



Mayfield Passivhaus

Location: East Sussex

Completion Status: Completed September 2015

Occupancy: Occupied since October 2016

Architect: HazelMcCormackYoung LLP

Consultant: PHPP consultant: Aaben, Structural Engineer: Crouch Waterfall, Certifier: WARM

Contractor: Richardson & Peat

Client: Private

Mayfield Passivhaus is a 6-bedroom new dwelling, built on an historic Percy Crane landscape garden; This beautiful setting was the original reason for the client buying the land and the brief was to create a modern, environmentally friendly house that contrasted with, but respected the original landscape. This led to the adoption of the Passivhaus design approach, which was a first for contractor, client and architect alike.

The client aspired for a new home, modern in its layout but timeless in design. HazelMcCormackYoung LLP were appointed back in 2009, and took time overcoming planning restrictions calling for a traditional building mimicking the former 1930's bungalow footprint. The house achieved planning in 2013 and works began on site in 2014.



The project has a treated floor area (TFA) of 419m² and can be interpreted as a literal venn diagram – 2 pitched accommodation wings with a glazed shared space in between.



Materials are limited to timber, zinc, aluminium and roof tiles.

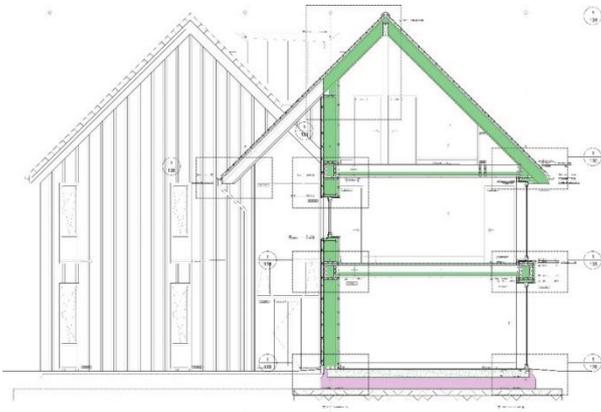


*Everything being new means that all the views, all the glass, all the room sizes feel correct and because of the insulation and the air circulating system every room feels the same and there's none of those silly draughts that you get, like sitting in my house in London which was built 120 years ago, where I can sit and watch television or I'm in the bath and feel a draught, and you don't really notice that, because we grew up with that, and every house I lived in all my life is like that, until you get a house where everything **isn't like that**.*

Mayfield Passivhaus Owner

The timber frame was erected and then insulated on site, with 450mm of mineral fibre to walls and 350mm to the roofs.

The frame sat on a concrete slab set within an IsoQuick insulated raft and was clad externally in a windproof breather membrane and internally with Intello airtightness membranes and tapes. Coordination and collaboration with the contractor enabled a valuable knowledge sharing exercise to ensure the airtightness and thermal performance was delivered.



Primary Energy: 95 (kWh/m ² /a)	Heating Demand: 15 (kWh/m ² /a)
Air Changes/Hr: 0.6 (@50pascals)	Heating Load: 11 (W/m ²)



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Lessons learned

- The project was the first certified PassivHaus for architect, client and contractor, so a great deal of coordination, knowledge sharing and teamwork was required throughout. All parties learned enormous amounts from the process and both architect and contractor are now applying this experience to several other PassivHaus projects.
- Every decision made through the project was double checked against cost and materials and components were sourced with care to ensure they were both suitable for a PH project and were within the budget allowance.
- The open book policy adopted by the team enabled this process to be managed. The Architects believe it is unlikely that this same budget could have been achieved through traditional procurement.
- The MVHR unit first installed performed well, but was at the high end of its duty, so this was swapped out and replaced for a larger unit to allow the MVHR to run at a lower capacity. This upgrade to the design calculation seems sensible for future projects.
- The contract sum did not include the certification fee, which is something that will be included in the provisional sums for future projects.
- The original design had a wrap-around window in the kitchen/dining room, but there was no available window solution to provide sliding folding doors on a building corner, whilst maintaining air tightness. If I built the project again I would hope that one would be available for use.
- The air-tightness champion is king of the site.
- Collaboration and ego-free team-work are vital to the success of a certified Passivhaus.

Further Information

[Mayfield Passivhaus Project information](#)

Previous PHT story: [Mayfield Passivhaus certified](#) - 22nd December 2016

[HazleMcCormackYoung](#)

[House Planning Help Podcast 157: A contemporary eco home case study – with James Galpin from HazleMcCormackYoung](#)