# vsp

Your ref: PS132246-010-L-Rev1

By email p.pereira@coronation.com.au

2 February 2024

Public

Peter Pereira Coronation Property Co. Pty Ltd Level 2, 66 Wentworth Avenue Surry Hills NSW 2010

#### Dear Peter,

WSP Australia Pty Limited (WSP) has been requested to review the following revisions in the development plans for Precinct 75, St Peters, NSW (the site) and assess if this may potentially impact the assumptions in the Human Health and Environmental Risk Assessment (HHERA) (Golder, July 2022). This cover letter is to be read in conjunction with the HHERA, which was developed to assess the potential human health and environmental risks in relation to the proposed development plans for the site.

### **Revised Development Plan Review**

The reviewed new and current development plans included the following documents:

- the revised development plans (Site B), 'App A\_LEC Drawing Set Main Works' and 'S4.56 Site B Binder' dated 24/05/2023, provided by Home to WSP via email on the 26<sup>th</sup> May 2023;
- The general arrangement plans (basement 1, zone 2 and 3: 'A-B-2-2051' and 'A-B-3-2051') and stormwater drainage details plans in relation to the OSD tank (drawings: 'CI-526-04', 'CI-526-03', 'CI-400-03', provided by Home to WSP via email on the 21<sup>st</sup> June 2023; and
- Structural drawings ('shoring drawings combined') for retention systems (wet basement sections and details) and 'basement tanking note', sent to WSP via email on the 23<sup>rd</sup> June 2023.

The following was reviewed in conjunction with the new and current development plans provided (listed above):

- The development plans which were available at the time of the HHERA; and

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WSP acknowledges that every project we work on takes place on First Peoples lands. We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.  The modelling approach used for the HHERA, principally the method that groundwater and vapour entry to the basement were assessed.

# **Development Plan Changes and HHERA assumptions**

WSP note the HHERA was completed in 2022 with reference to preliminary development plans that had not, at that time, been endorsed.

Subsequently, after completion of the HHERA the building designs were changed in the final endorsed plans. The changes of relevance to the HHERA were principally the lower elevation of the Basement 2 floor level in the north eastern section of the development.

A further proposed amendment of the building design has been proposed. The changes of relevance to the HHERA were principally the lower elevation of the "Loading Bay" area of the Basement 2 floor level in the south western section of the development.

For clarity, the development plans (as provided to WSP) referred to in the above points are:

- Basement Plan 2 DA-20-98 Revision 10 20/08/2021, being the design considered in the HHERA
- Basement Plan 2 DA-DA-20-98 Revision D 10/11/2022, being the approved/'endorsed' plan
- Basement Plan 2 DA-20-98 Revision 26 24/05/2023, being a proposed amendment plan

WSP understand the only changes to basement floor levels since the currently endorsed plans (as at 1 February 2024), relevant to the HHERA, include the lower floor elevation in the Loading Bay area. Proposed changes to the internal configuration of the basement levels or the extension of the basement towards the north east (Edith Street) were not anticipated to be relevant to the HHERA.

This review therefore considers:

- Changes in the building design between the HHERA (preliminary design) and the final endorsed design.
- Changes in the building design between the endorsed design and the proposed amendment design.

#### CHANGES IN BASEMENT LEVELS (LEVEL B2)

A change between the preliminary design and the endorsed design basement level at Level B2 indicates approximately 0.7 to 0.8 metres deeper floor levels for approximately 40% of the basement, changing from:

 RL of approximately 9.68m to a RL of 8.88m., approximately representing the north eastern portion of the basement, below proposed Building 8 and Building A.

A change between the preliminary design and the endorsed design basement level at Level B2 indicates approximately 1.5m deeper floor levels for approximately 20% of the basement, changing from:

 RL of 9.68m to a RL of 8.20m., approximately representing the south eastern portion of the basement, below proposed Building B.

A change between the endorsed design and the proposed amendment design basement level at Level B2 indicates 0.77m deeper floor levels for 20% of the basement, changing from:

 RL of 8.8m to a RL of 8.03m., approximately representing the southwestern portion of the basement (Loading Bay area) below proposed Building C.

Remaining basement areas indicated minimal or no change in depth, approximately representing basement below the proposed "Commons" outdoor area.

#### HHERA review assumptions and conclusions

- The primary area of concern for groundwater contamination is the north-western boundary of the basement – adjacent to proposed Buildings C, 8 and the outdoor "Commons" area – along proposed "Makers Way".
- Minor changes to the basement layout (mostly parking spaces and ramp positions) were noted, but as the overall extent/dimensions did not appear to have changed significantly between the preliminary design (used in the HHERA) and the endorsed or proposed amendment designs, no impact upon the contamination models or risk conclusions was expected.
- The basement area that would be significantly deeper (1.5 m deeper) is at the south to south-eastern section of the development (inferred to be below proposed Building B) and therefore not anticipated to be impacted by the key zone of groundwater contamination further to the west/northwest. WSP note this deeper basement area is incorporated in the endorsed design but was not present in the preliminary design considered at the time of the HHERA.
- The basement areas, adjacent to the zone of primary groundwater contamination were indicated to have lower floors (0.7 m to 0.8 m lower) but the following factors apply:
  - The original HHERA assumed the lower basement level (B2) walls would be fully below groundwater levels – so only seepage water (into spoon drains) was relevant for risks.
    - The lower floor elevation would not change this assumption and no change (higher or lower) to the estimated risks would occur. Note, groundwater inflow through the drains (original HHERA) was already based on previous modelling and assumptions of deeper basements.
  - The original HHERA assumed the upper basement level (B1) walls would be partially below groundwater levels adopted 1 m high section saturated with the remaining 2 m high section dry. Due to drawdown of the water table by drains in the lower level (B2) it was assumed no or minimal inflow would occur to the upper level's drainage systems. Contaminant entry was therefore dominated by vapour intrusion through the wall.
    - A lower floor level in the new proposed basement level B1 would potentially allow some/greater groundwater seepage entry to the drainage system. However, this would also reduce the proportion of the wall space available for vapour intrusion.
    - The estimated risks due to vapour entry through the foundation walls were higher than risks estimated due to water ingress through drains.
    - Therefore, lowering the floor level in the upper basement (Level B1) may potentially reduce the total mass of contaminant vapour entering the building. Although it was considered likely that minimal actual change would occur as drawdown of the standing water levels (due to the lower basement drainage system) may still result in the upper basement level walls being 'dry'.

In summary, the proposed changes to the basement floor levels (deeper) and the noted changes to the internal layout and extension of the basement towards the north east (Edith Street), either between the preliminary design and endorsed design or between the endorsed design and proposed amendment design were not anticipated to change the results or conclusions of the HHERA regarding vapour or groundwater intrusion and risks.

#### **OSD TANK DESIGN**

The OSD tank design was not clear in the original development plans (at the time of the HHERA) and the OSD tank dimensions were presented as a 'dashed' line on the basement level B1 plan only, with an unconfirmed depth.

The new development plans showed the OSD tank, in the north/west side of the proposed Building C/Loading Bay area, extending down to basement level B2.

#### HHERA review assumptions and conclusions

- The OSD tank extends along the NW border of proposed Building C. This is in the zone of key/maximum groundwater contamination identified at the site (encountered at wells MW4, MW6, MW7, MW15).
- The tank was indicated to extend from the upper (internal) surface, approx. 12.55 mAHD to base approx. 10.0 mAHD.

Therefore, the OSD tank would likely be partially below the reported groundwater surface standing water level (SWL) possibly to a depth of 0.7 m to 2.0 m along its length.

- As the final below ground design of the development had not been finalised at the time, the HHERA considered a number of potential basement types including a fully hydrostatically 'tanked' structure and a free draining structure. The primary risk scenario involved the assumption that contaminated groundwater and vapour may enter the basement levels through the drainage system and/or walls.
- The HHERA had already assumed groundwater could enter the basement via strip/seepage drains, so the presence of the OSD tank was not expected to change those assumptions or risk conclusions.
- Home have confirmed that the OSD tank and basement will be 'tanked' (waterproofed) and therefore, this approach was anticipated to eliminate the vapour and seepage entry pathways and potential exposure to the human health receptors identified in the HHERA.

In summary, based on the indicated design of a waterproof 'tanked' structure, the presence and proposed design of the OSD tank were not anticipated to change the results or conclusions of the HHERA regarding vapour or groundwater intrusion and risks.

## Conclusion

In conclusion, the development changes provided to WSP with respect to the basement levels and the OSD tank addressed in this letter are not anticipated to change the results or conclusions of the HHERA with respect to vapour or groundwater intrusion and risks.

Yours sincerely

Alex Blount Principal GeoEnvironmental Engineer

EDITH STREET	SITE BOUNDARY	
	BUILDING 7 ABOVE SHOWN DASHED	BUILDING 8 ABOVE SHOWN
2		
DA-40-00		
	CHANGES BETWEEN HHERA AND ENDORSED PLANS	
	BUILDING 6 ABOVE SHOWN DASHED	
	BUILDING 1 ABOVE SHOWN DASHED	
	APPROX. CONTAMINATED	
	GROUNDWAIER ZONE	
		OSD 145m <sup>2</sup>
2 PA-40-01		
		RL 10.050
		1500
	PROPOSED AMENDMENT	
		BUILDING 2 ABOVE SHOU
	SITE BOUNDARY	
	MARY STREET	
BASEM	ENT 2	
1 : 250		
Cox	Applicant	
70 Geo NSW 20 T + 61 2 E + 61 2	ge Street, The Rocks, 000, Australia 9267 9599 9264 5844	



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Rev	Description	Бу	Dale
19	FOR INFORMATION	TP	24.02.23
20	FOR INFORMATION	TP	09.03.23
21	FOR INFORMATION	СК	13.03.23
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23	FOR INFORMATION	CK	24.03.23
24	FOR INFORMATION	TP	04.04.23
25	DRAFT SECTION 456	MB	04.05.23
26	FOR SECTION 4 56	MB	24 05 23

DEVELOPMENT APPLICATION