

2015.5869 R001A

7 April 2016

DPTI Building Management Facilities Services  
PO Box 428  
Mount Gambier SA 5290

Attention: Martin Schoenfisch

## MOUNT GAMBIER ROUNDHOUSE – ENGINEERS ASSESSMENT REPORT

The existing railway Roundhouse at 20 Webb Street Mount Gambier is a State Heritage listed building. The timber framing in the building was substantially damaged by fire several years ago. DPTI has applied for the Roundhouse to be demolished.

Referring to a letter dated 11 November 2015 from Simon Wiseman, Senior Planner for the City of Mount Gambier to the Development Assessment Commission: an *Engineers Assessment* report is required to indicate which parts of the building are *structurally unsafe or unsound and cannot reasonably be rehabilitated*. Following is our report.

### Report Procedure

In February and March 2016, Gene Lassaline of Tonkin Consulting visited the site. We measured the existing building and developed the attached Plan and Section drawings of the Roundhouse. We have assessed which parts of the roof framing appear to still be structurally sound, which sections of the roof structure are questionable (without further up close investigation) and which parts are obviously unsafe / or previously collapsed /missing. (If all or some part of the roof framing members within a section bounded by 4 grid lines are considered as structurally unsound, we have labelled this section of the roof as Unsafe.) The results of this assessment have been marked on our Plan drawing.

Our measure up and inspections were limited to an 'at ground' view only for the purposes of this report. Building dimensions have been rounded to the closest 0.1 of a metre. The size of roof framing members was roughly estimated only, not closely measured.

In order for the reader to better comprehend the condition of the Roundhouse; photographs of the 4 sides of the building, along with a photograph of each bay of the Roundhouse, taken from the open east side, is included in this report.

### Building Condition.

The Roundhouse is a large crescent shaped building with 9 bays for servicing railway locomotives. The east side of the building is open to the railway turn table. The floor is a concrete slab with several open mechanics pits. The roof varies from about 5 to 9m high. The walls and roof are clad with corrugated galvanised iron and zinc-alum steel sheets, with some parts of the west wall clad with green translucent sheeting. Framing appears to mainly be heavy Oregon timbers. Some east wall girts are Radiata Pine. The columns along the east and west sides of the building appear to be Australian Eucalypt hardwood.

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Much of the roof framing has been substantially damaged by fire. Some parts of the roof have likely collapsed during or following the fire. We understand that DPTI has also removed some sections of roof framing that were structurally compromised and in danger of collapse.

As indicated on our Plan drawing, over half of the roof framing area has been damaged by the fire, with only the perimeter sections of the roof being unaffected. The majority of the heavy timber columns appear to generally be in sound condition, apart from localised fire damage to parts of some columns and previous railway work damage to others,

### **Conclusion**

The Roundhouse is fenced off and signed to prohibit entry; however it is obvious that even with the fencing and signage in place that the building has been and is probably still being entered into by children and young adults. With open pits, and building debris / timber boards with nails protruding lying about, the Roundhouse is definitely not a safe place to walk around in. During our inspection we noticed burnt timber boards and galvanized iron sheets swaying in the breeze and hanging precariously from the weakened roof framing. It is difficult to say when more parts of the roof will collapse. There is also the danger that poorly fastened roof sheets could be lifted off in high wind events and be dropped onto neighbouring properties.

We do not consider the building to be structurally safe. Considering the extent of damage, high cost and likely difficulty in now obtaining the long, heavy timbers needed to match the original construction, we do not believe that the Roundhouse could reasonably be rehabilitated.

We would strongly recommend that when the building is demolished, that it be dismantled and the salvageable heavy timbers retained for recycling rather than just being sent to landfill. The size of trees and length of timbers milled many years ago to construct the Roundhouse are no longer commonly available. We have previously designed several buildings with recycled old heavy timbers as prominent architectural features. If requested, we can direct you to a company that salvages and recycles old timbers.

Please contact the undersigned at 8723 5002 if you wish to discuss anything further on this matter.

Yours faithfully  
TONKIN CONSULTING



GENE LASSALINE MIEAust  
Principal Structural Engineer

Enc. Photographs, Plan and Section drawings

**Roundhouse Photographs (16 March 2016)**



East Elevation



South Elevation



West Elevation



North Elevation



Bay1, Grids 1 to 2



Bay 2, Grids 2 to 3



Bay 3, Grids 3 to 4



Bay 4, Grids 4 to 5



Bay 5, Grids 5 to 6



Bay 6, Grids 6 to 7



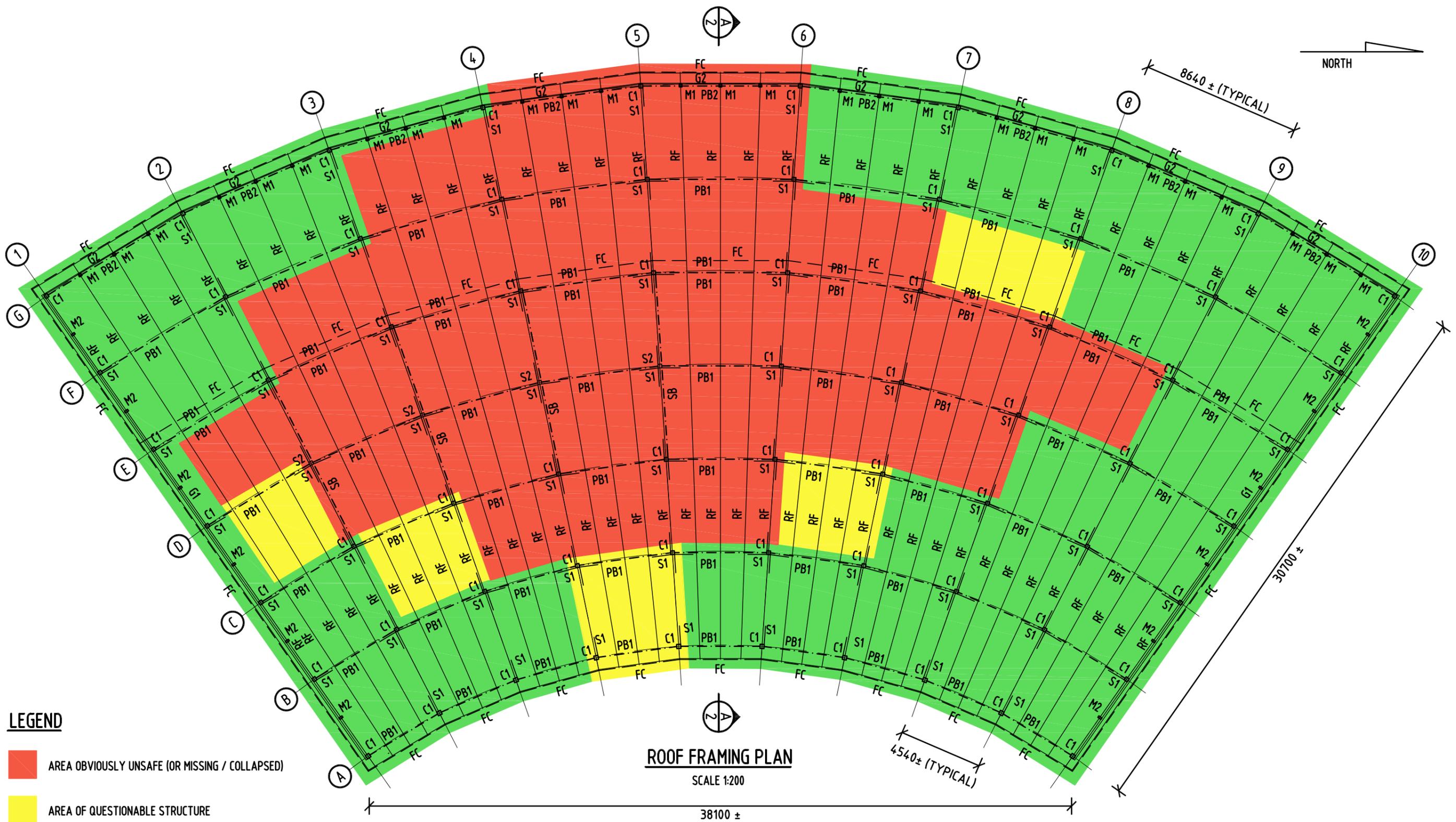
Bay 7, Grids 7 to 8



Bay 8, Grids 8 to 9



Bay 9, Grids 9 to 10



**ROOF FRAMING PLAN**

SCALE 1:200

- LEGEND**
- AREA OBVIOUSLY UNSAFE (OR MISSING / COLLAPSED)
  - AREA OF QUESTIONABLE STRUCTURE
  - AREA APPEARS GENERALLY SOUND

(NOTE: PLAN DRAWING SHOWS ALL MEMBERS AS LIKELY EXISTED PRIOR TO THE FIRE. SOME ROOF MEMBERS INDICATED ON THE DRAWING NO LONGER REMAIN)

REVISION	AMENDMENT / REASON FOR ISSUE	APPROVED	DATE
A	ISSUED AS FINAL	GL	24/03/16

NOTES:

(DO NOT SCALE)

50mm ON ORIGINAL DRAWING



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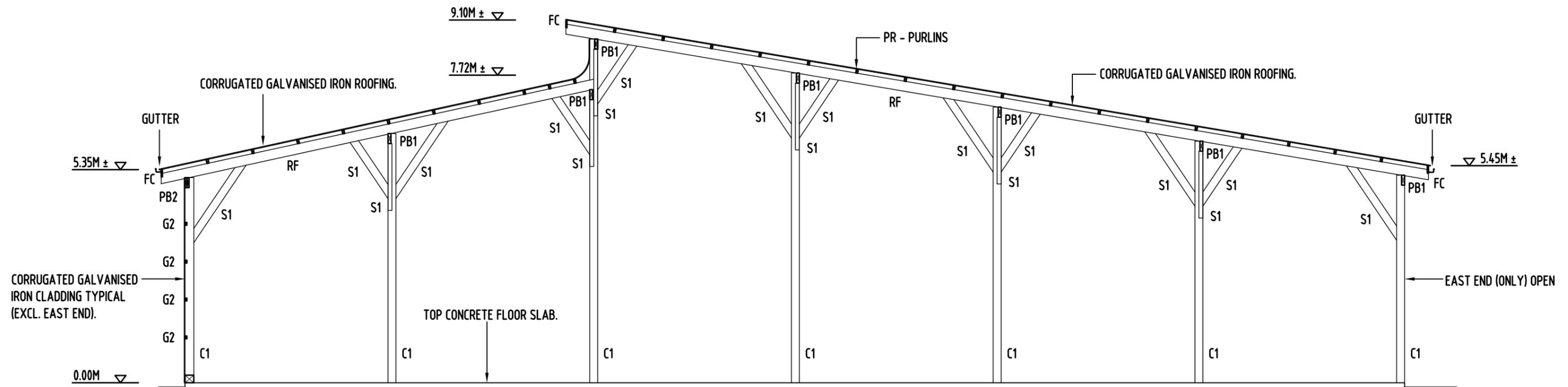
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SCALE: AS SHOWN	SHEET SIZE: <b>A3</b>
DESIGNED: GL	DRAWN: JC
PROJECT MANAGER: GL	SENIOR DRAFTER: JC
SURVEYED: -	SURVEY DATE: -
APPROVED: G. Lassaline	DATE: 24-03-16

<b>DPTI - Mount Gambier</b>			
<b>RAILWAY LANDS</b>			
<b>ROUNDHOUSE BUILDING</b>			
<b>MEASURED PLAN</b>			
FILENAME: 2015-5869-SHT1.dwg	JOB NUMBER: 2015.5869	SHEET NUMBER: 1 of 2	REVISION: A



**SECTION A-A - TYPICAL FRAMING PRIOR TO FIRE**

SCALE 1:100

**NOTE:**

ALL ELEVATIONS AND MEMBER SIZES ARE APPROXIMATE ONLY. ROOF MEMBER SIZES ARE ESTIMATED FROM 'AT GROUND' VIEW ONLY, NOT NECESSARILY MEASURED.

**MEMBER SCHEDULE**

MARK	MEMBER	NOTES
C1	200 x 200 POST	-
M1	150 x 150 MULLION	-
M2	200 x 100 MULLION	-
G1	70 x 100 GIRT	GIRTS @ 1100 CTS ±
G2	70 x 45 GIRT	GIRTS @ 1100 CTS ±
PB1	250 x 75 PITCHING BEAM	-
PB2	2/250 x 50 PITCHING BEAM	-

MARK	MEMBER	NOTES
SB	420 x 200 STRUTTING BEAM	-
S1	200 x 100 STRUTTING BRACE	-
S2	120 x 120 STRUTTING BRACE	-
RF	250 x 100 RAFTER	-
FC	200 x 30 FASCIA	-
PR	100 x 50 PURLINS	FIXED @ 1200 CTS ±. NOT SHOWN ON PLAN FOR CLARITY. REFER SECTION.

REFER PLAN ALSO FOR MEMBER LOCATIONS

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50mm ON ORIGINAL DRAWING

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SURVEYED: -	SURVEY DATE: -
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**DPTI - Mount Gambier**

**RAILWAY LANDS**

**ROUNDHOUSE BUILDING**

**TYPICAL SECTION**

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