

**1 in 66**  
are homeless in  
Birmingham

**45 years old**  
is the average age of  
death in men  
experiencing  
homelessness

**43 years old**  
is the average age of  
death in women  
experiencing  
homelessness

**1,700,000**  
**houses**  
were sold under the  
right to buy act, put in  
place by Margaret  
Thatcher

# Pixel Haus



## Exploratory Question:

Can designers create a solution to the UK housing shortage using community led, and sustainable solutions?

## Published texts to aid work:

'Exploring the relationship between housing concerns, mental health and well being: A qualitative study of social housing tenants' a study taken by the Journal of Public Health.

This texts explores the correlation between poor mental health and poor quality housing for those most vulnerable.

Understanding the problem is where we, as designers, must start. It is important to recognise where developers and councils have gone wrong so we can begin to make things right.

**A community led,  
co-operative  
housing project**





### What is Pixal Haus?

Pixal Haus is an **environmentally friendly social housing project** designed to help tackle the housing crisis in the UK. Using the principles of **co-operative housing**. Pixal Haus is a **non-profit, democratic organisation** led by its members, this means the residents are in control; **residents self-manage** the homes in a democratic way, they decide on rent costs, manage the maintenance, and create their own rules as a society. Therefore, the tenants are also the landlords.

Pixal Haus **aims to create community cohesion** where all members can function and grow in harmony together. Pixal Haus does this through the core value that **everyone within the community is equal** and deserves to have their views heard.

This Pixal Haus project lies within the walls of James Cond, Birmingham, however the aim for Pixal Haus is that it can work **autonomously** within any old or abandoned building.

### How is Pixal Haus different?

Pixal Haus aims to create a **balance between private and communal** life with a holistic approach to environmental design. Pixal Haus puts the tenants and the environment first and **profit last**.

Pixal Haus does this by using the tenant led scheme of co-operative living and by the use of **sustainable materials**, while **also incorporating green space and communal areas**.

Our ethos is to create a new way

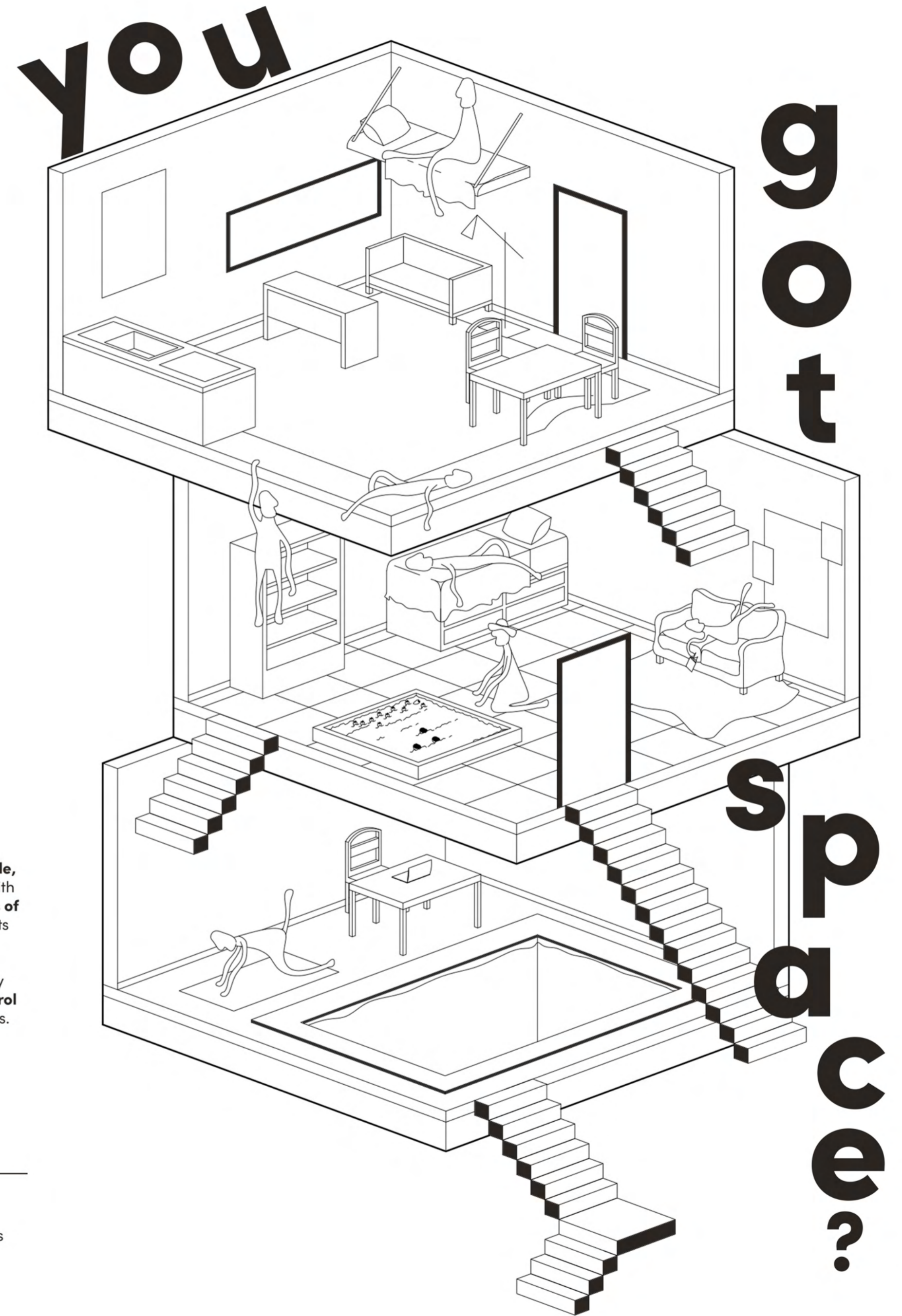
The units are **autonomous** to the building, therefore they can be built within any space, so long the building follows some basic regulations to ensure it is habitable for the modern-day person:

1. running water
2. communal green space
3. internet connection
4. signal
5. heating
6. natural light
7. active sewage system
8. electricity
9. no damp or mould
10. floors to be flat and sealed
11. asbestos free
12. ecology survey
13. pest control
14. an agreed set of rules decided

of living: one that is **sustainable, affordable and accessible**, with houses that cater to the **needs of tenants** rather than the tenants having to cater to the houses.

Simply, this will be achieved by **giving tenants complete control** of their houses and the designs.

15. air conditioning
16. carbon monoxide detectors
17. smoke alarms
18. fire/emergency exits
19. water drainage





## The design

Our houses are designed using structural insulated panels (SIPs) to ensure the heat stays in. SIPs panels also allow for a quick build so you won't be waiting a long time for your new home.

Using SIPs also means you are able to design your house how you want, catering to the correct amount of occupants. To do this, you will be a part of your house's design journey throughout.

You choose the exterior cladding, roof, layout and how many bedrooms you need, and your kitchen style.

We are able to be so versatile due to the modular nature of our designs.

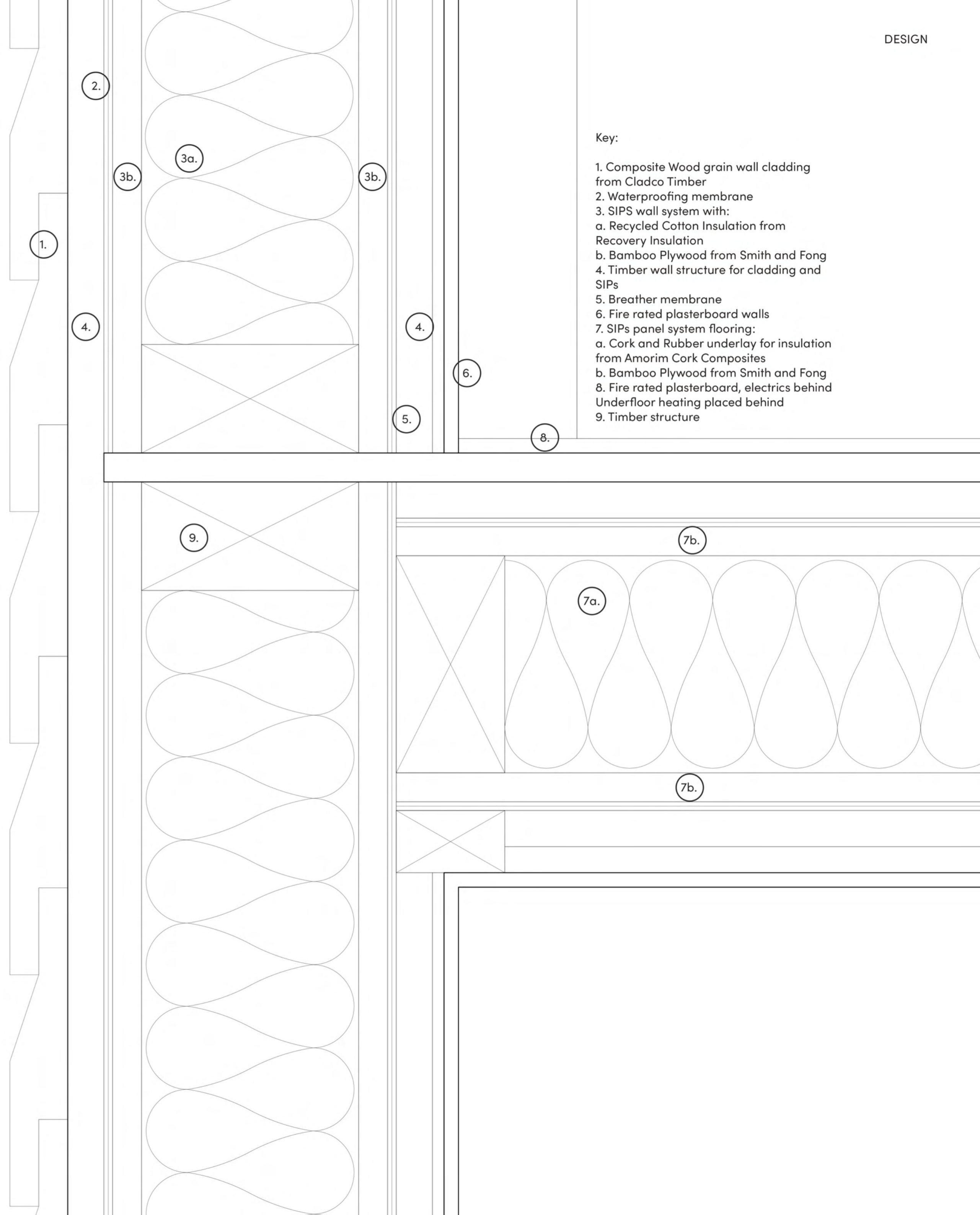
Our houses are prefabricated, meaning they are built offsite, craned into place and fixed together on-site.

## Flexibility

Pixel Haus is made up of individual units each at 23m<sup>2</sup> each. The size of the house depends on the number of occupants. Occupants are allocated a 23m<sup>2</sup> unit each, therefore a household of 3 would have 3 units, adding up to 69m<sup>2</sup> of floor space.

The use of SIPs panels aid this flexibility. The panels are made up of multiple layers; from outside to in: exterior cladding, timber batons, waterproofing membrane, plywood, insulation, plywood (the SIP), timber baton, a breather membrane, finally plasterboard, behind which sits the electrics.

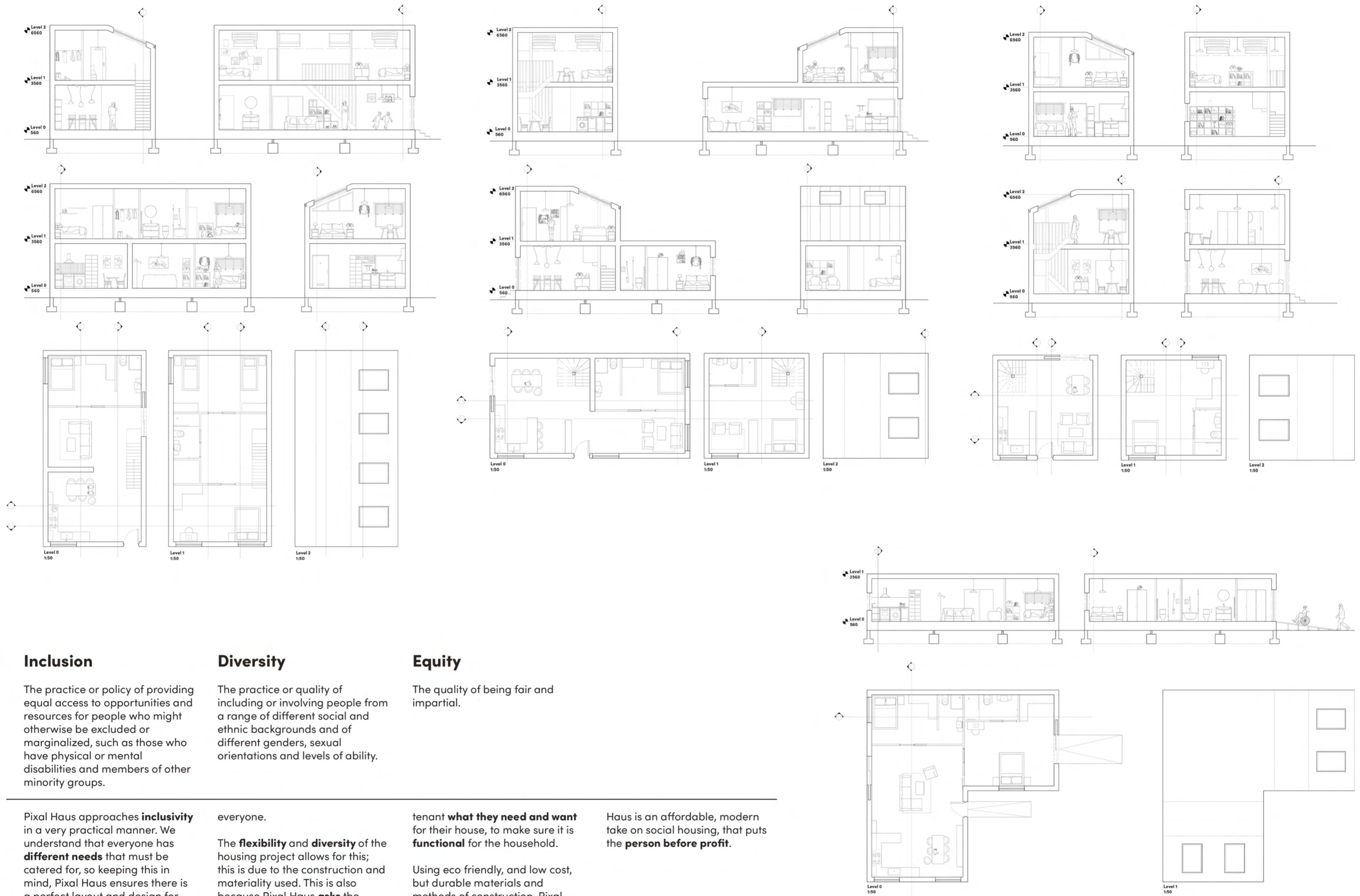
The SIPs are then screwed and bolted into place to create the individual units, before being transported to site and fixed together



### Key:

1. Composite Wood grain wall cladding from Cladco Timber
2. Waterproofing membrane
3. SIPS wall system with:
  - a. Recycled Cotton Insulation from Recovery Insulation
  - b. Bamboo Plywood from Smith and Fong
4. Timber wall structure for cladding and SIPs
5. Breather membrane
6. Fire rated plasterboard walls
7. SIPS panel system flooring:
  - a. Cork and Rubber underlay for insulation from Amorim Cork Composites
  - b. Bamboo Plywood from Smith and Fong
8. Fire rated plasterboard, electrics behind Underfloor heating placed behind
9. Timber structure





**Inclusion**

The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those who have physical or mental disabilities and members of other minority groups.

Pixal Haus approaches **inclusivity** in a very practical manner. We understand that everyone has **different needs** that must be catered for, so keeping this in mind, Pixal Haus ensures there is a perfect layout and design for

**Diversity**

The practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations and levels of ability.

everyone.  
The **flexibility** and **diversity** of the housing project allows for this; this is due to the construction and materiality used. This is also because Pixal Haus **asks** the

**Equity**

The quality of being fair and impartial.

tenant **what they need and want** for their house, to make sure it is **functional** for the household.  
Using eco friendly, and low cost, but durable materials and methods of construction, Pixal

Haus is an affordable, modern take on social housing, that puts the **person before profit**.





**The outside space**

Understanding the needs of the user is the most important part of design. In the Pixa Haus project, mental health is important to the design.

**Mental health**

It is true that nature is good for your mental well being, therefore one of Pixa Haus' regulations is to have green space within the housing project.

Scan the QR code to see a video of the green space designed in James Cond for this Pixa Haus project.



**You tell us:**

**How many occupants**

It's so easy! Start by telling us how many people will be living with you and if there are any children, we need to know their ages.

**The unit layout**

You tell us how you want your new house to look, it is all down to you and your family's preferences.

**The exterior cladding and roofing**

What colours from our range suit you best? Let us know!

**Colour scheme and furniture layout**

The colours in your house makes all the difference. We want you to be the happiest you can be in your new home, the best way to do that is by personalisation.

**The design**

Because the design is down to the individual household, there are infinite styles and layouts of houses. To ensure Pixa Haus caters to the needs of everyone, we take it as our responsibility to be inclusive and accessible. Our designs can range from 1 storey, up to 3, meaning if someone is unable to use stairs there is the perfect 1 storey house design for them.

Pixa Haus uses a combination of Cladco Wood grain composite exterior cladding and GreenCoat PLX for roofing, both of which can be easily fixed onto the roofing SIPs.

GreenCoat PLX can be bent into shape, allowing this to create a seamless finish, covering the roof as well as the exterior walls if desired. Both Cladco and GreenCoat PLX come in multiple colours to allow for personalisation of your home.



**The interiors**

Pixa Haus also understands that when you live in an environment you enjoy, you feel happy, that is why our interiors are the most important aspect of our designs.

**Scandinavian design**

The main purpose of Scandinavian design is to improve daily life, therefore the design is focused on everyday utilitarian items like furniture, lighting, textiles, accessories,

dishes, silverware, cooking utensils and linens. This means Pixa Haus interiors are clean, welcoming and have extra space for storage. Scan the QR code to see our website.

