



Made in Devon, built Worldwide

Passivhaus Certified

A+/A++ Carbon Rated

World-class design blending high tech with craftsmanship & traditional materials: the most advanced house building systems for self-builders and developers alike

The best custom sub and superstructure systems are now Passivhaus certified



Advanced Housing Systems

Illustrative Assistance for Quotes

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Building Systems

- 'last hundreds of years' Kevin McCloud
- passivhaus certified details for entire system
- closed panel envelope (delivered to site ready to take plaster internally with electrical services factory installed)
- fasted route to completion in a totally bespoke system
- more robust than masonry (but allows for masonry outer leaf or cladding)



"The most ingenious houses Grand Designs has ever featured"
Kevin McCloud shares his favourite simple Build

"One of the most comprehensive whole house certified building systems in the world"

Passive House Institute, Darmstadt



Working from basic planning consent drawings, we design and engineer the entire superstructure, substructure, and basement in sustainable materials, minimising the use of steel.

We also provide a full groundworks engineering package.

Superstructures

- hybrid timber frame SIPS (structural insulated panel)
- sustainable materials with a high recycled content
- soundproof
- breathing (vapour open from the VCL layer)

Advantages

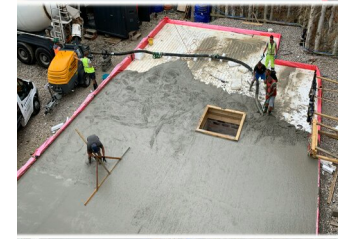
- optimum thermal mass
- carbon A+/A++
- optimised for integrated MVHR (mechanical ventilation & heat recovery)
- adjustable u-values from <0.1 W/m²K
- optimised for use with system insulated passivhaus foundation and basement

Substructures (foundations)

- passivhaus certified details for entire system
- insulating permanent formwork pre-cut in the factory and assembled in a day on site (1 day/100m²)
- costs the same or less than conventional foundations
- much faster installation than conventional foundations

Advantages

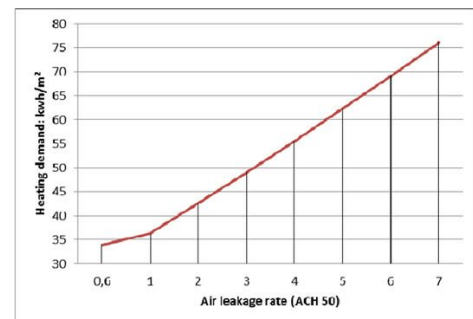
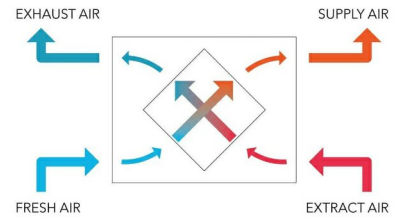
- minimal dig/spoil disposal
- all ground types from <50kN/m²
- including heaving clay
- extended on no bay areas
- exceptionally high line and point loading (>100kN)
- allows complex slabs including multilevel and curved
- finished floor power floated so no screed
- Integral optional U/F heating
- Low or zero steel mesh or rebar substituted for carbon fibre reinforced concrete premixed and pumped



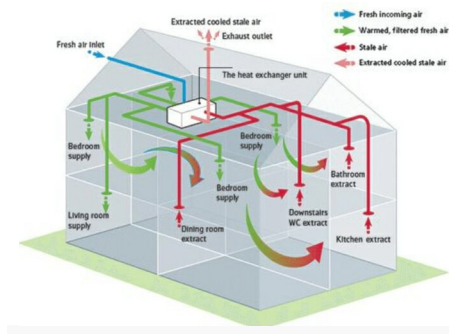
MVHR included

- removes moisture from the stale air within the house, reducing the risk of condensation problems
- filtered fresh air will reduce the effects of many respiratory allergies
- prevents damp and mould growth
- reducing noise entry in urban areas
- heat recovery efficiency of up to 90% resulting in reduced heating requirements

MECHANICAL VENTILATION WITH HEAT RECOVERY (MVHR)



How the air tightness of a dwelling correlates with the heating expenditure.
Graph taken from researchgate.net



The MVHR system

Further advice, finishing & turnkey

- Undertake or advise on all parts of the project cycle - architecture, planning, surveying, engineering, landscape architecture, geoengineering, demolition, project management, passivhaus and building physics
- Design & Build
- Total Build (turnkey)



The design and engineering we undertake specifies the exact configuration and type of the components.

The structural envelope comprises a panel and roof/floor cassette system with additional structural elements that are minimised by design, preferably in engineered timber but in steel as necessary



The superstructure system includes all components that allow us to erect the weather resistant superstructure onsite

The Sawmill

Having manufactured your house in our Devon facility at Butterleigh Sawmill, we transport by lorry/ship to site where the panels are craned into position on sole plates that we fit to your foundations (substructure). Please refer to our website to see videos of this process.

We built a house in one day for BBC DIY SOS

Generally, we erect ground floor panels in one day, and associated floor cassettes the next day. More complex and demanding buildings with many subframes, sway frames, curved walls and complex vaulted roofs increase this time. A straightforward 2 storey home up to 500m² will usually be erected in less than 2 weeks including window installation.

Comfort, Health & Wellbeing

Thermal bridge free insulation, airtightness, embedded MVHR, acoustic insulation, vapour permeability implemented in safe and sustainable materials, result in the most comfortable and healthy home environment.

Fixed Price

Using MMC/Off Site building methods means our price is fixed for the Design, Engineering, Manufacture and Installation of the Project and will not vary.

Your choice of windows

Our baseline is triple glazed in timber or timber/aluminium from Velfac and Rationel

Specialists in architectural glazing, complex shapes and curves, bespoke.

We are the only company that...

Makes both substructures (foundations) and superstructures (the bit above ground) that are Passivhaus Certified. Our THEPASSIVHAUS system and the majority of our systems have an A+/A++ Carbon footprint.

Off Site/MMC

Wiki lists the following advantages:

- speed of production
- speed of build on
- site
- overall cost
- quality and uniformity of build
- sustainability and waste reduction
- validation and
- testing
- health and safety

Completeness

The package is among the most complete available. We are not OVER complete, however. There are a couple of excellent European companies that are so automated and streamlined that the design must fit the factory rather than vice versa. We can always exactly match the most complex planning drawings and never say you can't change your mind.



Self builders & small developers

Packages for self builders or small developers to be fast, simple, complete and fixed price, leaving the least practicable amount to finish the house on site.

The walls (internal & external), ceilings, roofs, and all structural elements are included and quickly installed onsite, usually by the same team that crafted the house in our Devon workshops.

Windows and external doors are included.

Ventilation and Heat recovery system (MVHR) is included.

External walls are ready to take cladding; finished in Fermacell internally ready to take plaster; electrical conduits and back boxes are prefitted.

Floors and roofs are in cassettes.