



In line with developments in housing, materials are back at the heart of the debate

## **Energy, comfort and safety: the home of the future relies on copper**

**Brussels, 28 February 2008.** Sustainable development, renewable domestic energy, safety, comfort, home automation, etc.; the new priorities of modern-day housing mean that industry professionals and the general public are having to adapt to these developments. The choice of materials is a key criterion, whether for rising to the environmental challenge of harnessing energy or for improving the comfort and safety of the occupants. Due to its unique combination of properties: durability, recyclability, electrical and heat conductivity, and its aesthetics, copper is proving to be a key material for the home of the future.

### **Eco-homes: improving environmental performance and harnessing energy thanks to “copper technologies”**

The home of the future will have to integrate into its environment in an exemplary fashion. It is all about “discreet” homes, which are the symbol of eco-construction, and “energy-independent” or “neutral” homes. In order to reduce the environmental impact of a house, suitable construction materials need to be chosen. This means meeting certain standards in terms of environment, recyclability and durability, as well as in terms of performance with regard to the material's main purpose.



**Bourne House**  
© Manco/Valdivia

**Highly resistant to corrosion and 100% recyclable**, copper is a favourite material for pipes, facades and roofs. **The best electrical conductor among non-precious metals**, copper also helps to improve the efficiency of systems and electrical appliances and it is **at the heart of domestic renewable energy systems** such as solar energy and geothermal power. According to Professor Ronnie Belmans, President of the International Electricity Union, *“the judicious use of 1 tonne of copper in the energy sector makes it possible to reduce CO<sub>2</sub> emissions by 200 tonnes per year on average.”*

The use of copper combined with other sustainable materials such as wood and clay - both extremely efficient in their fields of application - considerably reduces a building's environmental footprint.

### **The house as a cocoon: the advantages of copper**

#### **✓ Electrical safety: avoiding and limiting risks**

If reducing the environmental impact of a home is the first challenge, ensuring the safety of occupants is the second. In Europe, 60% of homes are over thirty years old and it is estimated that over 70 million homes do not comply with electrical safety standards. These systems no longer comply with modern requirements and occupants tend to have dangerous habits: multiple appliances connected to the same socket, extension leads under the carpets, electrical devices close to water supply points, and unsafe DIY projects. **A well designed and maintained copper electrical installation is undoubtedly a safety asset in a home:** copper avoids connection corrosion problems and, above all, thanks to its excellent conductivity, carries current better than any other material. Installers are accustomed to working with this material and it is easy to install and efficient.

### ✓ Heating: the key to a comfortable living environment

For over 70% of Europeans, comfort is a key quality criterion for housing<sup>1</sup>. Space, heating, safety, interior layout and aesthetics are also essential quality criteria. Copper is omnipresent in our daily lives (cables, pipes, telephone and ADSL lines), but it is often hidden, taking a backstage role in the various systems that work together to create a comfortable living space.

Copper is the best heat conductor (among the non-precious metals), making it a **favourite for heating systems**. For both traditional and underfloor heating, copper-based solutions offer optimal efficiency. An efficient solution, underfloor heating encourages an even distribution of heat throughout each room and complies with new regulations on thermal characteristics.

### ✓ Copper adorns our homes

Apart from its hidden presence, copper can be seen in numerous household objects: taps, door handles, banisters, stair edges, decorative elements, furniture, cooking utensils. Already a favourite among architects, its technical and aesthetic qualities are attracting increasing numbers of designers, and copper is making a major impact on interior design. Its alloys offer a wide range of colours including orange-red, chocolate-brown, the golden yellow of brass and the characteristic green patina which develops, over many years, on exposed copper. Finally, copper's environmentally-friendly qualities make it a truly modern material for designers who are keen to use an "eco-design" approach.



*Bubble coffee table*  
Nendo design  
© Enza Temborra

### The smart house: copper, a key component in the "personal assistant" type housing of today

The union of IT, the telephone and electronics will shape the home of the future. New housing concepts incorporate a series of automatic comfort functions as well as functions for energy control, communications and safety. Omnipresent in these systems due to its use for energy and data transmission, **copper is also at the heart of the smart systems which regulate home automation**. Research carried out by the Dutch platform ELUX on comfort and domestic safety has, for example, led to a scheme which needs 50 to 70% more copper than a standard home.

Due to the rise in the number of elderly people in the overall population in Europe, **ensuring the safety and comfort of senior citizens is a growing problem. Elderly people in particular need adapted, safe and flexible housing, so that they can stay independent for as long as possible**. According to an analysis carried out by the European programme *Leonardo Energy*<sup>2</sup>, the home of the future should offer smart-ageing potential to meet this growing need. Interactive global support and emergency help systems, real "technology services", are already being tested and developed, including inactivity alarms, systems connecting elderly people to their families, fall, wandering or appliance malfunction detectors and medication assistance systems.

### ➔ A full press pack is available on request

#### ***About the European Copper Institute***

The European Copper Institute (ECI) is a joint venture between the world's mining companies (represented by the International Copper Association, Ltd) and the European copper industry. Its mission is to promote copper's benefits to modern society across Europe through its headquarters in Brussels and a network of eleven copper information centres

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<sup>1</sup> The main quality criteria for housing according to Europeans, BVA 2007 Survey for Qualitel.

<sup>2</sup> *Leonardo Energy* is an initiative managed by the ECI and its European network (11 copper information centres). It is dedicated to building information centres to serve all professionals directly or indirectly involved in the electrical energy sector: researchers, designers, engineers, contractors, architects, regulators, and journalists. [www.leonardo-energy.org](http://www.leonardo-energy.org)