

31 March 2011

Structerre reference number: S527512/AO

The Manager
Geraldton-Greenough Aquarena
Pass Street
GERALDTON WA 6530

Attn: Jennifer Spriggs

AQUARENA - PASS STREET WONTHELLA

In response to your recent request a representative from this Office visited site on 11 March 2011.

1. PURPOSE

The purpose of the visit was to inspect and comment upon the existing external male and female toilets/change rooms to determine if they are in a structurally acceptable state.

2. OBSERVATIONS

Whilst on site the following observations were made:

- Both external toilets were constructed from brickwork with large steel and timber awning constructed over the toilet areas. Advice on site was that the toilet blocks had been constructed in 1972.
- Digging boreholes while on site revealed that the soil profile consisted of Sand to 1000mm. As such the site is assessed as a Class 'A' in accordance with AS2870.
- Compaction testing of the soil with a Perth Sand Penetrometer returned results of 6/18, 6/4/8 and 10/10/10 blows per 300mm penetration between depths 150mm and 1050mm.
- Numerous cracks up to 10mm wide were observed throughout all leafs of brickwork in both toilet/change rooms.
- All brickwork is single leaf (110mm wide) up to 2100mm high with 230 x 470 buttresses located at approximately 3400mm c/c along the east and west facing walls. It was noted that a large portion of these piers are not built into to the single leaf perimeter brickwork.
- Numerous locations where steel plates have been bolted into existing brickwork to try and possibly reduce cracking and potential failure.
- The curved awnings were constructed with 75mm 'C' section perimeter beams and curved 60 x 40 timber purlins at approximately 1200 c/c. It was noted that some areas of cladding and guttering appear to be in poor condition. One purlin has been repaired using a steel sleeve and bolts, but does not appear to be performing adequately.

3. COMMENTS & RECOMMENDATIONS

Based on the observations made, it is in this office's opinion that the existing external male and female toilets/change rooms are not in a structurally acceptable state for the following reasons:

- Both structures do not comply with Table 12.3 in AS3700 (Masonry Structures) which specifies no more than 2400 max centres between piers to an unreinforced single leaf wall.
- As youths are primary attendees of the Aquarena, there is a high likelihood of injury, due to youths jumping over the walls and the potential failure/collapse of the walls in the process.
- The level of compaction is currently at a low level as 8 blows per 300mm is an acceptable result.

It is therefore the considered opinion of this Office that the structure has reached the end of its economic life, and it is our recommendation that the building be demolished and replaced as the extent of works required to restore the existing structures to a structurally acceptable level will require a large amount of reconstruction and ongoing maintenance in the future.

4. CONCLUSION

Thank you for allowing us the opportunity to assist you in this matter. If this Office can be of further assistance or if clarification is needed on any comments in this report, please do not hesitate to contact us again.

Yours faithfully

Adam Burrows
Geraldton Manager

Enclosed:
- Photographs taken whilst on site

Authorization
This report has been checked and authorized for release

Shane Just
Project Engineering Manager
BE Civil & Structural MIEAust

Disclaimer:
This report is at the request of the addressee and no liability is accepted by Structerre Consulting Engineers to any third person reading or relying upon the report, notwithstanding any rule of law and/or equity to the contrary and that this report is strictly confidential and intended to be read and relied upon only by the addressee.



Photograph 1 - Outside wall of existing toilets/change rooms



Photograph 2 - Steel flat bar installed to temporarily restrain brickwork



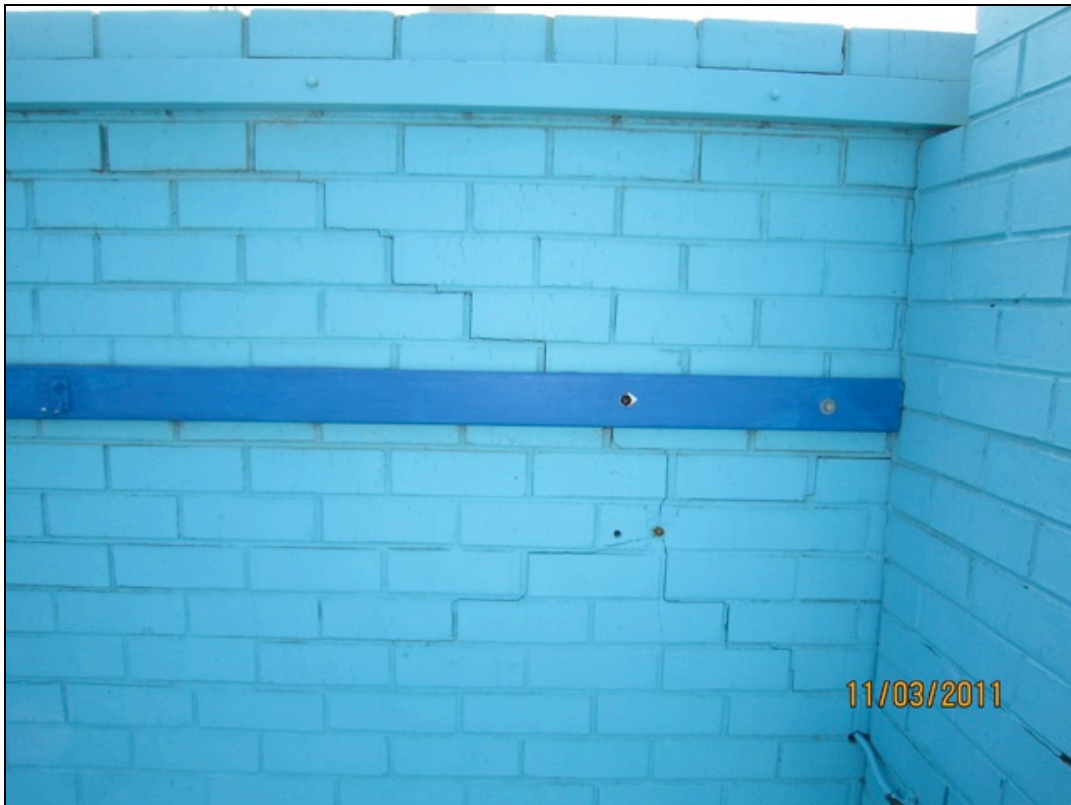
Photograph 3 - Failure to purlin



Photograph 4 - Cracking to brickwork



Photograph 5 – Cracking to brickwork



Photograph 6 - Cracking to brickwork