

# Worksite safety on HS2 set to be boosted by immersive 4D technology

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HS2 Ltd has joined forces with main works contractor Balfour Beatty VINCI (BBV) and innovative software developer 3D Repo to boost worksite safety. By harnessing the power of cloud-based technology, and combining it with unique hazard management technology, HS2 hopes to make its sites even safer as it moves into the full construction phase.

In a move to improve construction site safety, HS2 Ltd has backed the development of advanced 4D learning technology that enables site teams to identify, record and resolve site hazards as part of a virtual construction sequence evaluation and training.

The technology, cloud-based SafetiBase 4D, developed by BBV and innovative tech company 3D Repo, sees site workers enter the Mission Room (pictured), which creates a four dimensional, 360° virtual version of a BBV construction site on HS2's Area North route.

In the safety of an office environment, workers can then go on site and explore, discuss and agree the project's delivery sequence, identify safety issues and agree how to resolve them.

Delivery teams are able to go inside the Mission Room, and join remotely via the internet, to tag hazards at a specific place and time in the virtual build sequence. The technology also provides the ability to click on the hazard symbol to access its entire history including details of progress that has been made in tackling identified hazards.

HS2 Ltd senior innovation manager Dr David Rogers said: “HS2 places a high priority on caring for our workforce and creating an environment where no one gets injured. This technological innovation has huge potential to improve safety on the project. Immersing teams in a 4D virtual site enables them to examine the task and, not only tag hazards, but hopefully eliminate them before they arrive on site, driving a virtuous circle improving safety and boosting productivity.”

Balfour Beatty VINCI’s Head of Innovation & Transformation, Dan Fawcett said: “The integration of SafetiBase 4D is yet another step forward on our journey towards achieving Zero Harm – keeping our workforce, business partners, suppliers, subcontractors and members of the public safe.

“Using this immersive innovation, we are able to fully visualise our sites and interact with the works sequence, showing how specific HS2 assets will be built piece by piece. Creating a truly digital workflow for capturing hazards, assigning ownership and ensuring action is taken to mitigate or manage these risks, SafetiBase 4D also ensures that we are delivering efficiently and effectively throughout the programme of works.”

3D Repo’s commercial director Andrew Norrie said: “3D Repo has been working with Balfour Beatty VINCI on a HS2-funded innovation development to integrate 4D data from Synchro into 3D Repo. This development will allow users to democratise, visualise and analyse the output of 4D modelling to the wider project team. This will enable full cloud-based collaboration with issues and risks linked to the 4D timeline.”

*Photo credit: HS2 Ltd*

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