BIM to Construction Site

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What is BIM without surveying engineers?
Surveying engineers should take a new step
In order to build we need a solid foundation
The contribution of a surveyor on BIM projects

- establishment of a good starting point for all projects
- accurate documentation of space and structures
- optimized work processes
- seamless integration between field and office for
  - improved collaboration
  - better time and risk management
  - avoid waste of time and resources
  - avoid mistakes and unnecessary costs
BIM in Norconsult

- Overall BIM Strategy
- BIM as tool for engineering
- BIM at the construction site
- BIM as basis for FM
- Benefits of employing BIM
Overall BIM strategy in Norconsult

- Norconsult shall employ **BIM on all projects**
- Investment on both **BIM Tech and BIM Team**
- Development of **standardized work processes**, which are documented in the company **BIM manuals**
- **Separate models** for every discipline during processing
- **Combination** of models from all disciplines in the **collaboration environment**
- **Interdisciplinary control** inside collaboration environment
- All BIM models include **built-in information about quantities** and can be used in all stages of a project
Project description:

- New hydropower plant
- The biggest of its kind
- Entirely designed in 3D as a BIM model
- A Completely Paperless Project
- 1 sq Km Project Area
- Aerial and terrestrial Laser Scanning, Aerial and Ground image data, GIS data, Geodetic, geological and seismic surveys all employed for the initial documentation.
New Concept Design
New Concept Design
Bringing BIM into the construction site

- Establishment of a geodetic network
- Capture and modelling of terrain
- Scanning and modelling of existing structures and infrastructure
- Development, evaluation and optimization of concept in BIM
- Continuous monitoring of construction progress
- Update the «as built» model
- Continuous control of costs and quantities (5D BIM)
Project area documentation
Project area documentation
Project area documentation
Project area documentation
Project area documentation
Field and design integration
Design and construction integration
Field and Construction integration
Interdisciplinary collaboration
Integration between Model and “Bills of quantities”
Integration of Information

"ELEMENT" = INFORMASJONSFANE MED ISY PARAMETERE OG ANNET RELEVANT. LOKALISERT NOEN GANGER OVER SELVE ELEMENTET I SELECTION TREE (ET NIVÅ OVER).

ALLE ISY PARAMETERE ER GENERERT AV NORCONSULT. NÅ ER FORSKALING OG BETONG TILFØRT INTELLIGENS DIREKTE FRA MENGDELISTE.
Integration of Information
From Design to construction
From Design to construction
Monitoring of Construction progress
Monitoring of Construction progress
Update to As-Built status
BIM in Norconsult
PROCESS REVIEW AND FEEDBACK
Quality Checked Data
Quality Checked Data

N = 6547166,6075631
Ø = 305858,4957178
Conclusions
BIM to Construction site benefits

- Paperless construction
- Surveying based on the BIM model
- Navigation in the BIM model on portable devices
- Connection between objects in BIM model and codes on the bill of quantities
- Connection between elements of BIM model and available documentation
- Prefabrication of re-inforcement and various elements based on the BIM model
- Direct quality check by import of field data into collaboration model
- «As built» information integrated into the BIM model
- Control of quantities and costs based on BIM
- Scheduling and audits in BIM
- ...
And a bit of BIM fun
We certainly feel inspired! How about you?
Thank you