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ESTEP Response to the Recovery Plan

ENERGY-EFFICIENT BUILDINGS : A Key Requirement

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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?

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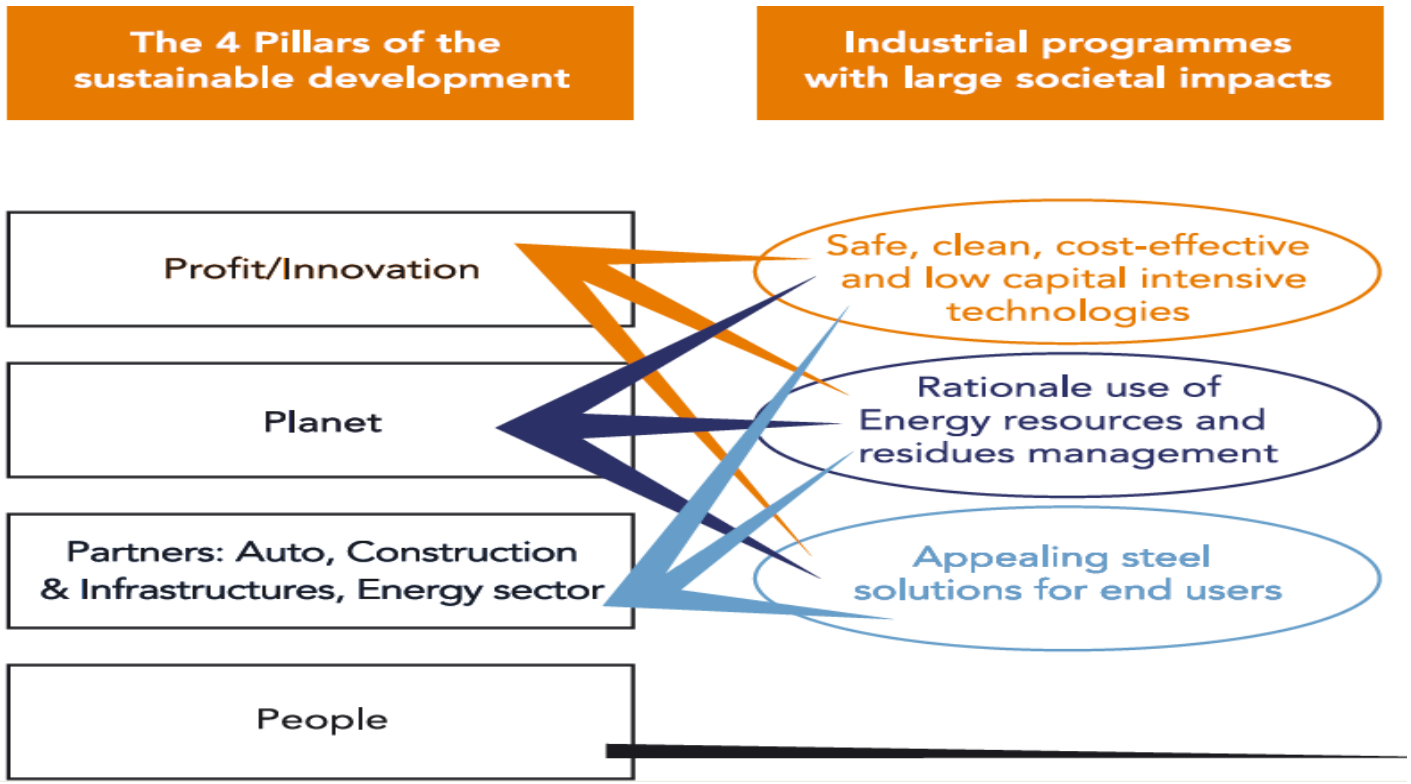


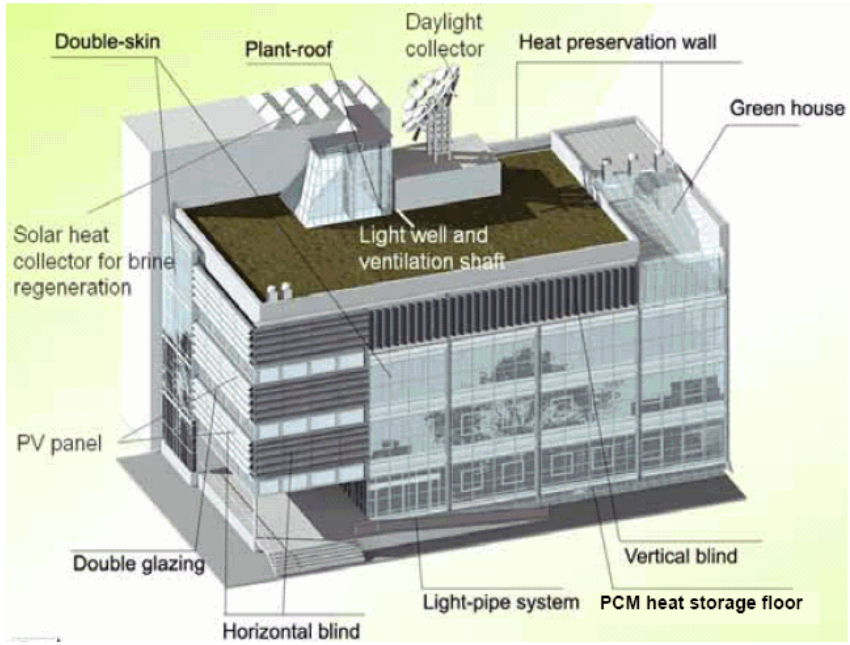
Steel Industry Turnover 92.5Bln€. Employment 377K
Total Sectors 2762Bln€. Employment 22Mio

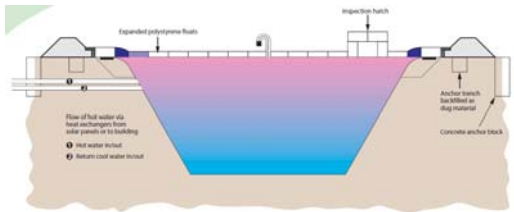
Why can Steel play a critical role in Energy Efficient Construction ?

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, optimisated 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 Constuction, and a must do to meet legislation demands and government targets