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Energy efficiency through participation

Refurbishing 'Los Limoneros'

Gaining the trust of residents was the biggest success factor in the Los Limoneros energy refurbishment programme. Los Limoneros is a social housing complex in one of Malaga's most deprived neighbourhoods, which thanks to the project, has significantly improved its energy rating.

In the past, attempts to deliver energy efficiency measures in Los Limoneros, such as improving the window insulation, had encountered problems. Without properly engaging residents in the process, they resulted in sabotage and vandalism. As an area that is known for high unemployment, crime, drugs, poverty and illegal activity, energy efficiency was not a top priority for residents. Many were also afraid that such measures would lead to an increase in their rent. The 'energy efficiency refurbishment through participation' project, completed in May 2014, was different. It sought to build trust with residents and actively involve them in the process from day one.

“Engaging the local community has been key to the success of the ELIH MED project. Too often the residents are merely informed of decisions that have already been made. ELIH MED gave us the opportunity to involve these residents in these decisions that directly affect their quality of life.”

Sandra Marín Herbert, Malaga City Council

Gaining trust

The city allocated a specific member of staff to act as a liaison for the project. This allowed the project team to build lasting relationships with the residents and generate mutual respect. The city held regular meetings with between 10 and 45 residents each time.

There were two main channels within the participatory process:

- The Territorial Management Group (TMG), made up of energy efficiency experts, engineers and architects, tasked with assessing the building's energy performance and identifying potential improvements.
- The Pilot Project Participative Group (PPCG), gathering residents affected by the refurbishment.

Council staff and property owners attended both groups. Any solutions devised in the TMG were taken to the PPCG for discussion with residents. As a result of these discussions, the city drew up and implemented a detailed energy

cities in action

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efficiency plan. Measures included a solar thermal and cogeneration heating system for sanitary water, insulation of the roof and crawl space, thermal wall insulation, and ventilation of the central patio by opening the skylight.

Residents have since been invited to workshops on the heating system and how to maintain it. This helps create a sense of ownership among residents - reducing the risk of vandalism - and lets them learn new skills.

“We are learning a lot because we have been going to meetings and they have explained everything to us over and over again. Also, they have installed smart meters to help us understand how much we spend on electricity. Now I am able to check what I spend in all of the rooms, so when I see that I have spent a little bit too much, I say 'hey! I have got to spend less'.”

Elisa Llorente, Resident in Block 3

Spreading the word

The project in Los Limoneros was complemented by two broader initiatives: an awareness raising campaign, and a smart metering campaign. These targeted a number of different neighbourhoods and informed residents about how to save energy and reduce costs.

The awareness raising campaign included using soluble graffiti to spread energy efficiency messages and engage young people; distributing information and giving expert advice; and the use of a cartoon character, the lightbulb 'Gastón', as a creative way of sharing the message. This campaign reached 14,439 people directly and a further 23,102 indirectly.

The smart metering campaign involved installing 45 smart meters in social housing in various neighbourhoods, including 20 meters in Los Limoneros. This allows residents to directly monitor their consumption, and identify when and how they are using energy. Council staff meet regularly with residents to advise them on reducing consumption and saving money, and many have already noticed a difference.

A new way of working

City staff managed to really engage with citizens through this project. They were surprised by how effective this new way of working could be. By managing to get the president of the residents' association on side, for example, they were able to gain the trust of many others. The project proved that by connecting with people on a personal level and gaining their trust, a lot can be achieved.



The initial survey sent to residents on comfort and energy consumption had a 20% response rate. This might not sound like much, but for a community previously so opposed to energy efficiency refurbishment, it showed a growing change in attitude. Four of the residents were even hired to work on the project.

Malaga is keen to build on the success of this approach. It continues to engage residents through workshops and has recently gathered local graffiti artists to paint a mural on the building's northern facade to promote the energy efficiency message. This was also carried out with the involvement of residents, and forms part of a wider plan that will be implemented together with the Municipal Housing Institute (IMV) to improve the area around Los Limoneros, creating extra services and amenities to make it a nicer place to live.

Los Limoneros was a pilot project carried out under the ELIH MED (Energy Efficiency in Low Income Housing in the Mediterranean) project, and was 75% funded under the European Regional Development Fund (ERDF). The remaining 25% was made up of local funds.

The project won the EURO CITIES award 2014 in the 'participation' category.

