"Research activities of the Building Energy and Environment (BEE) Group of CIMNE".

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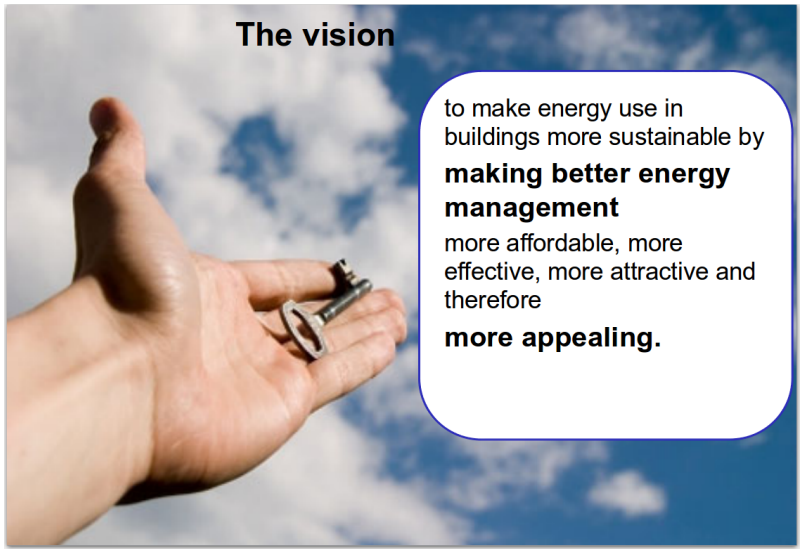
Introduction: The International Centre for Numerical Methods in Engineering (CIMNE), www.cimne.com, is an autonomous research and development centre, created by the Generalitat de Catalunya and the Universitat Politècnica de Catalunya (UPC) in 1987 under the auspices of the UNESCO, and dedicated to promoting and fostering advances in the development and application of numerical methods and computational techniques for the solution of engineering problems in an international context. CIMNE has the experience and reputation gained through participation in more than 910 R+D projects with the financial support of the European Community, and various organizations as well as Spanish and international enterprises.

Within CIMNE, the Building Energy and Environment **(BEE) Group**, www.cimne.com/beegroup, is an independent research group of around 15 researchers, focussing their R&D activities on methodologies and tools for the reduction of CO_2 emissions in the urban environment. Within this focus, work is organised along three lines: Applied research for the energy retrofitting of buildings and neighbourhoods; Applied research for the introduction of Renewable Energies and energy efficient methodologies in the building sector; Energy management, consultancy and assessment to owners of multiple buildings to enhance energy efficiency. Most of our work is focused in development of tools and web platforms that allow users to develop energy planning strategies and to monitor and follow energy improvements.



Research lines:

- **De-risking energy services:** *"developing an overall vision of the real building energy performance, based on an understanding of the influence of building pathologies and occupant behaviour"*
- **Smart urban environments:** *"Working with local authorities in projects that aim to integrate software tools, databases and systems in integral decision making platforms"*
- **Customers empowerment:** *"Improving the quality of information provision to empower citizens to participate more actively in their energy expenses "*

- **Energy Positive living:** *"Working actively to raise the awareness in the trend towards an energy balance where the building produces as much energy as it consumes"*

- **Real energy use in buildings:** *"We have over ten years' experience in the development and application of energy simulation, energy management practices, web services and monitoring devices in real buildings".*

- **Small and medium scale bio digesters:** *" More than 800 bio digesters have been installed in Bolivia. One research laboratory and training courses have been set up"*

On-going Projects:

BECA – Balanced European Conservation Approach – ICT services for resource saving in social housing (2011).
http://www.beca-project.eu

SmartSpaces - Saving Energy in Europe's Public Buildings Using ICT (2012).
http://www.smartspaces.eu

SEMANCO - Semantic Technologies For Carbon Reduction In Urban Planning (2011).
http://semanco-project.eu

Build up - the European web portal for energy efficiency in buildings (2011).
http://www.buildup.eu

AIDA - Affirmative Integrated Energy Design Action (2011).
http://www.aidaproject.eu

ENCERTICUS - Energy Certification, Information and Communication Technologies for User Satisfaction (2013).
www.med-encerticus.eu

EMPOWERING – EMPOWERING customers to save energy by informative billing - Intelligent Energy Europe (2013)
www.iee-empowering.eu