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Innovative rail solution came from thinking inside the box...

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More than £70 million has been saved thanks to smart methods being used to build a railway flyover.

As part of the East West Rail project, teams had to replace a flyover crossing the line at Bletchley. Instead of replacing old columns one by one, engineers instead opted to create a tunnel-like box structure for trains below to pass through – and for the bridge to sit upon.

This means the track, one of the busiest of its type in Europe, doesn't have to be shut, protected as it is by this new structure.

Mark Cuzner, East West Rail Alliance project director, said: "By working smarter we've been able to speedup the project by around six months. At the start of the project, we built a protective wall next to the West Coast main line so we could safely build the box structure during the day when the railway is open, instead of working piecemeal at night-time when the railway is closed.

"Most of the components for both the box structure, and the flyover, arrived pre-built and were simply assembled on site, like a model kit or set of Duplo bricks. The simplicity of construction meant we could

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safely reduce the workforce onsite by 60%, cut the previously-forecast cost by £70m and get the job done six months quicker than planned."

Simon Blanchflower CBE, East West Rail Company chief executive officer, said: "The transformation of the iconic Bletchley flyover has really brought the East West Rail project to life and brings communities from Oxford to Cambridge ever closer to a new, sustainable transport link across the region"

Headline figures from this construction method include:

- £70m saved by reducing the need to close the railway
- Modern methods of construction speeds-up project by six months
- 70% of components arrived pre-built and were simply assembled on site
- Simplicity of construction meant onsite workforce could be reduced by 60%
- New flyover will last 120 years (previous one lasted only 60 years)
- In the coming months track will start to be laid over the new structure.

The bridge replaces a 1960s-built concrete railway flyover which wasn't suitable to carry the new East West railway.