

Certification to the Passivhaus or EnerPHit building standards is a formal quality assurance process and assessment of the project's year round comfort and energy efficiency. Building certification involves a third party Passivhaus Certifier reviewing the technical design and construction information and PHPP calculation at key stages during the project.



Passivhaus certification is awarded on completion of the building or shortly after, at the "factory gate". There is no post-occupancy evaluation or measurement required for certification, although it is highly recommended to further enhance building performance. The attention to detail and quality checking principles help ensure that the planned building will actually perform as designed for energy efficiency and comfort.

CAREFUL PLANNING

Certification is intended to ensure a good quality of work. Airtightness, thermal bridges, the quality of the windows and their installation, the ventilation system and other building services will all be checked as part of the project both during design and in construction. The main factor in successfully achieving certification is design, as only careful and considered design will ensure you complete all the required factors to achieve the Passivhaus standard.

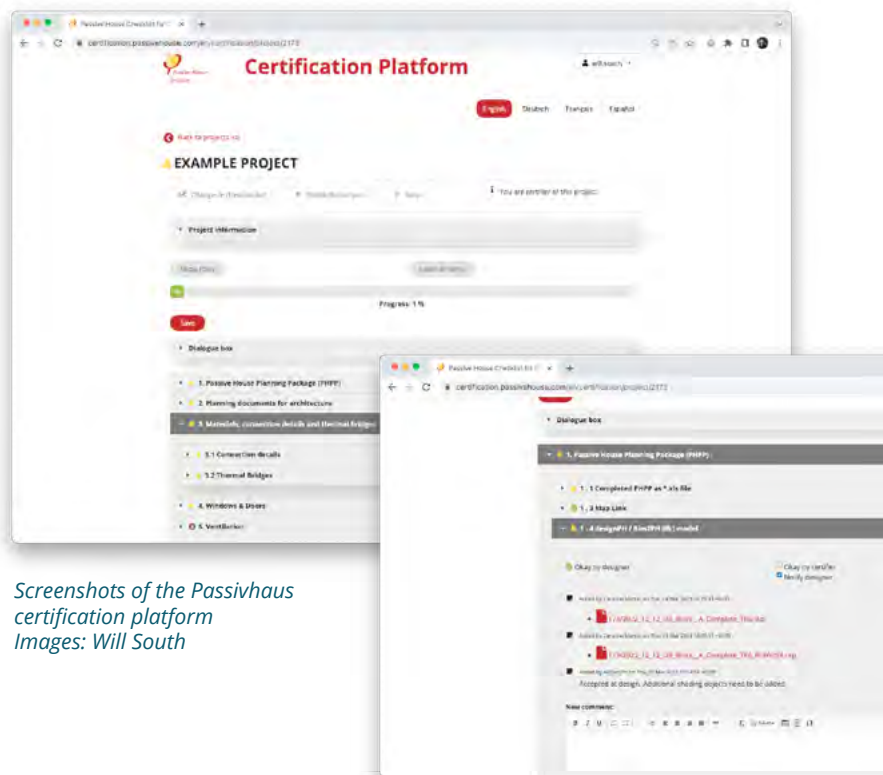
The process for designing a Passivhaus building is detailed in the Passivhaus Overlay for the RIBA Plan of Work (see left). Typically the Passivhaus Certifier will carry out design reviews at two or more points in the design process.

A more experienced design team on a straightforward building may not need as much input from a Passivhaus Certifier in earlier stages. Typically the latest involvement recommended for the Certifier is at technical design stage, tender stage, or pre-contract with the contractor builder.

TRACKING EVIDENCE AND GIVING FEEDBACK

The Passivhaus Certifier will use an evidence checklist for their quality assurance, which is normally provided on their appointment to the project. This checklist(s) should be referenced during the design stages with information collated as the project develops. This will save time when checks need to be made and signed off by the Certifier.

Projects may use the Passivhaus certification platform as an interface for uploading information and keeping track of progress, or a bespoke system may be set up. The Passivhaus Certifier will advise you on the best approach for your project.



Screenshots of the Passivhaus certification platform
Images: Will South



[pht.guide/
PassivhausOverlayRIBA](https://pht.guide/PassivhausOverlayRIBA)

do

- involve a Passivhaus designer from the start of the project
- model your design in PHPP at the early design stages
- engage with a Passivhaus Certifier once a design is developed to concept stage
- engage a Passivhaus certifier before tender and procurement (when you still have the chance)

don't

- assume that a building specification from a previous development will suit all future Passivhaus buildings
- try to certify a building that is already complete, this loses the majority of the value in the quality assurance process
- leave the collation of information to the last minute as this could cause delays in the building being certified



BENEFITS OF CERTIFICATION

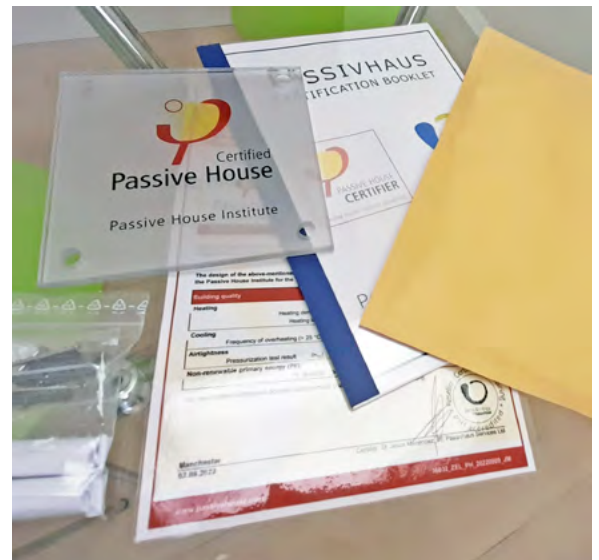
There are many benefits to certifying a Passivhaus for the designer and building owner:

- Passivhaus certification offers quality assurance during design and construction: it acts as a consistent input or golden thread focused on thermal comfort and energy efficiency.
- Certification checks catch mistakes in energy calculations and design before they have serious cost implications, and in construction while the impact can still be mediated.
- Quality checks during design and construction help the client know that they are getting what they pay for, and help ensure the design ambition for energy efficiency is achieved.
- The Certifier can share valuable experience and common issues from a significant number of projects from a wide range of designers and contractors, many more than individual designers or architects will see. This can help improve quality, and how solutions can be simplified and implemented in a better and more cost-effective way.
- The support provided by an experienced Passivhaus Certifier can result in a more economical building.

PERFORMANCE OVER TIME

Passivhaus certification is an assessment of the building at the point of completion and as such does not have a defined validity period. Research has shown that, properly maintained, Passivhaus buildings should continue to perform over time as intended. But bear in mind that Passivhaus is a whole building standard. To continue to enjoy the benefits of living in a Passivhaus, any modifications or extensions should be approached with just the same attention to quality as the original build, and you may want to consider recertification.

Certified Passivhaus Tradesperson training course. Image: WARM



*Passivhaus certification documentation and plaque
Image: Zero Energy*

PEOPLE AND PRODUCTS

As well as buildings, people and products can also be independently Passivhaus certified. Passivhaus projects don't have to use a Certified Designer or certified products, but it can make it easier to find the right team and equipment.

There are a number of accredited Passivhaus qualifications available for industry professionals. Architects, engineers, consultants, and others can attain the Certified Passivhaus Designer/Consultant qualification by one of two routes:

- pass a half day exam
- submit details of a certified Passivhaus building on which they were the person responsible for the Passivhaus design

A Certified Passivhaus Designer/Consultant training course is the best preparation for either route.

The qualification must be renewed after five years, either by collecting continuing education credit points or again, by submitting details of a certified Passivhaus building.

The Certified Passivhaus Tradesperson qualification is available for the site team, and there are also a number of further expert qualifications.

Passivhaus accreditation is also available for components, from windows and doors, through airtightness products, building services systems, connectors and anchors, to whole building systems. Components that achieve Passivhaus certification have been tested according to uniform criteria for each component type, which means they are comparable in terms of their specific values, and are of excellent quality regarding energy efficiency. Although it's not required for a Passivhaus project, using certified components can make the task of achieving certification for the building easier. The Passivhaus Trust recommends using only Passivhaus certified MVHR units.

CASE STUDY: Primrose Park



Certified in 2018, the Primrose Park development of 72 homes for affordable rent and shared ownership in Whiteleigh, Plymouth, was at the time the largest residential Passivhaus project in the UK.

The developer Plymouth Community Homes worked in partnership with Plymouth City Council to deliver the fully Passivhaus certified scheme. As both client and contractor were new to Passivhaus, the role of the Passivhaus Consultants (WARM: Low Energy Building Practice) and Passivhaus Certifiers (Etude) working alongside architects with Passivhaus experience, was crucial to help guide the project to certification.



The success of the scheme depended on all members of the team working together and committing to the extra level of care and attention to detail required. The design on paper needs to be realised on site, and there will always be challenges that haven't been anticipated by the architect or consultant so it's essential that communication between designer and contractor goes both ways, and that time is made for feedback from site. At Primrose Park, the contractors on the project, Mi-Space, built mock-ups and sample panels to get details and buildability right before they were used as a model across the scheme.

Chris Herron, site manager on the build, told Inside Housing that, with Passivhaus, "You have greater control over a build. It means every aspect of construction is tied down before you start: the materials, supply chain and price. And the close monitoring means that quality is maintained. It's guaranteed all the way through. I've loved it – everyone got on board."



Left: Site visit to the development under construction

Below: Passivhaus Certifier Will South hands certification plaque to John Clark, CEO of Plymouth Community Homes. Images: Etude

