Chair of Computational Modeling and Simulation
TUM School of Engineering and Design
Technical University of Munich

Software Lab:

Connecting the Facility and Engineering Digital Twins

Modeling:
Mathematics:
Programming:
Science:

Description

Collaboration between facility department and engineering department is critical to ensure the facitilies is meeting the requirements for engineering equipment (e.g. electrical, plumbing, HVAC, etc.). Similarly, engineering must provide the layout of their equipment in context of the building for the facility group to ensure no interferences exist. Integrating BIM and mechanical CAD data in the same environment is essential, but challenging due to the significant differences in architecture. This project will analyze the facility / engineering collaborative workflow and identify the challenges and solutions to enable efficient data exchange processes.

A practical example could be illustrated using the TUM Hyperloop station.

Task

GENERAL INSTRUCTIONS:

- Station designed in Revit (reference Hyperloop Hub Concept (https://tumhyperloop.com/press/)
- Hyperloop designed in NX (ongoing TUM Hyperloop project)
- Option: Import Terrain data into NX and find optimal cut/fill height to minimize soil movement
- Station Revit data is imported into NX
- Hyperloop data is exported as IFC data
- Navisworks can be used for clash detection and documenting interferences
- Option: using NX Open, develop a BIM Collaboration Format Import/Export tool to communicate required changes

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- Document recommended level of detail required, options used to enable efficient collaboration and reasoning for using these options.

Supervisor

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