

Case Study title: A303 Virtual Hazlegrove Bridge Construction Model

Scheme name: A303 Sparkford to Ilchester

Project stage: 6 Date Case Study submitted 20/02/23

Construction

Scheme context:

The proposed Scheme will provide a continuous dual carriageway on the A303 linking the Podimore Bypass to the Sparkford Bypass and will include the removal of at-grade junctions and direct accesses

Case study details:

In the early stages of stage 6 we wanted to see the benefits of virtually building one of our bridge structures to see what benefits this would bring the project. The thoughts being that we could better plan and foresee any issues building it virtually, before we started construction. Further to this we also understood that the model would be able to identify areas of safety during high-risk operations helping subcontractors discuss operations, problems and help write RAMS.

Once we had agreed that this would be a useful approach, we contacted 4D Freeform about building the model inline with our programme. James at Freeform requested that we send him the drawings for the structure along with the current programme explaining the sequence of works and what we would like to see from the model. Once received Freeform were able to produce an initial draft within a few weeks. From there we had regular updates and discussions around what we would like to see and any changes we might want to make.

Once the model had been developed to an appropriate stage, we shared it with our subcontractors so they could input into the process. This led to some very good discussions around methodology and safety of all operatives during construction. We were also able to input lots of elements of temporary works and how these were installed and utilised during the construction of the bridge. We were then able to feed this back to Freeform to finalise the model. With the finalised model in place, we used this to great effect during site specific inductions and then used it in high risk task inductions to aid explain the processes, and help all involved visualise their own RAMS what is expected of them.

What are the benefits?

The benefits of this 4D modelling have been greater than we first thought. We have been able to have some very useful planning and safety discussions with all those involved, well before they go out and do the works. This has also meant that those who are on the ground doing the works have had some really useful chats with those writing risk assessments and method statements to explain how they would like to go about various tasks. The modelling has also been beneficial in providing effective visual tools when explaining further problems, that we may need to get Temporary Works Designs briefs written to overcome issues.

How can others apply your learning?

It would have been really good to have done this earlier in the life of the project with various updates allowed for at specific hold points. If you were able to have the whole project modelled in this way it would show you overlaps in the programme that possibly may have been missed which would hopefully negate the need for delaying or resequencing works.

Visual materials that explain your approach / outcome



Contact for more details: Jonathan Blott Jonathan.blott@gallifordtry.co.uk

Further information:

<http://www.freeform3d.co.uk/>

[Model example on LinkedIn](#)

<https://n3g.4projects.com/sc/4OOADD>

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