Commission initiatives for the modernisation of construction

1st European conference | BIM and energy performance of buildings

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The context of modernisation: base of our actions

Challenges
- Ageing populations
- Migration
- Skills evolution
- Service orientation
- User-centric thinking
- Customisation
- Real-time
- Climate
- Natural resources
- Energy transition
- New business models/players
- Life-time approach to assets
- Innovative materials
- Increased usage of BIM
- Weight of the sector

Approach
- The Energy & Decarbonisation transition
- The digital transition
- The Circular Economy & industrialisation
- Smart and sustainable growth and jobs
Digital change in the construction value chain

**SKILLS & TOOLS**

- Basic & Higher Education
- Training on the job
- New digital tools

**BUSINESSES**

- New Business model
- New digital player
- New digital player
- New digital player

New digital services:
- e.g. drone operation
- e.g. robotics
- e.g. digital DB

BIM contributes to sustainable, energy efficient buildings

- Systems & materials
- Water runoff & collection
- Renewable energy systems
- HVAC system
- Green design decisions

- Simulations
- Daylighting
- Energy-analysis software
- Energy use/m²
- Energy cost

- Sustainable sourcing
- Recyclability
- Sustainable manufacturing
- Dangerous substances

- Resource & Energy efficient construction
- Less waste
- Fewer errors

- IoT
- Real time management
- Big data
- Connection to energy grid

- Circular economy

**BIM cycle basis:** Lloyd's Register

**BIM cycle basis:** Sustainable, energy efficient buildings
Commission initiatives & support

Support
Public sector take-up

Support
Research & Innovation

Support
Construction value chain and SMEs

Create
momentum

Support
horizontal activities

• H2020
• Horizon Europe

• Thematic Group 1: High level Group on Construction
• Conferences/speeches
• LinkedIn: Construction 4.0 Europe

• Study "support digitalisation of construction and its SMEs"
• Smart CE marking

• BIM standardisation
• Digital Industrial platform for construction

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Thank you!
Commission initiatives for innovation in construction (1/4)

Support public sector take-up & PP

- **EU BIM Task Group**
  - 23 member states: how to introduce BIM in the public sector: handbook in 18 languages.

→ Common framework: encourage alignment on the understanding of BIM

Free download at [www.eubim.eu](http://www.eubim.eu)

Commission initiatives for innovation in construction (2/4)

Support the construction value chain and SMEs

- **Study: support digitalisation of construction and SMEs:** May 2018 – March 2019
  - **Digitalisation gap analysis:** desk research
  - **Expert interviews**
  - **Recommend 2-4 EC actions:** Technical, Skills & HR, Policy, Monitoring → synergy with other/existing actions
  - **Roll-out plan**

- **Smart CE marking:** Digitising construction product performance data: with CPE and CEN TC 442.
Commission initiatives for innovation in construction (3/4)

Create momentum around digitalisation of construction
• Thematic Group 1: High level Group on Construction
• LinkedIn Group: Construction 4.0 Europe

Support horizontal activities
• BIM standardisation: with CEN/Cenelec TC 442
• Digital industrial platform for the construction sector: Call – need for and potential content of a digital industrial platform for construction

Commission initiatives for innovation in construction (4/4)

Support Research & Innovation
• H2020 & Horizon Europe
  • Smart buildings, data, IoT, AI, age friendly housing and robotics in construction.
  • PPPs, research on smart building materials, BIM in renovation and energy efficiency in buildings, pre-fabrication, etc.
Public procurement & digitalisation of construction

- **Public Procurement = a major share* of total construction expenditure**
  → Objective: Shaping the market from the demand side.

- **The PP directive sets out the recourse to digital tools in the tendering process.**
  → Challenge: Coherent and timely implementation in Member States

*e.g. Germany 44%, BCG - 2012 figure*
Aspects of digital construction

Improve planning, construction & renovation processes
Robots, 3D printers, scanners, satellite imaging, drones, prefabrication

Sustainability, energy & environment
Smart materials, circular economy, storage

Digital construction & BIM

Improve operation & maintenance of buildings
Sensors, IoT

Smart analysis
Big data