

Statws/Status:

Cyfrinachol / Confidential



NB. This report relates only to the version of the scheme dated January 2008

Adroddiad Adolygu Dylunio: Design Review Report:	31 January
Dyddiad Cyfarfod / Cyflwyno'r Deunydd: Meeting Date/Material Submitted:	16 January 2008
Lleoliad/Location:	River Ely - Penarth to ISV
Disgrifiad o'r Cynllun Scheme Description:	Footbridge
Cleient/Asiant: Client/Agent:	WAG [Paul Williams] Cardiff Harbour Authority [David Lowe]
Developer/Datblygwr:	
Pensaer/Architect:	Faber Maunsell [Stuart Evans, Susan Chappelow, Mike Tan]
Awdurdod Cynllunio: Planning Authority:	Cardiff CC [Norman Howlett] Vale of Glamorgan [Jane Crofts, Vicky Abraham]
Statws Cynllunio: Planning Status:	Pre-application
Y Panel Adolygu Dylunio/ Design Review Panel:	
John Punter (cadeirydd/chair) Cindy Harris (swyddog/officer) Charlie Deng (swyddog/officer)	Mark Hallett Kedrick Davies Martin Knight

Lead Panellist:

Martin Knight

Sylwedyddion/Observers:

Stephen Jones, WAG DE&T

Declarations of Interest

Mark Hallett declared that his company works closely with Paul Williams [WAG] and the Harbour Authority on other schemes.

Martin Knight declared that his practice was the architect for a shortlisted project bidding for the £50m Big Lottery Fund award, won by Sustrans' Connect2 project which includes this scheme.

Cyflwyniad/Presentation

The proposal is for a new bridge for pedestrians and cyclists, 4 metres wide and 140 metres long, to form part of the 10.5 kilometre Cardiff Bay peripheral walkway. The bridge provides a pedestrian and cycle link between Cardiff Bay and Penarth, an important link between the Sports Village and Cogan Rail Station, is DDA compliant and promotes sustainable transport. A major constraint to the project is that navigation along the River Ely is to be maintained and existing cycleways need to be well integrated. The minimum soffit level of the bridge is required to be 8 metres AOD and the number of support piers in the river channel should be minimised. Piling works within the river are limited to the period from January to March. The lighting scheme must be approved by the Environment Agency because of possible effects on fish.

The proposed concept design, prepared by Holder Mathias Architects and Faber Maunsell engineers, has developed from an original simple structure to a tilting bascule bridge with a "signature" opening mechanism in the middle of the span. The working group has identified two preferred bascule-type lifting options for the opening mechanism from a list of 7 or 8 and Option 2 features a steel truss below the deck. The estimated cost is £3.5 million and the project is expected to start on site in January 2009 with a 15 month construction period. The land on the Cardiff side was originally reserved for housing but the owners of the adjacent site, Cambrian Marine, have expressed an interest in acquiring it to create public open space and an improved setting for their development.

Cardiff County Council has aspired to a footbridge in this location for many years and welcomed the proposal in principle. They want the scheme to be design-led, and consider Option 2 to be the better one. The Vale of Glamorgan Local Planning Authority also welcomed the introduction of the pedestrian/cycle linkage, and considered the design important along with

maximum usability, preferably with 24 hour access. However, the authority has not yet assessed the landing area and location.

Ymateb y Panel/Panel's Response

The Panel welcomed the proposal for this footbridge to complete the missing link from Cardiff Bay to Penarth and started by asking if the proposed location was the right place to construct the bridge. The client explained that the availability of land was the key issue in deciding the bridge location. The possibility of putting the bridge further downstream was explored, but the further downstream it goes, the more often the bridge will have to open, because of the marina immediately downstream. The current location also benefits from the proximity to Cogan railway station, although links to the cycle and footpath network at each end are still unresolved.

The Panel considered the navigational constraints as the key driver for the bridge design, and wanted to understand the operational and maintenance requirements, and the frequency of the bridge opening, in more detail. The team stated that the bridge opening could be operated from the Barrage control centre, via CCTV. The opening could be on demand or according to a timetable, but this was still to be decided. The opening frequency was expected to be several times a day.

The Panel recognised that the current design was work in progress and commented that the predicted frequency of opening would determine the bridge design options. We thought that the curved lifting mechanism shown in both options would infringe the navigation channel in both its open and closed positions. Its marine reference to a fishing hook appeared tenuous and unconvincing. We were unable to support the current design approach, which focused attention on the lifting span, rather than ensuring that equal attention and resources were devoted to the bridge approaches. Ultimately, we would like to see a holistic design solution which delivers an open, transparent and elegant structure.

The Panel was pleased to see the 'through truss' approach challenged as this was thought likely to limit transparency and views and prove claustrophobic and unwelcoming, particularly if the bridge is to be used as a 24-hour facility. We considered the under deck truss solution provided more freedom and flexibility and a considerably better experience for the bridge users than the through truss. The client stated that they would choose Option 2 as a basis for proceeding, and would include the Panel's comments in developing the design to the procurement stage. The Panel was informed that the 'below deck truss' option would reduce the overall length and the gradient would be reduced to 1 in 33. We saw this as an important benefit as we felt that the continuous 140 metre ramp, even at the permissible maximum gradient of 1/20, would be challenging to some users.

The Panel was told that river water could be used as ballast to assist with opening the centre section of the bridge and reduce the energy in use. However, the Panel advised that this system would be slow to operate and difficult to maintain. The best solution in terms of the environment and maintenance would be to minimise the lifting span and to operate it using the most efficient machinery.

The Panel thought this footbridge had the potential to be a very significant scheme capable of attracting high quality bridge designers. We suggested that a design competition could achieve this and help to raise the project profile. The project team stated that, despite the delayed start, the project programme was still tight, and they intended to go through the OJEU process followed by a Design & Build construction package. The Panel still considered that a Design & Build competition would be suitable for this scheme given the time provided, and using appropriately weighted criteria. This approach would also enable the market to input more accurate construction costs. We recommended that the client needed a clear specification for the frequency of opening and other relevant briefing requirements, and should then present this to preferred consortia, which should include architects, engineers, artists and bridge builders.

The Panel thought that the lighting strategy would be an important element of the overall design both in terms of functional safety as well as aesthetics, and advised that a lighting designer or an artist could help to resolve this issue.

We discussed the quality of the connection with the rail station on the Vale side. The Panel recognised that the connections with the station were outside the scope of this project, but wanted to ensure that improved provision for pedestrians was not precluded by the details of this scheme. On both sides, the bridge approaches needed to be well integrated with existing footpaths and cycleways. The Panel welcomed the opportunity to tie the bridge in to new public space with public amenities on the ISV/Cardiff side of the river and thought this would allow the bridge to become a destination as well as a new link.

Crynodeb/Summary

The Panel welcomed the opportunity to review the scheme at an appropriately early stage. The success of the bridge will lie not only in the crossing but in the connections and links it provides and we urge both local authorities to consider how the bridge can be sensibly tied into existing and proposed routes. We strongly emphasise our view that the key to success in this scheme is that the brief should be as clear and precise as possible, based on the constraints of planning, environment and function, and that brief should then go out to tender, inviting bids from consortia made up of diverse professionals teamed with experienced contractors. The Panel strongly

recommends a Design & Build competition to accomplish the project, and would make the following further recommendations:

- The Panel is satisfied with the justification for the location of the footbridge. We note that the pedestrian and cycle networks linking both ends of the bridge to their surroundings are not yet well resolved, but we realise this issue is largely outside the control of the project team.
- The navigation envelope and the frequency, timing and speed of operation are all critical in determining the brief and informing the design and these do not yet appear to be fully defined
- In terms of aesthetics, the current design approach suffers from a disjunction between the central span and the approaches, and the focus on the 'signature' lifting span has resulted in an unbalanced and awkward composition. The structure should be treated as a coherent whole, integrating the lifting device with the rest of the bridge. Of the two options presented, the below deck approach structures in Option 2 offers cleaner lines and a better pedestrian experience.
- The idea of a water counterbalance lifting device using river water sounds interesting, but operational and maintenance implications need to be considered. Given that bridges are designed for a 120 year life, the technical solutions should be robust and well tested.
- The Panel advises against developing either of these design options further. We recommend the client use the existing preferred Option 2 as a constraints diagram and the basis for a design competition to choose one contractor-led team responsible for design and construction.
- The Design Commission for Wales would be pleased to assist in the future development of this project and we would welcome sight of the winning solution.

Diwedd/End

NB A Welsh language copy of this report is available upon request.