

Newsletter 5 January 2024

What's inside

- 2 Demo Building Renovation Introduction
- 3 Tartu Demo Building
- 4 Sofia Demo Building
- 5 Sassa Scalo Demo Building

Follow us



/company/ensnare

ensnare.eu



This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement n° 958445. This document reflects only the consortium's views and the Commission is not responsible for any use that may be made of the information it contain

Demo Building Renovation in ENSNARE

The design and renovation process for the demonstration buildings in ENSNARE have followed a **dynamic and non-linear approach**. The validation of the modular façade solutions is being executed through three residential building pilots: Tartu (Estonia), Sofia (Bulgaria), and Sassa Scalo (Italy)

The architectural journey commences with the **pre-design phase**, evolving into the **technical design** during the **concept design phase**. Upon the completion of the final technical design, the renovation phase ensues, followed by the subsequent handover and use phase (Figure 1). Currently, the **Tartu** demo building is **being renovated**, while the demo buildings in **Sofia and Sassa Scalo** have **completed the technical design** and **will start the renovation process** in the new year of 2024. The forthcoming renovation activities in Sofia and Sassa Scalo further exemplify the project's dedication to **translating conceptual designs into tangible and sustainable structures**.



Figure 1: Demo Buildings Renovation Design Process ENSNARE

As mentioned earlier, the design goes through a series of iterative processes, which means that the **design team and clients collaborate continuously**. Leveraging feedback loops, we've adeptly addressed emerging issues, ensuring the optimal design for all stakeholders. The technical design stage is significant because it involves making final decisions and **client feedback is crucial** during this stage. Involving third parties such as local architects and construction companies can provide valuable assistance in obtaining accurate data on the building and further installation of PV panels.



Tartu demo building

In Tartu, ENSNARE exemplifies **collaborative synergy**, underscoring the project's commitment to **cohesive engagement**. Local architects from **RIBBON** played a pivotal role, contributing essential insights during the design process. Their involvement facilitated a comprehensive understanding of the dwelling's existing conditions, enabling technical partners to seek **on-site specialist advice**.



Figure 2: Before (25.01.2022) and after (25.08.2023) the demolition works in the TARTU demo building

The façade project for the Estonian pilot building reached completion in April 2023, followed by the manufacturing of technologies and modules in July 2023. The assembly and installation of ENSNARE modules transpired in October 2023, illustrated in Figure 2, showcasing the **building's transformation post-demolition**.

Essential to the project's documentation, the Tartu team actively provided **audio-visual updates**, including photos, videos, and live calls from the site. As the pioneer in installation technology, the **Tartu** demo building's feedback significantly **contributed to refining the renovation process for ENSNARE's other demo buildings**. Currently, the ENSNARE modules' installation phase is complete, paving the way for technical equipment, sensors and panels. The Tartu team is actively coordinating additional material deliveries and preparing for the system connection installation, making a milestone in our innovative journey.



Figure 3: The installation of ENSNARE modules in TARTU demo buildings (19.10.2023 and 06.11.2023)



Sofia demo building

The façade project of the Bulgarian pilot building was finalised in September 2023. The manufacture of technologies and modules is planned for January 2024 with the assembly and delivery of ENSNARE modules to be carried out in February 2024. The façade project (Figure 4) for the Sofia demo building underwent **two rounds of approval**, adapting to design layout changes caused by structural conditions and previous renovations of the building. With the final design approved, material orders are currently being processed.



Figure 4: The façade project of the SOFIA demo building

Extensive **design considerations** led to a **delay in the building process**. The updates are made in line with the decisions of technical partners and the pilot building leader. For example, the inconsistencies in windows were found in older plans of the building with the photos, which required **delivery of new plans from the client's side**. Other changes were made due to modulation of the panels. The irregular shape and configurations require their own solutions in the connection (registration areas).

Sofia and Sassa Scalo present **unique challenges**, as module installation on existing structures demands **meticulous design planning**. Unlike the Tartu demo building, which underwent demolition and subsequent renovation, the Bulgarian and Italian demos are not subject to such extensive changes. Consequently, panels must be studied diligently to ensure a **seamless fit within their designated spaces**, given the limited range of possible adaptation stations.

This intricate blend of innovative design and collaborative efforts sets the stage for an exciting and dynamic trajectory for the Sofia demo building. To prepare for module installation, **on-site groundwork for the sub-structure is currently underway**. The following photos showcase the building's condition before the commencement of demolition and preparation works, offering a visual narrative of the project's progress and the meticulous planning involved.





Figure 5: The current condition of the SOFIA demo building in use

Sassa Scalo demo building

The façade project of the Italian pilot building was finalized in October 2023. The manufacture of technologies and modules is planned for January 2024 with the assembly of ENSNARE modules and their delivery to be carried out in February 2024. This demo building mirroring the timeline of the Sofia project, encountered **delays due to organizational challenges** and **the intricate façade complexity**. Uniquely designed with protruding elements, as depicted below in figure 6, **the building posed challenges in aligning modules with technology placement guidelines**. To ensure consistent placement of the technologies, a decision was made to create a plane on the façade. This building is not only architecturally unique but also has **specific seismic requirements** that must be considered during the design phase.



Figure 6: Photo of the SASSA SCALO demo building before the works

For these specific seismic requirements we have in the consortium **COAF**, a construction company **specialized in the seismic and energy retrofit of buildings**, that has been involved since 2009 in the **post-earthquake reconstruction** works after the Aquila earthquake. Spearheading the efforts in Sassa Scalo, the COAF team actively participated in meetings, providing necessary drawings and information. The captivating rendering of the future structure, also prepared by COAF, is showcased below, in figure 7. Presently, their focus is on the substructure, involving material procurement and initiating preparations. The blend of **architectural innovation** and **meticulous planning** makes the Sassa Scalo project a captivating journey to watch unfold.



Figure 7: The rendering of the SASSA SCALO demo building after the installation (not the final design)





Stay up to date with our latest news and with the project progress. Subscribe here to ENSNARE newsletter and follow us on social media!

