The behaviour of a building’s users may be at least as important as its design when it comes to energy use. Kathryn Janda, from the UK Energy Research Centre’s Energy Demand theme, argues that architects are well placed to take more responsibility for educating and informing the general public about how buildings work and that school buildings in particular could become part of the education process and not just static spaces.

Writing in *Architectural Science Review*, Dr Janda describes American studies showing that energy bills in “zero-energy homes” are not zero. These houses are designed to be energy efficient and produce their own energy through solar power. While the houses in this solar community do use less energy on average than those in a neighbouring “normal” community, both neighbourhoods show the same overall variance in energy usage. There are some high consumers, some average consumers, and some low-energy users. To Dr Janda, this means that smart buildings aren’t the solution—smart people are.

The personal actions of individuals account for around half of the energy consumption across all sectors while institutional (or non-personal) choices account for the other half. Buildings can be designed so that the outcome of an individual’s decisions on energy use is lessened – for example, heating a well-insulated house to 19°C will use less energy than heating the same house to 21°C – but people’s energy-using behaviour is not always reasoned and predictable. This means that education and information initiatives to “correct” behaviour may not be enough to bring about change. Studies show that people cut back their energy use when given feedback, either by using real-time meters or by being given indirect information in the form of, for example, itemised bills. However as most people’s knowledge of energy issues is very limited, (in 2002 a study in the USA showed that only 12% of the general US population could pass a basic energy quiz), providing more feedback in the hope of influencing behaviour may not be the answer.

Architecture students may be taught how to integrate sustainability into building design, but although nearly all of us use buildings, very few people outside of the architecture and engineering professions understand how buildings work and their effect on health, wellbeing and the natural environment. Dr Janda quotes researchers in the US who suggest that the design of school buildings in particular could be used to enhance and expand areas of the curriculum - for example solar-operated shading devices could be used in maths, physics and science teaching.

“In the face of climate change, purely architectural solutions are necessary, but by themselves, not sufficient, said Dr Janda, “The UK government has declared that new homes must be zero-carbon by 2016. Experience with “zero energy” homes shows us that designers cannot do this alone. They will need to work with users to deliver comprehensive energy reductions. Preparing the public for this interactive role is a job in itself – and one that architects are well placed to deliver.”

Commenting on Dr Janda's work, John Loughhead executive director of UKERC said, "Katy’s research shows that trying to achieve carbon reduction and sustainability for buildings solely through tightened design standards simply will not work. A much better understanding of energy use in practice is essential if architects and those responsible for our built environment are to meet targets for energy saving."

Dr Janda thinks that a new professional group might develop to take on this education role for the common good. She sees parallels with public health education initiatives, although she considers that a health-based profession would not be able to deliver the innovative and diverse building solutions that would come from the involvement of architects.

“If government supported research and teaching in this vital area, we could move towards developing the smart people needed to maximise building performance” Dr Janda said. “Concurrently, the building professions would have to reshape their norms of success and achievement.”