

RAMBOLL

BUILDING INFORMATION MODEL

The building information model (BIM) provides a detailed 3D output of all relevant structures of a construction project.

Building information modelling produces a detailed 3D structural model, which can be utilised in different phases of a design and construction process. The design of a construction project is significantly eased by the information gathered from the three dimensional BIM.

The diversified and detailed information accelerates the actual construction work as well as makes the overall project more effective. Simulation of the various phases of the building project makes it easier to see the whole picture. With building information model both 2D drawings and reports as well as 3D images of the building can be produced.

Detailed 3D structure model

The detailed structural model of a building consists of intelligent structural parts. These contain information such as precise measuring parameters, weight and vo-

lume. Also attribute information is available and can be utilised throughout the construction process and maintenance of facilities.

The 3D geometry added up with individual information of the parts bring several advantages for the parties in the building project. The added value in the 3D design based on building information model is particularly the quantity and quality of information provided.

Ramboll Finland has chosen **Tekla Structures** software as the main design tool for building engineering. **Tekla Structures** enables the simultaneous working of multiple designers within the same model. Our successful concept includes also manufacturing drawings.

Our design references with **Tekla Structures** consist of industrial, commercial and office buildings as well as buildings for public and residential purposes. We have also par-

ticipated in numerous R&D projects. We have implemented building information models for steel, concrete, wood and composite structures.

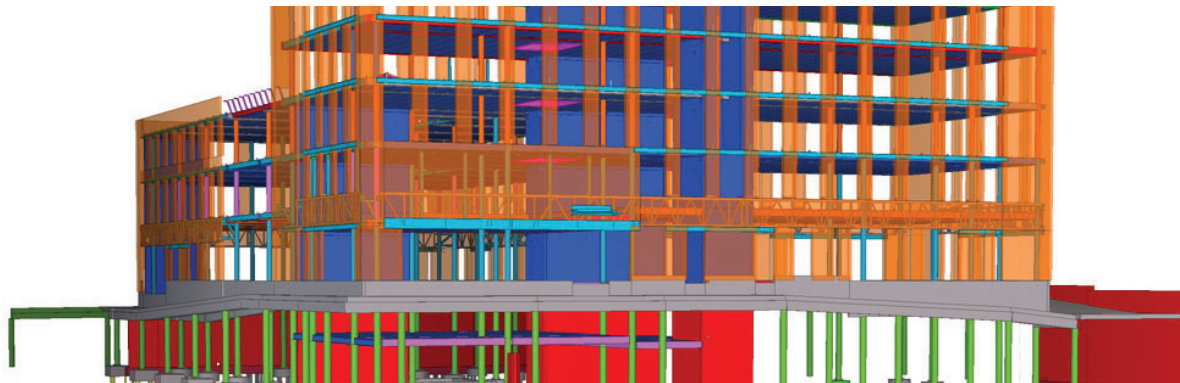
Benefits of the product model

In addition to design work the valuable information provided by BIM can be utilised in the entire building project. The BIM also mitigates the production control, quantity surveying, cost estimation and project management of the construction project.

The **visuality of the product model improves** understanding of the entity and the details of all structures in the construction target. With 3D model the compatibility of the structural parts is easy to ensure.

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With data transmission also attributes for industrial automation machines, eg. raw data for CNC-engines, can be collected. Utilising this data minimizes the overlapping work within the building process.

Reports of parts and assemblies can be produced through individual data gathered from the intelligent model objects. These reports can be utilised with material orders, manufacturers production controlling systems as well as quantity surveying and cost estimations.

With product model it is possible to simulate the different construction phases. The assemblies and elements in the model can be scheduled in terms of design, manufacturing, transport and installation.

Compared to traditional drawing based design the building information model is significantly more accurate and reliable. Also 3D prints can be produced out of the model.

Our references

Prisma retail centre, concrete and steel structures, Helsinki 2007-2008

Metso Power Oy, steel structures of a boiler building, Pori 2006-2007

Metso Power Oy, steel structures of the power plant, Scotland 2007-2008

Otalampi service centre, concrete structures, Lohja 2006-2007

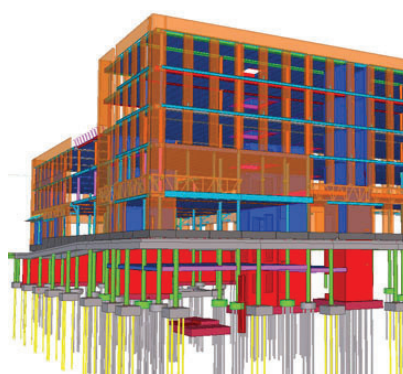
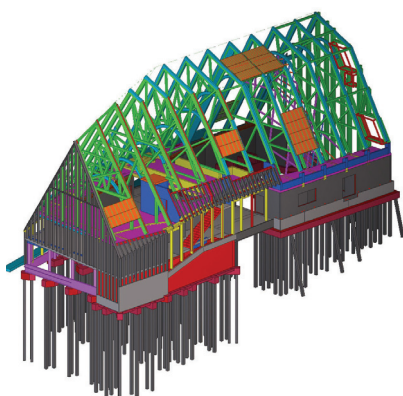
TAYS, concrete structures of the hospital extension, Tampere 2005-2007

Technopolis Ruoholahti, concrete, steel and composite structures, Helsinki 2007-2008

Technopolis Helsinki-Vantaa, concrete, steel and composite structures, Vantaa 2006-2007

Kuokkala church, concrete and wood structures, Jyväskylä 2007-2008

Meilahti sport centre, concrete, steel and wood structures, Helsinki 2007-2008



ON THE LEFT

Kuokkala church: concrete and wood structures

Technopolis Ruoholahti: concrete, steel and composite structures