A Danish General Contractors Perspective on VDC Design Management

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VDC Tender process and Design Management at MT Højgaard
Speakers

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Agenda

• About MT Højgaard
• BIM and VDC in Denmark
• VDC timeline in MT Højgaard
• The VDC process from a contractors perspective
• Cases
MT Højgaard – A Danish Contractor

One of the leading construction and civil engineering groups in the Scandinavia

All services under one roof – nearly 100 years of experience
We complete, design, construct and refurbish plants, bridges, housing plus commercial and industrial buildings.
MT Højgaard – A Danish Contractor

- 4,000 employees
- Headquartered in Denmark
- Local and nationwide in Denmark
- Focused international activities
- Revenue of USD 1.0 billion in 2014
- 25% of our revenue is generated through international activities
BIM and VDC in Denmark

Engineers started early (2000s), but Contractors drive the development

Heavy use and acceptance of the IFCs

Government and Public Initiatives and Standards
  Public Client requirements, Digital Construction, Cuneco

Strong users organizations
  Bips, Buildingsmart, BIM Århus/CPH
VDC Timeline

- **2008 KPMG**: First design BIM Project
- **2010 Novo Nordisk**: First fulltime BIM Coordinator on a Project
- **2011 BIM Departm.**: 6 people BIM Department
- **2012 DesignQA**: Structured approach to design information quality
- **2011 CMC Metro**: Process for Clash Detection Developed
- **2012 Nordea HO**: First BIM execution Plan
- **2013 MTH LOD and MPS**: Modelling requirements published
- **2014 BIM Coord. Educ**: Internal BIM coordinator training and Education
- **2014 MTH Head Office**: VDC project on new Head Office
- **2014 Building-SMART**: MT Højgaard receives BuildingSMART award
- **2015 VDC Division**: VDC Division Kick Off with 33 employees
- **Oct 2015**: 5D tender
- **Dec 2014 VDC lab**: First VDC lab opens in Seborg Office
- **2009 2xPhD projects**: To PhD projects started about BIM and planning

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VDC Process, Technology, Collaboration

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VDC in MT Højgaard

We complete the project virtually – before we do it on site

- Higher productivity
- Lower risk
- Higher hit-rate
- A better work environment

Best in Class VDC
iTWO process

- Discipline models
- BIM Qualifier
- Element planning
- Activity module
- Estimate
- TCO

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5D tender | Process and tools

- Client Workshop
- VDC Project Strategy
- VDC labs
- Rapid Modeling
- Rapid Estimate
- Model Management
- 4D logistics
- 5D estimate

Tender process

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VDC labs

VDC-lab Søborg

VDC-lab Aarhus

VDC-lab MOBILE Odense

VDC-lab Vietnam

VDC-lab Olso 2015

VDC-lab blue box

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VDC Strategy

- VDC strategy workshop
- Choice of VDC services
- Address challenges, pain and goals
Managing Models for VDC Tool

Prosjektoppsætning

VDC Ydelser

Generate

MPS

Link

Download Revit objekt

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Rapid modeling
Rapid Estimation and BoQ, Unit Rates

- Work items are created and connected to cost database
- QTO is conducted
Logistics
4D Scheduling
5D Estimation

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VDC | 6D TCO
VDC | 6D TCO