

Saving energy through a user-friendly experience

June 14 2016, by Clara Attene



Credit: Youris.com

Living or working in energy-efficient buildings can be a great opportunity, but users need to feel empowered. This means making them aware of the building features and allowing them to manage some of the

appliances by themselves. In this way, disorientation or annoyance is avoided and people feel more in control.

"The most common complaints are about high indoor temperatures during the summer and dry air in the winter, while some residents are frustrated with technical systems," says Åshild Lappegard Hauge, senior research scientist at [Sintef Building and infrastructure](#) department in Oslo, Norway, and author of several qualitative surveys about the satisfaction of occupants in sustainable buildings.

In Italy, the new 166m [Intesa Sanpaolo skyscraper](#) overlooking Turin seems to be a case where the implementation of best practices is leading to a positive experience. Designed by the famous architect Renzo Piano, rolled out in April 2015 and awarded with a LEED Platinum certificate, it is one of the most ecological skyscrapers in Europe.

"Everything is computerised," affirms Matteo Gallo, who works on the 29th floor of the building, "The systems are quite efficient, and they satisfy the different needs of people working in the open space. Each group of desks has a display that displays the temperature, although users can't manage it directly. If necessary, they can call for a technician to fix what doesn't work perfectly."

The project has tried to balance energy savings and user comfort. For example, "the LED lighting is not 100 percent controlled by the automatic building management system," explains Valentina Serafini, architect from Renzo Piano Workshop Building. "Each worker has different needs: Therefore, we provide every desk with an LED lamp that can be switched on and off as required," she adds.

"We showed the workers the building's characteristics – such as the 'double skin' façade that helps keeping the air colder or hotter according to the season – to make them aware of the differences from a traditional

workplace," explains Luca Tedesi, chief of the Buildings and logistics department of the bank.

Dealing with the issue of the interaction between users and automated devices in retrofitting solutions, researchers from the European project [Bresaer](#) are working on a building energy management system (Bems). It is based on algorithms that make predictions, i.e. weather forecasts, and simulations to evaluate energy performance.

It also includes a graphical user interface, which allows the end-user to interact with the system. "Through our interface two modes are available, manual or automatic. Therefore, the user can handle the system if required," affirms José Hernández García, researcher at Energy Division of Cartif, one of the project's partner.

The researchers also want to demonstrate that the comfort criteria calculated by the system are more accurate than what an individual user would apply, because they take into account factors like the future occupancy of the rooms, the optimisation of the energy consumption or the weather outside.

Finally, a good user experience of sustainable buildings requires a high level of awareness of the "side benefits" arising from more ecological behaviour.

An example comes from a project carried by [Global Action Plan](#), a British independent charity committed to engaging people in practical solutions to environmental problems. In the so-called [Operation TLC](#), they helped nurses, doctors, security and cleaning staff of the Barts Health NHS Trust, a hospital in East London with 15,000 employees, to achieve long-term cost savings.

"The building had high efficiency standards and our programme was

aimed at supporting the occupants to save energy," tells Philippa Ward, executive partner of the organisation, "Actions such as switching off the lights or turning off machines were shown to improve the sleep and privacy of patients. So we talked to hospital staff about that, instead of focusing on environmental messaging. We used reasons that were particularly relevant for them, and so motivated the staff to make a major effort on green behaviour, saving £428,000 per year," she concludes.

Provided by Youris.com

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