

Project Advice Notice

Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 1 of 20

Site Inspection Report

to: City of Whitehorse

Rohan Prathapasinghe

Rohan.Prathapasinghe@whitehorse.vic.gov.au

Rohan,

Following your request we have attended site the morning of 3rd September 2015 to conduct a structural assessment of the Whitehorse Centre. We confirm that we have conducted our assessment in accordance with our agreed proposal dated 3rd September 2015. The following report outlines items witnessed during our inspection and recommendations, as required.



*FIGURE 1 – Whitehorse Centre, 379-397 Whitehorse Rd, Nunawading VIC 3131
(Building floor plan overlay NearMap image)*

Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 2 of 20

1 INTRODUCTION

Site was attended on Thursday 3rd September, 2015. Weather conditions were overcast, dry and approximately 15°C at the time of inspection.

The brief for the site attendance was to undertake an inspection on the structural condition of the existing building. We understand that Council has confirmed plans to develop the building in the medium to long term and would like to establish whether any remedial works are required in the short term. As advised by Council we understand there has been some concerns regarding the building fabric, in particular the main fascia structure.

The preparation of this report and the assessments contained therein was made on the basis of the following:

- Visual assessment of the internal surfaces of the building including flooring, ceiling, walls and doors.
- Visual assessment of the external surfaces including cladding and perimeter pavements (where applicable)
- Assessment with reference to AS1684 – Residential Timber Framed Construction
- Assessment with reference to AS2870 – Residential Slabs and Footings
- Assessment with reference to AS3600 – Concrete Structures
- Assessment with reference to AS3700 – Masonry Structures
- Assessment with reference to AS4100 – Steel Structures

This report is released subject to the following conditions and qualifications:

- The report may only be used by the named addressee and their client for the purpose it was commissioned and in accordance with the corresponding Conditions of Engagement
- The report may only be reproduced in full
- The report shall not be considered as relieving any other party of their responsibilities, liabilities and contractual obligations
- Visual inspection of readily accessible building elements including wall cavities
- Computations were not performed to confirm compliance with relevant building codes or Australian Standards
- This report does not address the compliance of glazing or the presence of asbestos or other contaminant materials.

The following people were present at the inspection:

- Ben Leske – Kersulting



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 3 of 20

2 SITE & SURROUNDING CONDITIONS



FIGURE 2 – Nearmap aerial shot (North = up)

2.1 SITE GEOLOGY

Geological survey maps of the area identify the local geology as “Anderson Creek Formation (Sxa): generic” Llandovery to Wenlock aged deposits, which typically include sandstone (thick to thin bedded); siltstone. Maximum seasonal ground movements would be expected be in accordance with ‘class M’ (moderately reactive clay or silt sites which may experience moderate ground movement from moisture changes) soil conditions as defined in AS2870-2011.

2.1.1 Anderson Creek Formation(Sxa): generic

Field Name	Field Value
Unit name/code: descriptive name	Anderson Creek Formation(Sxa): generic
Unit description	Sandstone: thick to thin bedded; siltstone, minor conglomerate
Oldest to youngest age	Llandovery to Wenlock

TABLE 2.1 – Site Geology Details



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 4 of 20

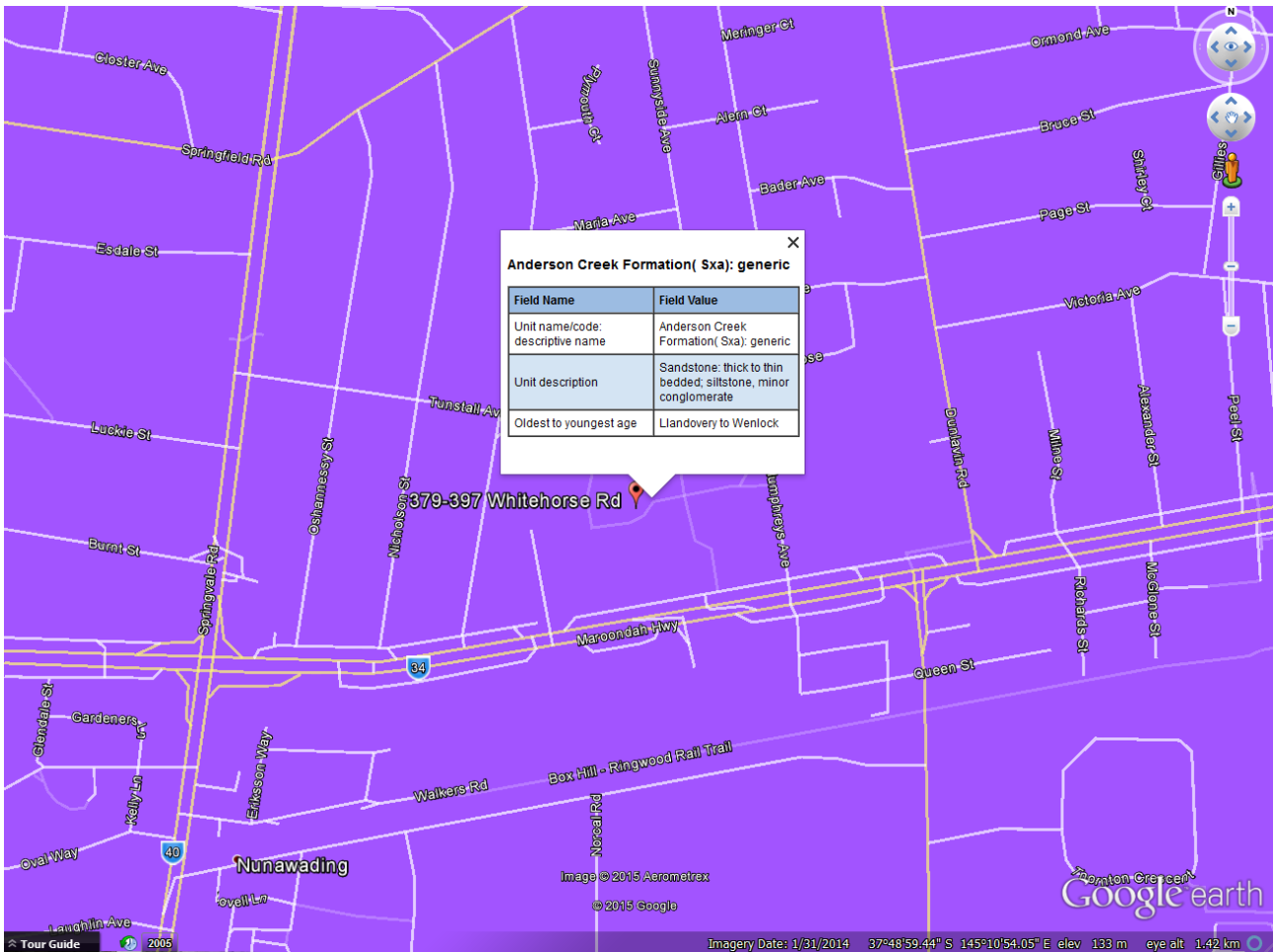


FIGURE 3 – Google Earth Aerial with Seamless Geology 250k overlay

2.2 EXISTING BUILDING

2.2.1 GENERAL CONSTRUCTION

Prior to our inspection limited architectural documentation was made available to our office.

Based on the construction issue date provided on the drawings we understand the existing building is approximately 30 years old with alterations/additions undertaken approximately 1998. This was generally consistent with the building condition on inspection.

The Building structure is generally a structural steel frame with lightweight girts supporting the external cladding to the fly tower and lightweight steel purlins supporting the metal deck roof throughout.

Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 5 of 20

Although structural drawings were not available for review as part of this report it appears that the ground floor structure is a combination of a concrete raft slab on ground and suspended concrete slab on dwarf walls/strip footings. We expect that the main stage, soundshell and theatre floors have been framed with structural steel bearers and timber floor joists.

2.2.2 AREA IMMEDIATELY SURROUNDING BUILDING

The existing building is predominantly surrounded by both concrete & asphalt pavement. The pavements generally fall away from the building perimeter.

A large asphalt carpark is located to the east which provides parking and access to the building.

The remainder of the building is generally surrounded by soft landscaping including garden beds and lawn areas. There are mature, isolated trees surrounding the building however we do not expect that these would have an impact on the moisture levels of the footing founding material.



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 6 of 20

3 OBSERVATIONS

The following observations were made during our site investigation. Refer to site photographs below.



Site Photograph 1 – slight damage to gutter and external clad



Site Photograph 2 – perimeter pavements generally fall away from building



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 7 of 20



Site Photograph 3 – perimeter pavements generally fall away from building to drainage infrastructure (kerbs, pits etc.)



Site Photograph 4 – slight damage to soffit of fascia/eave, appeared to be water damage



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 8 of 20



Site Photograph 5 – deterioration sighted in roof sheet



Site Photograph 6 – damage sighted in concrete pavement



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 9 of 20



Site Photograph 7 – concrete pavement settled however building appears structurally sound



Site Photograph 8 – damage sighted to concrete loading dock, appeared to be hit by vehicle rather than movement



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 10 of 20



Site Photograph 9 – downpipe penetration through fly tower cladding



Site Photograph 10 – downpipe penetration through fly tower cladding



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 11 of 20



Site Photograph 11 – several penetrations through fly tower cladding, including roof drainage



Site Photograph 12 – penetration through fly tower cladding

Whitehorse Centre Building Condition Report

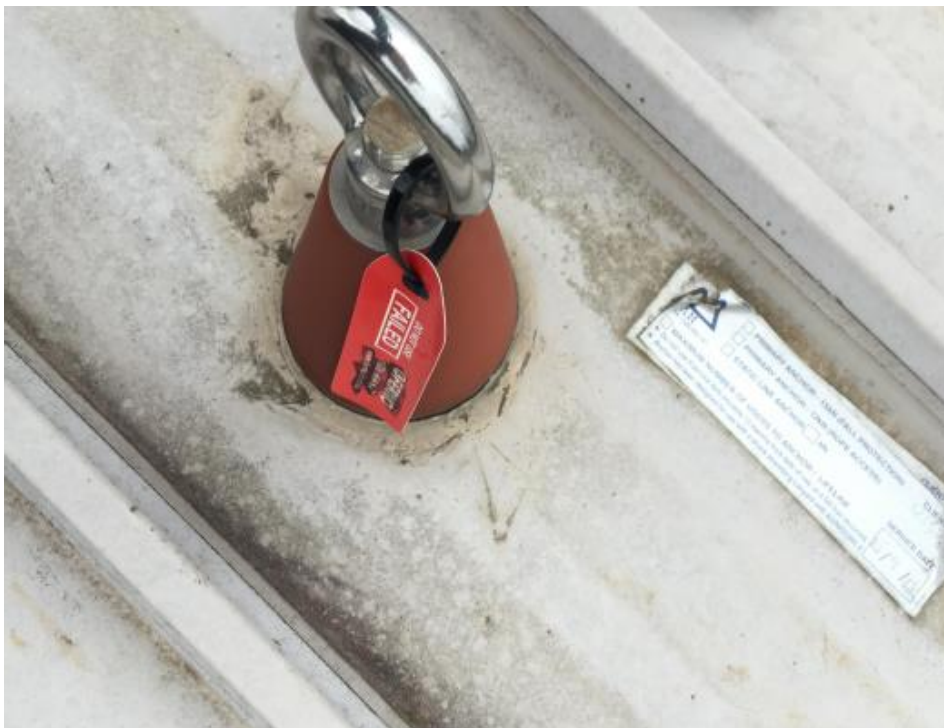
15KER400-PAN-S001

22 September 2015

page 12 of 20



Site Photograph 13 – main roof areas had a number of anchor points



Site Photograph 14 – majority of anchor points had been recently tested and tagged “failed”



Whitehorse Centre Building Condition Report

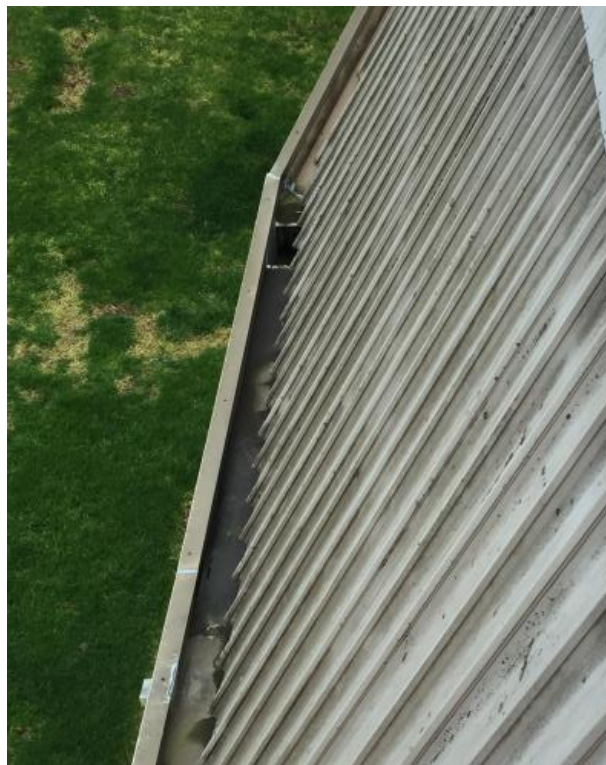
15KER400-PAN-S001

22 September 2015

page 13 of 20



Site Photograph 15 – majority of anchor points had been recently tested and tagged “failed”



Site Photograph 16 – gutters generally appeared well maintained on inspection



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 14 of 20



Site Photograph 17 – gutters generally appeared well maintained on inspection, appeared moisture has ponded on areas of roof sheet (mould build up)



Site Photograph 18 – mould build up sighted, possibly from water ponding on roof deck



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 15 of 20



Site Photograph 19 – mould build up sighted, possibly from water ponding on roof deck (DP spreader shown top left of photograph)



Site Photograph 20 – mould build up sighted, particularly around flashing elements



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 16 of 20



Site Photograph 21 – mould build up sighted, particularly around flashing elements



Site Photograph 22 – very slight fall in fly tower roof deck

Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 17 of 20



Site Photograph 23 – mould build up sighted, particularly around flashing elements



Site Photograph 24 – mould build up sighted, particularly around flashing elements



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 18 of 20

4 CONCLUSION & RECOMMENDATIONS

Following our inspection and observations as noted above we conclude that the existing structural condition is generally sound. There were elements of the building fabric including external cladding, roof sheet, gutters/downpipes which have shown wear these were generally non-structural.

The sites drainage infrastructure at the time of our inspection generally appeared in a well maintained state. To ensure that site stormwater drainage performs as intended we'd recommend that the drainage infrastructure is regularly maintained. This includes regular checking of all gutters, downpipes, overflows, pavements, kerbs and pits to ensure that all elements are able to operate at capacity (ie. without blockages).

The minor damage sighted external cladding could be easily replaced to ensure the internal elements are protected. At a minimum we'd recommend that these damaged elements are sufficiently sealed to ensure internal elements including structure and lining are not compromised (refer site photographs 1 & 4 above).


The external flexible pavements (asphalt) have generally performed well and are in a sound condition. The grading of all pavements generally has been sufficient to allow for stormwater runoff external of the building perimeter. There are areas of external concrete pavements which have cracked through slabs which suggest ground movement. The settlement between the concrete pavement and building as shown in *site photograph 7* suggest that the settlement is locally only and has not affected performance of the structural footings.

The roof sheet throughout appeared to have deteriorated over time. We note the following items regarding the roof sheet:

- Showed general deterioration following years of exposure to weather elements
- A number of penetrations through the roof sheet and 'retrofit' flashing attempts
- Generally appeared to be near the end of service life

In addition to the above the roof fall was very flat in some areas (approximately 1 degree fall in main roof). This would not assist roof drainage to the main roof and our assumption for water ponding due to the presence of mould on the roof sheet.

The lack in roof fall/slope in addition to the number of flashing attempts to the roof and cladding may contribute to minor leaks which we understand to have occurred to the centre over a number of years. We note that each penetration creates a new opportunity to allow for water ingress, and possible leaks. While we note at this stage there is little structural concern from these leaks that the centre users may be affected and therefore regular maintenance/replacement of sealants may be required.



Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 19 of 20

In addition to the roof penetrations a number of penetrations were sighted in the external cladding, particularly in the fly tower. As shown in *site photograph 10* these appeared to be retrofit and not part of the original building works, with varying degrees of sealant/waterproofing applied.

During our inspection we utilised a harness provided by the Whitehorse Centre operational staff. The harness was used to gain access to the large roof areas as there were a number of anchor points located throughout. On inspection it was observed that the anchor points had recently been inspected with a number (>50%) of them failing testing. We'd recommend that these are addressed by a certified installer so that the roof elements can be maintained as noted above.

Following our review of the existing conditions we anticipate that the building condition can be maintained through regular general maintenance. We do not expect that major structural works will be required to the structural frame and or footings in the short term life of the building.

Do not hesitate to contact this office should you require further information.

Kind regards,



Ben Leske
Project Engineer



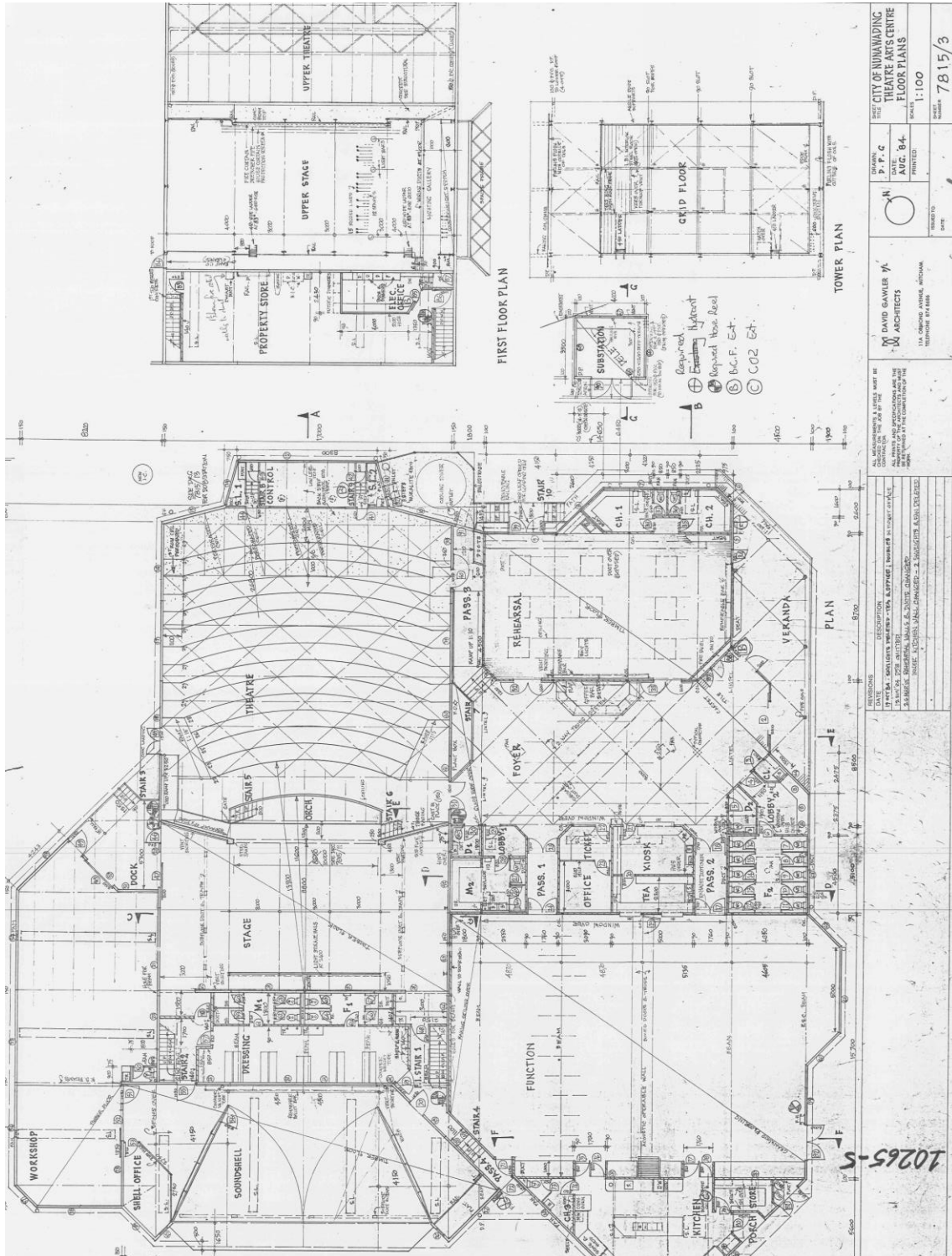
Whitehorse Centre Building Condition Report

15KER400-PAN-S001

22 September 2015

page 20 of 20

5 APPENDIX



Appendix 1 – Arts Centre, Architectural Floor Plan