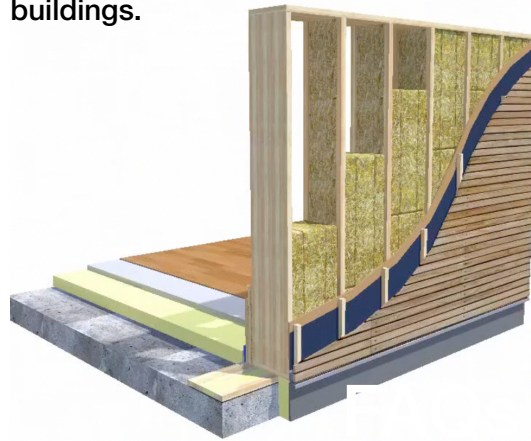


FAQs

ModCell is a sustainable, prefabricated straw wall and roof panel system designed for use in retail, offices, schools, housing, and commercial buildings.



ModCell® FAQs

What about fire? ModCell® Straw is tightly packed and enclosed within a structural timber frame, i-joists, sheathing board on the inside surface of the panel and breather board on the outside surface of the panel. This forms a fully enclosed panel with no straw visible. Fire needs a ready supply of oxygen to burn and without it, no combustion will occur. The panels provide a near airless environment, so fire resistance is very good. All ModCell panels offer 60+ minutes of protection. Final visible internal and external surfaces will increase these levels though the fire resistance levels they offer.

What about infestation? Straw contains very little nutritional value and will not, in itself, support a pest population. The density of straw discourages rodent activity. Infestation can only occur when a panel has been damaged and straw is open to the outer atmosphere.

Won't the straw decompose? ModCell® panels are designed to be breathable and prevent the build up of humidity levels. It is high humidity levels that cause decomposition to take place. It has been

established, independently, that straw has the potential to decompose when the moisture content exceeds 25% for an extended period of time. To ensure a high level of confidence, it is generally accepted that straw moisture content should not exceed 20%. As a result of the breathable nature and design of the ModCell® panels, moisture levels inside the ModCell® panel rise and fall in synergy with the surrounding environment, preventing the risk of decomposition. Research at the University of Bath has shown that the moisture content in ModCell® rises and falls on a daily basis with an average figure of 15%.

What about damp? ModCell® is delivered to site as fully closed and weather proof panels. Moisture content levels are measured at the factory gate. Research has shown that damp is kept at bay naturally as part of the breathable properties of the materials used.

What sizes do ModCell® panels come in? There are no standard sizes, as such designers are free to design as they like. The structural engineering and spread of flame/acoustic requirement of the project will dictate the size. This work is completed by ModCell® as part of package included in our overall costs.

Can I get curved panels? Yes, we can curved panels depending on the tightness of the radius. If you require these please contact ModCell® to discuss your specific requirements.

How thick are the panels? ModCell® Core panels are currently available in 3 depths:

Panel depth	Straw depth	U-value
427mm	400mm	0.13 W/(m2K)
377mm	350mm	0.14 W/(m2K)
262mm	235mm	0.19 W/(m2K)

ModCell® Core at above depths are plus battens and depth of cladding on both the internal and external surfaces.

Does ModCell® help towards the thermal mass of the building? ModCell® has an optimum combination of mass and super insulation.

What are the u-Values?

ModCell® Core 427mm	= 0.13
ModCell® Core 327mm	= 0.14
ModCell® Core 262mm	= 0.19

ModCell® panels can deliver an airtight construction to PassivHaus specifications if required. As a result, buildings using ModCell® can help deliver zero heat requirements, saving money and CO₂ emissions. BaleHaus® at Bath has an air tightness over 10 times better than current regulations require at 0.86m³/h/m² at 50Pa.

What about Carbon? ModCell® panels are carbon positive. A typical ModCell® Core 427mm panel has the equivalent of 1400kg of atmospheric CO₂ locked up in its fabric. A typical two storey BaleHaus® of 94 m² banks almost 43 tonnes of atmospheric equivalent CO₂.

How are ModCell® panels made? The structural timber frame is 'infilled' with straw between i-joists,, compressed. The wall is then clad with timber or other client chosen cladding materials

What are ModCell® panels made of? Straw, FSC/ PEFC certified timber materials. They are precision-engineered using modern methods of construction (MMC).

Are ModCell® panels sustainable? Yes, ModCell® panels are made from almost 100% renewable materials. ModCell® Panel frames are constructed using certified legal and sustainable timber using FSC or PEFC certification as standard. All straw, which is an annual 3m tonne by-product of the agricultural industry, is untreated. At end of life the panels can be disassembled and all elements either re-used, recycled, used as biomass or safely composted.

Is there waste from the manufacturing process?

Straw trimmings are reused in other panels and rejected material are composted, used as bedding for farm animals or recovered as biomass. Cut materials from the frame manufacturing process are used in the factory's biomass boiler. Cut waste is minimal as each panel is CNC cut from larger sheets. Lime render is spray applied with almost no residual

waste. Offcuts of stainless steel for the fixings are minimised by design but are collected and recycled.

Do ModCell® panels cut noise levels? Yes

Panel depth	Straw depth	Acoustic
427mm	400mm	50db
377mm	350mm	48db
262mm	235mm	45db

How heavy are ModCell® panels? Weight varies by panel size. 3m x 2.7m weighs approximately 750kg.

Are there different finishes available? Yes. The panel is able to accept all types of external surface finishes; including timber, stone, brick, metal, magnesium board, render carriers etc.

How do you incorporate essential services like power and data? ModCell® Core allows for services to be installed in the void created by the battens between the internal face of the panels and the internal finish layer/plaster board.

Are ModCell® panels structurally load bearing? Yes. On all building types ModCell® panels are structural up to 3.5 floors high. Over 3.5 floors progressive collapse design requires an independent frame into which ModCell® infill panels can be secured.

How high can you build with ModCell® panels? There is no limit to the height of buildings in which ModCell® can be used.

Can I use ModCell® within a structural frame? Yes, ModCell® can be used with timber, steel and concrete frames.

What is the lead time? 12 - 16 weeks from confirmed order subject to design freeze and factory fabrication slot being available.

Do you build ModCell® panels onsite? No, ModCell® is an offsite prefabricated panel system.

Where are ModCell® panels made? ModCell® Panels are either fabricated in regional manufacturing units or within a local 'Flying Factory™'. If 'Flying Factory™' option is chosen we endeavour to assemble the ModCell® panels within 3 - 15 miles of the construction site. Using local skills labour and materials, we keep more of the project's value within the local economy and reduce CO₂ emissions.

What quality controls do you have? ModCell® is an ISO 9001-2015 certified company. Panels are entirely manufactured and assembled under controlled conditions. The quality of each panel is assured and signed off at various stages during manufacture. ModCell® is delivered to site as fully closed panels. Moisture content levels are constantly monitored throughout the manufacturing and delivery process.

How long do ModCell® panels take to install? A typical 3 bedroom house can be erected and made watertight in 5 days.

What equipment is needed to install them? On construction site – Crane or telescopic lifting device. Scaffolding.

Can I buy them in kit form? No. Currently manufacturing quality controls prevent the manufacture outside of factory environments. Although we are happy to engage with community groups and individuals who want to assemble panels. This would be after appropriate training and supervision.

Do you supply to self builders? This is dependent on the size of the development and will reviewed on a case by case basis.

What delivery packages does ModCell® offer? ModCell® is able to offer a number of delivery packages including: Supply & Fit; Design, Supply & Fit; Full turnkey (subject to location).

How much do they cost? Costs are dependent on three criteria:

- 1) Size of project
- 2) Location of project
- 3) Complexity of project

What other services can ModCell® provide?

CPD training on the ModCell® system.
Full design indemnified architectural and structural engineering services via our sister companies
Energy strategy and modeling.
Sustainability consultancy.
Offer advice and guidance to existing design teams.

How long do they last? Life cycle would be the same as a traditionally constructed building. At end of life they can be

easily reused or disassembled. Straw and wood are biodegradable and can be used as biomass. All metal fixings can be recovered and recycled. There are a thousands of straw bale buildings throughout the world, some of which are over 120 years old.

Where can I get my building insured? There are a number of insurance brokers who offer insurance, an example is M & DH Insurance Services Ltd (www.mdh-insurance.co.uk).

Do you supply complete building packages? Yes ModCell® are able to offer a number of different whole building solutions across market sectors. Please see the following brochures for more information:
ModCell® Renewable Schools;
ModCell® Renewable Retail;
BaleHaus® by ModCell®.

Where can I see one? There are a number of locations in the UK. These include:

St Bernard's Road, Bristol - Residential
Nucleus Building Hayesfield School, Bath - School
Inspire Bradford Business Park, Bradford. - Commercial
May Park Primary School, Bristol - School
Weydon School, Farnham, Surrey - School
Straw Bale Café, Holme Lacy Hereford - Commercial
Waterfoot Primary School, Waterfoot - School
Castle Park Primary School, Caldicott - School
Think Low Carbon building, Barnsley - College
LILAC CoHousing Project, Leeds - Residential
Faculty of the Built Environment, UWE, Bristol - University
Torfaen EcoBuilding, Cwmbran - Local Authority office
York EcoDepot, York - Local Authority office
Knowle West Media Centre, Knowle West, Bristol - Community

Contact us to arrange visit or find other locations.

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