BIM – Building Information Modelling
People, processes, technology and methods

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Source: aardeplan
Agenda
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- What is not BIM?
- People
- Methods
- Processes
- Technology
- Challenges
- Conclusion
What is not BIM?
At the front ok - …
... – and behind, there’s nothing
BIM is more than 3D-Modelling

• The “G” alone, the 3D-geometry isn’t the core of BIM.
• The “I”, the information is missing.
BIM is not a software

... or a tool.

Source: ban993HAO
BIM is…

… a method:

“Virtual design, construction and operating, which combines the use of digital building models and appropriate organisational forms and processes.”

Source: SIA 2051 BIM
A method…

… which supports *interdisciplinary collaboration* between stakeholders by using *digital building models*.

Source: aardeplan
1. People
BIM is more than the digital collaboration between clients and planners

Client – Designer/Planner

Source: M. Huber
BIM gets together a bunch of stakeholders using a common method

Client – Designer/Planner

Designer/Planner – Designer/Planner

Designer/Planner – Builder

Designer/Planner – User – FM

Source: M. Huber
And each of them, has their own needs and requirements

The appointing party side as the appointed party side.
Planner / Designer
Appointed Party
2. Method
To achieve the goals with the BIM Method, it needs more than technology

It needs people who are using the right processes.

Source: M.Breit / CIFE
The goal is …

… at the beginning

Source: pixaby, Claudia Wehrli
.... and the goals should be fixed in a **common** way at the beginning.

Source: pixaby, Henning Westerkamp
Get the goal

And to achieve a goal, it needs **activities** and «**tools/aids**» (information).

Source: pixaby, Simon Steinberger
3. Processes
BIM Process: A troika with goals, … .

Goals

- Requirements
- Metrics

Source: M. Huber
BIM Process: A troika with goals, content … .

Goals
• Requirements
• Metrics

Content
• Information
• Depth/Width

Source: M. Huber
BIM Process: A troika with goals, content and quality.

Goals
- Requirements
- Metrics

Content
- Information
- Depth/Width

Quality Assurance
- Coordination
- Communication
- Change management
- Session Mode

Source: M. Huber
And each of them is fixed in the BIM Execution Plan

Bestimmung der Projektziele

Prozessplanung (Planung der Planung)

Zielsetzung für den BIM-Einsatz

Bestimmung der BIM-Organisation

Regeln für Beteiligte ohne BIM-Nutzung

Koordinationsmassnahmen

Regeln für koordinierte BIM-Nutzung

BIM-Nutzungsplan

BIM-Modell-Plan

BIM-Koordinations-Plan

Source: Grundlage prSIA 2051
4. Technology
BIM is not a software

... or a tool.
BIM is not a software

… or a tool.

But we need digital tools to execute projects with the BIM method in an efficiency way.

Source: ban993HAO
e.g. architect

Source: M. Huber
Source: M. Huber
Exchange model standard

For an efficient exchange of information with digital building models, we need an common open exchange standard.
Digital building models – Data exchange standard

IFC (SN EN ISO 16739: 2016) as independent open exchange standard.

Source: buildingSMART
Challenges
New Tools: Renaissance

Filippo Brunelleschi: Invention of perspective

Leon Battista Alberti: Ten Books about architecture -> plan

Place of planning ≠ Construction site

- Dome Santa Maria del Fiore (1418-1436)
- Church San Lorenzo (1418-1428)
- Foundling hospital (1421-1455)

Quellen: wikipedia.org
Vision: Charles Eastman 1975

“It would combine the positive aspects of both drawing and models and eliminate their common weakness. It would incorporate three-dimensional information in an easy-to-read format and would require any change to be made only once for its full effect to be revealed. It would accept changes easily and provide automatic checking for spatial conflicts”

Source: Eastman, 1975, P. 46
Connection: Discipline – Tools – Method

Source: M. Huber
Connection: Discipline – Tools – Method
Connection: Discipline – Tools – Method

Source: M. Huber
Conclusion
Conclusion

– BIM is not a tool.
– BIM is more than 3D geometry.
– It’s the “I”, which makes the difference.
– BIM is a method.
– … an interdisciplinary, collaborative method …
– … based on open BIM workflows and …
– … using an neutral exchange standard (IFC)
– We are leaving an over 500 years old history behind us. The plans as information carrier are leaving us, an the digital building model as single source of all information becomes reality.
– And it the end: The BIM method is a big opportunity for advanced building skins.
Thanks!

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