

## REPAIR Good Practice Example: Florence, The Leopoldine Monastery



***In 2001 renewable energy measures were proposed for application at the Leopoldine Monastery in Florence under the “Thermie A” project.***

*The measures outlined in the project for this historic monastery building include insulation of the building envelope, direct gains, openings, passive and active solar measures and technologies, day lighting design and energy rational management.*

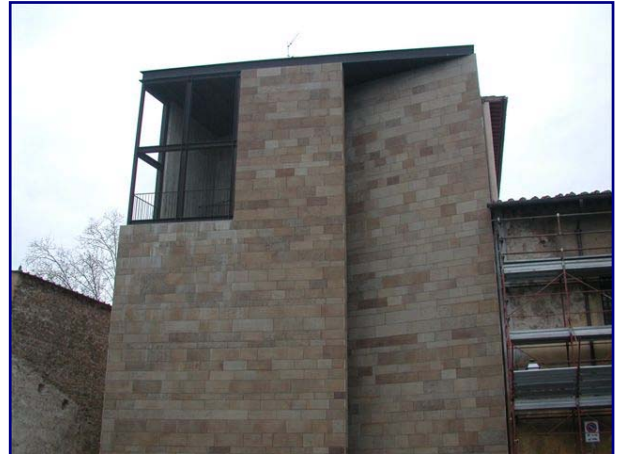
The project focuses on the integration of Solar and Renewable Energy techniques and components in historical buildings with aesthetic constraints. The main technical task was to install Roof mounted Solar Collectors (the Research & Development phase for this was completed within the former Rebuild-Recite project) and an underground thermal collector, both assisting a water heat pump.



Particular attention was given to the architectural design for the interior, in order to achieve the best day lighting and comfort levels. Residential units and tertiary rooms are designed by adapting bio climatic principles within the building constraints and to meet the needs of the building owners (the City).

The ‘Thermie A’ project aims to demonstrate the feasibility of the integration of renewable energy sources in old buildings, regeneration designs and contribute to the spread of relevant

technologies in the inner, historical parts of the European cities.



The “Thermie A” project deals with technologies and measures answering particular challenges of historic buildings in common with a number of significant cities.



*These challenges are largely related to aesthetic constraints, high density, and the old age of buildings and / or their services networks.*

*Other challenges include the lack of open spaces, direct building gains, the lack of technical setting rooms, vertical passages and insufficient daylight for ground floors and generally for low floors.*

*The objectives in this project are to apply, within this refurbishment scheme, selected energy technologies whilst avoiding aesthetic impact and adapting solutions to the particular case.*



Installed systems include Solar Roof panels, Combined Heat and Power and improved insulation to achieve energy rationality (save and use) and renewable integration.

*Once such renewable energy technology measures are applied and monitored, they demonstrate technical feasibility and economic viability, together with knowledge for further applications and the experience for design improvement.*

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