

## **HOMES programme: making the most of the energies of each building**

Providing each building with solutions to achieve top energy performance while preserving comfort and quality of life: this is the ambition set by the 14 industrial partners and research actors partnering in the HOMES Programme, led by Schneider Electric.

Each member of the group contributes specialised knowledge, expertise and creativity to finding, together, ways to make the most of the energies of commercial and residential buildings. The investment is high: more than 80 million euros\* to create the solutions we'll use tomorrow, at home, in offices, or in public buildings. Their efforts span a wide-ranging innovation process: analysing trends, specifying needs, supporting changes to the standards and integrating emerging technologies to design more efficient system architectures, with optimal conditions for success.

*39 million euros funded by OSEO*

### **The pressure is mounting**

There's no time to lose. Energy resources are becoming scarcer. At the same time, temperatures are sure to rise and the upward demographic trend continues: the world's population is due to reach more than 9 billion in 2050, with minimum demands for the comfort of their HOMES and on the job.

Buildings offer tremendous potential for progress since they presently account for 40% of energy usage for heating, cooling, lighting and powering equipment: lifts, cold storage, computer systems, etc.

With current technologies, savings can already be made, by having well-insulated buildings, choosing efficient low-consumption equipment and combining it with control and automation systems.

To further and realise the potential savings, the best existing technologies must be deployed in all buildings, innovative architectures must be adopted, and new systems must be imagined in fields still unexplored. It also means changing our behaviour and habits in our ways of living and our ways of building. By providing the actors with the means for cooperation, HOMES intends to rethink building design and integrate the implementation and maintaining of energy efficiency in building construction, renovation and use.

## **Think different!**

In the Innovation Division, the programme is headed by Didier Pellegrin and brings together industrial leaders in their markets, scientists, technology innovators, specifiers and standards-makers. HOMES plays a role in breaking down the walls between specialised areas and ways of doing things, giving priority to joint efforts by building actors: design offices and contractors, architects, specification organisations, electricians and air conditioning specialists, heating specialists and automation specialists.

The purpose? To enhance innovations in each partner's field of expertise and to develop, within four years, a proposal of innovative, concrete, realistic solutions that can be widely deployed.

In addition to Schneider Electric's expertise in energy management, HOMES benefits from the competencies of Philips Lighting for lighting, Somfy for closing systems, CIAT for air conditioning, EDF for connection to the grid, TAC and Delta Dore for building automation and control, STMicroelectronics, Radiall, Watteco and Wieland Electric for electronic components and connectors, and the CEA, CSTB and IDEA for their scientific and technological input.

## **Leads already in the pipeline ...**

Making the most of building energy means optimising installations of energy-consuming equipment by automation and making their energy performance last with metering and monitoring functions. Enabling all buildings to optimise energy management via sensors, metering and control will be a major evolution. The whole of building electronics and the related technological evolution come into play. Just as electronics has revolutionised our ways of communicating, working, entertaining ourselves and moving about, with HOMES, it will revolutionise the buildings of the future.

In seeking solutions that combine energy metering, control and distribution, HOMES relies on its partners to make the most of technologies and adapt them to fit the specific needs and constraints of buildings: for example, installing wireless control and monitoring functions, thereby creating greater flexibility in reconfiguring spaces; using silicon carbide to improve the performance of variable speed drives, thereby reducing the power consumption of motors; cutting the cost of ambient sensors with MEMS, making the sensors autonomous, powered by minute generators producing electricity from the environment around them, etc.

Leads such as these, still embryonic or confidential today, will shape our day-to-day lives tomorrow.