



Architectural designers
Natural building specialists
Trainers



Building Healthy Homes with Straw and other Natural Materials

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Strawbale houses are far more than just houses with walls of straw



They are made entirely of natural materials



Plant or bio-based materials with low embodied energy

- Earth, clay, cob, adobe
- Clay plasters
- Timber/wood
- Strawbales
- Unfired brick
- Sheepswool, hemp
- Recycled paper & cotton
- Stone, sand and gravel



Other natural materials

Products made from plant/bio materials but more processed

- lime render
- recycled foamglass
- fired bricks
- Linseed oil based sealants and paints
- Lime and clay based paints
- Woodfibre board
- Smartply/Elka/Egger board (formaldehyde free OSB)
- Panelvent (structural board)



In combination these materials bring these qualities to a strawbale building



- humidity regulation – natural plasters
- excellent indoor air quality – no toxic off-gassing
- fresh air – breathable wall systems/passive/active ventilation
- ambient temperature – thermal storage
- peace and quiet – excellent sound insulation
- quality of light – graduated by deep rounded reveals
- beautiful surroundings – simple organic finishes
- ownership – participation in the build

Loadbearing strawbale house in Dorset, 2015



Infill strawbale house in Norfolk, 2013



Loadbearing strawbale Community centre in Wakefield, 2004



Smaller strawbale buildings



Owlery and Story telling hut

All year round garden building





Specific healthy qualities of strawbale buildings

- **Vapour Permeable (Breathable)** strawbale walls with lime/clay plasters and paints – allow passage of vapour = positive effect on indoor air quality, allowing air exchange from the outside without creating draughts or losing heat.
- **Hygienic** - lime plasters help prevent bacterial growth and moulds.
- **Absorb toxins and smells** - clay plasters create healthier IAQ.
- **No mould growth or condensation** – due to the hygroscopic properties of clay and lime plasters and paints, their ability to absorb excess moisture in the air and to release it as humidity levels drop
- **Thermal insulation** - help create warm and cosy living spaces that feel good to inhabit with no toxic off-gassing.
- **Acoustic insulation** - help create a peaceful home with no toxic off-gassing.

Natural Clay plasters



Healthy and non toxic, absorb
odours
Regulate humidity

User-friendly
Beautiful!

No Condensation!

Natural Lime renders



Hygienic, long lasting, natural, regulate humidity
Excellent weatherproofing properties
12,000 year history

Strawbale Council Houses 2008



Extremely thermally efficient:

U value of walls 0.11

Airtightness/air exchange of 2.62

Have reached air exchange of 0.26 on loadbearing straw passive house

The first 2 storey loadbearing house in the UK



Grand Designs Eco-Home of the Year Award 2008



Penwhilwr, Wales - built
2003-7

built for £70,000

Healthy on the pocket!



Sworders salerooms (Fine Art and Antiques) 1100 m² Stansted Mountfitchet 2007



**Maintains an ambient temperature throughout the year
Saves the company 75% on heating bills from previous premises**

Strawbale houses are easy to build



And don't require a timber framework!

Raleigh's Cross, Exmoor – a two storey semi-detached loadbearing straw house



A few advantages of building with strawbales

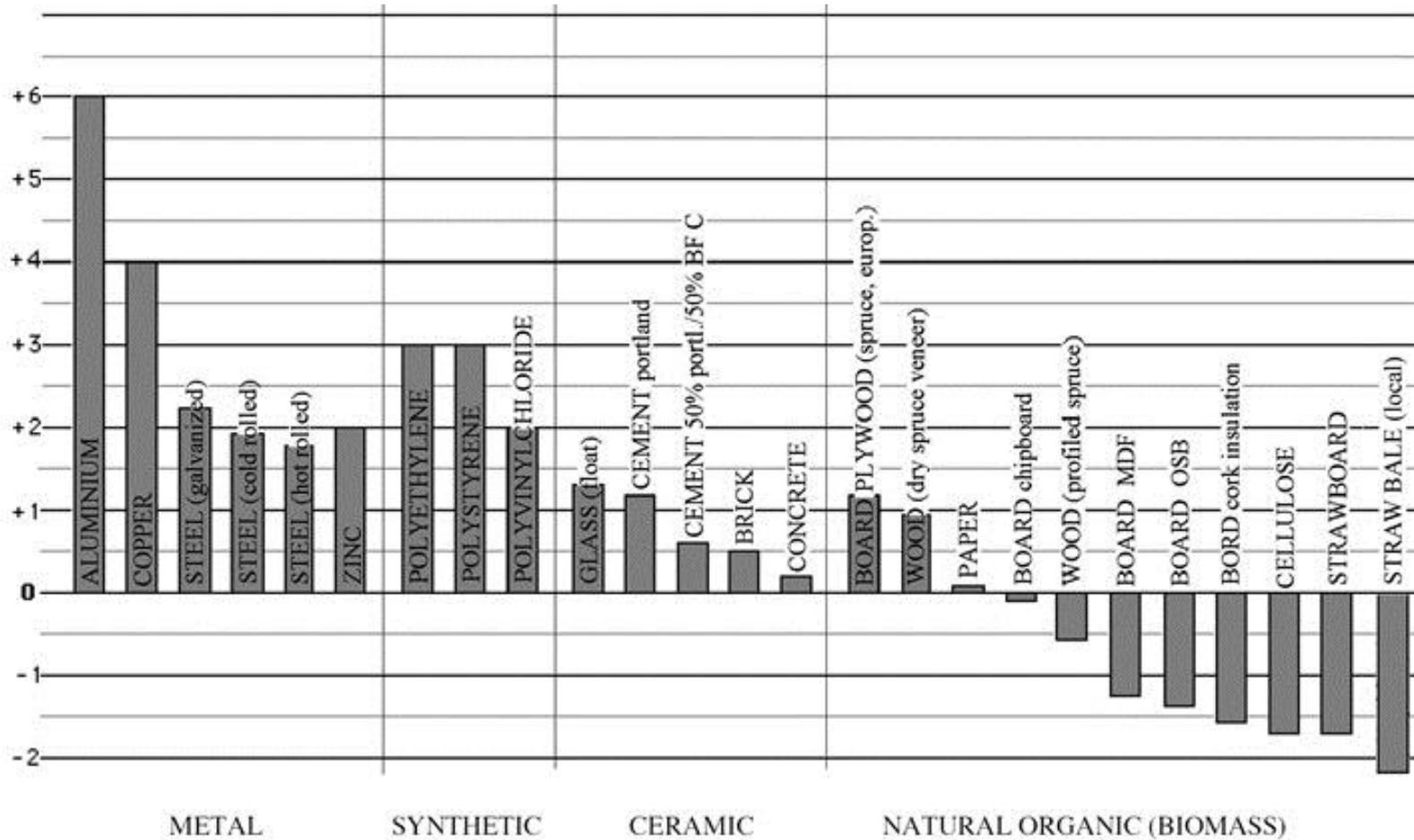
- Extreme energy efficiency – can reach passivhaus standard and beyond – U value of walls 0.11
- Stores latent heat – efficient thermal mass in walls
- Greatly reduced long term running costs
- Stores carbon and uses 85% low embodied energy materials
- Affordable – high quality self build 2 bed house for £60,000, contractor built for £130,000
- Plentiful materials, no need to change agricultural policy
- Healthy, all natural materials also increase feelings of well-being, happiness and contentment
- Could solve the housing crisis!

The School of Natural Building (SNaB) teaches practical skills to all age groups



Natural Building makes us happy

Net CO2 pollution [kg] emitted by production of 1kg of 25 common building materials



(MacMath, R., 2000, CARBON DIOXIDE INTENSITY RATIOS: A Method of Evaluating the Upstream Global Warming Impact of Long-Life Building Materials)



Cuerden Valley Park Visitor Centre the UK's first LBC registered project



The Living Building Challenge: a new and rigorous environmental standard
www.living-future.org/lbc

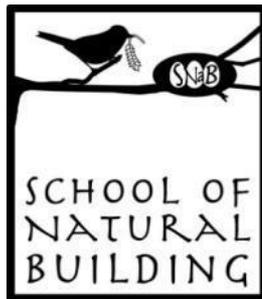
The Todmorden Strawbale Hotel

Bringing Affordable, Beautiful and Healthy
Accommodation to Todmorden's Visitors!





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