

Tønsbergprosjektet

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The Tønsberg Project
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Collaboration?









Source: wikipedia.org

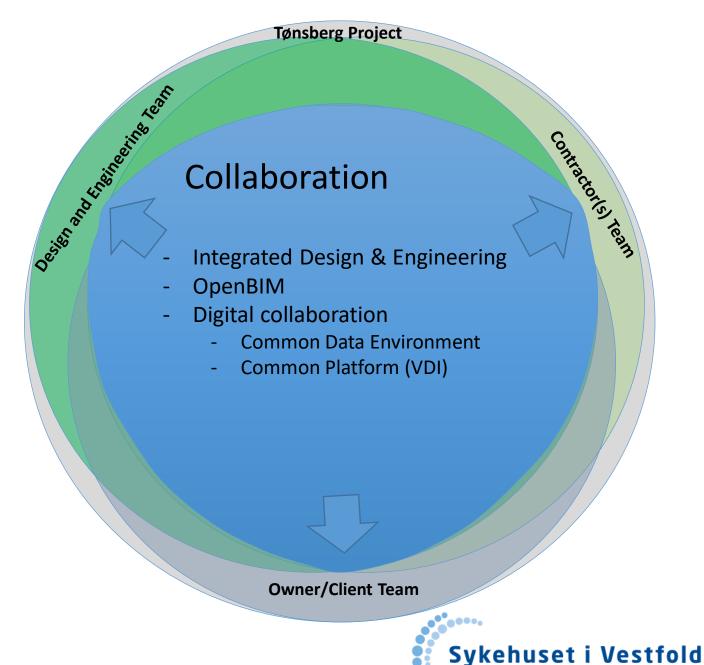
Does the projects participants drive on the same road - in the same direction — have the same goal and in the same speed?





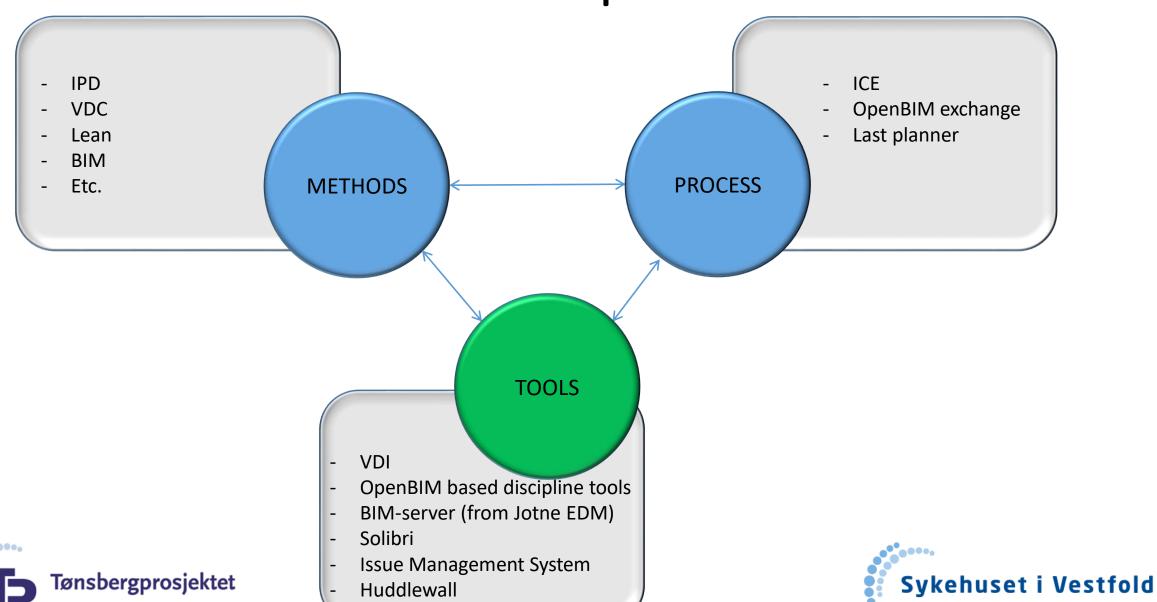
Real Collaboration

- Integrated Project Delivery (IPD)
 - Early involvement all participants
- Co-location
 - Big Room
 - Huddlewall
- Digital collaboration
 - All participants driving on the same digital highway - Virtual Desktop Infrastructure (VDI)
 - Full control over type of software and versions
 - OpenBIM
 - BIM-server
 - Issue Mgt. System
 - MyProject (for documents)

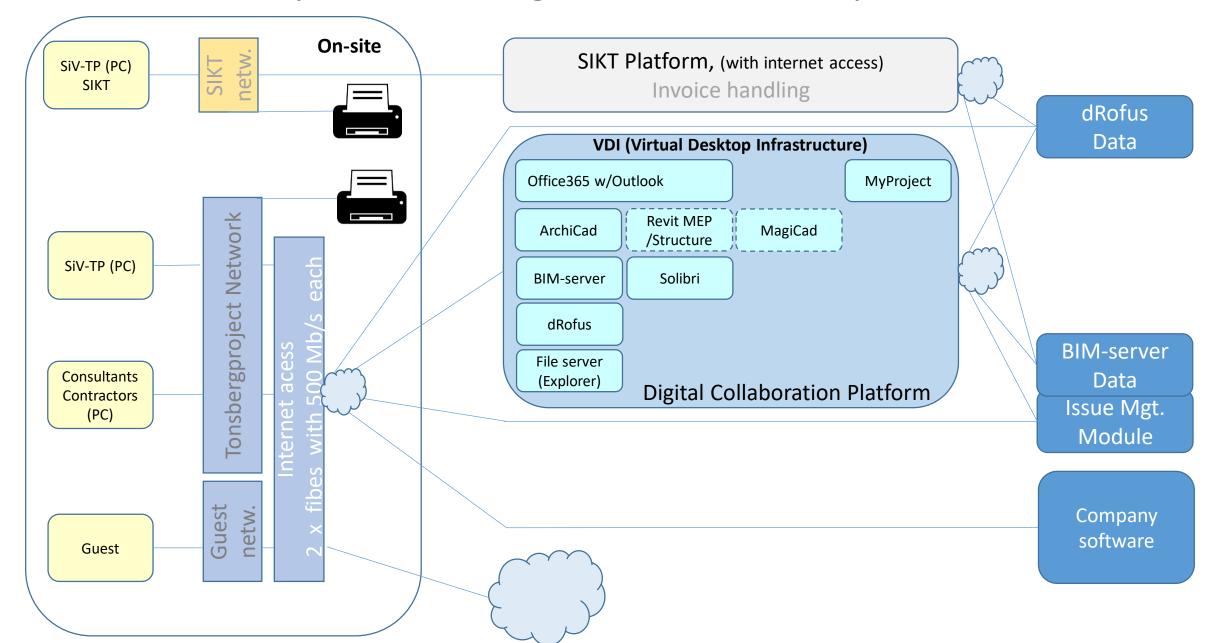




Process and OpenBIM



Total System with Digital Collaboration platform



BIM Requirements

3D

- Existing Conditions Models
- Laser scanning
- Ground Penetration
 Radar (GPR) conversions
- Safety & Logistics Models
- Animations, renderings,
- walkthroughs
- Bill driven prefabrication
- Laser accurate BIM driven field layout

4D

SCHEDULING

- Project Phasing Simulations
- Lean Scheduling
- Last Planner
- Just In Time (JIT)
 Equipment Deliveries
- Detailed Simulation Installation
- Visual Validation for Payment Approval

5D

ESTIMATING

- Real time conceptual modeling and cost planning (DProfiler)
- Quantity extraction to support detailed cost estimates
- Trade Verifications from Fabrication Models
- Structural Steel
- Rebar
- Mechanical/Plumbing
- Electrical
- Value Engineering
- What-if scenarios
- Visualizations
- Quantity Extractions
- Prefabrication Solutions
- Equipment rooms
- MEP systems
- Multi-Trade Prefabrication
- Unique architectural and structural elements

6D

SUSTAINABILITY

- Conceptual energy analysis via DProfiler
- Detailed energy analysis via EcoTech
- Sustainable element tracking
- LEED tracking

7D

FACILITY MANAGEMENT APPLICATIONS

- Life Cycle BIM Strategies
- BIM As-Builts
- BIM embedded O&M manuals
- COBie data population and extraction
- BIM Maintenance Plans and Technical Support
- BIM file hosting on Lend Lease's Digital Exchange System

Source: bimpanzee.com





BIM - Level of Development

specification based on BIM Forum LOD:2015

Level of Development(LOD) - description

LOD 100 - non geometric + LOD 100 – SYMBOL or ONLY INFO=> INFO information + information - approximate SKETCH - text or symbol LOD 200 - generic placeholders + LOD 200 – VOLUME+INFO=> "PLACEHOLDER" information - approximate SYSTEMS DESIGN - volume LOD 300 - quantity, size, shape, + location, orientation + LOD 300 – OBJECT+INFO=> MEASURE information - **DESIGN** - object LOD 350 - quantity, size, shape + location, orientation + LOD 350 – OBJECT+INFO=> MEASURE+INTERFACES information - DESIGN COORDINATION - object w/interfaces LOD 400 – OBJECT - INFO+MEASURE+INTERFACES LOD 400 - quantity, size, shape + location orientation + **B5** information - FABRICATION - object w/interfaces LOD 500 - quantity, size, shape + location orientation + LOD 500 – OBJECT - INFO+MEASURE+INTERFACES **B6** information - FIELD VERIFIED (as-built) - object w/interfaces

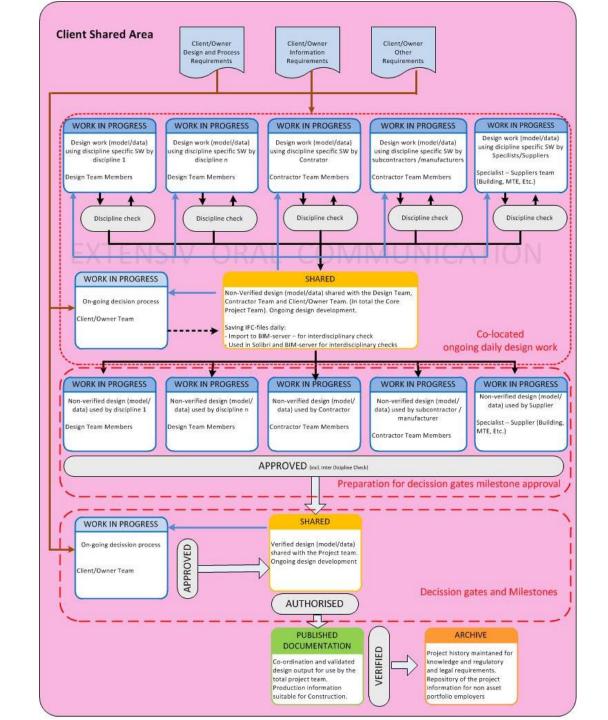




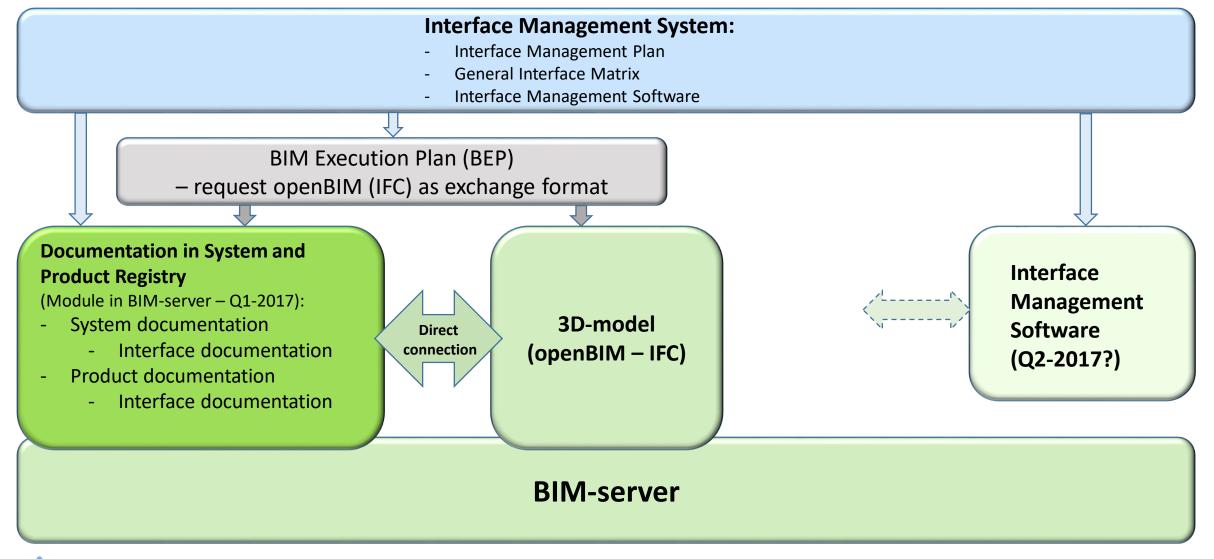
Working process – Open BIM

Basic and detailed design phase

Modelling (structure and sizes) adapted to the speed of IFC export from the software.



BIM, Interfaces and FM-documentation







Industrialized building production – what do we want to achieve?

- Increased quality
- Less building faults during construction process
- Lower building cost
- Faster construction time and processes

What do You want to drive? The first prototype of a Kit Car or a car from a production line?









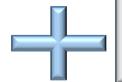
Open BIM and Industrialised building production

- Reduced cost
- Higher and more predictable quality
- Faster building process
- Effective use of resources
- Better interface process and handling
- Design and build it correct the first time
- Less challenges with noise from the building site for the hospital
- Less hot works on site, reduced SHWE challenges (SHA)
- More work off-site, reduced SHWE challenges on-site





OpenBIM



Industrialised building production





www.tonsbergprosjektet.no



We have our own App, where you can get the latest information about our project (click on the symbol)

Questions?