

BIM360 DESIGN

Delivering high quality assets in Vietnam with BIM.

Executive Summary

In early 2016, ICE was one of the pioneers who dared to invest in BIM360 Team and C4R to increase efficiency in working as well as to coordinate with customer offices in Australia, New Zealand, England, etc. and 75% of employees have realized the effectiveness of using BIM360 at work. On this basis ICE identifies the strategic implementation of digital solutions as the key to success.

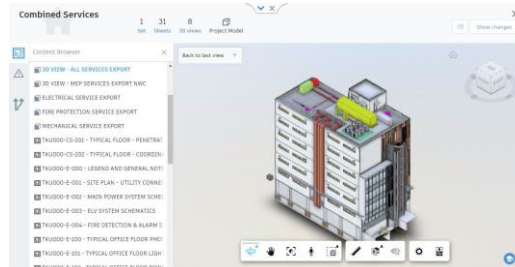
The implementation of BIM 360 with cloud technology, which helps ICE manage collaboration around 3D models and improves communication, collaboration, and decision-making, has also resulted in a significant reduction in design errors and drawing rework, significantly reducing design completion time before basic construction work begins.

Benefits to Projects

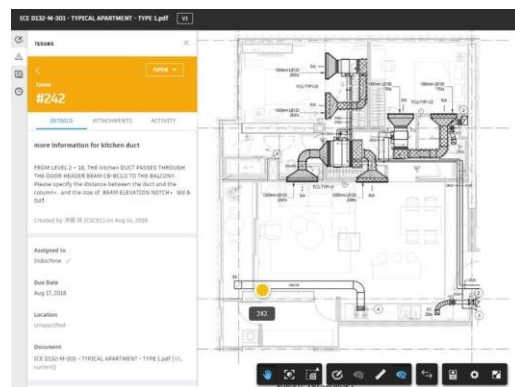
Key benefits to the project include.

- Synchronize model to cloud when working
- Maximize the benefit of cloud-based file sharing by control sharing of information with the entire project team, streamline file organization, save time, and maintain consistency
- Streamline design reviews across team members anytime, anywhere
- Easily compare versions for both 2D & 3D drawings
- Aggregate comments and markups in a single location
- Online issues management
- Control visibility permissions by individual or company
- Proactive monitor changes from other disciplines by subscribe to folders that you want to follow
- Synchronize files via Desktop Connector
- Access to project via mobile devices

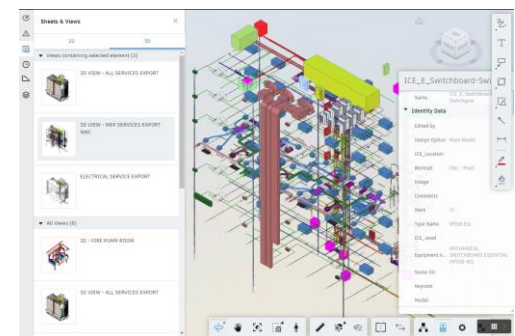
Some images snip from projects have been executed



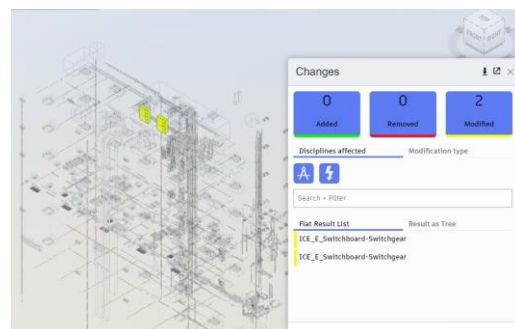
TCC MEP pilot project - Main building view



Alpha 2 – An issue needs to be solved



Review model on Web and Coordination



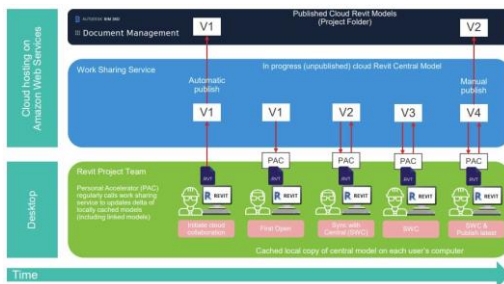
Compare the changing between 2 version of model

Process

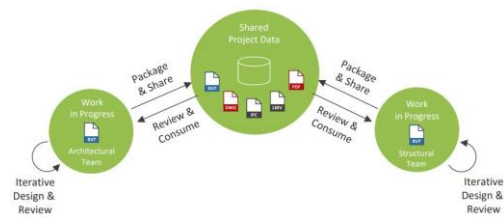
A key element of projects is controlling coordination and risk in an organized and transparent way. For each new project, team leads went through a time-consuming process of setting up and training new users on the INT/EXT SharePoint. The level of communication and coordination required for uploading and sharing the models to customers and related information also took up significant time in the workflows that led to misinterpretation of versions or mixing up different aspect models (Architecture-Interior-Structural-Facade-Landscape).

With BIM360 that easily to create all new stakeholders from a template and setting permission for whole trades and teams, it makes sure project teams have access to the right information at the right time.

The image below describes the working process from a design team to work-sharing service and when finalize publish model for submission on BIM360 web review



And this is the process of exchanging models back and forth in the design coordination process between disciplines



Through the project timeline



Recommendations

ICE acknowledged the power of combining the Autodesk BIM application set: Revit, Navisworks, BIM360 and its own in-house team of BIM modelers and BIM process. Collaborating as a united team on the BIM implementation, ICE executed the following activities:

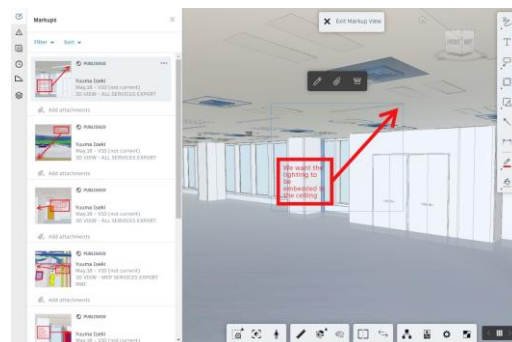
- Setting up a BIM Execution Plan (BEP)
- BIM Policy for all staffs when modeling
- Revit Manual, when working with Revit.
- Collaboration with open standard format Industry Foundation Classes (IFC).
- Setting up a hosted BIM 360 environment for the partners to enable collaboration, coordination, and integrated workflows
- Developing a standardized 3D model information structure that involves Revit templates and libraries.

Conclusions

In 2020, 50% of projects on BIM360 have been deployed out of total projects of the company, most of which are offshoring projects and projects outside of Vietnam. The aim is to adopt and promote 80% higher usage of BIM360 by 2023.

With the BIM 360 cloud environment, projects can now be set up in real-time, saving the IT department and project office weeks of effort each year.

The use of BIM 360 Design significantly improves work sharing efficiency; Reduced model opening time, less emails and less transfer files. View the model visually without having to open in Revit, easily to coordinate the design with markup, comment, and issues.



Markup from TCC

Supporting information

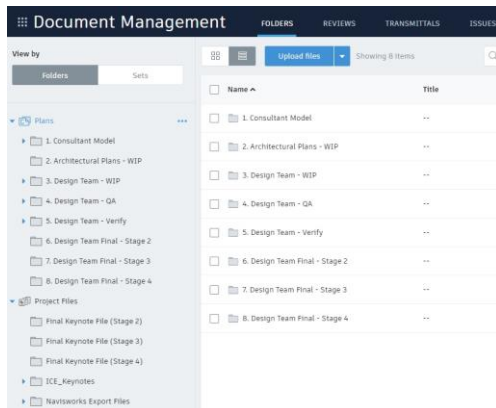
In the BIM360 there are 2 main areas for working with two completely different functions

Plans:

- Design documents (2D drawings and 3D models)
- Files are viewable and capture details from the original source files
- OCR capabilities and title-block information captured
- Version control and automatic slip sheeting for markups and issues
- Automatic detail callout hyperlinking for 2D drawings

Project Files:

- Other project related documents (i.e. contract documents, photos, specifications, bids, etc.)
- Original file format remains intact
- Similar to other cloud-based document storage solutions
- PDF viewing and searching capabilities
- Supports design files used in Design Collaboration module



Folder setup in Document Management

Key considerations

To absorb the constant changes in the development of technology applied in the construction industry, we continuously learn, study and research to be able to create a stable development of ICE in the future. We define ourselves with the following criteria:

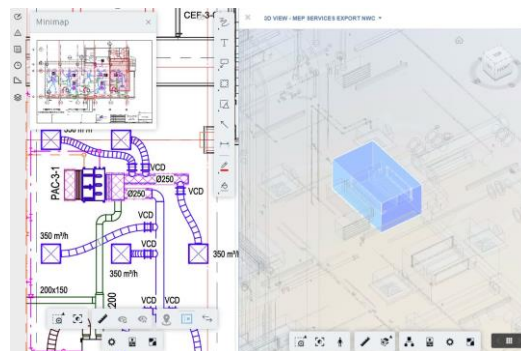
- A stronger organization (integrated, agile, and innovative).
- Establishment of a solid innovation practice (focus on technologies and partnerships).
- More digitization and breakthrough BIM technologies (cloud solution, data-driven, predictive, VR/AR, etc.)

Discussion

Indochine at this time has implemented many projects on BIM360 with our partners, besides the great advantages that BIM360 has brought us up to now. There are some points that we need to review and further improve in the coming time.

Some of the lessons we have learnt so far:

- The difference in the level of technological knowledge among the project participants
- Need better control over BIM360's automatic mailing, avoid disturbing people and drifting important mail
- Need to add ISO19650 management system to BIM360 for optimization
- Exploit more of BIM360's underutilized features such as: reviews, transmittals, title-block, insight, etc. to increase the value that BIM360 brings
- BIM360's server is in the US or Europe, so the internet connection is always an issue that should be considered when using



Review an object in layout with splitting View