Automation of 3D Modelling

3D modelling has become the backbone of integrated detail design. A considerable amount of effort, time and cost is involved in executing integrated 3D modelling across all disciplines. Manual data entry is needed at each stage of design, drafting and drawing based on which a 3D model is made. When entering data manually, there are chances of some data loss, translation errors and other human errors. To eliminate these errors and to optimize the time and man-power needed, we designed a software application to automate 3D Modelling by eliminating need for data re-entry at each step.

The application was initially developed for Electrical and Civil departments to directly optimize specialized 3D integration software license and high skilled man-power requirements. After being successfully implemented for ongoing projects like UOP-5, SNDC, KDC and GSFD, the developments were further leveraged to the Piping and Instrumentation teams.

Overall process improvement

Before the application was introduced, data needed to be entered manually at each of the consecutive stages of design, drafting and drawing. The 3D modelling based on the drawings also needed separate manual data entry. Thus, a longer time was needed to complete modelling of projects and the industry benchmark could not be achieved.

However, with the introduction of the application the modelling schedule has been optimized and there has been approximately 30% saving of skilled man-power. There have also been cost savings for PDS and PDMS licences across various departments:
Civil – 50-60%
Electrical – 30-40%
Instrumentation – 20-25%

Thus, the software has considerably improved productivity and optimized the modelling schedule.

Future Scope

In the future, the software can be leveraged further within LTHE and has the potential to extend across other engineering centres. Additionally, the model developed by the software carries all information within the model, which can be easily accessed at the client end and used across multiple software. Further developments on this application can help LTHE in achieving improved compliance to ISO 15926 (international standard for data integration, sharing, exchange, and hand-over between computer systems). Overall, the development of this application has been a breakthrough innovation at LTHE towards value engineering.

3D model for Hasbah