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Project co-funded by the European Commission

Work programme topics addressed:

EeB.NMP.2013-6 Achieving high efficiency by deep retrofitting in the case of commercial buildings

CONSORTIUM PARTNERS

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ECOSHOPPING

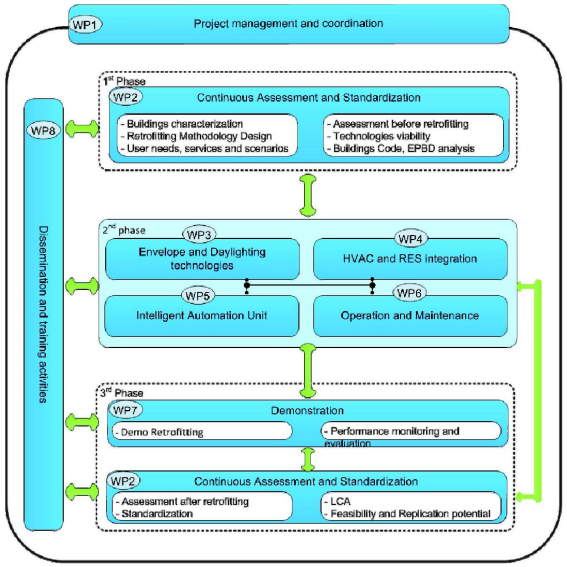
ENERGY EFFICIENT & COST COMPETITIVE RETROFITTING SOLUTIONS FOR SHOPPING BUILDINGS

http://ecoshopping-project.eu/

PROJECT SUMMARY

"EcoShopping" project aims to build a holistic retrofitting solution for commercial buildings to reduce primary energy consumption down to less than 80kWh/m2 per year and increase the share of RES more than 50% compared to the state of the art.

The project intends to use and integrate available products and technologies along with a network of low-cost equipment to accurately monitor the environmental and occupancy parameters to have better control of the BAM and full exploitation of the Building Thermal Mass, which serves as a "Thermal Battery" and stores the RES directly without using battery, tank or other expensive storage material and simplifying the system structure.



CONCEPT

"EcoShopping" project aims at conducting systematic methodology and cost effective solutions for retrofitting commercial buildings. By bettering the insulation and lighting system, integrating additional RES based HVAC systems and exploiting the building as a thermal storage, developing an intelligent automation control unit, maintenance and commissioning technologies, the energy efficiency of the commercial building is expected to have an overall enhancement of about 58%.

The "EcoShopping" platform will integrate other existing HVAC systems, such as heating, ventilation, air conditioning, etc. and will interoperate with other ICT- based subsystems (e.g. for security, protection, gas-detection, safety and comfort). The control and management of automation systems will be based on advanced algorithms. The platform will be capable of learning from previous operations and situations – by means of a semi-automatic process of retraining from Internet-based repositories, which allows configuration, personalization and dynamic adaptation to the characteristics of the building and the weather.

PROJECT DATA

Project cost: 4.10 million €
Starting date: September 2013
Project Duration: 4 years

OBJECTIVES

- ✓ To reduce primary energy consumption down to less than 80kWh/m2 per year and increase the share of RES (Renewable Energy Sources) more than 50% compared to the state of the art.
- ✓ To investigate a retrofitting solution with innovative thermal insulation solutions and Day lighting technologies.
- ✓ To develop and install a RES direct powered DC variable speed heat pump and strengthen the Building Thermal Mass for reducing the energy consumption.
- ✓ To integrate the Intelligent Automation Unit (IAU) concept with a Mobile Robot.
- ✓ To develop a solution for automatically identify and foresee failures and inefficiencies in HVAC system performance.
- ✓ To offer a continuous assessment through the entire project.