Agosti Nanotherm presents:

Nobilium®Thermalpanel

The insulation solution that fully integrates with historic/listed buildings.

Agosti Nanotherm is a leading company in the building sector for its use of unconventional and environmentally-compatible materials, with solutions that also work in historic/listed contexts.

In response to the market share seeking a compatible insulation solution for historic/listed buildings, Agosti Nanotherm has designed an innovative and discreet product: Nobilium® Thermalpanel.

This natural mineral solution has thin layers of pure basalt with very low thicknesses between 3mm and 9mm. The unique manufacturing method (basalt layers “sewn” together with the same basalt fibre) means the solution can be installed without the need to use mechanical dowelling, i.e. without “massacring” the wall of the historic building. The installation is carried out exclusively using natural lime products (air and/or hydraulic) and/or with the same products typically used to restore façades on this type of building.

Compatibility requirements:

Attention to detail while designing the innovative insulation solution has allowed for a positive response to numerous queries from various authorities about the requirements that need to be met by the materials/solutions installed/used in historic buildings, such as:

1) Mineral, natural and safe products, possibly non-combustible and durable, and environmentally compatible.
2) Non-invasive installation systems compatible with historic buildings and their restoration cycles, which do not change the aesthetics for which the building is known.
3) Solutions and/or products that do not alter and/or damage the hygrometric balance achieved by the walls.
4) Reversible solutions, should a return to the pre-installation situation be needed in future.

Carnival Palace Hotel in Venice with Nobilium®

Nobilium® Thermalpanel meets the above technical requirements:

1) Use of a natural mineral solution in pure long basalt fibre, unalterable over time with ecological, recyclable and readily available material, safe for use in part thanks to the unique manufacturing process that ensures the dimensional stability of the diameter.
2) Given that basalt is a mineral product, it integrates in a natural and fully compatible manner with any restoration cycle identified for an historic building. Its high mechanical strength means it can be used without anchors, and with a thickness of just 9mm, the result is fully integrated with the aesthetics.
3) Thanks to its reduced thickness and high breathability, the Nobilium® Thermalpanel allows the wall to interact freely at hygrometric level with the exterior, with zero substantial changes to the initial situation.
4) The ideal use and compatibility with products already used and approved for the restoration of historic buildings means the Nobilium® installation cycle is "reversible", so it "protects" rather than damages its historic host wall.

Anchor-free installation

Why use it for historic buildings?

As mentioned before, the Nobilium® Thermalpanel is fully compatible with historic buildings, so its use boasts the following advantages:

Considering a hypothetical "historic" stone wall measuring 50cm thick and with average thermal conductivity of 2.30 W/mK (source: Casaclima), therefore with a thermal resistance R of 0.217 m^2K/W (0.5m / 2.3 W/mK), to which the 9mm Nobilium® Thermalpanel is applied (R = 0.28 m^2K/W), the result would be as follows:

- the insulating power of the 500mm-thick wall would be more than double with the addition of just 9mm of mineral insulation, increasing from an R value of 0.217 m^2K/W to 0.497 m^2K/W. It would also create a thermal phase shift of around 14 / 15 hours, reducing initial thermal dispersion by around 50%.
- The compact nature of the Nobilium® hidden in the top-coating of the wall would have zero consequences for the aesthetics of the building.
- When installed externally, this solution would "protect" the entire underlying wall from the thermal "stress" of the outdoor environment, with positive results for the internal temperatures of the wall (better preservation and protection of any internal frescoes).
- The uniformity of materials and temperatures where the Nobilium® is applied will create less stress on and degradation of the external finish, thus increasing its useful life.
- The high breathability of the Nobilium® + refining package will allow the wall to breathe more than a solution of the same thickness with just plaster + refining.
- When installed on internal walls, Nobilium® creates higher internal surface temperatures in the winter and lower ones in the summer (with equal heating), or, alternatively, the same internal surface temperatures could be maintained but with lower heating/cooling costs.

- The internal installation of Nobilium® would also create a significant improvement in comfort/energy use where the building is used occasionally (e.g. offices), given that to heat and/or cool it, less energy would be needed and a comfortable temperature would be reached faster (elimination of mass to be heated, having interposed Nobilium® between the internal environment and the external perimeter walls with high mass, which would have "absorbed" enormous quantities of heat before heating up/cooling down).

Government bonuses:

There are tax benefits that support the works.

Thanks to government bonuses, customers can carry out energy renovation works at a lower cost. The company is describing and demonstrating the benefits of using Nobilium® where the customer has limited space.

For example, there may be a constraint due to an existing window or door frame that creates a lack of space. The moderate thickness of Nobilium® offers a solution to thermal bridges without compromising the fixture. Its use as a levelling foundation for external paintwork also increases the duration of the finish over time, since the temperature and material are both uniform.

Mould:

The recent hike in energy costs combined with the government's latest measures will force households into a more prudent use of heating in light of the upcoming(i) winter(i), with a consequent and inevitable drop in the temperatures of the internal walls. The end result will be a high risk of promoting condensation and mould.
Thanks to its technical properties, Nobilium® can reduce and/or entirely remove these health hazards, using a natural, environmentally-compatible, simple, fast and low-profile application.

https://nobiliumthermalpanel.it/en/

Conclusions:

We believe that the Nobilium® Thermalpanel offers a concrete, feasible, usable and durable response for historic/listed buildings, since its low profile integrates easily into buildings, creating a significant reduction in thermal dispersion with a mineral solution that can be integrated into the installation cycles of the materials identified for the restoration, further "ennobling" the work it is applied to.