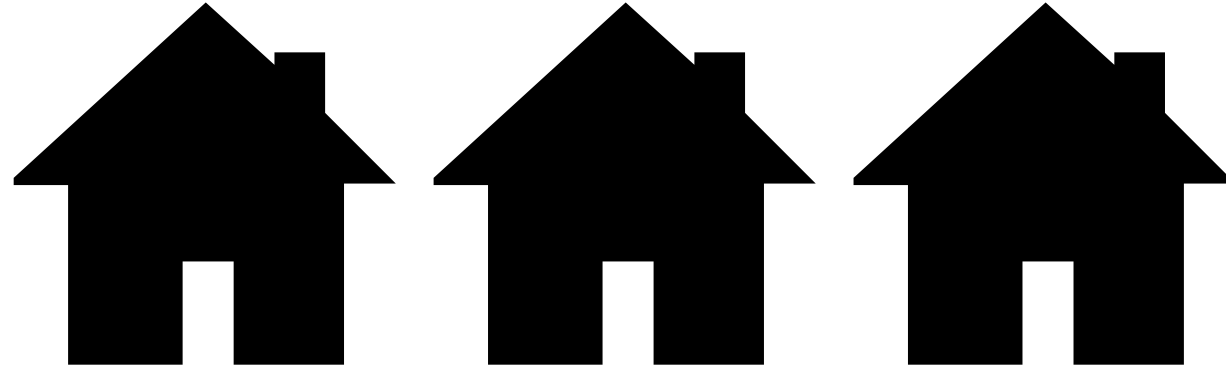
Every unemployed person costs taxpayers pounds **£10,000** a year in benefit payments and lost tax revenues.



The cost of a single person sleeping rough in the UK for 12 months is estimated at **£20,128**.



The average price of a dwelling in East Sussex is **£467,352**.



Programme

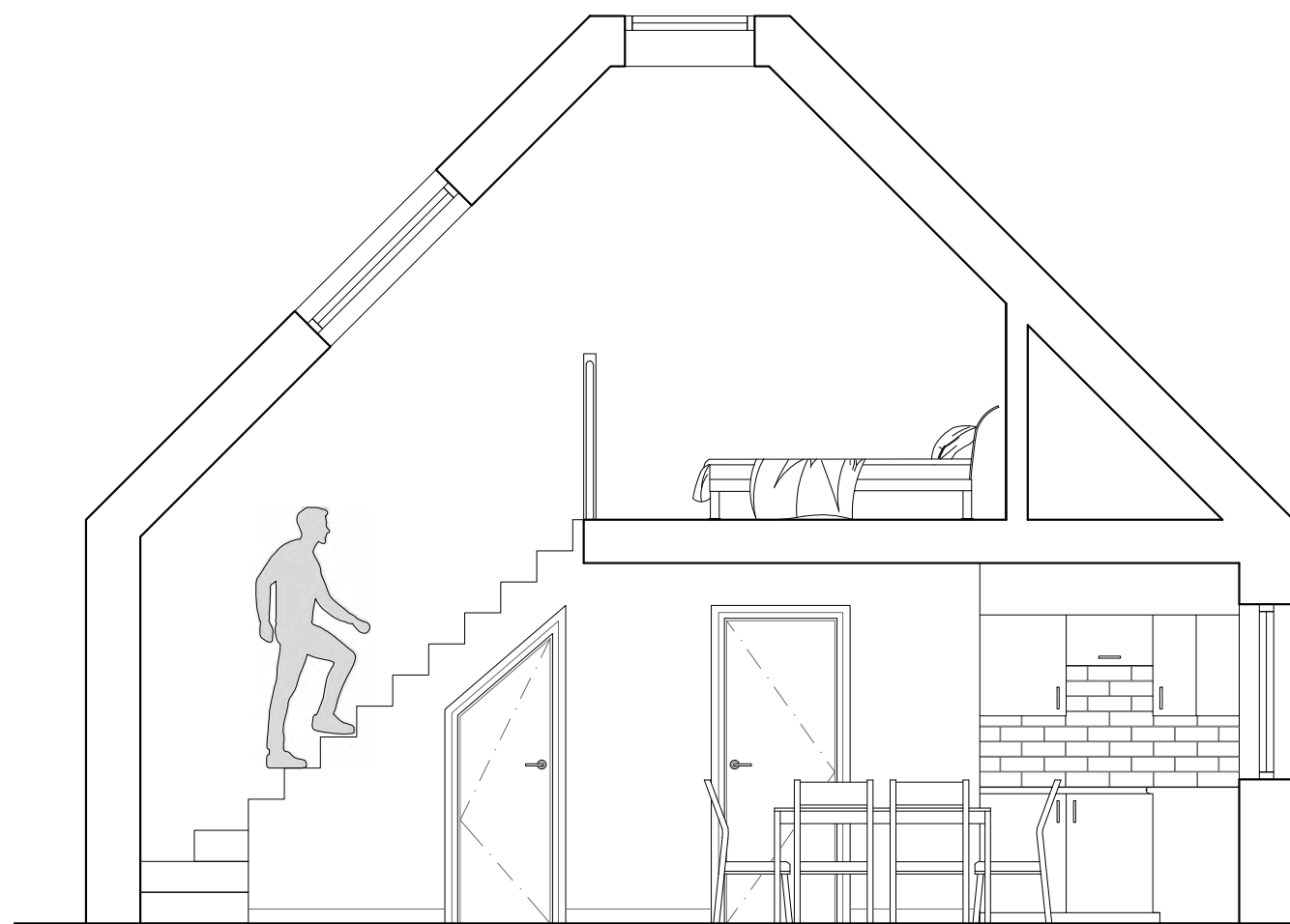
Using the principles of the agriculturally led Kibbutzim, paired with the most vulnerable people in society in need of support, work, or affordable rental housing the programme seeks to allow individuals the opportunity to 'turn the corner' whilst simultaneously learning new skills working on-site to subsidise rent, utilities and food costs they would normally have to worry about themselves. The on-site accommodation is tailored to different groups of individuals at different stages of their journey. Single occupancy, co-living, couples and small families





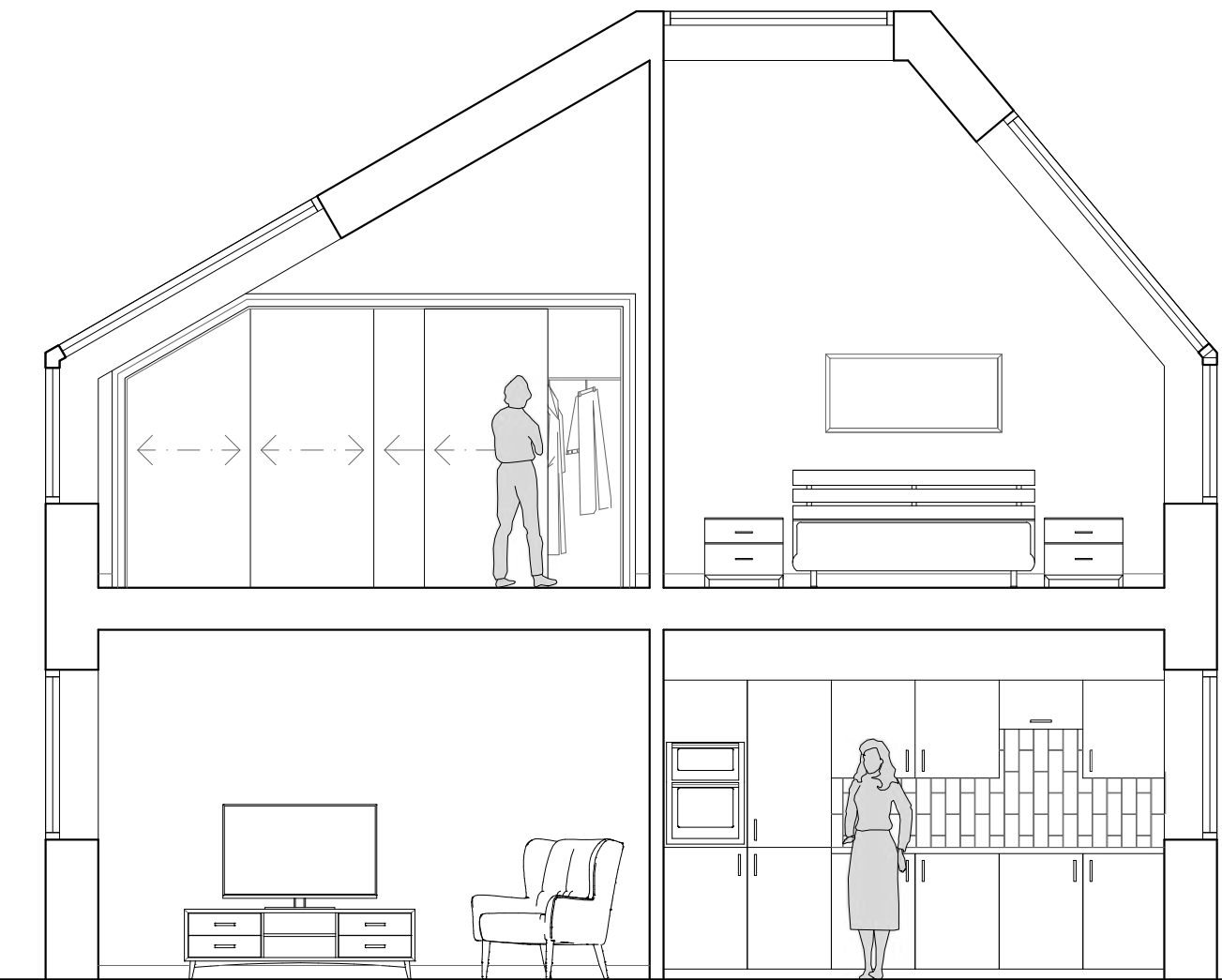
Precedent Study: **Maison Lapatie:**
Lacaton & Vassal

A low budget house for a couple with two children, completed in 1993, utilises a transparent polycarbonate sheeting creating an east facing conservatory. The dwelling caught my attention when researching due to the 'greenhouse' like nature of the conservatory. I was especially intrigued by Lapatie House's adaptability throughout the year, by integrating the entire garden into the habitable living space in the summer.



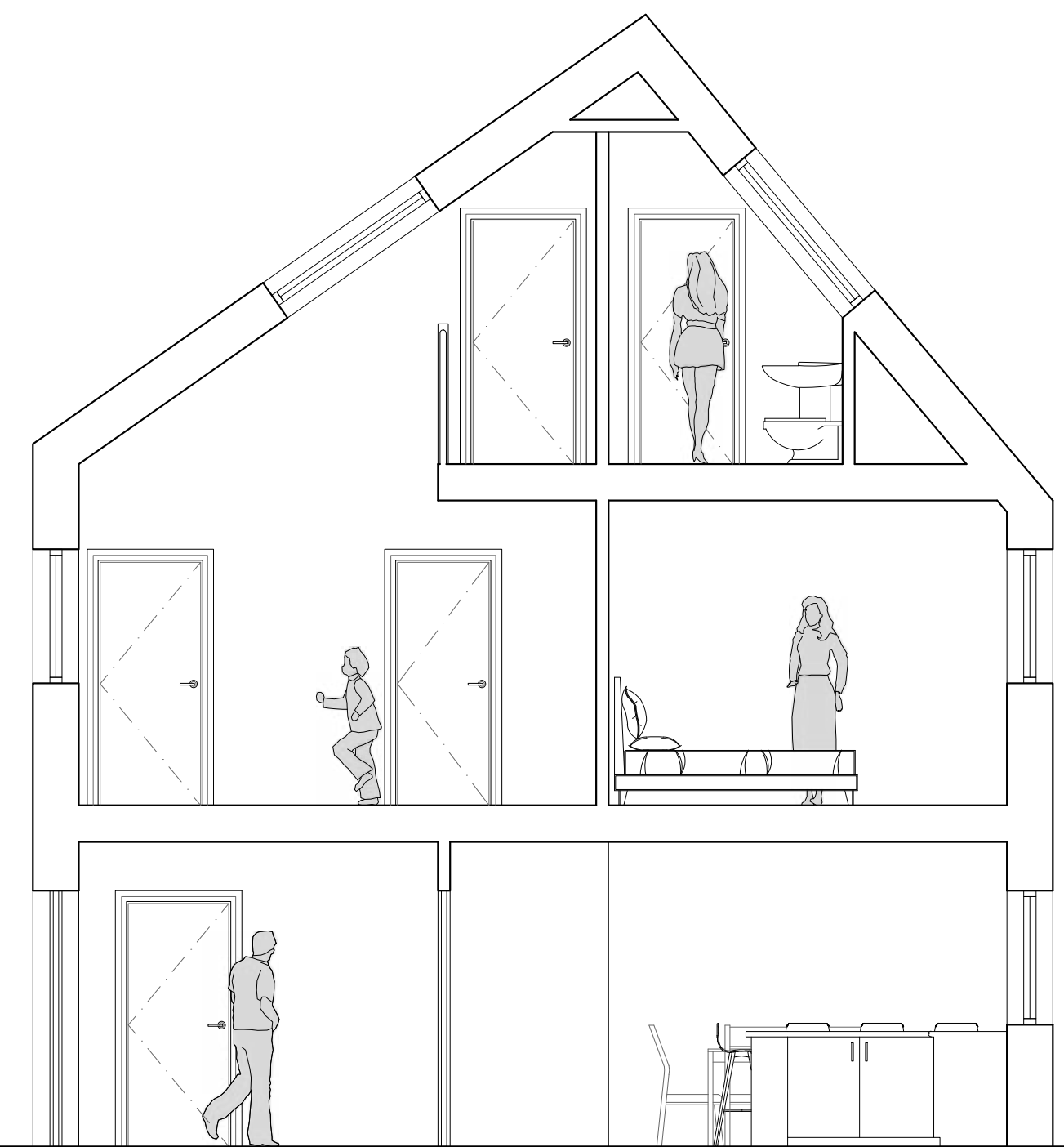
Small

Single occupancy,
couple, co-living



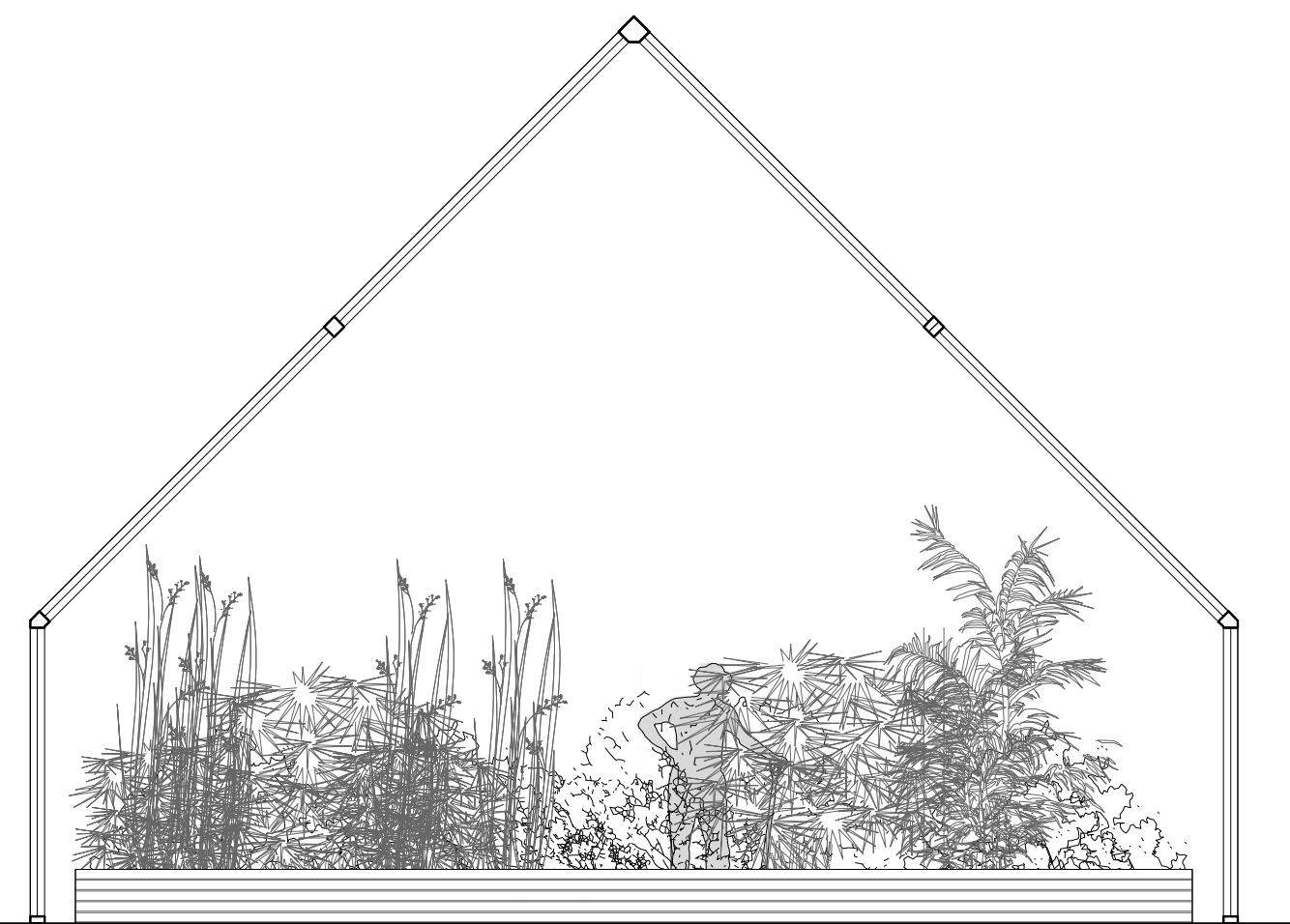
Medium

Family house, co-living,
generation home,
shared house



Large

Community house,
shared house,
multi-generational
home, family house

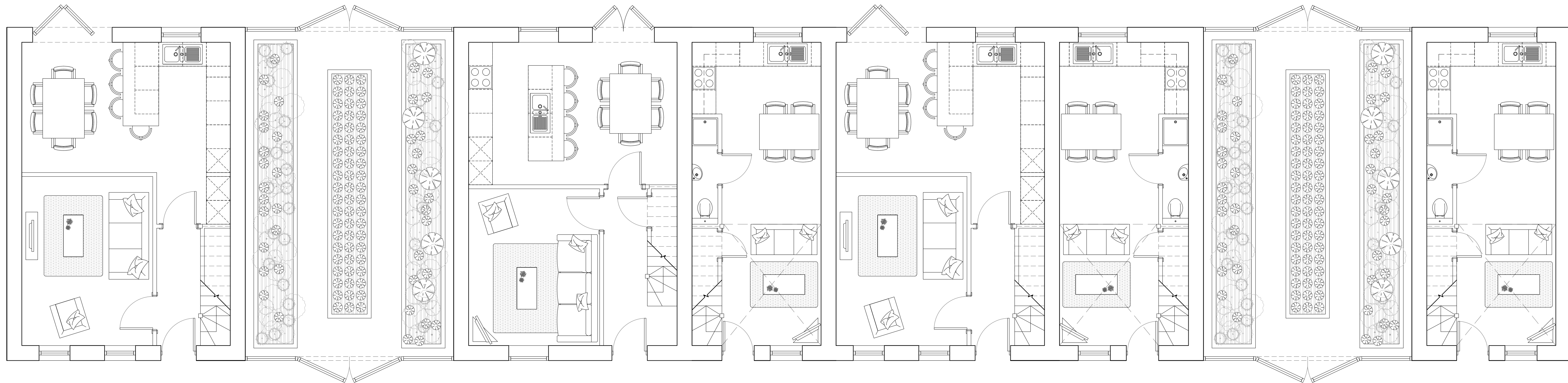


Greenhouse

Increased crop yields,
communal farming,
connecting spaces

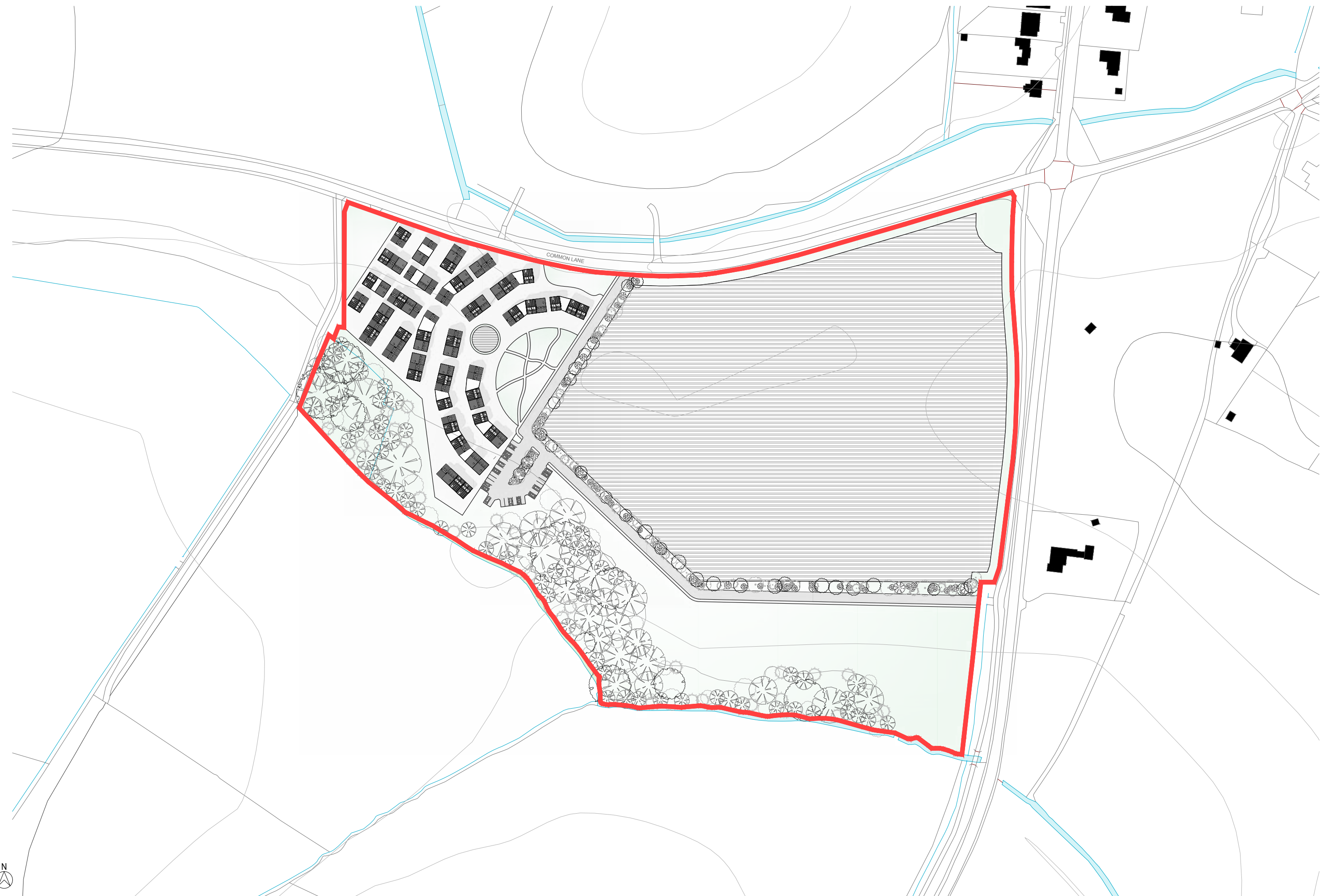
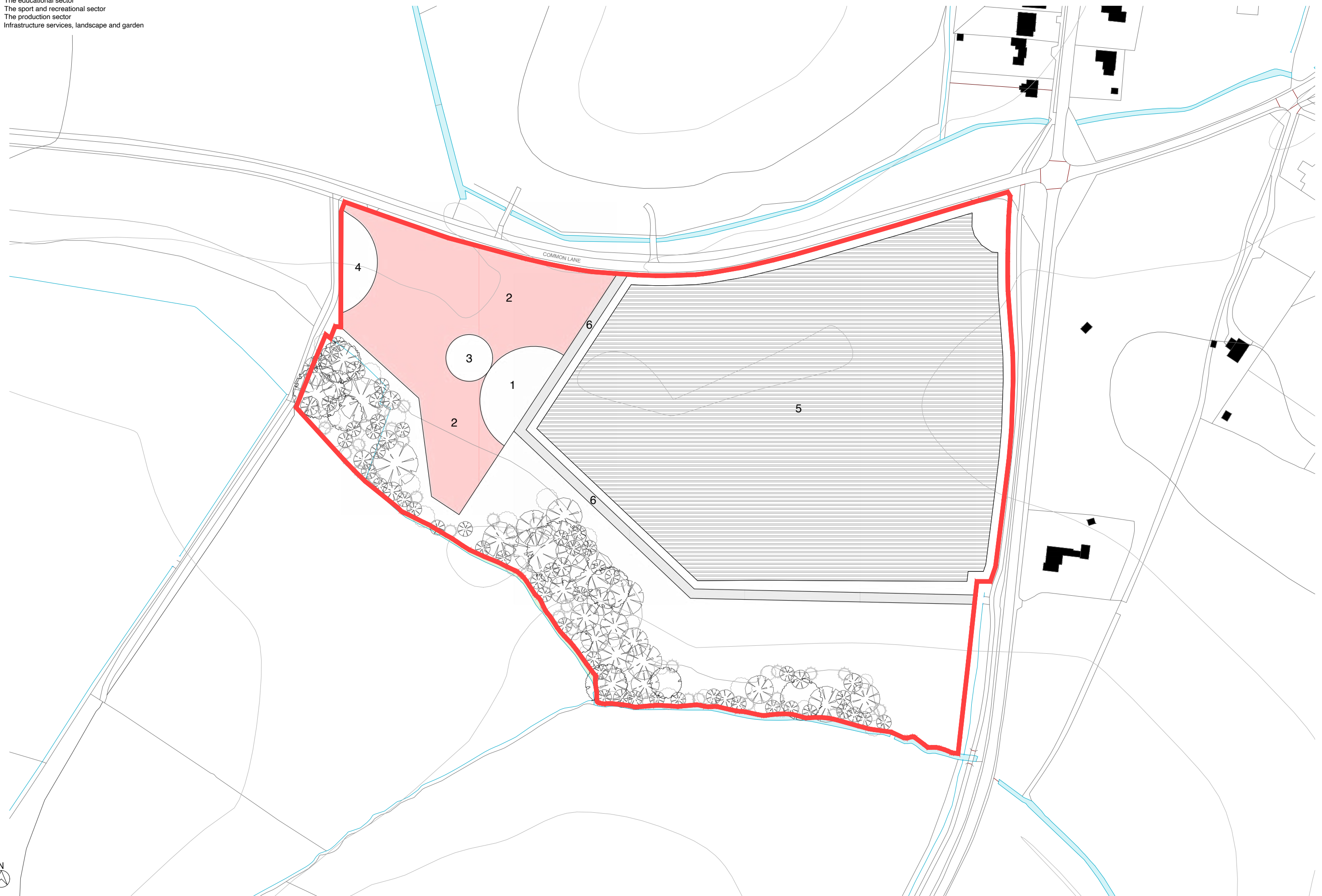
Adaptive: typologies for the many

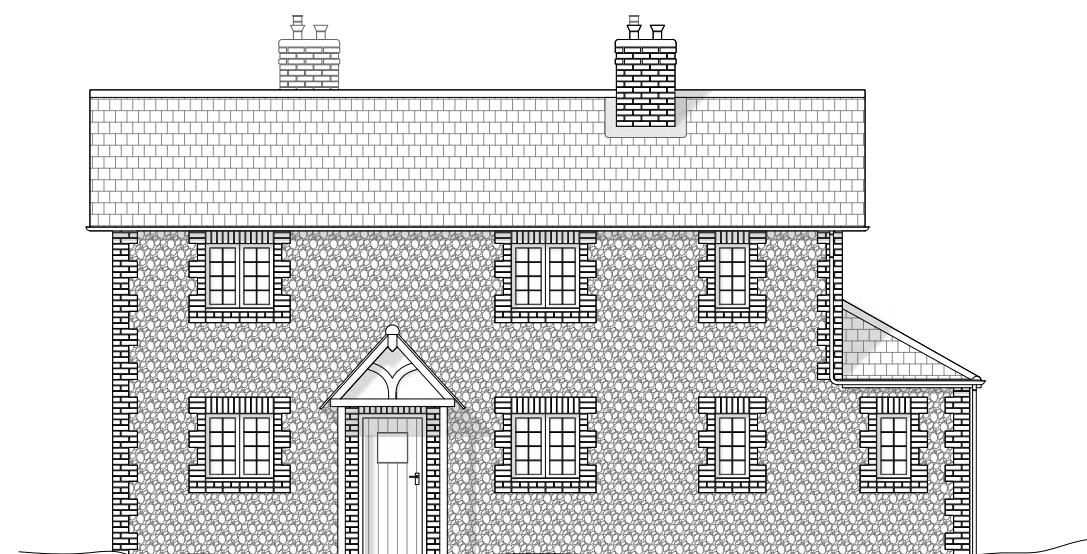
A range of housing typologies that are responsive to the people
who are in desperate need of affordable housing





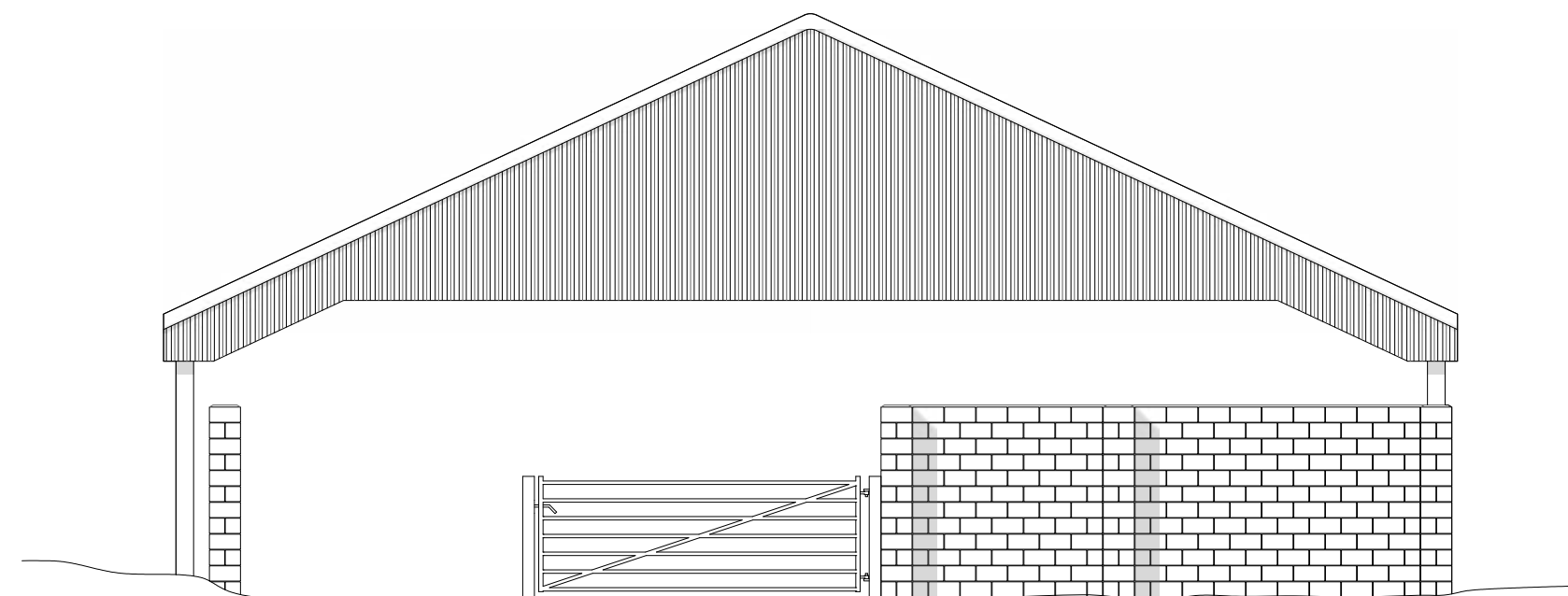
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The Old School House, Berwick Village

Knapped Flint, Brick Quoining

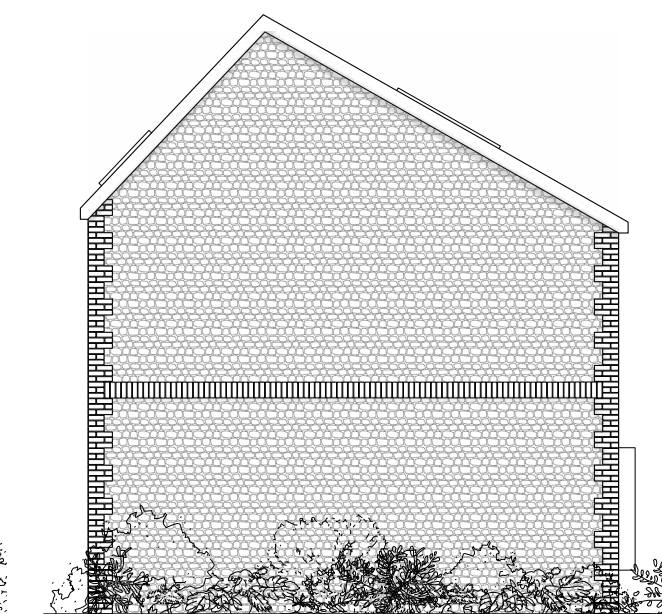
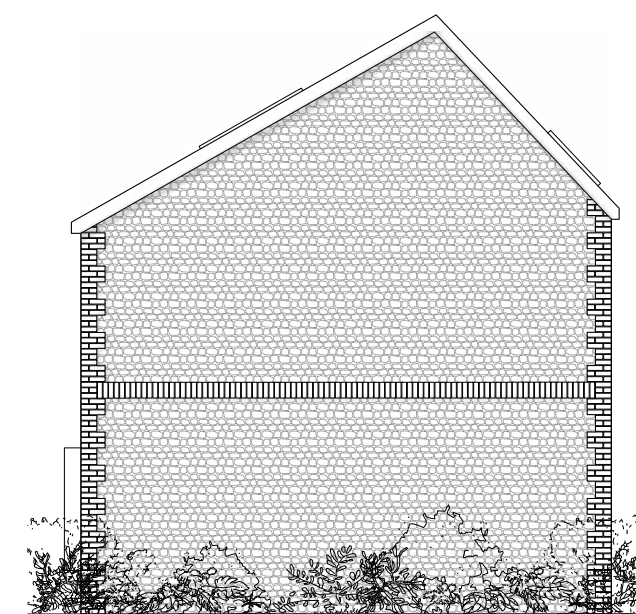
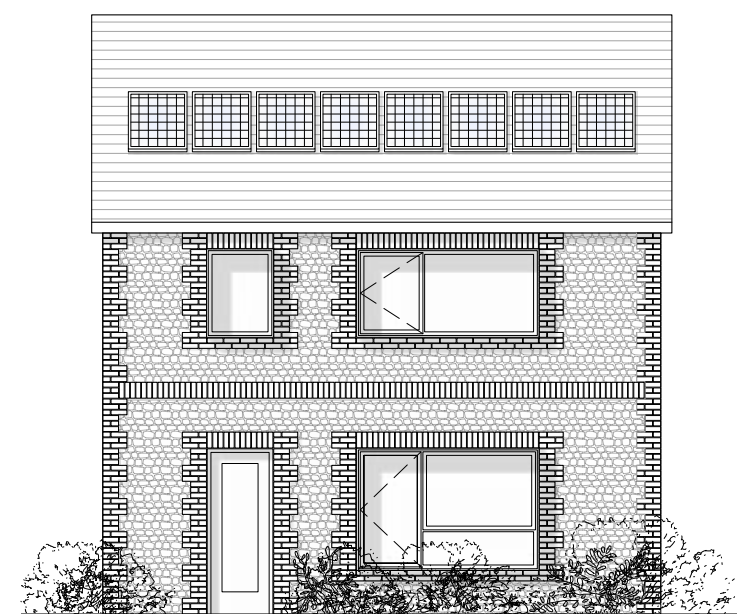
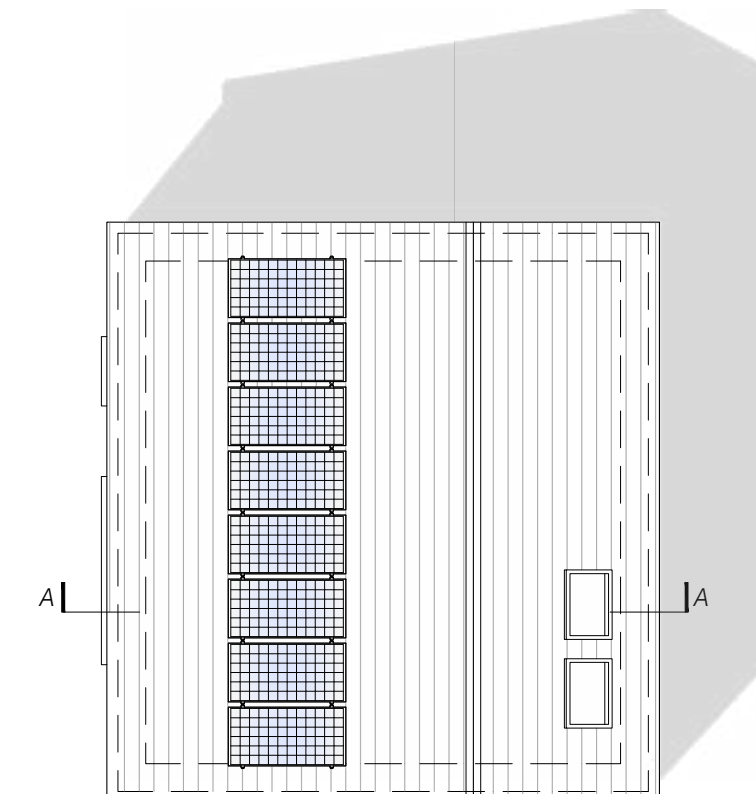
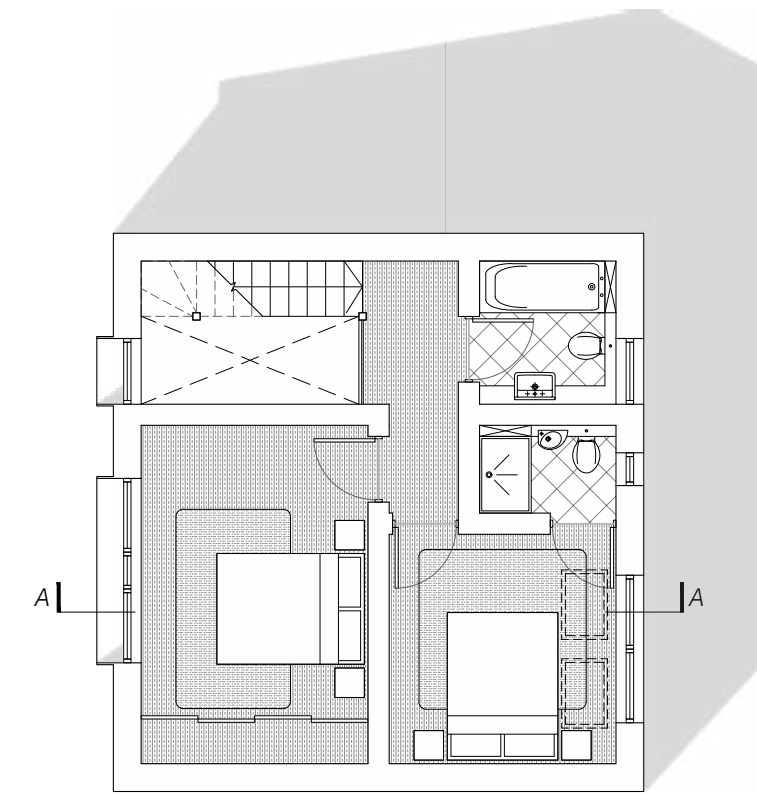
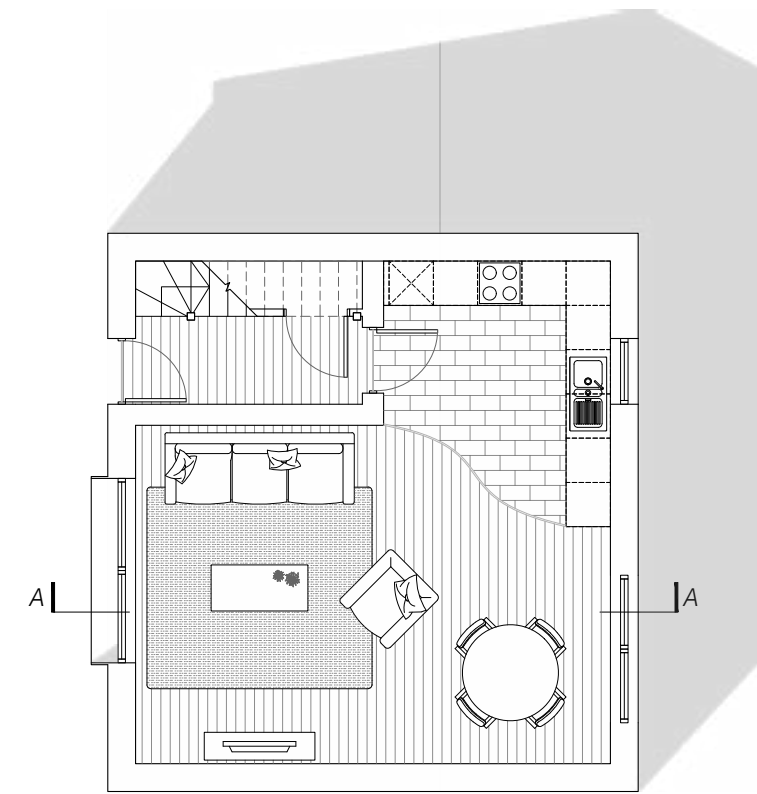
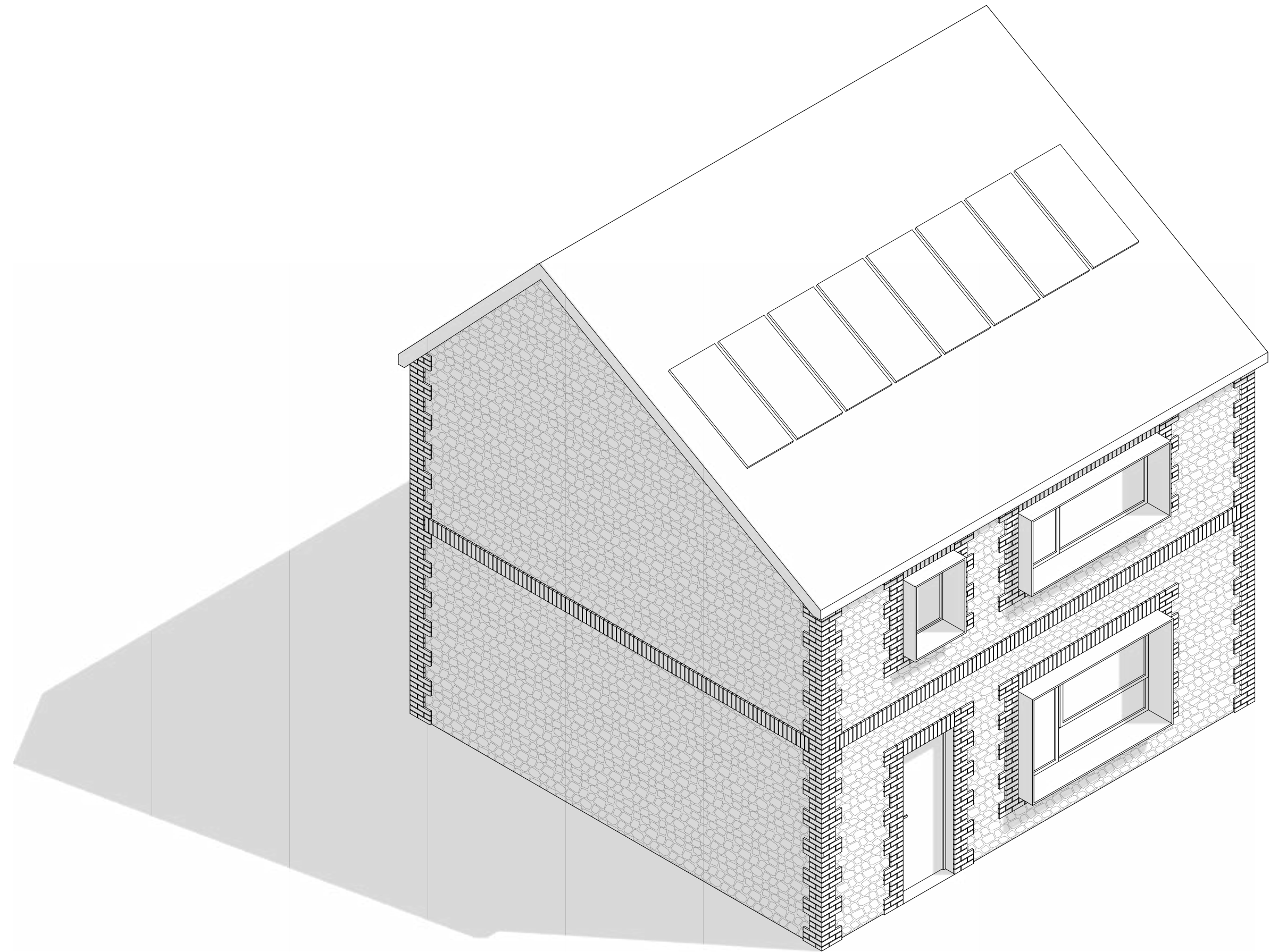


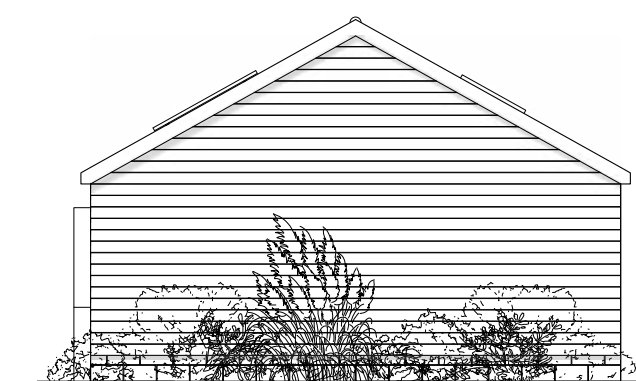
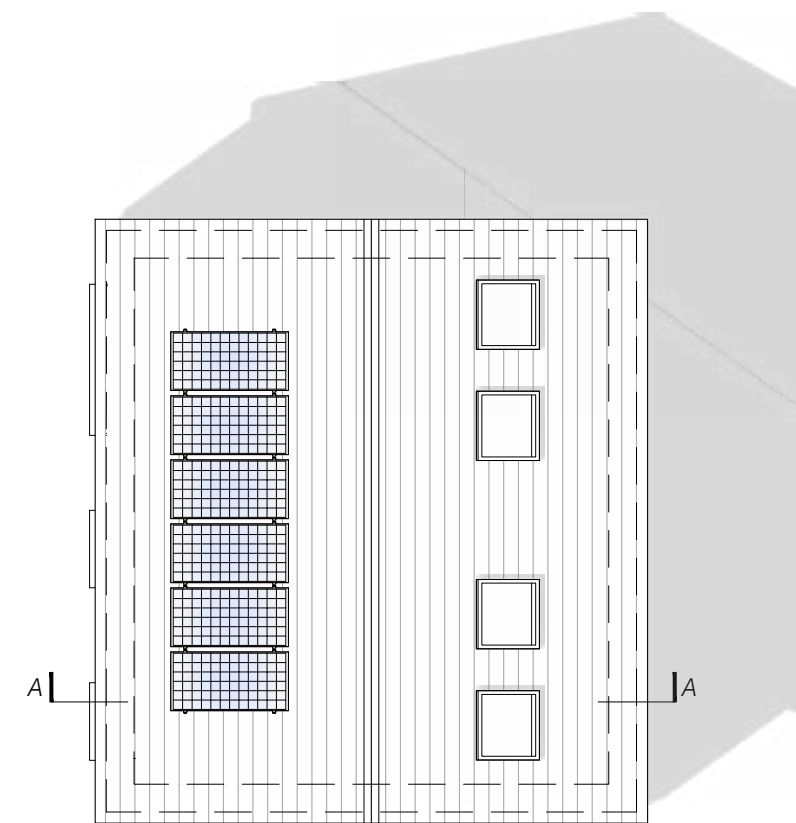
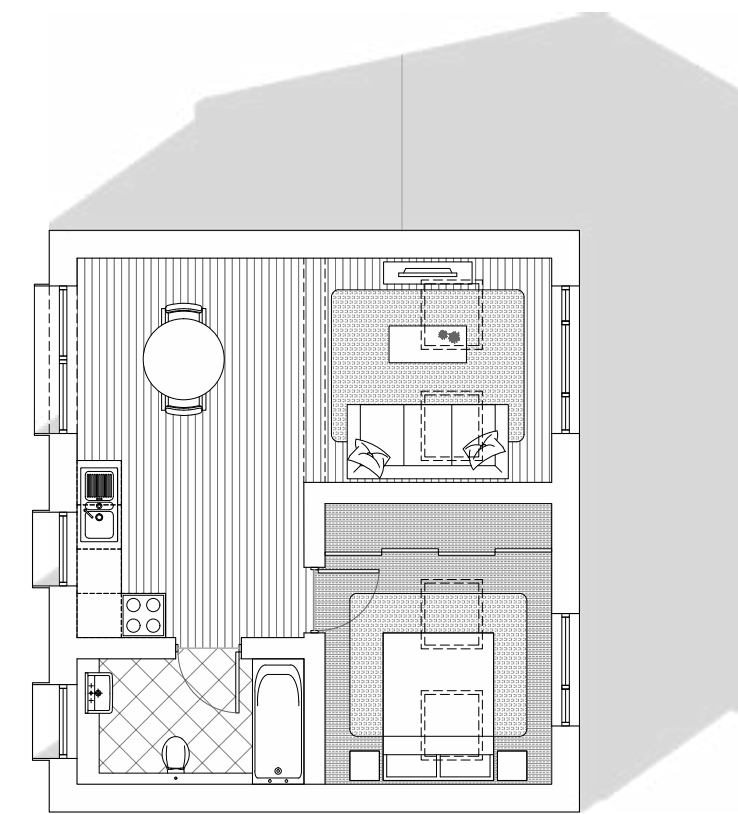
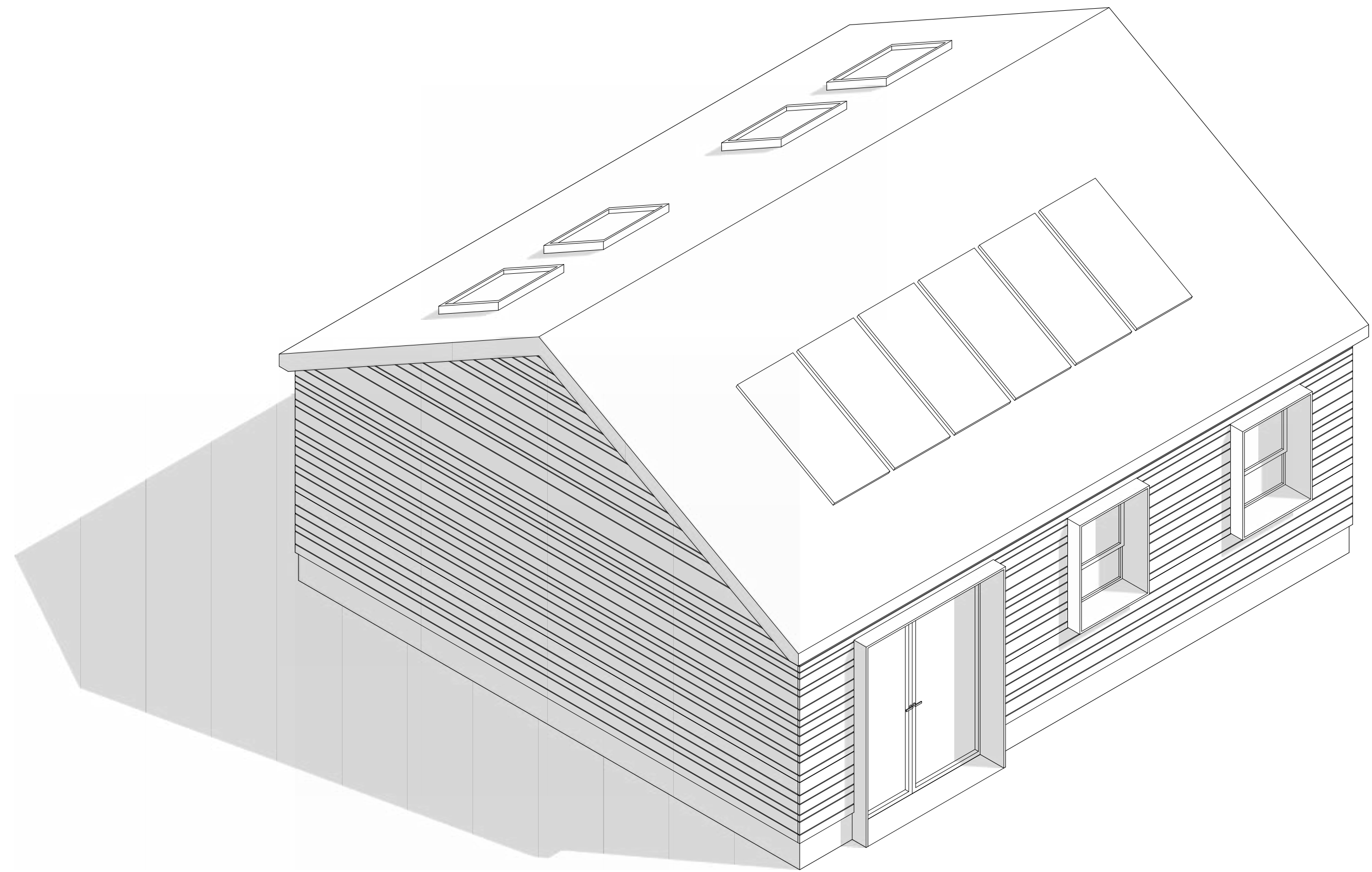
Cow Shed, Berwick Village

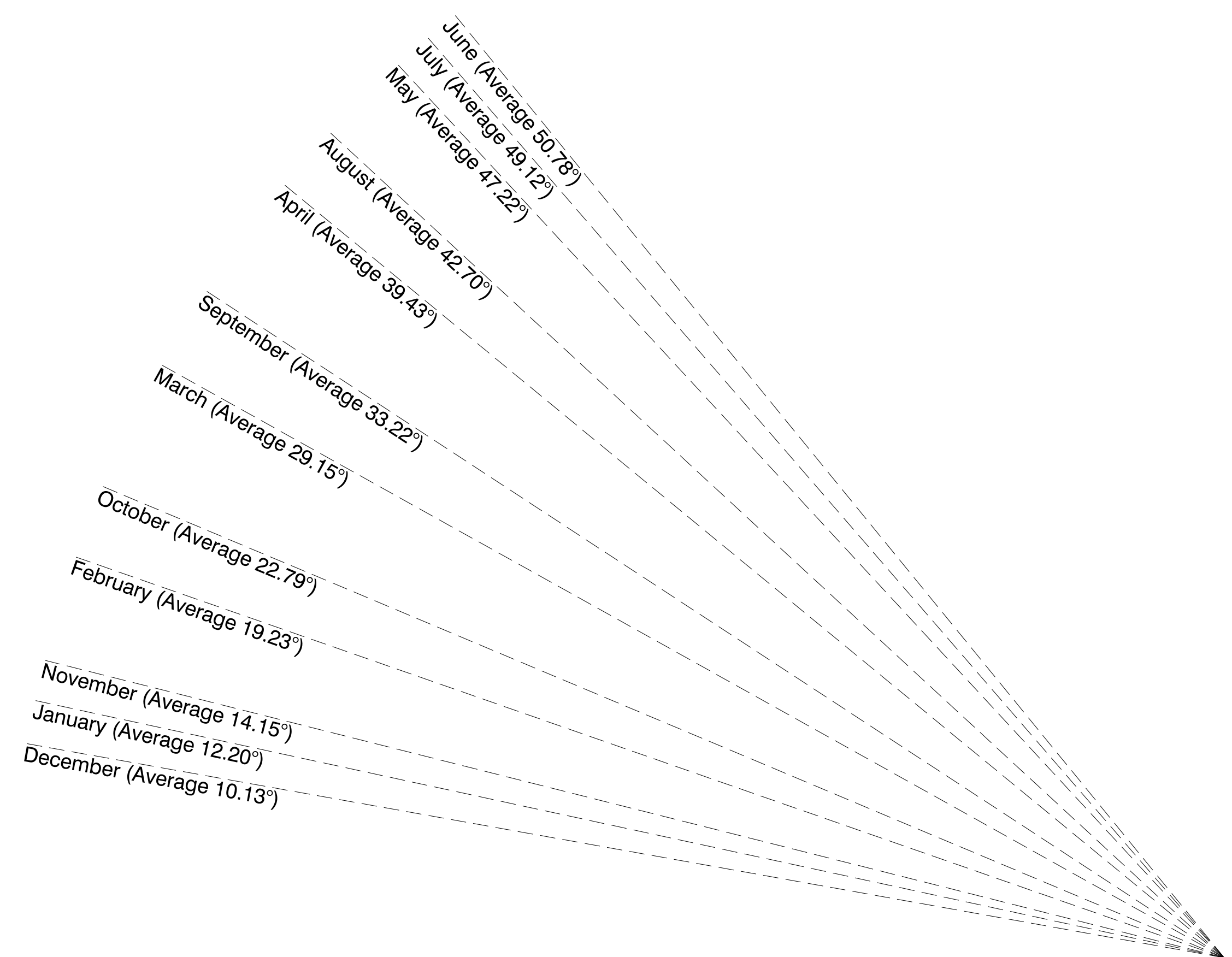
Concrete blockwork, Corrugated metal cladding

Context

Using Berwick's agricultural surroundings as context form, materiality and scale were all observed and studied in order to better contextualise future designs with its surroundings. Two precedents, as shown on the previous page, give an insight into the backdrop where the site is geographically located. Signifying feature elements of materiality, in the form of brick, flint or timber will immerse the proposal furthermore into its surroundings.







Sun Angle Calculations

Average Angle of Sun per Month

January - 12.20°

February - 19.23°

March - 29.15°

April - 39.43°

May - 47.22°

June - 50.78°

July - 49.12°

August - 42.70°

September - 33.22°

October - 22.79°

November - 14.15°

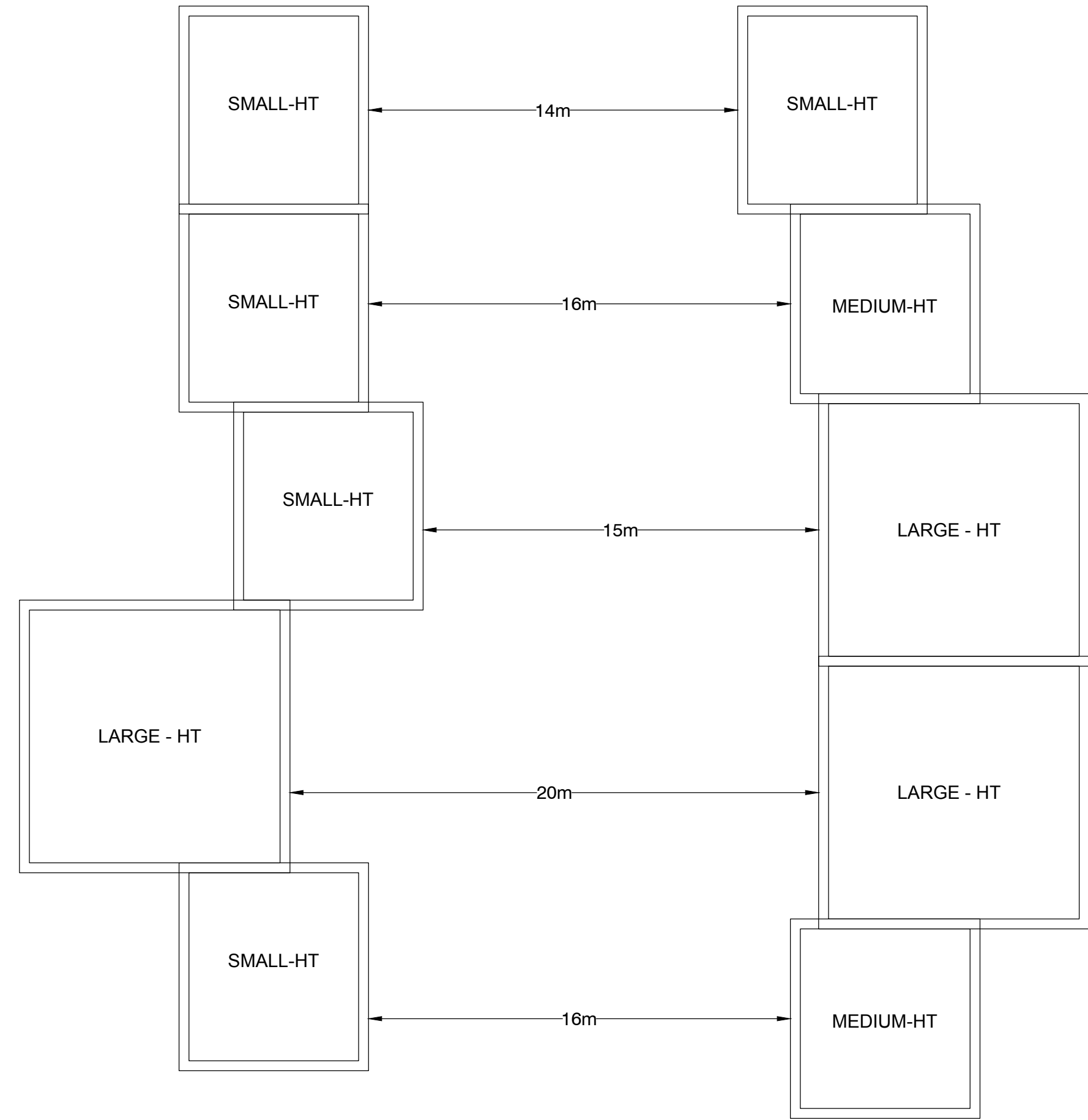
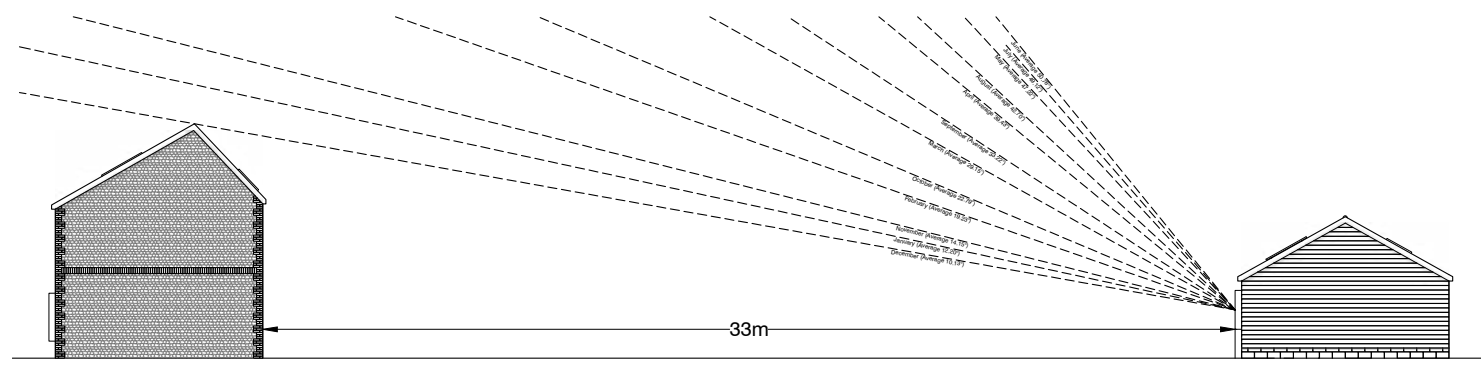
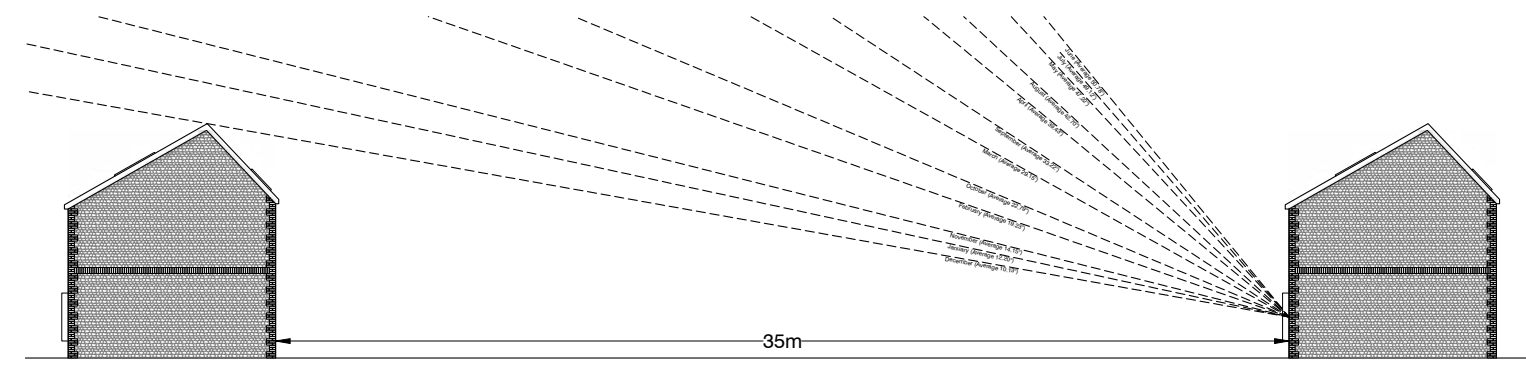
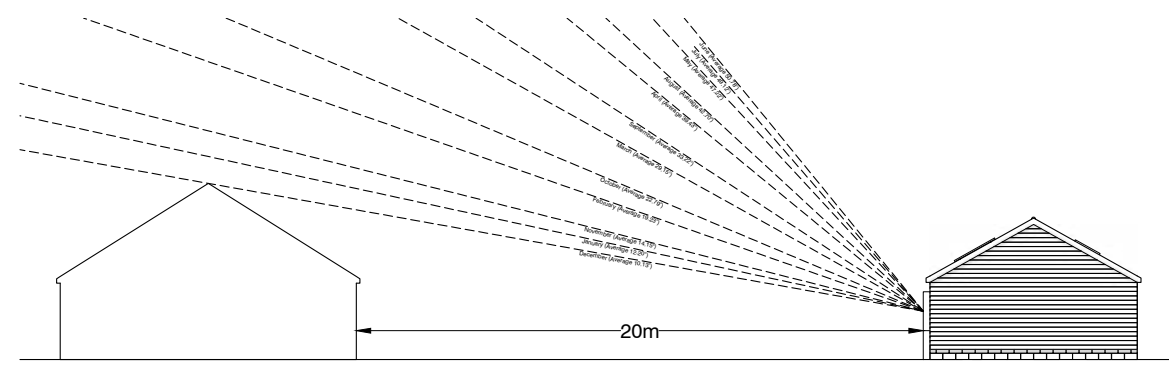
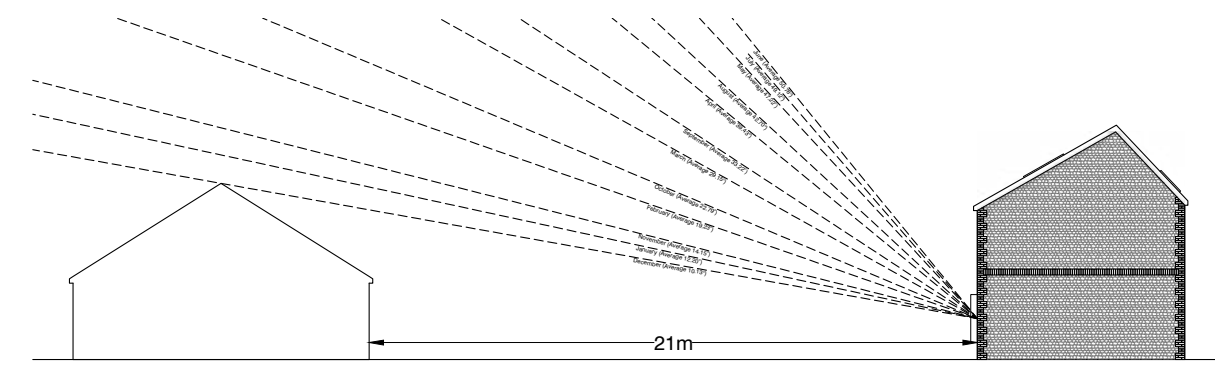
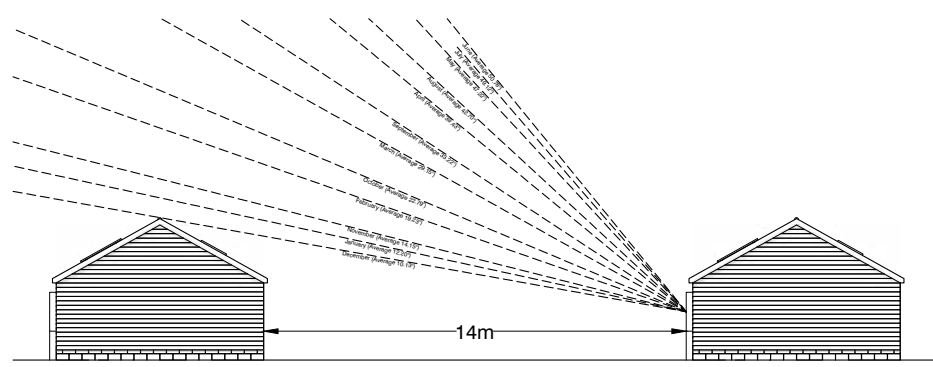
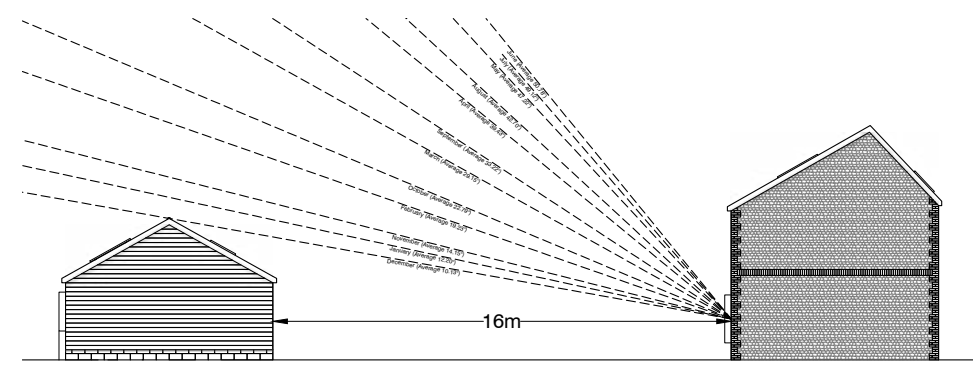
December - 10.13°

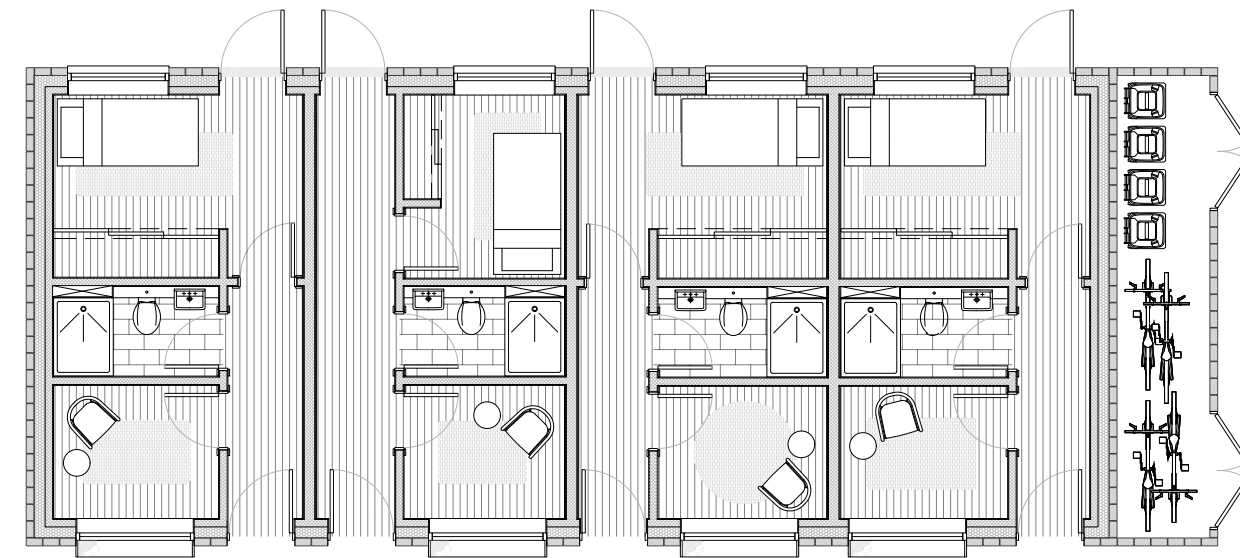
The average annual angle of the sun is calculated by taking the angle at 09:00am, 12:00pm and 15:00pm for every day of the month and then calculating the average.

This information will inform the design development of the dwellings to incorporate best practice Passive Design incorporating direct solar gain, passive solar cooling, shading and elements of thermal mass into the design(s).

Passive Solar Design

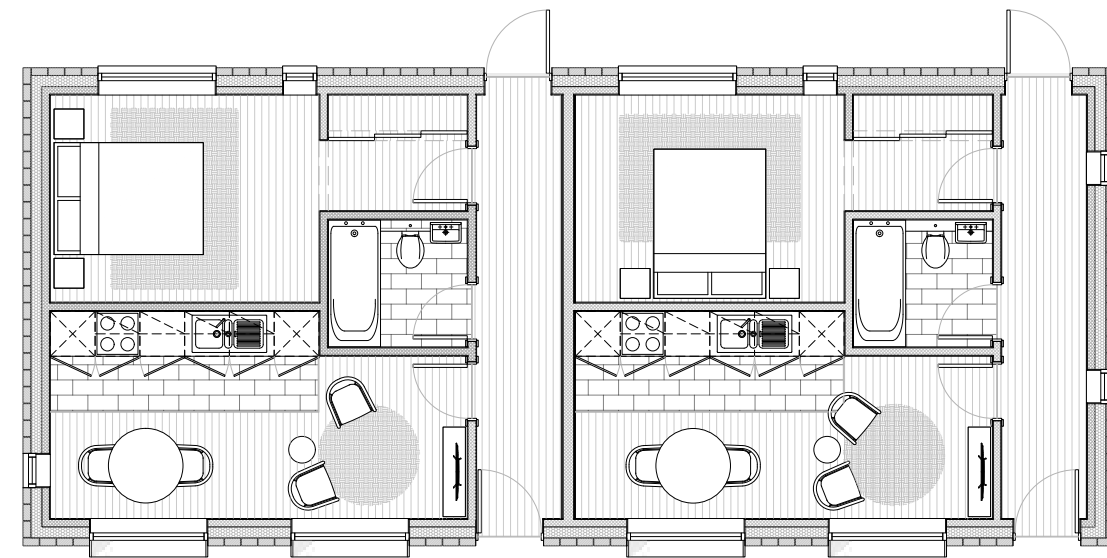
Passive solar design refers to the use of the sun's energy for the heating and cooling by exposure to the sun. When sunlight strikes a building, the building materials can reflect, transmit, or absorb the solar radiation. Basic design responses to solar can provide heating and cooling effects in the home. Facing the units true south, selecting materials that retain or store the heat produced by sunlight and overhangs / deep window reveals can be used to shade the aperture area during summer months.





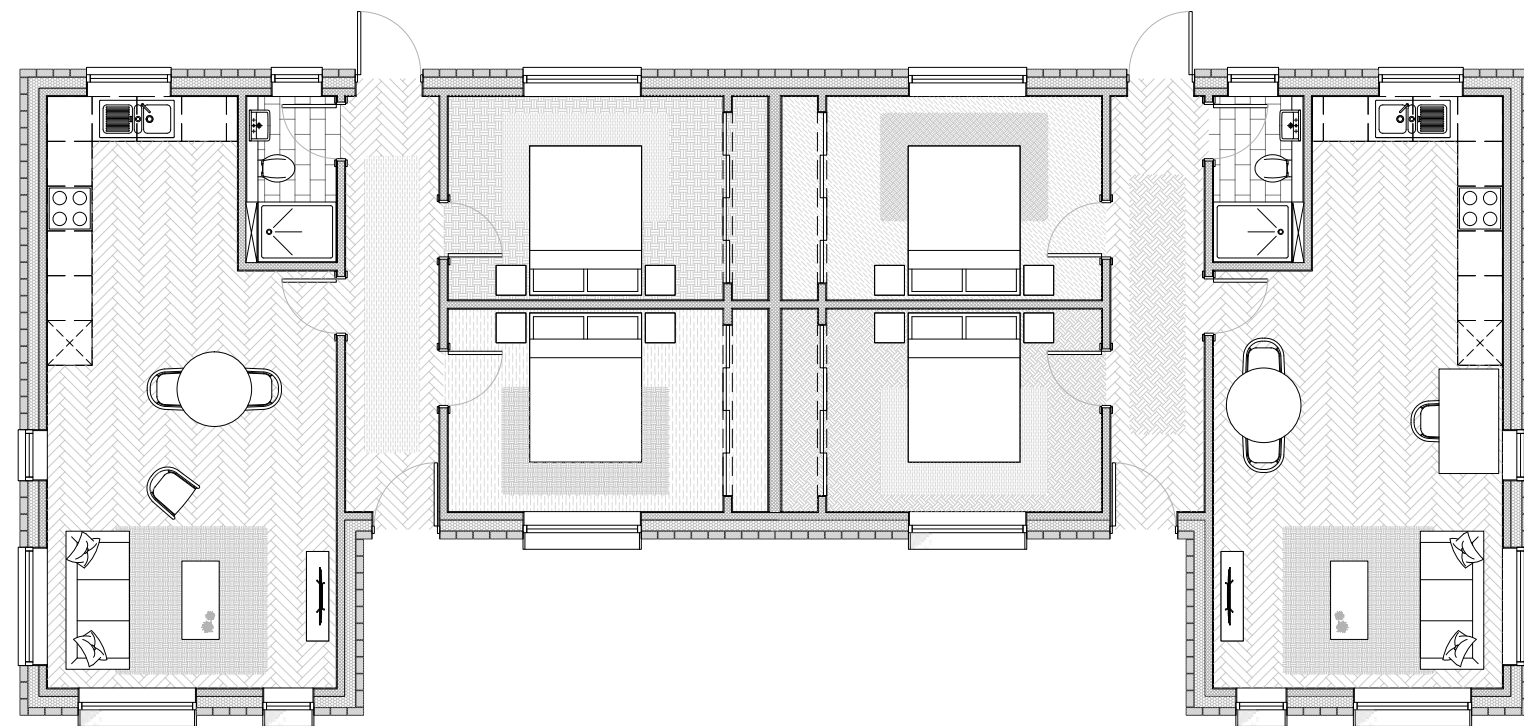
House Type A

4 x Single Occupancy Units



House Type B

2 x Single Occupancy / Couple Units



House Type C

2 x Co-Living / Small-Family / Couple Units

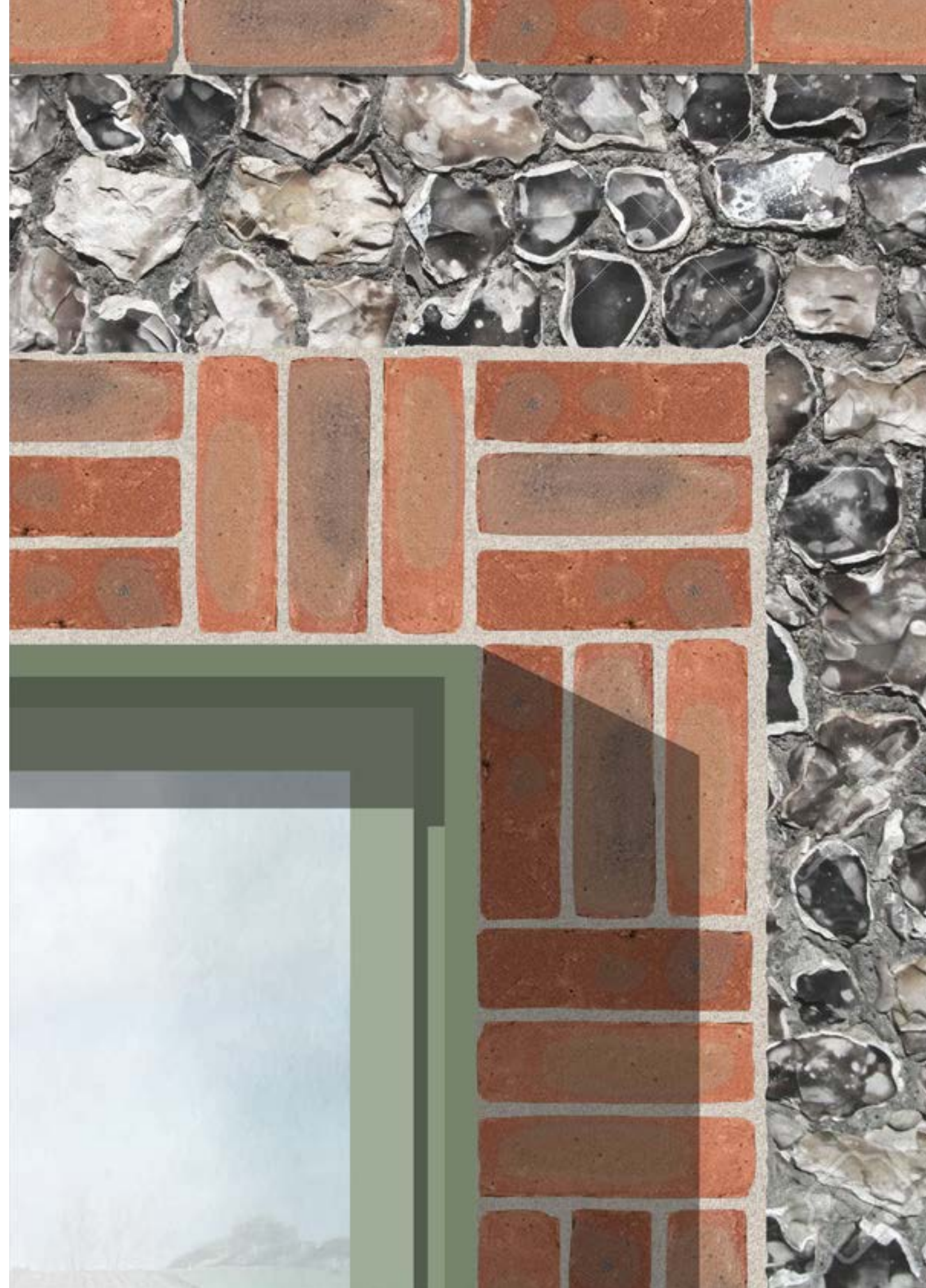
Design Development

Through design iterations and slight changes of perspective the housing units have developed in terms of size and scale to be more tailored to individuals, couples and co-inhabitants rather than family and multi-generational homes. The units placed in accordance with the structural basis of a Kibbutz and spaced accordingly to the aforementioned separating distances are integrated in different types of community. Site-wide, neighbourhood and immediate. All three aspects of community similar but slightly different.









Elevational Studies:

Sourcing either local or low-carbon alternative materials is crucial to the ethos and overall visual appearance of the proposal. Un-contentious, familiar, and agriculturally sympathetic materials were chosen to respond to Berwick's rural context in a cotemporary manner.



Material Study: **Kenoteq K-BRIQ**

The K-BRIQ is an efficient alternative construction brick made from recycled materials. The low-carbon production process does not require high temperature firing, virgin cement or high volumes of clay for its production like similar traditional products. The K-BRIQ, comparable in strength to a traditional brick, is made from nearly 100% recycled content, requires no firing and has a high thermal mass. Selected based on these properties all residential units are constructed, in some part, from this material.



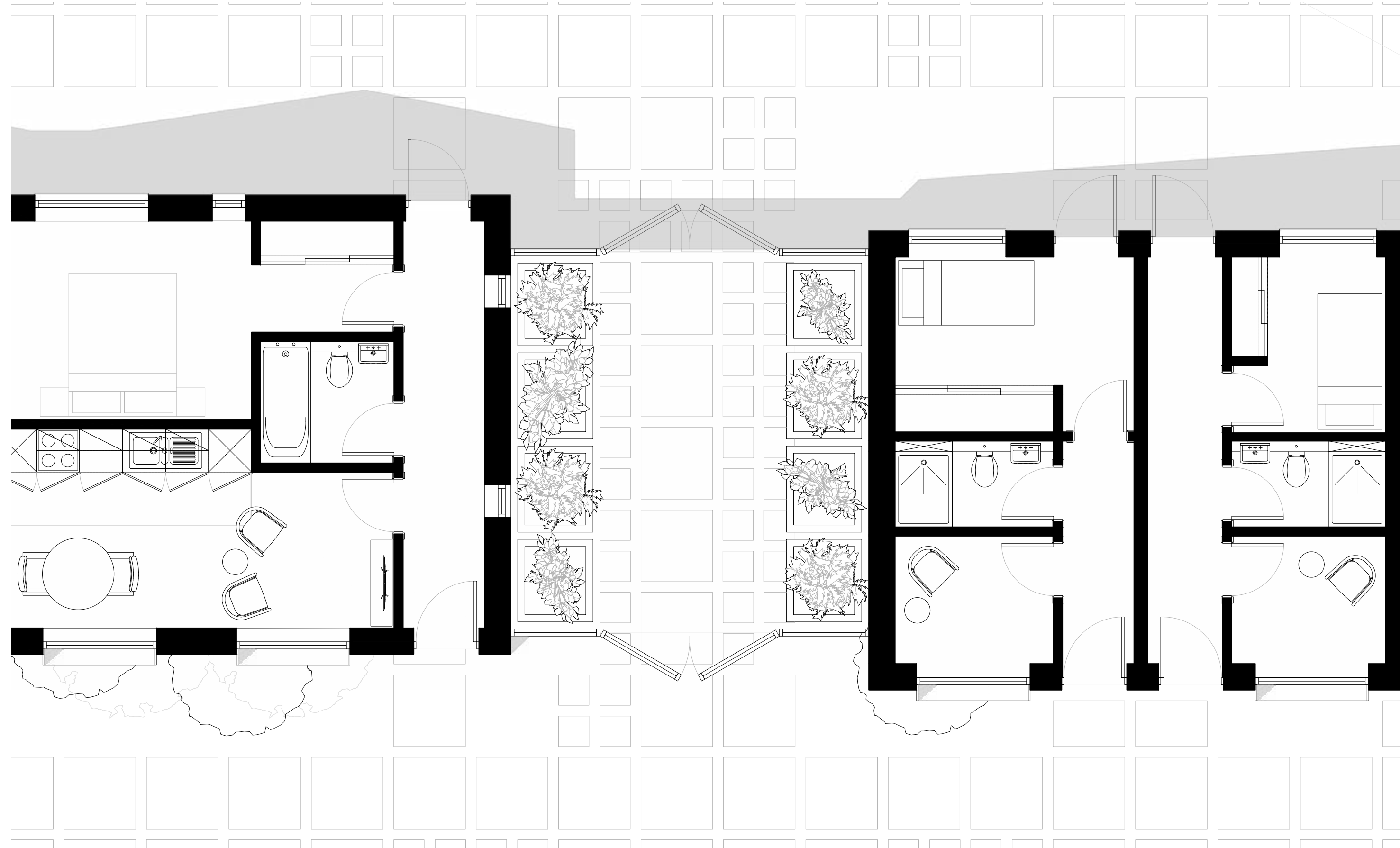
Material Study: **Greenbloc Ultra**

Greenbloc Ultra is a low-carbon alternative, using up to 80% less CO₂ during manufacture, than a conventional high density load bearing concrete block. At our current rate of material consumption, we're absorbing 157% of the natural resources on the planet. Greenbloc Ultra substitutes cement with an industrial by-product. The low-carbon alternative achieves, if not surpasses, the traditional building material with far better environmental results.



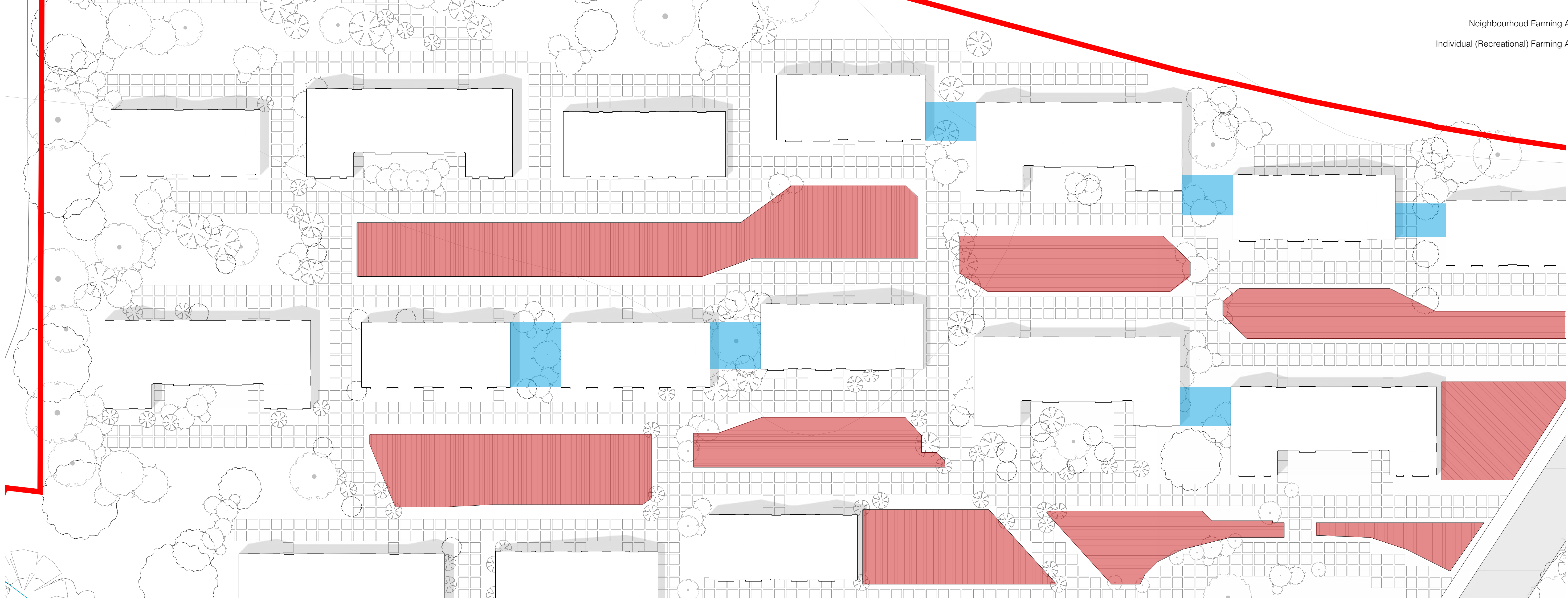
Material Study: **Margent Farm - Hemp-Fibre Corrugated Sheets**

A hemp fibre based corrugated sheet that can be used for both as exterior an interior finish. The low-carbon product has a high cellulose content of 60 - 70% of the plant making it a strong and durable material. The plant based material is then bound with a sugar based resin made entirely from agricultural waste. The sheet is to be used as a natural alternative cladding to corrugated steel, bitumen and cement, specifically chosen for its sustainable properties.



Communal Farming

Communal farming, the on-site framework for the sustainable rehabilitative residential development is not limited to the site wide ambitions. Neighbourhood farming areas link the cluster of dwellings together whereas connecting, greenhouse like structures, link individual units together and allow the ability for inhabitants of these units to undertake their own recreational farming activities in their own designated space associated with their dwelling.

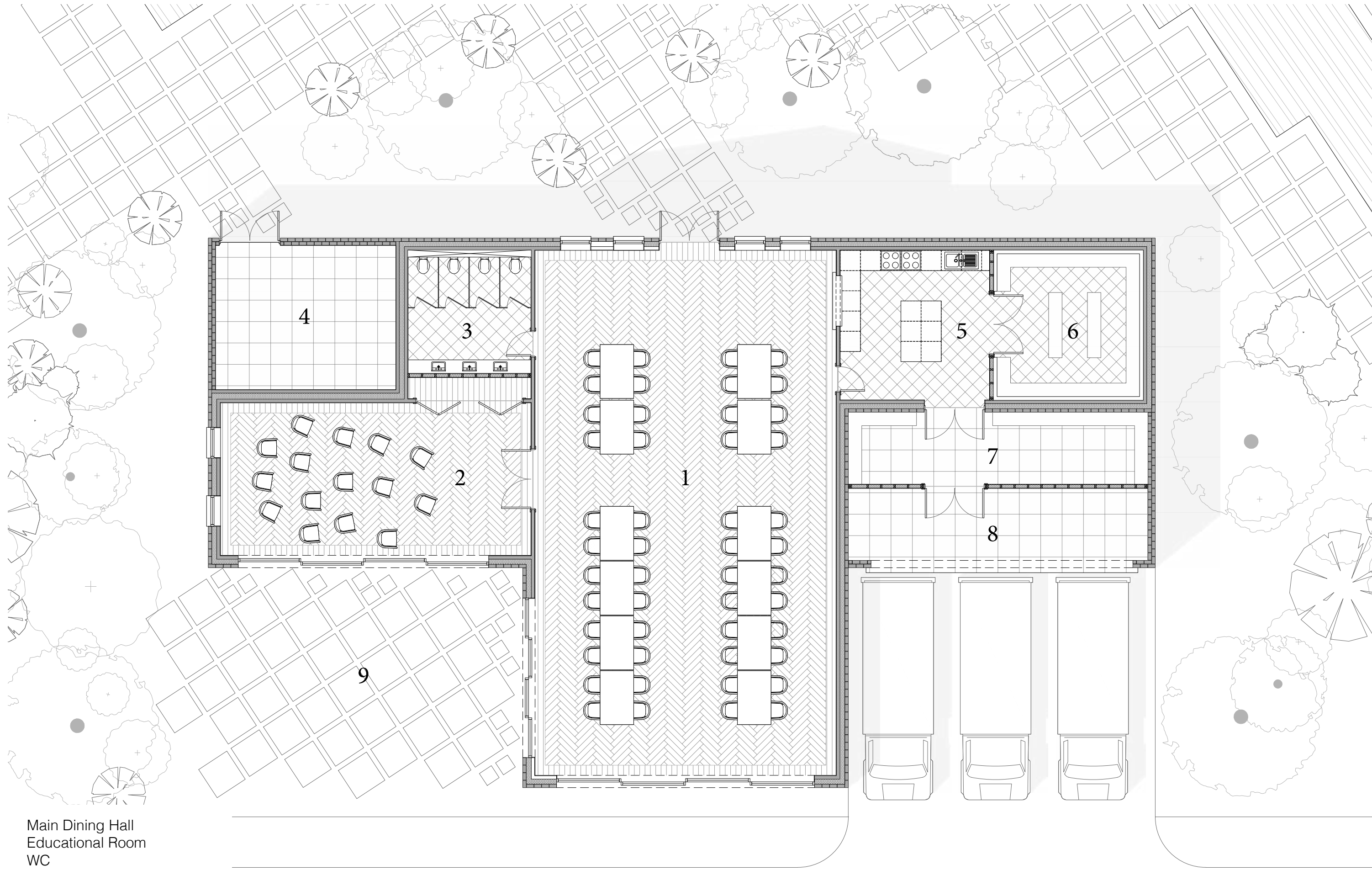


Neighbourhood Farming Areas



Individual (Recreational) Farming Areas





Community Dining Hall

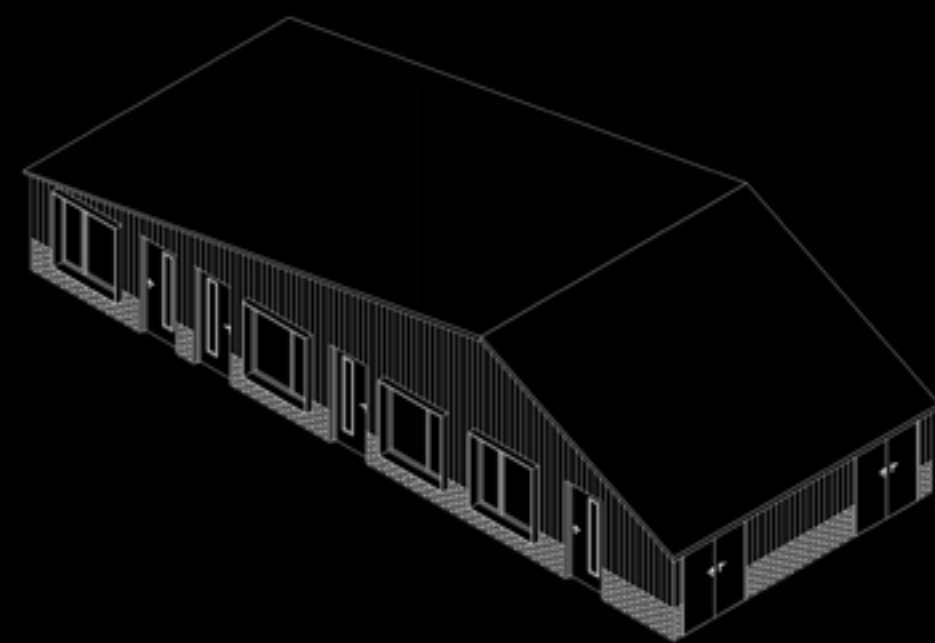
Similar to the principles and ideologies of the Kibbutzim, a central dining space for residents to collectively eat their meals is key to the settlement as a whole. The 'hypothetical' centre of the site, this structure is arguably the focal point for the whole scheme, and in the case of the Berwick site, is located along the main access road into the site. As the basic structure of the Kibbutz, as shown previously, demonstrates, the central and educational sectors are paramount to the overall masterplan of the site.

- 1 Main Dining Hall
- 2 Educational Room
- 3 WC
- 4 Agricultural Equipment Store
- 5 Kitchen
- 6 Cold Store
- 7 Store
- 8 Loading Bay
- 9 Terrace



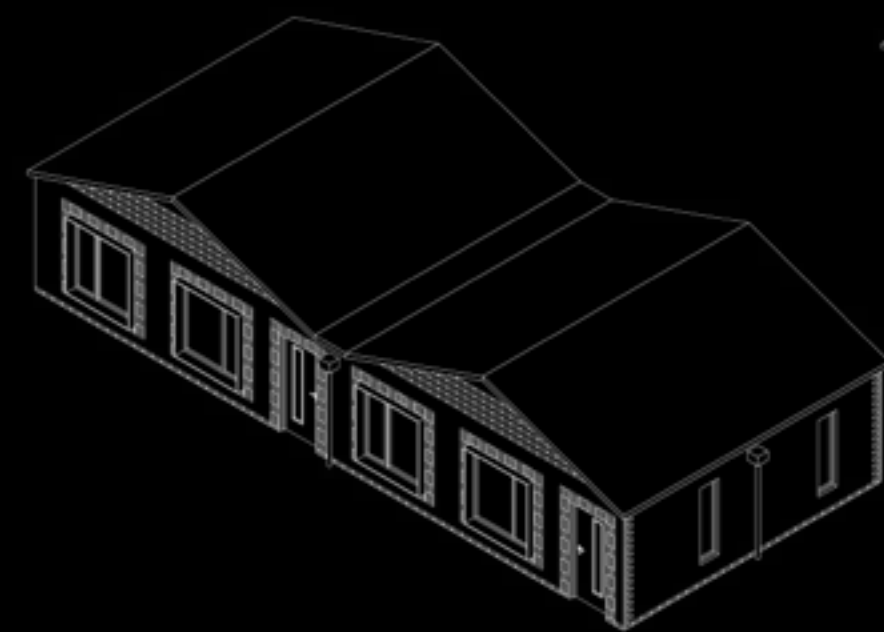


- 1 The central sector
- 2 The housing sector
- 3 The educational sector
- 4 The sport and recreational sector
- 5 The production sector
- 6 Infrastructure services



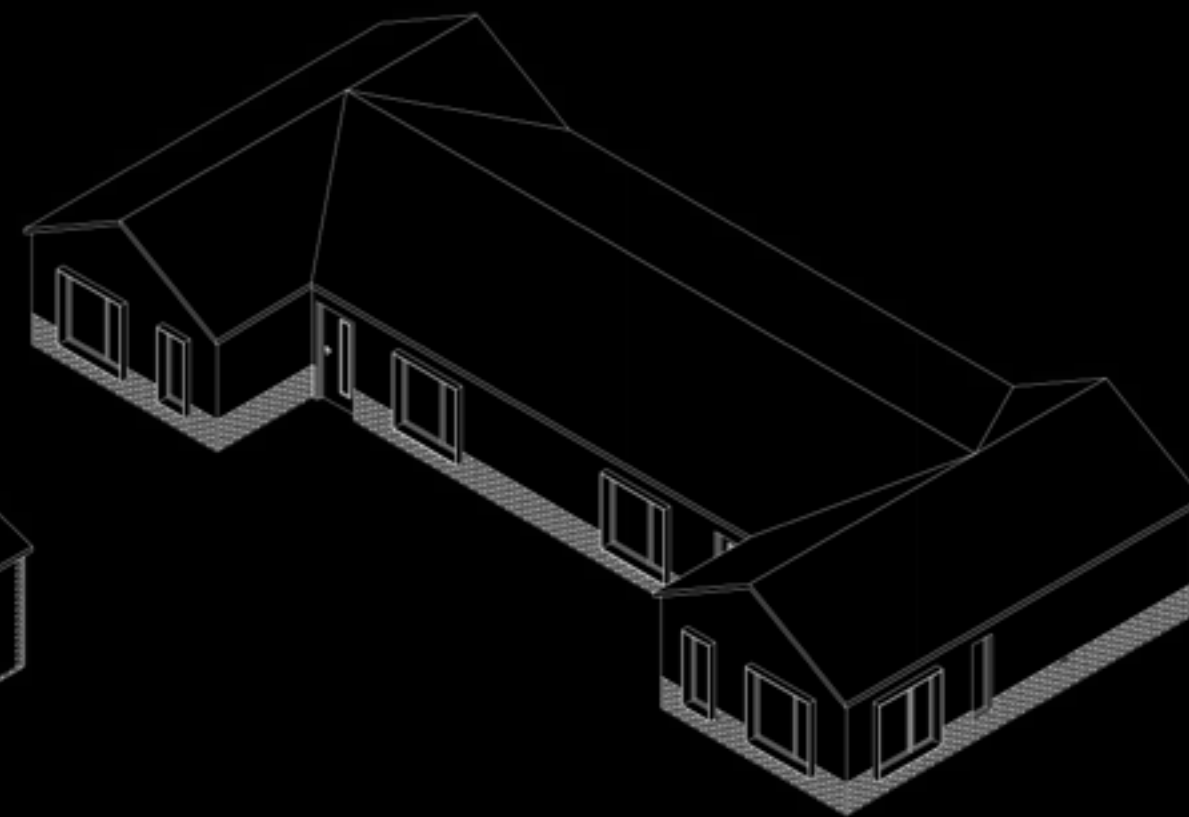
House Type A

Single Occupancy



House Type B

Single Occupancy | Couple

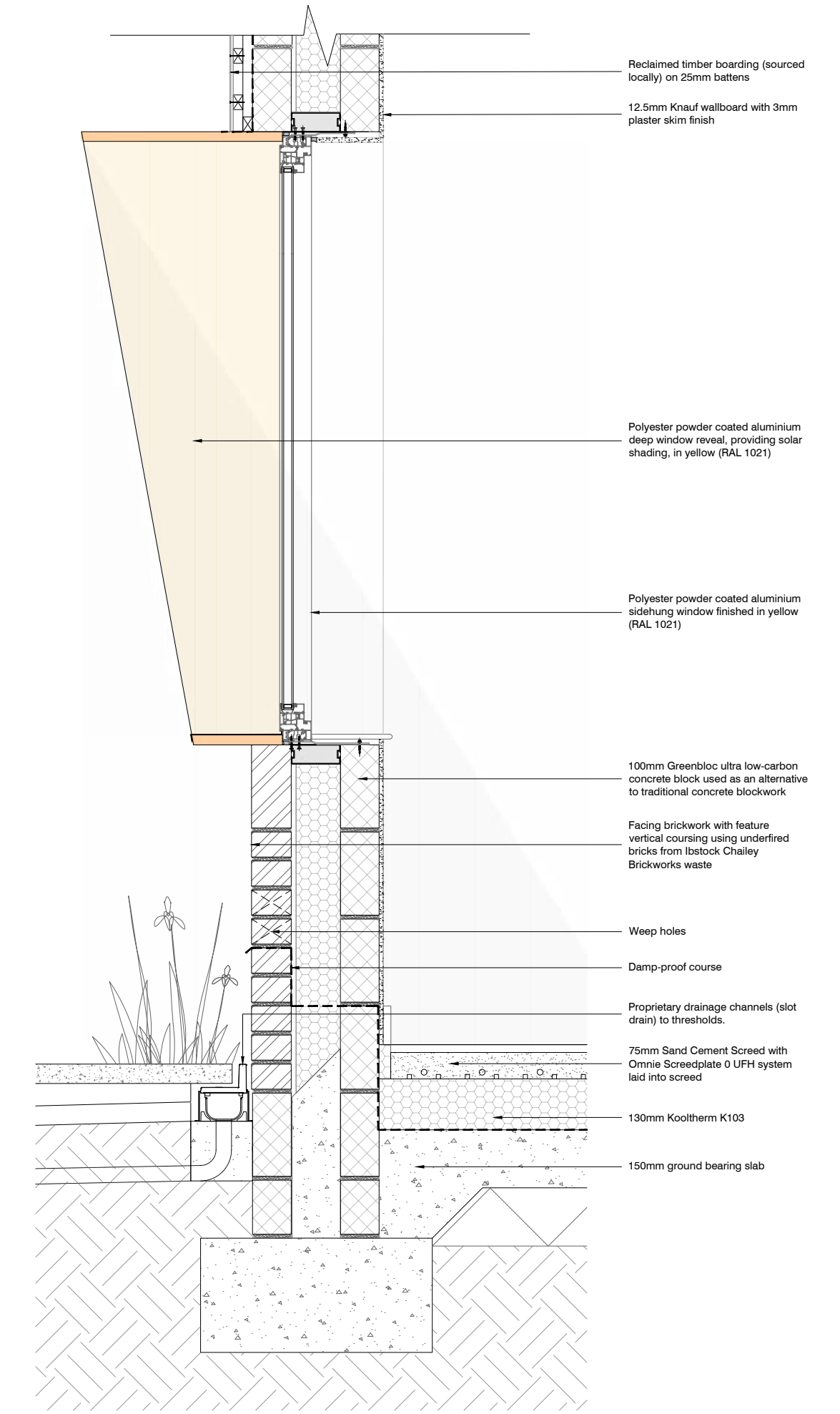
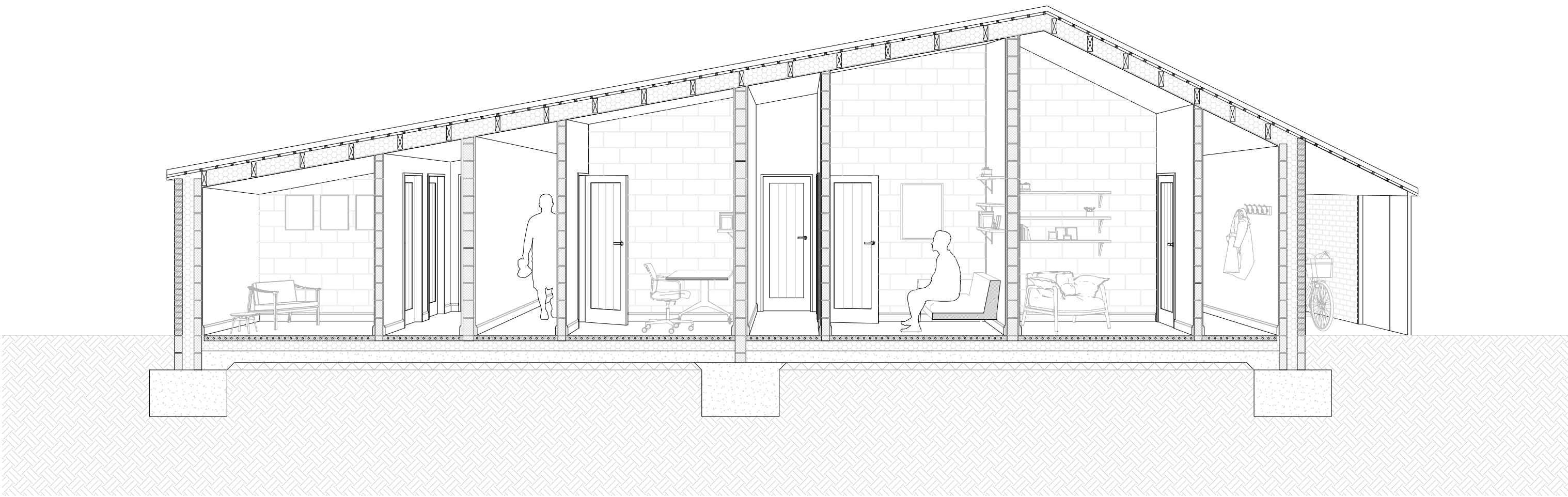


House Type C

Couple | Small Family | Co-Living

Adaptive: typologies for the many

A range of housing typologies that are responsive to the people who are in desperate need of affordable housing.



“a place to call home”

AI715: Design Thesis | **Scott Clampin** | M.Arch 02