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Next Generation Clash Detection

Clash Management in a virtual building model is a recognised way of reducing on-site clashes and the associated waste and rework including labour costs, impact on program, waste of materials and expenditure on new materials. Industry estimates suggest each co-ordination issue on-site will cost between £3,000 and £4,500 to rectify, so to prevent this we need to look at how to resolve these issues prior to construction.

For years now models have been generated and federated in applications such as Navisworks which is great at reviewing a full project information model and elevating the clashes to the team to either resolve in the design authoring tools or to approve. However, setting up this process and managing the clashes is labour intensive, with the generation of search sets to break down the model into manageable elements.
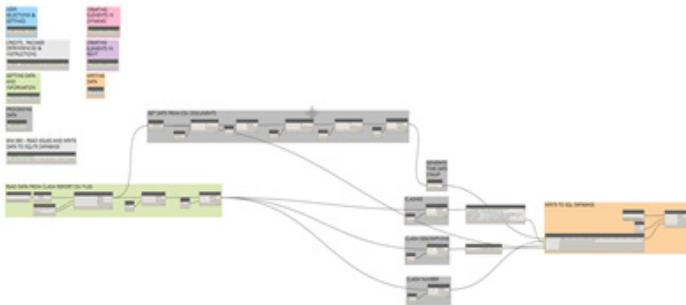

We also have an issue of having one single model which all the project teams download and comment on the issues, resulting in the generation of several sources of the truth, leaving the BIM co-ordinator with a task to collate these comments back into the main federated clash model. The classic version of BIM 360 Glue resolves this issue by hosting the NWD file up in the cloud for all the team to access at the same time.

But this still does not get around the generating of search sets and the lack of grouped clashes this presents, until we look at the Next Generation of BIM 360 coordination. By using Dynamo and Python scripting we can break down a model into the Revit categories or into the assigned classification

codes automatically to simulate the search sets used in a traditional clash model. When we then share with BIM 360, the models are automatically federated, the clash tests are automatically generated and a clash matrix presented.

When we review the clashes automatically generated, we quickly see that all the clashes are grouped via the effected elements, this reduces the number of tasks we need to review and time needed to resolve these. With the breakdown of the models to the Uniclass categories we can click through the problems and either accept, push or raise them in the BIM 360 platform as an issue and assign them to a party to resolve the clash within a specified time.
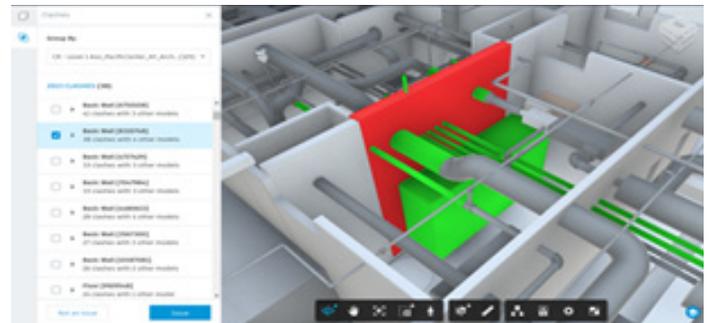
Reports and notification of issues can be generated and published to the teams that need to resolve them. This can then be pushed into an SQL database to store the data where analytics and dashboards in tools such as Microsoft Power BI can be automatically synchronised to the data to present a clear and concise representation and progress report of the whole clash management process.

To finalise the workflow again by using Dynamo the elements that are clashing can be highlighted back in the Revit application so the responsible parties can quickly view and resolve.

For more information on our construction services please call 01992 807 444 or email **marketing@excitech.co.uk**.

Features and Benefits of Next Generation Clash Detection

- Automatic model federation
- Automatic generation of the clash matrix
- Linked dashboard analytics
- No reconciliation/collation of multiple models

- Issue tracking and reporting
- No need to look at search sets or rules
- Model elements presented back in design authoring tool to resolve