ManuBuild
Open Building Manufacturing

European Integrated Project on Industrialised Construction

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The vision of ManuBuild is **open building manufacturing**, a new paradigm for building production and procurement by *combining* highly efficient *manufacturing techniques* in factories and on construction sites *and an open system* for products and components offering diversity of supply and building component configuration opportunities in the open market.
ManuBuild - Objectives

“To develop a ManuBuild System that will be used to produce uplifting, sustainable and cost-effective customer-oriented building through radical integration and industrialisation of the design, production and delivery processes as well as greater integration and involvement of the customer; helping them to determine the shape of function of their development.”

- Construction costs reduced by 50%
- Construction time reduced by 70%
- Work related accidents reduced by 90%
- Affordable customised and flexible buildings
- Architecturally rich & sustainable communities
- Diversity of plug and fix components
ManuBuild - Open System

Vision
- Building construction as a knowledge based industry
- Open system: products + process + production + ICT
- Effective production and open system combined!

- Closed system
- Open system

- Car industry
- Advanced house manufacturing
- Ship building
- Prefabrication in construction
- Open building
- On site production & assembly
- On site craft work
ManuBuild - Approach

- Building Concepts
- Business Processes
- Production Technologies
- ICT Support
- Demonstrations
Design Process Production ICT

Develop and introduce concepts, rules and new products for building design for manufacture employing a system engineering approach,

- Customer choice and design flexibility through lifecycle
- Design for living
- Design for manufacture
- Openness to multiple sourcing of components
- Principles and rules of open systems
Develop and implement a new value driven business process specifically for open building manufacturing and the indicators to measure the efficiency of the process.

- New and value added process and organisations that integrate the key players
- Organisational concepts and models to support the integration of the customer
- New services covering the whole life cycle of buildings from design until demolition and recycling.

Business Processes + Organisational Models + Service Models = MBM
Integrate and develop technologies and methods new to the construction industry for flexible, value added manufacturing and assembly processes

- Off-site manufacturing and pre-assembly: highly flexible, scalable, efficient, and automated manufacturing methods and systems
- Mobile factories: concepts for portable/mobile factories that will bring efficient manufacturing and pre-assembly operations to building sites
- Logistic solutions: for efficient and lean handling and on-time delivery.
New integrated ICT infrastructure and key tools to support distributed building manufacturing with seamless information management and delivery.

- A tool that enables the ManuBuild process where the customer, developer and manufacturer are linked.
- Customer-oriented design and configuration
- Market analysis and new product development methodology
- Model-based, site logistics and assembly planning.
Realising the Challenge for Flexible and Open Building Manufacturing

- **Novel open system and European-wide standard for buildings:** modular, cheaper and faster manufacturing and assembly, future expandable and open for modification,

- **New value driven business models and processes:** focus on customer and community perceived whole life cycle value, and involvement of stakeholders in planning, design/configuration, customisation, delivery and service of individual buildings,

- **New ambient and scalable technologies and methods for manufacturing and assembly:** efficient, flexible, fast, safe, healthy and environment-friendly,

- **New ICT methods and tools:** full integrated support throughout the whole life-cycle for customer, community, suppliers and manufacturers.
Demonstrations

Validate results and key scenarios using real and full-scale buildings
- Madrid
- Sweden
- UK
Consortium

24 partners from 10 European countries

Covering the whole value chain
ManuBuild - Summary

ManuBuild is an integrated project on industrialised construction and forms part of European Framework 6 with 10 M€ EC financial support

- Vision
  - Transformation of building construction into a knowledge based industry.
  - Open system: Building + Process + Production + ICT

- Focus & approach
  - Open building system concepts
  - Value driven business processes
  - Ambient manufacturing methods
  - ICT enablers
  - Demonstration in full scale building projects in Spain, UK and Sweden

- Duration -
  - April 2005 – March 2009

- Consortium
  - 24 partners from 10 European countries.

- Web site
ManuBuild - Keeping in touch

1st International Conference

The Transformation of the Industry: Open Building Manufacturing

Wed 25th - Thur 26th April 2007
Rotterdam - The Netherlands

Community of Interest
http://www.ManuBuild.net
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