



Welcome to A2PBEER's first newsletter, outlining the objectives of the project! Expect further newsletters once every 6 months with updated news and events from around Europe.

Overview of Project

A2PBEER is a four year research project partially financed by the European Union 7th Framework Programme and seeks to develop a cost effective, "energy efficient retrofitting" methodology for public buildings, drawing on the expertise of over 22 partners from 11 European countries. The company, Tecnalia, located in Spain are the lead partner for this project.



Now, nine months into the project, three demonstration districts in differing climatic areas have been evaluated and fitted with monitoring equipment to assess the energy performance of the buildings and their energy consumption. The retrofitting strategy will be outlined in our next issue of the newsletter.



Demonstration Districts

There are 3 demonstration districts to be monitored, retrofitted and validated.

District 1 is the Leioa University Campus and is located on the outskirts of Bilbao, in the Basque regions of Spain. The demonstration building is the Central Rector's Office Block located within a complex of 15 other buildings.

District 2 includes the Technology and Maritime Museum in Malmo situated in the southern part of Sweden. The demonstration building incorporates a 1950s building with a submarine attached via glazed walkways.

Finally, district 3 is located in Ankara, Turkey at the Aflivadem Vocational School. The demonstration building is the boy's dormitory and is situated within a complex of buildings.

To investigate further into the structure and layout of the buildings in all three demonstration districts...[read more](#)



Aerial View of Bilbao



Aerial View of Malmo



Aerial View of Ankara



Retrofitting

The company, Acciona, have prepared a detailed measurement and monitoring plan of the energy consumption and indoor environment conditions for the selected demonstration buildings within the A2PBEER project, with the aim to verify the final energy performance of the retrofitted demonstration buildings in each district.

The monitoring strategy required to evaluate the energy use in each demonstration district before retrofitting, was based on a specific deployment of meters and sensors, and a distributed communication network. This will be outlined in more detail in our next newsletter in September.



Technological Solutions

There will be a number of technologies deployed within the demonstration districts, but each district will require their own solutions to achieve near zero energy performance. Each of the four technologies will assist in improving the performance of the external envelope of the building, improve lighting conditions and reducing the heating/cooling consumption. These are listed below and can be studied in more detail on the link to the website.....<http://www.a2pbeer.eu/technical-solution/>



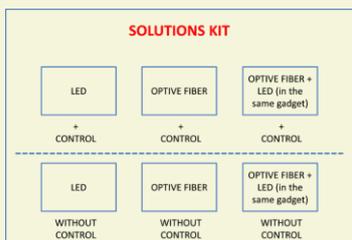
High Performance Building Envelope

Providing a **super-insulated facade** retrofit system by integrating innovative energy efficient Vacuum Insulation Panels (VIPs) within the internal structure and providing an advanced ventilated system to the external facade. These technologies will be installed to improve the energy performance of the main structure of the buildings.



Smart Windows

A **smart window** solution, utilizing a unique mechanism permitting various amounts of solar radiation into the building at different times of the year. The window system will be able to rotate 180 degrees and will be fitted with special glazing which will assist in controlling solar gain within the buildings.



Smart Lighting Systems

Four types of systems are envisaged, using a combination of **optical fibre techniques, LED luminaires** and an **intelligent control system**. Natural lighting will be deployed into the building via this fibre optic technology and controlled by 'presence' sensors.



Smart/Optimised Thermal Network

The introduction of the proposed fully integrated **"triple-state" absorption technology**, will incorporate an innovative **solar collector system** and a **smart dual thermal sub-station**. This system will reduce the need for use of fossil fuels and create an energy efficient solution for the provision of heating and cooling within the buildings.

Results and Training

The existing demonstration districts have been fitted with monitoring equipment and are presently being monitored and recorded for a period of 12 months. It is then intended to retrofit the building where further monitoring will take place to best practice standards. The energy performance of the building and the energy consumption by its end users will then be evaluated with a view to replicate this retrofitting method into other public buildings.

A "kit-concept" will be developed and applied in practice to SMEs, social housing developments and other public buildings in order to provide adaptable and affordable solutions for retrofitting in Europe.

A training programme will also be developed for specific trainers in each demonstration country, using a specific e-learning portal for the project.

Further Newsletters

We hope to keep you updated with further newsletters once every 6 months, with the next one due in September. This will describe the retrofitting strategy for the demonstration buildings and outline the monitoring procedures. Further details on the technologies will also be presented.

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