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European engineers emphasize green value of low-energy buildings



New and existing buildings need to be more efficient

European Union goals to cut energy consumption by 20 percent across the bloc has led to an emphasis on efficiency - not just in homes, but in office buildings, shopping malls, and other structures.

The words "energy efficient" are usually applied to cars these days - the result of engineers coming up with more fuel-efficient models that take people further and pollute less. But a large European network of engineers meeting in Rome this week want to focus on what their profession can do to further reduce energy waste - in buildings, not in vehicles.

Improving buildings' energy efficiency is at the forefront of a new European Union initiative called Build Up. The public/private partnership aims to establish minimum standards for measuring energy efficiency, create a certification system for buildings that meet those standards, and help find ways to cut down on energy consumption.

The construction, maintenance, operation and demolition of houses and buildings account for some 40 percent of the EU's total energy consumption and is a main source of greenhouse gases.

Panos Panagopoulos, president of the European Federation of Engineering Consultancy Associations (EFCA), said this is the next "big story" for engineers. His organization is one of the co-sponsors of a Rome conference about energy efficient buildings from May 26 to May 28.

"Buildings will be the focus of activity of engineers now for the next period, retrofitting buildings for reduced energy consumption," Panagopoulos said.



Using new construction materials isn't the only way to save energy

That can include things like redoing a roof with solar panels instead of ordinary tiles, placing solar film on windows so they reflect heat in cold climates, or better insulating buildings in cold climates.

Learning from the past

Vice President of the Association of Italian Engineering Organizations Raffaele Gorjux said making buildings more efficient isn't just about using new technology, either. Often, he said, the best ideas come from the past. Aspects of a building's design - like having high or low ceilings or thick earthen walls - can passively make it more efficient.

"Centuries ago, when air conditioning was not an option, still people managed to live comfortably," said Gorjux. "Sunscreens, ducts for air flow through buildings, use of day and night, a lot of techniques."

Gorjux said European engineers should start exporting this expertise to other areas of the world.

"For instance, in the Middle East, some good skills exist in the area of new buildings, but there is no culture of rehabilitation of existing buildings," Gorjux said.

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