**Observation**

Inspection was undertaken at the subject property in the presence of the Insured to which the following vehicle impact damage was noted:

1. We noted the brick wall about rear of the subject garage has been completely damaged as a result of direct vehicle impact. **Images 2-9**
2. The subject brick wall appeared to be single brick with engaged piers measured approximately 1200mm spacing.
3. We noted the brick wall is extended from footing approximately 700mm below garage finished floor level up to the roof eave gutter.
4. In addition, we noted the garage roof is timber truss frame system supported off timber transfer beam about the rear area.
5. We noted the timber transfer beam is supported off brick engaged piers at both ends. **Image 11**
6. At the time of our inspection, we did not note any sign of structural deflection and distress within timber roof frame and transfer beam to indicate structural integrity of the roof framing system has been compromised due to the vehicle impact. As such, in our opinion, the timber roof frame structure can remain in place. **Images 10-11**
7. It appears that the top chord of the truss roof has spanned over the abovementioned brick wall about the rear of the garage to support fascia board without any physical fixing into the wall. **Images 10-13.**
8. In saying that, the subject brick wall along the rear of the garage is working as cantilevered or freestanding wall without any lateral support and restrain on top.
9. Further to the above, we noted localised damage within the edge of the concrete slab along the north-eastern alignment of the garage, requiring patch and repair.
10. We also noted the downpipe about the rear of garage has shifted as a result of the vehicle impact. **Image 6**
11. We noted damage within external brick wall about the north-western corner of the garage consistent with vehicle impact damage. **Image 7.**

## Review of the Structural Compliance of the Garage Wall about Rear Alignment

1. As mentioned above, the brick wall in question is unreinforced single brick wall with engaged piers at approximate 1200mm centers spacing with total high of approximate 2700mm.
2. We refer to *AS4773.1:2015 – Masonry in Small Buildings, table 9.2,* we noted external unreinforced single leaf brick wall with engaged piers to have minimum 600mm pier spacing to be deemed to satisfy the standard’s requirements.

Table

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Figure 2- Excerpt Pier Spacing Requirement within *AS4773.1:2015*

1. However, we noted the engaged pier spacing of the subject brick wall about the rear of the garage is 1200mm.
2. As such, we confirm the single leaf brick wall with engaged piers about the rear of the garage is not in compliance with the requirements of *AS4773.1:2015.*
3. In saying that, the damaged brick wall about the rear of the garage is to be replaced using 230mm double brick wall
4. A timber top plate of 90x45mm is to be installed on top of the brick wall using metal strap, in which top chord of the roof frame can fix into using triple L grip.

**Discussion**

NA

**Conclusion**

We confirm damages specified within the report is consistent with the vehicle impact damage.

At the time of our inspection, we did not note any sign of structural deflection and distress within timber roof frame and transfer beam to indicate structural integrity of the roof framing system has been compromised due to the vehicle impact.

As such, in our opinion, the timber roof frame structure can remain in place.

In addition, we confirm the single leaf brick wall with engaged piers about the rear of the garage is not in compliance with the requirements of *AS4773.1:2015.*

Subject to the above, we provide the following construction methodology in facilitating reinstatement of the damaged brick wall:

1. Install adequate propping to support the timber roof frame prior to any demolition and reinstatement of the brick wall.
2. Patch existing concrete slab using Sika MonoTop -412 NFG in accordance with Sika specifications.
3. Allow seven (7) days after the application of Sika Monotop-412 NFG prior to construction of the brick wall about rear of the garage.
4. The subject damaged brick wall at rear of the garage is to be replaced with 230mm thick double brick wall inclusive of “toothing” provision to allow new brickwork to key into the existing brickwork inclusive of ties (heavy-duty wall ties at every three (3) courses) and flashings in accordance with *AS 4773.2-2010 – Masonry in Small Buildings – Construction.*
5. Install 90x45 MGP10 top plate is to be placed over the subject brick wall and tied down with metal strap at 900mm centres in to the wall.
6. Top chord of the existing truss roof frame is to be fixed to the timber top plate using one (1) triple-L-grip in accordance with AS1684.2.
7. We have provided schematic floor plan and typical section detail of the above within **Appendix A**.