Build It AWARDS 2018 SHORTLISTED Best Eco Home

Shangri-La North Norfolk

Passivhaus | Holiday Home

01953 687332 | beattiepassive.com

cool, temperate climate CERTIFIED COMPONENT Passive House Institute

Beattie PASSIVE
UK's First Certified Passivhaus Build System

"The Beattie Passive approach, with the emphasis on airtightness, super insulation and the elimination of thermal bridges, is really the way forward"

Simon Fenn, Client

Passivhaus Provenance

Shangri-La combines a Scandinavian-esque design aesthetic with the energy efficiency, comfort and carbon-saving benefits of the Passivhaus standard, which originated in Germany.

It is available to rent as a holiday home throughout the year.

Finding Shangri-La

This 130m^2 single storey, 4 bedroom holiday home is situated in a secluded seaside location in the hamlet of Waxham on the idyllic North Norfolk coastline.

Shack Up

We collaborated with Mole Architects, who themselves also have considerable experience in energy efficient, low carbon design.

Shangri-La is built from timber, with a twin pitched roofline and a broad veranda. It has highly insulated walls and an inexpensive mechanical ventilation and heat recovery (MVHR) system. The main fenestration faces southward to maximise solar gains.

Client	SImon Fenn & Mitra Cvijanovic
Location	Waxham, Norfolk
Brief	To build a single storey 4-bedroom Passivhaus holiday home in a secluded coastal location in Norfolk

Q&A
Simon Fenn & Mitra Cvijanovic

We talk to our clients about their experience of designing and building a Passivhaus using the Beattie Passive build system.

What led you to Passivhaus as a construction method?
For us, the question became not why would we build to the Passivhaus method, but more 'why wouldn't we?' As we looked at the costs, there wasn't really much difference between a more traditional method of construction and Beattie Passive.

At the start of the project, we imagined a fairly well insulated house, coupled with something like a heat pump; but then it occurred to us that systems like heat pumps, while interesting, are aimed at fixing an issue (i.e. heating the house) that doesn't really need to exist in the first place.

We concluded that our investment should be in the super-insulated fabric and not questionable eco-gadgets, such as heat pumps, or long term costs, like fuel. The other important aspect was keeping the architect's original design. The Beattie Passive system doesn't dictate the design - it fits in with yours.

How and why did you approach Beattie Passive?
Beattie Passive was recommended by Mole Architects as they had worked with them on a project previously. Although a first hand recommendation is valuable, we still wanted to know more about them.

We found the company to be really open. In the first instance, we visited the offices and met the team. While the house was being fabricated, I went to the production facility and met the team there. While this isn't a 'hands-on' build, I was keen to see the process in action and to meet the people involved. I appreciated the transparent approach and it was reassuring to meet the team.

What has been the most interesting aspect of having a Passivhaus and the system from Beattie Passive?
We think the most interesting element is to see the gulf between a traditional build and what is a more modern approach.

Now it almost seems quaint that you would want to built a 'traditional' house with bricks and mortar, especially knowing that the end result is going to be way behind a Passivhaus in terms of running costs - but also, more importantly, in terms of comfort.

The Beattie Passive approach, with the emphasis on air tightness, super insulation and the elimination of thermal bridges, is really the way forward. It is also better to have as much done in the factory as possible because the time onsite is kept to a minimum and quality can be far better controlled.

The family pictured outside the completed structural thermal envelope.

What has been the best/most surprising aspect of the build?
Perhaps the most surprising aspect was to see how quickly the structure went up. It was very quick once the groundworks were done. The other surprising thing is - if it's so easy and cost effective to build houses that essentially don't require heating, why isn't it mandatory? Given the emphasis on complex and expensive solutions to climate change, why are obvious ones like this not given more prominence?

Have there been any downsides to the project?
The only downsides are quite minor. Because the fabric has to be kept airtight, there are elements like a stove where you have to put in pipes very early and this has involved a fair bit of coordination. Of course, you don't actually need a stove to heat the house but we wanted one to give the house a cosy feel.

How has the process been on site?
The process on site has been very smooth. Beattie Passive provided a single point of contact, in our case Benedict, the Project Manager. This made the process very straightforward because we could go to Benedict with any questions or concerns. On site there was a site foreman, Steve, who led a small team. On site visits, Steve was always available to talk us through what had been happening. We felt that Beattie Passive combined new ways of working with traditional values of good workmanship and actually caring about what they were doing.

Which aspects are you most looking forward to once the build is completed, due to it being a Passivhaus?
We're looking forward to the low running costs. We anticipate that it will be an extremely comfortable house to live in.

Were you surprised by the high levels of airtightness?
The airtightness result was really impressive - although not unexpected given the rigorous approach by Beattie Passive. If the house was built to current Building Regulations, then it would be leaking around 20 times more air. That says a lot about this type of construction method, but also the current Building Regulations!

Passivhaus | Holiday Home

Shangri-La | Waxham

Beattie Passive is the first UK company to be certified for a complete build system by the Passivhaus Institut in Germany.

Technical Specifications

- **Wall U Value**: 0.11 W/m²k
- **Airtightness**: 0.309 ³/h/m²@50pa 0.52 ach, n_{50}
- **Ground Floor U Value**: 0.11 W/m²k
- **Roof U Value**: 0.11 W/m²k

"We have been very impressed with the high quality of construction and the delivered house exceeded our expectations on Passivhaus standards. It's been a pleasure working with the team at Beattie Passive"

Ian Bramwell, Director, Mole Architects

The Passivhaus principles are predicated on passive heat sources - people doing ordinary things, such as cooking, provides sufficient warmth.

The home takes some inspiration from the idea of the beach bungalow vernacular. There is a large open plan living area.

The pitched roof can be seen in this picture of the bedroom. The whole house has plenty of natural light.

Passivhaus Partnerships

"Working with our client on his third project and being at the forefront of energy efficient design, it was a natural progression to look at Passivhaus as a way to deliver a high performing and quality build for our client. We approached Beattie Passive to discuss the design and it began with them supplying just the design, technical and testing package, yet subsequently grew to the provision of a complete watertight building!"

Ian Bramwell, Director, Mole Architects

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