

# Structural Engineers Report For:

Jubilee Park Concrete Flood Wall, Rogerstone

## STRUCTURAL REPORT

Prepared for:

**Rogerstone  
Community Council**

**REF: 17957**

## Document Control

<b>Project</b>	Jubilee Park Concrete Flood Wall, Rogerstone
<b>Client</b>	Rogerstone Community Council
<b>Vale Consultancy Ref:</b>	17957

### Document Checking:

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<b>Prepared By:</b>	Louis Morgan BSc (Hons) Structural Engineer	<b>Signed:</b>	
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<b>Checked By:</b>	Jon Mathias BEng (Hons) Director	<b>Signed:</b>	
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<b>Verified By:</b>	Jon Mathias BEng (Hons) Director	<b>Signed:</b>	
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Issue	Date	Status
A	13 <sup>th</sup> January 2025	First issue

13 January 2025  
 Our Ref: 17957/LM/JM  
 Issued by email to: Colin Atyeo <rogerstoneccclerk@gmail.com>

To Whom It May Concern,

**RE: Structural Inspection at Jubilee Park, Rogerstone**

We were appointed by our client, Rogerstone Community Council, to perform a visual inspection of the Jubilee Park retaining wall, to assess its condition and to provide any recommendations for remedial works as required. Our survey was undertaken on the 9<sup>th</sup> December 2025, at which time the weather was fine, dry and it had recently rained.

Our findings are restricted to structural matters of the retaining wall only and we would state we have not examined any part of the structure that was covered, unexposed or inaccessible and are therefore unable to state that any such component is free from defect.


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**Description**






The mass concrete flood wall, constructed in 2014-2015 is approximately 1.60km in length and protects the Jubilee Park residential development from any high tides from the Ebbw River. The wall height varies in height and width along its elevation with a maximum height of approximately 5.0m. The flood wall is of mass concrete construction with varying stem and base layouts. Expansion joints are located at approximately 24.0m centres, or at changes in direction.






Extensive riverbank erosion from the Ebbw River has led to an approximately 25.0m section of footpath collapsing. The collapse is to the rear of the wall, located at a chainage of approximately 410.0m.






**Observations & Assessment**






No.	Photograph	Description
1		<p><b>Location:</b> 10.0m (Front Elevation)</p> <p><b>Observation:</b> No defects noted.</p>






2		<p><b>Location:</b> 15.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, cracking approximately 1-2mm in width.</p>
3		<p><b>Location:</b> 35.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, cracking approximately 1-2mm in width.</p>
4		<p><b>Location:</b> 100.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, cracking approximately 1-2mm in width.</p>
5		<p><b>Location:</b> 45.0m (Rear Elevation)</p> <p><b>Observation:</b> Surface damage noted around top of wall, damage continues horizontally for approximately 5.0m.</p>
6		<p><b>Location:</b> 108.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking through section of wall, cracking approximately 1-2m in width</p>






7		<p><b>Location:</b> 140.0m (Rear Elevation)</p> <p><b>Observation:</b> Hairline cracking noted across wall.</p>
8		<p><b>Location:</b> 155.0m (Rear Elevation)</p> <p><b>Observation:</b> Various hairline cracking across wall.</p>
9		<p><b>Location:</b> 160.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, cracking was hairline in width at a high level and approximately 1-3mm at the base.</p>
10		<p><b>Location:</b> 190.0m (Rear Elevation)</p> <p><b>Observation:</b> Horizontal hairline cracking noted across wall.</p>
11		<p><b>Location:</b> 255.0m (Rear Elevation)</p> <p><b>Observation:</b> Horizontal hairline cracking noted across wall.</p>






12		<p><b>Location:</b> 275.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, cracking was approximately 2-3mm in width, horizontal cracking also noted across sections of wall.</p>
13		<p><b>Location:</b> 280.0m (Rear Elevation)</p> <p><b>Observation:</b> Horizontal crack through full height of wall localised around joint, crack was approximately 2-3mm in width.</p>
14		<p><b>Location:</b> 340.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking at base of wall, Seepage noted at joint between base and stem.</p>
15		<p><b>Location:</b> 360.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical crack through full height of wall localised around joint, crack was approximately 2-3mm in width.</p>
16		<p><b>Location:</b> 380.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, cracking was approximately 2-3mm in width.</p>




17		<p><b>Location:</b> 405.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking at base of wall, seepage noted between the base and stem.</p>
18		<p><b>Location:</b> 405.0m (Rear Elevation)</p> <p><b>Observation:</b> Section of path has collapsed into the river.</p>
19		<p><b>Location:</b> 420.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking noted at the base of the wall localised around joint, cracking was approximately 2-4mm in width.</p>
20		<p><b>Location:</b> 430.0m (Front Elevation)</p> <p><b>Observation:</b> Cracking noted around post base, cracking was approximately 1-5mm in width and was noted to various post bases</p>
21		<p><b>Location:</b> 433.0m (Front Elevation)</p> <p><b>Observation:</b> Cracking noted around post base, cracking was approximately 1-3mm in width and was noted to various post bases</p>

22		<p><b>Location:</b> 435.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical crack localised around joint, crack was approximately 1-2mm in width.</p>
23		<p><b>Location:</b> 440.0m (Rear Elevation)</p> <p><b>Observation:</b> Horizontal cracking noted across wall sections, cracking was hairline in width.</p>
24		<p><b>Location:</b> 490.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical and horizontal hairline cracking noted across wall.</p>
25		<p><b>Location:</b> 505.0m (Front Elevation)</p> <p><b>Observation:</b> Cracking noted at base of wall, cracking was approximately 1-3mm in width.</p>
26		<p><b>Location:</b> 560.0m (Rear Elevation)</p> <p><b>Observation:</b> Vegetation growth within movement joint.</p>

27		<p><b>Location:</b> 570.0m (Front Elevation)</p> <p><b>Observation:</b> Seepage noted between the base and stem.</p>
28		<p><b>Location:</b> 590.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical crack noted at joint where tree has collapsed, crack was approximately 1-2mm in width.</p>
29		<p><b>Location:</b> 600.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking noted at the base of the wall localised around joint, cracking was approximately 2-3mm in width.</p>
30		<p><b>Location:</b> 640.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking noted at the base of the wall localised around joint, cracking was approximately 2-3mm in width.</p>
31		<p><b>Location:</b> 690.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, cracking approximately 1-3mm in width.</p>

32		<p><b>Location:</b> 705.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking noted at the base of the wall localised around joint, cracking was approximately 2-3mm in width.</p>
33		<p><b>Location:</b> 720.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal and vertical cracking noted at the base of the wall localised around joint, cracking was approximately 2-3mm in width.</p>
34		<p><b>Location:</b> 730.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical crack noted where tree has collapsed, crack was approximately 1-2mm in width.</p>
35		<p><b>Location:</b> 745.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking noted at the base of the wall localised around joint, cracking was approximately 1-3mm in width.</p>
36		<p><b>Location:</b> 805.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, crack was approximately 1-2mm in width.</p>

37		<p><b>Location:</b> 870.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, crack was approximately 1-2mm in width.</p>
38		<p><b>Location:</b> 950.0m (Rear Elevation)</p> <p><b>Observation:</b> Cracking and spalling concrete at low level.</p>
39		<p><b>Location:</b> 1050.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical and horizontal cracking noted across wall, cracking was hairline-1mm in width.</p>
40		<p><b>Location:</b> 1300.0m (Front Elevation)</p> <p><b>Observation:</b> Horizontal cracking across wall panels, cracking was approximately hairline-1mm in width.</p>
41		<p><b>Location:</b> 1480.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, cracking approximately 2-3mm in width.</p>

42		<p><b>Location:</b> 1550.0m (Rear Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall, crack was approximately 1-2mm in width.</p>
43		<p><b>Location:</b> 1560.0m (Front Elevation)</p> <p><b>Observation:</b> Vertical cracking through full height of wall localised around joint, cracking approximately 1-2mm in width.</p>
44		<p><b>Location:</b> 1600.0m (Rear Elevation)</p> <p><b>Observation:</b> Cracking noted around post base, cracking was approximately 1-2mm in width.</p>

### Conclusions & Recommendations

It is our professional opinion that the concrete flood defense wall of Jubilee Park is in satisfactory structural condition, with a number of minor defects, for which remedial works should be considered as a part of the regular maintenance schedule of the wall.

The various horizontal cracks noted to the front and rear elevation, mostly localised around joints in the wall, are considered to not be of adverse structural concern. The cracks are likely formed by minor differential settlement of the foundations and seasonal thermal movement. It is our recommendation that these cracks continue to be monitored and reassessed in 18-24 months, to confirm if the cracks are progressive and require remedial works to prevent the likelihood of further cracking. Wherever cracks are deemed to be non-progressive or related to thermal movement, they should be filled with a non-shrink grout to prevent water ingress and likely damage due to frost/thaw effects. Where cracking has been noted at collapsed trees, we recommend that the trees are removed from the wall and the cracks are also filled with a non-shrink grout.

Whilst the water staining noted at the joint between the stem and base, along the front elevation of the flood defense wall may be unsightly, we do not consider the noted seepage to be of adverse structural concern. The seepage is likely due to defective or damaged waterproofing at the joint between the stem and base of the wall. We would also recommend that these areas be monitored over an extended period

of time to confirm that no adverse cracking or spalling concrete forms around the areas of water seepage. Should defects begin to arise in these areas we would recommend that local excavation be undertaken to the rear elevation of the wall, exposing the joint between the stem and base to allow for adequate waterproofing to be installed.

We recommend that where noted, the vegetation growth within the movement joints, mostly to the top of the wall be removed to prevent further damage via root ingress. The damaged sealant should be replaced wherever vegetation requires removal.

Where cracking has been noted around post bases of the guard fences, these are likely caused by the fenceposts being cast without enough cover to the edge of the concrete, the cracking may also be being exacerbated by the posts and fences being climbed on. We recommend the cracking of the corner fence post bases, local to the Jubilee Park footbridge, are repaired using a concrete crack repair solution, such as those provided by Sika. Should the cracking continue, we would recommend that the corners be mechanically fixed back to the surrounding concrete, using a crack repair kit such as those provided by Helifix.

If you have any queries regarding this report or require any further information, please contact our office at the above address.



Louis Morgan BSc (Hons) – Structural Engineer  
**Vale Consultancy**

**Enclosures:**

**Photographs 1 – 44**