ESTEP Response to the Recovery Plan

ENERGY-EFFICIENT BUILDINGS: A Key Requirement

Milan Veljkovic ESTP/ECCS/LTU
ETCP Conf. Brussels, 2009.11.15
based on
T. J. Hurd presentation from July 2nd 2009
Overview

- ESTEP.
- Role of steel in EEB, applications, projects.
- Short term roadmap.
- What we (WG3) are looking for?
Steel Industry Turnover 92.5Bln€. Employment 377K
Total Sectors 2762Bln€. Employment 22Mio
Why can Steel play a critical role in Energy Efficient Construction?

Steel is one of the most important construction materials with half of the steel produced used for construction, and has considerable potential for integrated energy efficient buildings:

- Ease of offsite manufacture, assembly, and modular construction
- Multi functional – structure, floors, roof, envelope
- Adaptable and flexible for integration of green technologies (lighting, renewable energy, phase change materials etc.)
- Ease of design for manufacture and deconstruction
- Adaptability and flexibility allowing dynamic use of buildings throughout lifecycle
Energy-efficiency of steel construction – holistic building approach
Large Variety of Potential Projects Identified

Product and System development:

- **Development of integrated systems that reduce energy consumption in buildings particularly for space heating, cooling and energy storage**
  e.g. light-weight envelopes, optimised thermal inertia, solar gains and thermal insulation, passive or reactive floors, PCM integration, subsoil heat exchange, etc

- **Integration with microgenerating technology**
  e.g. Integrated solar and PV technology, OLED-organic light emitting diodes

- **Solutions that lend themselves to modern methods of construction (MMC), adaptability, deconstruction and reuse**

- **Customised multifunctional facades for new build and renovation**

- **Building concepts for integrated management of energy transformation, storage and use; continuous monitoring integrated to the control**, e.g. embedded sensors
Roadmap Timelines

Short Term and Medium Term (2010-2016)

Concentrates on:

- Energy-saving technologies in service systems
- Renovation methodologies
- Advanced façade systems
- Adapted green technologies with passive and active systems

➢ To achieve > 20% saving
➢ And by 2016 steel solutions are available for zero carbon new buildings as legislation demands and suited to MMC
What are we looking for?

Cooperation within construction sector
for developing the solutions for

ENERGY-EFFICIENT BUILDINGS, which is a Key Requirement for Sustainable Construction, and a must do to meet legislation demands and government targets