9.0 The Central Span

9.1 The Central Span Design Options

The proposed bridge adopts a single-span structural approach to avoid the need for supports within Network Rail land and to minimise disruption to railway operations. A clear span of approximately 25–30m is required to accommodate the rail corridor and achieve the necessary safety clearances. This establishes a bridge deck level of approximately 136.2m AOD, which in turn defines the extent of ramped access required on both sides of the railway.

At this stage, a range of structural forms has been considered, including steel girders, truss systems, concrete decks, and composite solutions. While each has merits, concrete options are generally less suited to installation over a live railway due to their weight, and truss structures introduce additional complexity in both fabrication and visual impact.

A steel plated U-girder configuration is identified as the preferred solution. This form provides an efficient and robust spanning capability within the required range, while maintaining a relatively shallow structural depth to limit ramp lengths. It also lends itself to off-site fabrication, allowing the bridge to be assembled in advance and installed during a single planned railway possession. This approach reduces construction risk, shortens programme duration, and limits disruption to rail services. The form also allows parapets and screening to be integrated within the structure, contributing to both safety and a clean architectural expression.

Construction is expected to rely on prefabricated elements lifted into place using cranes positioned within adjacent land, with the southern site likely to accommodate temporary works and compound areas. The bridge abutments would be located outside the operational railway boundary, with foundations formed using reinforced concrete pads or piled solutions depending on ground conditions. Ground-supported ramp sections will be used where possible to reduce structural complexity and cost.

Overall, the proposed structural strategy prioritises simplicity, constructability, and compatibility with railway constraints, while providing a durable and efficient solution that can be developed further through detailed design and site investigation.

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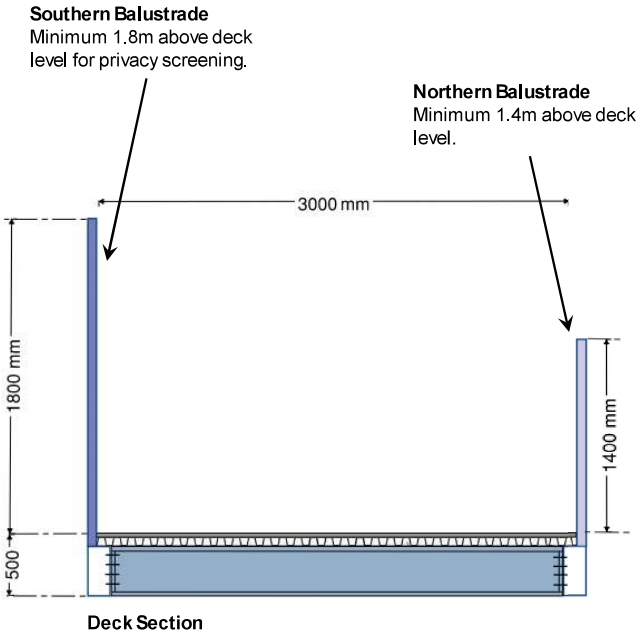
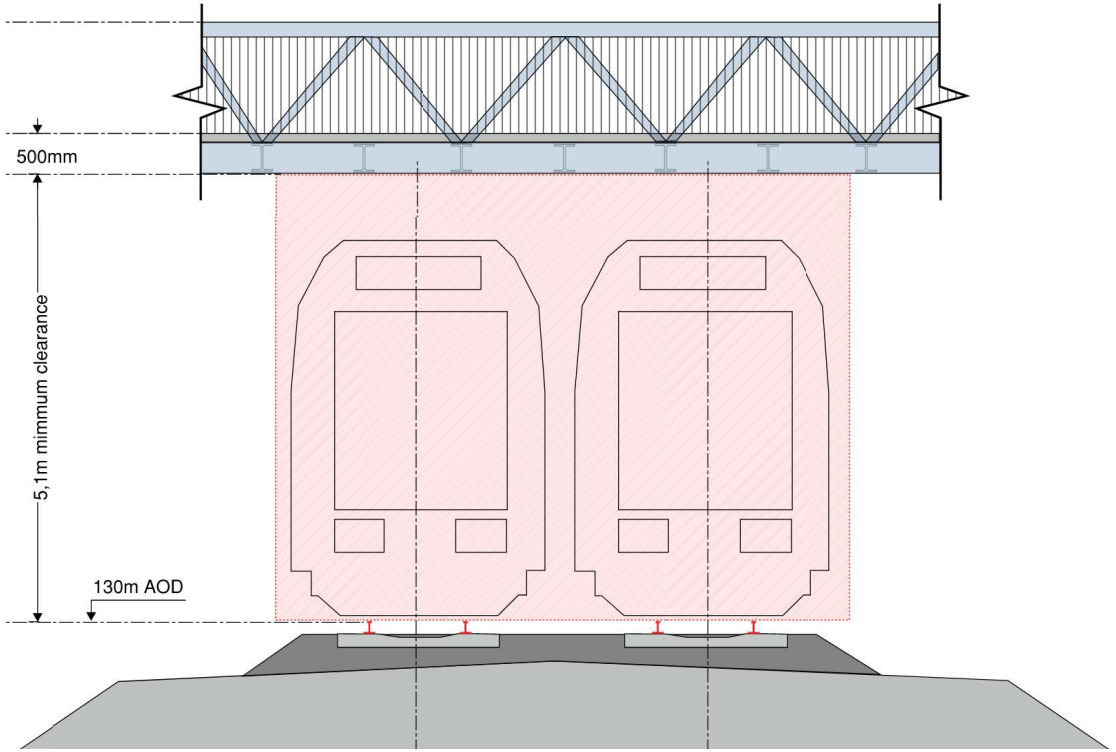




9.2 Steel Bridge Structure

General arrangement:

- Primary elements – either girders or trusses span between the abutments and are up-stood to form handrails and reduce overall depth.
- An alternative is to downstand the primary elements – providing a lighter but deeper option. This will impact on the bridge height and as such is not recommended.
- Secondary elements span across the bridge, supporting a precast or composite deck.
- Additional handrails as required.
- Weight is needed within the bridge deck to prevent dynamic issues, and footfall induced vibration across the bridge.

Steel is generally not preferred by Network Rail, due to maintenance requirements. Therefore, any steelwork is likely to be Corten steelwork to minimise the need for maintenance over a 100-yr life.

9.3 Concrete Bridge Structure



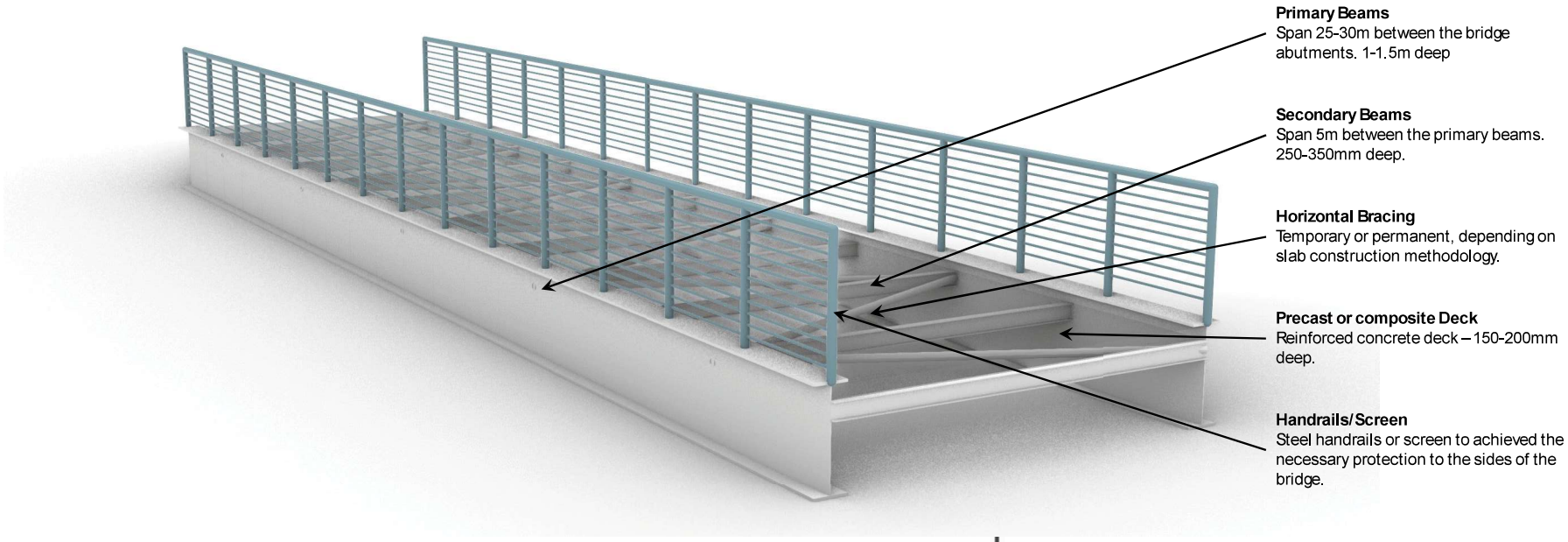


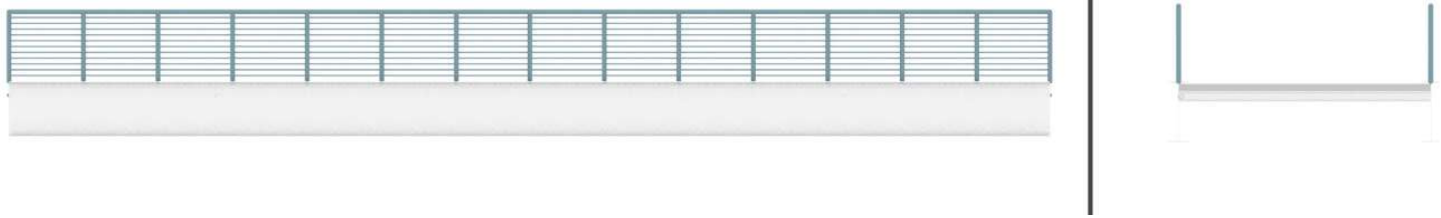
General arrangement:

- Primary elements – generally a box girder or prestressed element which spans between the bridge abutments.
- The spanning element sits beneath the bridge deck, which will increase the required height of the bridge to achieve the required clearance beneath.
- The bridge deck is formed using a precast or in-situ concrete deck, supported on the primary elements. .
- Additional handrails as required.

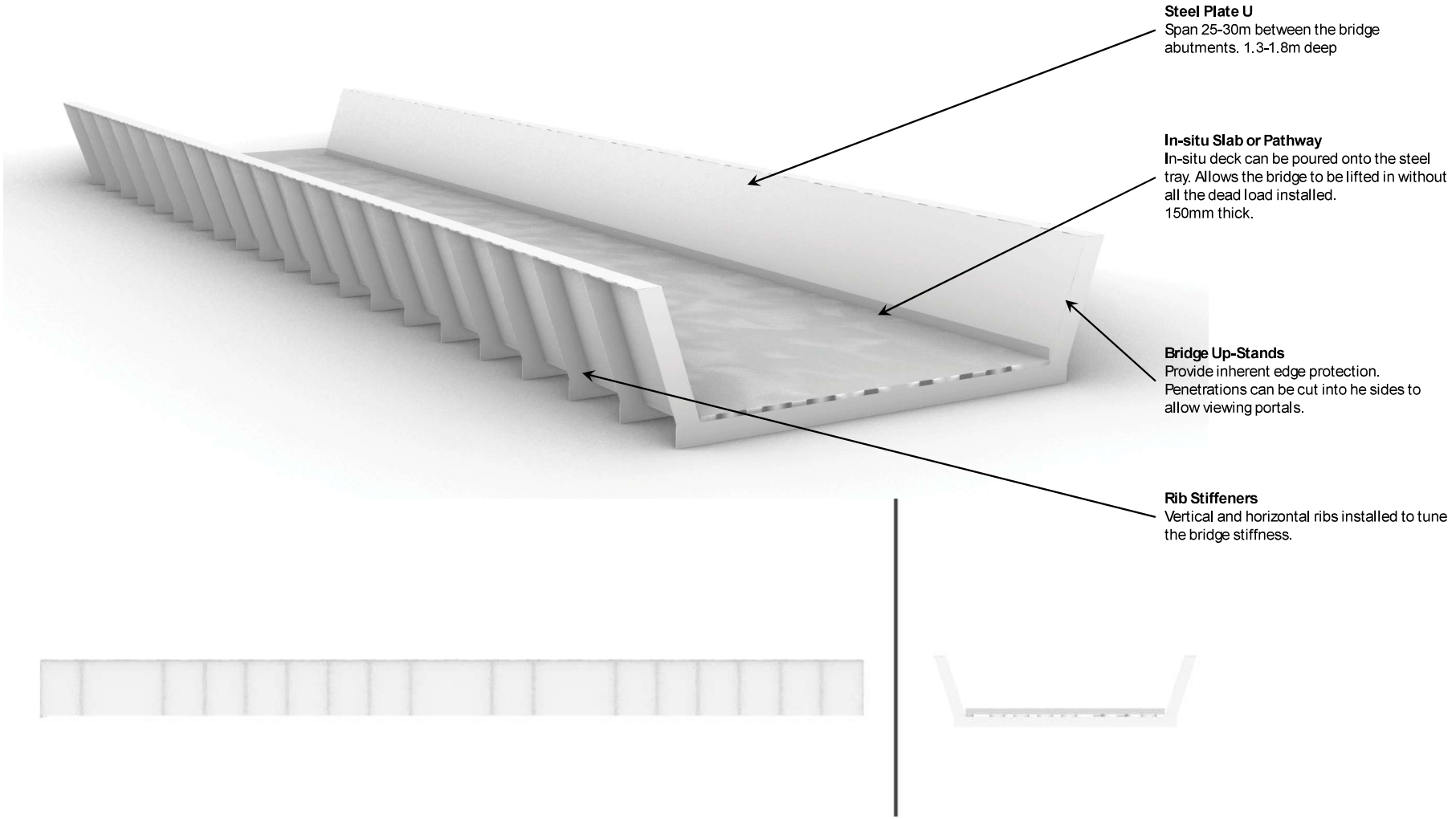
Precast concrete allows minimal maintenance, however the weight of the bridge at 25-30m will require mid-span support during construction.

9.4 Steel Downstand

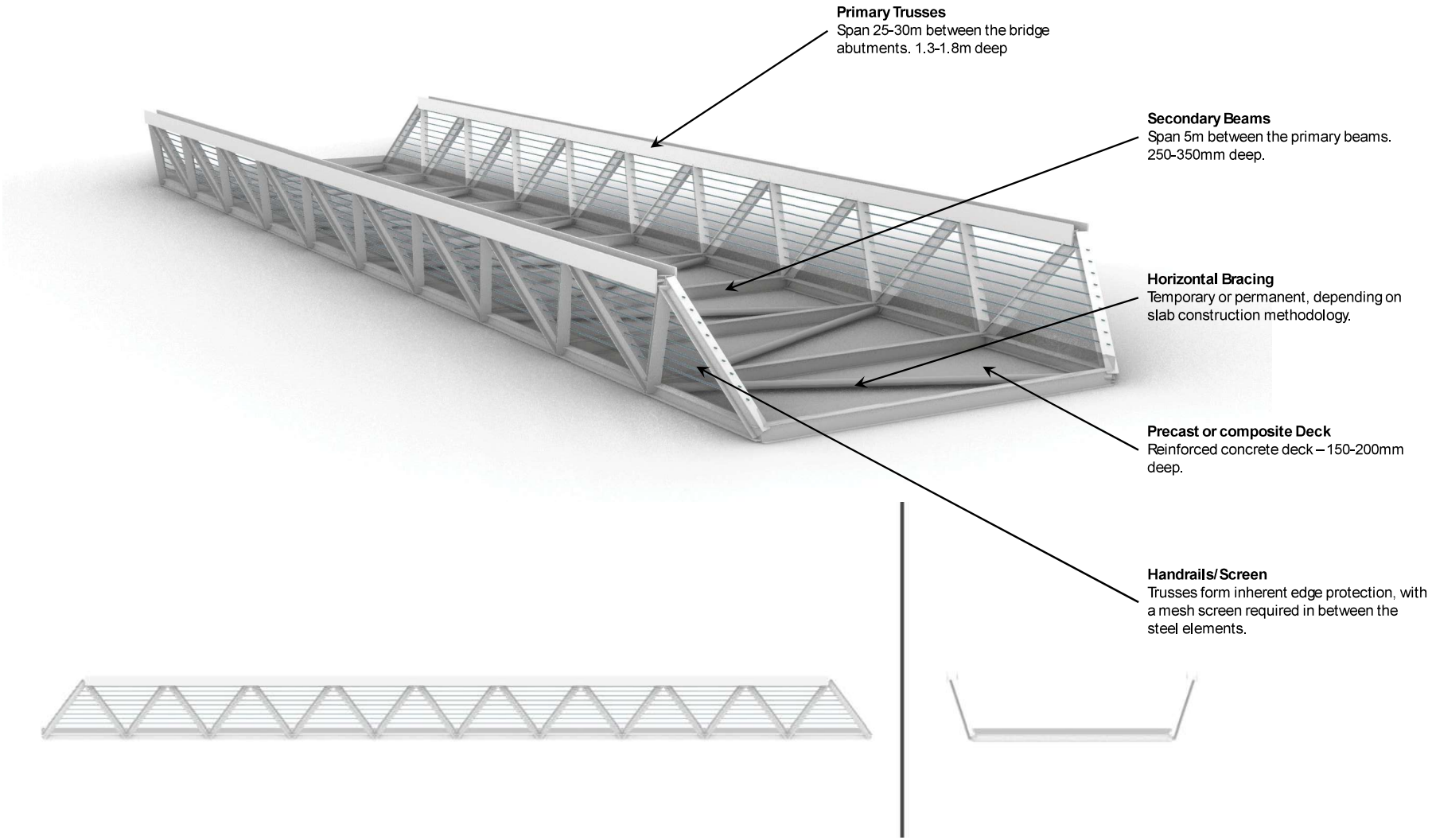




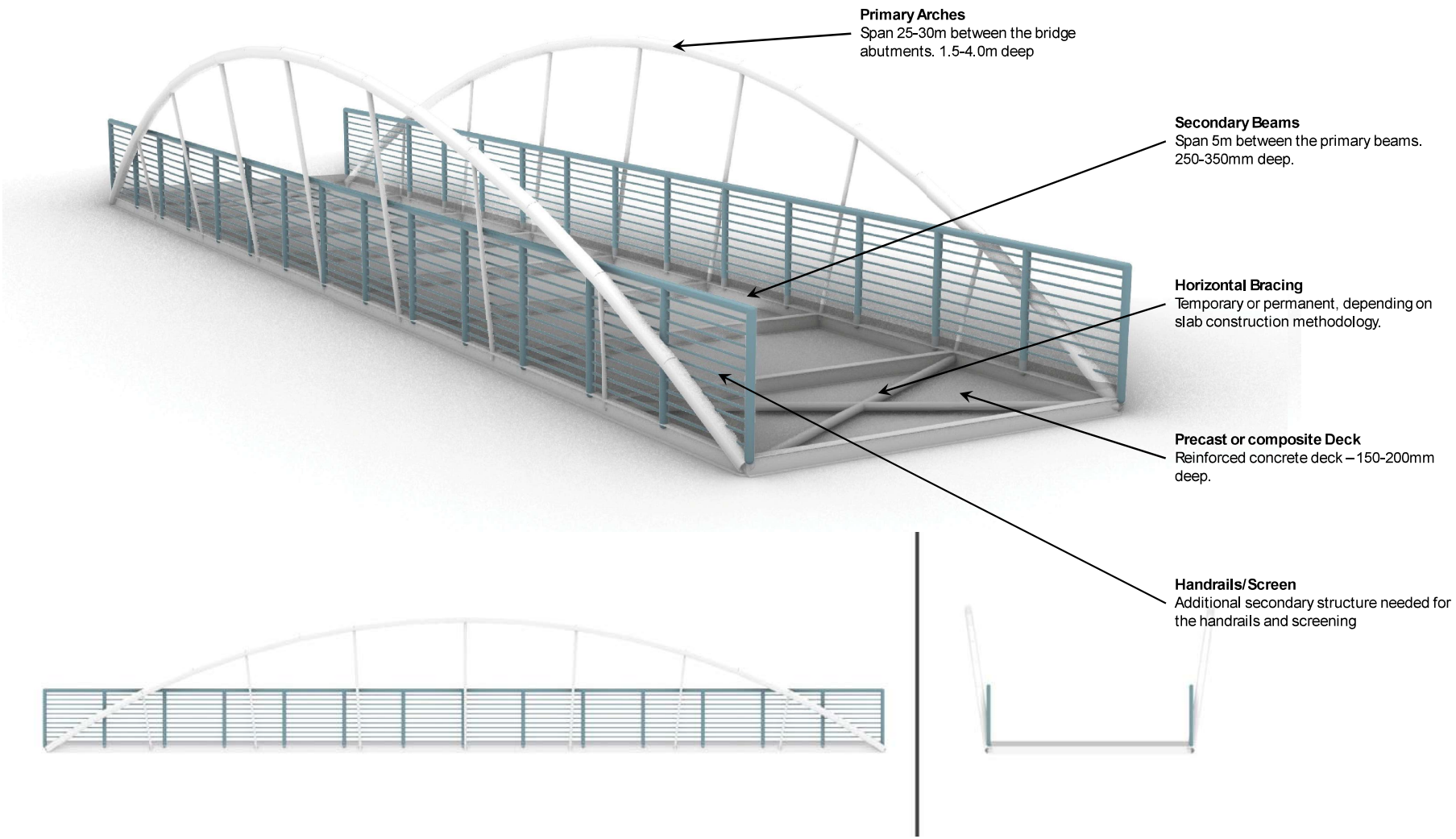
9.5 Steel Plated Upstand



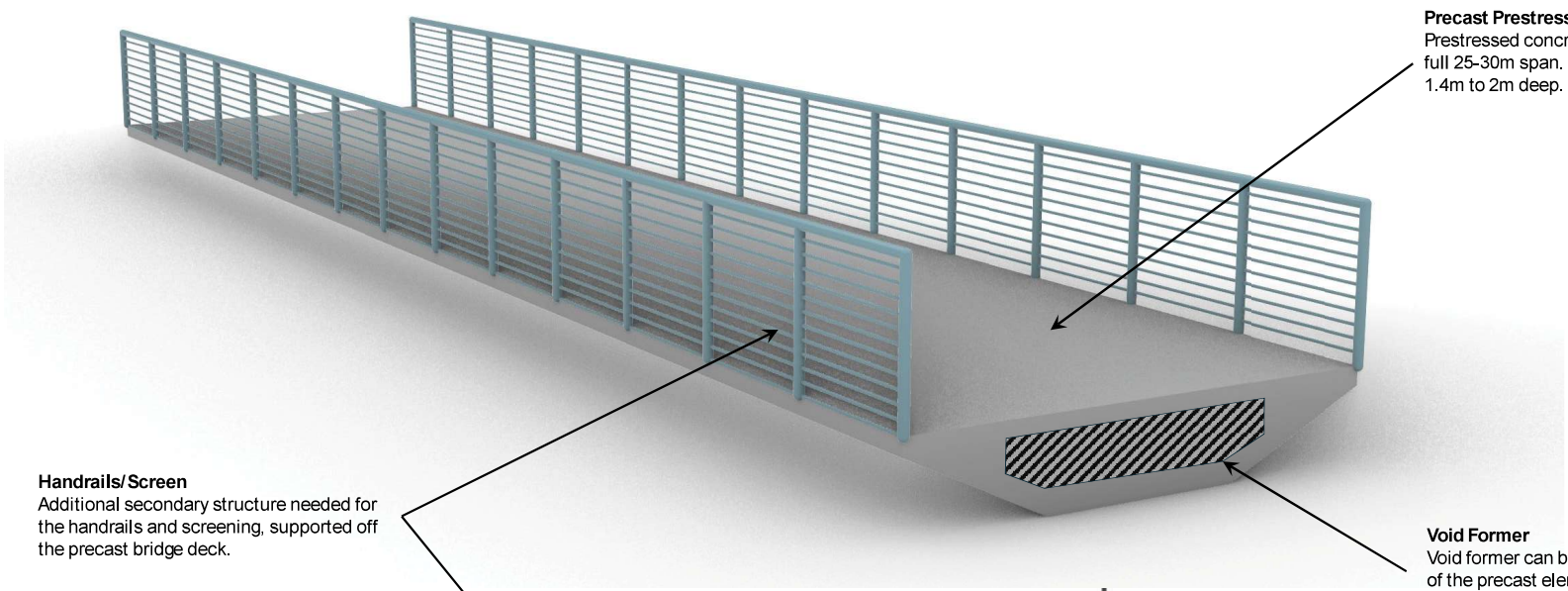
9.6 Truss Upstand



9.7 Tied Arch Structure



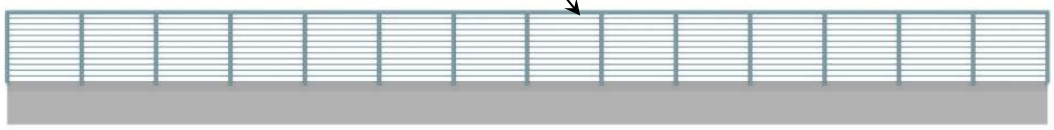
9.8 Pre-cast Box Beam Structure



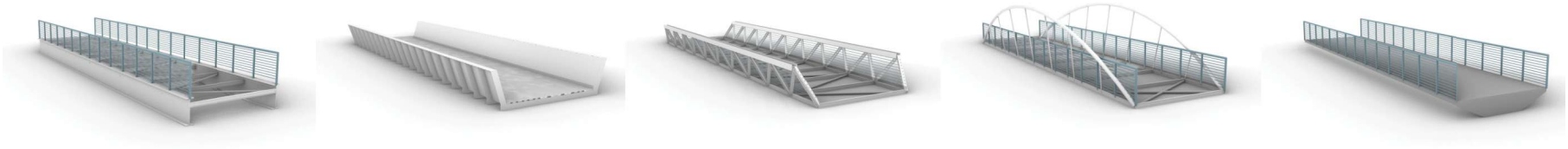
Precast Prestressed Bridge Deck
Prestressed concrete box girder spans the full 25-30m span.
1.4m to 2m deep.

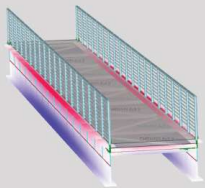
Handrails/Screen
Additional secondary structure needed for the handrails and screening, supported off the precast bridge deck.

Void Former
Void former can be used through the centre of the precast element to reduce the dead weight of the structure.

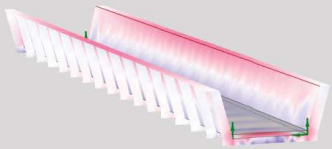


9.9 Preliminary Material Quantities

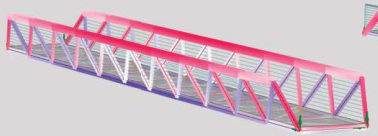




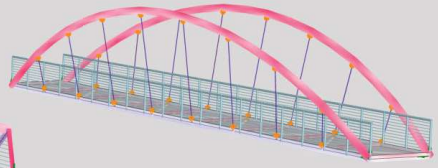
Option 1: Double I-beam + Precast deck
Steel Mass=22.8 tn
Concrete Mass=33.8 tn
Deflection=85 mm



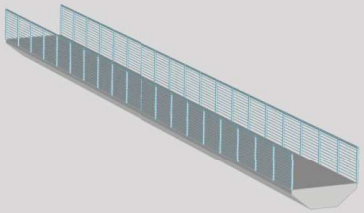
Option 2: Plated U + Concrete deck
Steel Mass=26.2 tn
Concrete Mass=27 tn
Deflection=66 mm



Option 3: Upstand Trusses + Precast Deck
Steel Mass=14.3 tn
Concrete Mass=33.8 tn
Deflection=85 mm

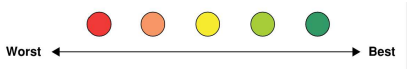


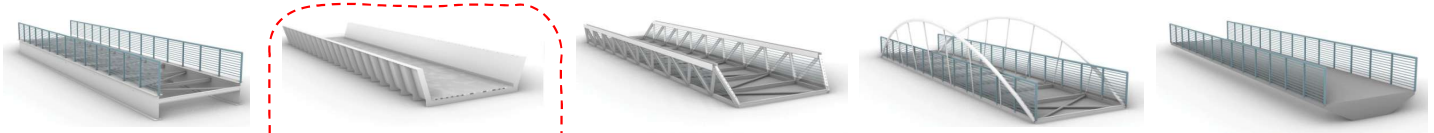
Option 4: Shallow Arc + Composite Deck
Steel Mass=9.8 tn
Concrete Mass=33.8 tn
Deflection=43 mm



Option 5: Prestressed Concrete Trapezoidal Deck
Concrete Mass=149 tn
Steel Mass=12 tn

9.10 Bridge Options RAG Table



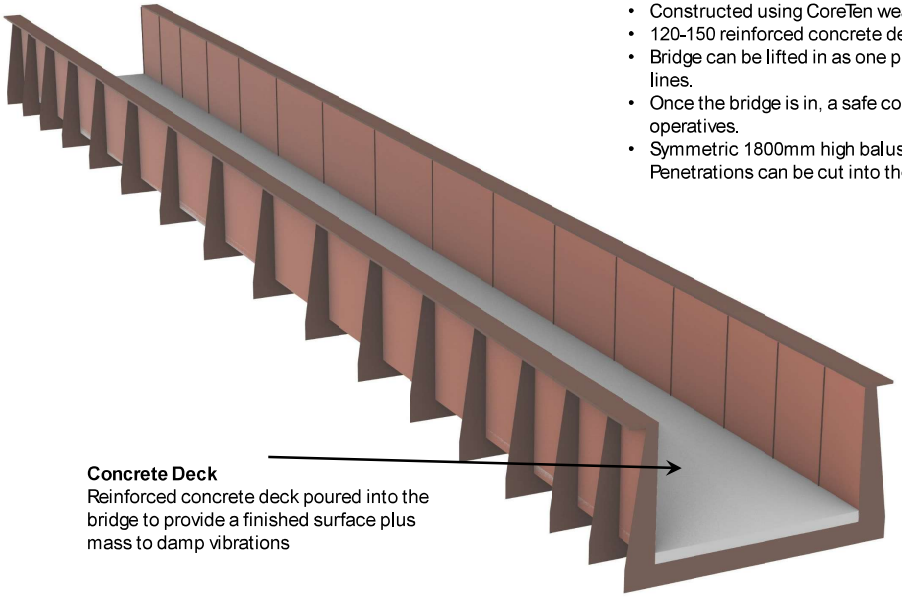


MATERIAL QUANTITIES	Simple spanning elements, including secondaries and bracing required.	Integrated structure combines the handrails with the decking.	Optimized truss elements to reduce the spanning elements.	Efficient arch structure minimised material.	Heavyweight concrete self weight increases quantities.
EMBODIED CO_2	Standard steel sections used.	Customised steel elements used for the bridge deck.	Optimized structure to reduce material.	Optimized structure to reduce material.	Concrete is a low embodied carbon option.
CONSTRUCTABILITY	Deck to be installed afterwards, requiring possible access at height.	Integrated working platform prevents risk to contractors.	Deck to be installed afterwards, requiring possible access at height.	Deck to be installed afterwards, requiring possible access at height.	Mid-span support or temporary works required to install.
LEVEL IMPACT	Deeper deck structure raises level throughout.	Minimal deck structure provides optimal levels across the bridge.	Downstand secondaries increase deck depth.	Downstand secondaries increase deck depth.	Deeper deck structure raises level throughout.
ARCHITECTURAL IMPACT	Basic structure buildup with minimal architectural value.	Integrated balustrades creates architectural identity and simple, efficient aesthetic.	Opportunities for optimising the truss can provide an interesting architecture.	Arch gives an architectural language to the bridge.	Adding architectural merit to the bridge will increase cost.
MAINTENANCE	Maintenance and inspection required periodically.	Minimal maintenance required.	Maintenance and inspection required periodically.	Maintenance and inspection required periodically.	Minimal maintenance required.
OVERALL SCORE					

9.11 Recommended Option

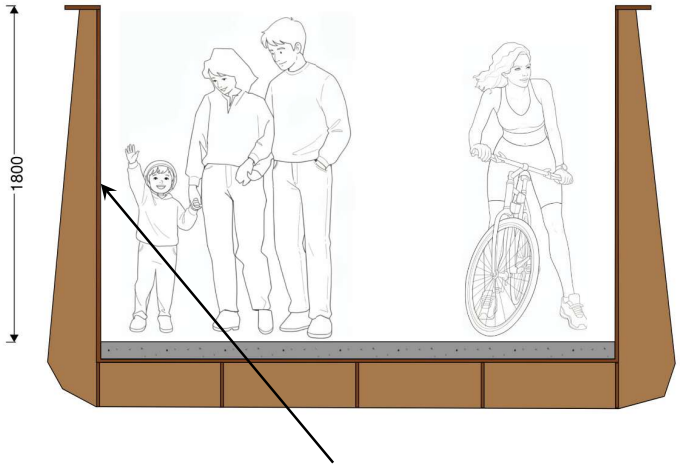
Plated U-Girder Bridge:

- Single span integrated structure, with a U-shaped profile extending across the bridge.
- Stiffeners along the length of the bridge to maintain dynamic performance.
- Constructed using CoreTen weathering steel.
- 120-150 reinforced concrete deck poured onto the bridge to provide a robust walking surface, along with mass to damp footfall vibration.
- Bridge can be lifted in as one piece during and overnight possession of the railway, minimising impact on the operation of the railway lines.
- Once the bridge is in, a safe construction route is in place to install the concrete, lighting and other finishes without risk to the on-site operatives.
- Symmetric 1800mm high balustrades on each side provide both a visual screen to the south, and a more efficient structural system. Penetrations can be cut into the side walls of the bridge to allow viewing down on to the tracks if required.



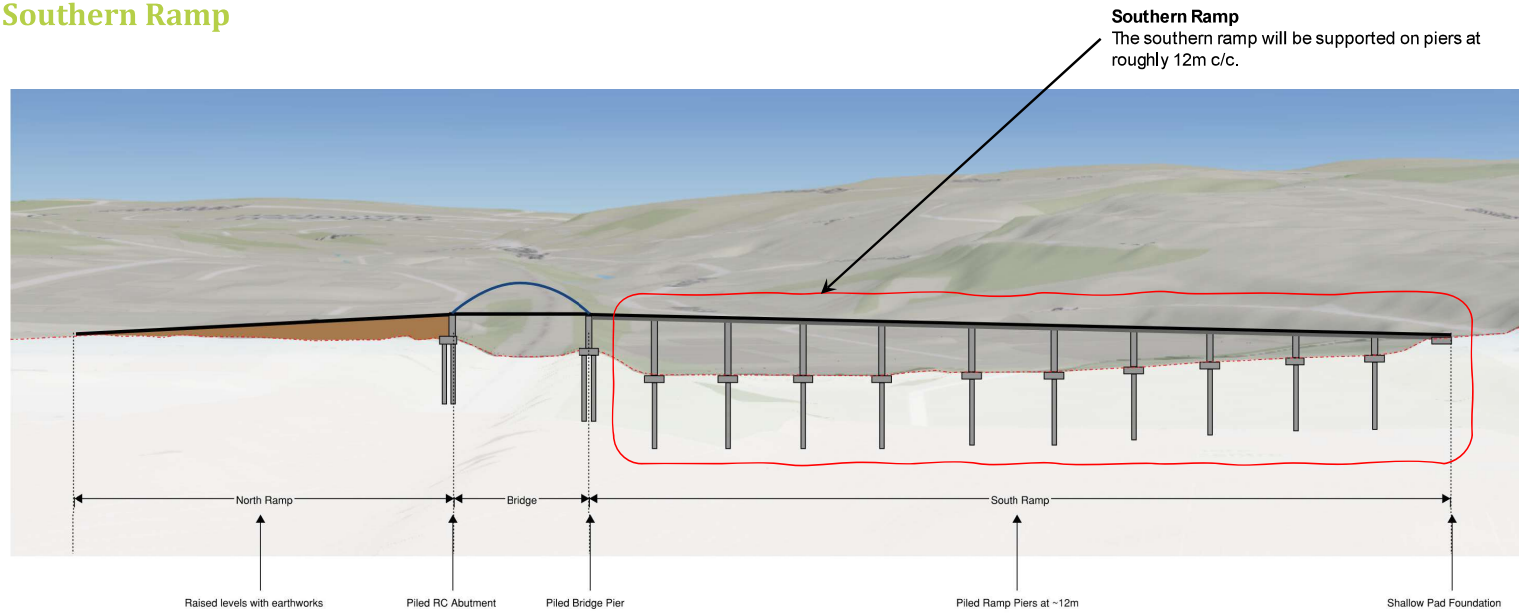
Concrete Deck
Reinforced concrete deck poured into the bridge to provide a finished surface plus mass to damp vibrations

Elevation
Stiffener locations tuned along the length of the bridge to design out dynamic footfall vibration



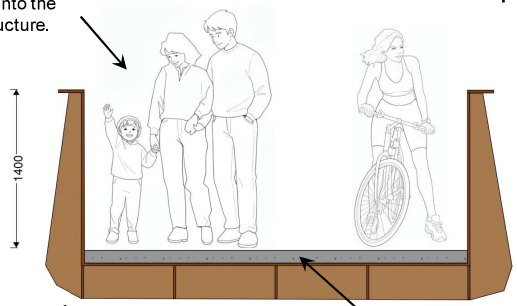
1800 Balustrades
Balustrades on each side integrated into the bridge structure.

9.12 Southern Ramp



Maintain the same geometry and form of the bridge into the southern ramp structure.

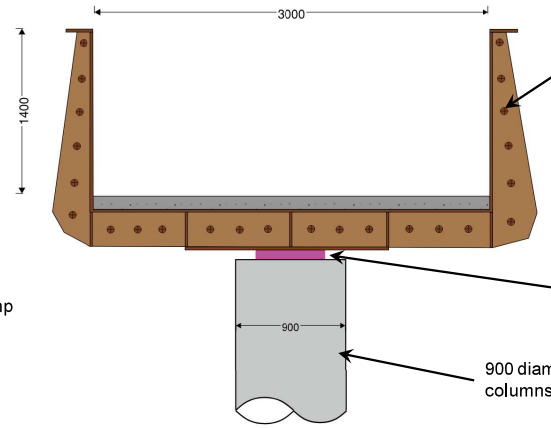
Section AA – Ramp Deck



3m wide ramp sections, with a 1400mm high balustrade to the edges.

120-150 thk RC deck on the ramp to form the finished level.

Section BB – Pier Interface



Allow for ramp to be installed in 12m sections, with a bolted splice at each connection location

Allow for bearings to all ramp and bridge supports

900 diameter ramp columns

10.0 Architectural Vision & Placemaking

10.1 Vision

The proposed bridge should be understood not only as a piece of transport infrastructure, but as a defining civic element that reshapes the character and usability of the surrounding area. Beyond its functional role, the scheme presents an opportunity to create a welcoming and active public space that enhances the identity of Haslemere and strengthens connections between communities

10.2 Arrival and Movement

From the northern side, users would approach the bridge via an improved and clearly defined route from Wey Hill, transitioning from a busy commercial environment into a calmer, more pedestrian-focused space. The gradual ascent provides an accessible and intuitive route, with open views towards the surrounding townscape and landscape beyond.

Crossing the bridge, the experience would be defined by a sense of openness, safety, and visibility. The structure itself—whether expressed through a robust steel form or integrated parapets—would frame views along the railway corridor while maintaining a strong sense of enclosure and security. Lighting, materials, and detailing would contribute to a safe and comfortable environment both during the day and at night.

On the southern side, the arrival sequence becomes more spatially expressive, particularly in Option C. The helical ramp creates a distinctive movement through the landscape, offering a more gradual and engaging transition to ground level. This element has the potential to become a defining architectural feature, creating a sense of arrival and identity for the site.

10.3 Integration with the Herons

The bridge enables a rethinking of the wider leisure centre surroundings, transforming what is currently a fragmented and underutilised space into a more coherent and active public environment.

There is an opportunity to organise the site around the bridge as a central focus, with complementary uses arranged to support activity throughout the day. These may include:

A small café or kiosk positioned to benefit from passing footfall
A cycle hub or repair station supporting active travel users
Enhanced recreational facilities, including a redesigned skate park and sports courts
Informal seating and landscaped areas for rest and social interaction
Potential provision of a youth-focused facility or flexible community space

These elements would work together to create a lively and inclusive destination, encouraging both movement through the site and longer dwell times.

10.4 Landscape and Public Realm

The landscape strategy would play a key role in integrating the bridge into its surroundings. Retention of existing mature trees, where possible, would be combined with new planting to enhance biodiversity and soften the visual impact of the structure.

Public realm improvements could include clear and legible pedestrian and cycle routes, high-quality surface materials, integrated seating and lighting and green infrastructure such as rain gardens or planted edges.

Together, these interventions would create a safer, more attractive, and more usable environment for all users and sustainability strategies will strengthen its case for funding.

10.5 Architectural Character

The bridge itself has the potential to act as a local landmark. A simple, robust structural form, such as the proposed steel U-girder, can be expressed architecturally through clean lines, integrated parapets, and carefully considered proportions.

Material selection, such as weathering steel and concrete, would provide durability while contributing to a distinctive visual identity. Openings or framed views within the structure could enhance the user experience, while maintaining safety and privacy where required.

Lighting design will be particularly important, ensuring the bridge is welcoming and safe after dark while minimising light spill and ecological impact.

10.6 Creating a Destination

By combining infrastructure with placemaking, the bridge can become more than a route—it can become a destination in its own right. Increased footfall and improved visibility will support a more active and overlooked environment, helping to address concerns around safety and anti-social behaviour. The images on the following pages are indicative of the kind of development that could take place.

In this way, the project contributes not only to movement and connectivity, but also to the social and spatial quality of the town, reinforcing Haslemere's character as a connected and accessible community.


CAFÉ


CAFÉ

11.0 Recommendations

11.1 Recommended Approach

This feasibility study demonstrates that a new accessible pedestrian and cycle bridge linking Wey Hill and Kings Road is both technically achievable and strategically beneficial for Haslemere. The scheme addresses a long-standing gap in the town's infrastructure by providing a safe, direct, and inclusive crossing of the railway.

The assessment of options has identified that a new bridge at an alternative location is the most practical solution. Upgrading the existing Kings Road footbridge is not recommended due to significant spatial constraints, structural limitations, and the requirement for lifts and extensive works within Network Rail land. Similarly, a tunnel solution has been discounted due to high cost, construction risk, and the complexity of working beneath a live railway.

Options A and C have been developed in further detail as the most viable configurations. Both provide fully accessible, step-free connections and comply with current design standards and Network Rail requirements. The choice between these options ultimately depends on project priorities:

Option A offers a simpler, more direct solution with lower structural complexity, reduced construction risk, and likely lower cost. It prioritises efficiency and deliverability but has a larger footprint and limited integration with the surrounding site.
Option C provides a more compact and integrated design through the use of a helical ramp, creating opportunities for placemaking and improved connection with the leisure centre. While this option introduces greater structural complexity and potentially higher cost, it offers significant long-term benefits in terms of site activation and urban design quality.

In both cases, a single-span bridge structure of approximately 25–30m is recommended, utilising a prefabricated solution to minimise disruption to railway operations. A steel plated U-girder configuration is identified as the preferred structural form due to its efficiency, constructability, and ability to integrate parapets and screening within the structure.

11.2 Wider Opportunities

The introduction of a new bridge presents an opportunity to do more than provide a crossing; it can act as a catalyst for wider regeneration and enhancement of the Herons site and surrounding area.

Improved connectivity will increase footfall and accessibility, supporting local businesses, leisure facilities, and community assets. The area around the leisure centre has the potential to evolve into a more active and cohesive public space, with opportunities to:
Upgrade and reconfigure existing recreational facilities, including the skate park and sports courts
Introduce complementary uses such as a café, cycle hub, or small commercial units
Create a focal point for community activity, potentially including youth facilities or flexible event space
Enhance landscaping and public realm to improve safety, visibility, and user experience

These interventions would benefit from increased passive surveillance generated by the bridge, helping to address concerns around safety and anti-social behaviour while strengthening the overall sense of place.

11.3 Delivery Considerations

Successful delivery of the project will require early and ongoing collaboration with key stakeholders, particularly Network Rail, Waverley Borough Council, and local landowners. Engagement with the community will also be essential to address concerns relating to overlooking, privacy, and construction impacts.

The project will need to progress through Network Rail's approvals process, including Asset Protection engagement and staged technical approvals. Construction methodology should prioritise off-site fabrication and modular installation to reduce programme risk and minimise disruption to rail services.

A comprehensive programme of surveys will be required to inform the next stage of design, including topographical, geotechnical, ecological, and utility investigations.

11.4 Delivery Considerations

The bridge represents a relatively high-value piece of infrastructure but offers strong long-term returns in terms of connectivity, sustainability, and community benefit. A blended funding approach is likely to be required.

The primary funding mechanism is expected to be the Community Infrastructure Levy (CIL), with Haslemere well positioned to bid for strategic CIL funding. Additional funding sources may include:

- Sustrans and active travel grants
- Local Sustainable Transport Fund (LSTF)
- Section 106 developer contributions
- Potential support from national infrastructure funding initiatives

Early alignment of the project with local transport and sustainability strategies will strengthen its case for funding.

11.5 Next Steps

To progress the project, the following next steps are recommended:

1 - Undertake detailed topographical and ground investigations
2 - Confirm the preferred option through stakeholder consultation and cost review
3 - Initiate early engagement with Network Rail Asset Protection (ASPRO)
4 - Develop outline design proposals to planning stage
5 - Prepare a high-level cost plan and funding strategy
6 - Carry out a cost-benefit analysis to support investment decisions

11.6 Conclusion

The proposed Kings Road Active Travel Bridge represents a transformative opportunity for Haslemere, delivering a long-awaited connection that improves accessibility, supports sustainable travel, and enhances the town's public realm.

While both Option A and Option C are technically viable, the selection should be guided by the balance between cost, deliverability, and long-term place value. With appropriate design development and stakeholder engagement, the project has the potential to become a key piece of civic infrastructure that provides lasting social, economic, and environmental benefits.

Part 3