



# 3D Repo

## The Remodelling of King's Cross Railway Station

A case study by 3D Repo

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King's Cross Remodelling project by SPI







Figure 1: The reality model of part of the King's Cross remodelling project. Image courtesy of SPI.

## Remodelling King's Cross Station

London's King's Cross railway station is one of the busiest stations in the United Kingdom, serving close to **40 million passengers** each year. But it's been 25 years since any major intervention has taken place on the railway, and it is now in need of some major remodelling work. The remodelling will allow for an increase in the number of long-distance trains and facilitate future improvements to journey times.

Specialist Project Integration (SPI) are undertaking this massive **£250,000 project** which includes:

- Extending passenger platforms
- Bringing one of three unused tunnels back into use
- Modifying track due to crossovers between rail providers
- Moving signalling control to York

One of the major challenges for this complex project is that the new railway needs to be built on top of existing railway whilst it remains open.

## Improving Coordination

With about 300 architects, engineers, and contractors, and some 3,500 CAD files; SPI knew that traditional methods of communication and design coordination were not appropriate. Furthermore, they needed to be sure that disruption to one of the UK's busiest railway stations was kept to a minimum.

Despite using ProjectWise as a common data environment (CDE), there was also a need for a design coordination and collaboration tool that could run easily in a web browser. 3D Repo's digital platform for Building Information Modelling (BIM) was chosen as the platform to help SPI with coordination due to the fact that it required minimal training, and it could be accessed from any computer without the need for software installation or licencing.

**40 Mill**

Passengers served  
each year

**£250k**

Estimated project  
budget

**50%**

Station to close during  
remodelling

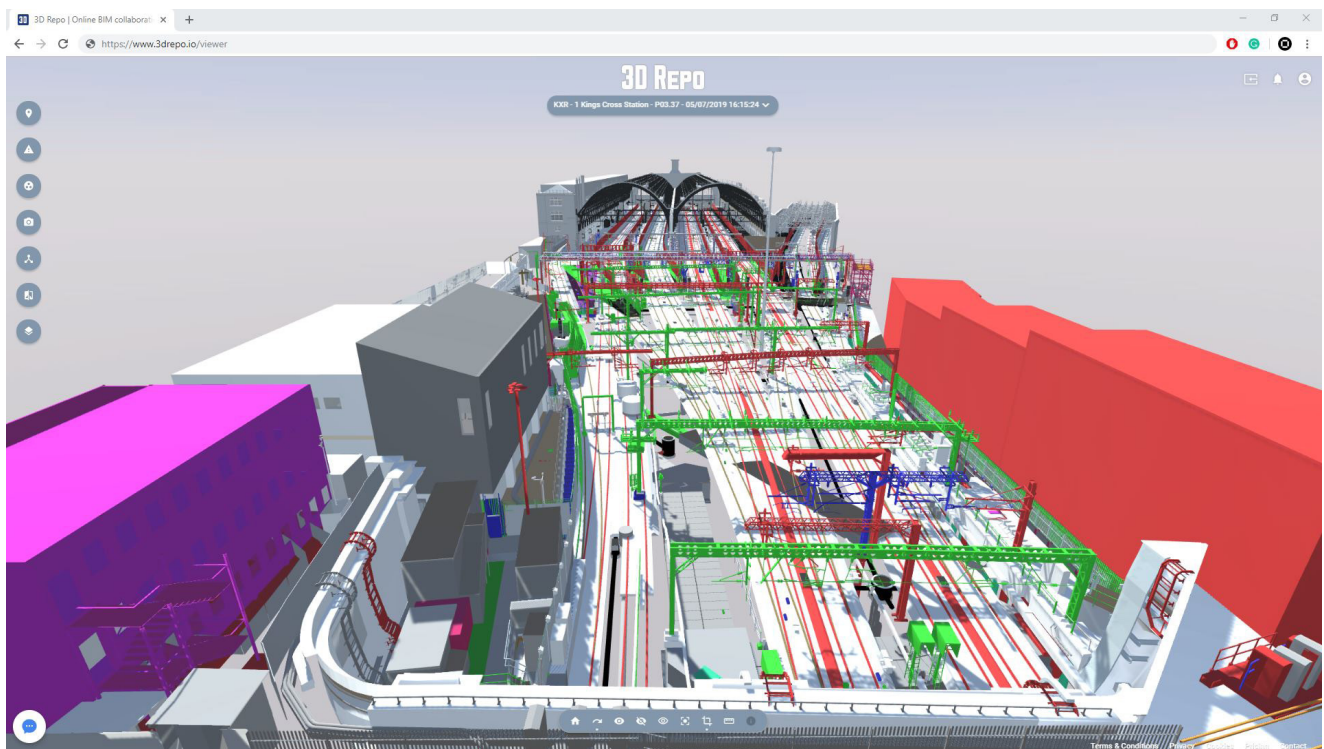


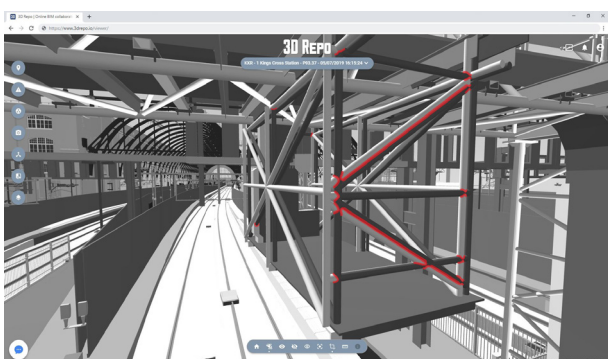
Figure 2: Federation of the King's Cross railway station model, taken in the 3D Repo platform. Model courtesy of SPI.

## The Digital Construction Platform

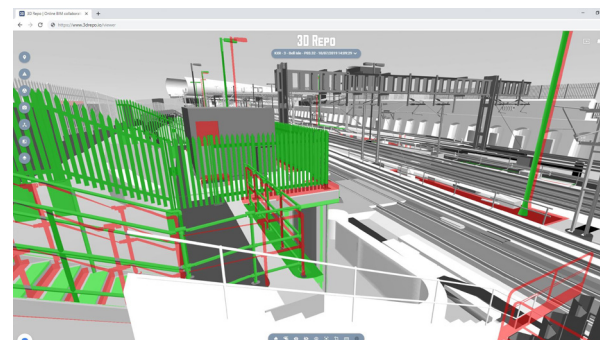
SPI are using 3D Repo as a [design coordination tool](#) and also as a [communication tool](#) to help them bring this project together, and predict a saving of about 10,000 hours of on-site work thanks to the combination of software applications being used. Software being used includes CAD, Microstation, 3D Repo, and VRAM.

### Design Coordination

One of the key features used is [Instant Clash](#), which identifies issues e.g. pipe running through a wall, highlighting the exact intersection point to save potential re-work during construction. Designers and engineers simply log in from a web browser to view the latest models, log issues, and comments into the platform as a central hub for communication – no more lost emails.



[3D Diff](#) detects changes made to the model regardless of file type, making it easy for multidisciplinary teams to collaborate when different design software applications are being used. It compares actual geometry changes between models, highlighting new elements in green and deletions in red. 3D Repo supports many popular file formats including [Revit](#), [Bentley DGN](#), [IFC](#), [FBX](#), [Navisworks](#) and more.



*"The great thing about 3D Repo is that we're only using the most basic features and we're getting a strong return on investment"*



- Simon Wray  
Managing Director, Specialist Project Integration

## Communication Tool

3D Repo is also being used to host a “reality model” of the project with the purpose of [democratising data](#) and [reducing complexity](#) for all other stakeholders, as they do not necessarily understand CAD drawings and BIM models.

The reality model is a realistic version of the design, adding context to the remodelling project and removing the need for interpretation. SPI have found that this has helped to [minimise time scales](#) in decision making from local authorities, station management, train operators etc. as they are able to relate the reality model back to a real-world context.

Other tasks that 3D Repo is being used for during the King's Cross remodelling project:

- [Driving training for new track layout](#)
- [Signal sighting](#)
- [Planning e.g. site logistics](#)
- [Obtaining consents](#)



Democratise data



Reduce complexity



Minimise time scales



*“The fact there’s nothing to install and it can be accessed from anywhere has proved immensely popular with the engineering teams.”*



– Simon Wray  
Managing Director, Specialist Project Integration

## Get in touch today

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