

3D REPO

Smart Groups Boost Model Quality for Mid Group



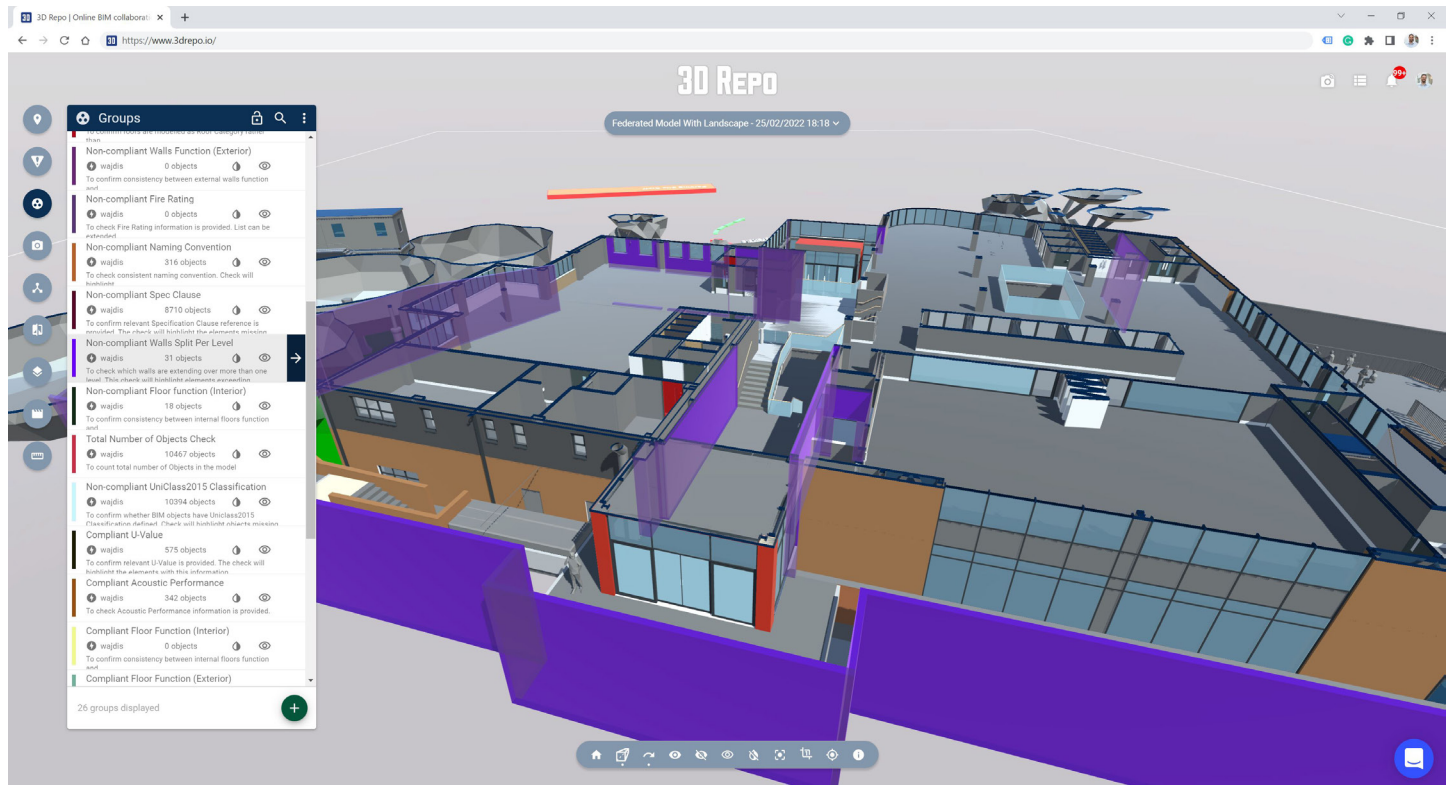


Figure 1: A model in the 3D Repo platform with non-compliant walls highlighted in purple.

Overview

Mid Group trials model and data validation process with outstanding results

Mid Group was founded in 2014 and has since established itself as one of the UK's leading offsite construction, consultancy, and development businesses. The secret to the company's success? A passion for innovation and simplifying the construction process to maximise value for clients. It is this attitude that compelled Mid Group to partner with software and BIM specialist, 3D Repo, to create a new automated model and data validation process that delivers unprecedented efficiencies.

An ambitious project forged during the pandemic

Mid Group first approached 3D Repo in July 2021, amidst the global Covid pandemic. The company was working on a new residential scheme called Carnival Place, part of Wokingham Borough Council's multi-million-pound town centre regeneration project.

The residential proposals for Carnival Place include 55 new apartments alongside a new pedestrianised promenade that links the site with the town centre.

Challenge

A creative partnership

Due to the magnitude of the project and the ongoing challenges posed by the pandemic, Mid Group decided to look for a solution

that would enable efficient data sharing, reliable workflows, and model validation. 3D Repo became the partner of choice to help the company with its ambitious project.

“Mid Group opted for a multi-project plan with us,” explained Jack Williams, Senior Account Manager at 3D Repo. “This plan allows unlimited users across multiple projects to access project data in 3D Repo. As with all our other plans, it also allows you to connect 3D Repo to various common data environments and file store solutions, and in this instance Mid Group is using Asite. This option enabled everyone involved in the Carnival project to access the model and work as cohesively as possible.”

Mid Group undertakes BIM data validation for all its projects through its in-house BIM team, Sterling BIM, and normally spends time checking models in two-week cycles. The team checks that all objects are named correctly, they have the right parameters attached (e.g. fire ratings, acoustic ratings, U values), are modelled correctly, and meet the requirements of the BIM Execution Plan.

The checking process is generally done manually and with the fast pace of projects, it can be challenging for the project teams to get the model data to the right quality in the time frames allowed.

Solution

Saving more than 1,500 man-hours per year

“We identified a use case where 3D Repo ‘Smart Groups’ would automatically validate our model data via the creation of different rules in order to check the models”, explains Stephen Chudley, BIM, Design, and Technology Director at Mid Group. “Last year across all our projects, we processed more than 400 models and checked every model for information accuracy. This process typically took a minimum of three to four hours per model which translated into thousands of hours.”

For the use case to be viable, the checking procedure needed to be automated, scalable, transferable across all projects and file types, and provide easy access to the data for all. Mid Group and Sterling BIM worked collaboratively with 3D Repo to create a custom set of data validation rules to be added to 3D Repo’s ‘smart groups’ feature that Mid Group now use to validate model data.

The Sterling BIM team then developed and enhanced the 3D Repo Power BI templates to produce an automatically generated dashboard report which summarises model quality and highlights any non-conformities.

“This has cut the time spent on each model to approximately 30 minutes. The results of the model check are automatically

shared in the 3D Repo platform as well as via the automatically generated report using the 3D Repo open API and Power BI. We have not just achieved a reduction in time, but also a process improvement that allows us to achieve greater efficiency and accuracy whilst driving up quality. The improvement has also been delivered at speed – from use case definition, through product implementation, data validation testing, to rollout took less than 6 months,” continues Stephen.

“In addition to an estimated time saving of over 1,500 hours per year, we found that we collaborate much better with our partners thanks to 3D Repo’s solution”, added Stephen. “Our end users are construction and commercial teams who really value the fact that the data is always correct. And, thanks to the dashboards, we can quickly identify where the issues are, saving time across our entire project team including consultants and contractors.”

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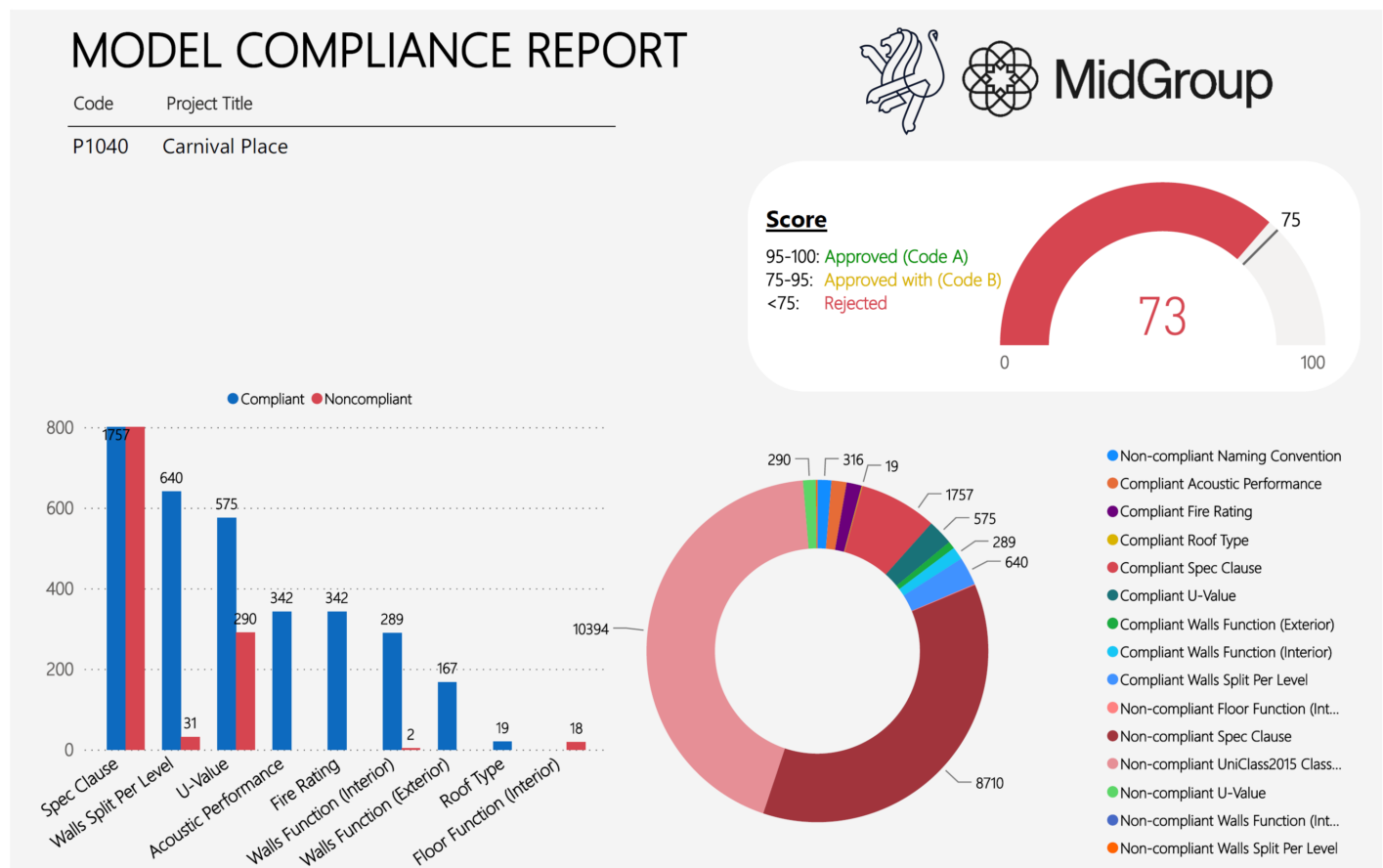


Figure 2: Mid Group model compliance report using data from the models in 3D Repo.

Future

Streamlined processes and improved documentation deliver accurate projects on time

The tailored data validation solution 3D Repo, Mid Group, and Sterling BIM have developed, vastly improves documentation. This enhances the quality of the models before they have even gone into manufacturing which means better outcomes overall. As an example, the first time Stephen's team ran the validation of the object data, 350 errors were spotted, but after implementing 3D Repo's process, the number of errors was down to zero in just three weeks.

"Our solution aims to improve overall model data quality with accurate, up-to-date information to meet the requirements of the golden thread," continued Jack Williams. "In addition, the process can help design consultants by identifying which objects they need to fix and how, which is an automated feature of the system."

Through the automated data validation pipeline, users can import various standard elements, which gives offsite workers a greater level of assurance. The benefit of the validation is right first time, which reduces procurement lead times.

"3D Repo's solution has completely overhauled our procedures", says Stephen. "The benefits are easy to see – instead of working

with Excel spreadsheets and doing manual calculations and checks, everything is done automatically. This type of passive validation is essential in improving our efficiency and streamlining operations. In addition, it validates deliverables and makes everyone more accountable, which leads to a better working environment. Better quality data is the backbone to delivering projects on time, on budget, and to the highest standards possible and this solution is a fantastic development substantially enhancing our capabilities."

**1,500+
hours
saved**



Figure 3: Carnival Place high-resolution fly through.



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