ECLIPSE | CONSULTING ENGINEERS

Site Inspection Report

Copy:

From:	Stephen Healey	Date:	23 December 2021	Pages:	**8**	Ref.:	10345-001-sir

Project: **Existing Building Review**
416 High Street Maitland
Preliminary Site Inspection

Date of Inspection	▪ Wednesday 24 November, 2021
Inspection Carried Out By	▪ Stephen Healey
Areas of Project Inspected	▪ Internal & external ground floor review
Reference Documentation	▪ Maitland City Council: Notice of Determination DA2019/739, dated 28 Oct 2019 ▪ Codewise Certifiers: Review of Proposed Subdivision for Affects of BCA Compliance, dated 28 July 2019 ▪ Approved Fire Gear: Fire Safety Survey, dated 11 August 2019 ▪ Insite Town Planning: Statement of Environmental Effects, dated 30 Nov 2016 (4 Pages) ▪ Thomas & Associates Consulting Pty Ltd: Structural Advice - Common Wall Fire Rating dated 16 Augusts 2019

1. Background

An inspection was carried out of the external area of the existing building as well as the internal ground floor space. A fire had occurred in the building with damage noted mainly along the central area of the southern wall. There was no access to the upper levels due to the fire damage.

An aerial view of the subject site is shown in Figure 1, below.

Figure 1 - Aerial View of the Site - Subject Building Highlighted in Blue (NearMap 15 Dec 2021)

ECLIPSE Consulting Engineers Pty Ltd
305/12 Century Cct,
Norwest Central,
NORWEST NSW 2153

Phone : (02) 9894 8500
info@eclipseconsulting.com.au
www.eclipseconsulting.com.au

A general external view of the northern elevation is shown in Figure 2, below.

Figure 2 – External View of the Existing Building (Northern Elevation)

The existing building has a rectangular floor plan with an overall area of approximately 145 m2. There are three (3) storeys with each of the floor levels constructed with timber framing.

As can be from Figure 2 above and Figure 3 below, some external steel framing members & internal tension rods have been installed previously to strengthen or stabilise the building. No further details of these rectification works were available at the time of the inspection.

Figure 3 below, shows the external eastern elevation of the building with an external steel bracing member visible on the left hand side of the building (southern side). Figure 4 shows the external southern elevation of the building.

Anchor plates with tension rods are clearly visible just below the roof line. It is not clear if this rectification / strengthening works were carried out at the same time.

Figure 5 below shows a typical internal view from ground level. Some of the original timber support columns have been removed and some hive been replaced by circular steel columns. It is not clear if engineering advice was sought about the column removal but based on the member sizes & spans this would seem unlikely. The column removal may also have occurred because of the fire within the building.

A survey plan of the building was prepared by Earth Surveying which indicates the current position of the building. An extract of this survey is shown in Figure 6 below.

Significant bowing of the walls, out-of-plumb of the walls and out-of-square of the building was identified by the survey. Out of vertical of over 140 mm and out of square of over 130 mm was reported.

Figure 3 – External View of the Existing Building (Eastern Elevation)

Figure 4 – External View of the Existing Building (Southern Elevation)

Figure 5 – Internal View of the Existing Building (Looking South West)

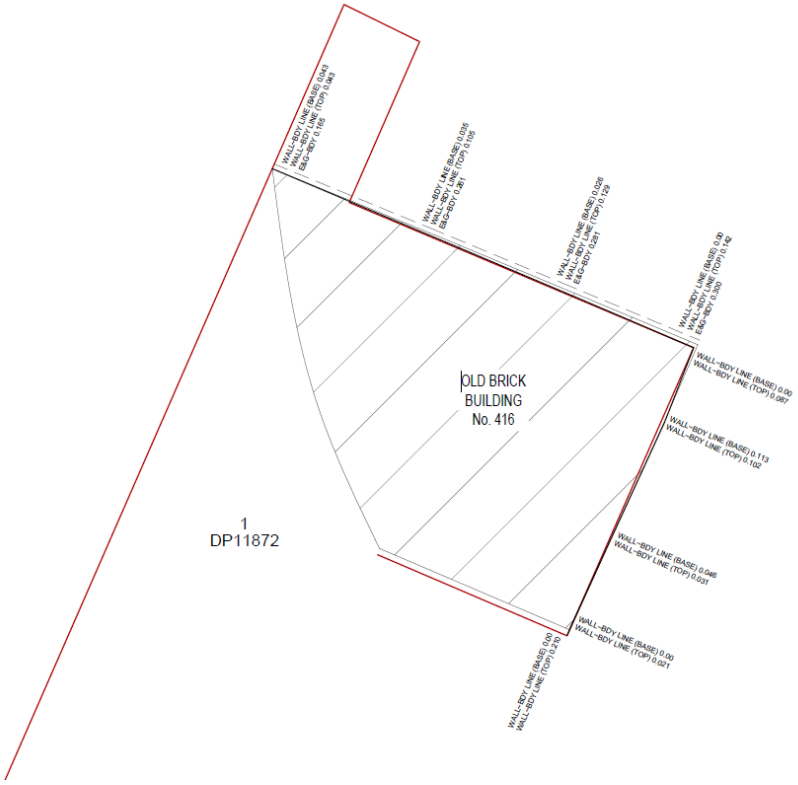

Figure 6 – Extract from the Building Position Survey

Figure 7 – Internal View of the Fire Damage to the first Floor Timber Framing

Figure 8 – Internal View of the Fire Damage & Rotted Timber Lintel

Figure 9 – Internal View of the Fire Damage to the First & Second Floor Timber Framing

Figures 7, 8 & 9 above show the typical fire damage to the internal area of the building. The fire destroyed part of the ground floor level at the existing stair opening, with damage to the second floor level also clearly visible from the ground floor level.

Figures 10 & 11 below show significant defects in the northern masonry wall, including partially collapsed masonry, very significant masonry cracking and rotated & deformed lintels.

Figure 10 – External View of the Partially Collapsed North Wall

Figure 11 – External View of the Distorted Lintels & Cracked North Wall

2. Building Condition Review

Overall, the building was found to be in a very poor condition. The following defects were noted:

- General settlement of the sandstone footings supporting the masonry walls was visible around the perimeter of the building.
- Cracking of the brickwork external wall was visible from both inside & outside the building to all four walls.
- Dislodged brickwork was seen on both the northern and southern elevations.
- All walls were visibly out of vertical on all four faces.
- Bowing was evident in the northern and eastern walls.
- Significant cracking was evident in the northern & southern walls.
- Dislodged and rotated sandstone lintels were visible on the northern elevation.
- Structural steel bracing members had been installed on the eastern end of the northern wall, the northern end of the eastern wall and just north of centre on the eastern wall.
- Internal bracing rods were found to be lying on the ground floor level & not connected to the plates or external structural steel bracing members.
- Several timber lintels were visibly deformed due to rot or fire damage.
- Deflection in the floor joists to the first floor was visible.
- The ground floor level slab was missing or partially demolished in several areas, generally uneven and of poor quality.

The condition of the second floor framing & roof structure could not be determined at the time of the inspection. The condition of the building & access limitations since the fire (internal stairs had been removed) meant that access above the ground floor level was not possible.

3. Recommendations

Overall, the building was found to be in an extremely dilapidated and structurally compromised condition. The building should be barricaded off at this time ensure that unauthorised personnel are not able to enter the building. It was noted that door locks were in use and effective at the time of the inspection.

The building does pose a high degree of personnel risk to people entering the building and a moderate degree of personnel risk to people outside the building, mainly due to falling debris.

Whilst rectification of any building is possible, this building was found to be in such poor condition that rectification works would be extremely complicated and complex.

It is most likely that the foundation level and up would need removal & reinstatement to adequately stabilise the building. This work would be extremely difficult without the demolition & subsequent reinstatement of the existing building. The costs of the rectification and reinstatement works would be very high and not economically viable for either commercial or residential developments.

Hence, it would be recommended that, due to the very poor condition of this building, demolition & reinstatement using new materials would be the only viable option.

I trust that this clarifies the situation. Please feel free to contact me if you require any additional information at this stage.

Yours faithfully,
ECLIPSE Consulting Engineers Pty Ltd

Stephen Healey
BE(Hons) MIEAust CPEng
PRINCIPAL