

## outPHit – Passive House Institute's new EU project

The need for highly energy-efficient retrofits is increasingly urgent. In order to achieve this, deep retrofit projects must be implemented rapidly and reliably. This is where **outPHit** comes in. outPHit is an EU-funded project within the framework of the Horizon 2020 programme. The project aims to enable deep retrofitting quickly and uncomplicatedly. Approaches include using prefabricated renovation elements or conventional methods. It is best to work outside the building and limit any negative impacts on residents, which will increase acceptance of the retrofit. However, what matters is that the resulting quicker implementation of deep retrofits does not miss the required level of energy efficiency of the building. These results must be reliably achieved.

With the Passive House concept, certification will ensure energy efficiency. The independent certification system guarantees a highly energy-efficient outcome, which can be forecast during the planning phase.

What if things have to be done quickly? The outPHit project aims to ease decision-making to ensure high-quality retrofit planning. Regarding the components used, the project ensures that these will dependably lead to a highly energy-efficient building.

In order to achieve all this, a design status review has been developed within the framework of outPHit. It allows independent checking of energy efficiency planning before the measures are implemented. Specifically developed products that facilitate building assembly or component connections and can be implemented fault-free will improve the quality of the executed work. Concepts for certification of deep retrofits review the quality of insulation, the number of thermal bridges and the level of airtightness. They allow a combination of systems with thermal insulation, windows and possibly ventilation concepts with heat recovery in Passive House quality. In addition, different tools and guides will also be prepared to help make quick decisions regarding the right concept for the respective project and make it easier to answer questions relating to the purpose of the measures.

Within the framework of **outPHit**, these retrofit concepts will be tested and optimised in different buildings in seven partner countries. It is intended that these pilot projects will achieve the EnerPHit standard, which equates to the Passive House standard for retrofits of existing buildings. After renovation, the projects will enjoy extremely low energy consumption and excellent living conditions. This will also be metrologically verified through a simplified monitoring concept. In this way, a significant reduction in the energy consumption and improved living comfort, as well as good air quality, can be made apparent to the residents.



Serial retrofits of 194 terrace houses in Zeeland, Netherlands. The installation of prefabricated elements saves construction time and costs. © Bouwbedrijf Joziase

The simplified monitoring concept will also allow access to a measurement database developed within the framework of **outPHit**. This database can compare the consumption data from highly efficient projects with the planned level of energy efficiency. This comparison will allow conclusions to be drawn regarding the success of the retrofit and enable subsequent optimisation of the operation of building services systems.

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