Chislehurst Road Bridge Reconstruction

Background

Why we are building the new bridge?

• Safety inspections revealed severe structural weaknesses
• No longer capable of carrying the 44 ton weight load of a HGV
• Engineering studies concluded no other alternative than to re-build
• Risk of collapse over busy rail line
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Thinking Forward

What are the benefits of a new bridge?

• Once rebuilt buses and HGV’s will be able use bridge again
  Diversion route will no longer be needed

• Relieves traffic pressure

• The new bridge will be low maintenance

• Will be a much more reliable structure

• Life span of 120 years, far greater than the current Post Tensioned
  1950s bridge design, found to be structurally very weak
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HOCHTIEF’s Key issues

Our key issues are;

• **Safety of site staff and the public is paramount**
  - Working in a critical rail environment
  - Working in a compact site
  - Working close to the local community

• **Local Community Engagement, ensuring regular and consistent information**
  - Keeping noise to a minimum
  - Sensible plant movement to avoid disturbance
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The Reconstruction works

Construction plan

• Our method is based on a robust access/protection deck able to contain all the loads from demolition of the existing deck and construction of the new bridge

• The footpath will remain open over the bridge for the full period of the site works other than for safety critical works associated with the crane lifts of the rail protection deck and new bridge beams

• Each half of the bridge will be demolished and reconstructed sequentially allowing one side to remain open

• Whilst the first half of the bridge is being demolished service and utility diversions can take place during the re-build of that side reducing the down time
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Construction Phasing - 1

- Existing Bridge from West
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Construction Phasing - 2

- Install Protection Screens under the bridge
- Install Foundations, Trestles and Slide Tracks
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Construction Phasing - 3

- Installed rail protection deck under existing deck
- Lifting in the beams in pairs at night
- Sliding the pairs of beams under the bridge
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Construction Phasing - 4

- Remove the existing surface to reduce the weight
- Saw Cutting Pre-Stress Tendons, (existing deck load taken on rail protection deck)
- Pedestrians and Services remain on the unaffected East Footway
- Saw Cutting in preparation for the lifting out of the existing beams
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Construction Phasing - 5

- Break out/lift out Beam Segments
- Break up sections of beams off of bridge away from the railway
- Separate concrete from steel and remove from site
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Construction Phasing - 6

- First phase demolition completed
- Installing new steel girders 1 to 4
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Construction Phasing - 7

- First Phase steelwork complete
- Divert remaining services to new side of the bridge
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**Construction Phasing - 8**

- Completed first phase of deck
- Service diversions complete
- Pedestrians diverted to new footway
- Demolition of East deck completed
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Construction Phasing - 9

- Complete steelwork
- Install GRP enclosure below beams
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Construction Phasing - 10

- Complete new deck
- Remove rail protection deck
- Complete enclosure
- Reinstall working areas
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Construction Phasing - 11

- Complete – Chislehurst Road Bridge Reconstruction
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Construction Overview and Phasing

Jon Elliott – Site Agent