



Doc Ref: WE691-06F01(rev4)- WE Memo

Date: January 19, 2021

To: Walker Corporation

Address: Level 21, Governor Macquarie Tower,
1 Farrer Place, Sydney NSW 2000

**RE: BANKSTOWN CITY CAMPUS, WSU
PEDESTRIAN WIND ENVIRONMENT STUDY MEMO**

This technical memo presents an assessment of the updated design for the Bankstown City Campus development of the Western Sydney University (WSU) located at 74 Rickard Road, Bankstown.

Windtech Consultants have previously undertaken detailed wind tunnel testing for this development, as presented in the pedestrian wind environment study provided in December 2019 (report reference: WE691-01F02(rev3)- WE Report). This report assessed the wind environment conditions for pedestrian trafficable areas within and around the subject development with reference to the relevant wind comfort and safety criteria. Wind tunnel testing was utilised for the pedestrian wind environment assessment to quantitatively assess the wind comfort and safety conditions around the subject development. Further in-principle recommendations were provided in the technical memo provided December 2019 for an updated design to address potential wind entry issues (appended report reference: WE691-03F02(rev2)- Wind Entry Memo).

Since the time of issuance of the abovementioned reports, there have been some design changes to the development. Windtech has reviewed the design changes to the development based on the latest set of architectural drawings prepared by Lyons, received 19 January 2020.

The wind conditions for the updated design are not expected to be significantly different to the results of the previous wind tunnel assessment undertaken in December 2019. Therefore, the wind speed results are expected to be the equivalent, and thus recommended in-principle mitigation strategies have remained similar to the previous assessment.

Based on the results of the previous wind tunnel testing, it is expected that the majority of trafficable outdoor locations within and around the development will be suitable for their intended uses. However, some areas are expected experience strong winds which will exceed the relevant criteria for comfort and/or safety. The following in-principle treatments are

recommended to be included and/or retained in the final design, to ensure suitable wind conditions can be achieved in all assessed pedestrian trafficable areas:

- Retain proposed densely foliating, evergreen trees along Appian Way and Paul Keating Park, as shown in Figure 1a. The selected trees (spotted gum) along Appian Way are suitable to offset the wind impact.
- Retention of the proposed cluster of densely foliating, evergreen shrubs at the south-western building corner on the Ground Level, as shown in Figure 1a.
- Retention of 3m high screens (impermeable or up to 20-30% porosity) near the south-eastern corner entrance on the Ground Level, as shown in Figure 1a.
- Retention of proposed revolving door at the northern entrance on the Ground Level, as shown in Figure 1a.
- Retention of proposed planters and undergrowth near the south-eastern entry on the Ground Level, as shown in Figure 1a.
- Retention of impermeable balustrade along the northern Juliet Balcony area, as shown in Figure 1a.
- Retention of a 1.6m high, impermeable balustrade along the perimeter of the balcony located on Level 02, as shown in Figure 1b.
- Retention of an impermeable, full-height screen along the eastern perimeter of the north-eastern corner terraces located on Levels 05 and 16, as shown in Figures 1c and 1f.
- Retention of an impermeable, full height screen along the northern perimeter of the north-eastern corner terrace located on Level 11, as shown in Figure 1d.
- Retention of the proposed screen along the perimeter of the southern terrace located on Level 14, as shown in Figure 1e.
- Retention of strategically located densely foliating evergreen landscaping along the southern perimeter of the southern terrace on Level 14, as shown in Figure 1e.
- Retention of a 1.2m high impermeable balustrade along the southern perimeter of the terrace located on Level 18, as shown in Figure 1g.

It should be noted that for any points that are exceeding the safety limit (annual peak), the treatment solutions recommended (in-principle) do not rely solely on planting or vegetation. If an area exceeds the safety limit and the treatment recommendation includes planting or vegetation, it should be noted that this is made in combination with solid element treatment solutions, such that the planting/vegetation assists with the comfort levels and the solid element treatment mitigates the annual peak winds.

With the inclusion of these treatments to the final design, it is expected that wind conditions for all outdoor trafficable areas within and around the development will be suitable for their intended uses.

Treatments Legend







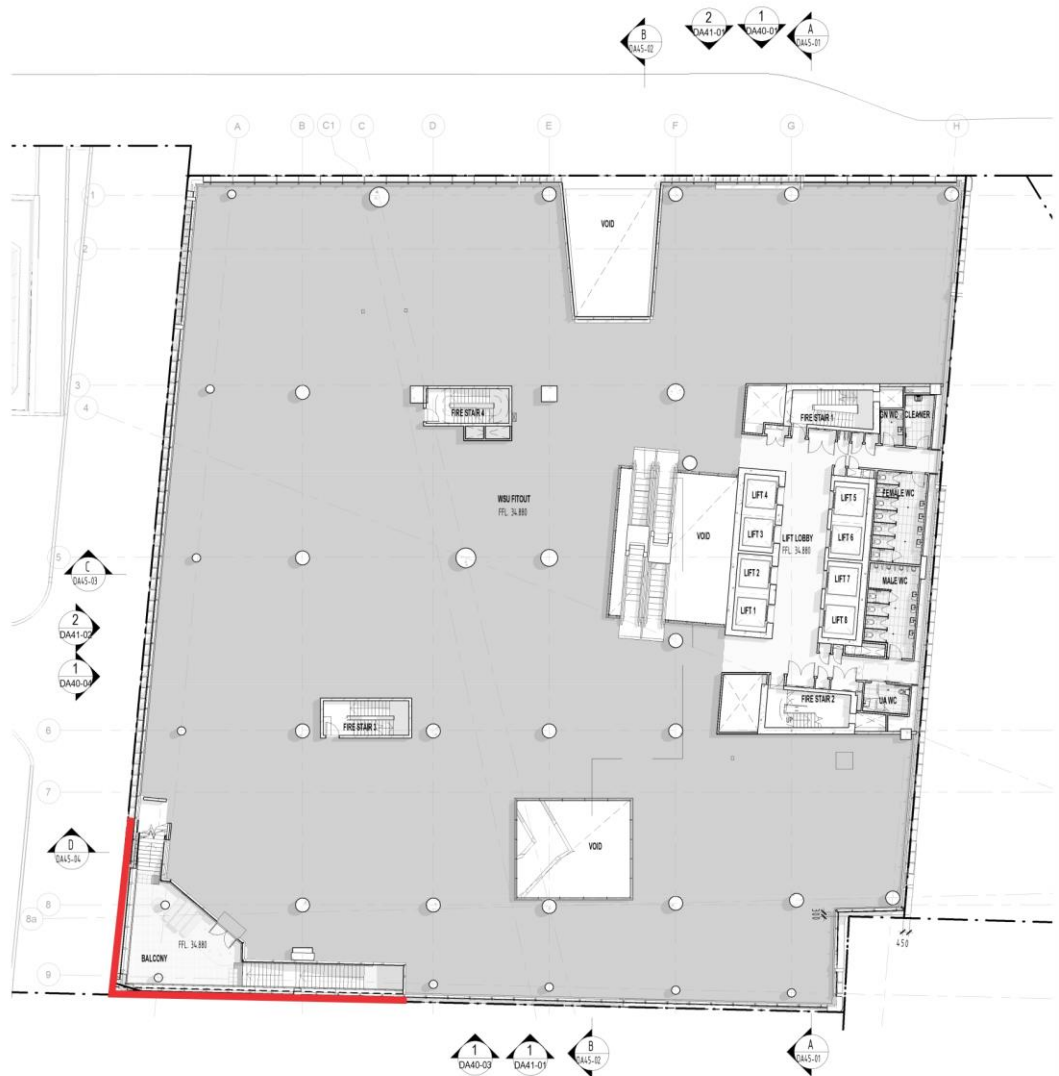
-  Retain proposed densely foliating evergreen trees capable of growing to a height of at least 3-5m with a minimum canopy width of 4m.
-  Retention of proposed densely foliating evergreen shrubs/planting capable of growing up to 1.0-1.5m high above a 0.5m high planter box.
-  Retain planters and undergrowth
-  Inclusion of 3m high screens (impermeable or up to 20-30% porosity)
-  Retain impermeable balustrade
-  Retain revolving door



Figure 1a: In-Principle Recommended Treatments for Ground Level

Treatments Legend

Recommended inclusion of 1.6m high impermeable balustrade along the western and southern perimeter of the balcony

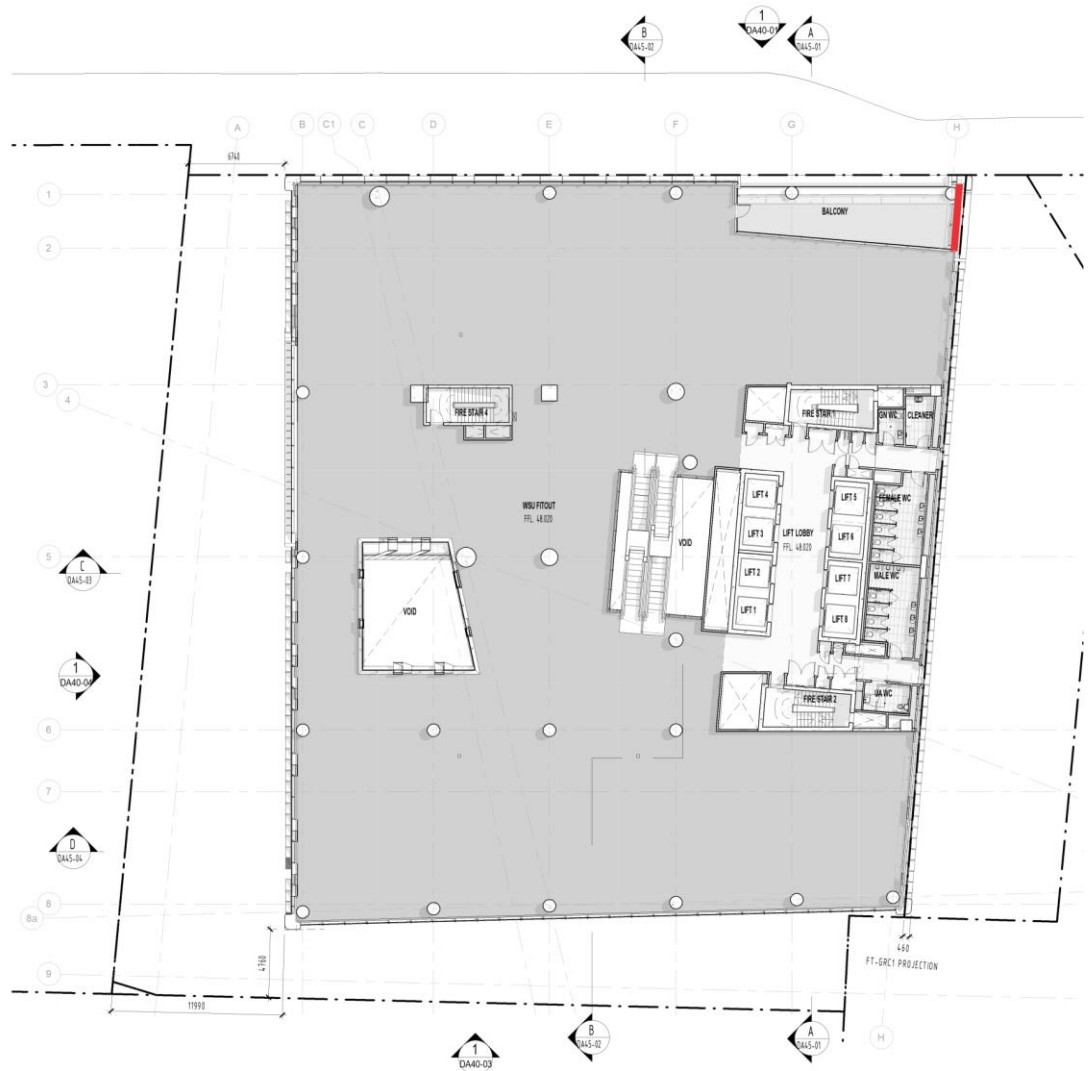


Level 02

Figure 1b: In-Principle Recommended Treatments for Level 02

Treatments Legend

- Retention of impermeable full height screen along eastern perimeter

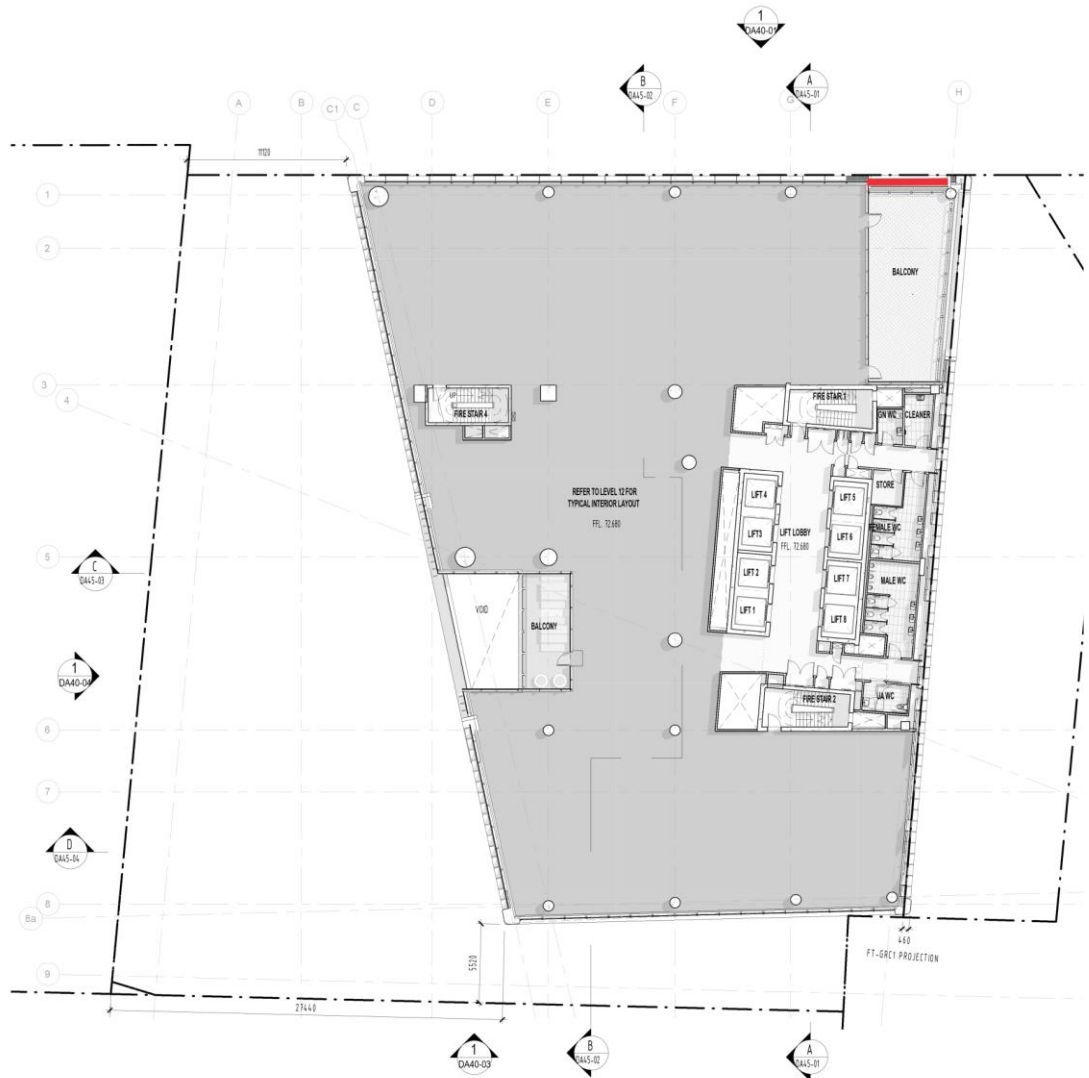


Level 05

Figure 1c: In-Principle Recommended Treatments for Level 05

Treatments Legend

- Retention of impermeable full height screen along northern perimeter



Level 11

Figure 1d: In-Principle Recommended Treatments for Level 11

Treatments Legend

- Retention of strategically positioned densely foliating, evergreen planters capable of growing to a height of 2.0-2.5m above the floor slab
- Retention of screening along the perimeter of the terrace



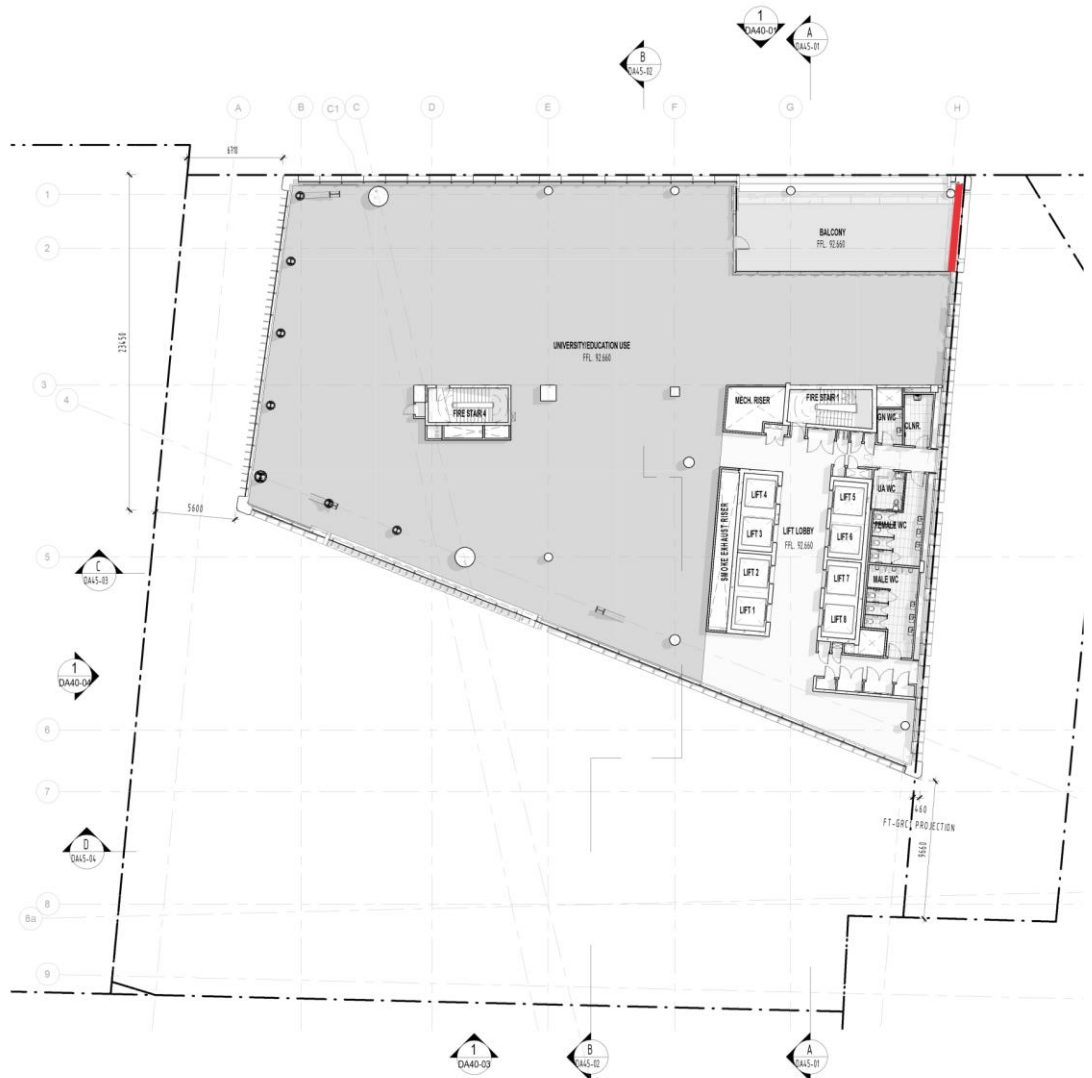
Level 14

0 10 20

Figure 1e: In-Principle Recommended Treatments for Level 14

Treatments Legend

- Retention of impermeable full height screen along eastern perimeter

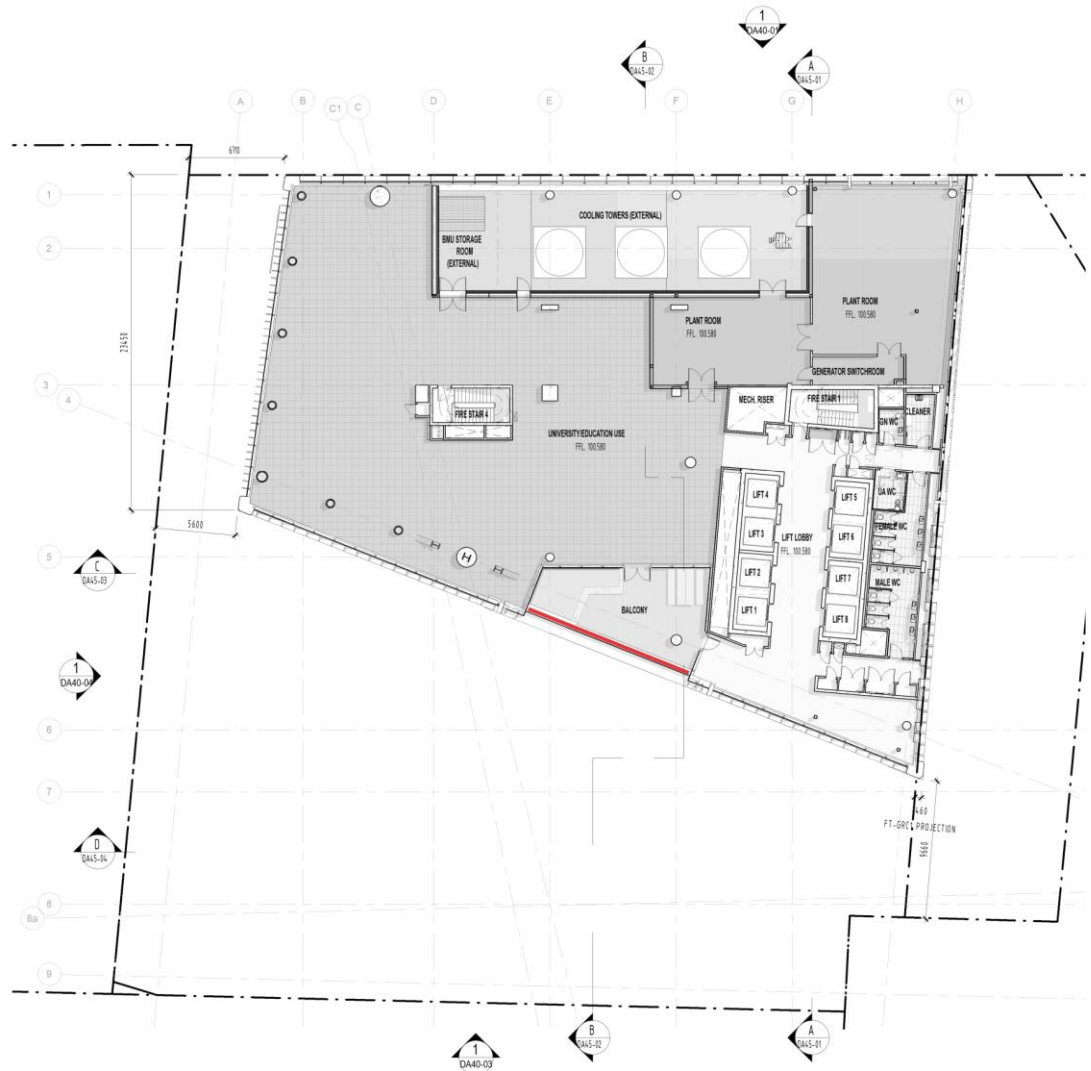


Level 16

Figure 1f: In-Principle Recommended Treatments for Level 16

Treatments Legend

- Retention of a 1.2m high impermeable balustrade along the southern perimeter of the terrace.



Level 18

Figure 1g: In-Principle Recommended Treatments for Level 18

DOCUMENT CONTROL

Date	Revision History	Issued Revision	Prepared By (initials)	Instructed By (initials)	Reviewed & Authorised by (initials)
July 24, 2020	Initial.	0	HK	MV	JG
July 30, 2020	Updated treatment figures	1	HK	MV	JG
August 14, 2020	Updated for comments	2	HK	MV	JG
January 13, 2021	Updated drawings	3	HK	MV	JG
January 19, 2021	Updated drawings	4	HK	MV	JG

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Appendix