

A hand is shown placing a white paper house on a grassy field. In the background, there are white paper figures of people holding hands. The scene is set against a blurred green background.

SUSTAINABLE MATERIALS

Rachel Trend

Native Chartered Architects

NATIVE



THE ASSOCIATION OF
STRAW-BALE BUILDING UK
www.strawbalebuildinguk.com



www.nativearchitects.com





Hands on – self builders

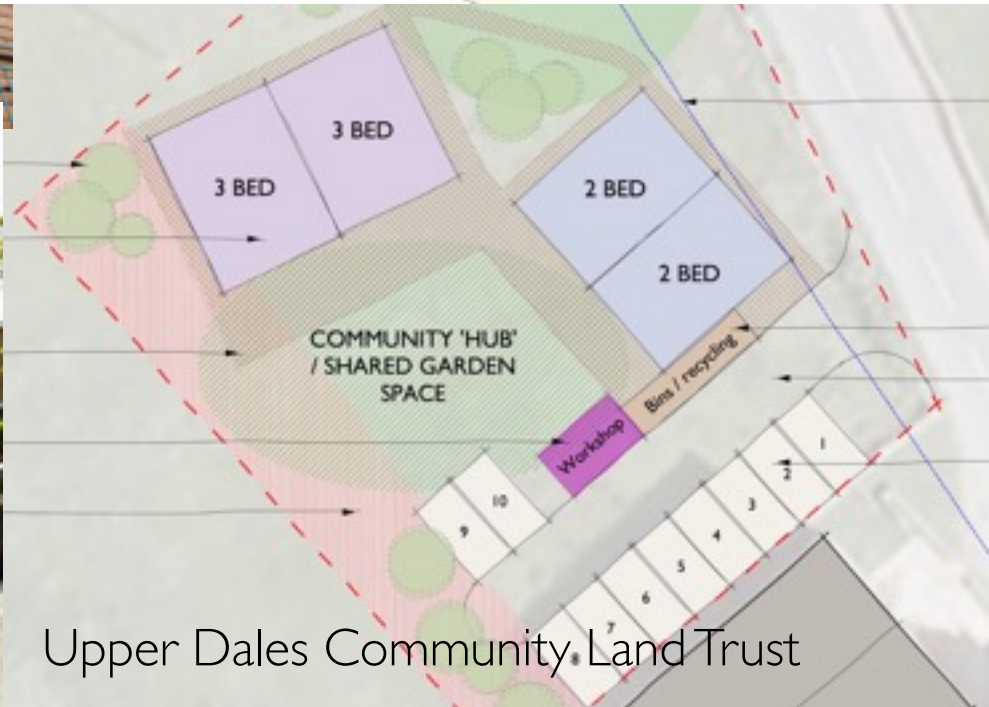
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Bedale



YorSpace - Lowfield Green

Husthwaite Village Hall



Upper Dales Community Land Trust

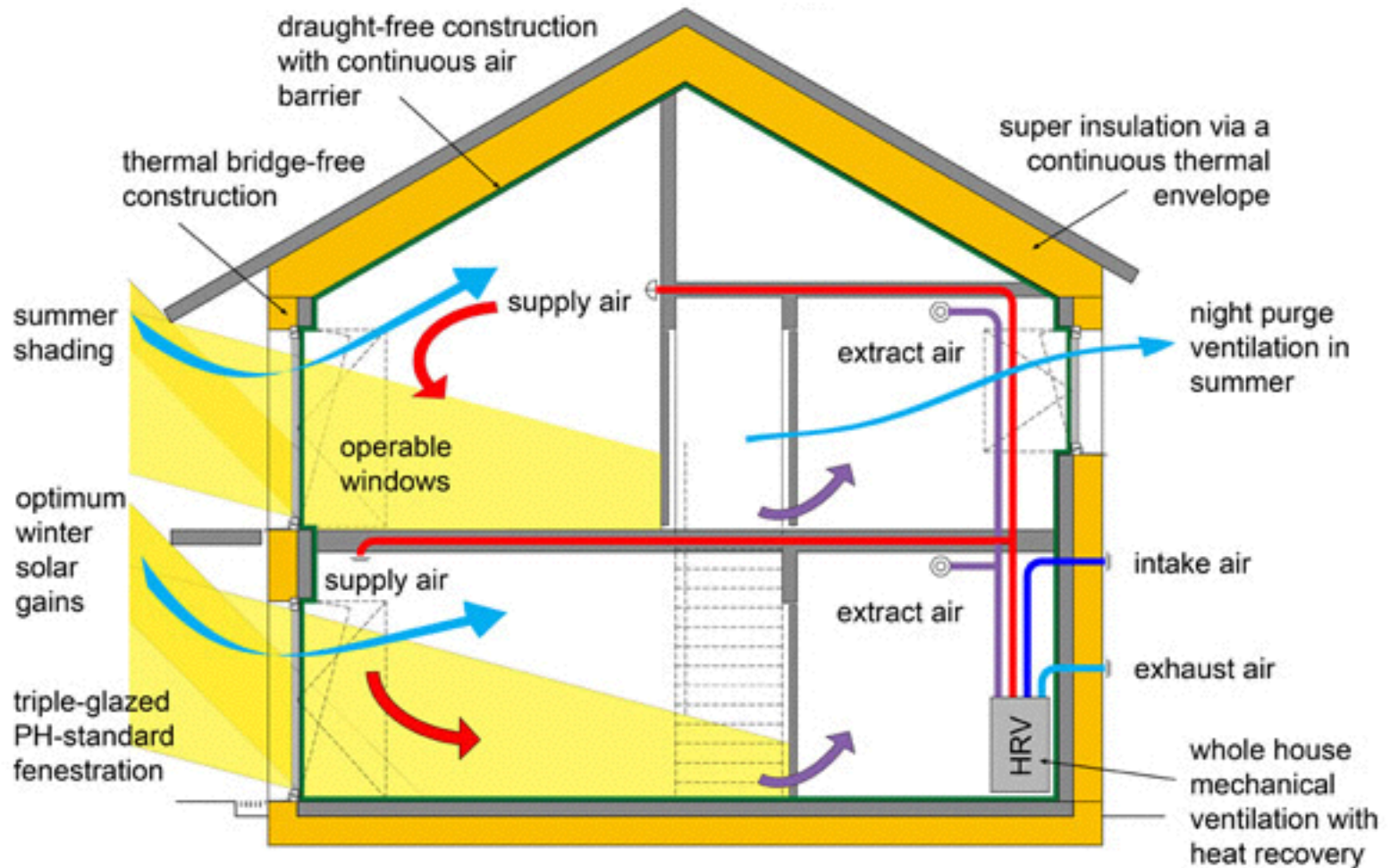
Community Engagement

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- Why should we use alternative building materials?
- What natural materials can we use in construction?
- How do we use natural materials in construction?
- Case studies from Native Architects
- Any questions?



Passivhaus Principles



Sustainable construction?

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Life cycle of buildings

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1. Reduce building co2 emissions
 - In use
 - In construction
2. Reduce waste
 - Resources
 - Cradle 2 Cradle
3. Enhance building occupant health and comfort

Why sustainable materials?

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Conventional materials

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- Energy intensive
- Toxic
- Polluting
- Non-renewable
- Non-recyclable
- Performance and durability
- Internal air quality

Conventional materials

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Natural materials

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- Reduce embodied energy
- Non-toxic
- Carbon sequestration
- Renewable
- Performance and durability
- Breathable construction

Natural materials

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Straw

NATIVE



Straw bale workshop
- Native offices, 2009

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Straw House
- Whenby 2014/2015

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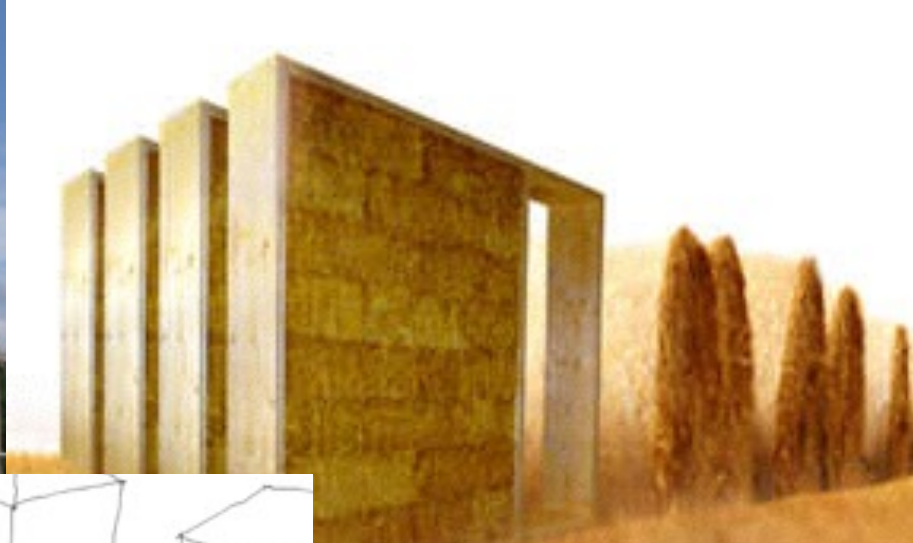
Straw House
- Whenby 2014/2015

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Straw House
- Whenby





Prefabricated Straw





Hempcrete

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Mixing Hempcrete

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In-situ Hempcrete





Farm near Tadcaster

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Farm near Tadcaster

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Hemp Cottage
- Isle of Colonsay

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Hemp Cottage
- Isle of Colonsay

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Pre-cast Hempcrete

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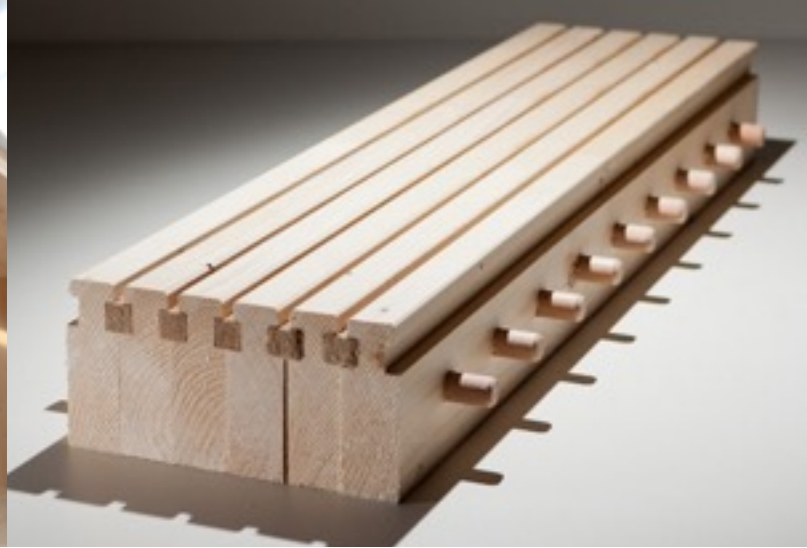
William's Den





Timber composites
and wood fibre insulation

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Timber

NATIVE



Earth

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- Sustainability is important at every stage of a building's life cycle
- Natural materials have a low embodied energy and perform well thermally
- Natural materials have benefits for occupant health and comfort
- Consider the supply chain and training
- Innovation in natural materials leading to larger scale mainstream projects