

Design Review Report

DCFW Reference: 27

A483/A489 Newtown Bypass,

Powys

20th March 2014



Declarations of Interest

Panel members, observers and other relevant parties are required to declare **in advance** any interests they may have in relation to the Design Review Agenda items. Any such declarations are recorded here and in DCFW's central records.

Review Status

CONFIDENTIAL

Meeting date	20 th March 2014
Issue date	4 April 2014
Scheme location	Newtown
Scheme description	New bypass road
Scheme reference number	27
Planning status	N/A

Declarations of Interest

Ben Sibert declared the following interests in advance:

The Welsh Government is Arup's client on several current schemes and future bids, including one scheme that Peris Jones is leading.

Arup also bid for the Newtown Bypass with another team and were not appointed. Ben Sibert had no meaningful involvement in the bid.

TACP is sub-consultant to Arup on the A465 dualling and regularly works with Arup.

Alun Griffiths is currently Arup's client on the Circuit of Wales with their JV partner FCC. Arup and Alun Griffiths are aligned together to bid for future Welsh Government Schemes.

Attendees at the meeting confirmed that they were content to proceed.

Consultations to Date

A public exhibition for the proposed scheme was held in July 2013. Further public exhibitions are planned. The scheme came to DCFW Design Review in January 2014 and this report should be read alongside the report from the January review.

The Proposals

The scheme is for a 5.6km long bypass road around Newtown through predominantly agricultural land, with a build budget of approximately £50m. The new road will include eleven structures, including bridges, and culverts. Among the aims of the project is the desire to relieve significant traffic congestion in the town, making it a safer place to walk and cycle. The team plans to publish Draft Orders in June 2014, a Public Local Inquiry is likely to follow in winter 2015, and construction begin in summer 2016 subject to successful completion of the Statutory Orders process. De-trunking of the old route

through Newtown will follow and the Welsh Government clarified that the principal works to the de-trunked road would be undertaken by the local authority in a separate scheme. This Design Review consisted of an updated presentation by the team with conversation and questions, followed by a site visit to view various points along the proposed road.

Summary

- The Design Commission welcomes the opportunity to review this project for a second time. On the whole the Commission is supportive of the project, and welcomes the efforts made to reduce costs and impact on the environment through design.
- The Commission understands that de-trunking the existing road through the town will lead to the potential for public realm improvements for pedestrians and cyclists and these should be further explored as key opportunities for added value and public benefit.
- The review focussed on the development of the structures which are at an early stage in the design process, but will have significant visual and physical impacts on the local landscape and wider environment. Although still at an early stage, the panel was not content with the proposed design for several structures and advised that more development work is required to achieve the right balance of visual impact.
- The Commission recommends that the team engages an architectural bridge designer to work on the scheme, a move that has been shown to add significant value and refine structures on other recent road schemes brought to the Commission.
- Some parts of the road alignment, both vertical and horizontal, do not respect the natural topography and need further development to reduce visual impact and achieve better alignment.
- There are details of the road design, such as signs and lighting which warrant careful consideration and opportunities should be sought to ensure they are well integrated and form a cohesive whole.
- It will be useful for the team to put in place a mechanism for setting design focussed scheme objectives and to review these throughout the design and delivery. This will help to strengthen aspiration and identify and communicate achievements.
- The Design Commission would welcome further opportunity to review the scheme as designs progress.

Main Points in Detail

Scheme Objectives

It would be useful for the team to set out scheme objectives relating to design. An iterative process could be implemented to allow these objectives to be reviewed and refreshed at different stages throughout the design and delivery of the scheme. This process should encourage design aspirations and help identify and communicate achievements. The team should aim for objectives to be exceeded.

Road and Landscape Design

The Design Commission welcomed the efforts made to minimise negative impacts, save costs and provide a better value scheme through amendments to the proposed route layout. The philosophy of integrating landscape design and environmental mitigation is also supported.

It is understood that the environmental masterplan is currently being developed through a series of 1:1000 scale drawings. We would like to explore these in more detail at the next review.

The aim to minimise the intrusive effects of road lighting is considered appropriate given the rural location. Although it is essential that roundabouts are lit, options for the method of lighting should be explored with the aim of minimising negative impacts, including views to the road from a distance. The physical height, intensity, focus and direction of light should all be carefully considered.

A strategy should be developed to minimise the negative impacts of signs. We encourage the team to consider creative opportunities to integrate signage into other highway elements, possibly by considering the input of professional artists of international status, experienced in infrastructure. Several Dutch artists such as Lilian Roosenboom have such experience and are familiar, not only with Wales, but with applicable standards.

On sheet three of the four plans presented, the proposed road passes close to a farm, on embankment, with two underpasses for access. The site visit revealed the impact a significant embankment through this undulating landscape would have. We would encourage the design team to consider more variation in the vertical alignment to avoid the large volume of fill in this particularly delightful natural landscape and thus reduce the visual impact.

On sheet four of the four plans presented, the panel noted a straight alignment of road that cuts through a small hillside. The design team were encouraged to consider whether a curved alignment could provide a road more accommodating of the existing natural topography.

The team explained that landscape design would be used to highlight the entrance route into the town, which is more urban in character. This has not yet been designed in any detail. The Design Commission would welcome the opportunity to review this part of the scheme at the next design review. The panel thought that the use of token 'gateway features' should be avoided, in favour of design which better responds to analysis of the context.

There are several listed structures close to the route of the proposed road. It would be useful to map these, and any other archaeological interests, so that impact on them can be more easily assessed.

It is proposed that the attenuation ponds will also deal with treatment of run-off water. The ponds will have a visual impact on the landscape. Possibilities for reducing the size of ponds by challenging the predicted outfall flow with NRW should be explored.

Structures Design

General Points:

Different structural options are being considered for the bridge structures. The team should be sure that the best structural strategy has been found for each bridge before progressing to a more detailed level of design.

The Commission recommends that the team engages an architectural bridge designer of significant reputation to complement and work alongside the engineers and landscape designers on the family of structures. This should be an early appointment so as to achieve an integrated team and add value.

A local stone has been sourced from a quarry in Welshpool for facing the structures and has been chosen to match with historic railway infrastructure in the town. It will be useful to see stone samples and test panels to better understand how the stone will be used and its appearance. The design team confirmed their intention that the traffic face of over-bridge abutments would be clad in stone and not left as plain concrete.

The team confirmed that site splices to steel girders would be welded and not bolted.

The detailing and expression of the stone on the structures will be important. The detail at the abutments, spans, parapets and returns, and the angle of the splays must be carefully considered. Ways in which the safety barriers will work with the structures should also be explored. The panel would like the team to explore ways of introducing a break to the string course line at abutments and to integrate the stone cladding more as a statement of the structural support rather than just a finish. The example of the existing town railway bridge was discussed as a precedent. Different options should be explored to find the best solutions for this scheme. The team may find it useful to look at wider precedent.

The landscape design and planting around the structures will also be significant, and should be accurately represented on drawings as designs progress.

Family of Over-bridges:

The panel and the team discussed the merits of different arrangements for the family of over-bridges. The team explained their rationale and all agreed that the chosen solution for single span structures with setback abutments was the most appropriate for the dimensions of the carriageway involved.

The stone/concrete corner detail, splayed abutments and parapet design should all be explored in detail.

Dolfor Bridges:

There are two bridges in close proximity proposed at the Dolfor valley: one under bridge, 18m high, and an adjacent over bridge. The team should explore the relationship and juxtaposition between the two, refining the design for greater unity and elegance, given their proximity.

The structure of the bridge over the valley has not been satisfactorily resolved at this stage, although it is acknowledged that the proposal reviewed was at an early stage of development. The deep valley setting is dramatic, especially when viewed from the road at the valley floor, and provides the opportunity for an exciting and well-designed structure. The nature of the structural supports and the way they meet the sides or floor of the valley will be particularly crucial to achieving an elegant and successful bridge. The following points should be considered:

- The proportions of the 3-span slit/aperture beneath the bridge
- Ladder deck or multi-girder arrangement of steelwork and the consequential effect on pier arrangements
- Type, shape, number and detail of piers, and how they meet the valley floor. Is two the right number of piers?
- Whether to include haunches on the main girders
- Cross head detail, especially the ends
- Alternatives to pier structure: arch etc.
- Design and view of the underside of the deck
- Connection details

Mochre Bridge:

The Mochdre Bridge will pass over a stream and two roads. It is proposed that there will also be an underpass somewhere near to the bridge, and the team are considering whether this route could be incorporated under the bridge structure. A box underpass immediately next to the bridge may not be visually acceptable and alternatives should be considered.

The team is still exploring structural options for this bridge – either two-span or three-span. The location of the pier/piers and the impact on views and landscape are important and will inform the design.

Railway Bridge:

The structure for the railway bridge appears to be neatly designed and well resolved. The panel is supportive of the proposal for this structure. The railway bridge does not have significant lines of sight from the road or adjacent view points.

Eastern Gateway Bridge/Pool Road:

This bridge was not discussed in any detail and should be examined at the next design review.

Next Steps and Future Engagement

De-trunking of the old route through Newtown is planned following completion of the new bypass. This process will involve widening of the pavement back from the kerb line where possible. There will be potential to improve the public realm for pedestrians and cyclists in the town, and the Local Authority should ensure this opportunity is not

missed. The Design Commission would encourage additional and timely engagement with Powys CC to explore further improvement works which might be carried out in the town centre.

This project is one of the largest engineering projects in the area for many years. There will be a number of opportunities for the town to engage with the project, such as educational and these should add value to this scheme, and create benefits for the local community. In particular the use of the project to engage and inspire should be seized.

The Design Commission would welcome further review meetings as designs progress to a more detailed stage. Our design review slot on 22nd May 2014 might offer a suitable time for the next review and this has been discussed with the team. Early confirmation would be helpful.

At the next review we would like to see the following:

- Environmental masterplan drawings
- Development and refinement of the structures design
- More detailed design of routes into Newtown town
- More detailed proposals for lighting and signage
- Details of Benefit/Cost Ratio (BCR) which justify the scheme

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

Attendees

Agent/Client/Developer:	Peris Jones, Welsh Government
Designers/Contractors:	Alex Thomas, Atkins Peter McComiskey, TACP Jo Wall, TACP Richard Bruten, Alun Griffiths Contractors Terry Davies, Atkins
Planning Authority:	
Design Review Panel:	
Chair	Alan Francis

Lead Panellist

Ben Sibert
Andrew Linfoot
Amanda Spence, Design Advisor, DCFW

Observing:

Carole-Anne Davies, Chief Executive, DCFW