



# TECHNICAL MEMO – BIN BROOK RETAINING SOLUTIONS

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| <b>DATE</b>        | 08 October 2025                                                                                        | <b>CONFIDENTIALITY</b> | Public |
| <b>SUBJECT</b>     | CtoC Public Inquiry, Technical Clarification, Bin Brook examples of potential retaining wall solutions |                        |        |

## Background

WSP has been requested to provide further details of the retaining wall and reinforced earth slope solutions which could potentially be employed for the Bin Brook approach embankments as part of the CtoC project.

## Potential Options

Examples of retaining wall and reinforced earth solutions which could be employed subject to further assessment at the detailed design stage are presented in the table below; this list is not exhaustive and other forms of retaining wall and alternative finishing/facing materials may be considered if deemed appropriate. Any solution proposed to be adopted would remain within the order limits as shown on the deemed planning drawings. Note that the photographs illustrate the form of retaining wall and are not intended to be a true representation of the retained height proposed or its final finish and appearance.

| Potential Solution | Description                                                                                                                                                                                                                         | Available Finishes                                                                                                                                                                           | Example Images / Details                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| King Post Wall     | King Post Walls are a type of retaining wall, made up of isolated vertical steel columns (or H Beams), into which infill panels are inserted over the retained height of the wall, horizontally between the webs of each H section. | Exposed steel columns with timber sleepers or precast concrete panels infill. Often left plain in temporary works, but cladding in a variety of finishes can be added to improve aesthetics. | See photograph below from Keller and Dawson Wam King Post Wall. |

| Potential Solution                                                                   | Description                                                                                                                                                                                                                                                                           | Available Finishes                                                                                                                                   | Example Images / Details                                                           |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                      |                                                                                                                                                                                                                                                                                       |                                                                                                                                                      |  |
| RC Retaining Wall                                                                    | <p>A reinforced concrete (RC) wall formed either from precast units or poured in place, with a thin vertical stem and a base slab. The base extends into the retained side to provide stability, so the wall resists earth pressure mainly by cantilever action rather than mass.</p> | <p>Smooth or shutter-textured concrete finish, typically grey. Can also be clad with masonry, brick, or stone facing to blend with surroundings.</p> | <p>See photograph below from Bison Precast Retaining Walls.</p>                    |
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| Potential Solution                                                                  | Description                                                                                                                                                                                                                                                                                      | Available Finishes                                                                                                                                                                                                                    | Example Images / Details                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Crib Wall Retaining Wall                                                            | Crib walls comprise a grillage of precast concrete, polymer or timber header and stretcher elements placed to form a cage on a firm foundation, usually of mass or reinforced concrete; the spaces between the grillage of header and stretcher elements are filled with free draining material. | Open-cell concrete or timber lattice filled with stone. When planted, can develop a “green wall” appearance as vegetation grows through. Visually softer and more natural than solid walls.                                           | See photograph below from Tensartech Ecocrib System.           |
|   |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                       |                                                                |
| Reinforced Earth Wall                                                               | A structure where horizontal layers of reinforcement (e.g. geogrids or steel strips) within the soil mass provide tensile strength, faced with precast panels or blocks.                                                                                                                         | Modular facing panels (often precast concrete, sometimes textured or patterned) or blockwork. Can be supplied in coloured or ribbed finishes to improve aesthetics. Large, geometric panel faces are a common feature on UK highways. | See photograph below from Tensartech TW1 and TW3 Wall Systems. |
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| Potential Solution    | Description                                                                                                                                                   | Available Finishes                                                                                                                                                                                             | Example Images / Details                                                  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Reinforced Soil Slope | Like a reinforced earth wall, but with a sloped face (up to 70 degrees) rather than a vertical one, usually grassed or planted for a more natural appearance. | A grassed or planted slope that blends into the natural landscape. Usually indistinguishable from a conventional embankment once vegetation has established, giving the most natural aesthetic of the systems. | See photograph below from Tensartech Naturalgreen and Greenslope Systems. |

