



BEATTIE PASSIVE

Indicative build costs

For a three-bedroom semi-detached house in Dunfermline, Scotland, with a GFA of 86m² (excludes fees):

- Cost of traditionally constructed standard home to 2010 Part L, £93,975 total, or £1,092.73/m²
- Cost of Beattie Passive home with Passivhaus certification, £93,898 total, or £1,091.83/m²
- Cost of Beattie Passive home with Passivhaus certification built to comply with the 2016 definition of zero-carbon, £99,398 total, or £1,155.79/m²

One Brighton (this image) was a 'highly profitable' zero-carbon development that cost 3% more than a standard development. Its developer is now chief executive of Beattie Passive (below), a Passivhaus kit of parts that costs the same as a home built to current building regulations

BEATTIE PASSIVE AND ONE BRIGHTON

Pete Halsall is another zero-carbon veteran with roots dating back to BedZED. He was behind the "highly profitable" zero-carbon One Brighton scheme and is now chief executive of Beattie Passive. This is a standardised kit of parts that is used to build homes to Passivhaus standards. "It delivers Passivhaus performance at normal build costs," says Halsall. The jump from Passivhaus to zero-carbon is relatively small – £5,423 for a three-bedroom semi-detached home – as the main energy requirement is hot water and fixed lighting, as a Passivhaus needs virtually no heating.

Created by former carpenter Ron Beattie, the system is designed to be foolproof. It consists of just 16 standardised components. According to Beattie, these can be put up by anyone "who can hold a hammer". The frame is based around a series of space studs, configured to minimise the number of air and heat losing interfaces. Beattie Passive tests each for air leakage and acoustic and thermal performance, and, if they meet required standards, issues Passivhaus certification.

According to Halsall, the key to keeping costs down is standardisation with build simplicity. "We need a standardised system that can be built by semi-skilled carpenters," he says. Beattie Passive used 18–24 year olds who were third-generation unemployed to build four Passivhauses in Scotland. These exceeded the Passivhaus requirements by a wide margin. "Sustainability is about solving the climate change issue and getting people into work,"



Halsall says. "There is something like a million unemployed 18–24 year-olds [in the UK], which is an absolute disgrace. This system allows those people to come into the industry." Halsall wants to license the system to anyone who is interested in using it and also do some developing.

Halsall also managed to deliver the zero-carbon development One Brighton at market prices and still make a healthy profit. Developer Bioregional Quintain negotiated with the planners to increase

density, which increased profitability. It cut out the basement level car-park, saving £2m. Halsall says build costs were kept to just 3% more than a standard development. "We tried to keep things as simple as possible to keep the costs down," he explains. The concrete frame utilised post-tensioned slabs, which reduced the amount of concrete needed. It was made from concrete containing 50% cement substitute and 100% aggregate, which was green and saved money. ©