

Digitalisation as an Enabler in the Construction Industry

Virtual Design and Construction in MT Højgaard

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Abstract

MT Højgaard is employing the use of Virtual Design and Construction – VDC – on projects locally and internationally. Using the latest 5D technology in MTHs VDC-labs the biggest risks can be mitigated and best solutions can be found already in the tender phase. The vision is to execute projects virtually to optimize the solution and costs, increase safety in projects and to form the basis for early involvement of stakeholders across the value chain.

Keywords: Virtual Design and Construction; Safety; Optimization; Productivity; Risk; Collaboration;

1 Introduction

At MT Højgaard (MTH), we create the spaces in which we live and work. We have done so for almost 100 years. Today, we combine our practical knowledge with advanced technology and insist on collaboration based on dialogue, curiosity, courage and enthusiasm.



Figure 1. South Marieholms bridge, Sweden

In his book “Building the Future Today”, Torben Biilmann the CEO of MT Højgaard, describes how the construction industry is an industry suffering from low productivity and how current practices do not contribute to increased productivity.

Thus, the industry needs to create a new practice which “offers customers a wider range of options and more value for money, whilst at the same

time increasing industry profitability and reducing the industry players' exposure to risks and conflicts". [1]

Since 2014, MTH has had VDC, Virtual Design and Construction, as a key part of the group strategy to be a lever in making the change and in 2015 MTH was awarded the iTwo Award for the best use of 5D models.

The term VDC was coined at CIFE on Stanford University, as “the management of integrated multi-disciplinary performance models of design-construction projects, including the product (i.e., facilities), work processes and organization of the design - construction - operation team in order to support explicit and public business objectives” [2]

At MTH it translates into: "Executing the projects virtually before building in real life".

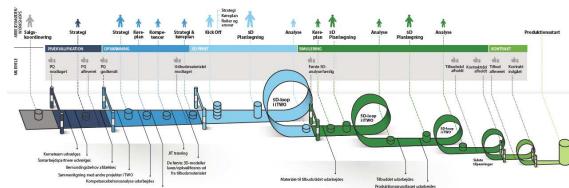


Figure 2. VDC-process for pre-construction