

13 December 2024

Kent Cook  
Citify Group

Kent,

## **RE: Buckingham Arms Hotel – Post-Fire Event Structural Assessment**

### **Executive Summary**

Based on a visual assessment and preliminary structural analysis conducted by Matter Consulting, we conclude that the existing building structure proposed for retention as part of the new development is structurally stable, with no modifications required to the current planning documents from a structural integrity perspective.

Within Zone 2, roof rafters damaged by the fire are identified for complete replacement as part of the proposed refurbishment works, which we understand are already included in the current planning application.

Additionally, one steel lintel beam within Zone 2, affected by the fire, is proposed to be replaced and strengthened during refurbishment. However, the existing beam and surrounding walls remain self-stable and structurally unaffected by the fire.

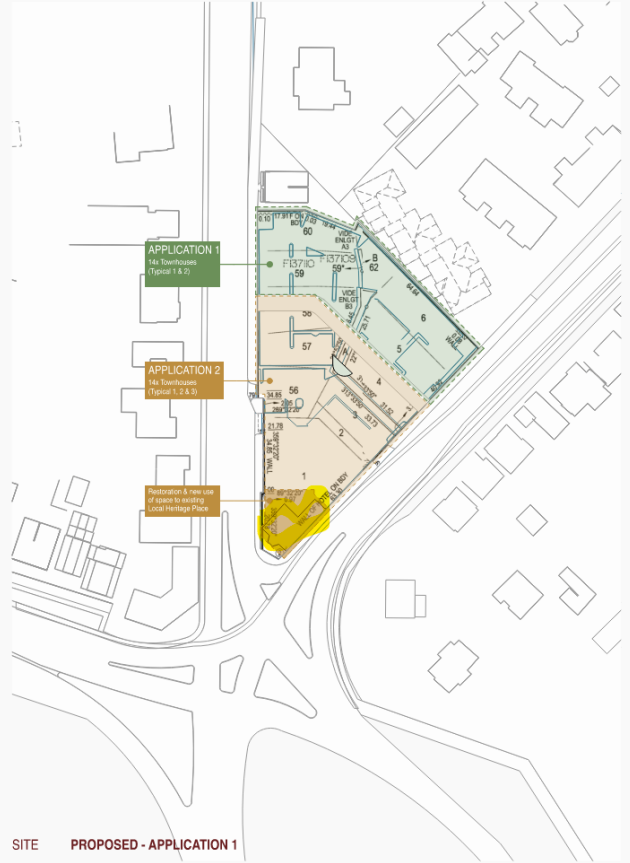
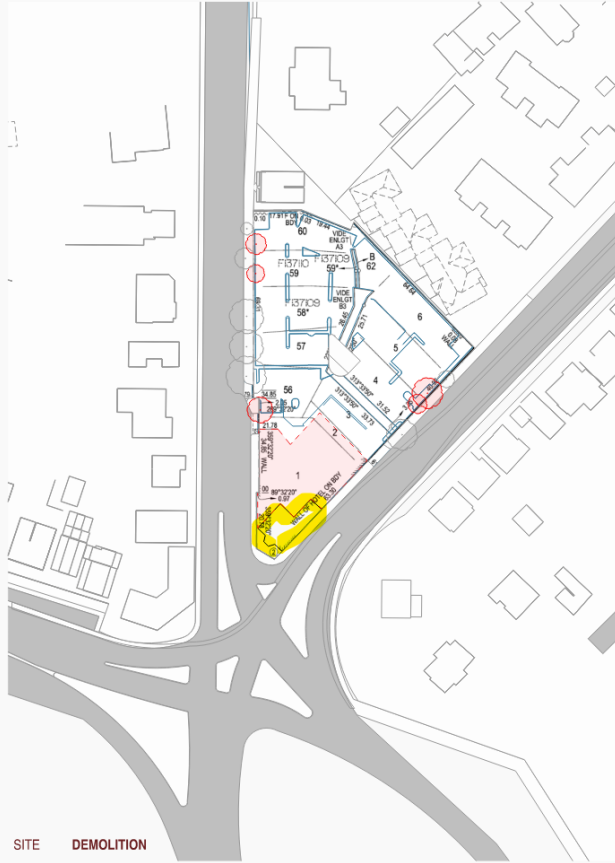
Additional detailed structural analysis and design will be required before construction to confirm the sizes and specifications of rafters and steel beam framing, as outlined in the recommendations.

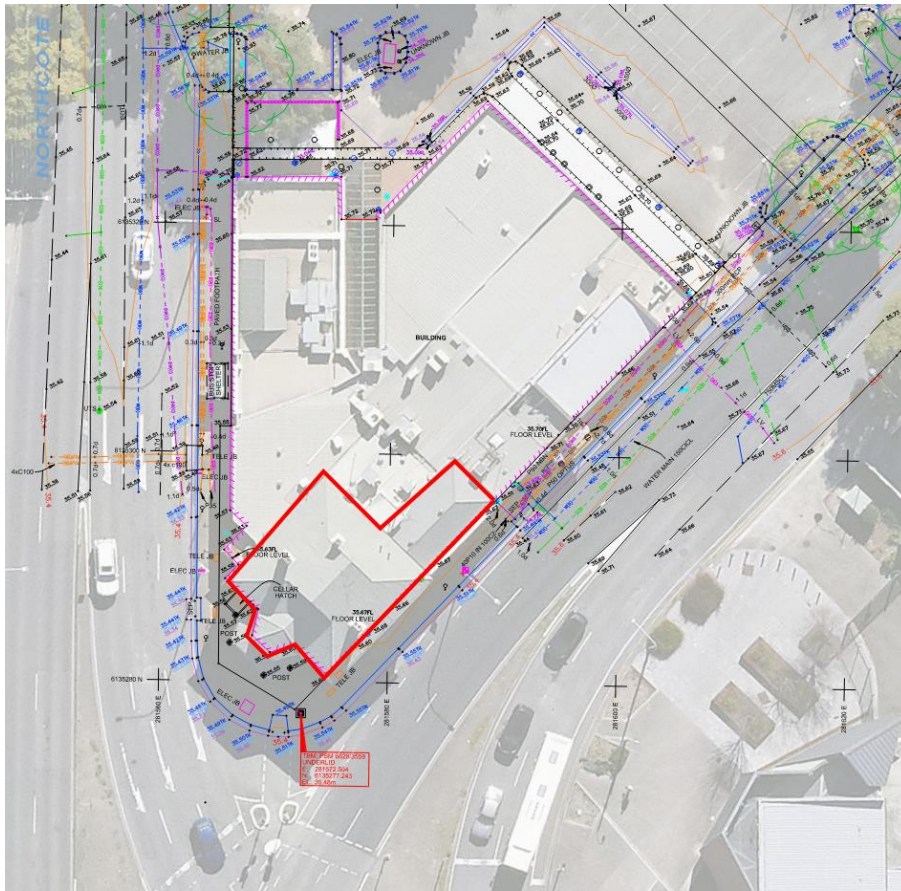
### **Introduction**

Wahid Elgohary of this office carried out a visual, non-intrusive inspection of the two-story structure at the Buckingham Arms Hotel, Walkerville, on 28 November 2024. This inspection was conducted at the request of Citify Group to assess the current condition of the building following the recent fire incident.

The inspection and assessment detailed in this report pertain to the existing building structure and the sections proposed for retention and refurbishment as part of the current planning application.

These sections are outlined in the following pages and divided into Zones 1 and 2 to present the condition and corresponding recommendations.





## Scope of Work

The scope of work relating to the appraisal of this structure is as follows:

- Review of drawings provided by Stallard Meek Flightpath Architect where relevant to the proposed retained heritage building structure.
- Site visit to visually assess the existing structure described above.
- Carry out structural analysis and provide a structural assessment on impacted areas
- Provide recommendations for remedial works as required

## General Building Description

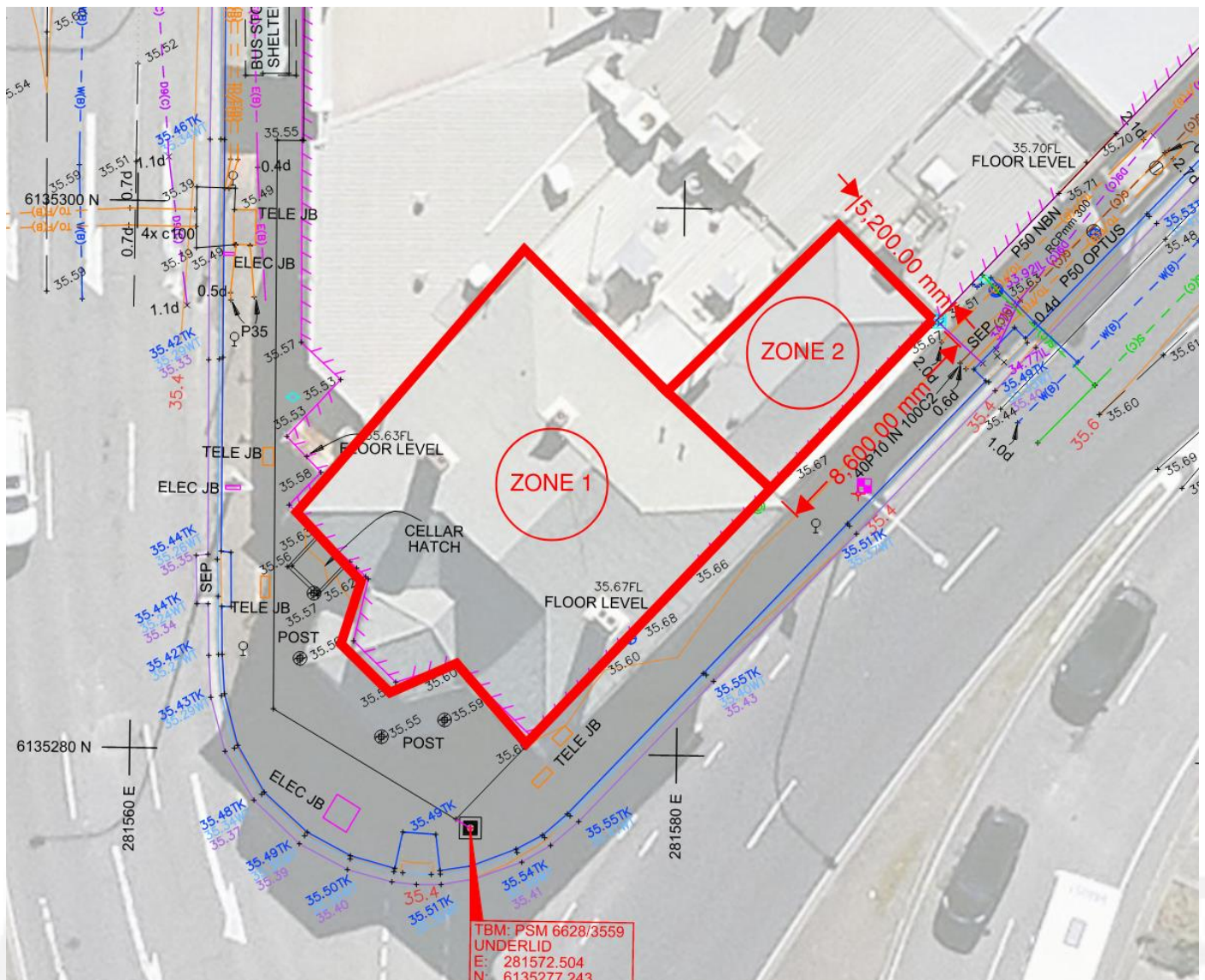
Based on visual observations from our site visit, the existing building structure appear to be of the following construction:

- Concrete ground floor slab.
- Solid masonry perimeter walls with 3 layers of interlocking brick.
- Concrete suspended first floor supported on steel beams and columns.
- Timber truss roof structure supporting timber purlins and tin roofing.

## Observations

The following observations were made during the inspection of the building structure.

- The fire event did not impact the great majority of the heritage-listed building footprint that is proposed to be retained (zone 1)
- The fire event did affect the area below (zone 2) as following;
  - o Tin roofing is damaged/burned and requires replacement
  - o Roof timber purlins are damaged/burned and required replacement
  - o Perimeter masonry walls are unaffected with only minor charring of the plaster finish
  - o Steel lintel beam supporting level 1 façade wall is likely to be impacted by the heat generated during the fire event although remains intact.

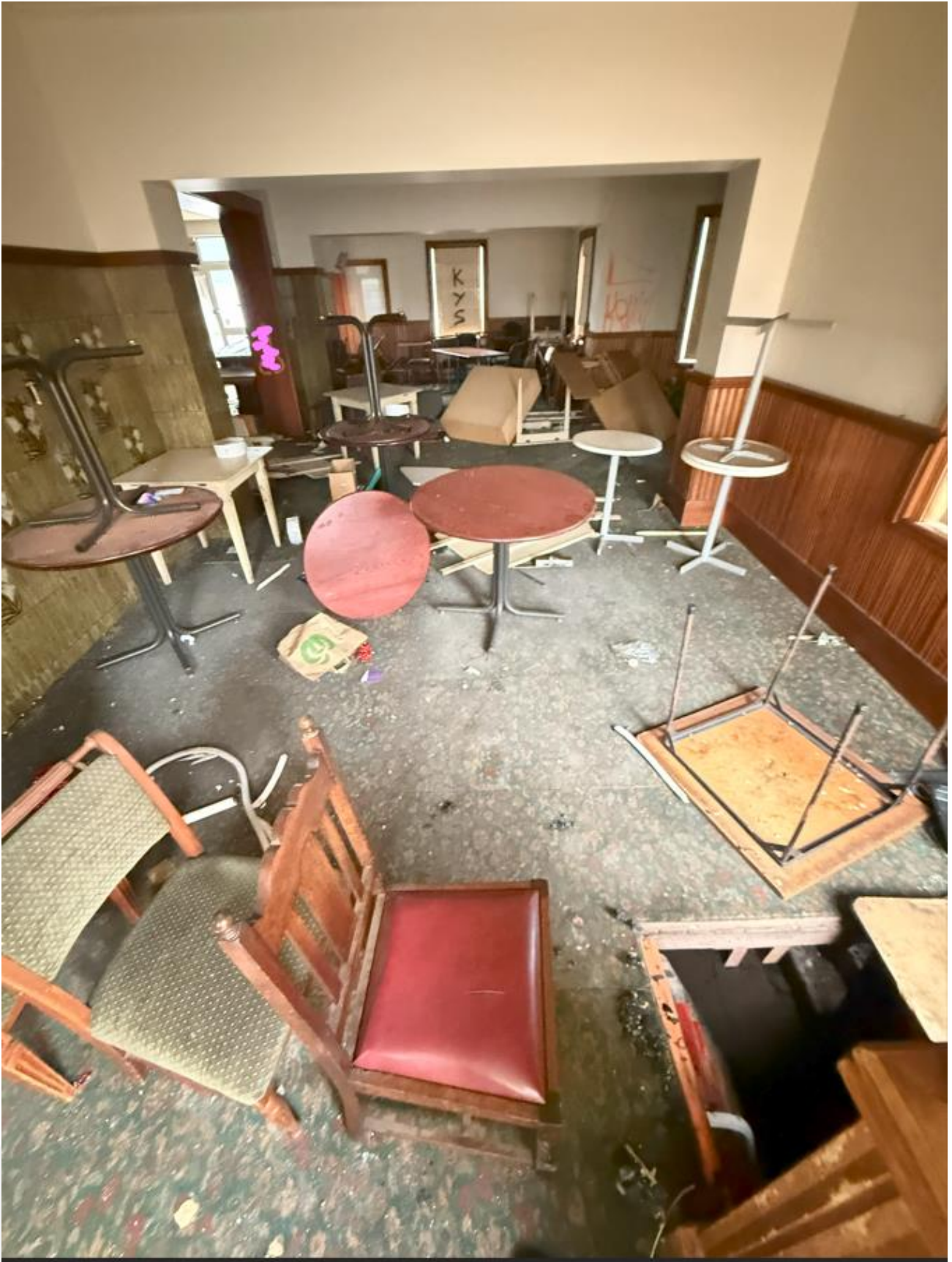


Condition of Zone 1 – Unaffected areas











Existing basement cellar in zone 1 unaffected by the fire event as well.





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Condition of Building Segment to be retained – Zone 2

Ceiling and insulation has collapsed inwards, with roof rafters fully burned and charred







Walls remain intact and unaffected by the fire. Plaster render has delaminated due to the heat generated, but no visual signs of charring or burn onto the existing and proposed to be retained walls.









Steel beam remains intact with limited deformations or deflections, however adjoining timber rafters have charred and signs of heat/burn is visible on plaster and adjacent brick.

Hence, the steel beam is stable in its current condition however the ductility is assumed to have been affected by the heat generated during the fire event.





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## Recommendations

Based on our observations and experience, we provide the following comments

- A. In relation to the affected zone 2 area within the building segment that is proposed to be retained;
- Metal tin roof and supporting timber rafters to be fully replaced
  - Steel beam to be replaced with a new steel beam and column frame.
  - Existing walls within affected area interlock on all corners to form a self-stable and integral structure in current condition and do not require to be demolished.

Note: The existing walls have been assessed based on 8.6m long x 5.2m wide construction, with minimum 220 thick interlocking solid brick construction and 3.5m clear height interlocking at all corners to form a box self-stabilizing structure as witnessed on site.

- B. In relation to the unaffected zone 1 area within the building segment that is proposed to be retained;
- No further action is required structurally, this area forming the majority of the heritage building to be retained remains unaffected by the fire event.

## Qualifications

The following qualifications apply to this report:

- Our inspection was limited to areas that were accessible and visible for assessment. No opening up or detailed investigative works were undertaken. As such, some parts of the structure were not able to be examined.
- No testing of material samples was carried out.
- This report has been prepared for the sole use of planning application only and shall not be distributed to other parties without our written consent.
- Further detailed structural analysis and design is required at a later date prior to construction to confirm rafters and steel beam framing sizes and details required as per recommendations above.

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We trust this satisfies your current requirements. Should you have any queries or wish to discuss, please do not hesitate to contact the undersigned.

Regards,



**Wahid Elgohary**

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