Appendix O

Murray Withers RataGroup Email: murray@ratagroup.co.nz

Subject: 265 Riccarton Road – Antonio Hall building – Post-fire structural inspection Project Number: 210611

Dear Murray,

Miyamoto were engaged to inspect the building at 265 Riccarton Road, Christchurch also known as Antonio Hall building to determine the extent of structural damage caused by a recent fire that occurred in the west wing of the building. Alejandro Amaris Associate Structural Engineer of Miyamoto carried out an inspection of the building on Tuesday 21 December 2021.

The building has three sections and was built in three stages: The west wing is the original building and was used at that time as homestead which was built circa 1910; the middle section was built circa 1950 which contain a wedding chapel and the east wing post 1960s. In 1996 the building was registered as a Category II historic place by the New Zealand Historic Places Trust.



Figure 1- Aerial photo at 265 Riccarton Rd

Miyamoto understands that there was damage in an earlier fire back in 2019 which affected the

middle section with a wedding chapel and part of the east wing (see Figure 2).



Figure 2- Aerial photo at 265 Riccarton Rd

Our scope of works is limited to assessment of the original west wing, for which we have been requested to comment on the structural stability of the building follow a recent (second) fire event in November 2021.

The west wing building consists of a two-storey building, L-shape in plan, with the primary structure being double skin brick cavity walls. From the site inspection it is evident that the fire has affected the following elements:

- The fire has burnt through the roof rafters and metal sheeting causing collapse, leaving no roof structure.
- The timber floor joists and flooring of the first floor has been burnt through causing collapse, leaving no first floor.
- The ground floor structure and subfloor was covered in debris from the fire and could not be assessed.

Miyamoto observed the following items that pose an immediate risk to the public and/or to any person in the building in particularly if someone is to access the fire affected areas: 2.

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been significantly damaged and has collapsed as a result of the most recent fire. The The majority of wooden structure (roof and first floor flooring) had been significantly damaged and has collapsed as a result of the most recent fire. The existing unreinforced brick walls are currently cantilevered from ground level, with very low out-of-plane capacity under seismic or wind loading. Out of plane collapse presents a risk to anyone within 8m of the building footprint during an earthquake or a moderate wind event. Loose roof linings and building services (ducting) are compromised and at risk of falling or becoming airborne in a moderate wind event.

- 3. Debris on the ground which poses a trip hazard, with timber and exposed nails that present a risk of injury to anyone that accesses the area of debris.
- 4. Remaining burnt out timber elements risk collapse if disturbed.
- 5. The damage to the ground floor structure is unknown and may also present a risk of collapse and entrapment.
- 6. The remaining brick walls have the following damage:
 - Partial collapse of brickwork from loss of lateral support due to collapse of roof and first floor.
 - o Spalling to several areas of brickwork from heat effects of the fire
 - Substantial cracking from earthquake in 'hourglass' formation consistent with inplane shear failure.

Miyamoto recommend the following be carried out as soon as practicable for the west wing (old homestead) of the complex:

- 1. Prevent access to the damaged area of the building by installation of suitable hoarding and/or fencing at least 8m away from the perimeter of the building.
- 2. Remove loose roof linings, building services, etc, where safe to do so.
- 3. Demolish the fire affected internal partition walls and clean up debris from the ground floor.

The following has been considered in relation to the remaining brickwork elements of the west wing:

- The combination of fire and earthquake damage has resulted in widescale damage that would at least require a substantial proportion of replacement and there are limited areas of the brickwork that are now salvageable.
- 2. The condition of the brick ties within the cavity of the double brick walls are unknown, but it is likely that there is at least some deterioration to the ties that has compromised the structure of these walls.
- 3. The instability of the brickwork from the lack of lateral support and the damage noted above would present a significant hazard to any workers that access the site. Hence the safe installation of temporary bracing or strong-backs used to retain the brick walls is unlikely to be practicable.

For the reasons noted above, it is recommended that the remaining elements of the west wing is demolished and the materials that are at risk of becoming airborne (e.g. sheet roofing or lightweight fibres) be secured or disposed of.

Should any further information be required, or any additional damage is identified, please contact the undersigned.

Yours sincerely,

Reviewed by:

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SITE VISIT PHOTOS











