

# HILL COTTAGE RETREAT CENTRE - POWYS

A wide spectrum of philosophies and professional disciplines to meet for workshops, courses and retreats

Project Name: Hill Cottage Retreat Centre

Company: Frame Technologies

Sector: Self Build

Technology: TechVantage™ S

## Overview:

Blended into Powys' serene countryside landscapes, the Hill Cottage Retreat Centre is designed for individuals and groups from a wide spectrum of philosophies and professional disciplines to meet for workshops, courses and retreats. The original yoga area was limited, and a new purpose-built space was required. The new dodecagon-shaped building from Frame Technologies now offers a tranquil centre which is perfect for groups to practise yoga.

## The Challenge:

To provide an optimal shaped room for therapeutic yoga, the client required a particularly unique timber design: a twelve-sided timber frame with a 9.2m diameter clear span and a 2.4m square for each of the twelve sides. The complex building uses a fully vaulted engineered timber frame structure with no loadbearing internal walls. Once Frame Technologies had established an engineered timber frame to meet the brief, we finalised the build with a total loose rafter and glulam roof solution, which comprises internal exposed timber spokes in the ceiling and a low pitch in the roof.

## Offsite Manufactured Timber Frame:

The truly one-off build combines an engineered timber frame with stainless steel tie rods to prevent the structure from spreading. Timber is core throughout the design as the client decided against the use of concrete, even in the foundations. Frame Technologies designed and manufactured a timber foundation alternative by screwing metal flitch plates on the facets at wall plate level to provide a sturdy base. By implementing offsite manufacturing processes in our well-managed factory, Frame Technologies were able to minimise building time, disruption, onsite risks and labour costs. Offsite technology enabled us to erect the building within just five days.

Offsite manufactured timber was selected as the primary structure for this build as environmentally conscious materials and practices are representative of lifestyle at Hill Cottage Retreat Centre. Set amid acres of market gardens, young orchards and wildflower pastures, the new timber retreat is naturally fused into its woodland surroundings, where the owners encourage all guests to minimise waste and carbon emissions.

## Achieving The Optimum Performance:

Frame Technologies used offsite manufacturing techniques to build a timber frame floor cassette solution using our own TechVantage™ S system, a 140mm panel with glass mineral wool insulation that is embedded between sheathing board and wood fibreboard. A 25mm service batten is nailed to the OSB inside the single panel system. Meanwhile, the low pitch of the roof retains a cosy atmosphere inside the retreat centre.

The floor sits on timber sleepers and is fully insulated with cassettes, which Frame Technologies transported to site in four sections that we then bolted



together with the walls in place. Frame Technologies heightened thermal benefits even further by implementing south-facing windows for passive solar gain. The overall build achieves an impressive U-value of 0.19W/m<sup>2</sup>K.

#### Positive Outcomes:

The final word goes to our client: "Frame Technologies were incredibly helpful and responsive to all of our requirements and delivered the project on time and within the budget. We are very happy with Simon and Jen's commitment and professionalism."