

The Passive House Center – practical training, building community and spreading knowledge

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Introduction

This work presents the pioneer project of the Passive House Center (PHC) and the strategy to maximize its outcome as a training facility and a tool to raise awareness amongst the different stakeholders in the construction sector.



Figure 1: A general view of the Passive House Centre.

The Project

The PHC is located in Pombal, in the centre of Portugal, inside Reynaers Aluminium Portugal's industrial area but with an independent access and operation.

The PHC is a training and practical demonstration facility with 64 square meters and it is composed by four independent modules (4x4 meters each): a comfortable, finished and usable w.c. installation; a comfortable training room dedicated to building services, such as

heating and cooling, ventilation and DWH systems; two open modules where each partner individually, or preferably in cooperation, can freely simulate real situations regarding the opaque and transparent building envelope construction.

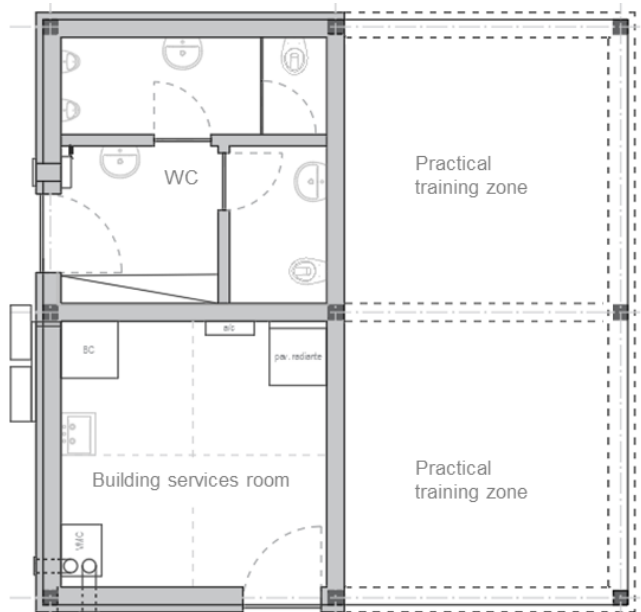


Figure 2: The plan of the Passive House Centre.



Figure 3: A practical workshop during the construction phase.

The project was promoted by Passivhaus Portugal Association, developed by Homegrid and financed by the PHC partners, making a total of 28 partners (each partner company holds an equal share) [Passivhaus Portugal 2026].

Goals

The PHC has three main goals. The first goal is to fulfil the need to have an open facility exclusively dedicated to overcome the main weaknesses of construction in Portugal, such as airtightness, window installation, thermal bridges and a good installation of building services. The second goal is to provide the Passive House network in Portugal with a training facility

to gather the Passive House community along the entire year. The third goal is to encourage the team work between the different involved partners and highlight its benefits.

Workshops

The workshops are designed to be practical and demonstrative, to stimulate the interaction within the participants based on the hands-on approach. The number of participants tends to be small, never exceeding 20 persons, to assure a better interaction between every stakeholder.

The target audience is the following: builders and installers, architects and engineers, students and general public.



Figure 4: Practical workshops: building envelope.

Results

The PHC was concluded in the second semester of 2024 and during its construction phase occurred five practical workshops. So far, the PHC hosted ten practical workshops in consortium, involving several partners in each workshop, reaching a total of 180 participants/trainees and 18 company partners [Passivhaus Portugal 2025].



Figure 5: Practical workshops: building services.

In the following years there will be the capacity to organize up to 25 annual workshops reaching a potential audience of 500 participants annually.

Lessons learned and next steps

The organization of each workshop, which involves different partners (in some cases up to six or seven partners), takes a lot of effort to coordinate but it is very rewarding to see the team work even between rival companies.

This approach has a huge replication potential and also the potential to scale up because it can be implemented in additional locations, in order to promote the development of the Passive House standard in each region.



Figure 6: Practical workshops: building services.

References

[Passivhaus Portugal 2025] Passivhaus Portugal Association: *The year in review*. Press release available at: <https://passivhaus.pt/noticias/balanco-da-passive-house-2025/>

[Passivhaus Portugal 2026] Passivhaus Portugal Association: *Passive House Center*. Website page in Portuguese available at: <https://passivhaus.pt/passive-house-center/>