Stand-Inn

International Standards for Sustainable Construction and BIM
the Stand-Inn project

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European Commission

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International Standardization

- is a consensus-building process
- is a participatory process ➲ stakeholders
- relates to other standards (ISO) and directives or policies (CEN)
- harmonizes existing approaches
- is performance based rather than prescriptive
- gives companies a reliable business environment
- ISO TC59 SC14, SC17 and CEN TC350 standards
  - aim to enable the exchange of service life and sustainability information related to internationally traded products and services
- ISO TC59 SC 13 Organisation of Building information
  - aim to establish common interface for exchange of object-related information
  - provides the IFC/buildingSMART standards (IFC, IFD, IDMs and BIM process)

Construction - Changing Awareness

- Construction sector as 40/30 industry
  - 40% of emissions, materials resources and energy use
  - 30% of waste generation
  - 26 million workers in EU15
  - 2,5 million companies (97% of these are SMEs)
- Built Environment as social factor
  - enormous share of national economies in the built environment
  - identification, character, frame for societies life
  - significance of built infrastructure for societies functioning
  - amount of time spent indoors
- Changes in societal / political attention
  - changing scope and requirements in regulation
  - sustainability
- Altogether creates an environment in which the construction sector needs to react to maintain “societal acceptance“

sustainable development of buildings...

Ņ... brings about the required performance and functionality with minimum adverse environmental impact, while encouraging improvements in economic, social (and cultural) aspects at local, regional and global levels.Ó

ISO 15392:2008 Sustainability in Building Construction - General Principles

May 14, 2008 Wolfram Trinius 12

standards with common mission

- provide methodological basis
- provide and apply general principles
- establish voluntary standards
- relate to overarching societal demands
- translate to building sector concerns
- relate to policies, but not to be political
- not to prescribe, not to stifle innovation
- create market demand!!!!!
- integrate into business models

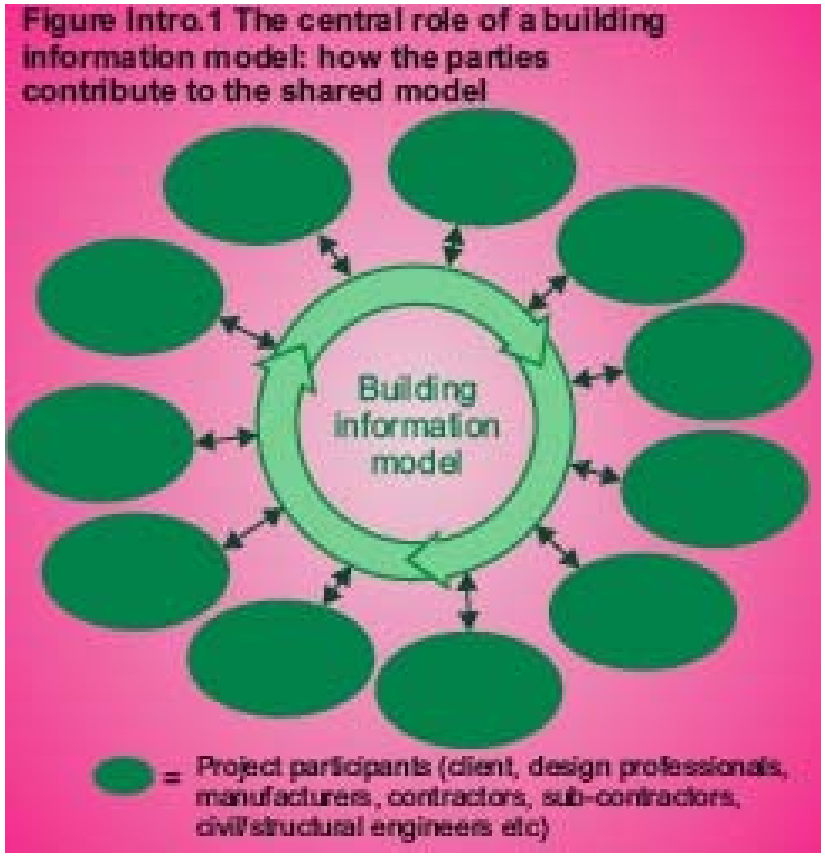
modularity concept

- Standards addressing thematic fields that yield information to each other
- applicable as separate units
- most profitable when applied in context
- focus on fields with sufficient agreement
- paving for fields with future demand and/or emerging agreement
- establish communication standards that enable information to be handled in business environments,
  - both as B2B and B2C communication

Information and Decision Making

- Information to be communicated among various actors
  - decision making
  - reasoning for decision making
- requires a common understanding of information as well as shared agreement on its meaning and importance
  - technical performance, functionality, cost
  - environmental performance, sustainability
- rules for transparent and fair communication
  - especially when relating to complex information in comparative situations that are communicated to the market
- enable flexible adaptation
  - different stakeholders, objects, scope, scenarios, decisions, clients needs
- creation of a market for the generated information
  - active role of public as well as private market actors
  - supported by policy framework

buildingSMART
Central Role of IFC - BIM



- common information model useful for all involved actors and applied tools
- bi-directional communication based on open standards
  - changes directly available to all other involved actors
  - always updated
- no repeated entering of information
  - time & work effort, cost
  - potential for mistakes
- increased process efficiency
  - planning, management, monitoring, documentation, etc.

buildingSMART
virtual - sustainable - reality

- rapid model building
- virtual life cycle inclusion
  - operation, management
- integrates simulation and visualisation tools
- code conformity checker
  - innovative integrated application of standards
- provides information
  - e.g. to sustainability assessment tools

- enables
  - real-time collaboration
  - consideration at early design stages
  - concept validation
  - efficient design and decision making processes
  - scenario comparisons
  - integration of individual software applications with the standard interface
  - reapplication of knowledge and experience

Outlook

- IFC support for exchange of object-based information
- all actors communicate on common basis
- real-time online cooperation regardless location
- numerous design and simulation tools are “IFC enabled”
- BIM as an enabler of innovation in the construction sector

- information libraries
- any object-based information can theoretically be included in the model
  - object to be defined on relevant scales
  - understanding of exchanged information requires stringent standards
  - information to remain objective
- evident link and ability to the demand to communicate sustainability information