

Memorandum

To Stephen Fabling
Date 30 August 2022
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Reference number 287249-00
From Sina Hassanli
File reference
Subject Impact of revised building envelope on expected wind conditions

General

In reference to the Arup environmental wind assessment report on Powerhouse Ultimo Renewal issued on May 4th, this memorandum is to provide a brief statement on the impact of the design changes in the building envelope on the pedestrian wind conditions in and around the site.

The Powerhouse Ultimo Renewal Stage 1 State Significant Development Application (SSDA) sets out the concept proposal for the development, establishing overarching guidelines, principles and development controls for the detailed design, construction and operation of buildings and public domain that will be subject to a detailed (Stage 2) SSDA.

In response to submissions received during the public exhibition of the Stage 1 SSDA, the building envelopes above the state heritage listed Boiler House and Turbine Hall/ Engine Room and North Annex have been removed. These buildings remain largely intact externally and the removal of the envelopes above these structures reinforces the commitment to the retention and celebration of heritage within the site.

The proposed building envelope has been reduced above the Switch House, enabling a design response that reimagines the modern rooftop/ mezzanine addition. The envelope above the Pump House has also been reduced to ensure views to the Boiler House will remain unobstructed from Pier Street and Harris Street.

To provide further clarity of future built form (whilst providing for maximum potential design innovation through the design competition), the Applicant has determined a maximum gross floor area (GFA) that will apply to the future development. It is proposed that a maximum amount of GFA across the site of 40,000 square metres will apply, which represents an increase of 10,000 square metres compared to existing built form within the site. As such, with the retention of the state heritage listed buildings, any new built form will only form a relatively small proportion of the proposed envelope. The Design Guidelines require a minimum of 2,200 square metres of publicly accessible open space to be delivered within the site, limiting the extent of new building footprint able to be developed.

This addendum to the Environment Wind Impact Assessment (Appendix Q to the EIS) confirms the conclusions of that report remain valid accounting for the amended envelope and proposed maximum 40,000 square metres of GFA across the site.

Wind conditions

Compared to the previous building envelope prior to the public exhibition assessed by Arup from an environmental wind perspective, the revised envelope would provide similar to improved wind conditions depending on the location around the site.

Removing the envelope to the northern Annex, boiler house, and turbine hall would not be expected to change the wind conditions around the site as the existing buildings occupy the same building footprint and height. Reducing the height of the Zone 3 envelope to the height of Pier Street as shown in Figure 1 would slightly improve wind conditions around the north-east corner as it would allow for the wind to go above the roof to expand and decelerate. Removing the envelope to the post office would result in wind conditions being similar to the existing conditions. Reducing the height of the envelope above the switch house (i.e. heritage core Figure 1) to apex of the existing roof would have a minimal impact since the surrounding envelopes (i.e. Zone 1 and 2 envelopes) are essentially taller.

In conclusion, the changes in the building envelopes are marginal from a wind perspective and the expected wind conditions in and around the site described in the Arup report issued on May 4th would remain valid.

Qualitatively, integrating the expected directional wind conditions around the site with the wind climate, it is considered that wind conditions at the majority of locations around the site would be classified as suitable for pedestrian standing with windier conditions around the building corners being classified as suitable for pedestrian walking. These are similar to the existing wind conditions around the site. All locations around the revised envelope would be expected to pass the safety criterion.

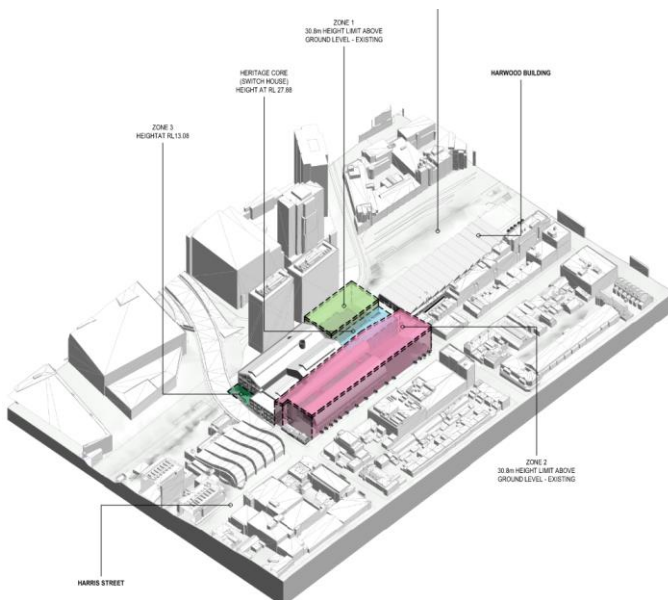


Figure 1. Revised building envelope