

# DERBYSHIRE LONGHOUSE SIPs SELF BUILD PASSIVE HOUSE

Derbyshire

Project: Derbyshire Longhouse SIPs Self Build Passive House

Company: Derbyshire Longhouse

Sector: Self build

Technology: SIPs Self Build Passive House

Derbyshire, traditional, windy with undulating hilly countryside scattered with farms and buildings that have a familiar similarity about them. A shape that is long and follows the lines of the hills, a Longhouse a venerable type of building which dates back thousands of years. They were designed to protect the human inhabitants but also the livestock from the elements all living under one roof.

Being city dwellers whilst their family grew up Mike and Sarah bought an 18 ½ acre small holding in the Derbyshire dales to live a very different life. Sarah has become a fulltime shepherdess Mike a busy director, a massive change of lifestyle. The plan is to move both sets of parents into a new house.

Mike states: "Our vision is to build an innovative, sustainable, multi-generational ecosystem that optimises natural resources, establishing a symbiotic relationship with the Dales' natural ecology and providing an inspirational vision for the future of family-living."

Planning history for the site showed 26 previous residential planning applications for the farm – all of which had been refused.

[Jillian the architect](#) told them that the only real route for them to get planning permission was to through a special section of the planning regulations called 'paragraph 79' – it had to be a house of exceptional architectural quality that could only be built in the landscape surrounding it so it becomes part of the landscape. After 2 years of application approval was granted.

21<sup>st</sup> century interpretation of a Derbyshire long house – a series of interconnected spaces arranged in a line. A way the family could come together so it was multigenerational living.

2 existing barns were knocked down. Foundations laid and 45tonnes of steel formed the frame of the building. The entire structure was then clad in SIPs. Walls clad in corrugated steel and standing seam roof all encased with triple glazed aluminium windows and doors.

500m<sup>2</sup> of living space. Spacious open planned living quarters, kitchen sitting room and a majestic double height dining room all with breath taking views of the dales. Downstairs contained a living accommodation for Mikes parents, upstairs housed bedrooms for Mike and Sarah and the girls, at the back of the house independent living accommodation for Sarah's mum. 3 generations of family. However in this modern longhouse the animals will be living outside!

The issues faced by the site were numerous, building to near Passive House standards, a roof that mirrored many roof planes and the need to transport all of the building down a track no wider than 3.5m wide and a steel frame that looked like something from Battlestar Gallactica!

At every stage through numerous design team meetings and many telephone calls emails and every other form of correspondence this project



wound its way like the undulating hills it was to be built in to a conclusion.

SBUK had 8 weeks to deliver and install the SIP cladding to the building which was within the 8 – 10 week build program allowed. Our costs were delivered within the parameters of the final estimate for the project despite the time lapse in between.

The overall project suffered from delay due to late delivery of the standing seam roof.

Delays due to the pandemic and the struggle for materials added a couple of months to the overall program and the budget increased by 7%. Inflation during this period has been running in excess of 10%!!

In all reality our package stayed the same despite timber costs rising by over 50% and SIP panels rising by 32% in the same period. We have been able to achieve this for the client by better optimisation of the SIP panel cutting which reduced what should have been enormous wastage due to the triangular shape of the panels.

Optimisation ultimately was nearer to normal due to hard work and diligent panel landing by our design team.

From the very beginning of the project the clients have looked to build an energy efficient fabric first building that will last the test of time.

The ultimate use of the house was to house 3 generations of family. The consistent search for improvements in the materials and airtightness of the building whilst striving to achieve a passive house has led to a building that has incredibly low cost for heating.

Recently whilst the snow was laying on the ground the inside temperature was 22c despite no heating being used.

SIP panels are inherently airtight, add to that a VCL that has wrapped the building throw in the mechanical heat recovery and the building outperforms virtually anything that is currently being built.

It was very important to the client to outperform standard SIP panel thicknesses so they opted for our largest panel thickness at the time. This will keep paying back for years to come whilst keeping all 3 generations warm.

“Sarah and I are absolutely delighted to be in our incredible new home. We have been fortunate to have an amazing team of passionate professionals taking us from a muddy hillside to an amazing family home. “

“We have been blown away with our passive house -2c outside and 22c inside with no heating just great insulation, superb air tightness and solar gain”

Mike & Sarah