

Emls GEOTECH & DESIGN

Matt, thanks for your comments and the information you have provided so far. I thought the Tonkin report was very useful and believe it is sufficient for the concept design. If there is more data that may become relevant, we will certainly have to consider that in the final design – provided there are reliable reports.

In the concept design I have tried to consider the critical load cases. Earthquake analysis is not required for this bridge type according to my calculations. As for water flow – since we only have the value for 100 year ARI, and bridges are to be designed for 2000 year ARI, I have factored the load in accordance with AS 5100.2-2004 (in this case the factor is 1.65) and applied the load to the superstructure. Furthermore, I have assumed the structure is fully submerged to 500mm above deck level. For log impact the code specifies a minimum mass of 2t, but I have used 3.5t instead which is supposed to represent a large gum tree floating down the river at 2.08 m/s. I hope this answers all questions the bridge expert might have.

Regards,

Christiane Husmann



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From: Matt Wittwer [<mailto:mwittwer@ahc.sa.gov.au>]

Sent: Tuesday, 25 February 2014 12:25 PM

To: Christiane Husmann

Subject: RE: Verdun bridge concept

Given recent experience on another project, I found maximum velocity did not necessarily occur at the 1:100 flow, as downstream conditions caused water to back up, and slowing and spreading the flow over the flood plain.

That said, have I even provided enough info in the Tonkin report to judge when maximum velocity would occur, or did you just need to take an educated guess?

FYI, I recognise I lack the knowledge / experience to even ask the right questions about your concept. Instead, I has sent your concept off to an experienced bridge designer in Qld I have used in the past, so just trying to give him as much information as possible about the site and flow conditions.

Matt Wittwer – Civil Projects Coordinator, Engineering

t: 08 8408 0543 | **m:** 0409 509 342

From: Christiane Husmann [<mailto:Christiane@magryn.com.au>]

Sent: Tuesday, 25 February 2014 9:21 AM

To: Matt Wittwer

Cc: joneaton@bigpond.net.au

Subject: RE: Verdun bridge concept

The river flow velocity quoted on the drawing was calculated from the 100 year ARI peak flow of 449m³/s as specified in Tonkin's hydraulic model, divided by the flooded cross section. The bore logs showed refusal at 2.4m and 1.75m. The holes were drilled on either side of the river. If the footing depth specified on the drawing cannot be achieved, the pads will have to be wider and longer, but this is subject to a thorough geotechnical investigation prior to the detailed design. The footings have been designed and are not arbitrary, but may change slightly in the final design. Hope this answers your questions.

Regards,

Christiane Husmann



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From: Matt Wittwer [<mailto:mwittwer@ahc.sa.gov.au>]

Sent: Friday, 21 February 2014 3:27 PM

To: Christiane Husmann

Subject: Verdun bridge concept

Just a quick question – what was the maximum velocity of the river flows you anticipated in your design?
Are footing depths arbitrary at this stage, subject to drilling / soil testing?

Matt Wittwer – Civil Projects Coordinator, Engineering

Adelaide Hills Council | PO Box 44 Woodside SA 5244

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Regards,

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Hi John,

Hard copies of the concept are going out today along with the cost estimate for your review.

Regards,

Christiane Husmann



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From: joneaton@bigpond.net.au [<mailto:joneaton@bigpond.net.au>]

Sent: Friday, 21 February 2014 12:52 PM

To: Christiane Husmann

Subject: RE: Proposed pedestrian bridge at Verdun

Hi Christiane

Thank you for the bridge design of 19th Feb, 2014. It was Matt Wittwer who suggested a 2.5m width and I'm aware that his preference is for stepping stones at minimal expense to the two Councils. The existing broken concrete wall will already suffice for stepping stones but will be unsafe to use during higher river levels and will be of minimal use to cyclists. High river levels also correspond to the peak of the walking season. A bridge is therefore the most desirable option for safety and amenity.

Do you have an estimate of the construction cost of the 3m bridge and approaches so that I can complete my report to the Office for Recreation and Sport and commence the process of chasing up potential avenues of funding through sponsorship and grants.

Thank you for your work on this. I will forward a more detailed response to you soon.

Best wishes

John



Walking Federation of SA Inc

John Eaton

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Visit the WSA Website at: <http://www.walkingsa.org.au/>

From: Christiane Husmann [<mailto:Christiane@magryn.com.au>]

Sent: Wednesday, 19 February 2014 3:24 PM

To: joneaton@bigpond.net.au

Subject: Proposed pedestrian bridge at Verdun

Hi John,

I have attached the concept for the bridge at Sandow Rd. We kept the bridge above the 50 ARI year flood inundation so that it will not be flooded frequently. I understand the high season of walking coincides with high flood levels and it is not desirable if the bridge is closed during that time. In addition, there will be less maintenance required in the long run compared to a lower (and shorter) bridge which is likely to be flooded more often. The superstructure has been designed for impact from a floating gum tree; however, the balustrade panel hit by the tree will collapse or be damaged. The concept of discrete panels aims at keeping the damage and repair costs down.

We are showing a 3m wide bridge because this width is specified as the minimum dimension for a shared path according to Austroads, which is the relevant standard for road and bridge design. It also helps reduce conflict between bicycle riders and pedestrians. The desirable width is 3.5m according to the Code. I understand the minimum width also depends on the level of activity, so please let me know if a 3m wide bridge suits you.

I look forward to your feedback. Thank you.

Regards,

Christiane Husmann



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Hi John,

Just a quick update on the job: We have received the borehole log and it shows sandy clayey gravels over sandstone. Matt Wittwer is still trying to arrange a site meeting with the landowner, so nothing has happened as yet. We are expecting the survey by mid next week, which is the last piece of information required to actually start on the design.

Regards,

Christiane Husmann



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Hi John,

Thanks for your email. We are expecting the results of the geotechnical investigation this week, and the surveyor advised us today that he will send the survey within the next two weeks. Matt Wittwer helped us with contacting the owners of the adjacent property and they are happy for the surveyor to go

to site anytime. Matt is planning a site meeting with Chris Kennedy, the owner of lot 3, sometime next week and has asked me to come to site as well. I will let you know when the meeting will be held in case you wish to join us.

The costing for the concept design is as per our quote, and I anticipate the concept design to be completed in 4 – 6 weeks.

Regards,

Christiane Husmann



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From: joneaton@bigpond.net.au [<mailto:joneaton@bigpond.net.au>]

Sent: Tuesday, 14 January 2014 1:33 PM

To: Christiane Husmann

Subject: Progress of Geotech and design concept

Hi Christiane

I was wondering whether the Geotech survey for the proposed bridge at Sandow Road has been completed yet? Is it possible to give me a time frame for the preparation of a design concept and costing so that I can finalise payment and prepare a report for the Office For Recreation and Sport? I will then be in a position to pursue avenues of funding for the actual construction of the bridge in 2014.

Best wishes

John Eaton



The Walking Federation of South Australia Inc. ABN: 78 019 005 437 CIN: A0020507J

John Eaton Trails: Strategic Access & Infrastructure
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