



## Professional Opinion

Regarding

## Restoration Viability

of

55 - 57 Nelson Place (Oriental Hotel)  
Williamstown Victoria

*Prepared for:*

The Save Williamstown Group

*Prepared by:*

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*Date:* 10 February 2014

*Inspection Dates:* 22 May 2013, 12 June 2013





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## 1. Introduction

### 1.1 Description

The Oriental Hotel also known as the Williamstown Tavern is an old derelict heritage building located on the corner of Ann St and Nelson Place Williamstown. The building is a three storey, double brick covered in stucco that has experienced extensive cracking and degeneration over the life of the building.

### 1.2 Site inspection and access to building

Two visual site inspections of the building were undertaken on the 22<sup>nd</sup> of May 2013 and 12<sup>th</sup> of June 2013. Due to safety concerns and also the fact that the building has been cordoned off and access has not been permitted, inspections were done from the street front only with no access obtained to inspect the internal structure.

### 1.3 Purpose of report

The purpose of this report is to provide a professional opinion on the viability of restoration of the existing Oriental hotel into a once again accessible commercial building and provide advice based on a visual external inspection on its safety and options for restoration.

The report will also provide comment on the recent ruling of the VCAT decision to allow demolition. We will also attempt to give other examples of where retention of facades have occurred whilst internal construction takes place.

### 1.4 Commissioning of report

Save Williamstown Group commissioned me initially for an inspection on the 21<sup>st</sup> of May and then officially on 28<sup>th</sup> of May 2013 to provide the witness statement and again on the 6<sup>th</sup> of February 2014 to provide this report giving opinion on the viability of restoration.

### 1.5 Author of report

I am a structural engineer with over 12 years design experience and close to 10 years as a qualified engineer. I am the joint managing director of Klopfers Dobos Consulting engineers located at 166 Hoddle St Abbotsford. I have worked on numerous new to heritage designs in the past as highlighted in the curriculum vital in section 6. I have also been involved with the propping of similar heritage buildings.

### 1.6 Reports reviewed and documents relied upon

As there was no access to the internals of the building the author has reviewed the following reports to assist in recommendations;

- Aurecon Report dated 22 June 2012 (Ref 230289)
- BHS Consultants Report dated 22 April 2013 (Ref 7006lt01-hbcc-struc\_assess\_II.doc)
- BHS Consultants Report dated October 2013 (Ref 7006rpt01-121010-final.doc)

In the preliminary designs the author has based his design assumptions on the following Australian standards;

- Part B1 of the Building Code of Australia (BCA) 2011
- AS/NZS 1170.0 2002 - Structural Design Actions - General Principles
- AS/NZS 1170.1 2002 - Design Loads, Permanent, Imposed & Other Actions
- AS/NZS 1170.2 2011 - Design Loads, Wind Actions
- AS4100 1998 - Steel Structures
- AS3600 2009 - Concrete Structures
- AS3700 2011 - Masonry Structures

## 2. Description of Observations

### 2.1 Overall Building Observations

The building which is currently cordoned off to footpath traffic appears to be in a generally poor, neglected and derelict state. All windows within the building have either been boarded up with corrugated iron or have exposed broken windows. The brickwork has undergone numerous cracking throughout its façade that range in condition from minor cracking to severe structural cracking. The brickwork at the top of the building appears to bow (leans in or outwards) on all faces. The condition of the lower storey appears to be in better condition than the upper levels, less frequent cracking and bowing of the walls is less apparent. External steel work such as access stairs appear to be in a corroded condition. The layout of the site is seen below and the following gives a more detailed description of observations of each of the façades. Conditions of the building may have further degraded since the last site inspection as there appears to have been actively very little or no attempt at maintenance by the current owner.



Figure 1 - Site Layout (Referenced from Google maps)

### 2.2 Northern Façade Observations (facing nelson Place)

The northern façade similar to the other façades experienced a high amount of cracking to the first and second storey with less prominent cracking to the ground floor. Whilst it appeared there was less cracking to the ground floor it could not be fully assessed due to the presence of numerous posters to the ground floor that may hide possible cracks. There was one significant vertical crack noted to the ground floor near the north/eastern corner.



Figure 2 - Northern Façade (22 May 2013)

The top of the façade bows visibly inwards as illustrated in figure 3. The actual amount of eccentricity could not be accurately surveyed due to the limited access as previously discussed.

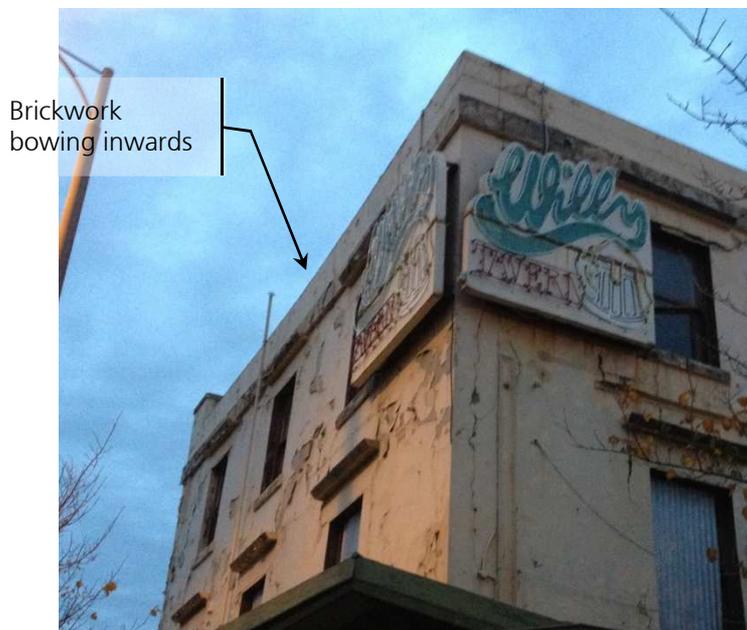


Figure 3 - Eccentricity of wall at the top of the Northern façade (12 June 2013)

### 2.3 Eastern Façade Observations

The eastern façade could only be viewed from the street due to the restricted site access. There were two significant cracks that were visible, one large horizontal that extends to a diagonal crack near the corner of the building (refer figure 4). The other significant crack was a mainly vertical crack at the centre of the façade that appears to extend from the roof to the second floor. The rain head that transports the rain

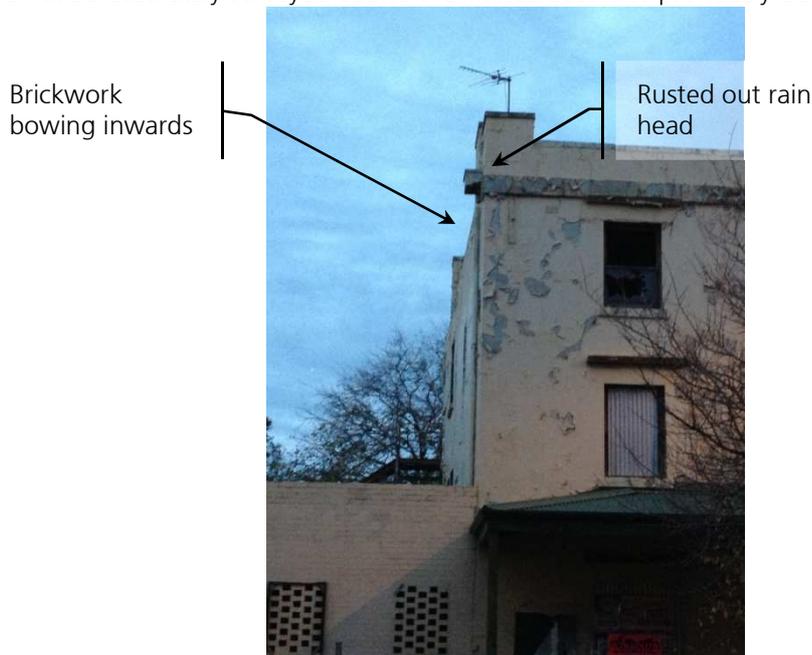
water from the roof to the downpipe has completely rusted out which means that excess water will possibly get into the brickwork further degrading its integrity (refer figure 5).



Large horizontal crack running to a diagonal crack

Figure 4 - Eastern facade (12 June 13)

The top of the façade bows visibly inwards as illustrated in figure 3. The actual amount of eccentricity could not be accurately surveyed due to the limited access as previously discussed.



Brickwork bowing inwards

Rusted out rain head

Figure 5 - Eccentricity of eastern façade (12 June 13)

## 2.4 Southern Façade Observations

The southern façade's cracking is seen as minor at the south/western corner and appears to develop along its length until major cracking to south/east corner is experienced. There is a steel walk way to an access door, the steel walk way appears to be in moderately poor condition.



Figure 6 - Southern façade (12 June 13)

The cracking that can be seen on the south/eastern corner (as seen in figure 7) is severe extreme and it is assumed that there would be no structural continuity between south and east walls due to the size of the crack.

The drainage to the down pipe in the south/eastern corner is completely non-existent due to the rusting out of the downpipe (refer Figure 7). The rusting out of this down pipe would shed water to the façade further damaging brickwork and footings.



Figure 7 - Major cracking of brickwork to south/eastern corner

Similar to other walls mentioned the southern façade bows inwards (refer figure 8), the amount of bowing to this face is slightly less than on the north face and east face however it is still seen as significant.



Figure 8 - Eccentricity of eastern façade (12 June 13)

## 2.5 Western Façade Observations

The western façade experiences major tension cracks at its centre and also at its corners. There are larger cracks also seen on the ground floor at the north/western corner. The bowing of this wall is in the opposite direction to the north, south and east walls and leans outwards towards the street.



Figure 9 - Western facade (12 June 2013)

As seen in figure 10 there has been a steel channel installed to the south western corner, this was presumably installed as a tension tie to help tie in the brickwork due to cracking/leaning of brickwork. It appears that since the installation of this tension tie further outward bowing of the wall has occurred and as a result the stiff tension tie has pierced the brick work as it has moved outwards.



Figure 10 - Brick tie punching into brickwork (12 June 13)

## 3. Analysis of observations



### 3.1 Cracking throughout building

The frequent cracking observed throughout the building is a sign of movement of the brickwork. This movement of the brickwork is likely due to movement in the footings and/or internal structure supporting brickwork warping/decaying. In this scenario I believe through observations that both are a factor.

Buildings of this period almost certainly have footings that would not comply with today's standards. The brick work was often built off discontinuous bluestone footings. As the footings are discontinuous there is nothing to stop them moving differentially when there are movements in the soil supporting them.

Movements in the soil often occur from one or a combination of the following factors;

#### Changes in moisture conditions:

When Clayey/Silty soils experience an influx of moisture they swell, conversely when they dry they shrink. When these volumetric changes occur they are very unlikely to happen uniformly. As such differential movement under the footings results in cracking in the brittle brickwork and stucco commonly occur. Changes in moisture content can occur due to the following reasons;

- Leaking water pipes/services under the building
- A perched water table
- Prolonged periods of wetting/drying (flood/drought conditions)
- Inadequate depth of footings (deeper footings are generally less affected by moisture variations)
- Tree roots under footings sucking moisture out of the soil

#### Tree Roots/Organic material:

Tree roots can not only cause changes in moisture conditions as mentioned above, they can also cause expansion under footings when growing and conversely if they die and decompose cause contraction.

#### Overloading of the footings:

Invariably the loading of the footing to the perimeter of the building is not completely uniform due to some areas been loaded with floor loads etc. The highly loaded areas may settle more than the areas that are not as highly loaded, which leads to differential movement of footings.

The other mentioned cause of differential movement is dilapidation of the internal structure. If the internal structure is dilapidating and falling away (as mentioned in the Aurecon report dated 22 June 2012) it will pull the brickwork it is meant to be laterally restraining with it.

The visual dilapidation of the Oriental Hotel due to the cracking is exacerbated by the presence of stucco to the building, the concrete stucco is very brittle and will crack under very slight movement.

### 3.2 Steel Walk Way to southern façade

The steel walk way to the southern façade appears to be struttred from the brickwork. This is unlikely to be acceptable engineering wise and is almost certainly structurally unacceptable given the current brickwork condition.

### 3.3 Cracking to south eastern corner.

The cracking to the south eastern corner is of concern as it is important to the structural integrity of the building that the corners are structurally engaged. At present due to the condition of the brickwork at this corner no structural engagement could be considered which is a concern.

### 3.4 Movement at steel tension restraint and outward lean to western façade.

The movement seen at the tension restraint on the western façade is of concern (refer figure 8). The concern is twofold: one being that as the tension backer (the steel channel supporting the brickwork) has pierced the brickwork it no longer restrains the brickwork from bowing outwards. The other concern is



that it indicates that the wall has continued to move outwards since the installation of this tension restraint.

As the wall bows outwards it is of greater concern, as the likely direction of collapse should it occur is onto the street. This is the only wall that bows outwards and it is recommended that it is propped immediately for the safety of the public.

### 3.5 Down pipes

It is recommended should the building be retained that the downpipes should be remedied immediately to stop further degradation of the existing structure and to also stop water shedding to the footings.

### 3.6 Internal Structure Conditions

As mentioned previously the author has not had the opportunity to observe the internal structure of the building due to safety concerns. Based on photos in previously published reports by Aurecon dated 22 June 2012 and BHS consultants dated 22 April 2013 the internal condition is poor. This is of importance as the internal structure supports the external brick walls and is vital to such a building for its stability.

## 4. Recommendations for the future of the Oriental hotel

Due to the condition of the Oriental Hotel options for the ongoing life is either significant restoration or demolition.

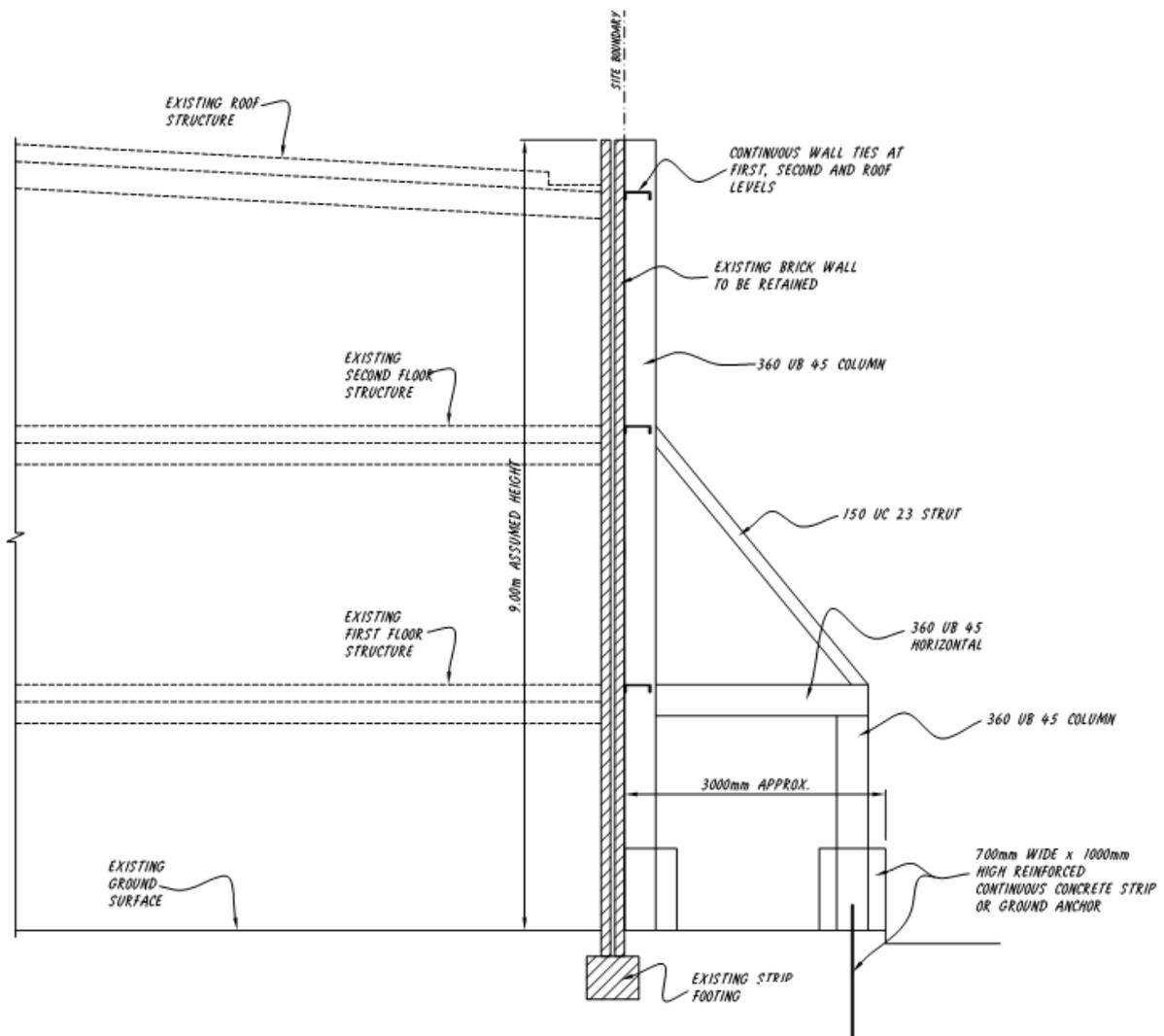
### 4.1 Restoration

The restoration of the building would involve significant works to get it to comply with the current Australian standards they include, but are not limited to;

- Initially continuously propping the building externally at all three levels (roof, second floor, first floor), refer section 4.1.1 for details.
- Further assessment of the internal structure and replacing as necessary.
- Underpinning or tying existing footings to a new continuous footing system.
- Repairing drainage.
- Significant repairs to existing brickwork and replacing in some areas of major concern (such as the South/East corner).
- Repair of existing structural ties.
- Surveying existing eccentricities of walls and further assess requirements for re-alignment.
- Plumbing (aligning) of walls.
- Assessment of soil moisture conditions.

#### 4.1.1 Propping to Existing oriental building

As the propping should be done externally to help free access internally for the maintenance works. An external gantry propping system that extends the width of the foot path would need to be adopted, if continual access to the footpath is required. The height of the Oriental Hotel was unable to be accurately established therefore an estimated height of 9m was used to provide a preliminary indicative design for gantry propping.



**WALL PROPPING (FRAMES SPACED AT 3.0m MAX. CENTRES)**

Figure 11 - Preliminary propping design of the oriental hotel

## 4.2 Demolition

If the restorations mentioned in section 4.1 do not take place then the building appears to be unsafe and is at risk of failure under extreme wind loads or earthquakes. As such the building appears to be a public safety concern under its present conditions and needs action taken to rectify it. If restoration is not approved then demolition would have to occur for public safety.

## 5. Examples on current similar façade propping to retaining façade

### 5.1 92 -94 Easey St, Collingwood

Easey St in Collingwood was an old industrial building that was turned into industrial style accommodation. The owner of the builder engaged our company to design a solution of keeping the external façade whilst they built 3 storey apartments to the inside of the building. The owner kept the



façade as they believed it was a valuable addition to the building and would add character. The façade of the building can be seen below in figure 12. The façade had an approximate 80mm outward lean from top to bottom on it, this had to be taken into account when design the new lateral restraint from the new internal steel structure.



Figure 12 - Existing Building (prior to construction) at 92 Easey st Collingwood

As there were issues with blocking the footpath externally, the façade was propped internally whilst the internal structure which was made up of light weight steel and timber was constructed. The propping method did not require a gantry type arrangement as described in section 4.1.1 due to the props being internal. The same principle applies however of keeping the external façade and building new a new permanent steel support system. Figure 13 shows the internal view of the building when the façade is supported by diagonal push pull props only.



Figure 13 - Internal propping of front facade during construction

Figure 14 shows the new steel frame that has provides the permanent support for the existing façade.



Figure 14 - construction of internal permanent steel structure to support existing brick facade.

## 5.2 Dimmeys redevelopment 140-160 Swan St Richmond

The landmark Dimmeys site in Richmond which is over a century old is to be re-developed whilst retaining the existing façade. The builders (Crema Construction) used a gantry type system very similar to the type proposed in section 4.1.1 (refer figure 15).

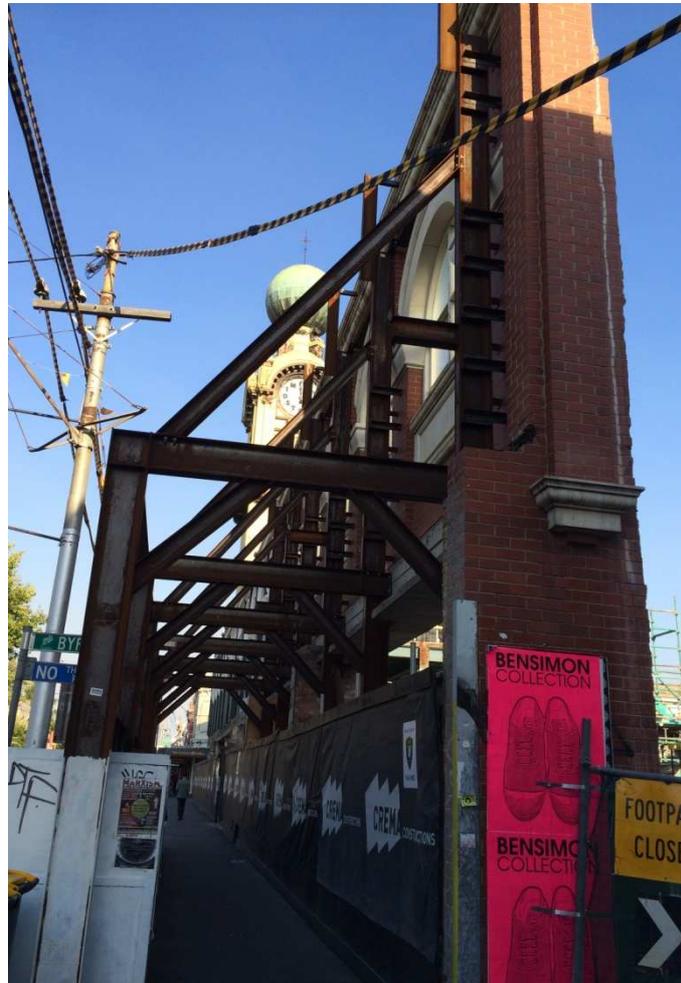


Figure 15 – External gantry façade (with walk way under) support at the old Dimmeys store in Richmond

Figure 16 shows the internal area of the building that is relatively unencumbered on the inside of the building to allow construction to proceed.



Figure 16 - Internal view of Dimmeys building

### **5.3 Southbank Grand Project, 151 City Rd Southbank.**

Southbank grand is a high rise building where developers have chosen to keep the existing brick façade whilst building a large high rise building on the internal site. Figure 17 shows the external gantry structure that allows pedestrian traffic under, which is again a very similar method of façade retention mentioned in section 4.1.1. Figure 18 is an internal view of the building site which shows a relatively clear building site for the construction.



Figure 17 - External Gantry (with walk way under) at 151 City Rd Southbank

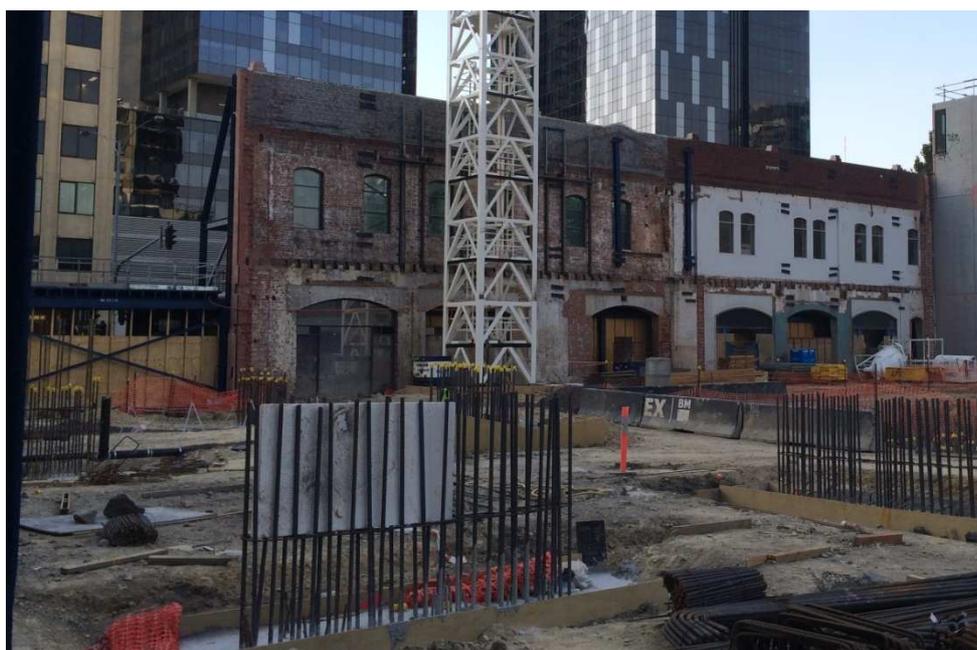


Figure 18 - Internal building site relatively unencumbered by existing brick wall



## 5.4 Hungry Jacks drive through, Hoddle St Richmond

The hungry jacks store on Hoddle St in Richmond has utilised a permanent propping system to permanently retain an existing brick wall, the system uses both angled props and also a gantry prop through the drive through to allow vehicle access, refer figure 19 below



## 6. Comment on recent ruling from VCAT on destruction of the oriental hotel.

The recent ruling by VCAT allowing the destruction of the Oriental hotel as out lined in the “Red Dot Decision Summary” main point of contention is that restoration would not save enough of the building for the restoration to be worth doing.

In the statement they have indicated they believe the vast majority of the internal structure (timber floors, columns etc) would need to be replaced a statement that the 3 expert witnesses more or less agree with, as per item 221 below the ruling has found that the retention of the façade only would not be worthy of saving, of which we cannot comment on and is the expertise of historical Authorities. The statement also mentions that some parts if not all of the external façade would need to be replaced (refer item 222), whilst we agree that a large amount of the façade will need to be restored we don't necessarily agree that it would lose any value, a lot of the rectification would involve re-aligning brickwork which should not change the brick work in any significant way. Our belief is that most of the two prominent street facing facades could be retained and also the majority of the rear facades, the rear facades however would require some re-build.

Significant points of interest in the red dot summary can be seen below;

- 19 We find the demolition of the Oriental Hotel acceptable. The building is in poor condition. Much of the building must be demolished. We conclude that the remnant building is not of sufficient value to be worthy of retention.



- 54 However, we acknowledge that the subject properties are not free of constraints. For example, all three lots are within the Heritage Overlay. The Oriental Hotel exists on Lot 2. If it is determined that the hotel cannot be demolished, this constrains the development potential and form of new buildings on that lot. Being former industrial land, the lots may have contamination that needs to be dealt with before residential use can commence. The lots are also in proximity to large industrial uses, namely the BAE shipyards and Mobil Tank Farm. Ultimately, the question here is not whether, the three lots are subject to constraints, but rather, whether the proposals represent an appropriate response to the context, the site's attributes and factors such as those to which we refer. On our assessment, subject to the design response dealing with constraints in an acceptable way, these three lots clearly provide opportunity for new housing development.
- 138 The objectors assert that the proposed developments will have an adverse impact on tourism. The Oriental Hotel is identified in one submission<sup>15</sup> as a tourist asset that forms part of the local history that attracts tourists to the area. Concerns are raised in other submissions that increased traffic and parking will also deter tourists from visiting Williamstown.
- 139 We are unable to conclude that the proposal will have adverse impacts on tourism. For reasons that we set out later, we find that the demolition of the Oriental Hotel is acceptable. The extent to which the hotel is to be demolished means that very little heritage fabric would be retained thus substantially compromising its heritage significance.
- 221 Ms Lardner suggest that even if the roof is replaced and new internal areas are constructed, the remnant building, the external shell of walls, is still worthy of retention. It could easily be argued that a redevelopment proposal which simply retains the outer shell of the building amounts to a form of *facadism*, an approach which, by and large is not, in our experience, encouraged.
- 222 However, the evidence clearly demonstrates that the extant entire outer shell of the building cannot be retained in full, and perhaps not at all. Mr Spano agrees the southeast corner of the building is unsafe and in peril of collapse. What exists will need to be demolished and that part of the external shell reconstructed. Mr Spano also agrees that the condition of the front northwest corner of the building is also in such poor condition that it will also need to be demolished and reconstructed<sup>36</sup>.



- 223 Mr Spano notes that the existing street walls lean outward. Diagrams presented by NPD<sup>37</sup> show the extent to which walls lean, in some cases more than 100mm from a true vertical alignment. We would attribute this lean to a number of factors including lack of structural support for the external walls as well as failure of the poor foundations. To retain external walls, substantial underpinning is required. However, we accept Mr Sheldon's proposition that this process is likely to be difficult given the condition of the walls and the nature of the work to be undertaken. It is likely that the walls would be further damaged during the underpinning process and they may possibly collapse.
- 224 Even if the underpinning is successful, the reality is that the vast majority of the fabric of this building must be removed, far more than envisaged by Ms Lardner. We conclude that the extent of fabric to be removed is so great, the heritage value of the remnant building is severely compromised. It would no longer be a heritage building *per se*, but essentially, a largely brand new building incorporating a limited amount of the fabric of the 1854 hotel. Such a building would be of limited, if any, heritage value.
- 225 We therefore conclude that, in the circumstances, permission should be granted for the demolition of the Oriental Hotel. We accept that the hotel is of local significance. If the hotel were in reasonable structural condition, it could be incorporated into a new development on Lot 2. However, the building is in poor structural condition. The structural problems with the building predate its acquisition by NPD. To correct structural problems, the vast amount of the building fabric must be replaced. This would severely compromise the heritage value of the building. We conclude that the extent of fabric which could be retained is insufficient to warrant retention of the building.

## 7. Indicative Costs of Restoration

Predicting the cost of this restoration is difficult to put an accurate figure to and would be best served by consultation with a quantity surveyor. I have however reviewed the indicative building costs of the BHS report August to October 2012. The BHS report indicates a figure of approximately \$1.5M, I have reviewed the items they have allowed for and they appeared reasonable. I believe the footing strengthening works cost of \$390k may be able to be completed for less, however it will depend on the exposed footing conditions. I would have allowed for around \$200k for this bringing the total restoration cost to \$1.36M. The cost the report has put for the propping of \$30k is likely to be low however, if the gantry option is undertaken as set out in section 4.1.1 the cost would be closer to \$100k.



Given these two factors roughly cancel each other out the cost of \$1.5M to restore the Oriental Hotel seems reasonable.

## 8. Conclusion

The building should be continuously propped at roof and second floor level. From there the discussion of whether or not restoration due to its heritage significance is worth it can take place. Restoration is a viable option and much of the building can be retained, it will however take a degree of care as per any historic restoration build, and a significant amount of work to ensure it complies with the current Australian standards.

Tristan Halls  
Building Practitioner (EC 39725), BE Eng (Hons).  
Joint Managing Director  
**Klopfers Dobos Pty. Ltd.**



## Curriculum Vitae



**Tristan Halls**  
B.E.(Civil, Hons.), CP Eng  
Joint Managing Director



### Introduction

Tristan has close to 10 years with consulting structural engineering. In 2010 Tristan became a director at Klopfers Dobos. Tristan has a broad knowledge of industrial commercial and residential projects.

### Qualifications

Joint Managing Director at Klopfers Dobos (3 years)  
Bachelor of Engineering (Civil, Hons)  
CP Eng, Building Practitioner No. 39725

### Experience

Tristan graduated in 2004 after completing his thesis on the Explosive Impacts relating to the understanding of the behaviour of steel during impacts as a result of explosions. Tristan started his career at Klopfers Dobos in 2002 whilst still an undergraduate. In 2007 Tristan broadened his career by moving to Norway and working for Reinertsen where he undertook structural design on offshore oil platforms. Since returning to Australia and Klopfers Dobos in 2009 Tristan has quickly ascended in the company becoming a Klopfers Dobos Director in 2010 and has a key role of delivering a large number of projects within the office

- January 2010 – Current; Joint Managing director at Klopfers Dobos
- January 2009 – December 2010; Senior engineer at Klopfers Dobos
- June 2007 – August 2008; Senior design Engineer for Aker Reinertsein (Norway)
- 2004 – 2007; Design Engineer at Klopfers Dobos
- 2003 – 2004; Undergraduate engineer at Keith Bennett And Associates
- 2002 – 2003; Undergraduate engineer at Michael Samms and Associates

### Representative Projects

#### Industrial

Craigieburn Train Maintenance Facility, 610 Hume Hwy  
Visy Co-generation Plant, Reo Crescent Campbellfield  
Star Track Express Distribution Centre, Sargents Rd Minchinbury

#### Offices

Building C, 296 Ferntree Gully Rd, Notting Hill  
Rathbone Wine Group head office and distribution center, Lot 1,2,6 Lorimer St Port Melbourne

#### Retail

Coles Retail development, Spring square Hallam  
BMW Showroom and workshop, 62 Entreprise Drive Bundoora  
Centro Shopping centre Warrnambool, 72-82 Hopkins Hwy Warrnambool  
Horsham gateway Centre, 120 -124 Wilson St, Horsham.  
Thurgoona Plaza Shopping Centre, Shuter Ave Thurgoona

#### New to Heritage Residential

92-94 Easey St, Collingwood  
259 The Boulevard, Port Melbourne  
144 Dank St, Port Melbourne

#### Mixed Use Developments

Mixed use development (Woolworths and apartments); 284 Highett Rd, Highett

#### Commercial Development

123 – 131 Acland St, St Kilda  
Multi-Unit Development, 30 Access Way, Carrum Downs  
Foresite Training, Lot 1 Banfield Crt  
Office and Warehouse, 365 Plummer St Port Melbourne

#### Other

Newhaven Middle School; 1770 Philip Island Rd  
John Ilhan Memorial Pavillion; Barry Rd Broadmeadows

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