Strawbuild

straw - sustainable, local & annually renewable



Nearly half of all the energy produced in the world is used to make and move construction materials

The making of 1 tonne of cement releases 1 tonne of CO2 (greenhouse gas) into the atmosphere

Using straw to build walls creates a net carbon GAIN/better than carbon zero

Grow and build your own bio degradable house!

CO2 emissions associated with production of new construction materials



Production of new construction materials accounts for approximately 11% of globa CO₂ emissions. (United Nations, 1999) Cement production is responsible for 7-10% of total CO2 emissions worldwide (Building for the Future, McLeod, 2005)

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



Upstream Global Warming Impact of Long-Life Building Materials)



Natural Local materials

earth and straw

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Lime Stabilised Earth

Local Lime Production

The Alhambra Grenada, Spain c1300

strawbuild - why





raw materials.....

- simple & cheap
- energy efficient
- bales of straw
- coppiced hazel



strawbuild - why



raw materials.....

- sustainable
- natural clay
- traditional lime



good hat, good pair of boots... and a good 'breathable' weatherproof jacket





strawbuild - why

- Beautiful hand crafted or flat contemporary
- High performance buildings
- Superinsulation
- 0.12 W/m2K U value walls





strawbuild - why



- Accessible and annually renewable
- affordable
- Multi-tasking:
- Insulation, building block & surface for plaster – all in one

strawbuild - why building



simonton house 1903 - nebraska



Durability



fueullette house, 1921 - france

strawbuild - why

Flexibility of Design



Wales 2001 - tono

Quebec 1993 - pelletier



strawbuild - why low fire risk



- tests with BRE 2004
- withstands fire for 2hr 40mins
- outperforms most modern materials
- fulfills B.regs for commercial buildings

strawbuild - why... and how !



- community building
- team work
- ownership

raw materials.....

- fun!
- enthusiastic help
- empowering







Recycled Materials - Rammed car Tyre Foundations

Clow Beck Centre 2002/3



- full planning & b. regs
- car tyre foundations
- loadbearing
- lime plaster



- walls built in 2 weeks
- volunteer workforce

Brin Edward's art studio, Suffolk, 2008





Allotment Building Wakefield 2007

Story telling hut, Assington Mill, Suffolk, 2007

South Pembrokeshire Self build from 2010



Michael Howlett michael@strawbuild.org



2 x two storey, 3 bed, semi detached loadbearing strawbale houses onto rammed car tyre foundations in an urban street

facebook.com/Pembroke Dock Eco Houses



Raleghs Cross Inn, Exmoor 2008

semi detached 2 storey strawbale loadbearing houses, exmoor, 2009



ecology building society 2005



- building regs approval for low-impact shallow foundations
- insulated limecrete
- no cement
- no plastic damp proof course
- no deep trenches

Ecology Building Society 2005



- loadbearing strawbale
- clay plaster
- lime render

- circular meeting room extension to new building
- working with local contractors and volunteers







techniques:

loadbearing



techniques:

infill









External Strawbale Wrap of existing block building for Schumacher College & Dartington Hall 2012




strawbale mobile home 2006 with Carol Atkinson





Give the walls good haircut

Reduce risk of surface flame spread Good key for plaster



plastering & rendering



- humidity regulation
- safe internal living environment

- Plasters must be permeable
- weatherproof –v- waterproof
- Lime or clay is ideal





Expert Plasterers











advantages of straw as superinsulation with solar passive design and good placing of thermal mass = top energy efficient homes
vastly reduced - little or no need for heating in winter or cooling in summer











passive solar design with local, natural materials for affordable, sustainable, carbon zero and zero energy homes

semi detached affordable housing, 2009 & 2011 north kesteven district council waddington and Martin



loadbearing strawbale 2 storey council housing





national trust – windermere 2006























the footprint - National Trust, Windermere

the national trust 2006 strawfootprint.org



 natural, local, sustainable materials.

 windblown oak, car tyres, sheep's wool and straw

• and a great process ...







sworders auction rooms & office - 2007





sworders salerooms, stansted mountfitchet 2007

One of the buildings we have been involved in, the largest strawbale building in the UK, a saleroom of 1100sq.m built for Sworders Ltd, has just won the Sustainability Award from the East of England RICS.





mongolia

health clinics and schools 2000









China – world habitat award 700+ strawbale buildings across north west china









2 storey loadbearing spiral house, Co Mayo, Ireland 2000



Penchwllwr, St. Dogmaels, Wales 2004/5







sue and richard Nicol's garden shed, wakefield, 2007

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westonbirt 2005 award winning design with 'reckless orchard'









UNR2 2009-03-30 1 2:1 7:01


long-term carbon storage

"the **average UK home** produces **50 tonnes of CO2** during its construction."

Research done by Carol Atkinson

one 16kg straw bale stores about 32kg of CO2

it takes 350 bales to build a typical 3-bed house

this building then **stores** about 12.25 tonnes of CO2 in its fabric.



Wihan 2007



quality spaces that won't cost the earth

facebook.com/strawbuild

courses volunteer opportunities



Strawbuild

