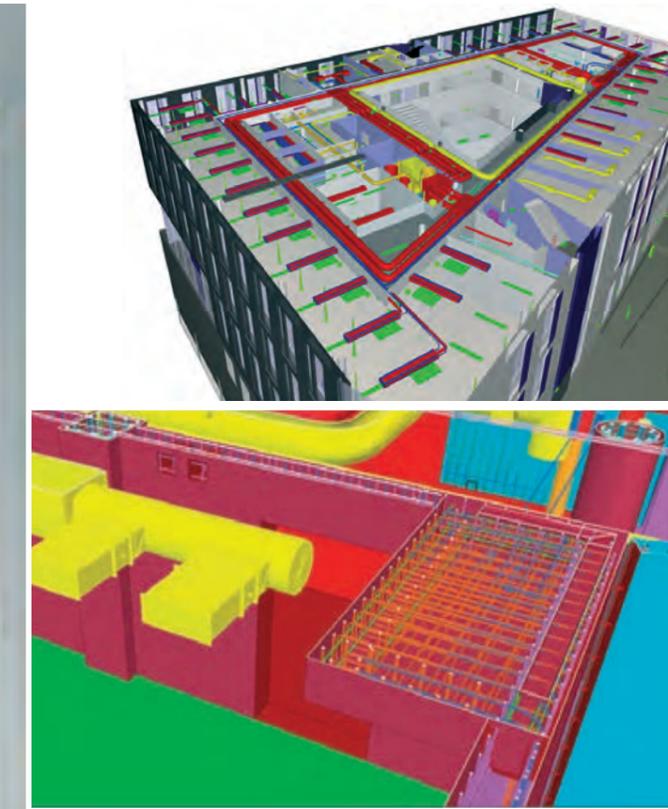


BIM in Building Projects

Manskun Rasti

Helsinki, Finland



“Using BIM together with production control system is a new efficient way of managing projects.”

Ville Oikari
Project Engineer, Skanska M&E Services

Manskun Rasti is a flagship project for Skanska Finland and that was one driver for using BIM in an extensive way. Phase 1 includes two 8-story office buildings and a shared 3-floor underground parking garage. Skanska Finland's new headquarters will be located in the first completed building. Once the project is finished, Manskun Rasti will comprise four office buildings.

On this project BIM models are used in many ways to achieve and support ambitious green goals. For example a CO₂ footprint was calculated based on architectural model quantities, energy simulations were made using an architectural model as the basis for an energy model and energy consumption was estimated via the BIM-based energy simulations and energy-efficient solutions.

A BIM model also provides a prototype of the building in its early stages before design decisions are locked, allowing changes and new innovative solutions to be piloted before the building is constructed. The architectural model was also used to create a virtual model, which can be used to produce fly-overs, rendered project images and videos to communicate the project's final outcome in an illustrative way.

In practice, a multi-disciplinary model has been used for communication purposes and the visualization of design solutions. Logistics and site planning helps visu-

alize the current situation on site and it brings more accuracy to the construction management.

BIM has also been used in safety planning to prevent accidents. Site and safety modeling covers temporary structures such as site office, storage areas, roads, cranes, falling prevention, marking of dangerous areas and other safety equipments including connection points for safety harnesses.

Prefabricated modules were also modeled with a detail level and linked to the structural model. Prefabrication increases productivity, saves time, it helps to prevent accidents and improves installation ergonomics.

In 2011 Manskun Rasti was chosen as the best Finnish building information modeling project by Tekla and was also the winner of the BIM Project category of the Tekla Global BIM Awards Competition. In addition, Manskun Rasti was selected as the Site of the Year 2011 by Rakennuslehti, a Finnish trade journal.

Manskun Rasti	
Owner & developer	Skanska Commercial Development Finland
Architect	Larkas & Laine Architects Ltd, ArchiCAD
Structural engineer	Magnus Malmberg Consulting Engineers, Tekla Structures
Heating, ventilation, air-conditioning & water systems design	Airix Building Services Ltd, MagiCAD
Electrical design	Pöyry Building Services, MagiCAD
Geotechnical engineer	Ramboll Finland Oy
Total gross area	28,228m ² (304,000sf)
Building 1, Kathy	Gross area 15,458m ² (166,000sf)
Building 2, Neptun	Gross area 12,770m ² (138,000sf)
Building 1, Kathy	Floor space 9,138m ² (98,000sf)
Building 2, Neptun	Floor space 7,485m ² (81,000sf)
LEED® certification	Targeting LEED Platinum