

# The Self Build Portal

The Gateway to more Self and Custom Build Homes

This website is produced by the [National Custom & Self Build Association](#) (NaCSBA) and is endorsed by the Government. Individuals interested in building their own home can become a Supporter of NaCSBA for FREE - [click here to join](#) - we provide Supporters with [discounts](#) that can save big money. Companies can support NaCSBA and The Self Build Portal in a number of ways - [find out more here](#).



- Home
- Need-a-Plot
- News
- Case Studies
- Events
- Forum
- Partners
- Suppliers Directory
- Register | Sign in



### Routes to building your own home

- Self build one-off home
- Contractor built one-off home
- Kit home
- Independent community collaboration
- Supported community self build group
- Developer built one-off home
- Developer led group project

### Useful information

- Finding land
- Finance/Taxes/Fees
- Construction methods
- Eco guidance
- Health and Safety
- Typical timescales

## Prefabricated Passivhaus bungalow

- Like 9
- Share 9
- in Share
- +1 0

### Background:

- This home was built for a retired couple in Inverness, Scotland by German-based premanufacturer Hanse Haus.
- It's a certified-Passivhaus bungalow which boasts an airtight building envelope and incredibly high levels of thermal insulation as well as a state-of-the-art Mechanical Ventilation Heat Recovery (MMHR) system, allowing 94.4% of heat within the property to be recycled.
- The property is north-facing but boasts an innovative roof design so that south-facing windows allow light and heat to penetrate into north-facing rooms.

### Delivery:

- The bungalow includes three bedrooms, an open plan kitchen/dining room and living room.
- The build system combines timber structural insulated panels (SIPs) with solid wall construction.
- It sits on 0.25 acres and the land was bought as a serviced plot that forms part of an estate of 24 individual self build homes.
- The design brief from the local authority included a number of restrictions for the build, including the colour of the render, and the need for cornerstones, grey roof tiles and black uPVC downpipes.
- Due to it being a Passivhaus-certified build, detailed planning permission was granted in just seven days. However the Passivhaus Institute spent more than three months undertaking complex calculations to confirm that the proposed building could be made to reach their standards; this meant that it would become the first Passivhaus-certified prefabricated bungalow in the world.
- To reach Passivhaus requirements, 320mm of load-bearing insulation was installed on top of the completed foundations, and the groundworkers then laid the 184m<sup>2</sup> reinforced concrete slab to a 5mm tolerance, ready to build on.
- Over in Germany, the factory had manufactured the precision-engineered hybrid SIPs wall panels, with windows, additional insulation, doors and window sills added step by step. Ceiling and roof elements are built with the outside membrane already installed, which means that the structure can be made weatherproof in just two or three days.
- The whole house is test-assembled in the factory, then disassembled and all the components delivered to the UK.
- The ultra low-energy bungalow boasts high levels of insulation, LED and low-wattage lighting and an MMHR system.
- Triple-glazed windows ensure that the inner pane remains at room temperature to prevent condensation, and a sturdy insulated external door is clamped shut by turning the key three times, which creates an air-lock vestibule to prevent heat loss. The annual heating bills are estimated as low as £140, despite the fact that the site is north-facing.
- A 4m<sup>2</sup> array of solar thermal panels has been mounted on the south-facing section of metal roof. This is connected to a 300 litre heat exchange/storage tank, a Vaillant EcoTEC boiler and a solar pump to boost hot water for underfloor heating in bathrooms and reception rooms. Automated external solar blinds have been installed to the main south-facing windows in order to prevent overheating; they are operated by a radio-controlled weather station, which can be overridden by a hand-held transmitter.
- Such is the quality and air tightness of the bungalow that it achieved an impressive 0.23 air changes per hour when tested (the Passivhaus requirement is below 0.6).
- The living room and kitchen/dining room are located on the north side of the building so the couple enjoy far-reaching views from their elevated site. In order to counteract the lack of south-facing glazing in these rooms the bungalow was designed as two distinct blocks, with a split-level roof, which enabled large clerestory windows to be introduced at a height of five metres.
- From the front, the property appears to be a modest low-slung bungalow, with a traditional slate-covered roof that creates high sloping ceilings inside.
- The rear of the building is altogether more contemporary, however, with bedrooms and bathrooms contained in a lower section, roofed in metal, which enables sunlight to reach the clerestory windows above.

### Finance:



- Typical timescales
- What is Custom Build?
- Technical downloads
- More information
- Videos

## Two Bristol schemes promise more self/custom build homes

'Self finish' homes emerge on former school site with serviced plots planned elsewhere



Read more →

News



Aldcliffe Yard, Lancaster



Read more →

Case Studies

## Choosing a construction system



Read more →

Top tips

We support



- The plot cost £125,000.
- The build cost was £435,000.
- The total cost-per-m<sup>2</sup> is £3,043; based on the gross floor area of 184m<sup>2</sup>.

### Timescale:

- Building work commenced in June 2012.
- The bungalow was weatherproof in just two days.
- It was completed to turnkey in just 12 weeks.
- The entire project including the installation of all services was completed in 25 weeks.

### Learning Points:

- Off-site construction might be a good option to choose if you'd like to build your own home quickly and with minimal disruption onsite. The panels are assembled in warm/dry factory conditions and, once moved to plot, the homes are typically water and weatherproof within two to three days. Turnkey completion can typically be achieved in as little as eight weeks.
- Building a Passivhaus-certified home doesn't necessarily mean that planning permission will be gained quicker. However, various planning authorities now require homes to be built to a certain level of Code for Sustainable Homes (CSH).
- It's worth setting money aside in case your plot requires extensive remedial work. Site excavations for this home uncovered an unexpected seam of unsupported ground running across the hillside, which meant that the sides of the foundation trenches were crumbling - it cost £20,000 to put right.

### Related Links:

- [Hanse Haus](#)