

8<sup>th</sup> February 2018

Ces & Isabel Koutsos

By e-mail: [cesandisabel@mac.com](mailto:cesandisabel@mac.com)

**Re: Inspection and assessment of existing structure  
at 11 VICTORIA PARADE, MANLY  
Job N° 170768**

At the request of Mr Ces Koutsos, Stewart McGeady of Northern Beaches Consulting Engineers inspected the above property in July 2017. The purpose of the visit was to examine and comment on the condition of the existing heritage façade and attached structures in relation to the proposed new development detailed on architectural drawings prepared by Blackmore Design Group dated 15 June 2015.

During our inspection, photographs were taken. They have been attached to this report as Appendix A.

## **Outcome**

The purpose of this report is to consider demolition and reconstruction of the heritage structure as part of the new building verses preservation of the heritage structure during construction of the new building.

Preservation of the existing heritage structure will result in considerable weakening of the existing fabric and potential collapse during or after construction.

Reconstruction of the heritage structure will enable preservation of key heritage elements and reconstruction in a way that will reinstate and preserve the heritage value of the building.

## **Shoring**

The proposed new development involves site excavation of depths exceeding 4m and consequentially a shoring wall is required to retain the site boundaries and adjacent existing structures.

The shoring wall is to be constructed with contiguous or secant piles in accordance with the geotechnical engineer's recommendations. The piles will be drilled with a grout injection technique known as CFA piling. The shoring wall will be braced by a capping beam constructed at ground level with diagonal and horizontal internal strutting beams.

## Issues with existing footings and structure

The footings to the heritage structure of 11 Victoria Pde comprise of weak sandstone block style footings at ground level. The stability of the existing structure will be compromised from the demolition to the rear of the building as part of the new development.

Installation of the shoring piles and capping beam with piling rigs and excavators working adjacent to the existing sandstone block footings will disturb the foundation that supports them leading to instability. Because the existing fabric of the heritage building is so frail, the collective result of the disturbance to the footings and the reduced stability of the heritage structure can potentially cause partial collapse of the structure once excavation proceeds and the shoring wall begins to take on and sustain lateral load.

## General description of heritage structure

The structure consists of a two storey office building constructed of full brick masonry on sandstone block footings with timber framed floors and a conventionally framed tiled roof. The estimated age of the structure is in the vicinity of 100 years. The front of the building is characterized by rendered brickwork walls with two precast concrete columns and corbels supporting a first floor balcony edge that is finished in a patterned Stucco render.

## Summary of observations, salvage and reuse of existing façade elements

Upon inspection of the property the following issues have been observed:

### Ground floor

1. The lower brickwork wall that supports the front façade brickwork, concrete columns and corbels exhibits cracking that indicates footing movement has occurred. Refer photograph 1. The existing concrete columns and corbels can be salvaged and reinstated to match the original style.
2. Cracking and separation to the brickwork at the concrete corbels has resulted from the same footing movement as noted in item 1. Refer photograph 2. A crack stitch repair is a not long term practical solution and continual differential movement will occur.
3. The perimeter concrete beams to the front balcony exhibit spalling and corroded lintel bars. Refer photograph 3. The extent of spalling has progressed beyond the limit of practical remedial repair.

4. The front entry steel screen doors can be salvaged, treated for rust and reinstated to match the original style. The glazing and entry doors to the bay windows could be surface treated and reinstated to match the original style. Refer photograph 4.
5. Asbestos ceiling lining to the front entry porch is visible and it should be removed. Refer photograph 5.
6. The front entry porch slab is out of level and the slab has settled in the southern corner. Water staining on the tile bed shows ponding occurs at this location. Refer photograph 6. The slab is considered defective due to settlement.
7. The original lime mortar bed joints to the façade brickwork exhibit a 'tuck pointing' style finish. Lime mortar lacks bonding strength as distinct from cement mortar which is bound by cement. Consequentially most of the lime mortar has turned to sand and lost all bearing capacity. The longevity of the brick walls would benefit if it is reconstructed with cement mortar joints then tuck pointed to match the original style. Refer photograph 7.
8. Along the sides of the building rising damp is visible above the footing and the applied render and paint is fretting away. Refer photograph 7. There is no practical long-term remedial solution where rising damp and fretting will continue.

## First floor

9. In the front room of level 1, ceiling damage and sagging is visible indicating the ceiling has detached from the structure. Refer photograph 8.
10. Asbestos ceiling lining to the front first floor balcony is visible and it should be removed. Refer photograph 9.
11. Fretting to the facade brickwork on both the sides of the building was observed indicating that salt ingress into the bricks and mortar beds has occurred thereby leading mechanical fretting. Refer photographs 10 and 11. There is no long-term solution due to the original weaker lime mortar bedding.
12. The floor boards to the front first floor balcony have buckled vertically from moisture absorption and expansion. Refer photograph 12.
13. No drainage is available for storm water run-off to the balcony thereby leading to water damage to concealed structure beneath.
14. The brickwork balustrade to the balcony has separated from the façade and lacks the lateral restraint required to comply with Australian Standards. Refer photograph 13.
15. The bay window fenestration to the masonry built part of the building can be salvaged, surface treated and reinstated to keep the original style. The entire north-eastern overhanging timber framed section to the first floor is rotten beyond repair however the frosted glass windows could be salvaged and reinstated. Refer photographs 14 and 15.
16. There is a moderate degree of timber rot due to weathering to the north-eastern external window frames and they are considered beyond the limit of practical repair. Refer photograph 16.

17. Lintels on the south-western façade have corroded and show signs of previous patch repair work. Ongoing spalling and deterioration is evident. Refer photograph 17.

## Roof

18. A timber post which supports the balcony roof framing exhibits rot which has caused it to swell and distort and requires replacement. Refer photograph 18.
19. The eaves gutter along the south-western side of the building has detached from the roof and the eaves are lined with asbestos that must be removed. Refer photograph 19. The eaves gutters have detached and need to be replaced.
20. The underside of the roof tiles exhibit efflorescence from salt ingress as there is no glazing to the underside of the tile. The outer glaze has also deteriorated thereby allowing water ingress and efflorescence observed. This consequentially causes an inability to resist salt ingress and disintegration of the tiles. Refer photograph 20. The roof tiles will begin to fret and break away.
21. Oregon rafters exposed to water ingress will have rotted and require replacement. Oregon has poor durability when exposed to moisture.

## Recommendations and conclusion

Defective structures requiring replacement as described in the body of this report;

1. Original stone footings to the front of the building and supported masonry façade lime mortar brickwork walls.
2. Front entry porch slab.
3. Perimeter front balcony concrete beams and lintel bars.
4. Asbestos ceiling linings to front entry porch and front balcony.
5. Front room of level 1 ceiling framing and lining.
6. Front balcony timber floor framing.
7. Front balcony brickwork balustrades.
8. North-eastern overhanging timber framed floor to the first floor.
9. North-eastern external window frames to the first floor.
10. South-western façade window lintels.
11. Timber posts supporting front roof.
12. Eaves gutters to the roof on the south-western side of the building.
13. Roof tiles to the building.

Structures / elements which can be preserved as described in the body of this report;

1. Front concrete columns and corbels.
2. Front entry porch screen doors.

3. Front balcony bay window fenestration.
4. North-eastern frosted glass windows.

Given the extent of elements requiring replacement and the stability and safety issues of retaining the existing building we recommend that to preserve the heritage significance of the building, it is re-built in exactly the same way over the new structure which is compliant with BCA and Australian Standards but re-using original fabric where possible.

Please contact the undersigned with any questions relating to the contents of this report.

Yours faithfully

**NORTHERN BEACHES CONSULTING ENGINEERS P/L**



**Stewart McGeady**

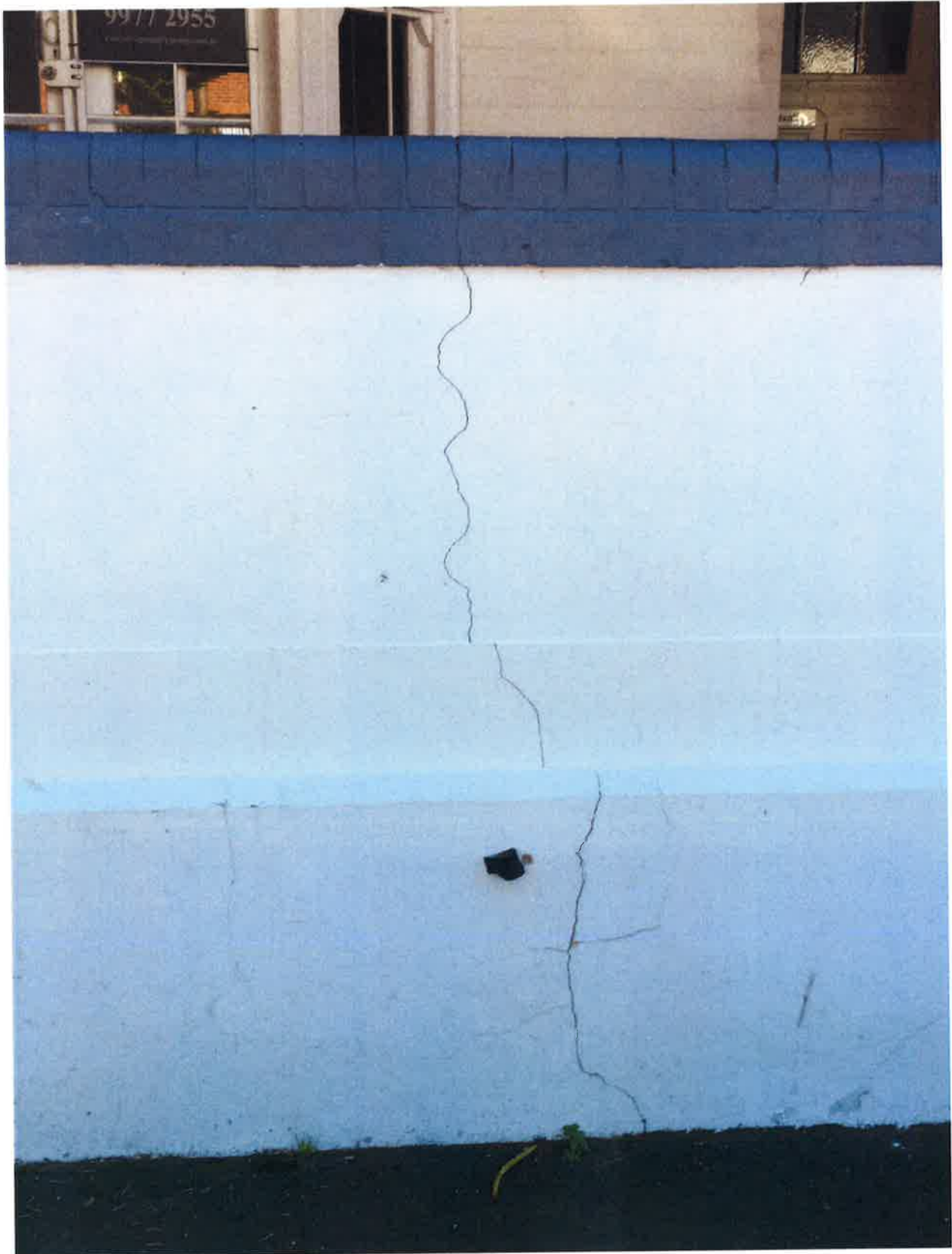
B.E. MIEAust Director

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## Appendix A: Photographs P01-P20





P01 – Cracking to lower brickwork supporting front façade brickwork, columns and corbels.



P02 – Separation to brickwork at corbels.





P03 – Spalling to beams and corroded lintel bars.



P04 – Front entry screen doors and bay window.



P05 – Asbestos ceiling lining to front entry.





P06 – Front entry porch slab out of level.



P07 – Tucking pointing to brickwork and rising damp above the footing.





P08 – Damage and sagging to the ceiling to the front first floor room.



P09 – Asbestos ceiling lining to front first floor balcony.



P10 – Fretting to façade brickwork.



P11 – Fretting to façade brickwork.





P12 – Buckling to first floor balcony floor boards.



P13 – Separation of first floor balcony balustrade from façade brickwork.





P14 – Bay window fenestration to brickwork constructed part of building.

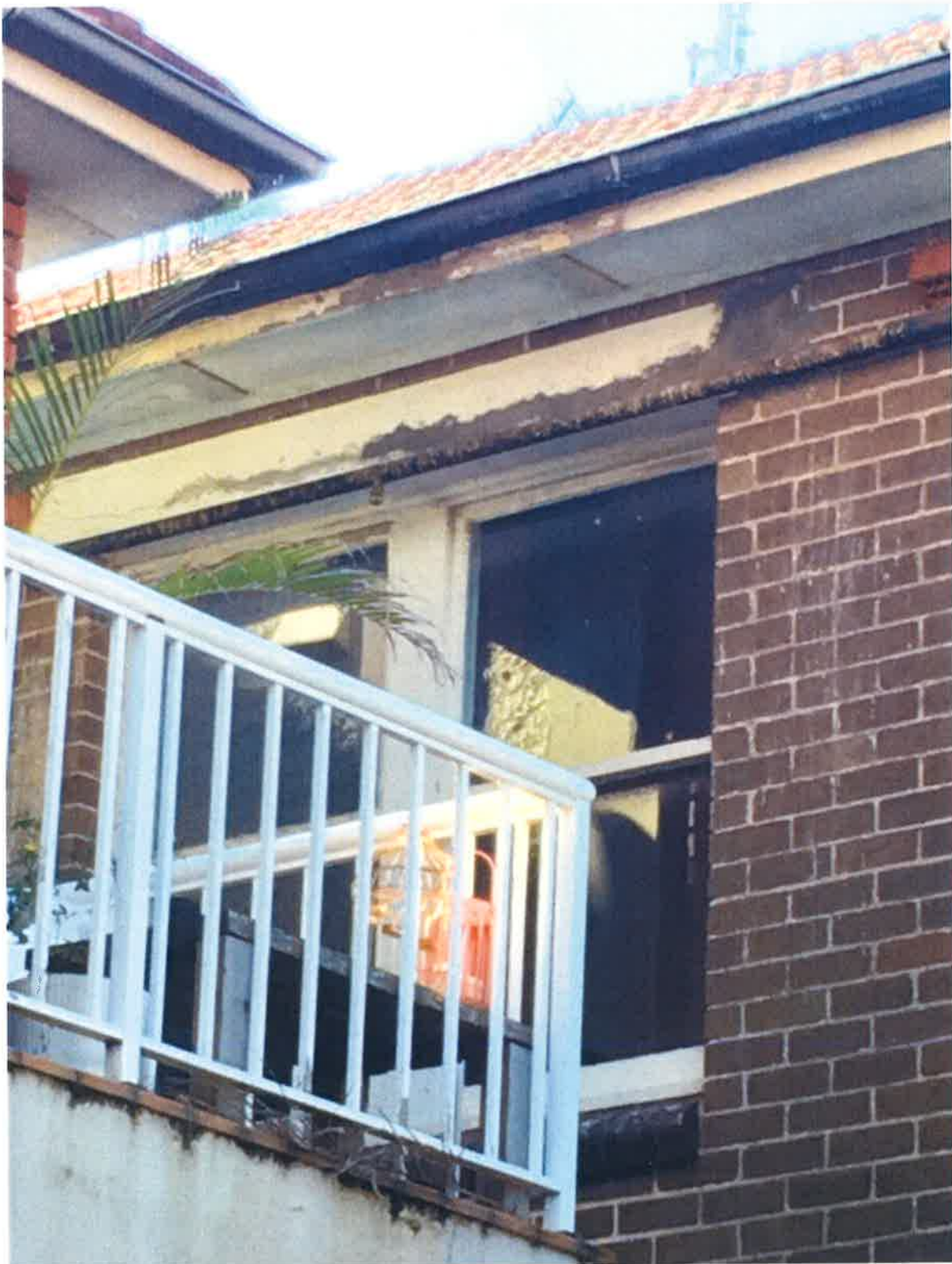


P15 - North-eastern overhanging section to the first floor.



P16 – Weathering and rot to the north-eastern external window frames.





P17 - Corroded lintels with patch repair on the south-western façade.



P18 - Timber post supporting the balcony roof exhibiting rot and is distorted.





P19 – Detached eaves gutter to south-western side of building and asbestos eaves lining.





P20 - Efflorescence to underside of roof tiles.