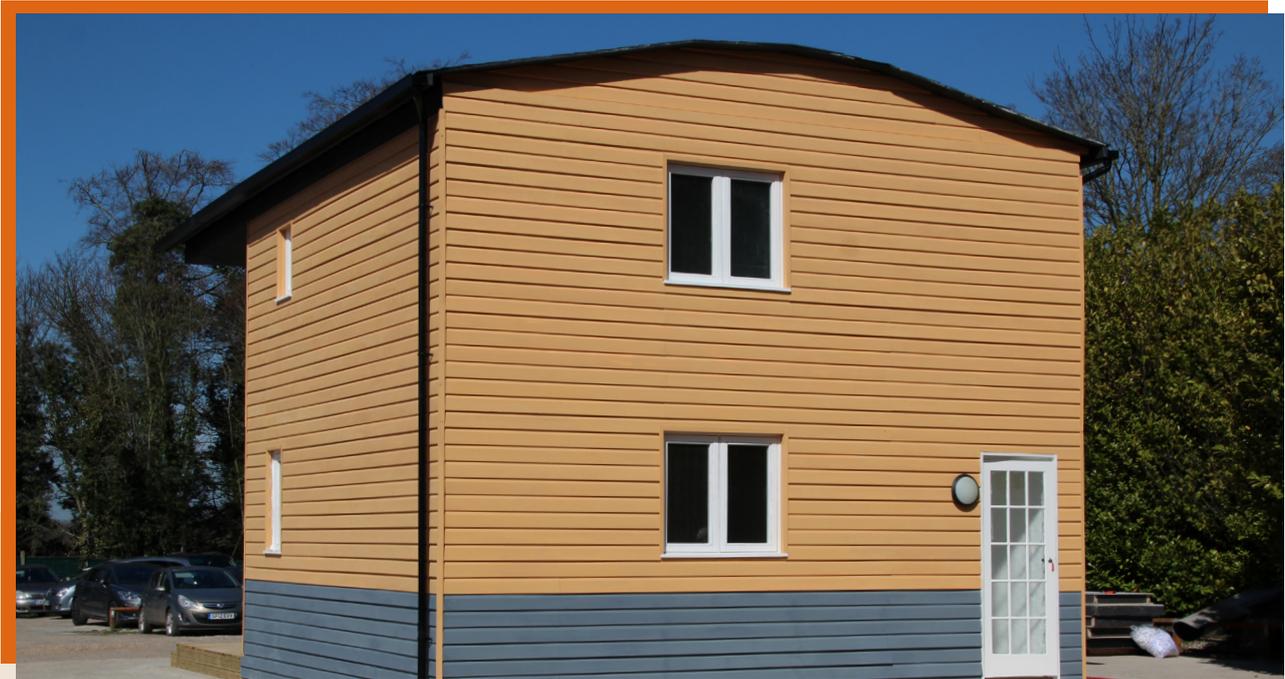


A FIRE RESISTANT ECO-HOUSE BUILDING SYSTEM



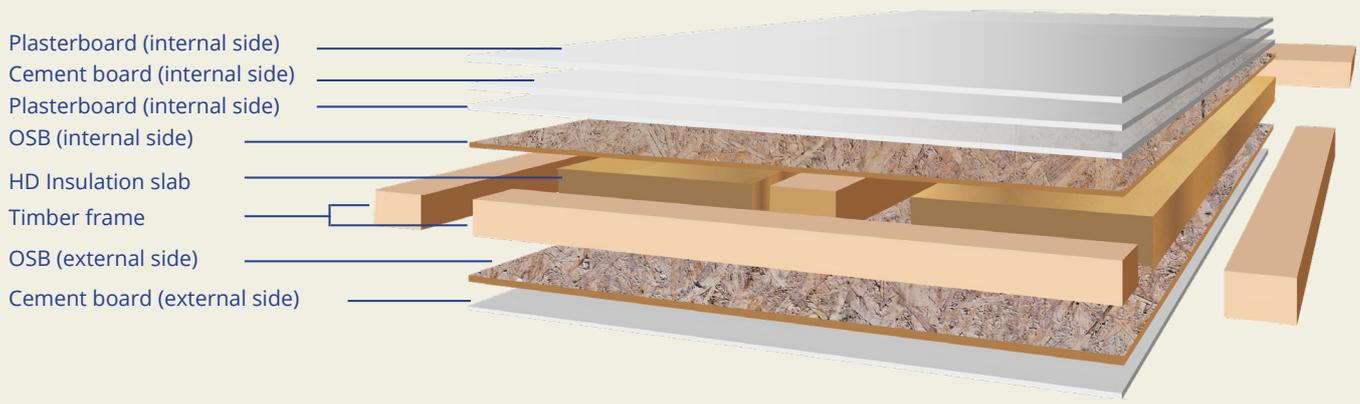
The effects of climate change are becoming increasingly evident, from heatwaves and wild fires to floods and violent storms. In the fight against the elements, the UK government announced the impending end of gas boiler installation in favour of lower carbon heat pumps but, in addition to the cost of the pump itself, additional upgrades required will include new radiators and increased insulation, making the transition enormously expensive.



As an alternative for new build projects, EnviroEcoWall panels offer a modern method of construction for domestic bungalows, houses and flats plus industrial units. They are made from eco-friendly materials and meet all of the following requirements:

- ◆ FIRE PROTECTION FOR ALL BUILDINGS - 3 HOURS & MORE
- ◆ IMPACT & AIRBORNE SOUND REDUCTION TESTED BY BTC (40 (-2;-6) dB & 45 (-2;-7) dB)
- ◆ THERMAL RESISTANCE TESTED BY BBA (r value 2.05 m²KW⁻¹)
- ◆ AIR PERMEABILITY TESTED BY SOUND & AIR (1.15m³.h⁻¹.m²@50Pa)
- ◆ UNIQUE METAL SUBFRAME TO HELP PROTECT FROM FLOODING
- ◆ MADE IN THE UK

To protect against flooding, the structure is supported on a metal frame that can, if conditions dictate, be raised - fully furnished - to a new level at a later date. All metal and wood floor elements are wrapped in specially made silicon cloth so no water can penetrate the ground floor and all other metal and wood materials are wrapped in a specially made glass cloth that is impregnated with Aluminium and coated with our black intumescent coating so it will never burn, rust or rot.



EnviroEcoWall is our unique pre-engineered, insulated, load bearing panel system designed to form a fireproof building envelope. It replaces traditional construction methods by combining structure, insulation, air and vapour barriers into one, prefabricated component.

THE PANELS - Literally, at the very core of each EnviroEcoWall panel is our non-combustible insulation slab - a durable and stable high density material that provides excellent fire protection and, thanks to its tightly woven fibres that help to reduce the transfer of heat and sound, great acoustic properties and outstanding thermal performance.

The design of EnviroEcoWall's timber framing negates the need for additional fillets or splines; the panels slot together seamlessly and are secured with our high performance adhesive and mechanical fixings.

FIRE RESISTANCE - All timber framing, OSB and plasterboard are treated with two coats of intumescent paint. EnviroEcoWall panels are completely fire resistant, tested to over 3 hours with a load of 3,900kg.

HEAT & SOUND - The panels have been extensively tested to evaluate their performance in insulating against the transmission of heat and sound, please see the table on page 4. Air leakage associated with traditional construction and timber frame is virtually eliminated when using EnviroEcoWall Panels thanks to the large format nature of the panels and the resulting small number of joints in the structure, so the house requires little, if any, mechanical heating or cooling measures.

FLOOD PROTECTION - Our EcoHouse is constructed on a purpose-built steel sub frame that helps to protect the superstructure and building contents from damage caused by flooding. The sub frame is wrapped with fire resistant material for additional protection and, should prevailing weather conditions become more severe over a period of time, the height of the sub frame can be increased to permanently expand ground clearance of the entire building, even after construction!



COST EFFECTIVE - Using our EnviroEcoWall panel system is more cost effective than traditional building methods. Whilst some of the materials may initially be more expensive, the speed of construction combined with the drastic reduction of on-site waste make it more cost effective overall. In addition, the finished build offers the added benefit of improved thermal efficiency therefore saving money on heating bills in the long-term.



EASY REFURBISHMENT AFTER FIRE - Should a fire occur in one room, our development testing showed that the amazing fire-resistant properties of the EnviroEcoWall panel system are able to contain the fire, stopping the spread to other rooms and eventually forcing the fire to extinguish itself. Thanks to this successful fire limitation and the absence of water damage that would have normally been caused by fire fighting measures, repair and renovation is quick, easy and, therefore, much more economical.



Once the burnt furnishings are cleared, the electrical fittings and top plasterboard coverings can be removed and quickly replaced. Our intumescent protection means that new sections of cable can simply be pulled through and connected to new fittings. Any damage to glazing is rectified before final decoration and speedy re-occupation after what would typically be a much more devastating series of events – and not even the smell of burning remains.



EXTERNAL CLADDING - There is a huge variety of finishes available as any type of cladding can be used for the external finish.



Standard panel size (mm) *	1200 x 2400
Panel thickness (mm)	130
Panel mass (kg/m ²)	68.75
Core composition	Enviro slab – non-combustible thermal insulation
Standard Surface facing (Internal face)	Plasterboard with fire resistant coating
Standard Surface facing (External face)	Fire resistant board ready for cladding
Airborne sound insulation (BS EN ISO 717-1)	40 (-2;-6) dB 45 (-2;-7) dB
Fire testing – walls	133 minutes fire integrity, insulation and load-bearing
Fire testing – floor load	3,900 kg, 2 hours, no movement
Air permeability	1.15m ³ .h ⁻¹ .m ² @50Pa
Thermal resistance (R value)	2.05m ² KW ⁻¹

*Can be made up to 3000mm high



Some of the benefits of building an EnviroEcoWall House

- **Speed of construction** - Strict quality control during our off-site fabrication process ensures dimensional accuracy, helps reduce build time and minimises waste on site. A weatherproof building shell can be complete just a few days after the groundworks are ready to receive the panels.
- **More internal space** - Slim profile walls that incorporate insulation mean more floor space for the same external dimensions when compared to conventional timber frame or masonry construction. Envirowall panel roofs do not require support trusses, leaving clear, warm, habitable roof spaces.
- **Thermal efficiency** - The insulated core combined with minimal panel joints help to create air-tight, highly energy-efficient buildings, reducing the need for heating which can mean lower energy bills.
- **Fire safety** - fireproof, self-extinguishing EnviroEcoWall panels protect life and property.
- **Strength** - self-supporting mean that, in many cases, they will not need additional physical support.
- **Eco-friendly** - EnviroEcoWall panels are fabricated using timber from sustainable sources. They use less timber than standard timber framing and are one of the most economical and eco-friendly forms of construction. Their high insulation and airtightness reduce the major sources of building energy use.

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