

Challenge

Talk2meBIM – Talk & Interact with your BIM model directly

BIM models often contain a lot of information which is helpful and even essential for various professionals active on a construction project. IFC standard file format is structured the way that advanced tools and viewers can handle it effectively. However, we humans struggle to get the right information we need from the model without having extra advanced tools and features. On top, very often IFC models contain low quality information – for example, unclassified or wrongly classified objects without any metadata attributes, etc. Having a solution which allows architect, engineer or construction site manager to get insights from the BIM model using natural language would save invaluable time, improve safety and efficiency of the project.

Possible Outcomes:

- User Interface equipped with chat window within an Online Viewer, so user can ask questions, get answers, insights, reports on their BIM model. It would also be useful to get a quality assessment of the BIM model and potentially improve it or enrich it with extra information – for example, this could be the addition of automatically generated metadata attributes such as object's area, volume, etc.
- Nice to have outcome: automatically bring the user to a specific object on the 3D scene.
- Idea to explore: Can an LLM (Large Language Model) help us improve the quality of IFC files in an automated and secure way? The idea is to have the LLM validate the IFC file and suggest improvements. A prompt engineer could then review these suggestions, and if everything is correct, apply the patches to the original file.
- Here is an example of the user flow:
 - User uploads a model into the online viewer
 - User asks, “Where is the biggest room in this building?”
 - Talk2meBIM answers, “The biggest room in this building is located on the 3rd floor with an area of x m2. Do you want me to show you this room?”
 - User says, “Yes, please”
 - Talk2meBIM zooms the viewer into this room and makes the other objects semi-transparent
 - User asks, “Can you please give me more information regarding the data quality of the model?”
 - Talk2meBIM answers “Of course. Based on ... the model quality assessment shows X % valid attributes, X % missing properties ... Do you want me to suggest some improvement measures?”