



Newsletter 2

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What's inside

- 2 Introduction
- 3 Demo buildings
- 4 Digital buildings
- 5 Who are we?

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Dear readers,

The ENSNARE project has just celebrated its first year of life and is progressing satisfactorily. As planned, ENSNARE is developing platforms and technologies to support building renovation. These solutions include a fully modular envelope mesh and a digital platform that support all stages of the renovation process.

We are validating the ENSNARE solutions in 3 pilot renovation projects covering Nordic (Tartu-Estonia), Continental (Sofia-Bulgaria) and Mediterranean (L'Aquila-Italy) climates, and 3 virtual (Glasgow-Scotland, Amsterdam-Holland and Milan-Italy) demonstration buildings aimed at upscaling the development of the solution. In this newsletter, you'll discover everything about each of the 6 pilot sites.

These demonstrators have been selected in order to cover a broad variety of building typologies and energy performance conditions that will foster the replication of the project solutions. The buildings have been chosen to represent the largest European construction residential market in different climatic conditions and different architectural implementations and will boost industrialization, mass production and economy of scale based measurements to be adopted.

DEMO buildings

The second-largest city in Estonia, Tartu, hosts this wooden-frame public building, originally built in 1947.

The pilot is a 2-storey residential building with 10 dwellings used as a rehabilitation center for ex-convicts. The goal for Tartu is to fully renovate the facility to provide a higher level of services and living conditions for people re-entering the society. The center will house up to 15 dwellings for 30 people after renovation.

Technical features include a façade of 442 m², 26 windows with double-glazed frame windows, natural gas HVAC and a subpar air tightness. It will be a near-zero energy building to minimize the costs for the NGO.

Tartu, Estonia



Sofia, Bulgaria



This demo site in Sofia consists of a masonry-structured two-floors multi-family apartment building.

Originally built in 1974 and renovated in 2004. It has been continuously inhabited. It was designed to have a total of 6 apartments.

Between its technical features, we can find a total floor area of 560 m². There is a heated semi-basement, and an open terrace on the last floor. The facade total area is 471 m². The building has a total of 42 windows, a 10-kW Heat Pump, a heat battery and a PV system. The DHW is generated by 2 gas boilers. The temperature is controlled by local controllers. The average annual energy consumption of 80-100 kWh/y.

L'Aquila, a city located in the heart of Italy, hosts a 1978 building with a masonry load-bearing structure and a wooden or side-cement roof. The goal for the building will be to become a nursing home for the elderly.

Its 772 m² façade has 46 windows (14% Window/Wall Ratio). In addition, the 1500 m² floor area building has a class G energy certification, gas boiler and consumption exceeding 8000 kWh gas and 22000 kWh electricity.

L'Aquila, Italy



VIRTUAL buildings

The Helix building is located in the West of Scotland Science Park, approximately 4 miles northwest of Glasgow City. It is a 2-floor office building with a total surface of 1445 m² and a concrete facade total surface of 2448 m². It has 52 windows and a window-to-wall ratio of 16%. Heating is delivered via a LTHW boiler with a seasonal efficiency of 0.95. Ventilation is provided via natural ventilation, except for 2 spaces that have mechanical supply and 3 spaces that have a mechanical exhaust. No on-site RES is present.

Glasgow, UK



Amsterdam, Netherlands



This is a 1985 mixed-used building with a commercial area on the ground floor and 30 apartments on the above 3 floors. It has a total facade area of 1950 m², 442 windows and an elevated 38% window-to-wall ratio. The building has concrete walls and slab with double glass aluminum frame windows. Its heating consumption is accounted for 150 kWh/m²y, while electricity consumption is accounted for 289 kWh/m²y.

This 1972 high-rise apartment building has a 3706 m² floor area and 245 windows with a window area of 547 m². It has a ventilated brick wall structure and uses gas for heating and DHW (22,000 kWh/y gas consumption) and electricity for the rest (410,000 kWh/y electricity consumption). It has radiators for heating and natural ventilation for cooling and IAQ. It was refurbished in 2020 with additional insulation and thermostats in all apartments.

Milan, Italy



Who are we?

The consortium

ENSNARE is an Horizon 2020 EU funded project carried out by 19 partners from 12 European countries: 11 SMEs, 5 research institutes, 2 corporations and 1 public body.

tecnalia

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