

Reference: 21115\_DRUMMOYNE\_INTEGRITY OF EX VESSEL

20 July 2021

Milton Architects  
76 McIlwraith Avenue  
Norman Park  
**QLD 4170**

**RE: DRUMMOYNE RESERVIOR - MAINTAINING STRUCTURAL INTEGRITY : EXISTING VESSEL**

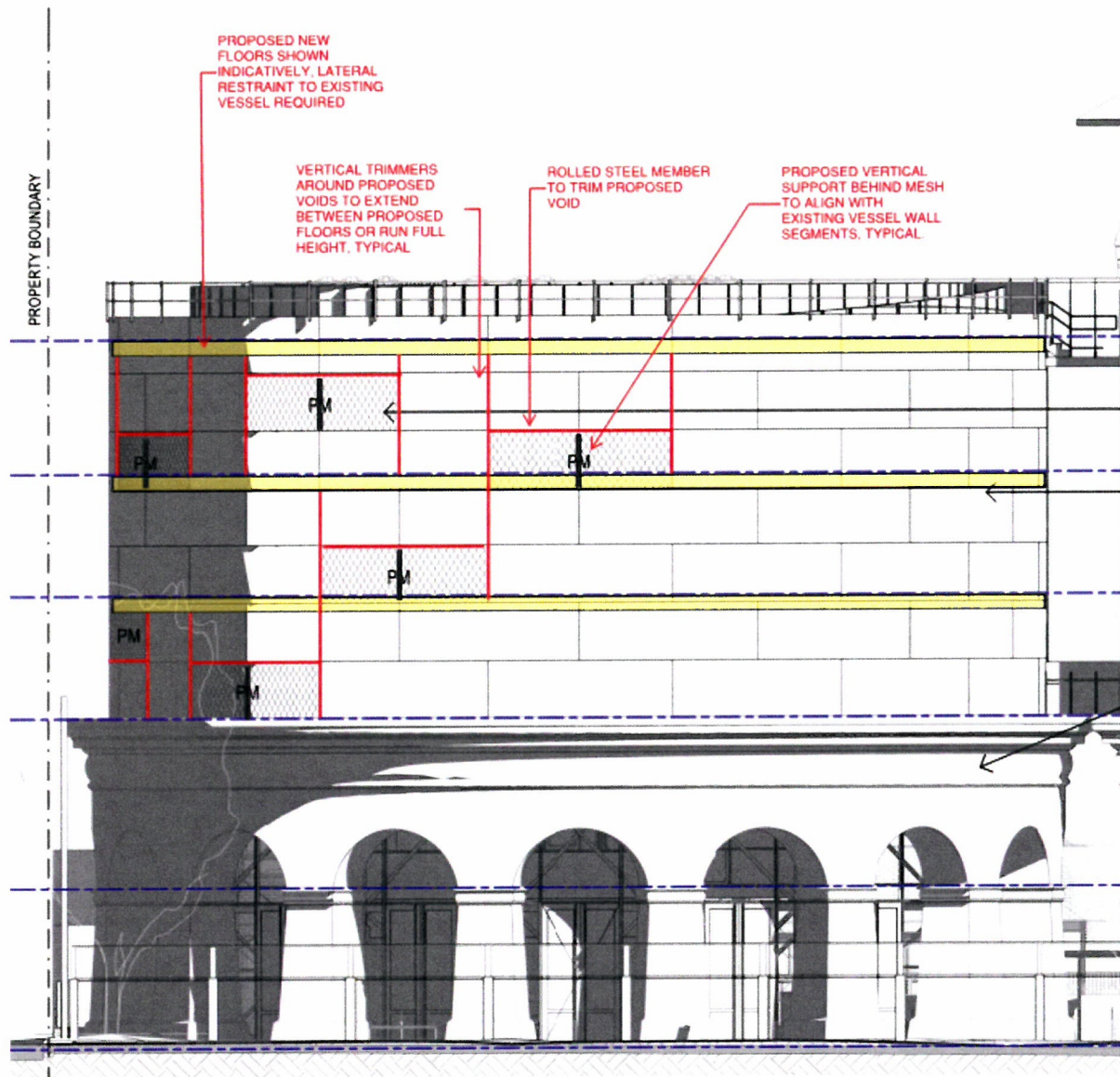
**Attention: Steve Milton**

Brogue Consulting Engineers were engaged by Milton Architects to provide a preliminary assessment of the existing steel vessel walls with specific reference to the proposed vessel penetrations. Our assessment of the proposed building conversion is based on the Milton Architects document job number 290 Issue E dated 30<sup>th</sup> June 2021.

The existing reservoir structure consists of an elevated steel framed tank supported on a concrete slab structure with internal braced steel columns and a feature concrete arched perimeter structure. The existing conditions are described in the Atlas Engineering Site Investigation, Conditions Assessment and Engineering Support WS0038 Drummoyne Reservoir, AED-0314-REP-001C, dated 26<sup>th</sup> June 2017.

Based on information provided to this office, we consider that the existing steel vessel and associated concrete floor has performed adequately to date, and we confirm that it is feasible to maintain structural integrity for the design life of the proposed structure. The following structural requirements are nominated to enable the vessel penetrations and to utilise the vessel as the proposed building cladding system:

1. Do not rely on the existing steel vessel for vertical support of proposed floor and roof structure.
2. Locate new vertical structure to support new floor and roof structures within the existing vessel. Column locations to be situated over existing column under the existing suspended concrete vessel base.
3. Provide lateral restraint of the existing steel vessel back to each proposed floor and roof level, nominated as Tower Level 4, Level 5 and Roof Garden on architectural documents.
4. Provide steel framed trimming members to the inside of the vessel around all proposed vessel panel removal / penetrations. Refer Figure 1 for proposed trimming detail. All trimming member to be behind the proposed mesh and/or inside of the steel vessel, refer Figure 1 following.
5. Provide maintenance of the existing vessel including a review of existing fixing details between panel sheets and fixing detail onto the existing concrete base. This should include patching and repair of any significantly rusted areas.
6. Provide a steel coating system and maintenance schedule, recommended to be based on a corrosivity category C4.



**Figure 1.** Part Elevation (Southwest) with proposed trimming details for existing vessel penetrations

This office confirms that the existing steel vessels structural integrity can be maintained and utilised in the proposed building works. The proposed penetrations in the existing steel vessel can be achieved by providing trimming steelwork to the penetrations as well as laterally restraining the vessel back to the proposed floor and roof structure.

Please contact this office if any clarification or assessment is required.

Yours sincerely,

Ashley Pollard  
Director - Structural  
B.Eng, CPEng, RBP, RPEQ, NER

For Brogue Consulting Engineers