

Tintagel footbridge: set in stone

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The bridge acts as a gateway between the mainland and the island, marked by the crown of the curved deck. High above the waves, it evokes the solidity of the ancient pathway, of the isthmus that once existed in its place. The deck is wide on the mainland side but becomes leaner as it approaches the island, with minimal contact with the most precious part of the site. The form of the structure echoes the "choke point", the "Dun Tagell", which gave the island its name.

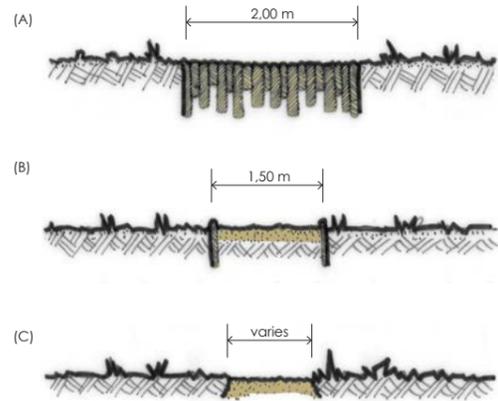
Like all other man-made elements on the island, the bridge is entirely built out of stone: a timeless, durable and familiar material. Through the use of masonry, the bridge takes its natural place within Tintagel's historical layers. Growing seamlessly out of the cliffs, the bridge seems to have always been part of this dramatic landscape.

Site & landscape: preserving identity through a restrained approach

- 1
- 2
- 3
- 4
- 5

Moving in the island landscape

Aside for the new footbridge, the landscape and pathway modifications are discreet and circulation is simplified.



Hierarchy of paths

A clear hierarchy of paths is established on the island, guiding visitors to the sights and away from the more vulnerable areas with as yet unexplored archaeology. The path is made of whole stones, stone fragments and gravel, directly recycled from the site and construction process.

A significant portion of the island can be accessed by users with prams on a step-free path (A). This path is paved with slate and has a width of 2.0 metres.

The main circulation route loops around the plateau (B). It is a simple gravel path, with structured stone steps and a width of 1.5 metres. Narrower and less shaped pathways (C) give visitors additional opportunities to explore the historical remains.

Site and bridge concept

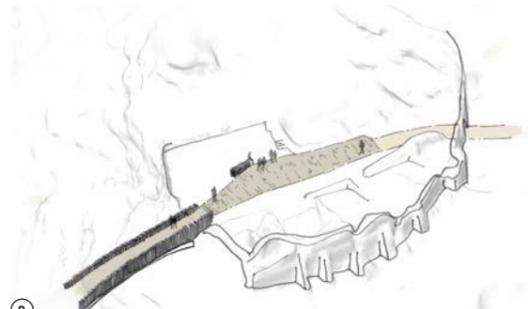
The project encompasses the overall visitor journey on the site. It is composed of sequence of pathways, amongst which the bridge stands out as an event.



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Courtyard

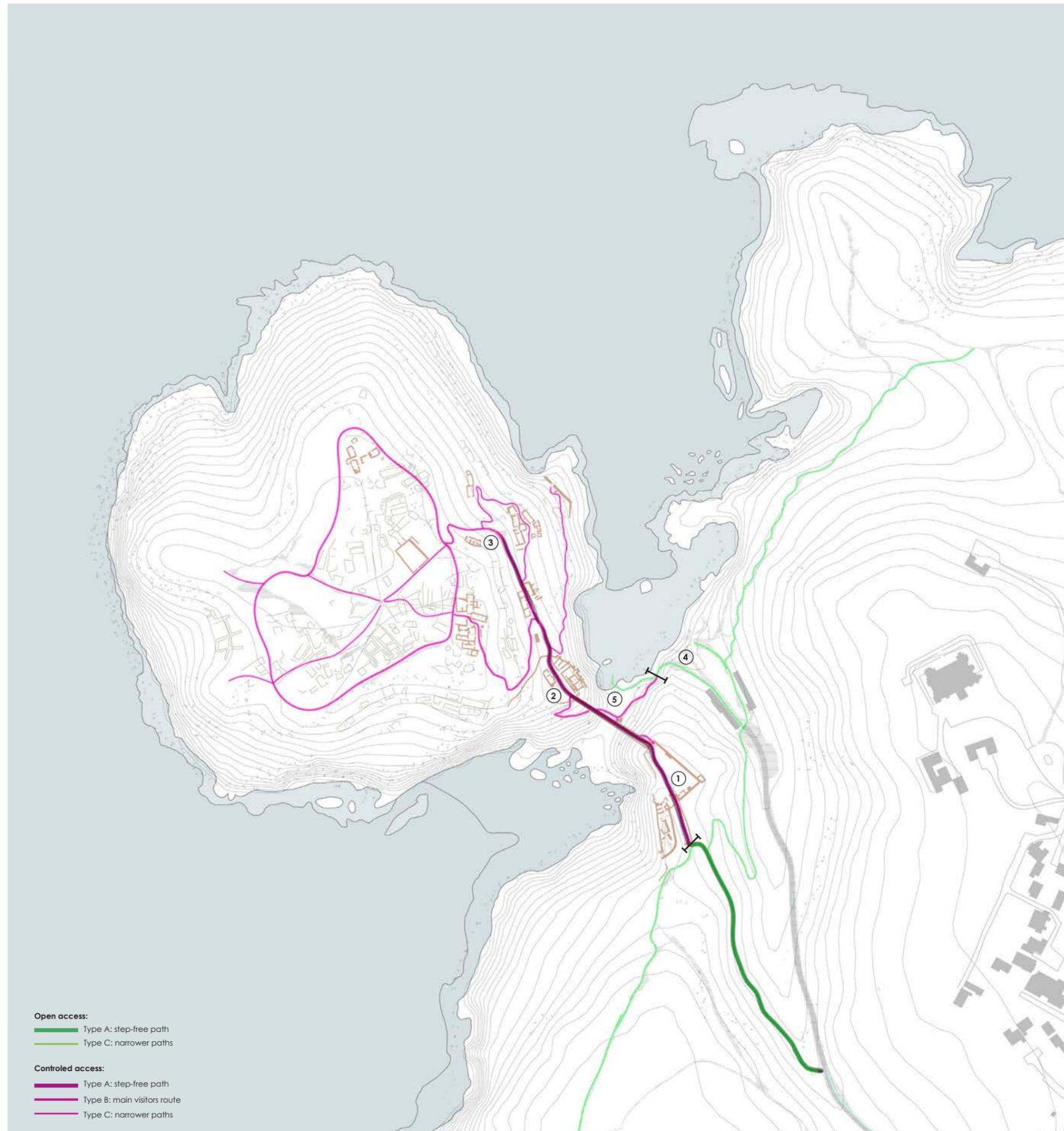
The courtyard is partially paved and offers sweeping views of the island, the Haven, and the sea. It is the perfect place to listen to an audio guide or read a history of the site.



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Great Hall

The path widens once past the chokepoint at the bridge landing on the island. It is spacious enough for groups of visitors to stop and admire the ruins of the Great Hall without hindering the passage of others freely passing.

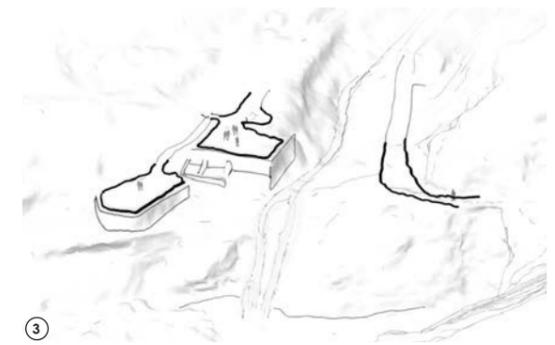


Open access:

- Type A: step-free path
- Type C: narrower paths

Controlled access:

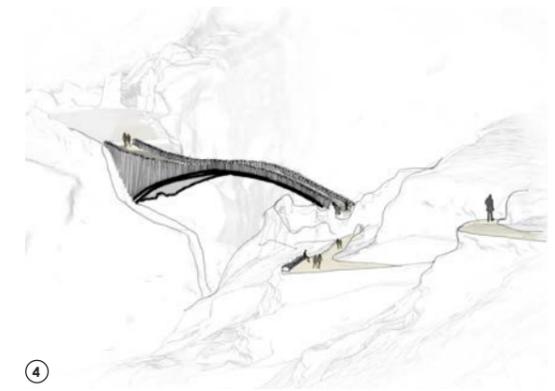
- Type B: step-free path
- Type B: main visitors route
- Type C: narrower paths



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Step free path

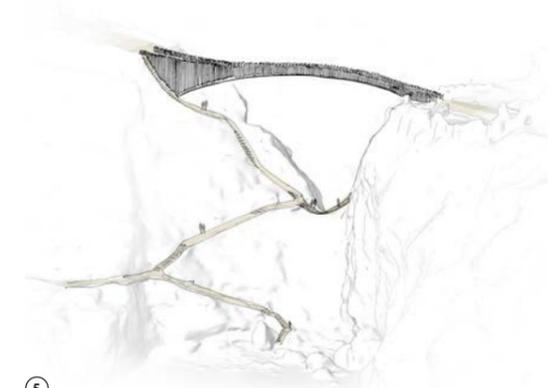
The paved path continues past the great hall to the base of the stairway and path leading to the island plateau. The paving stone is also used to build some low walls and benches. Way-finding and interpretative signage is kept to a minimum.



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Terrace

The pathways must avoid the build-up of modern additions. If anything, some of the more recent items and superfluous features should be removed if unnecessary for way-finding or visitor information.

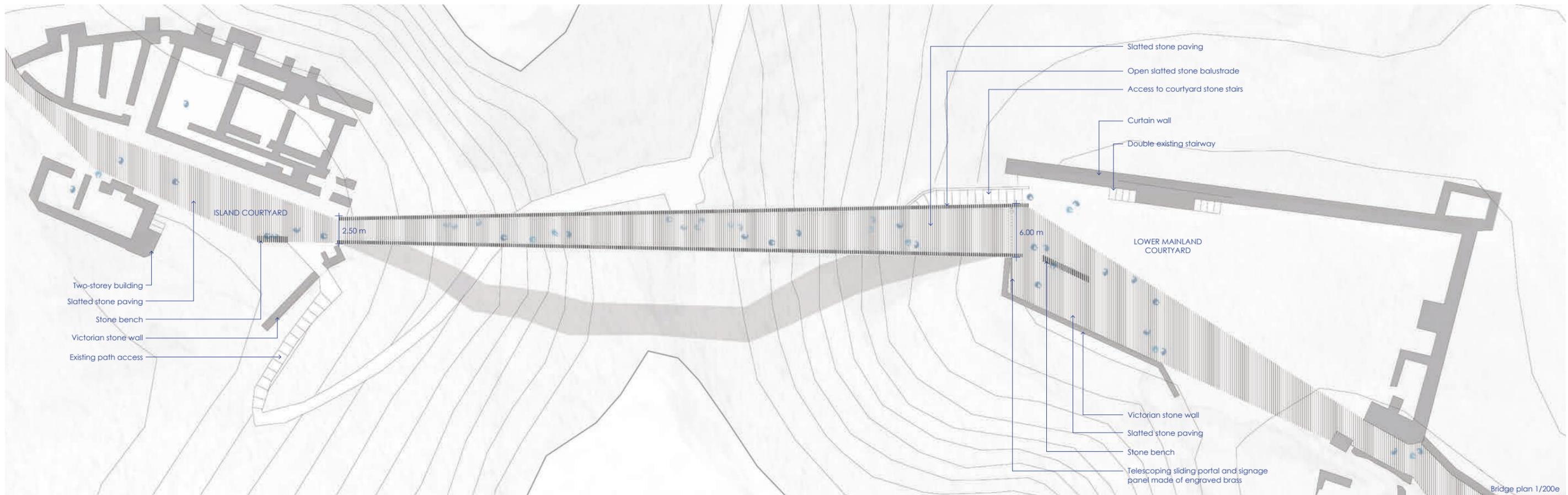
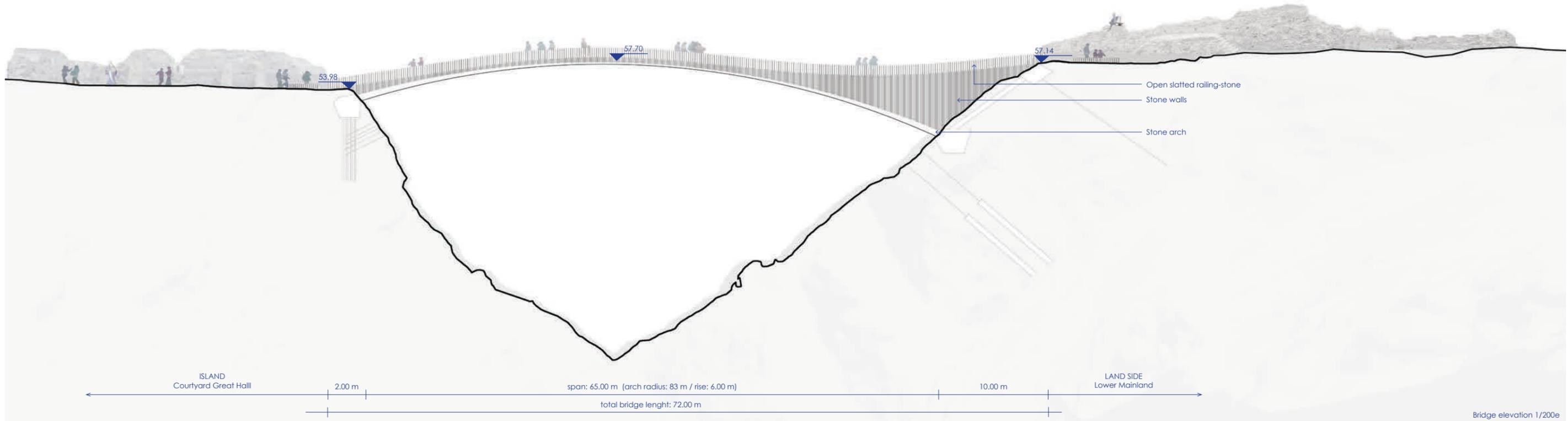


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Timber footbridge

It is proposed to rebuild the stairway in the manner of the stairs that were once cut in the isthmus. The wooden footbridge and ticket booth could then be removed. The stairs lead the visitors to the path along the cliff base back toward the beach, Merlin's cave, and the coastal path or towards the visitors centre, its souvenir shop, and cafe.

The bridge: form and material inspired by the site



The construction: an exciting challenge all visitors can discover

- 1
- 2
- 3
- 4
- 5

Approach to construction in a challenging environment

The principal considerations in developing the construction methods for the installation of the bridge are location and access; the site for the bridge is remote, with limited access to the site and only pedestrian access to the abutment locations.

The use of the cable crane provides a cost effective solution while exploiting the natural topography of the site to provide the necessary crane capacity. Helicopter lifting will however be used for some works such as ground investigations and cable crane installation.

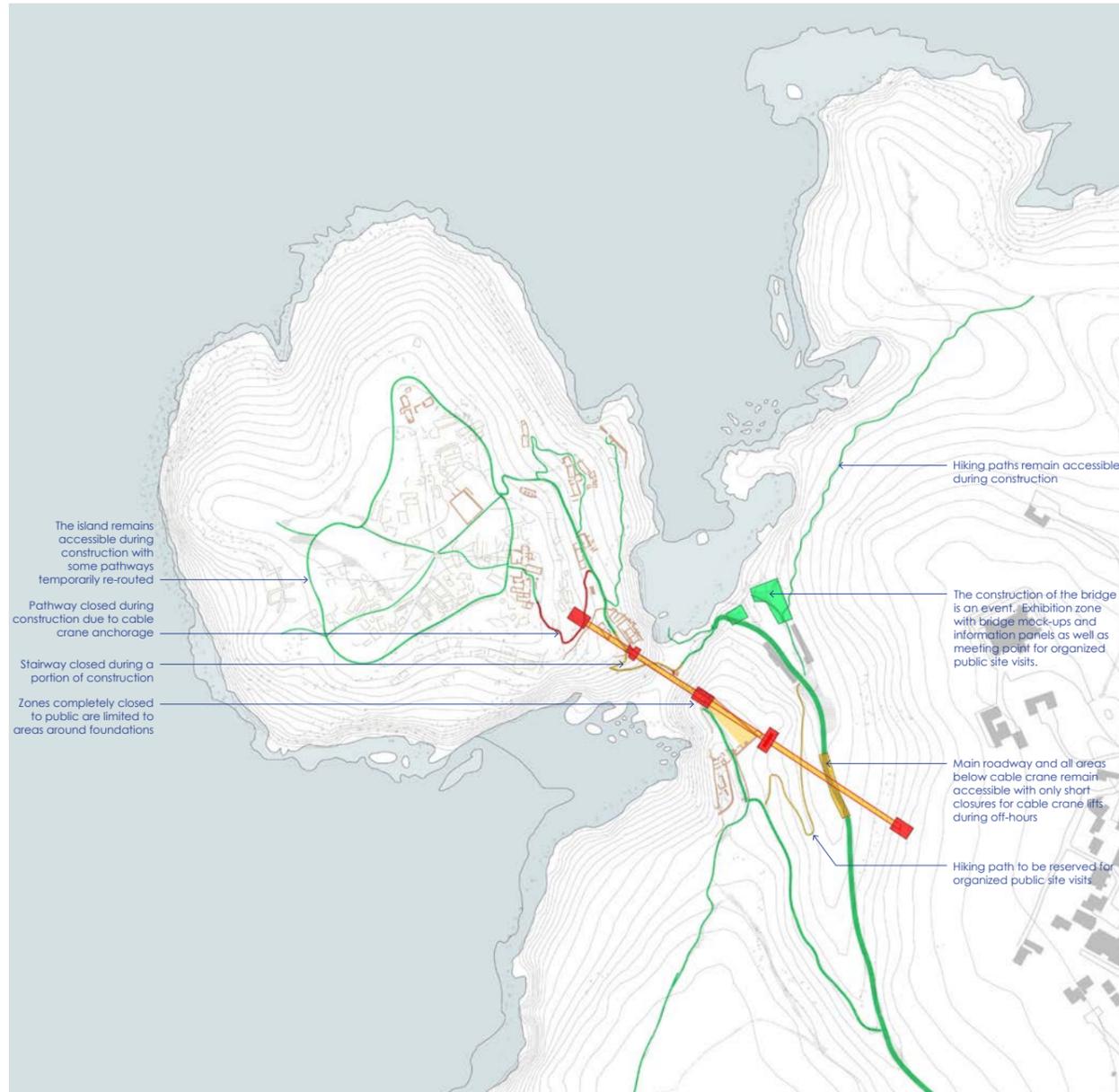
Cable crane and air lifts will be coordinated with visiting hours to maximize visitor access while maintaining construction schedule.

A construction site that is an event in itself.

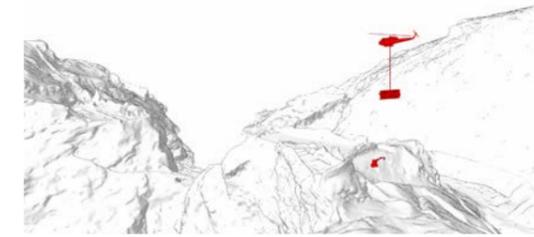
With helicopter lifts, a cable crane and structural stone technology, the construction of Tintagel Castle Bridge will be a spectacular, innovative and unique sight.

The site will be organized with viewing platforms and protected walkways so that the public and the contractor can co-exist safely to their mutual interest and a special exhibition area set up in the Visitor Centre will describe the architectural and structural scheme and explain the construction stages.

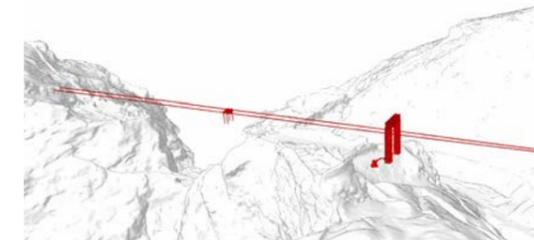
Prototypes and samples will be displayed on site and social media will also be used to relay information about key events and construction progress.



Construction sequence



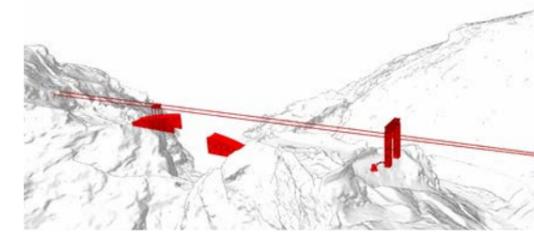
0) Ground investigations via abseiling and air-lift for boring equipment



1) Cable crane anchorages on island side and land side installed with equipment air-lifted by helicopter.

Pylon foundations constructed on micropiles with equipment including mini-crawler air-lifted by helicopter.

Pylon segments air-lifted and erected using mini-crawler to stabilise the A-frame pylon.



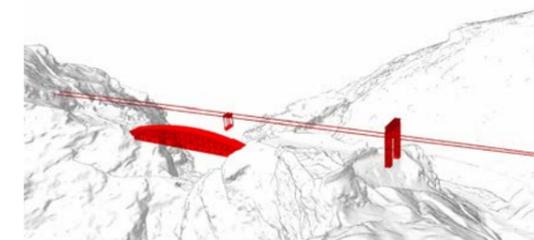
2) Cable crane suspension cables installed and tensioned.

20t capacity cable crane installed from roadway using mobile crane.

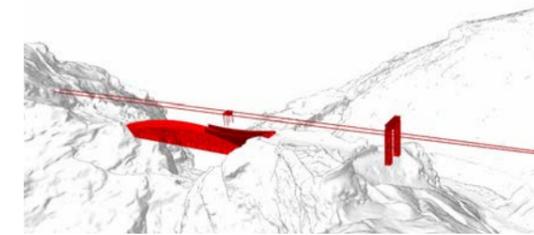
3) Equipment for slope reinforcement and abutment excavation lifted in via cable crane

Excavation, reinforcement of slope and foundations, reinforcement and powering of concrete compression block foundations.

Centring installed initially as free cantilevers using cable cranes and tying back to abutments



4) Centring completed, erection of arch slab via cable crane with just-in-time delivery of slab segments from roadway outside of visitor hours.



5) In situ laying of spandrel walls and cross walls on arch slab

Filling with void former or foamed concrete

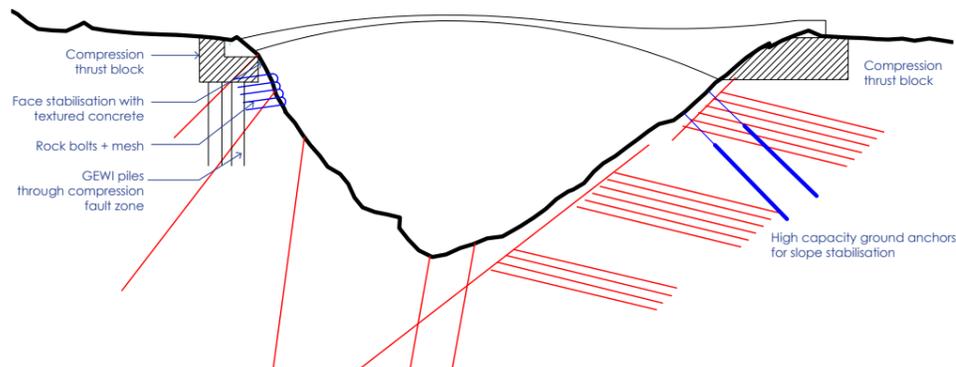
Paving of deck stone



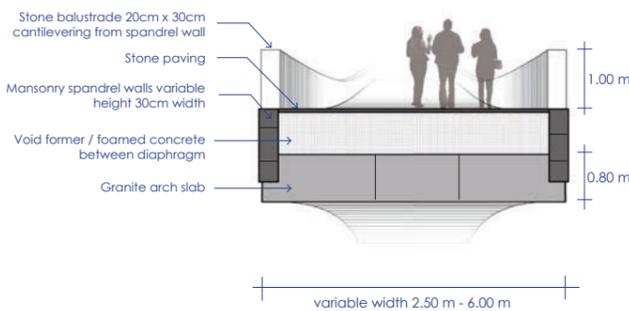
6) Removal of centring and large temporary works via cable crane

Break up and removal of cable crane as per installation using helicopter

Summary foundation and slope reinforcement



Cross section at 1/25e



The visitor experience: a spectacular journey into history

- 1
- 2
- 3
- 4
- 5

