

03 Design Development

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3.1 Vision

3.1.1 Key Deliverables

The Vision for the Access Improvements focuses on a number of Key Themes:

- Reflects the significance, quality and character of the World Heritage Site.
- Provides a resilient design that considers erosion and minimises maintenance requirements whilst responding to the user experience.
- Integrates consistent and regular risers and treads across the whole of the scheme.
- Incorporates spaces or places to pause along the pathway, to be placed at strategic points to allow for longer rests at specific view points/features.
- To use materials which enhance the integration into the local environment and compliment the existing materials of the World Heritage Site, aqueduct and surroundings.



Figure 03-1: User Experience

Scale as shown

3.2 Concept Design

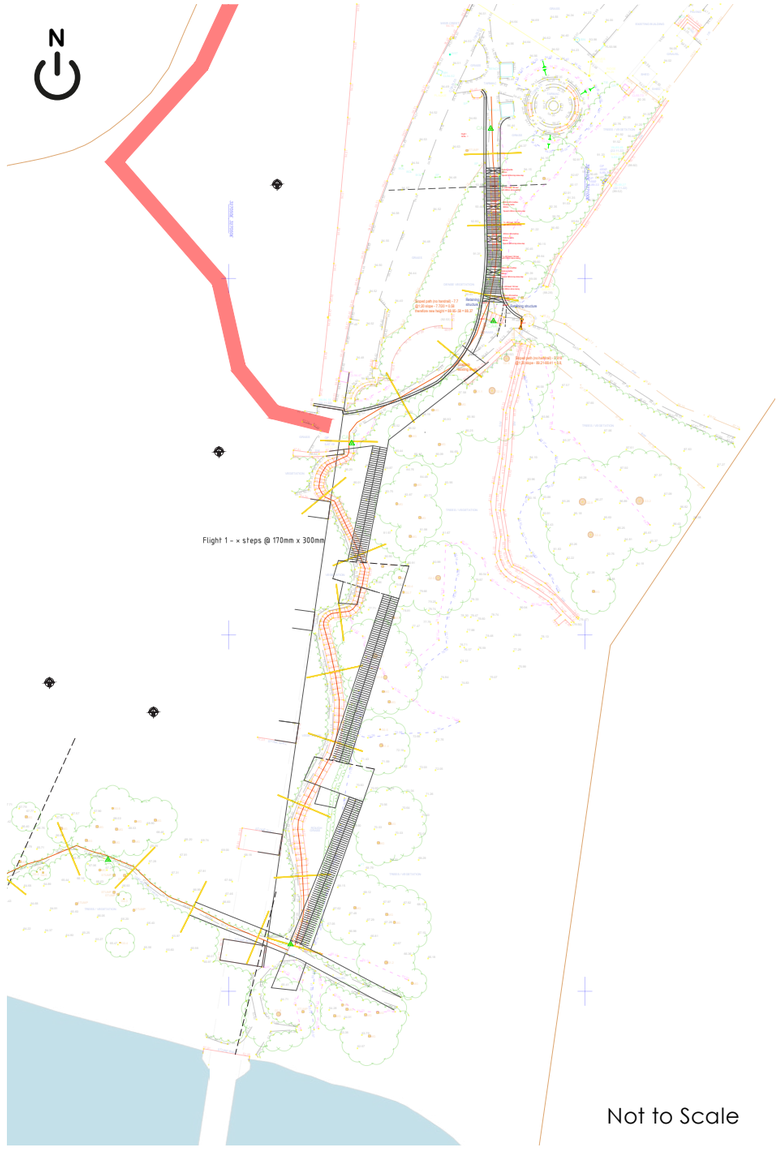
Initial concept design development looked at a number of approaches, these are shown in Figures 03-2 to 03-7. Concept A is the preferred option and is shown last here to illustrate the sub-options for Option A that were then considered.

3.2.1 Concept Option B- Geometric Improved Alignment

Option B considered a geometric approach to the realignment which would focus user views on the aqueduct during the stepped descent, and also create viewing platforms between the flights, as shown in Figure 03-2.

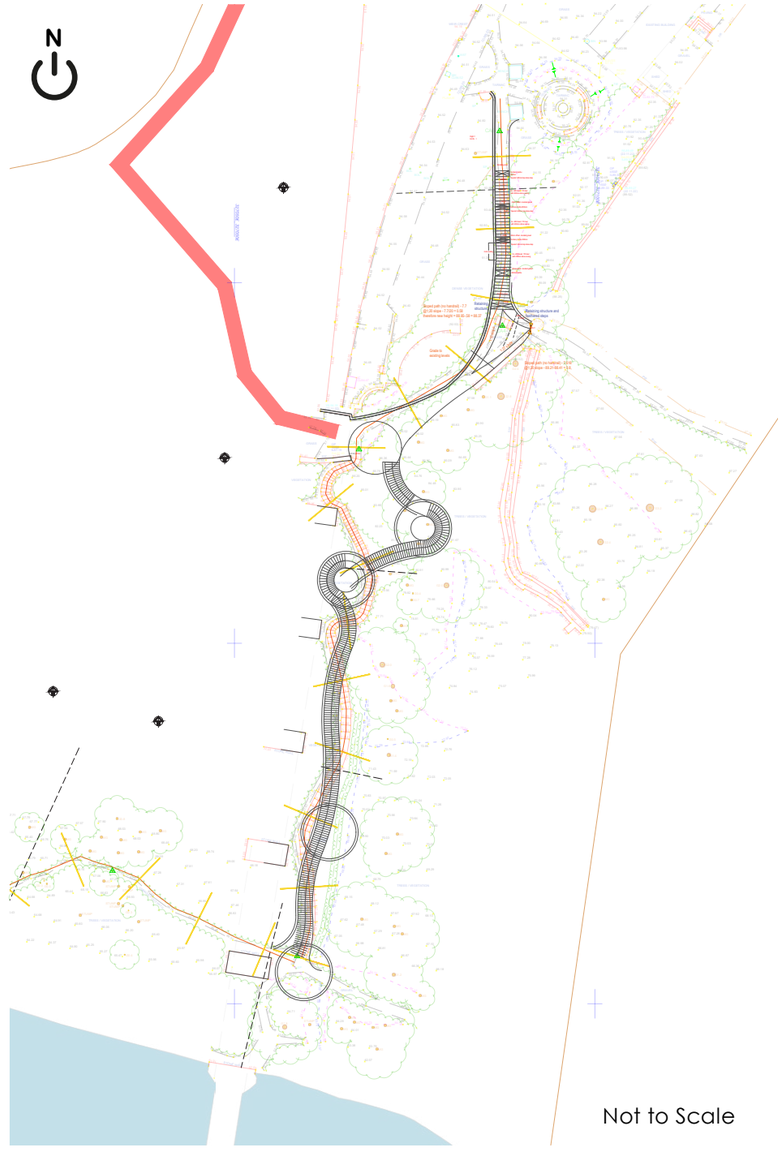
3.2.2 Concept Option C- Alternative Improved Alignment

Option C proposed a series of circular platforms around which the realigned steps wrap near the start of the descent, opening onto elevated viewing decks within the existing woodland and also beneath the arches of the aqueduct creating an 'up close' experience of the aqueduct. Because of the additional length of landings in the design this enabled us to slightly straighten the remaining descent alignment rather than following the existing alignment, as shown in Figure 03-3.



Not to Scale

Figure 03-2: Concept Option B



Not to Scale

Figure 03-3: Concept Option C

3.2.3 Concept Option A - Upgrade to Existing Alignment to minimise disturbance to existing topography (cut and fill) (Preferred Option)

Option A, as shown in Figure 03-4 used similar elements of design as Option C however the focus of the viewing platform areas was to the woodland side, away from the aqueduct structure, informed by feedback from Cadw to aim to restrict the proximity of users to the listed structure. The remaining descent then more closely follows the existing route, opening into a wider 'nodal' space at the base of the final flight to join the existing footpath which runs east to the Tŷ Mawr Country Park and west along the River Dee to the Pontcysyllte Old Bridge.

A variation of Option A was agreed as the Preferred Option to be taken forward into the Developed Design Stage.

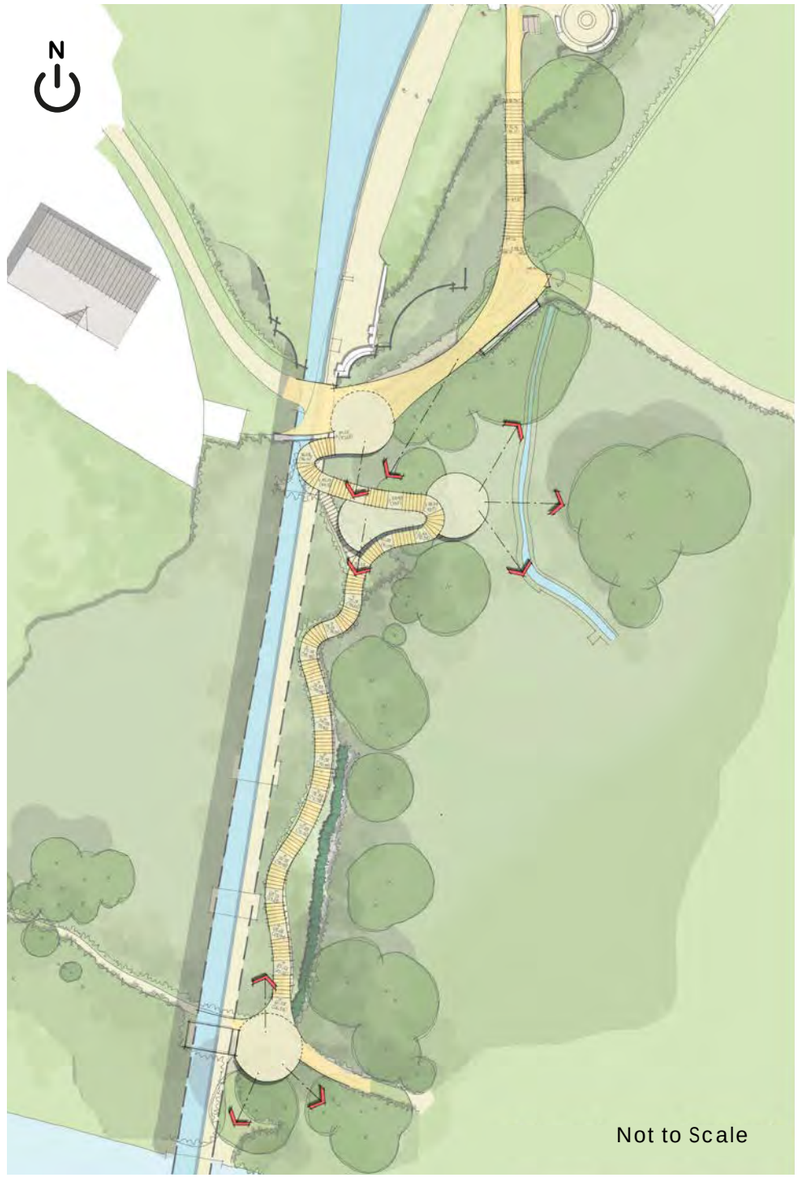


Figure 03-4: Concept Option A

3.2.4 Preferred Option Development

Figures 03-5 to 03-7 show further iterative development of the design, including alternative alignments.

Following a directive from the client we added an extra length of existing footway improvement from the foot of the steps going west beneath the aqueduct as shown in Figure 03-7, following the existing path route alignment for a short distance and widening out so users can then pause and turn to view the aqueduct. This footway is currently fairly inaccessible so these proposals will provide user with an additional experience of the aqueduct, enabling them to view a large expanse of the structure from the west as it crosses the River Dee.

Other changes reflected here and showing the design moving forward include:

- rerouting of the stepped access to avoid the Root Protection Zones identifed
- moving further from the aqueduct to reduce the risk of erosion of the heritage assett
- working with existing contouring to allow for appropriate width of new steps and regular landings and proposed localised regrading of existing levels to smooth out the interface between existing/retained and proposed levels in order to design out the need for guardrails.

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Figure 03-5: Preferred Design Development - Option A-1



Figure 03-6: Preferred Design Development - Option A-2



Figure 03-7: Preferred Design Development - Option A-3