Vision 2030

Agenda 2030

Research areas

Meeting Client Requirements

Transforming Of The Construction Sector

Becoming Sustainable

Indoor Environment
New Image of Cities
Using Underground Space
Mobility and Supply

Energy and Resources
Reduce Environmental Impact
Transport & Utility Networks
Cultural Heritage
Safety and Security

ECPTR
European Construction Technology Platform
Challenging and Changing Europe’s Built Environment
A vision for a sustainable and competitive construction sector by 2030
February 20th, 2005
European Construction Technology Platform (ECTP)
www.ectp.org

February 2005

November 2005
Objective

To meet an agreement on an ordered/structured list of priorities selected from the SRA for the coming 5-7 years.

From the SRA structure *(towards 2030)*

- 3 Pillars
  - 13 Research Areas
    - ~160 detailed Priorities
      » ~100 mid-term priorities (5 to 7 years)
      » ~67 long-term priorities (up to 2030)

To 9 ECTP Selected Priorities *(2007-2013)*

- 9 main Priorities
- 60 mid-term focused detailed priorities (5 to 7 years)
PRIORITISATION PROCESS (II)

SRA Rating by SG
SRA Rating by NTPs

Selecting Priorities

Consolidating Content (detailed priorities)

Inputs from FAs

V0
V1
V2
V3
V4

Nov. 05
Dec. 05
Jan. 06
Feb. 06
Mar. 06
Apr. 06
May 06
Jun. 06
Jul. 06
Aug. 06
Sep. 06

HLG3
NTP5
SG8
DP SG9
DP NTP6
SG10

9 ECTP Priorities

HLG4
SG11
• Technologies for Healthy, Safe, Accessible and Stimulating Indoor Environments for All (sra 1.1)

• Innovative Use of Underground Space (sra 1.3)

• New Technologies, Concepts and High-tech Materials for Efficient and Clean Buildings (sra 2.1)

• Reduce Environmental and Man-made Impacts of Built Environment and Cities (sra 2.2-1.2)

• Sustainable Management of Transports and Utilities Networks (sra 2.3-1.4)

• A Living Cultural Heritage for an Attractive Europe (sra 2.4)

• Improve Safety and Security within the Construction Sector (sra 2.5)

• New Integrated Processes for the Construction Sector (sra 3.2-3.1-3.4)

• High Added Value Construction Materials (sra 3.3) (and Nanotechnologies for Materials in Construction)

• + 1 transversal topic for SMEs
  • Technologies and Engineering for Innovative Added-value Services Offered by SMEs in the Construction Sector
Better understanding of the impact of the built indoor environment on health, comfort, feeling of safety and positive stimulation

To improve this built indoor environment for all people.

- Improved knowledge of relevant demands, needs and desires
- Harmonised assessment methods
- Methods, tools and strategies to ensure the design-for-all approach, through the development of adapted products
- New business concepts
- Retrofit and upgrade of existing underground structures
- New tunnelling technologies
- Processes and ICT
- Ground knowledge and environmental impact
- nD modelling in tunnelling
- New materials
New concepts, technologies, design tools and business models for:

- Retrofit
- Low energy new buildings
- Zero-energy buildings

New and improved materials and structures

- Integrated design tools
- New information systems
- Construction materials manufacturing process
Design concepts, materials and technologies for the reduction of damage to environment

Improve processes to make them more sustainable

Knowledge on material and energy flows

Reduction of impact of transport and utility networks

Reduction of impact of accidents

Technologies for contaminated soils and groundwater

Reuse and recycling of debris and waste materials

Protection and optimised exploitation of water resources
- New methods/tools for the comprehensive management of infrastructure
- Standards, models and databases for LT performance
- New concepts to extend the life time of structures
- New testing methods for early detection of damage
- Develop, design, build and operate with efficiency
- Integrated life-cycle assessment systems
- ICT systems to optimise traffic, serviceability and security of networks
- Development of an integrated approach to the natural and man-made environment
- Foreseeing and managing changes
- Developing assessments and controls
- Innovating in the creation of materials and structural components for cultural heritage
- Preserving urban and built environment
- European guidelines and codes for performance-based and innovative design
- Systems, models and tools for risk and safety management against natural and man-made hazards
- Systems for the management of risk and emergencies and partial functionality of networks
- Systems to monitor and control all security/safety parameters for infrastructures and buildings
- Technologies for mitigating natural and technologic risks
- Means to improve safety and reduce accidents on work places
New Integrated Processes for the Construction Sector

**Value-driven business processes**

**ICT enabled business models**
New ways for sustainable exploitation of ICT as a key part of business strategy in the open European / global construction marketplace.

**Knowledge sharing**
ICT for transforming project experiences into corporate assets. Object repositories. IPR protection of complex shared data. Context aware applications.

**Collaboration support**
ICT tools for information sharing, project steering, negotiations, decision support, risk mitigation, etc.

**Interoperability**
Ontologies & open ICT standards for semantic communication. ICT infrastructures.

**Industrialised production**
ICT for modular provision of customised constructions, logistics, assembly & services. Digital sites.

**Digital models**
nD models. Access to life time information for all stakeholders anywhere anytime. ICT for design, configuration, analysis, simulation, visualisation.

**Intelligent constructions**
Smart embedded systems & devices for monitoring and control. Embedded learning & user support.

**Vision for Processes & ICTs**
- Multifunctional construction materials
- Predictable, flexible and efficient building material production
- Durability and reliability of construction
- Easy to use and install building materials
- Prediction and management of building material behavior in service
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Thank You

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