How BIM Track Solved CÉH's Need for Clash Detection Workflow Optimization

Construction is underway for this 16,000 m² (172,000 ft²) hospital in Tatabánya, Hungary

About CÉH

The engineering firm Céh Zrt was founded in Budapest in 1989 on values of innovation and sustainable technology. It currently has a staff of over 240 engineers and developers.

The Hungarian city of Tatabánya, 50km (31 miles) west of Budapest, hired CÉH to design a 16,000 m² (172,000 ft²), three-storey hospital. Strabag Építőipari Zrt. won the tender, and CÉH has delivered the final construction plans as the General Designer subcontractor to Strabag. Zentrale Technik, an affiliate of Strabag, carried out the structural design of the foundations and the basement structures.

A project of this scale required impeccable clash detection to ensure that the construction is completed on time and on budget. Normally, CÉH would rely on Autodesk Navisworks for clash detection, but for this project they decided to supplement their usual procedures with the BIM Track web-platform for coordination.
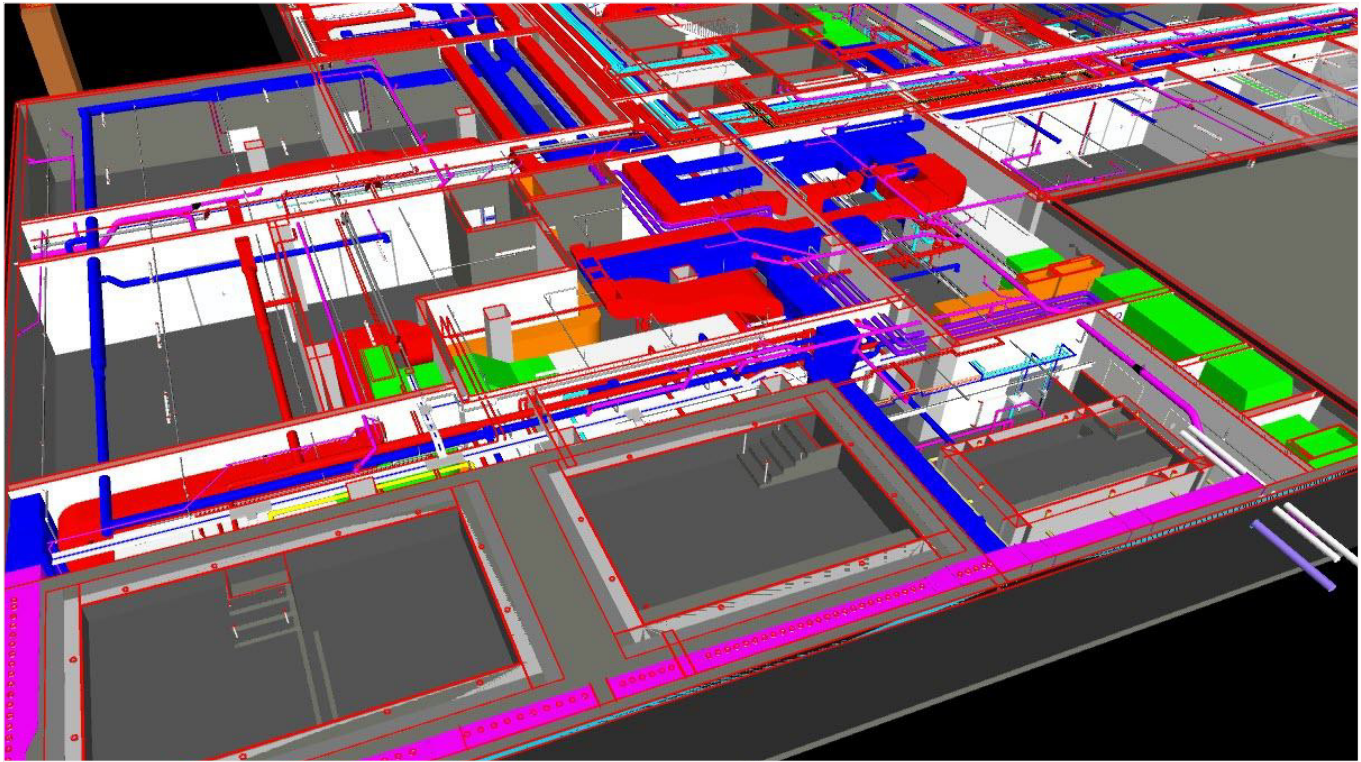
CĒH+

Figure 1: Clash detection in BIM Track's Viewer

The Challenge of Optimizing Clash Detection

Autodesk Navisworks is a reliable tool that is used industry-wide. For past projects, CÉH's clash detection workflow began by assigning each clash to a discipline to fix, who would prepare and then export HTML reports on each clash. These would then be forwarded to the appropriate designers, who would in-turn locate the clash in the model elements based on the element IDs and correct the clashes.

This workflow method had several drawbacks:

1. It was difficult for BIM Coordinators to track any feedback on specific clashes, such as whether or not they had been corrected

2. Modelers sometimes overlooked some of the clashes on the list, which would cause delays down the line

3. Using element IDs to locate clashes in the models was time consuming

4. There was no set way of distributing the HTML reports; email or file sending applications became standard practice, but even the most diligent stakeholder would lose or misplace files

5. Communication and coordination was cumbersome: the process of sending screenshots and element IDs through email, by talking on the phone, or by using office messaging services like Teams only added confusion and reduced efficiency.

The Solution

CÉH resolved to fix these problems by adopting an issues-management software. After thorough research, the firm chose BIM Track because of its effectiveness and value proposition.

CÉH began with a one-month free trial so that its stakeholders could familiarize themselves with the platform, after which it decided to test BIM Track on a pilot project: the hospital.

The benefits of BIM Track were made apparent quickly, and discipline designers gave very positive feedback.

BIM Track Implementation

Before putting the software fully into practice, CÉH created a user manual for each project team and subcontractor, as well as providing training on how to use the BIM Track platform.

The implementation was made easy by the fact that BIM Track does not substitute Navisworks, but rather adds functionality to it. CÉH's workflow now looks familiar but optimized:

| Before	After
After running clash detection, the report was exported to HTML	Issues are published directly through BIM Track
Lists of clashes were long and interspersed throughout communications channels	The entire list exists in BIM Track, and is easy to reference and know what remains incomplete and which clash has already been closed
Time-consuming to identify element IDs	BIM Track ties each clash directly to the model
There was no set way of distributing HTML reports	HTML reports are no longer necessary: all stakeholders can see the clashes in BIM Track directly and know who they are assigned to
Cumbersome communication channels	Each clash is its own issue and each issue has comments, file attachments, pictures and updates
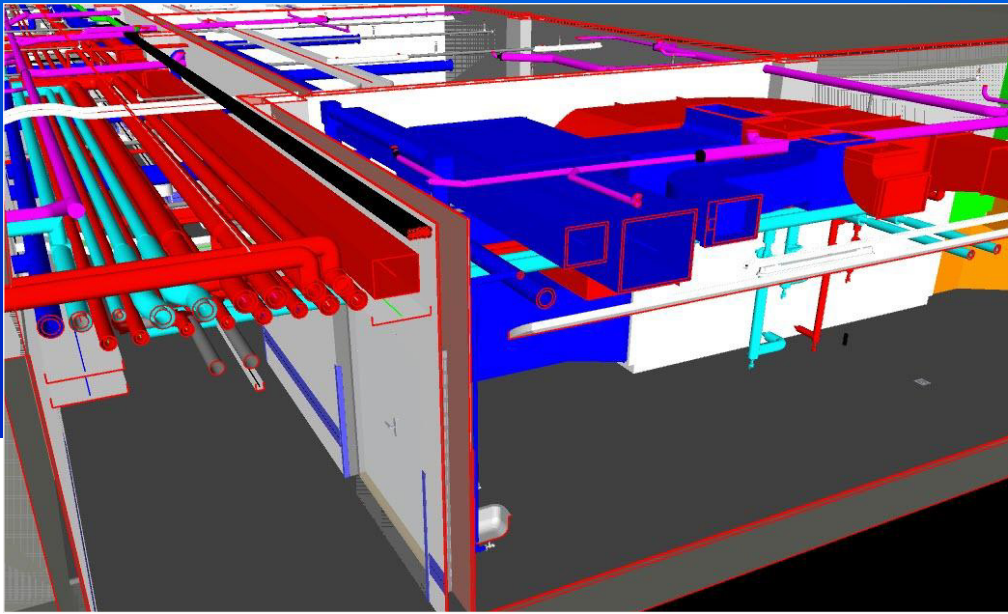
Figure 2: BIM Track lets users create issues that are tied directly to the model, which can be inspected using the Viewer
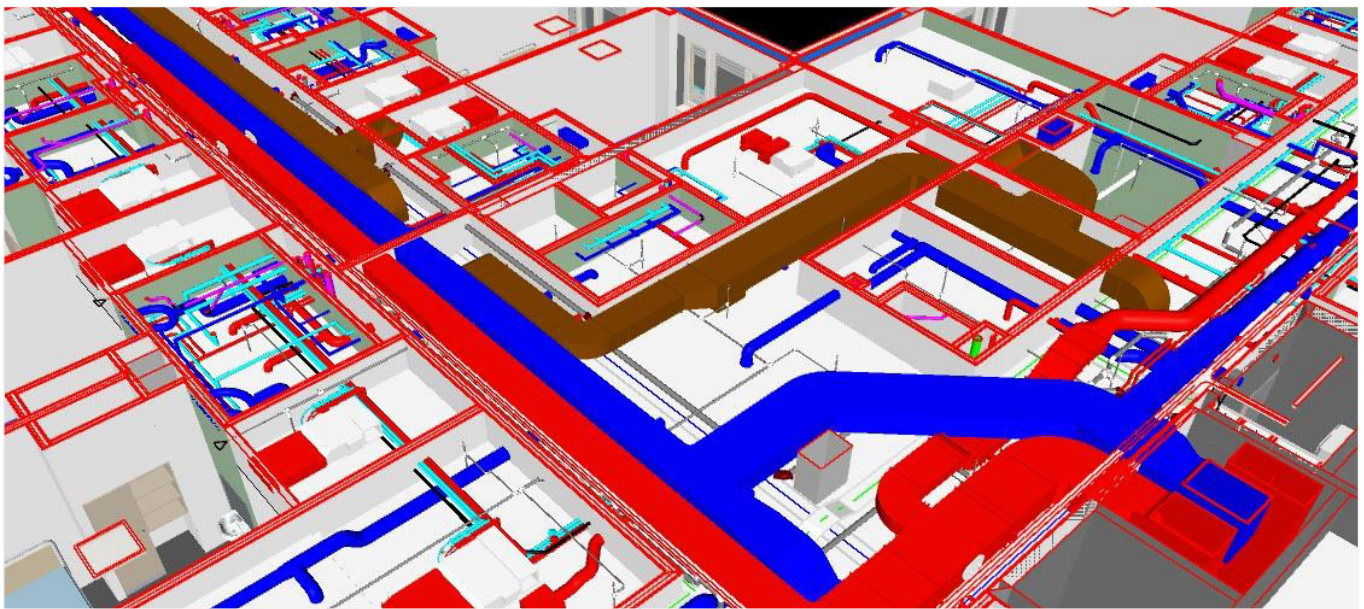

Figure 3: View of the hospital's model

Testimonials

BIM Track is one of the most useful tools we implemented in our company in the past years and we are looking forward to further developments to use it for an even wider variety of tasks.

We have used BIM Track on two projects so far. Clashes don't recur any more because someone "overlooked" something. What's more, the time spent correcting clashes has been reduced by 40%.

- Balázs Tudlik, BIM Manager, CÉH Zrt