

# Introduction

This document presents a series of interventions at different scales within the existing farm and explores their potential future uses to support the site's ongoing development and sustainability.

It highlights how each structure (whether small, medium, or large) could be adapted or enhanced to benefit the farm's operations, community engagement, and overall environment. This document combines practical and technical improvements with creative possibilities, aiming for the farm to continue growing as both a productive and inspiring place.





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# **Bentley Urban Farm: Context and Vision**



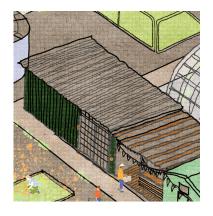
Bentley Urban Farm presents a range of opportunities for the sustainable development of Bentley town and its wider community. As a multifunctional site, it possesses the potential to operate as an economic, social, and environmental catalyst within the locality.

Following a period of community-based research conducted in Bentley, the Live Project team identified significant public interest in greater participation and collaboration with the farm. The findings suggest that Bentley Urban Farm could serve as a focal point for promoting healthy lifestyles, particularly through initiatives related to nutrition, physical activity, and social engagement.

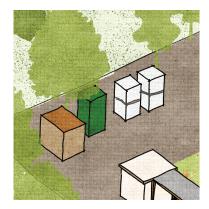
The research highlights a demand for inclusive spaces that nurture social connection, skill development, and environmental stewardship. In response to these findings, this document proposes a series of targeted interventions intended to enhance the operational and social capacity of Bentley Urban Farm.

These interventions are conceptualised as frameworks for reflection and tools for strategic growth rather than prescriptive directives. Acknowledging the changing nature of the farm and its surrounding community, the proposed design and technical interventions aim to reflect and build upon existing strengths while supporting long term resilience and adaptability.

# **Summary of Proposed Interventions**







### **A Physical Sign**

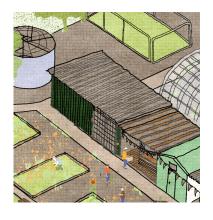
A visible and welcoming marker that strengthens the farm's identity and connection to the wider community.



A flexible multi-purpose space that supports learning, creativity, and inclusive community activities.

### **Compost Toilet**

A sustainable and accessible facility promoting environmental responsibility and circular resource use.





#### **Kitchen and Cafe**

A social hub encouraging healthy eating, food education, and informal gathering for visitors and volunteers.

### **Manna Catering Space**

A larger intervention designed to support enterprise, events, and skills development in food production.

#### **ASMALL INTERVENTION**

# **Physical Sign**

This small intervention aims to make the site more accessible and inclusive while fostering community agency. It acts as a welcoming point of orientation for new members, volunteers, and visitors. The absence of labels is a deliberate choice, allowing the sign to act as a conversation starter rather than a conventional marker, reducing dependency on core members for guidance and inviting dialogue and discovery.



# **Current Issues**

The farm currently lacks visual clarity for newcomers, making initial orientation and navigation challenging. Most of the necessary information is shared verbally, rather than being communicated through clear visual cues or signage.

As a result, casual volunteers and visitors often experience a sense of disconnection or uncertainty when engaging with the site.

# **Opportunities**

A hand-painted sign can create a selfexplanatory environment, allowing visitors to explore independently. Offering a low-cost, high-impact way to

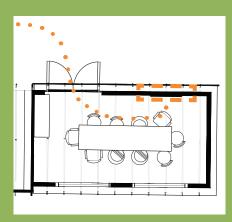
Offering a low-cost, high-impact way to strengthen the farm's identity.

The sign can act as a simple, approachable feature that encourages engagement and reduces reliance on core members for orientation.



#### **Highlight 1: What its made from**

The sign is constructed from hazel wood, selected for its ability to grow straight as well as it's sustainable properties. It is produced using green wood techniques, aligning with the commune's commitment to low impact practices and resource efficiency. The design reflects the principle of using existing materials responsibly, reinforcing the community's approach to mindful making and material reuse.



### Highlight 2: Where it will be used

The sign is intended to be installed within the farm's communal café area, a central point for interaction and coordination. Positioned in a visible location, it acts as a symbol of collective ownership and a practical feature that supports both visitors and members in navigating the site.



### Highlight 3: What it is used for

The sign facilitates orientation and participation within the farm, providing a tool for communication and task allocation. It enables newcomers to understand and engage with daily activities without relying solely on founding members, promoting shared responsibility. Its minimal painted markings encourage dialogue rather than direction, serving as a conversational element while avoiding disclosure of sensitive or valuable areas for safety purposes.

#### Reflection

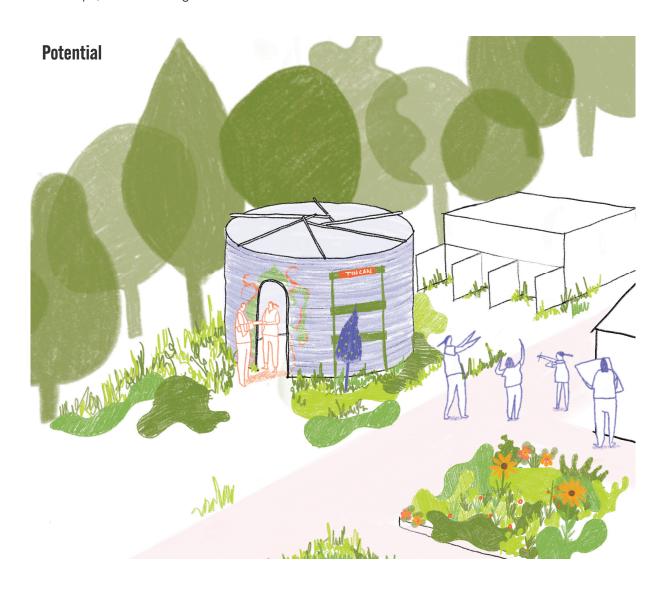
As a small intervention, the creation of the sign demonstrates how design can support both communication and collective identity within the commune. It provides a functional tool for orientation and engagement while reinforcing the ethos of resourcefulness and sustainability through the use of reclaimed materials.

This approach highlights the value of low-cost, participatory design actions that build confidence among newer members and reduce the reliance on founding individuals. By integrating making as a shared process, the commune can continue to develop practical tools that strengthen self-management, encourage skill transfer, and celebrate collective authorship across the site.

#### A MEDIUM INTERVENTION

# **Spider Room**

The room currently has no structured use but has the potential to be used for workshops and music sessions due to its good acoustic qualities. It could act as a potential space for workshops, small meetings and music sessions.

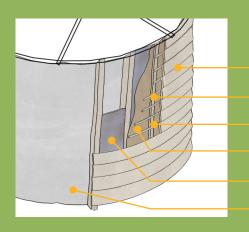


# **Current Issues**

The roof is currently covered with a plastic sheet, providing no insulation or reliable weather protection. This results in extreme indoor temperatures during both winter and summer. The absence of lighting further limits its suitability for workshops or other productive activities.

# **Opportunities**

The existing roof structure could be retrofitted with shingles or thatch to improve insulation and durability. Adding wall cladding, a timber frame, and reclaimed windows or bottle panels would enhance natural light and comfort. These improvements could support workshop activities and generate additional revenue for the commune and the farm.



#### **Highlight 1: Insulation**

Reclaimed pallet wood shingles

Horizontal counter battens

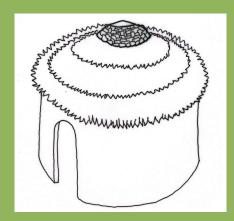
Vertical battens

Sheathing board

Recycled insulation of choice

Existing corrugated steel drum

This image shows how insulation can be provided through use of reclaimed materials and carpentry techniques.
This process could result in improved insulation



### **Highlight 2: Roofing as Closed - Thatched**

A thatch roof has excellent thermal insulation, can be sourced from farm activities or other allotments and is biodegradable. However, it is a fire risk, can degrade depending on the weather conditions (wet conditions primarily) and is susceptible to pest infestation if not maintained well.



### Highlight 3: Roofing as Open - Glass/ Polycarbonate

Glass is weather resistant as well as provides excellent lighting qualities and creativity when it comes to coloured glass. However, it is heavy, brittle, difficult to repair or replace if broken and has poor thermal qualities unless double or triple glazed. Polycarbonate is light, impact resistant and weather resistant . However, like glass, it has poor thermal insulation, can degrade over time due to sun exposure and isn't biodegradable.

### **Reflection And Future Applications**

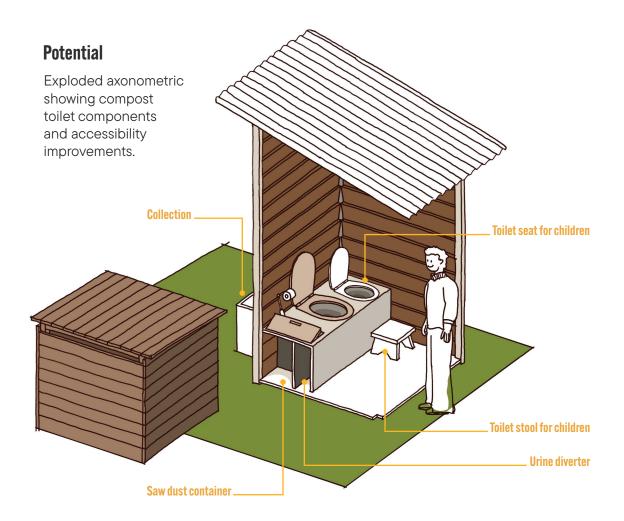
This exploration of the Spider Room demonstrates how the commune can retrofit and enhance existing buildings using locally available materials. By adapting spaces to meet changing needs, the community can extend the life and function of its structures while improving comfort and sustainability.

Over time, this approach encourages a culture of resourceful construction and knowledge sharing, enabling both expansion and continuous improvement of the built environment. Such practices promote resilience and support the development of higher-quality, sustainable living and working spaces across the commune.

#### A MEDIUM INTERVENTION

# **Compost Toilet**

The compost toilet is a low-cost and sustainable solution for human-waste management and reduces water use. The waste can be turned into a nutrient-rich fertilizer for non-edible plant beds to enhance soil health. Maintenance of the toilet can become a community activity. It needs efficient accessibility and proper maintenance.



# **Current Issues**

The existing toilet is not accessible due to the raised platform and relies on a single chamber system that discharges directly into the ground, posing environmental and hygiene concerns.

# **Opportunities**

This intervention supports sustainable living and resource recovery. It contributes to the nutrient cycle through proper treatment, conserves water, and reinforces circular systems. The design encourages education, community participation, and collective maintenance, while improving soil health and putrition.

# **HOW TO USE:**



#### 1. Collection

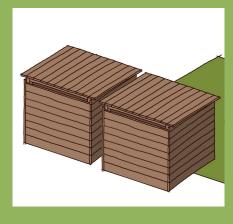
All key images, with text, can act as a 'how-to guide' poster mounted on the toilet

- The diverter inside the bowl separates urine to keep the collected human waste dry and odourless.
- Saw dust can be added from the adjacent container.
- Other accessories:
  - Shovel (to add the saw dust)
  - loilet seat with splash guard (for children)
    - Toilet stool (to adjust height for children)



### 2. Conveyance

- When the container is almost full, the treated waste can be removed from the rear side of the toilet cubicle into a larger compost container, where it can be stored for further breakdown
- This can become a community activity for the people at the farm



### 3. Composting

- The container in the toilet is emptied into larger compost bins where it can be stored until all the pathogens are killed and the manure is ready to be used.
- There can be more than one compost bin depending on the need and growth of the farm.

### **Reflection And Future Applications**

A compost toilet demonstrates the principles of closed-loop resource management. The process of separating and managing waste fosters community participation and strengthens local infrastructure. A well-maintained system also challenges conventional attitudes toward human waste, reframing it as an ecological asset.

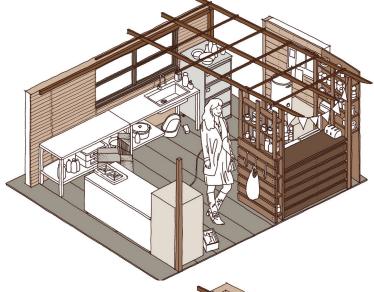
For Bentley Urban Farm, this represents an opportunity to expand communal infrastructure and promote sustainable practice. The composted material can serve as an alternative to synthetic fertilisers, supporting soil regeneration. As the farm evolves, the prototype can be enhanced with improved structural quality, ventilation, and accessibility.

#### A MEDIUM INTERVENTION

# **Kitchen and Cafe**

The kitchen and café area currently serves as the central social space for the commune, being the space visitors generally come to first. It is where members cook and share meals and often host communal gatherings, but has been out of use due to pest issues. Improving this space would enhance food preparation and storage capacity, allowing the commune to cater for larger groups and hold educational workshops on the full cycle of food production, from farm to plate.

### **Existing**



#### **Potential**



# **Current Issues**

The kitchen is not currently fit for regular use due to poor insulation, inadequate heating, and limited storage capacity. The existing rat problem prevents food from being stored safely and compromises hygiene standards. The stove is damaged and unsuitable for meal preparation, restricting the commune's ability to cook communally or host workshops.

# **Opportunities**

Upgrading the kitchen can improve hygiene, functionality, and energy efficiency while supporting communal use. Installing enclosed cabinets, doors, and shutters will create a cleaner, organised workspace. Improved insulation and cooking facilities will enable regular food preparation, and community-based teaching on sustainable food production.



### **Highlight 1: Rat-proofing**

Sealing openings at the front and rear of the kitchen will help prevent rodents from entering. Installing a shutter at the front preparation area, made from reclaimed timber or polycarbonate, and converting open shelves into enclosed cabinets will improve food security. A front door will allow the kitchen to be closed off when not in use.



### **Highlight 2: Space efficiency**

Reconfiguring the layout to create a dedicated preparation zone at the back of the kitchen will reduce congestion during meal times. Replacing the existing rocket stove with a gas or electric stove will free up space for additional storage and larger preparation surfaces, enabling smoother operation and increased food capacity.



### **Highlight 3: Insulation**

Applying cladding and reclaimed mineral wool to the roof walls, and main cooking zones provides a sustainable and non-toxic method of improving thermal comfort, ensuring the kitchen remains usable throughout the year.

### **Reflection And Future Applications**

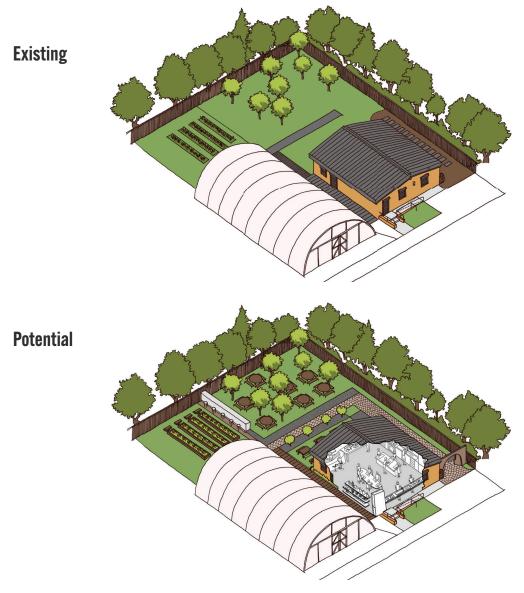
Food holds deep cultural and social significance, serving as a means of connection and communication and is at the heart of the commune's values. Enhancing the kitchen, therefore, goes beyond functionality, it strengthens community bonds and expresses shared values through collective cooking and dining.

This intervention underscores the importance of designing spaces that nurture collaboration, inclusivity, and shared identity. By improving key communal areas such as the kitchen, the commune builds both physical and social resilience. This intervention could also unlock opportunities for future development steps identified by the commune, such as expanding their workshop provision or increasing the scale of meals and events they can host from the farm.

#### A LARGE INTERVENTION

# **Manna Catering Space**

The former Manna catering kitchen has been unused since the tenant's departure, but holds significant potential as a central hub for community outreach, training, and food-related workshops. Its location and size make it well suited for activities that bridge the commune and the wider Bentley community, reinforcing local engagement and skill sharing.



# **Current Issues**

The space is not currently accessible to the commune without council approval, limiting its use for public or internal activities. Any future reopening for food preparation or sale will require compliance with health and food safety regulations. This lack of access and licensing prevents the site from contributing to ongoing community programmes or income generation.

# **Opportunities**

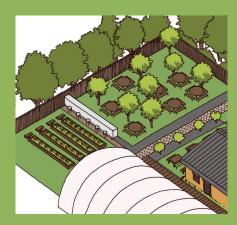
Reactivating the former Manna catering space could transform it into a key point of interaction between the commune and the public. Regular service may create opportunities for workshops, local events, and retail of farm produce. This would generate income for the commune while also promoting sustainable production and community collaboration.



#### **Highlight 1: Accessibility and Security**

Proposed entrance for the public to access the cafe. This serves the purpose of allowing the public to access the cafe without going through the farm. Entrance would be near the school and decorated to accentuate it.

This allows key areas to be cordoned off for security purposes, but still allows the public to access the rest of the farm via the catering building.



### **Highlight 2: Inclusivity and Interaction**

Proposed use of the area behind the kitchen to serve as an outdoor eating space. This provides an area for the public to sit and observe activities that occur on the greenhouses and could possibly attract potential volunteers interested in seeing and participating in the process of "farm to food". This in turn allows an alternative interaction with the farm as well as the commune by consuming their products and seeing how and where the produce is grown.



### **Highlight 3: Catering and Learning**

The acquisition of the catering kitchen could facilitate the opening of a cafe on site, offering seasonal menus based on the produce grown on the farm. The space would also provide the ideal setting for larger workshops, run either by the commune or by members of their wider community, such as cooking or preserving, as well as acting as a base from which to cater for larger external events. A small retail section for farm goods could also create new income opportunities and social connection.

### **Reflection And Future Applications**

This intervention highlights the potential impact of the former Manna catering building for the farm. By transforming it into an active socio-economic hub, a new café in this space could engage the wider Bentley community, enable skill sharing through "farm to food" workshops, and support financial autonomy through sales or bartering. It serves as both a meeting point and a platform for outreach, strengthening connections within Bentley and extending the commune's influence. The acquisition of this buillding could significantly benefit the commune, supporting its ongoing mission of self-sufficiency and community building - a resource not to be overlooked.

# **Existing Farm**

A landscape shaped by collective effort.



Bentley Urban Farm currently operates as a multifunctional community resource, integrating small-scale food production with social engagement and environmental awareness. Its spatial organisation has evolved incrementally, shaped by volunteer numbers, limited funding, and adaptive reuse of available materials. This has created a site characterised by resilience and informality, where each intervention responds to immediate need rather than long-term planning.

The existing configuration demonstrates the strength of grassroots action but also reveals spatial inefficiencies and fragmented circulation. Certain areas are underused or lack defined purpose, and infrastructure constraints limit the scale of community activities. Despite these challenges, the farm remains a vital local institution that fosters participation, skill sharing, and environmental responsibility.

# **Potential Farm**

A framework for growth, collaboration, and resilience.



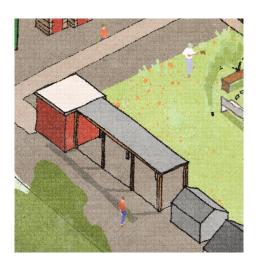
The proposed vision reimagines Bentley Urban Farm as an integrated system of cultivation, learning, and exchange. The design emphasises clear spatial organisation, defined circulation routes, and flexible zones for growing, making, and gathering. Each area is structured to support both production and participation, creating an environment where food, knowledge, and social connection are equally prioritised.

The proposal strengthens relationships between the commune, visitors, and the wider Bentley community. Through improved accessibility, shared facilities, and educational programming, the farm becomes a model for regenerative urban practice - where ecological care and community development operate in tandem. This vision positions the site as a catalyst for local resilience and a demonstration of sustainable urban living.

# **The Future of Bentley Urban Farm**

Exploring further potential uses and future development opportunities





### 1. Woodworking Area

The existing woodworking shop requires repair and restoration. Once upgraded, it could function as a workshop space for training, fabrication, and small-scale production, supporting both skill development and local enterprise.



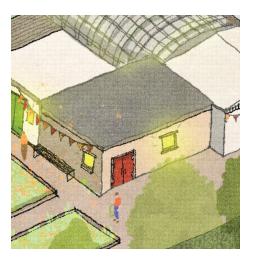
### 2. Stage / Music Area

This area could host cultural and artistic activities such as music, theatre, and spoken-word events. Establishing it as a flexible performance space would increase creative engagement and provide a platform for emerging local artists.



### 3. Compost Area

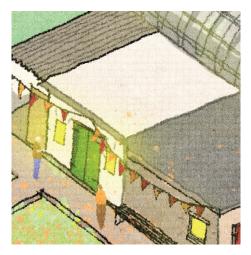
The compost heap is a key part of the farm's productive cycle. Improving access and organisation would strengthen waste management and soil health. It can also serve as a teaching space for sustainable practice.



#### 5. Office

The office functions as the administrative base for both the commune and the Doncopolitan newspaper. Reorganisation and refurbishment could improve functionality, storage, and environmental comfort. Additional ventilation and natural light would enhance working conditions.

A new window, door, and signage have been added for usefulness.



### 4. Reading Room

The reading room is well insulated but requires improved lighting. It could serve as a community venue for reading groups or workshops, fostering engagement between the commune and the wider Bentley community.



#### 6. Greenhouse

The greenhouse requires clearer signage to help identify crops and support educational activities. It could serve as a teaching and demonstration space for new members and visitors, promoting understanding of sustainable growing practices and the farm's food systems.

# **Materials Library**

This section lists examples of low-impact and reclaimed materials that can be sustainably sourced and used in construction. Live project team 11 have collated these materials to create a library for Bentley Urban Farm to refer to in future construction ventures to develop the farm.

### **Structural Materials**



#### **Reclaimed Bricks**

How to source reclaimed bricks:

Nearby reclamation yards or local construction sites. At construction sites where demolition is taking place, this is a good opportunity for BUF to reclaim with permission. Brick fabric also relates nicely to the mining history in Bentley.

Ideas for uses of reclaimed bricks: Planter edges, pathways and walls.



#### **Recycled Car Tires**

How to source recycled tires:

Can be retrieved from skip yards and also local motor businesses. This saves them going to landfill.

Ideas for uses of recycled tires: Small planters, walls, foundations and retaining walls.



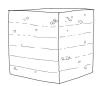
#### **Straw Bale Construction**

How to source straw:

There is an abundance of straw in the UK as it is not allowed to be burnt. This is a useful renewable resource that is efficient in construction and reduces waste. Straw bale construction has structural and insulation benefits.

Ideas for uses of straw:

Walls (timber main structure required) and temporary seating solutions at events.



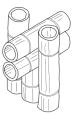
#### **Rammed Earth**

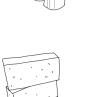
How to source rammed earth:

To use earth from the local area for rammed earth construction, the quality needs to have an ideal combination of sand, clay and gravel.

Ideas for uses of recycled tires:

Wall, planter encasements and floors.





#### **Bamboo**

How to source bamboo:

Can be grown on site, and become a cyclical resource for the farm.

Ideas for uses of bamboo:

Roof joists, decking, walls and fences.

### **Hempcrete Blocks**

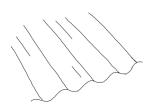
How to source hempcrete:

Hempcrete blocks can be made by hand by mixing hemp hurd, water, and a lime based binder. The solution then needs to be compacted into a mould.

Ideas for uses of hempcrete:

Walls (structure needed) and planter edges.

# **Roof Materials**



#### **Recycled Corrugated Plastic**

How to source corrugated plastic:

Corrugated plastics can be used in various single-use applications, including transportation and packaging. Reusing this reduces embodied carbon of construction.

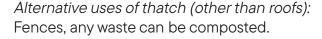
Alternative uses of corrugated plastic (other than roofs): Cladding, room separation and planters.



#### **Thatched Roof**

How to source components for thatched roof:

Thatched roofs can be constructed from various materials including straw, water reed and sedge which are all local to Doncaster.





#### **Reclaimed Roof Tiles**

How to source reclaimed roof tiles:

Similar to reclaimed bricks, pre-used roof tiles can be found on construction sites and reclamation yards.

Alternative uses of roof tiles (other than roofs): Claddings, planters and pathways.

# **Insulation Materials**



### **Recycled Clothes Insulation**

How to source recycled clothes insulation:

Used clothes that have been loved to unusable status can be collected from the commune and also the wider community in Bentley in the form of donations. The used clothes can be shredded into fibres to form the insulation. This prevents the clothes ending up in landfill.



#### **Sheep's Wool Insulation**

How to source sheep's wool insulation:

Sheep's wool insulation is renewable, natural, biodegradable and has a highly efficient u-value rating. Additionally, it can be sourced locally from farms in Yorkshire,



#### **Hemp Wool Insulation**

How to source hemp wool insulation:

Hemp can be sourced from the UK, is a renewable material and when grown absorbs a high level of carbon dioxide. Hemp wool is made from the wood fibres found in hemp plants. The insulation has low conductivity and therefore performs well at thermal control.

# **Cladding Materials**



#### **Reclaimed Timber Panels**

How to source the timber panels:

Timber panels for cladding can be sourced from old barns, factories, transportation pallets, or demolitions. This is an abundant resource in the UK and is already utilised at the farm.



### **Corrugated steel or plastic**

How to Source the corrugated steel or plastic:
Corrugated sheets are versatile for quick installation.
Corrugated steel is galvanised to avoid the formation of rust on the surface and plastic is lightweight and non-corrosive.
Corrugated sheets can be recycled from salvage yards, reclamation yards and construction sites.





Completed As Part of Live Projects The University of Sheffield & Bentley Urban Farm