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How BIM can aid the energy efficiency process for the European construction supply chain

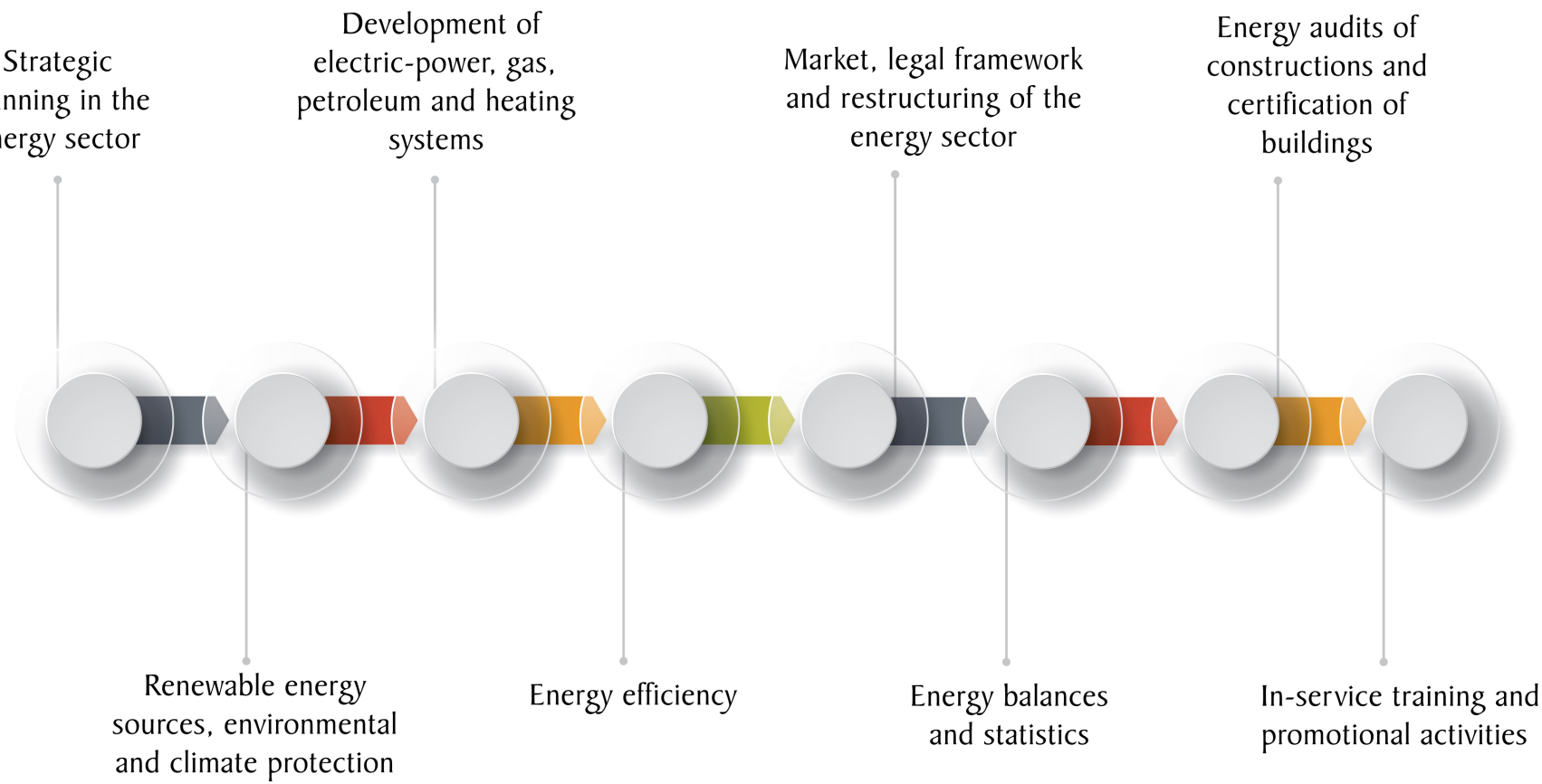
BIMcert Conference

22nd January 2020

Reducing the energy footprint in the built environment

How BIM can aid the energy efficiency process for the European construction supply chain

Energy Institute Hrvoje Požar



Energy Institute Hrvoje Požar

How BIM can aid the energy efficiency process for the European construction supply chain

- **BIM as enabling technology has global impact**
- **Sustainable construction – difficult without BIM**
- **BIM increases economics of entire construction process**
- **BIM digital model is universal**
- **BIM increases energy efficiency and transparency**
- **Benefits of technology**

How BIM can aid the energy efficiency process for the European construction supply chain

Plan

Energy savings targeted during the design phase

Design

Energy savings designed utilised to achieve energy optimization

Operate

Energy savings through in-use building performance

Build

Energy savings achieved through the building operation stage

How BIM can aid the energy efficiency process for the European construction supply chain

Energy savings are planned and targeted during the design phase. It is about utilising BIM tools to possibly reduce the gap between predicted and actual building performance proactively

- **BIM as an enabler of effective collaboration between design disciplines**
- **BIM tools for fast and accurate processing and comparison of a large number of design alternatives.**
- **Visualisation of energy loads and performance**
- **Multi-criteria optimization in terms of energy, environment and economy**
- **Selection of cost and energy for the most effective design alternative**
- **Tracing the route for the future decades of a building's optimal service and operational life**

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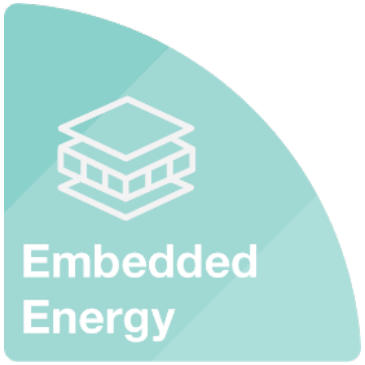

Recognized as a tool to support the visualisation of a building's energy performance, sequence and schedule of construction aimed towards the application of sustainable construction materials and techniques, with minimum waste of energy and materials

- **BIM 4D tools (time scheduling simulation)**
- **5D (quantification)**
- **3D BIM model integrated with VR and AR technologies**

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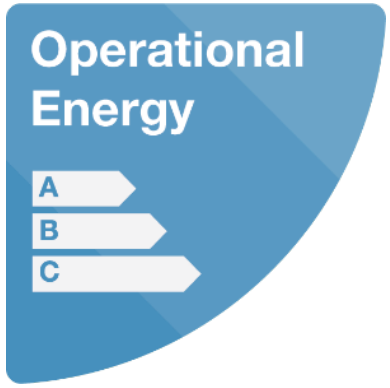

Energy savings achieved through the building operation stage –are monitored and managed continually

- **interlinking of data environments (BIM supported Energy Management System of Buildings)**
- **Smart buildings**
- **engagement of wider public stakeholders (occupants and users)**

How BIM can aid the energy efficiency process for the European construction supply chain

easier way of achieving energy savings through the lifetime of the building

- **Smart decisions made in the early design stage**
- **Energy for demolition or recycle / reuse**
- **Smart buildings**
- **BIM can be used to analyse and find effective and feasible ways to re-use existing building stock without the need of new builds**

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