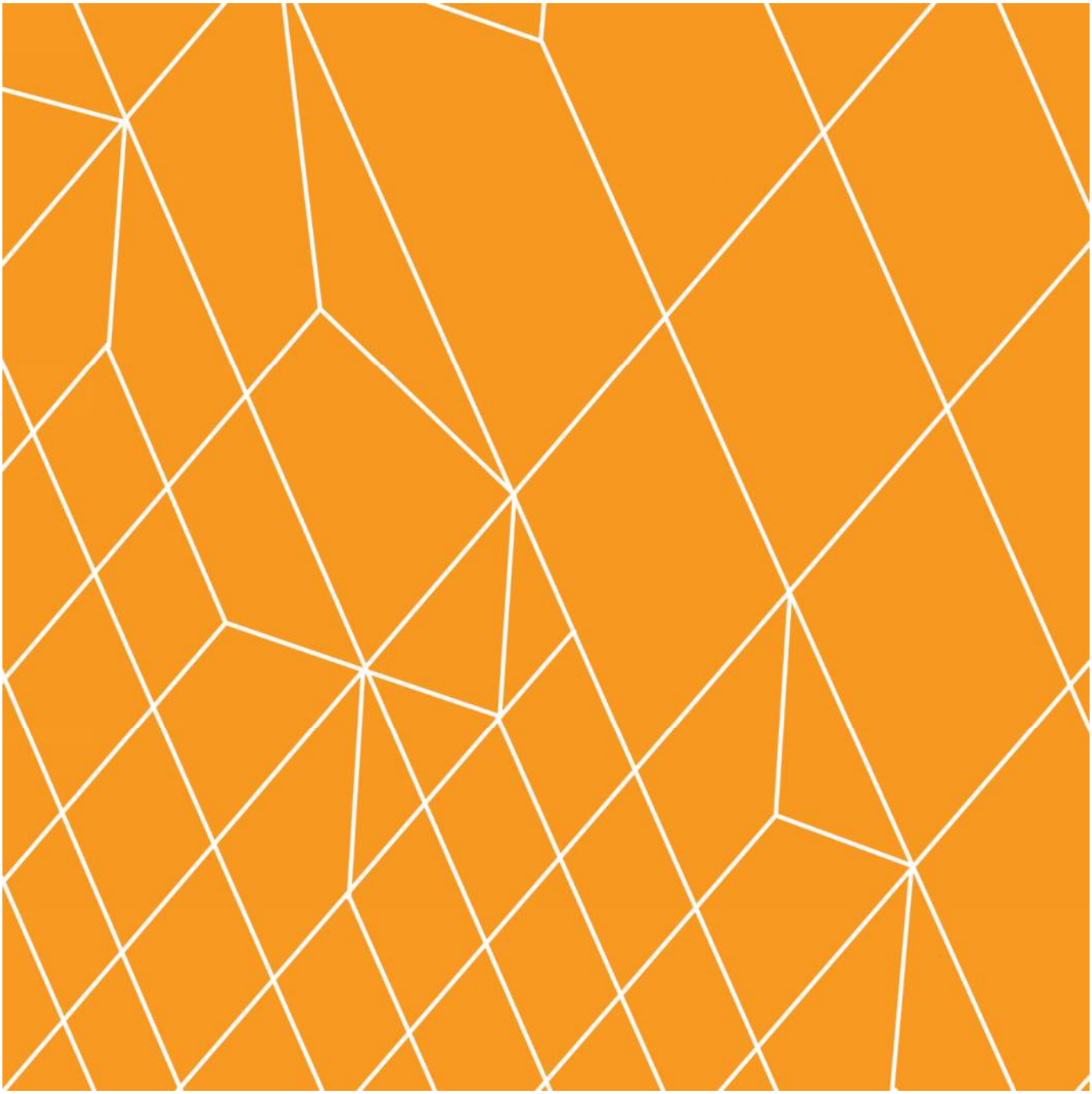


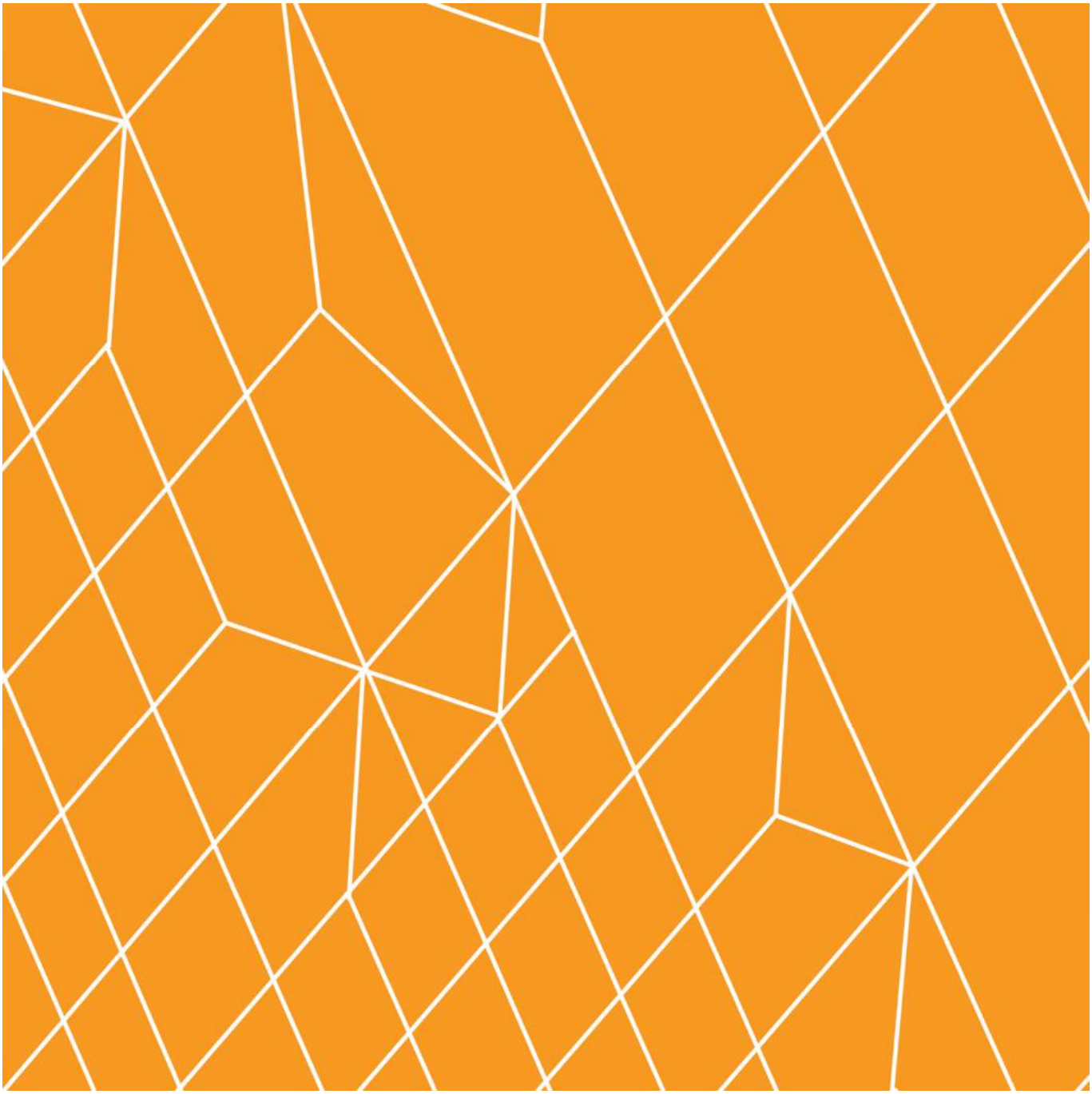
Environmental Winds
Downtown Carpark Redevelopment

Lower Hobson Street
Auckland

Report

Rev3
December 2024
145828.16

Holmes



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Rev3
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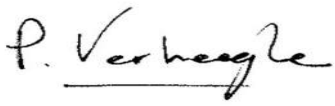
Report

Downtown Carpark Redevelopment | Environmental Winds Report

Prepared For:
Precinct Properties NZ Limited

Date: 12 December 2024
Project No: 145828.16
Revision No: 3

Prepared By:



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Report Issue Register

DATE	REV. NO.	REASON FOR ISSUE
07.07.23	1	Draft - Issue for Team Review
12.04.24	2	Draft - Updated with recent design changes
12.12.24	3	Updated to Address S92 Auckland Council Queries

CONTENTS

APPENDICES

FIGURES

EXECUTIVE SUMMARY

This report provides a summary of the assessment of the wind conditions around the proposed Downtown Carpark Redevelopment in Auckland, for the purposes of supporting a Resource Consent application. The aim of the study is to quantitively assess the wind effects of the proposed development on the pedestrian comfort in the surrounding area.

This report was initially based on architectural drawings, provided by Warren & Mahoney in March 2023 and wind tunnel tests completed at RWDI in June 2023. It makes use of the wind comfort criteria of the Auckland Unitary Plan (AUP) to describe wind conditions in terms of safety and acceptability for a range of activities. Subsequent updates to the scheme are addressed in the report.

Summary of Development

The proposed Downtown Car Park Redevelopment includes two new towers and a series of podium buildings. The two towers are tall, prismatic structures that are supported by podiums. Tower 1, standing at 227 meters, is situated just west of the existing AON House tower, while Tower 2, which is 162 meters tall, is positioned closer to Lower Hobson Road on the western side of the site. Both towers have chamfered corners, or ''cut-outs'', above the podium and at the top. The proposed Podium 3 block is located on the northern part of the site, adjacent to the M-Social building, and is of a lower height. A free roof covers a portion of the new public space situated between the podiums.

Methodology

For the wind tunnel tests, a 1:400 scale model of the proposed development and its surroundings located within approximately 500m of the target site were constructed from rigid material. Measurements were taken at approximately 160 locations around the site. Design workshops were organised in collaboration with the design team to adjust the design of the proposed development for wind.

Wind Conditions around the Existing Site

While conditions immediately around the existing site are shown to be relatively calm, they were found to deteriorate slightly at the north end of Lower Hobson Street, adjacent to the M-Social Building, with Category D conditions measured in this area.

Proposed Development: Key Wind Design Features & Mitigation Measures

The wind tunnel testing highlighted the need for the following in the new development:

- Podiums supporting T1 and T2. Free roof covering the space between P1, P2 and P3.
- 4m-wide canopy on the west side of P2.
- Landscaping including mature (6-8m) trees in and around the site and at the north end of Lower Hobson Street.
- Canopies covering laneways on east side of P1 and north side of AON Tower.

Key Wind Mechanisms

The podiums supporting the towers and the free roof are efficient at dispersing the strong winds deflected downwards by the towers before reaching ground level. The key areas of windiness are limited to the podium roof levels (P1 and P2), leaving conditions at ground level significantly less exposed.

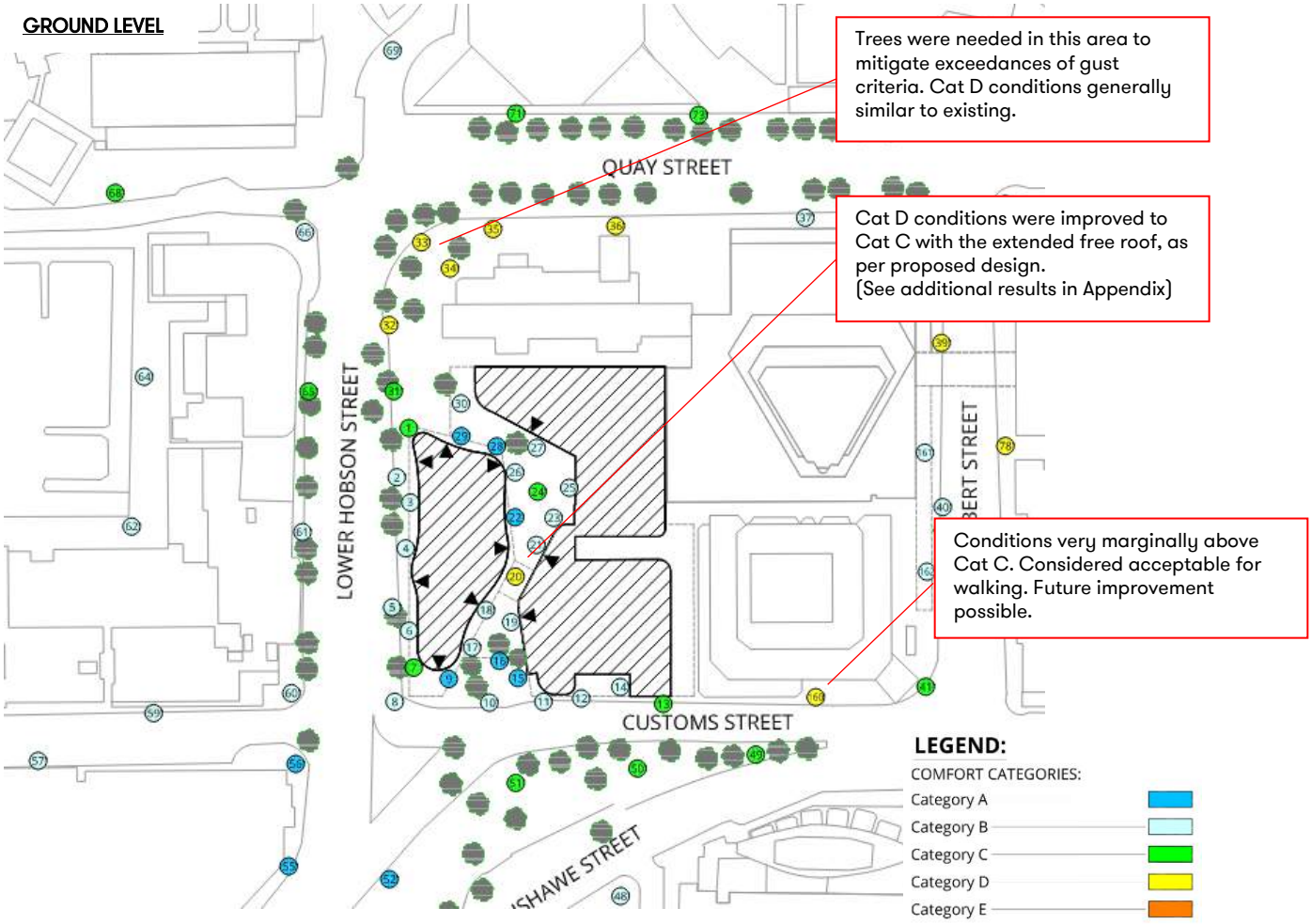
Overview of Wind Conditions

The wind conditions in and around the proposed development with the mitigation measures are diagrammatically shown below. Overall, wind conditions in and immediately around the proposed development were found to be relatively calm, generally in Category A and B, with local Category C conditions. With the landscaping as tested, there was no exceedance of the gust criteria for all areas around the proposed development.

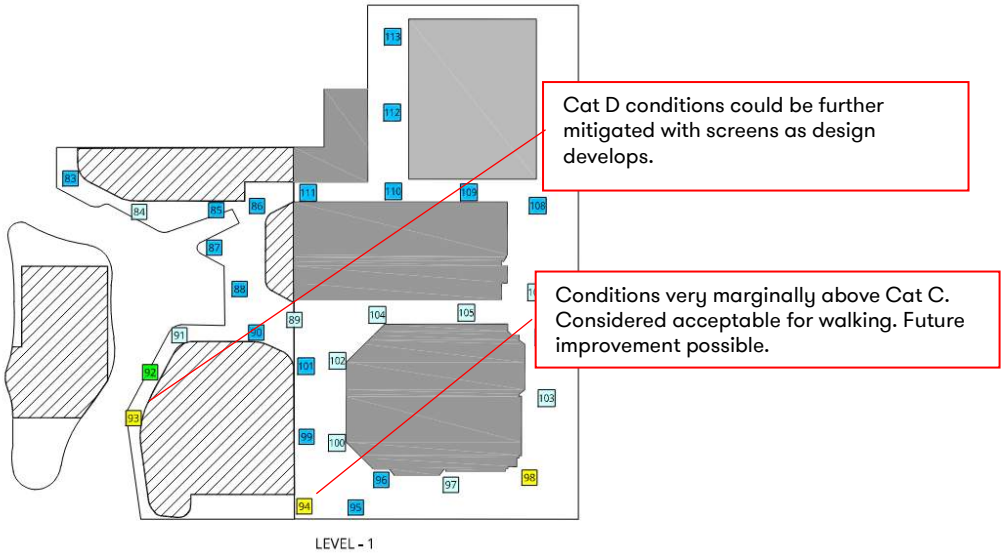
Critical Areas

- At the north end of Lower Hobson Street, mature evergreen trees were found to be effective at mitigating the local exceedances of the gust criteria, although trees could be supplemented by screens or hardscaping. Conditions are shown to be in Category D, which is generally similar to existing.
- In the eastern part of Customs Street, the wind conditions are only very marginally above Category C and considered acceptable for walking. Additional improvements could be made with additional landscaping in the future Sturdee St Park or when these areas are redeveloped in the future.
- At the south-east corner of P1, local Category D conditions at Level 1 would benefit from some local improvement, which may be achieved by extending screens or re-routing pedestrians slightly away from the corner. This could be implemented as the design develops.
- Additional wind tunnel tests demonstrated that wind conditions with the proposed free roof, which is larger than that resulting in the conditions shown below, were calmer, in Category C.

Overall, wind conditions in the public spaces at ground level generally comply with the AUP requirements for wind effects. Local and marginal exceedance in Customs Street or at Level 1 could be further mitigated with additional landscaping or as these areas develop in the future.



LEVEL 1 &2



Minor Modifications to Scheme Subsequent to the Wind Tunnel Tests

A series of minor modifications were proposed to the scheme subsequent to the completion of the wind tunnel tests, including:

- Podium P3 is reduced to 3 levels, and the free roof is repositioned one level lower than that which was wind tunnel tested.
- Tower T2 is reduced by four levels, and the north-west chamfered corner of T2 has been altered slightly.
- Tower T1 is 1.8m narrower in the east-west direction and 1.8m longer in the north direction. Additionally, Podium P1 is elevated by a level.
- The canopy to the west of P1 is reduced from 3 to 1.8m.

These changes were reviewed and are not anticipated to have a negative impact on the results highlighted above.

Modifications to the Proposed Landscaping

The updated landscaping plan maintains equivalent density at the corner of Lower Hobson Street and Quay Street but features a reduction in density further south along Lower Hobson Street.

Overall, the change to the proposed landscaping is not expected to change significantly wind conditions highlighted in Section 4. At the north end of Lower Hobson Street, conditions with the updated proposed landscaping are expected to remain generally similar to existing.

1 INTRODUCTION

This report provides a summary of the assessment of the wind conditions around the proposed Downtown Carpark Redevelopment in Auckland, for the purposes of supporting a Resource Consent application. The aim of the study is to quantitively assess the wind effects of the proposed development on the pedestrian comfort in the surrounding area.

This report is based on architectural drawings, provided by Warren & Mahoney in March 2023 and wind tunnel tests completed at RWDI in June 2023. It makes use of the wind comfort criteria of the Auckland Unitary Plan (AUP) to describe wind conditions in terms of safety and acceptability for a range of activities.

Several rounds of wind tunnel tests and workshops were completed to develop a suitable design for wind. This report presents the key wind mitigation measures implemented and tested in the wind tunnel, and the wind conditions for the final configuration tested.

Conclusions from this report may be affected if appreciable changes to the building massing and architectural features, from that considered in this study, are made as part of the project design development.

Limitations

Findings presented as part of this project are for the sole use of Precinct Properties NZ Limited in its evaluation of the subject property. The findings are not intended for use by other parties and may not contain sufficient information for the purposes of other parties or other uses. Our professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time. No other warranty, expressed or implied, is made as to the professional advice presented in this report.

2 BACKGROUND

2.1 Methodology Overview

The wind tunnel tests were carried out at the boundary layer wind tunnel of RWDI in accordance with the Quality Assurance Manual for Wind Engineering Studies of Buildings Ref [1]. A 1:400 scale model of the proposed development and its surroundings located within approximately 500m of the target site were constructed from rigid material. The was also included in the surrounding model. A general view of the wind tunnel model is shown in Figure 1.

rn 

Figure 1: Model in RWDI Wind Tunnel (June 2023)

2.2 Atmospheric Boundary Layer

The characteristics of the oncoming wind speed and turbulence are generated in the wind tunnel by using roughness elements upwind of the wind tunnel model (Figure 1). These elements create a boundary layer wind speed profile similar to one that occurs in the natural atmosphere.

An analysis of the terrain roughness was carried out using the ESDU methodology Ref [2]. This methodology is based on the Deaves and Harris wind model, which is also the model used in the New Zealand Standard for Wind Loading. The wind profiles for the wind tunnel tests were then selected to match that occurring in the natural boundary layer.

2.3 Measurements

Gust and mean wind speeds were measured at approximately 160 locations using Irwin probes (Figure 2) placed within and around the site. The locations of the probes were chosen either due to sensitivity of the expected activity in the area or because the proposed site geometry suggested the possibility of undesirable wind conditions. The location of the probes is shown in Figure 3.

Figure 2: Measurement Irwin Probe

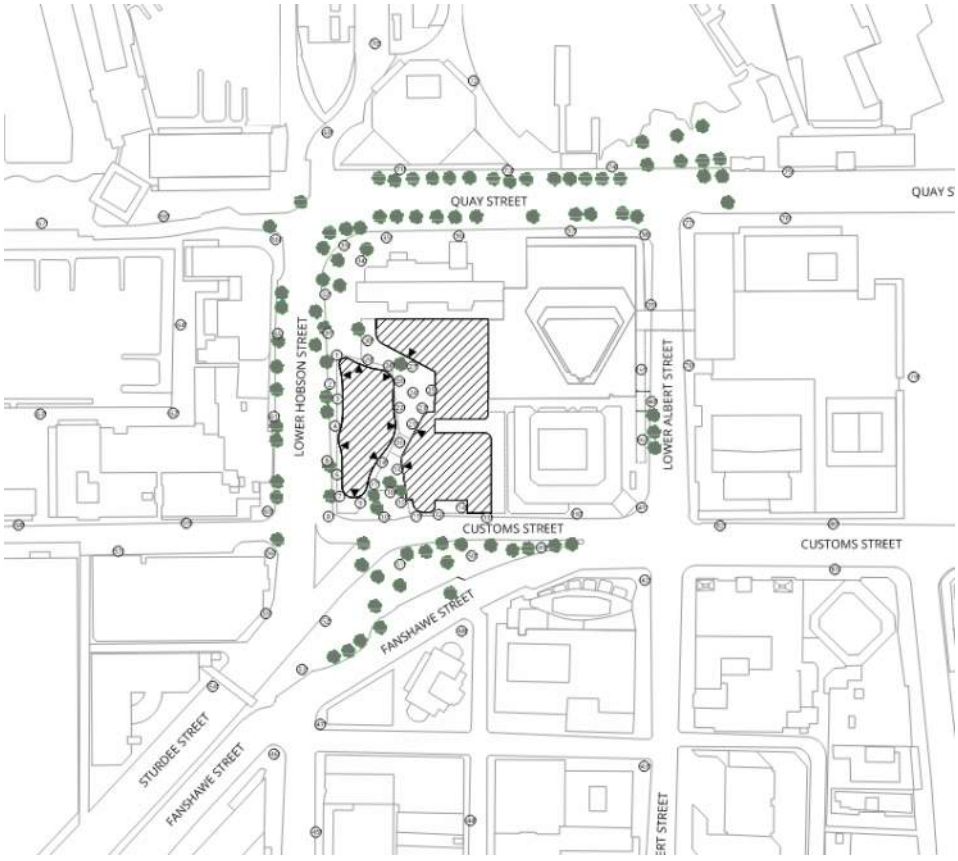


Figure 3: Measurement Location Plan

The measurements were made for 36 sectors of wind directions, i.e. every 10°, exceeding the requirement of the Manual [1].

The measured wind speed ratios were combined with the long-term wind statistics for Auckland to calculate the statistical distribution at each of the measurement point. The key characteristics of the wind climate are summarised below and discussed further in Appendix A.

2.4 Wind Climate in Auckland

A dataset of 19 years (1999-2017) of 10min-average wind speed data from Auckland International Airport was acquired from the MetService. The dataset was sorted by range of wind speeds and directions to obtain the annual wind rose for Auckland International Airport.

The prevailing winds in Auckland originate from a quadrant centred on the south-west wind direction as illustrated in Figure 4. A secondary wind component blows from the North-east direction and can be strong at times.

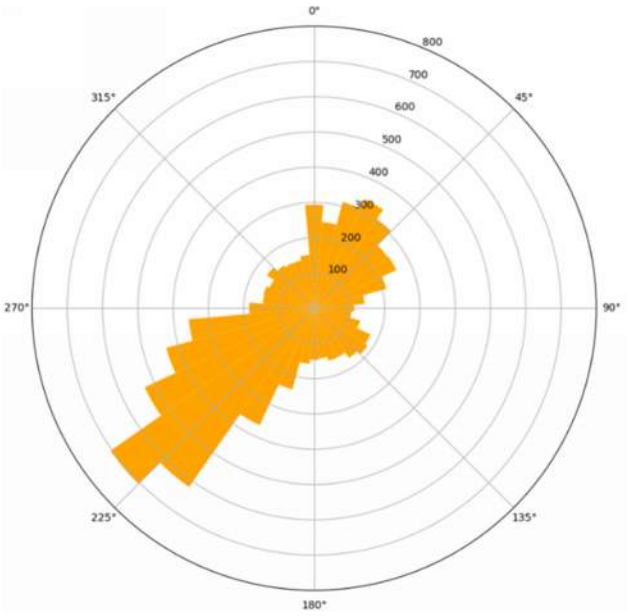


Figure 4: Wind Rose for Auckland Airport

2.5 Wind Comfort & Safety Criteria

The acceptability of windiness is subjective and depends on several factors, most importantly the activities to be performed in the area being assessed. A person sitting at a terrace reading a newspaper and wanting to enjoy a coffee would be more sensitive to wind conditions than someone walking along the footpath to the office.

There are many sets of wind criteria used worldwide to assess the acceptability of wind conditions in an urban context. All these criteria generally tend to be similar in that they account for the statistical variation of the winds and the activity to be performed in the area being assessed.

The wind criteria or categories used in this assessment are those from the Auckland Unitary Plan (AUP) Ref [3]. The AUP wind categories account for the intended activity performed, as summarised in Table 1. More details can be found in Ref [3].

Table 1: AUP Wind Categories (Summary)

Category	Description Summary
A	External area of long-term recreational or relaxation use. Public squares and parks.
B	Area for short-term recreation and relaxation. Streets with significant groupings of landscaped seating features
C	Footpath
D	Areas of roads for service or vehicle transit
E	Conditions potentially dangerous, unacceptable

The assessment of wind conditions in relation to the categories above are based on mean wind speeds only. However, a strong gust also has the potential to make someone stumble or fall. The AUP takes this into account by introducing a limit on the annual maximum gust speed (25m/s), which should not be exceeded anywhere around a proposed development.

The results from the wind tunnel tests at each measurement location are combined with long-term statistics for Auckland to quantify the wind conditions at each point according to the AUP Wind Category of Table 1. The full statistical distributions of the mean wind speeds at each measurement point are calculated and compared with the limits shown in the AUP, as illustrated in Figure 5. The colour of the spot is determined based on the 20% exceedance probability. The comfort conditions are represented by the colour of the spot, also shown in Figure 5.

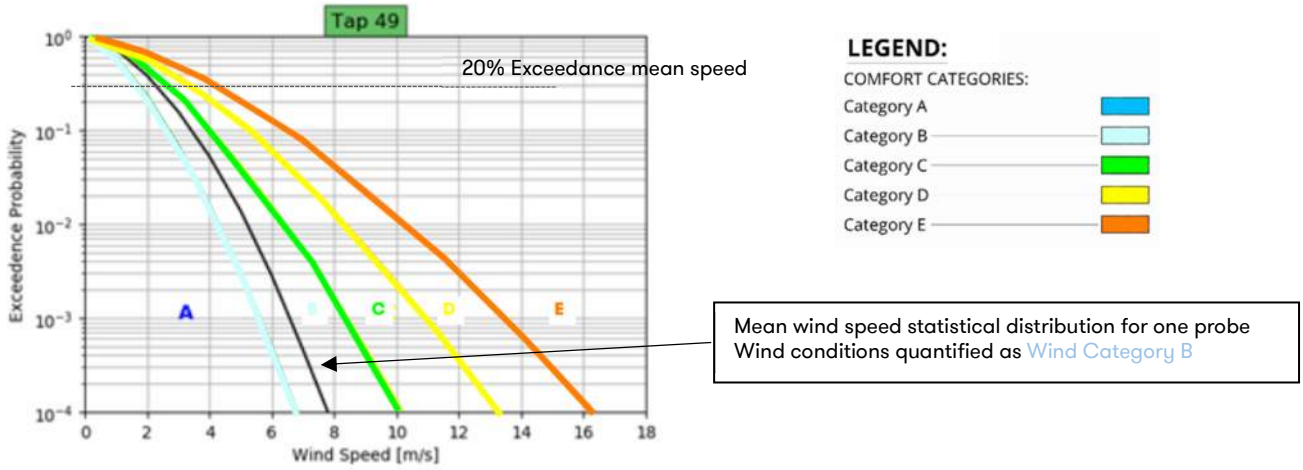


Figure 5: Example of Statistical Distribution & Quantification of Wind Conditions

2.6 Seasonal Variations

Note that the results were processed for the winter and summer seasons, but the results were found to be similar for the two seasons, as shown in Appendix A.

3 EXISTING SITE

The existing site includes a large rectangular multi-storey car park accessed from its south side. It is situated in close proximity to Auckland Harbour in the north and west direction. Most of the tall buildings of Auckland CBD, including the Commercial Bay building, are situated on the east and south-east directions, while the areas to the west and south-west feature low or medium-rise buildings as shown in Figure 6. The current site features restaurants and bars around its south-west corner. The site is bordered by Lower Hobson Street to the west and Customs Street to the south. Significant surrounding buildings include the AON Tower immediately east and the M-Social building immediately north. Pictures of the wind tunnel model of the existing site are shown in Figure 7.

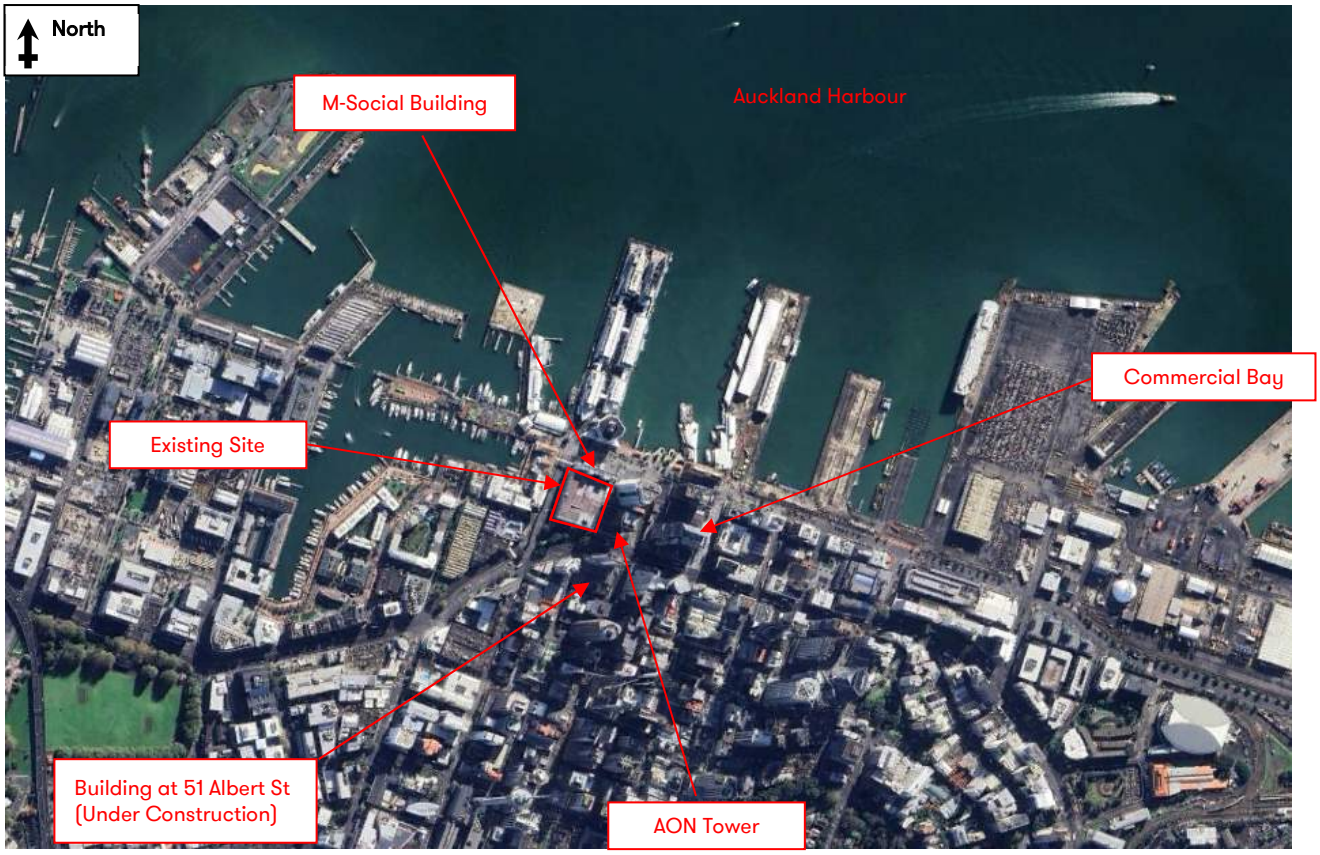


Figure 6: Aerial View of Existing Site (Google Earth)

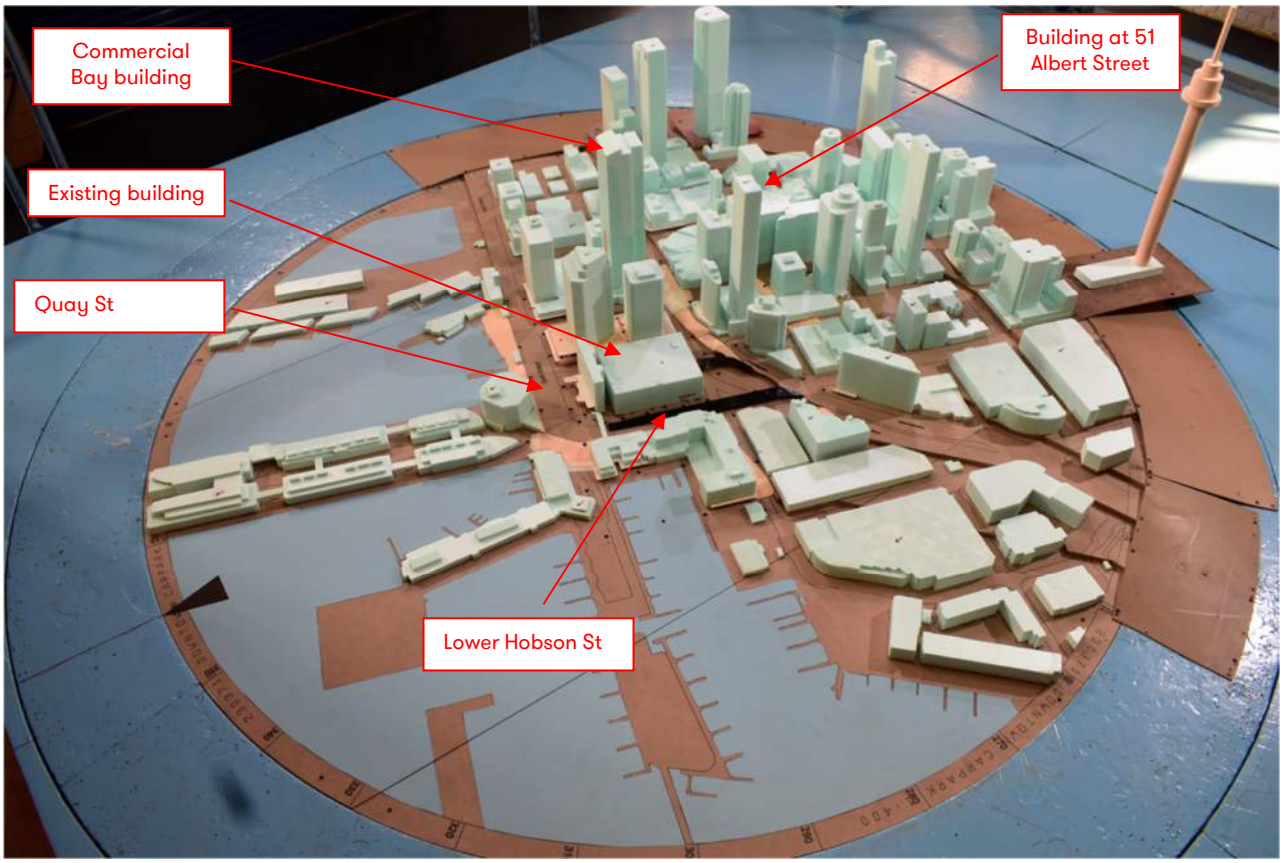


Figure 7: Existing Site Wind Tunnel Model Viewed from West

3.1 Existing Wind Conditions

3.1.1 Safety

For all areas around the existing site, there was no exceedance of the gust criteria (Figure 3.1A of Appendix A)

3.1.2 Comfort

The wind conditions around the existing site are shown in Figure 8.

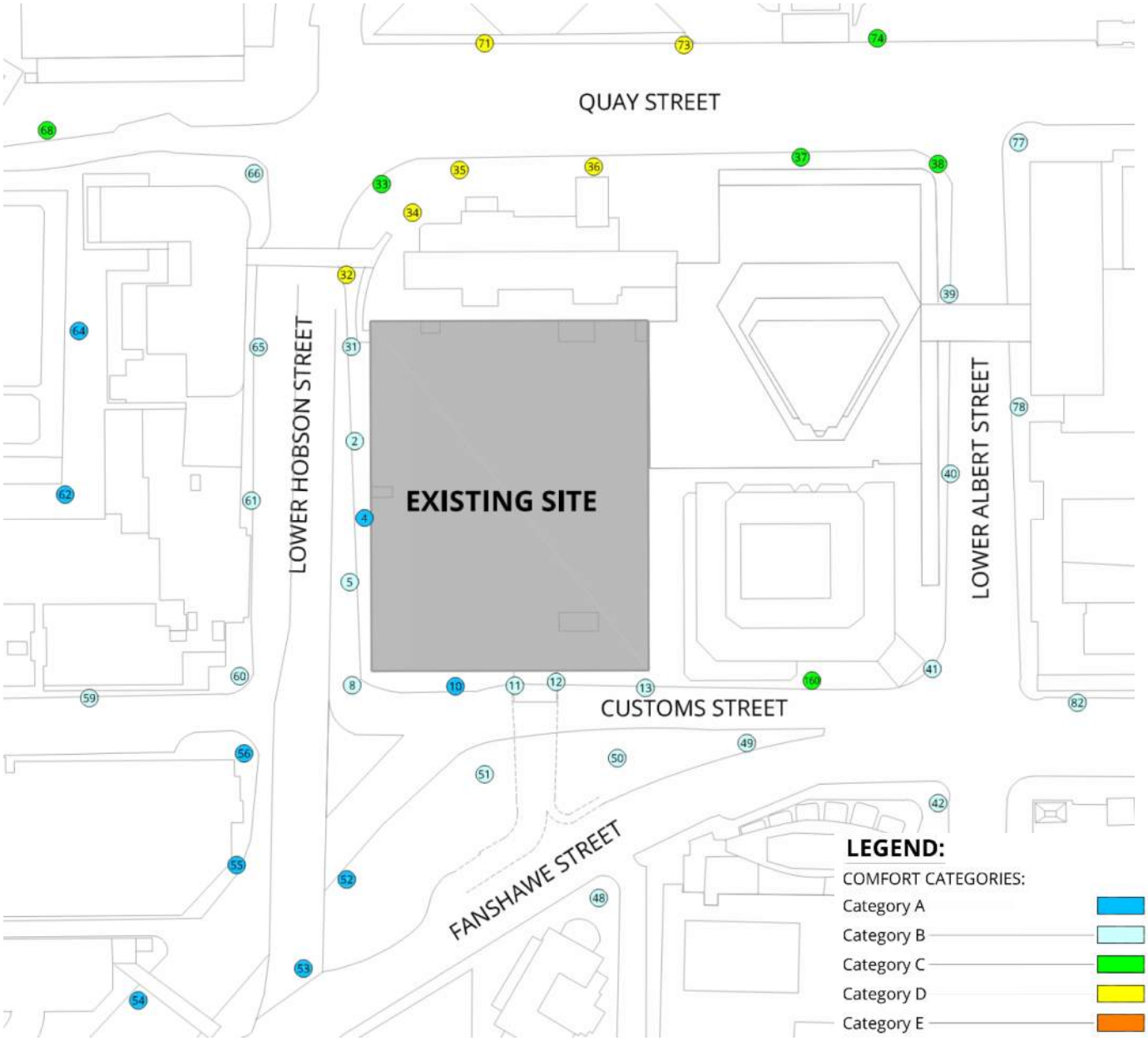


Figure 8: Wind Conditions in and around the Existing Site (Extract from RWDI Report).

Conditions in Lower Hobson Street and Custom Street are shown to be in Category A or B, with local Category C conditions (Location 160), which is acceptable for the current use of these areas. Further south-west, conditions in Sturdee Street tend to be generally calmer, in Category A.

Conditions are shown to be windier at the north end of Lower Hobson Street, just by the M-Social Building, with Category D conditions in this area. These conditions are due to the effects of the prevailing south-west and north-east winds accelerated around the M-Social building. Conditions further in Quay Street are shown to be exposed, in Category C or D (Figure 9). While Category D conditions would normally be considered as windy for a use as a footpath, they are not unusual in areas exposed to winds blowing across the sea, i.e. with no or limited shelter upwind, especially close to building corners. It is likely wind comfort expectations in such exposed areas would be lower than for other walking areas in Auckland CBD.

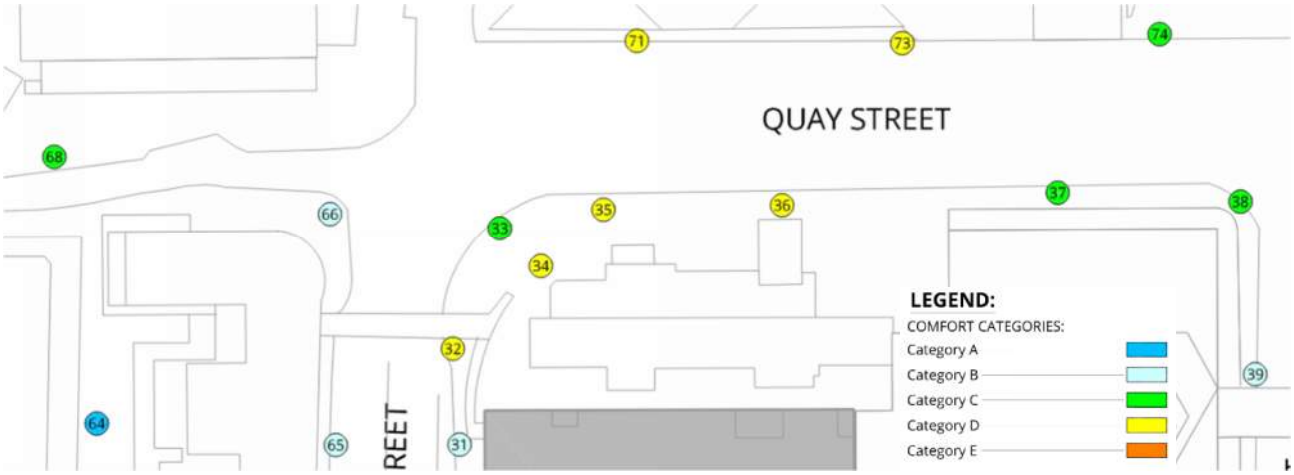


Figure 9: Existing Conditions in the Northern Part of the Site

In the area further east in Custom Street, conditions remain in Category B or C, while conditions in Albert Street are shown to be in Category B.

4 PROPOSED DEVELOPMENT

The proposed Downtown Car Park Redevelopment includes two new towers and a series of Podium buildings as shown in Figure 10.

The two towers are tall, prismatic structures that are supported by podiums. The proposed P3 block is located on the northern part of the site, adjacent to the M-Social building, and is of a lower height. Tower 1, standing at 227 meters, is situated just west of the existing AON House tower, while Tower 2, which is 162 meters tall, is positioned closer to Lower Hobson Road on the western side of the site. Both towers have chamfered corners, or ''cut-outs'', above the podium and at the top. The podiums are linked through bridges, and a free roof covers a portion of the new public space situated between them. This space can be accessed via several laneways, which connect it with Lower Hobson Street, Custom Street West, and the site of the existing AON House building located further east through steps. There is also link to the eastern pedestrian laneway situated on a podium level of Tower 1 on its east side.

The size of the step between the podiums and towers is an important geometric feature of the proposed development for wind effects. This step varies in size; it is relatively narrow on the north and east sides of the towers but is larger on the west and south sides.

The model also reflected the future laneways around the AON Tower, the existing and proposed landscaping in and around the proposed development, including in the future Sturdee St Park to the south. Pictures of the wind tunnel model of the proposed development are shown in Figure 12.

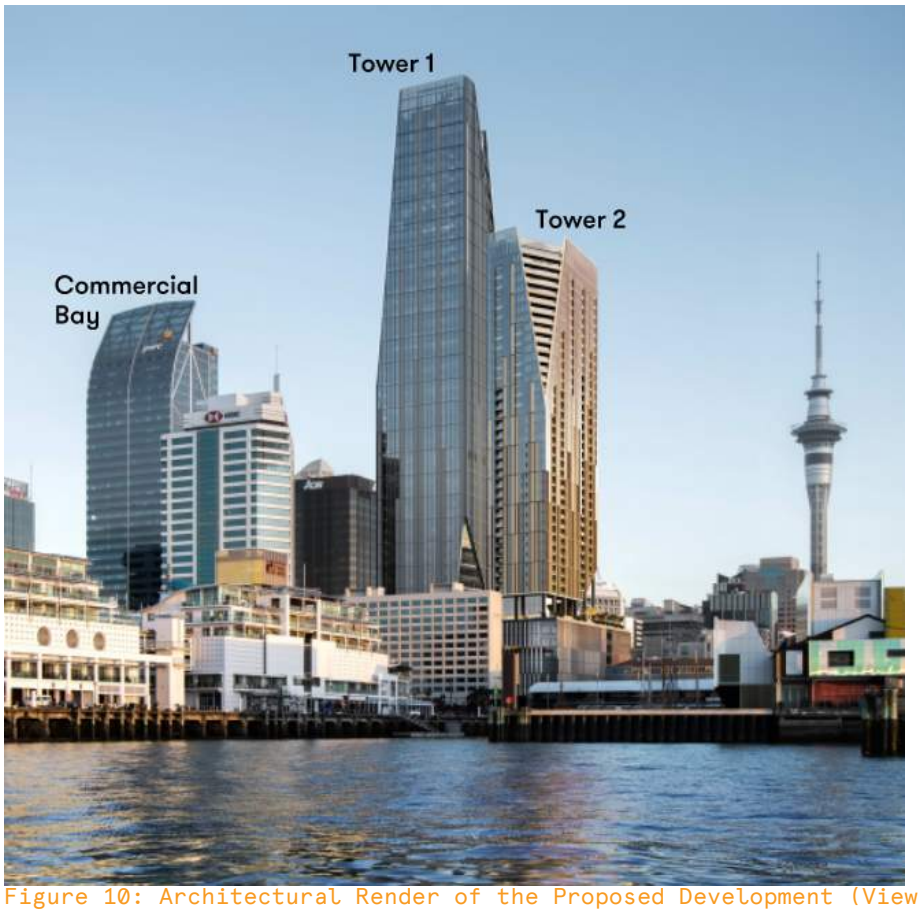


Figure 10: Architectural Render of the Proposed Development (View from North-east)

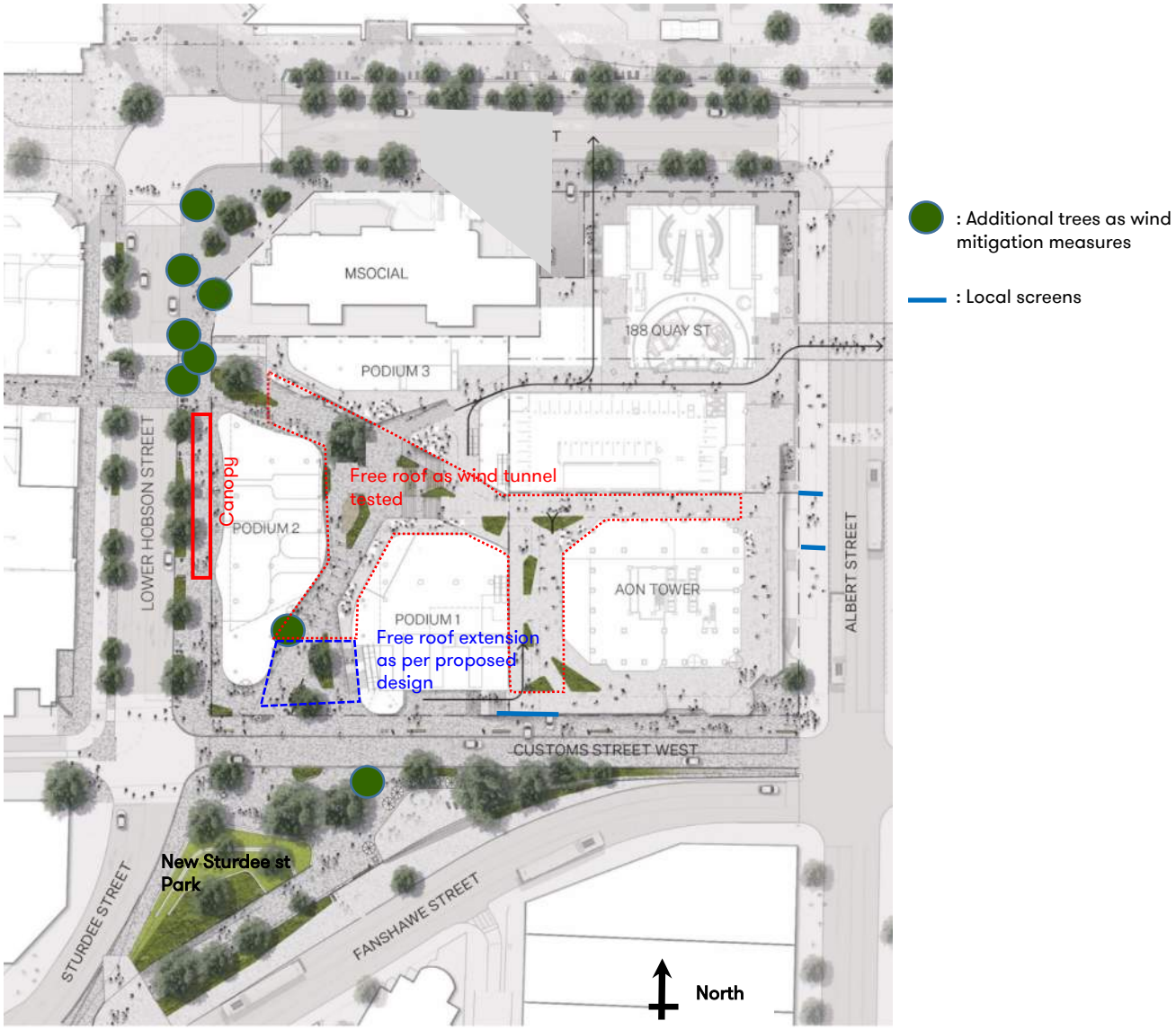


Figure 11: Context Plan with Mitigation Measures as Wind Tunnel Tested

The surrounding buildings used in the existing configuration, including the consented scheme at 51 Albert Street as shown in Figure 7 were also used in the proposed configuration. Pictures of the model as wind tunnel tested are shown in Figure 12.

4.1 Key Wind Design Features & Mitigation Measures

The wind tunnel model included the following relevant aerodynamic features:

- Podiums supporting T1 and T2.
- Free roof covering the space between P1, P2 and P3.
- 4m-wide canopy on the west side of P2.
- Landscaping including mature (6-8m) trees in and around the site as shown in Figure 11 above. The trees in Lower Hobson Street need to be evergreen trees capable of growing in exposed places, such as Pohutukawa trees.
- Canopy covering the lane of the east side of P1.
- While further away from the proposed site, local additional screens on the east side of the AON tower were implemented to simulate the bus stops. This area will be subject to future development.

The wind conditions shown in the section below are for the proposed development with all the mitigation measures listed above, as shown in Figure 11 and Figure 12.

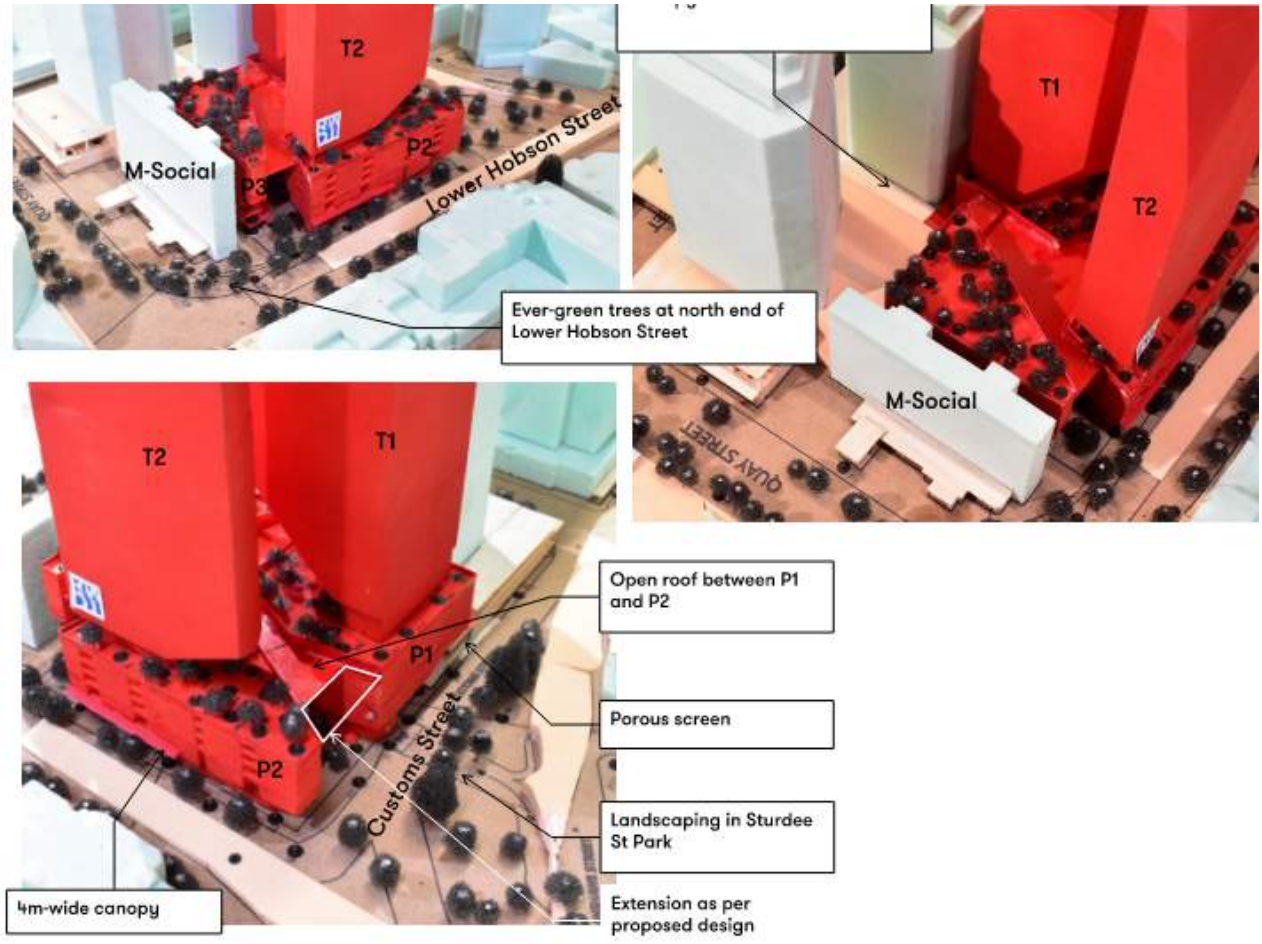


Figure 12: Pictures of the Model of the Proposed Development

4.2 Overview of Wind Mechanisms & Mitigation Strategy

The podiums supporting the towers and the free roof are efficient at dispersing the strong winds deflected downwards by the towers before reaching ground level. The key areas of windiness are limited to the podium roof levels, leaving conditions at street level significantly less exposed. Overall, conditions immediately at the base of the proposed development are shown to be relatively calm and acceptable for the intended use of the areas. However, while the potential for the most significant wind effect is largely mitigated by the podiums and the free roof, the two towers tend to act as a single large massing, increasing winds in Lower Hobson Street and Customs Street. Landscaping in the form of mature evergreen trees was found to be beneficial and is an integral part of the mitigation measures strategy.

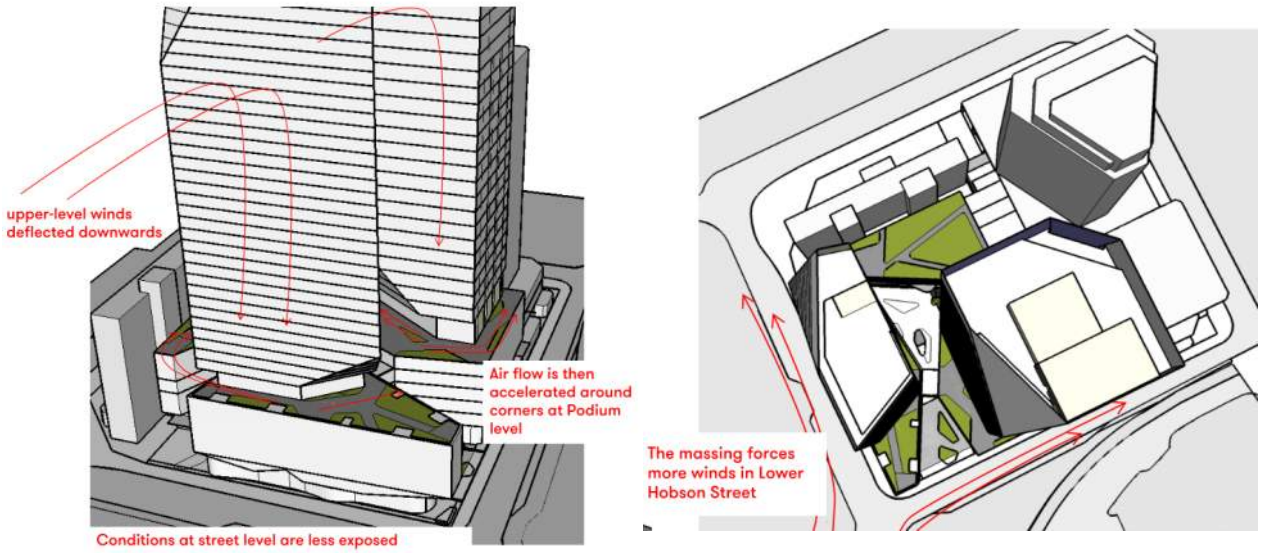


Figure 13: Wind Mechanisms

Wind conditions on the roofs of the podiums were measured in the wind tunnel tests and are reported in RWDI report. Due to the mechanism highlighted above, conditions were generally found windy, with some exceedances of the safety criteria on the roof levels of P1 and P2, even with landscaping. However, we understand access and the use of the space would be controlled and /or limited to good weather days. The conditions reported below are therefore for the main public spaces, including street level as well as Level 1 and 2 for the area around the AON Tower.

4.3 Wind Safety

With the mitigation measures highlighted above, there was no exceedance of the gust criteria for all areas at ground level around the proposed development. While mitigation measures at the north end of Lower Hobson Street could include solid or porous screens to mitigate exceedances of the gust criteria (Section 3.4 of Appendix A), the landscaping proved to be efficient during the wind tunnel tests. Care should be taken in the selection of the trees which need to be evergreen, arranged as shown in Figure 11, and capable of growing in exposed areas, such as the Pohutukawa tree.

4.4 Wind Comfort

Wind conditions are diagrammatically shown in Figure 14 below and described area per area in the subsequent sections.

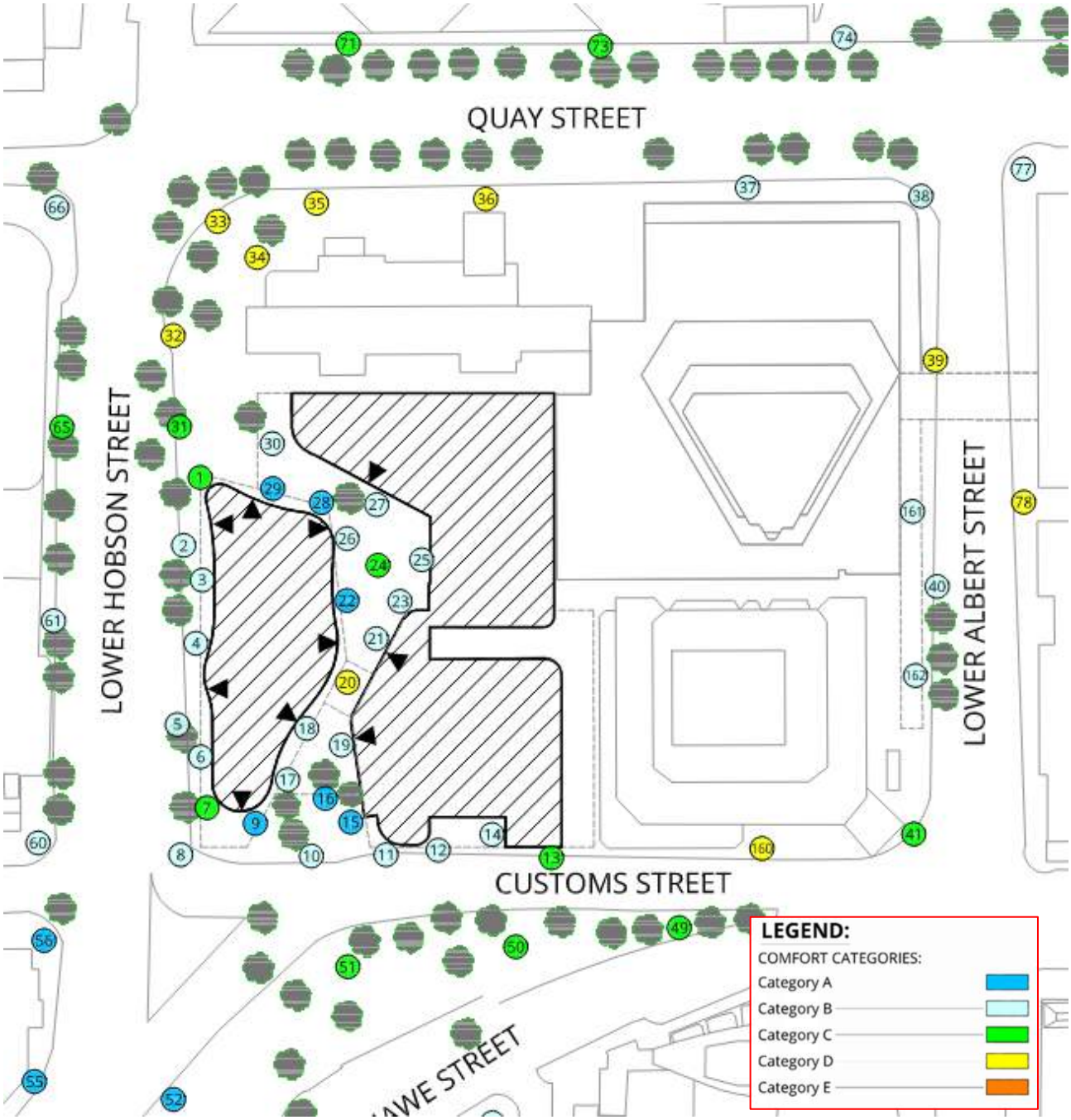


Figure 14: Wind Conditions for the Proposed Development with Mitigation Measures (Extract from RWDI Report)

4.4.1 Open Space between Podiums

As above, the podiums and the open roof significantly contribute to creating a suitable wind environment in the open space between them. Wind conditions in the southern-most area, i.e. close to the entrance from Customs Street, are shown to be in Category A, which would be acceptable for long-term sitting. Conditions gradually change to Category B as moving in the north direction and closer to the narrow point between P1 and P2, with local Category D conditions just below the bridge. Additional wind tunnel tests demonstrated that wind conditions with the proposed open roof were calmer, in Category C (Figure 1.1G and 2.1G of Appendix A). These conditions would be acceptable for walking but windy for long-term sitting. The northern part of the space has a combination of Category A and B conditions, which is typical of a good wind environment. Wind comfort in this space could be further optimised by positioning terraces or seating in areas of Category A conditions.

As detailed in Section 4.4.5 below, conditions on the stairs to the laneway north of the AON Tower are shown to be Category A, which would be acceptable for the intended use of the area.

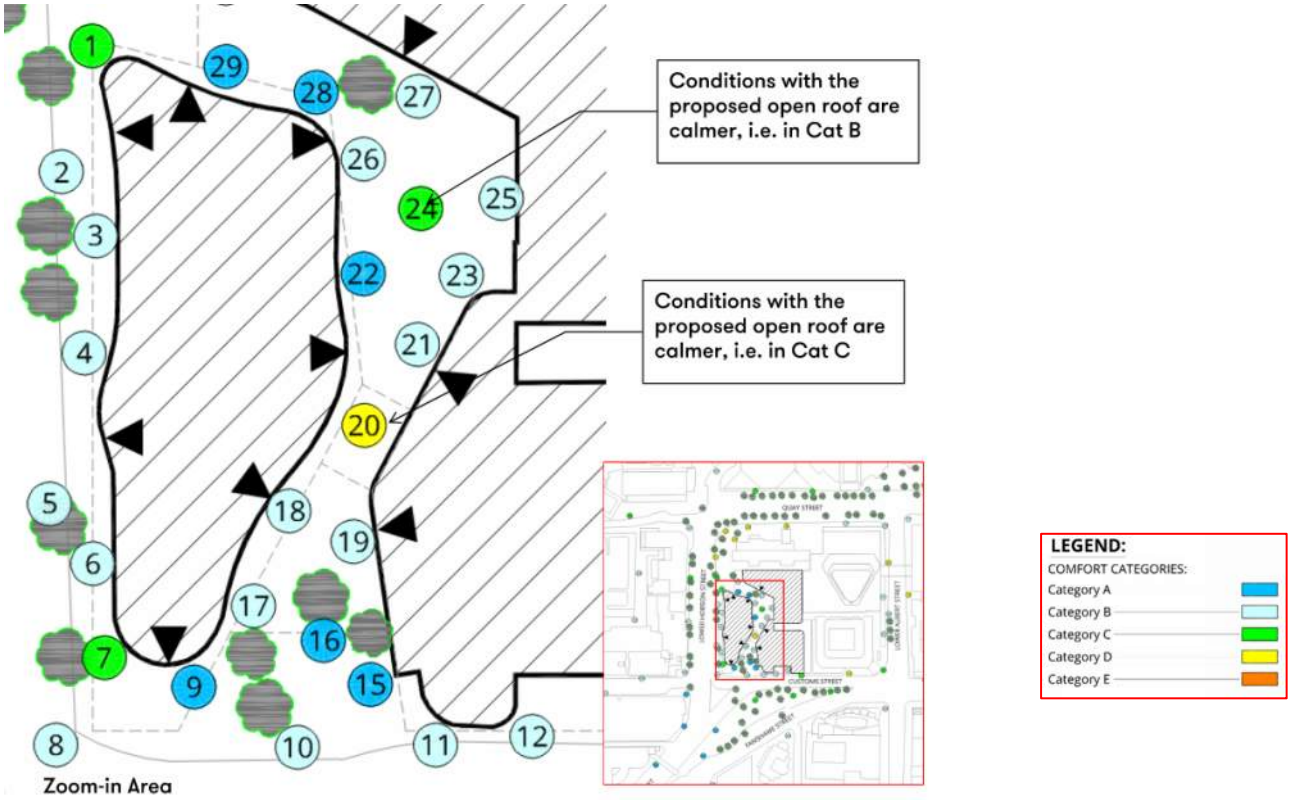


Figure 15: Wind Conditions in Open Space between P1, P2 and P3

4.4.2 Customs and Sturdee Streets

In Customs Street, conditions close to the proposed development are shown to be generally in Category A or B, which is similar to existing and acceptable for a use as footpath. Conditions on the opposite side of Customs Street, in the site of the new Sturdee St Park and in Sturdee Street, are also found in Category A or B. Conditions further east, around the south-east corner of P1 (Location 13) and close to the junction between Customs and Fanshawe Street (Location 49 and 50), are shown to be in Category C, which would be acceptable for walking.

There is a local area of Category D just south of the AON Tower, which is windier than existing. As stated in the RWDI report (Appendix A), conditions at this point are only very marginally above Category C and are considered acceptable for walking. In addition, further improvements could be made with additional landscaping in the future Sturdee stPark or when the podium area is redeveloped in the future to integrate a level of landscaping or screening. Conditions further east in Customs Street and at the junction with Lower Albert Street are shown to be in Category C, which is acceptable for a footpath.

Figure 16: Wind Conditions in Customs Street

4.4.3 Lower Albert Street

In the southern part of Lower Albert Street, conditions with local screening simulating the bus shelters are shown to be in Category B, which is similar to existing. As confirmed in RWDI report, the Category D condition (Location 39 & 78) would also occur in the existing configuration. For these two locations, the changes in the conditions between the existing configuration (Figure 8) and the proposed configuration (Figure 17) are a result of refinement of the model in this area between the different rounds of wind tunnel tests. These two locations are too distant from the proposed development to be significantly impacted by the development.

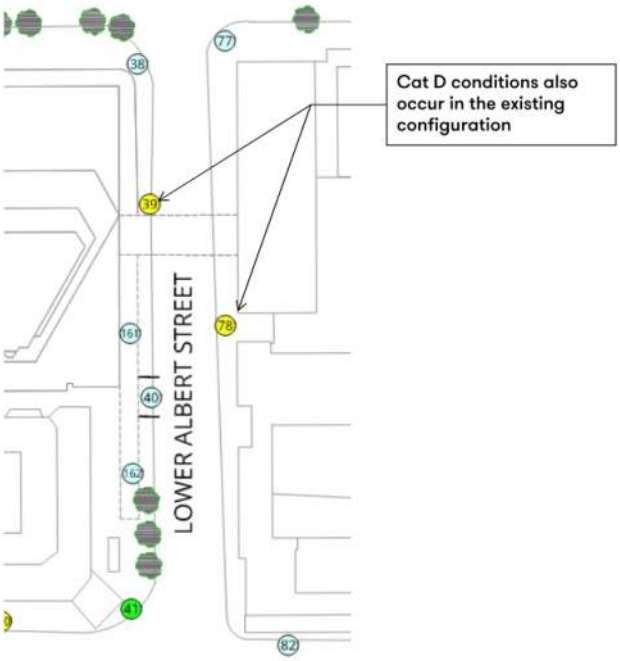


Figure 17: Wind Conditions at Lower Albert Street

4.4.4 Lower Hobson Street and Quay Street

Conditions in the south part of Lower Hobson Street are shown to be generally in Category B, which is similar to existing and acceptable for a use as footpath. There is a local area of Category C conditions around the north-west corner of P1 (Location 1,31), which would remain also acceptable. On the opposite side of the road, conditions at Location 65 are also shown to be in Category C, which is acceptable for walking.

Conditions in the north part of Lower Hobson Street, i.e. closer to the M-Social building, are shown to be generally in Category D. While one point (Location 33) is shown to be locally windier than existing, conditions overall remain similar to existing. As mentioned in Section 4.3, the arrangement of trees as shown in Figure 11 was found to be beneficial to the wind conditions in this area. As for the existing site, while Category D conditions would normally be considered as windy for a use as a footpath, such conditions more typically occur in areas exposed to winds blowing across the sea, i.e. with no or limited shelter upwind. It is likely wind comfort expectations in such exposed areas would be lower than for other walking areas in Auckland CBD.

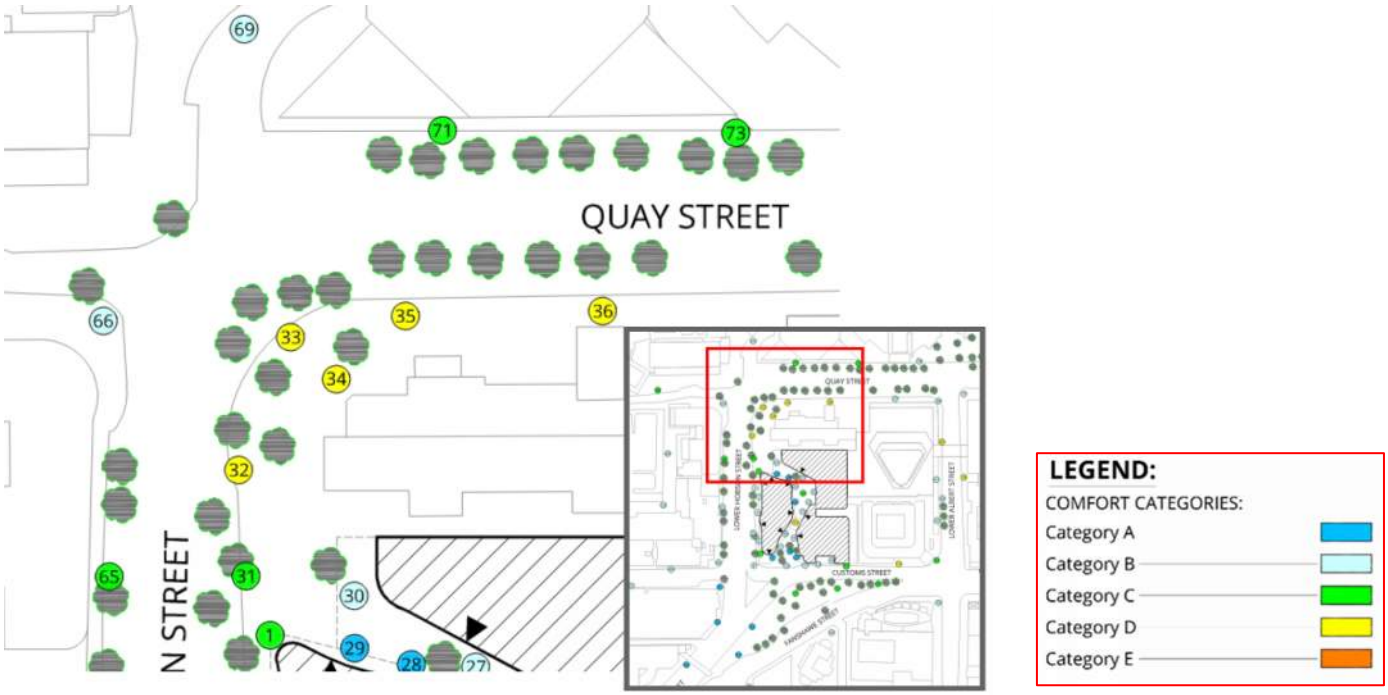


Figure 18: Wind Conditions at North End of Lower Hobson Street

Note that conditions were assessed with and without the existing fly-over in Lower Hobson Street as detailed in Appendix B. The fly-over was not found to have a significant effect on wind conditions in this area.

4.4.5 Level 1 & 2 Laneways

Wind conditions in these areas are diagrammatically shown in Figure 19.

Wind conditions in the laneways at Level 1 and 2 are shown to be calm, generally in Category A or B. A local area around the south-east corner of P1 (Location 94) was found windier, with Category D conditions measured in this area. While currently windy, this local area could be modified to control pedestrian access, enclose further this area, or re-arrange the stairs to incorporate additional screens.

As stated in RWDI report, conditions around the south-east corner of the AON tower (Location 98) on the podium are only very marginally above Category C and can be considered acceptable for walking. As for Location 160 (Figure 18), additional improvement could be made when the podium is redeveloped in the future to incorporate landscaping or screens.

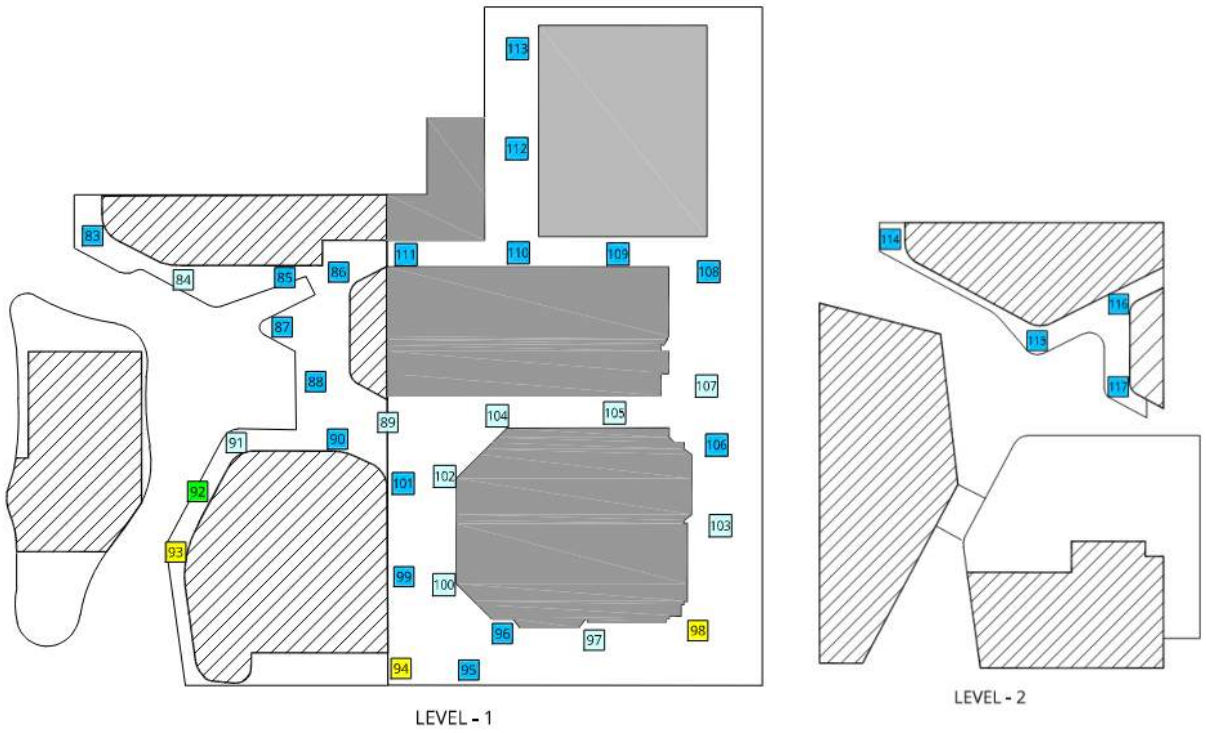


Figure 19: Wind Conditions in Laneways at Level 1 & 2 (Extract from RWDI Report)

5 IMPACT OF MINOR CHANGES TO THE BUILDING MASSING

Following the completion of the wind tunnel tests, minor changes to the design of the proposed development were made. This section of the report reviews these changes and the likely impact the changes may have on the conditions at ground level.

5.1 Review of the changes

The subsequent changes made to the design are summarized in Figure 20 and include the following:

- Podium P3 is reduced to 3 levels, and the free roof is repositioned one level lower than that which was wind tunnel tested.
- Tower T2 is reduced by four levels, and the north-west chamfered corner of T2 has been altered, as shown in Figure 20.
- Tower T1 is 1.8m narrower in the east-west direction and 1.8m longer in the north direction. Additionally, Podium P1 is elevated by one level.
- The canopy to the west of P1 is reduced from 3 to 1.8m.

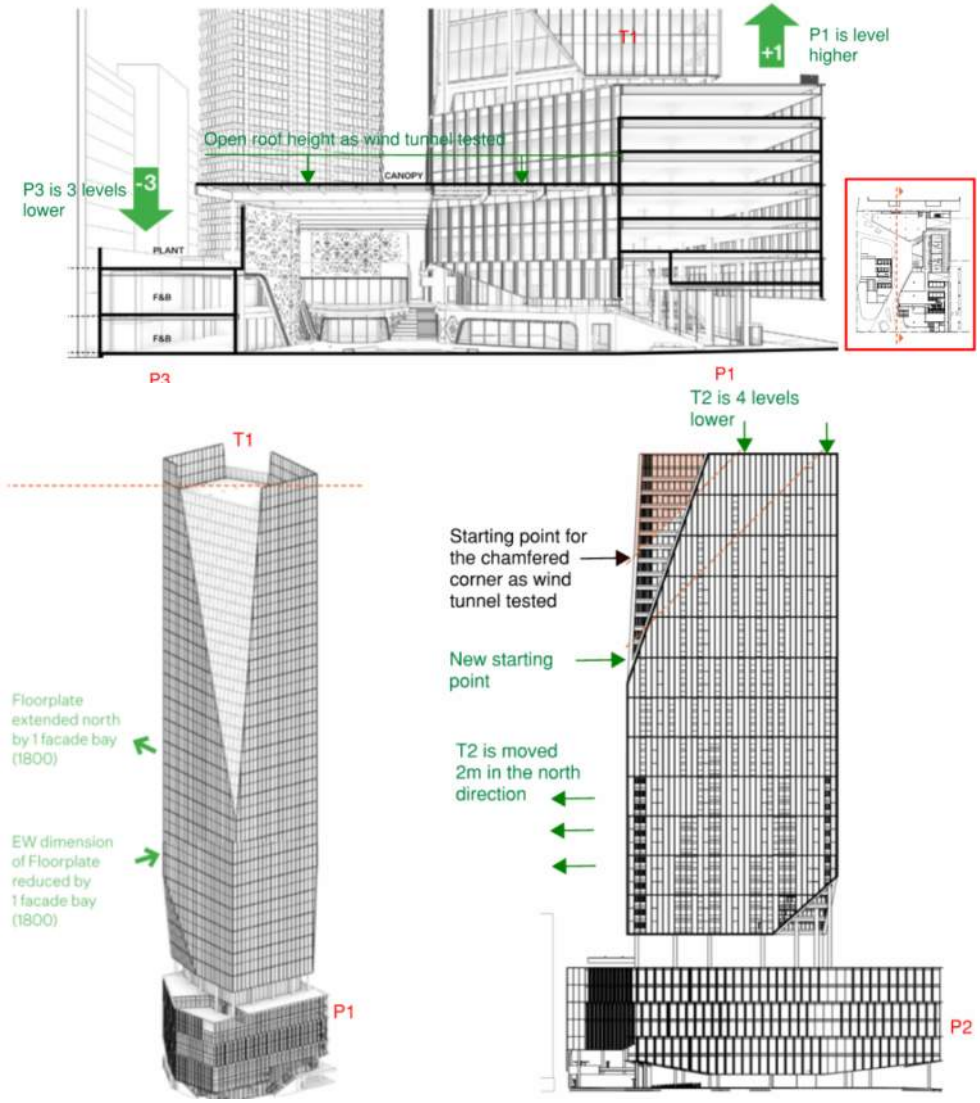


Figure 20: Subsequent Massing Changes Following Wind Tunnel Tests

5.2 Overall Impact of the Changes on Wind Conditions

Overall, the changes highlighted above remain relatively small in comparison with the scale of the proposed development and conditions at ground level are expected to remain largely unchanged. The effects of the changes were qualitatively reviewed as summarised below.

5.2.1 Effect of Change to P3 and Open Roof

The free roof, as shown in Figure 20 and in conjunction with the lowered P3, will continue to disperse the winds deflected downward by T2. Wind conditions at ground level are therefore likely to remain unchanged. Lowering P3 may slightly reduce the impact of westerly winds in Lower Hobson Street, but elsewhere, wind conditions are expected to remain unchanged.

5.2.2 Effect of the Change to T2

The effect of lowering T2, in conjunction with the new chamfered corner, is to reduce slightly the massing of T2 on its west elevation, letting more of the west and southwest winds flowing around and above T2. Consequently, wind conditions are expected to remain either unchanged or potentially become slightly calmer. Moving T2 two meters northward is unlikely to have any impact on wind conditions, as the free roof will continue to disperse the winds deflected downwards by T2 before reaching ground level.

5.2.3 Effect of the Changes to T1 & P1

Extending T1 1.8m to the north has the effect to reduce the size of the step between the T1 and P1 on the north side. However, the podium is already complemented by the free roof and therefore this change won't affect conditions on this side of T1.

Reducing the massing of T1 by 1.8m in the east-west direction will result in an increased gap between T1 and T2. This, in turn, may slightly reduce the pressure differential between the southern and northern areas. It is anticipated that this could have a minor positive effect on wind conditions at ground level between T1 and T2, and possibly in Lower Hobson Street. Overall, conditions are expected to remain unchanged.

The extent of change to P1 is limited compared to the overall massing, and conditions at ground level are expected to remain unchanged.

5.2.4 Effect of the Change to the Canopy to the west of P1

The reduction in canopy from 3 to 1.8m is just within accuracy of modelling in the wind tunnel (3mm reduction, at 1:400 model scale). Most of the winds deflected downwards are already dispersed over the podium and the reduction in canopy width is not anticipated to have a significant effect on wind conditions.

6 IMPACT OF CHANGES TO THE LANDSCAPING

6.1 Review of Changes in Landscaping Plan

The proposed landscaping along Lower Hobson Street has been revised from the layout shown in Section 4 (Figure 12). The updated landscaping plan, illustrated in the background image of Figure 22 below, maintains equivalent density at the corner of Lower Hobson Street and Quay Street but features a reduction in density further south along Lower Hobson Street.

6.2 Effect of the Changes to the Landscaping Plan

Additional results from the various rounds of wind tunnel testing were used to assess the sensitivity of wind conditions to changes in landscaping. The configuration presented below and referred to as Run 1, featured less landscaping at the corner of Quay Street and Lower Hobson Street compared to the updated plan but included additional trees further south along Lower Hobson Street. This landscaping configuration, as tested in the wind tunnel and illustrated in Figure 21 below provides valuable insights, as the trees are positioned further from the critical area at the northern end of Lower Hobson Street.

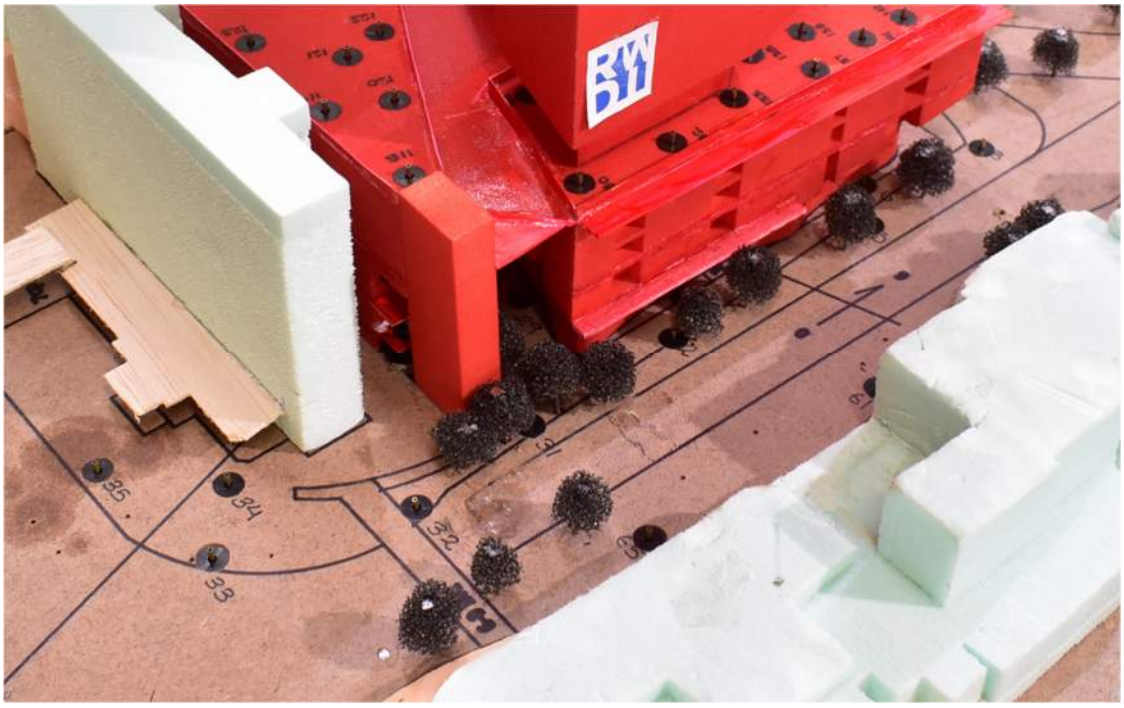


Figure 21: Landscaping as Wind Tunnel Tested in Run 1

Our comments on wind conditions for Run 1 are as follows:

- There was only a marginal exceedance of the gust criteria at Location 35, with the gust speed exceeding the threshold by less than 4%. It is expected the dense landscaping at the corner of M-Social shown in the updated proposed landscaping would improve conditions and eliminate this exceedance. Elsewhere, there was no instance of exceedance of the gust criteria.
- Conditions at Location 33 and 34 are shown to be in Category E, but marginally only (Appendix C) and the dense landscaping is expected to improve these conditions to Category D, which would be broadly similar to existing.
- Conditions at Location 65 are shown to be in Category D, which is windier than the Category C but similar to the existing conditions further north.

Overall, the change to the proposed landscaping is not expected to change significantly wind conditions highlighted in Section 4. As summarised in Figure 22, at the north end of Lower Hobson Street, conditions with the updated proposed landscaping are expected to remain generally similar to existing.

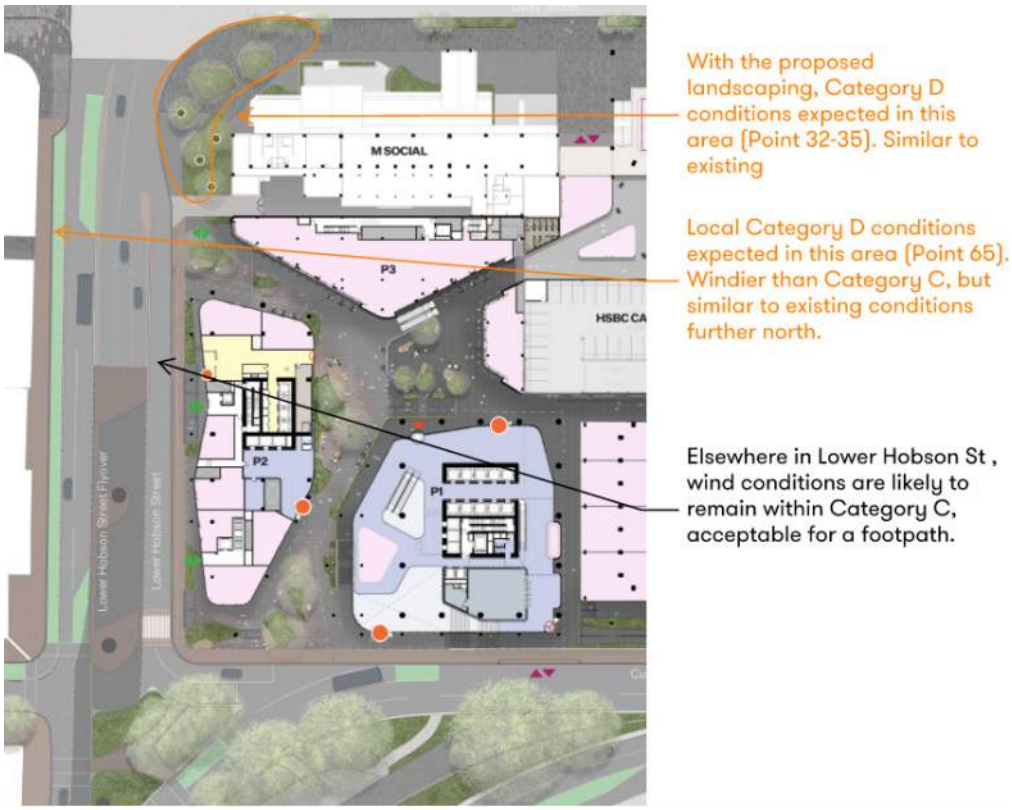


Figure 22: Updated Landscaping Plan & Expected Wind Conditions

7 IMPACT OF CHANGES RESOURCE CONSENT (NOVEMBER 2024)

Further changes were recently made to the proposed Development which concern mainly the internal arrangement and use of the towers. The only notable changes to the outer geometry were identified as follows:

- Slight amendments to the chamfer of T2
- The P2 building line slightly moved west at ground level
- P1 Custom Street stair moved 4.5m west

These changes were reviewed and do not affect significantly the geometry or the massing and are not expected to have any impact on the wind conditions described above.

8 CONCLUSIONS

This report provides a summary of the assessment of the wind conditions around the proposed Downtown Carpark Redevelopment in Auckland.

This report was originally based on architectural drawings, provided by Warren & Mahoney in March 2023 and wind tunnel tests completed at RWDI in June 2023. It makes use of the wind comfort criteria of the Auckland Unitary Plan (AUP) to describe wind conditions in terms of safety and acceptability for a range of activities. Subsequent updates have been reviewed and the covered by the report.

The wind tunnel tests were carried out at the boundary layer wind tunnel of RWDI. A 1:400 scale model of the proposed development and its surroundings located within approximately 500m of the target site, were constructed from rigid material. Our key findings were as follows:

Wind conditions around the existing site, were shown to be in Category A or B, with Category D conditions at the north end of Lower Hobson Street.

The proposed development podiums supporting the towers and the free roof disperse the strong winds deflected downwards by the towers before reaching ground level. The key areas of windiness are limited to the podium roofs, leaving conditions at street level significantly less exposed. However, the proposed development tends to act like one large massing forcing slightly more winds in the side streets. Landscaping was found necessary in a few areas to mitigate the effects of this mechanism.

For all areas around the proposed development, there was no exceedance of the gust criteria. 6-8m trees were found to be effective at mitigating exceedances of gust criteria at the north end of Lower Hobson Street, although landscaping could be supplemented by screens.

Wind conditions in and around the proposed development also remain generally in Category A or B, with local Category C conditions, which would be acceptable for the intended use of the areas.

The Category D conditions at the north end of Lower Hobson Street are generally similar to existing. In the eastern part of Customs Street, the wind conditions are only very marginally above Category C and considered acceptable for walking. Additional improvements could be made when these areas are redeveloped in the future.

Wind conditions in the public spaces at ground level generally comply with the AUP requirements for wind effects. Local and marginal exceedance in Customs Street or at Level 1 could be further mitigated as these areas develop in the future.

9 REFERENCES

1. Australasian Wind Engineering Society (2019) Wind-Engineering Studies of Buildings. Quality Assurance Manual, AWES-QAM-1–2019.
2. ESDU. 1974–1999. Wind speeds and turbulence. Engineering Sciences Data Unit (ESDU International), Wind Engineering Series Vols. 1a and 1b.
3. Auckland Council. Auckland Unitary Plan, Chapter H8 Business – City Centre Zone. Section H8.6.28 Wind.

Appendix A Technical Appendix – RWDI Report

REPORT

DOWNTOWN CARPARK REDEVELOPMENT

AUCKLAND, NZ

PEDESTRIAN WIND STUDY
RWDI # 2303718
June 22, 2023

SUBMITTED TO

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EXECUTIVE SUMMARY

RWDI Australia Pty Ltd (RWDI) has been retained to conduct a pedestrian wind assessment of the proposed Downtown Carpark Redevelopment located in Auckland, NZ. The pedestrian-level wind microclimate assessment was initially undertaken for the following configurations of the site:

Existing Configuration: Existing site with existing surrounding buildings.
Proposed Configuration: Proposed Development with existing surround building.

Additional smoke visualisation studies were also undertaken to understand the primary wind flows around the site and its interaction with the subject development. Subsequently, refinement of the model details was undertaken for the surrounding buildings (e.g., AON Tower) and several rounds of mitigation tests were undertaken. Notably, in compliance with local standards, trees and other landscaping measures were intentionally omitted in areas where high gust winds were observed. These sensitivity tests were conducted to assess the impact of *only* incorporating upwind trees. For the final round of mitigation tests (Run 5), all trees were incorporated to ensure accurate and comprehensive results. The report only outlines the findings from this final round of mitigation tests. The results are summarised as follows:

Wind Safety:

- High winds exceeding the safety limits are not expected for the existing site.
- With the addition of the proposed development, safety exceedances are noted on the grade level at the corner of Quay / Lower Hobson Streets and within the upper levels on Level 1 (corner of AON Tower) and Levels 6 & 7 terraces.
- All grade and Level 1 safety exceedances are resolved through the inclusion of wind control measures in the form of screening and upwind landscaping. High winds on Levels 6 & 7 terraces will be addressed during the detailed design stage of the development.

Wind Comfort:

- The existing wind conditions are generally calm (CAT A or B) at most locations around the site throughout the year. However, higher wind speeds are observed along Quay Street with conditions suitable for active use (CAT C and D).
- With the inclusion of the proposed development, the local winds are diverted along Lower Hobson Street and Customs Street resulting in an increase in overall wind activity at the corners of Lower Hobson Street / Quay Street and Custom Street / Lower Albert Street. Wind conditions are consistent with the existing scenario at most off-site locations. Winds are also likely to channel between the proposed buildings on the ground level with slightly higher winds expected at the neck of the channel.
- Wind speeds suitable for passive use (CAT A & B) are expected at most locations on Level 1 and throughout the Level 2 terrace. Localised wind effects can create windier spots (CAT C through CAT E) around the southern end of AON Tower. Wind conditions on upper-level terraces are not anticipated to be suitable for comfortable use throughout the year.
- The addition of mitigation measures in the form of screening and landscaping tends to improve the overall wind comfort conditions around the site. Most grade and Level 01 areas are suitable for passive use (CAT A & B). Wind comfort conditions also improve at the corner of Lower Hobson Street / Quay Street and Customs Street / Lower Albert Street.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

RWDI Australia Pty Ltd (RWDI) has been retained to conduct a pedestrian wind assessment of the proposed Downtown Carpark Redevelopment located in Auckland, NZ. This report presents the project objectives, background and approach, and discusses the results from RWDI's wind tunnel assessment.

The project site, shown within its existing surrounding context in Image 1, is located at the corner of Customs Street West and Lower Hobson Street near Princes Wharf. It is also bounded by M Social Hotel to the north, and HSBC Tower and AON Towers to the east. The proposed development consists of two high-rise towers (approximate heights of 160 m and 200 m) situated atop a 30 m high podium. A low-rise building is also included along the north of the site.

Image 1: Aerial View of the Existing Site and Surroundings

The objective of the study is to assess the wind speeds in pedestrian areas within and around the study site. This quantitative assessment is based on wind speed measurements on a scale model of the Proposed Development and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared with the appropriate criteria to gauge wind comfort and safety in pedestrian areas. The key outdoor pedestrian-accessible areas of interest associated with the development include the pedestrian footpaths around the site, the primary entrances and amenity spaces on the grade level, and the proposed amenity spaces on upper levels.

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment within and around the Proposed Development, a 1:400 scale model of the site and surroundings was constructed for the wind tunnel tests of the following configurations:

Existing Configuration:	Existing site with Existing Surrounding Buildings (Image 2A);
Proposed Configuration:	Proposed Development with Existing Surrounding Buildings (Image 2B); and
Mitigation (Run 5):	Proposed Development with Existing Surrounding Buildings and with the inclusion of Landscaping and Wind Control Measures (Image 2C).

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 480m radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modeled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 162 specially designed wind speed sensors to measure mean and gust speeds at typical chest height above the local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in 10-degree increments. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and was confirmed with the project team.

Image 2A: Wind Tunnel Study Model – Existing Configuration

Image 2B: Wind Tunnel Study Model – Proposed Configuration

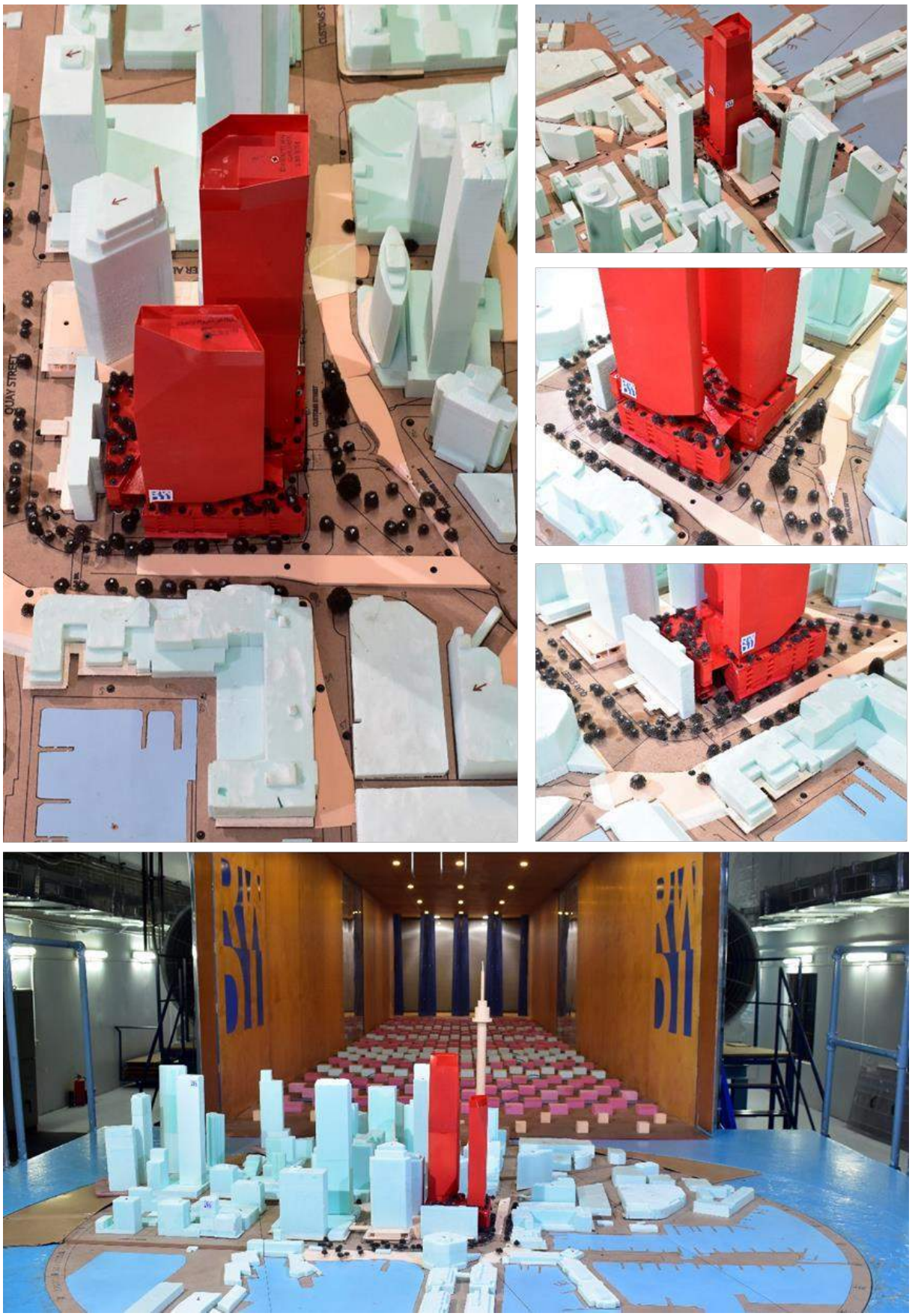
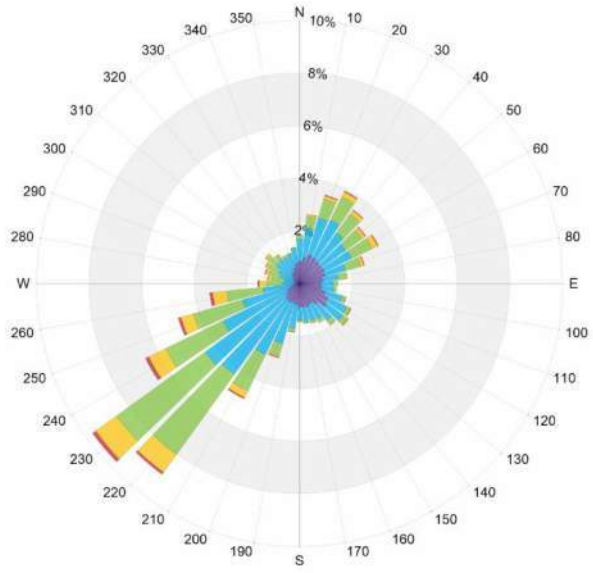


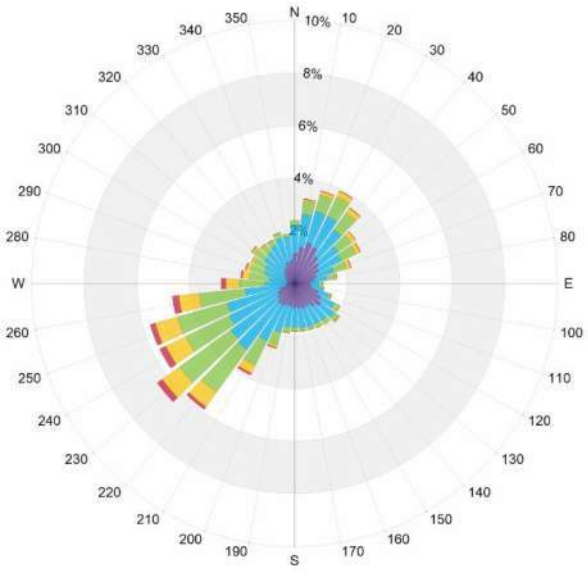
Image 2C: Wind Tunnel Study Model – Mitigation (Run 5) Configuration

2.2 Meteorological Data

Wind statistics recorded at Auckland International Airport between 1995 and 2018, inclusive, were analysed for the Summer (November through April) and Winter (May through October) seasons. Image 3 graphically depicts the directional distributions of wind frequencies and speeds for these two seasons. Winds from the southwest and northeast directions are predominant in both summer and winter seasons as indicated by the wind roses. Strong winds of a mean speed greater than 10 m/s measured at the airport (at an anemometer height of 10 m) occur 6.9% and 8.9% of the time during the summer and winter seasons, respectively. These primarily originate from the southwest and northeast directions. Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the wind criteria for pedestrian comfort and safety.



Summer (November – April)



Winter (May – October)

Wind Speed (m/s)	Probability (%) Summer	Winter
Calm	1.0	1.5
1-3	27.2	30.8
4-6	39.2	36.6
7-9	25.6	22.2
10-12	6.0	7.3
>12	0.9	1.6

Image 3: Directional Distribution of Winds Approaching Auckland International Airport between 1995 and 2018

2.3 Pedestrian Wind Criteria

The Auckland Unitary Plan Operative sets out standards for compliance to facilitate a comfortable environment for designated pedestrian activities. The standards detail the requirements related to pedestrian wind comfort, with the objective of mitigating adverse wind effects generated by tall buildings exceeding 25 m in height. The requirements note that a new building must not cause mean wind speed around it to exceed the category for the intended use of the area (as set out in the table below and in Image 4) and an existing wind speed which exceeds the controls set out in the following table to increase.

Comfort Category	Mean Speed (m/s)	Description
Category A	**≤ 2.1**	Areas of pedestrian use or adjacent dwellings containing significant formal elements and features intended to encourage longer term recreational or relaxation use such as major and minor public spaces, parks and other open space, and adjacent outdoor living spaces.
Category B	**≤ 3.3**	Areas of pedestrian use or adjacent dwellings containing minor elements and features intended to encourage short term recreation or relaxation, including adjacent private residential properties such as minor pedestrian open spaces, pleasance areas in road reserves, streets with significant groupings of landscaped seating features.
Category C	**≤ 4.1**	Areas of formed footpath or open space pedestrian linkages, used primarily for pedestrian transit and devoid of significant or repeated recreational or relaxational features, such as footpaths where not covered in categories A or B above.
Category D	**≤ 5.2**	Areas of road, carriage way, or vehicular routes, used primarily for vehicular transit and open storage, such as roads generally where devoid of any features or form which would include the spaces in categories A - C above.
Category E	**> 5.2**	Represents conditions which are dangerous to the elderly and infants and of considerable cumulative discomfort to others. Category E conditions are unacceptable and are not allocated to any physically defined areas of the city.

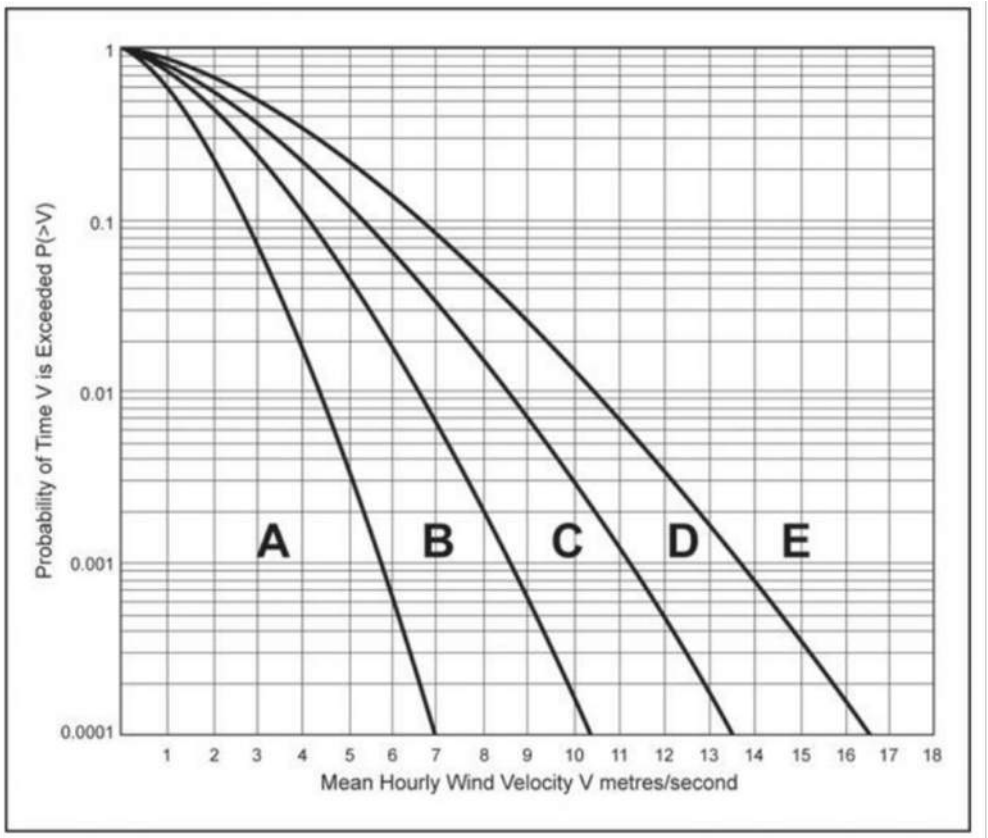
Notes:

1. The comfort criteria are based on mean wind speeds occurring 80% of the time annually.
2. All through-site links and other private land given over to public use as bonus features, or subject to public access easements, shall be subject to the Wind Environmental Categories

Safety Criterion	Gust Speed (m/s)	Description
Exceeded	> 25	Excessive gust speeds that can adversely affect a pedestrian's balance and footing. Wind mitigation is typically required.

Notes:

3. The average annual maximum peak 3-second gust.
4. Annual exceedance of one hour per year or 0.0114% of the time for 24 hours a day.



Derivation of the wind environment control graph:

The curves on the graph delineating the boundaries between the acceptable categories (A-D) and unacceptable (E) categories of wind performance are described by the Weibull expression:

$P(>V) = e^{-(v/c)^k}$

where V is a selected value on the horizontal axis, and P is the corresponding value of the vertical axis:

and where:

P(>V) = Probability of a wind speed V being exceeded;

e = The Napierian base 2.7182818285

v = the velocity selected;

k = the constant 1.5; and

c = a variable dependent on the boundary being defined:

A/B, c = 1.548

B/C, c = 2.322

C/D, c = 3.017

D/E, c = 3.715

Image 4: Wind Environment Controls
(Reproduced from Auckland Unitary Plan Operative)

3 RESULTS AND DISCUSSION

The predicted wind conditions are shown on site plans in Figures 1.1A through 3.2C located in the "Figures" section of this report. These conditions and the associated wind speeds are also presented in Table 1, located in the "Tables" section of this report. Based on the performance categories prescribed in the Auckland Unitary Plan Operative, Category A wind speeds are required in amenity areas, Category A and Category B speeds are appropriate for building entrances and areas where people might linger, Category C wind speeds are appropriate for walkways and footpaths, and Category D wind speeds are acceptable on roadways with minimal pedestrian traffic.

Note that the initial tests (existing and proposed scenarios) were conducted without the inclusion of any form landscaping to establish baseline conditions. Subsequently, landscaping and other wind control measures were included to provide a comprehensive understanding of the local wind environment. Note that trees and other landscaping measures were intentionally omitted in areas where high winds were observed. These sensitivity tests were conducted to assess the impact of *only* incorporating upwind trees. Dense landscaping tends to reduce wind speeds downwind of their location to a considerable extent and can be used upwind of areas where reduced wind activity is desired.

3.1 Generalised Wind Flows

In our discussion of wind conditions on and around the Proposed Development, reference may be made to the following generalised wind flows (see Image 5). If specific combinations of building and wind patterns coincide with prevailing winds, there is a higher potential for increased wind activity, resulting in uncomfortable or potentially unsafe conditions. To mitigate these effects, design considerations such as strategically setting back a tower from the edges of a podium, implementing deep canopies at ground level, utilising windscreens, and incorporating tall trees with dense landscaping (as demonstrated in Image 5) can effectively reduce high wind activity. The selection and effectiveness of these measures will depend on factors such as the site's exposure and orientation concerning prevailing wind directions, as well as the size and massing of the proposed buildings.

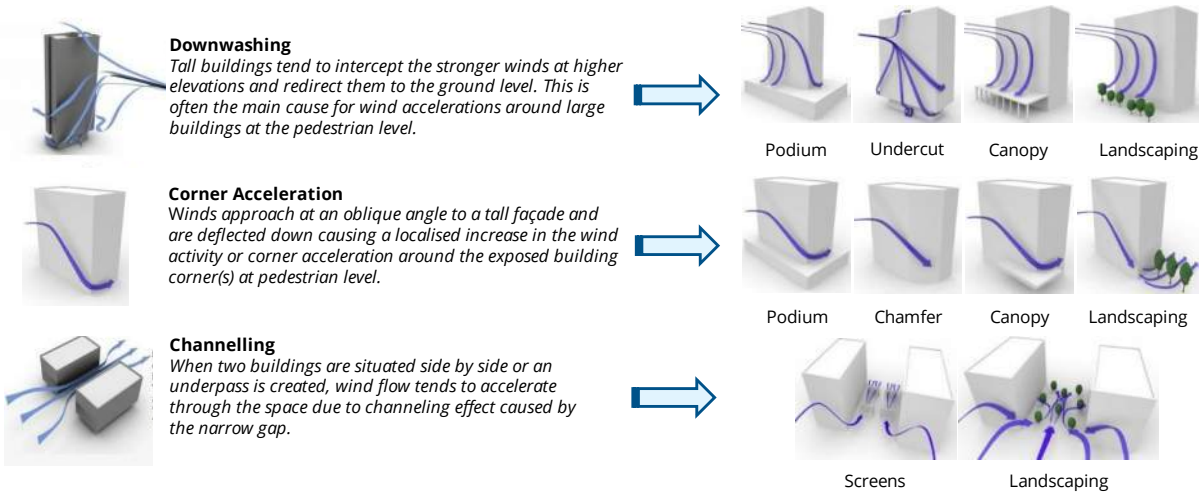


Image 5: General Wind Flow around Buildings with Examples of Common Wind Measures

3.2 Existing Configuration

3.2.1 Pedestrian Safety

Wind Speeds exceeding the safety criterion are not observed for the existing site on the grade level.

3.2.2 Pedestrian Comfort

Wind conditions around the existing site and surroundings are generally calm (Category A and B) at most of the locations throughout the year (Figures 1.1A and 2.1A). Higher wind speeds suitable for active pedestrian use (Category C and D) are expected along Quay Street and at the intersection of Quay Street and Lower Hobson Street. This is generally due to the relatively open exposure to the northeast winds as well as the prevailing southwest winds wrapping around the corner (Sensors 32, 34, 35, 36, 71, and 73). Slightly higher winds are also observed on Custom Street to the southeast of the existing site (Category C – Sensor 160).

3.3 Proposed Configuration

3.3.1 Pedestrian Safety

With the addition of the proposed development, three marginal exceedances are noted on the grade (Sensors 34, 35, and 61) along Lower Hobson Street and at the corner of Quay Street and Lower Hobson Street, as shown in Figure 3.1B. This is due to the interaction of westerly and southwesterly winds with the proposed massing of the development which intensifies the winds at these locations around the project site. Strong winds exceeding safety limits are also expected on Level 1 at the southeast corner of AON Building and within most areas of the upper-level terraces on Levels 6 & 7.

3.3.2 Pedestrian Comfort

Wind comfort conditions within and around the proposed development site are noted below:

- Wind conditions at the proposed entrances to the development and retail elements are expected to be calm and suitable for intended use at most of the locations. Marginally higher wind speeds (Category C) are noted at the retail entrance located on grade level between the towers (Sensor 21) which might be perceived as windy. Category D conditions are also noted within the central channel between the towers due to the funnelling of the regional southwesterly winds (Sensor 20).
- Wind conditions at most of the off-site locations around the proposed development are predicted to be calm (Category A or B) and consistent with the existing scenario throughout the year. Higher wind speeds (Category C and D), suitable for active pedestrian use, are noted along Quay Street and at the intersection of Lower Albert Street / Custom Street. Category E / uncomfortable wind conditions are noted at the intersection of Quay Street / Lower Hobson Street due to the interaction of southwesterly winds with the massing of the proposed podium.
- Wind conditions are expected to be suitable for passive occupant's use (Category A or B) at most of the locations on Level 1 and all locations on the terrace at Level 2 throughout the year. Windier conditions (Category C through E) are noted to the south of the AON Tower due to the redirection and subsequent accelerations of southwesterly winds.

- The terraces at Levels 6 and 7 consistently experience elevated wind speeds, falling within Category C to E conditions throughout the year. As a result, these areas are deemed unsuitable for regular use and will necessitate mitigation measures. The detailed design stage will focus on addressing these winds and implementing appropriate solutions to create favorable conditions for utilisation.

3.4 Mitigation (Run 5)

As noted earlier, a series of mitigation tests were conducted in multiple stages encompassing Runs 1 to 4. These tests were performed to evaluate the influence of existing local landscaping and proposed measures on the overall wind environment and were closely coordinated with the project team. It is important to highlight that sensitivity studies, specifically Runs 1a and 1b, were carried out by excluding all landscaping in areas where high gusts surpassing the safety threshold are expected (Sensors 34, 35, 61, and 98). The purpose of these studies was to assess the capacity of the surrounding landscape to effectively mitigate overall exposure and gust activity surrounding the site without reliance on the trees / vegetation immediately at these locations. The following results are based on the final round of mitigation tests (Run 5) and encompass all landscaping and wind control measures, providing a comprehensive understanding of the local wind environment. Note that the canopy design was also updated. Porous full-height screen has also been introduced along the southern end of Level 1 to reduce infiltration of southwesterly winds. Updates were also made to the AON Tower ground level areas to improve the wind assessment.

3.4.1 Pedestrian Safety

All wind safety exceedances on ground and Level 1 (AON Tower) are eliminated with the inclusion of the proposed wind control measures. Higher winds persist on the terraces of Levels 6 & 7 which will be further developed during the detailed design stage of the project.

3.4.2 Pedestrian Comfort

Wind comfort conditions within and around the proposed development site with the inclusion of mitigation measures are noted below:

- The wind comfort conditions around the site improve significantly within the inclusion of existing and proposed landscaping. The windy retail entrance noted in the proposed configuration is now suitable for passive use. The wind conditions within the central channel (Sensor 20) also improve considerably with Category C conditions expected for approximately 76% of the time with the inclusion of landscaping. Note that testing with a larger roof cover along the southern side has been shown to improve conditions at Sensor 20 to Category C (see Run 4 Figures in the appendices). The larger rood cover is shown in Image 6, in comparison to Run 5 cover.

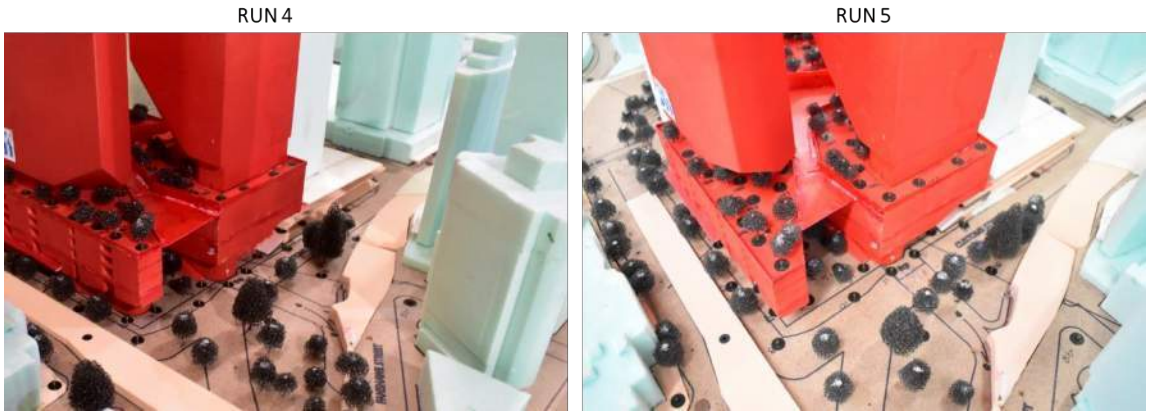


Image 6: Comparison of Southern Roof Cover for Runs 4 & 5

- Most of the locations in and around the proposed development are suitable for the intended pedestrian use throughout the year. Wind conditions along Quay Street and at the corner of Quay Street and Lower Hobson Street also tend to improve with the inclusion of the landscaping.
- A few off-site locations towards the east of the proposed development along Lower Albert Street are noted to increase to Category D. However, this is primarily due to the modelling updates made for the bridge over Lower Hobson Street which was initially modelled as a solid block for the existing and proposed scenarios.
- Wind conditions are expected to be suitable for passive pedestrian use at most of the locations on Level 1 and within all of Level 2 terrace. Wind conditions to the south of the AON Tower also improve considerably with the inclusion of landscaping and screening. Higher winds are observed at Sensors 94 and 98. However, it is important to note that these areas experience Category C conditions for approximately 74% of the time during the year. Conditions are, therefore, marginally above Category C and hence local measures such as planters or dense undergrowth under the upwind trees can further reduce wind exposure.
- Wind conditions along Custom Street also improve considerably with the inclusion of upwind landscaping within the pocket park (Sensor 160). These trees assist in reducing the overall exposure to the regional southwest winds with Category C conditions expected between 74% of the time during summers and 77% of the time during winters at Sensor 160. Conditions are, therefore, marginally above Category C and hence local measures such as planters or dense undergrowth under the trees within the pocket park can further reduce wind exposure.
- Wind comfort conditions on Levels 6 & 7 terraces improve generally. However, strong winds persist within these spaces. Additional mitigation measures including localised screening and pergolas will be necessary to address the winds. These will be further investigated during the detailed design stage.

4 STATEMENT OF LIMITATIONS

Limitations

This report entitled *'Downtown Carpark Redevelopment Pedestrian Wind Study'* was prepared by Rowan Williams Davies & Irwin, Inc. ("RWDI") for Holmes NZ Limited Partnership ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilise the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

Design Assumptions

RWDI confirms that the pedestrian wind assessment (the "**Assessment**") discussed herein was performed by RWDI in accordance with generally accepted professional standards at the time when the Assessment was performed and in the location of the Project. No other representations, warranties, or guarantees are made with respect to the accuracy or completeness of the information, findings, recommendations, or conclusions contained in this Report. This report is not a legal opinion regarding compliance with applicable laws.

The findings and recommendations set out in this report are based on the following information disclosed to RWDI. Drawings and information listed below were received from Holmes NZ Limited Partnership and used to construct the scale model of the proposed Downtown Carpark Redevelopment **("Project Data**")

File Name	File Type	Date Received (dd/mm/yyyy)
230321_DTC_Wind_Info_package_for_RWDI	ZIP	21/03/2023
20230321_RFDP PLAN EXPORT	AutoCAD	22/03/2023
20220705_PW_FINAL-RFDP-MASSING	Rhino	22/03/2023
230414_DTC_Mitigation_Measures_for_Baseline_Proposed	PDF	14/04/2023
Run5_Mitigation Measures	PDF	09/06/2023

The recommendations and conclusions are based on the assumption that the Project Data and Climate Data are accurate and complete. RWDI assumes no responsibility for any inaccuracy or deficiency in information it has received from others. In addition, the recommendations and conclusions in this report are partially based on historical data and can be affected by a number of external factors, including but not limited to Project design, quality of materials and construction, site conditions, meteorological events, and climate change. As such, the conclusions and recommendations contained in this report do not list every possible outcome.

The opinions in this report can only be relied up on to the extent that the Project Data and Project Specific Conditions have not changed. Any change in the Project Data or Project Specific Conditions not reflected in this report can impact and/or alter the recommendations and conclusions in this report. Therefore, it is incumbent upon the Client and/or any other third party reviewing the recommendations and conclusions in this report to contact RWDI in the event of any change in the Project Data and Project Specific Conditions in order to determine whether any such change(s) may impact the assumptions upon which the recommendations and conclusions were made.

5 REFERENCES

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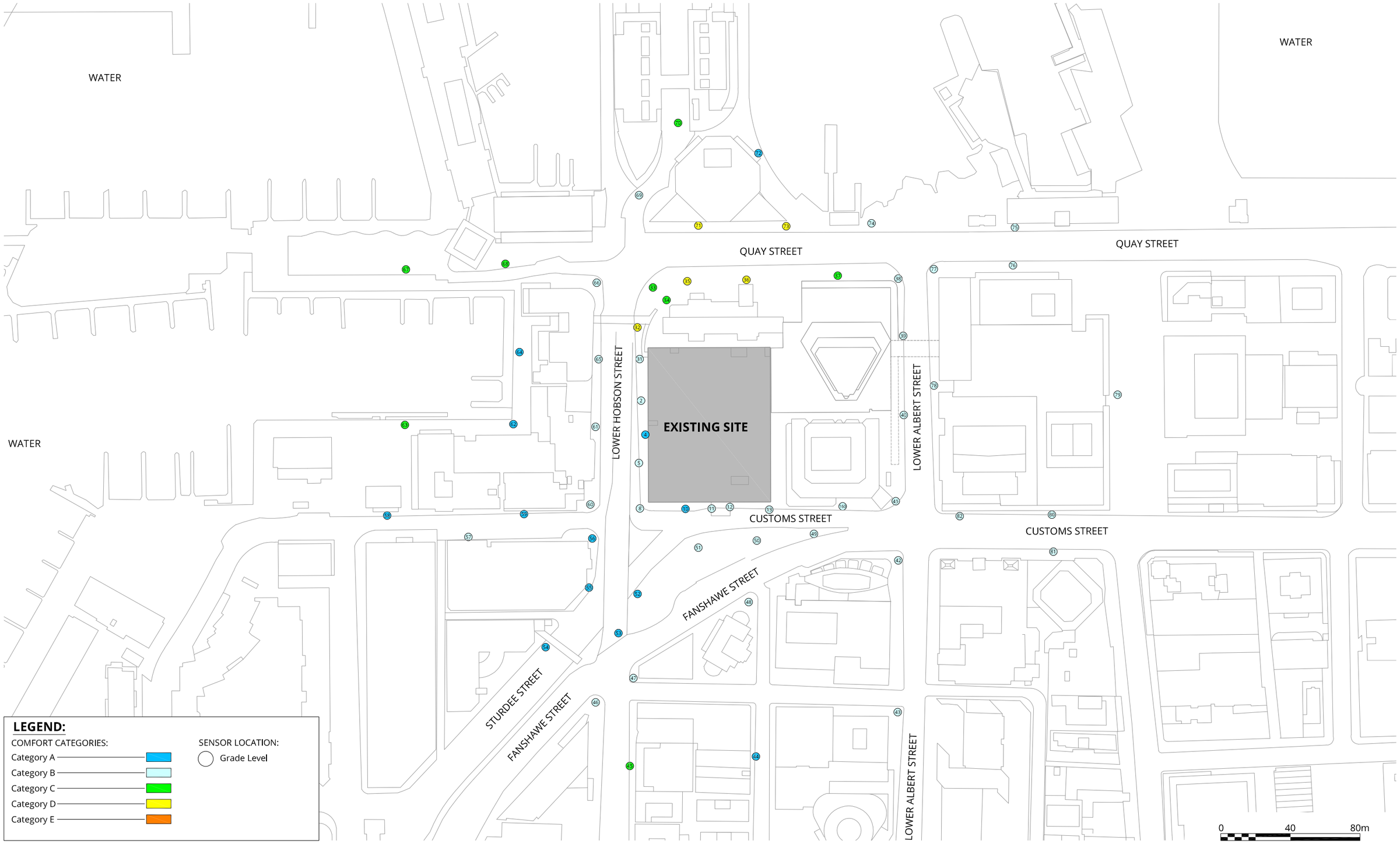

Pedestrian Wind Comfort Conditions
Existing Configuration - Grade
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.1A	
Approx. Scale: 1:2000		
Date Revised: June 20, 2023		

Pedestrian Wind Comfort Conditions
Proposed Configuration - Grade
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.1B
Approx. Scale:	1:2000
Date Revised:	June 20, 2023

Pedestrian Wind Comfort Conditions
Mitigation(Run- 5) - Grade
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.1C	
Approx. Scale: 1:2000		
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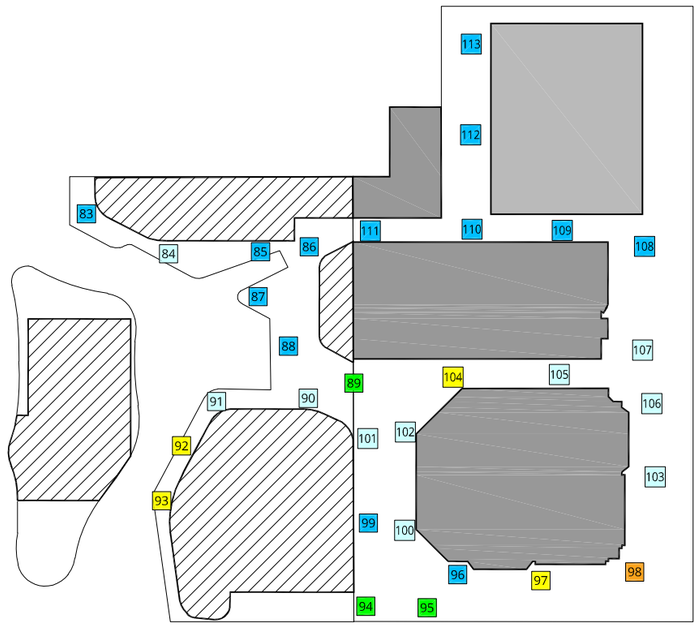

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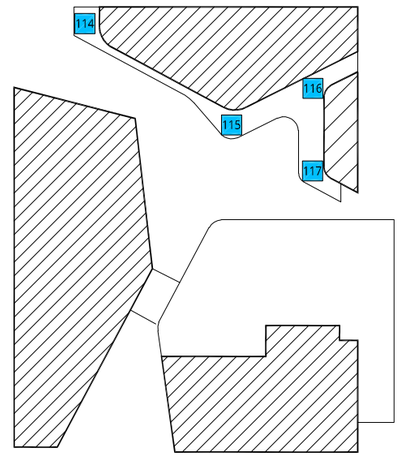

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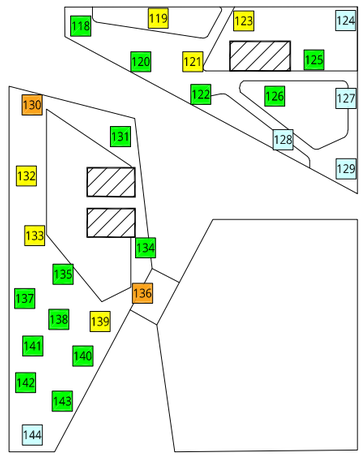

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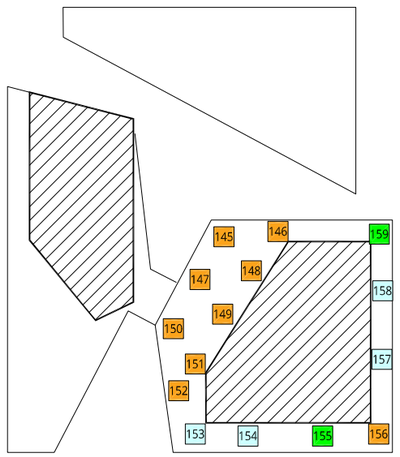


LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces

0 25 50m

Pedestrian Wind Comfort Conditions

Proposed Configuration - Terraces

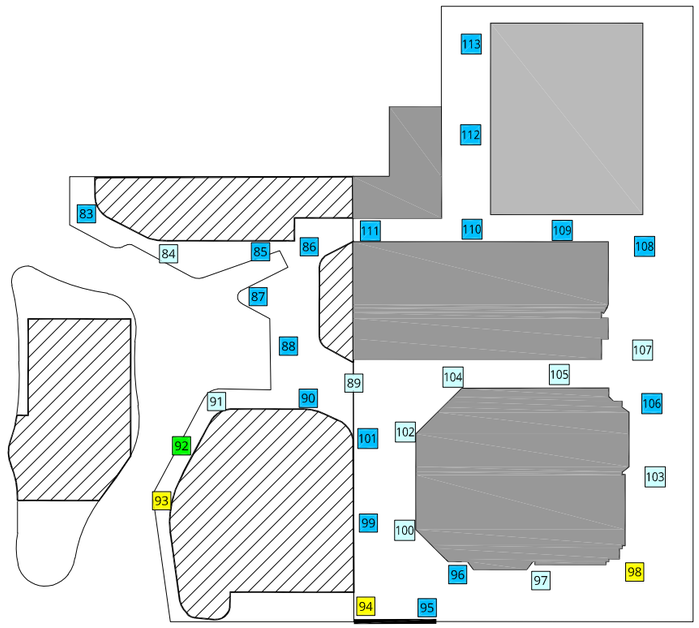
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.2B
Approx. Scale:	1:1250
Date Revised:	June 20, 2023



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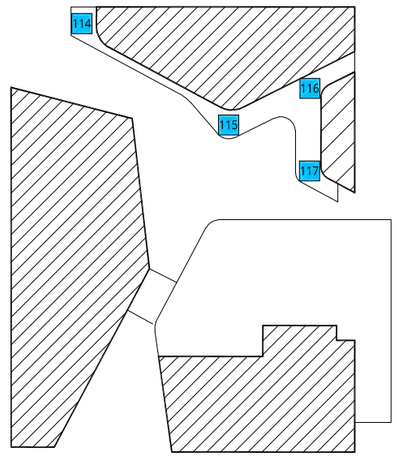

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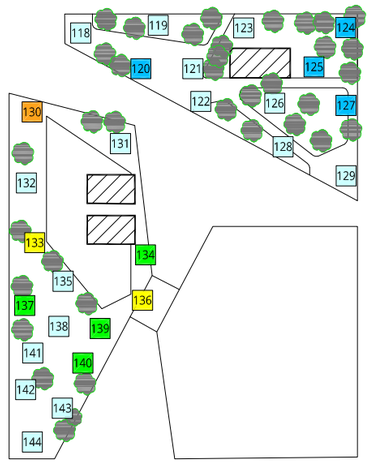

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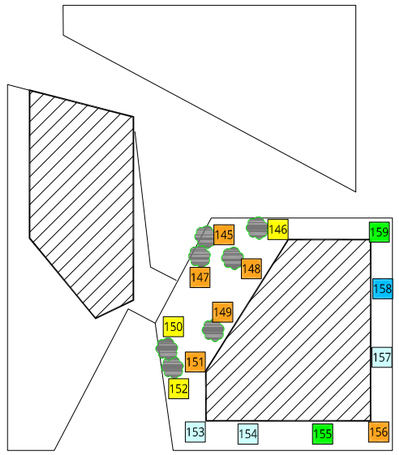

LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces
- Porous screen

0 25 50m

Pedestrian Wind Comfort Conditions

Mitigation(Run- 5) - Terraces

Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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Approx. Scale:	1:1250
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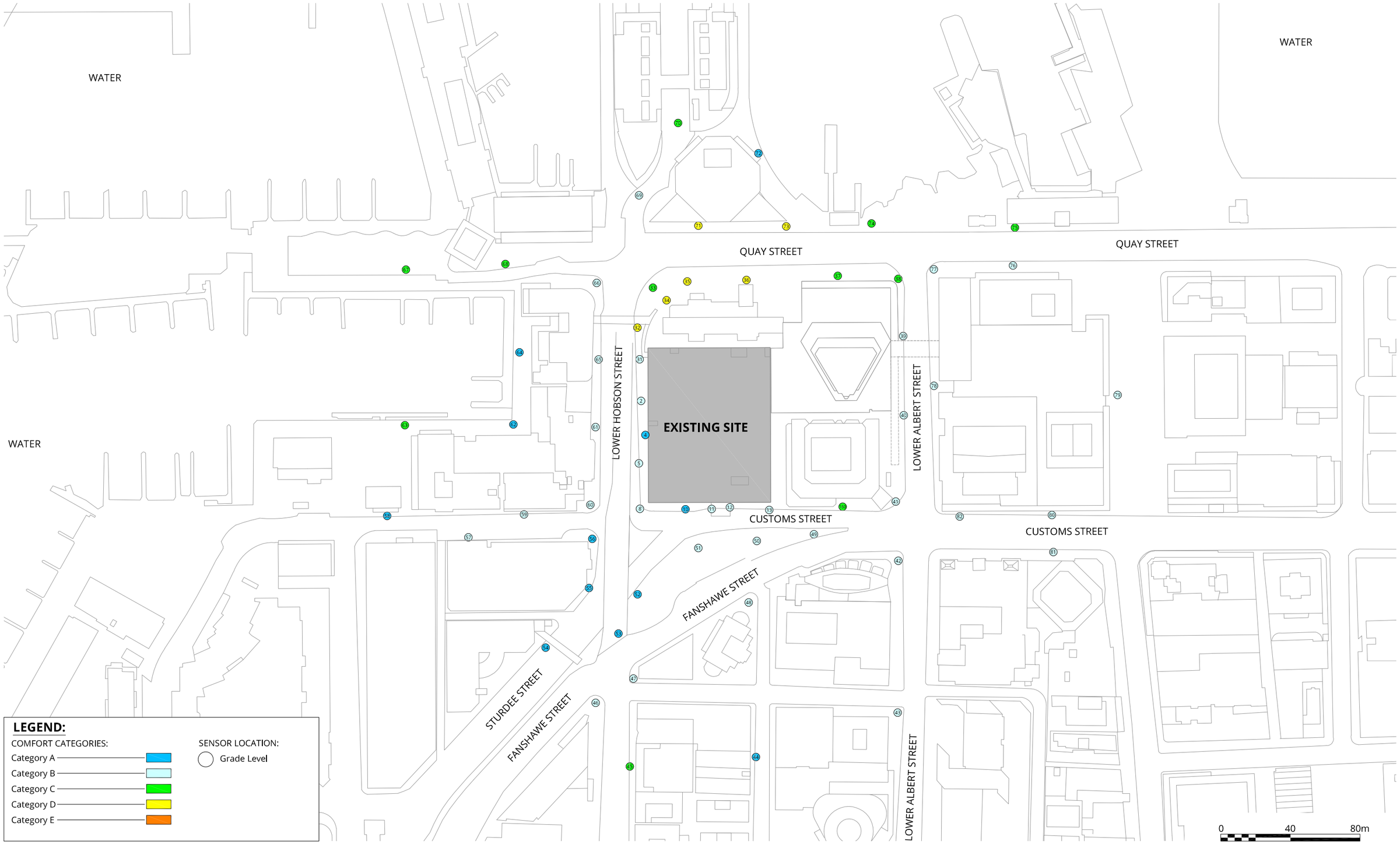

Pedestrian Wind Comfort Conditions
Existing Configuration - Grade
Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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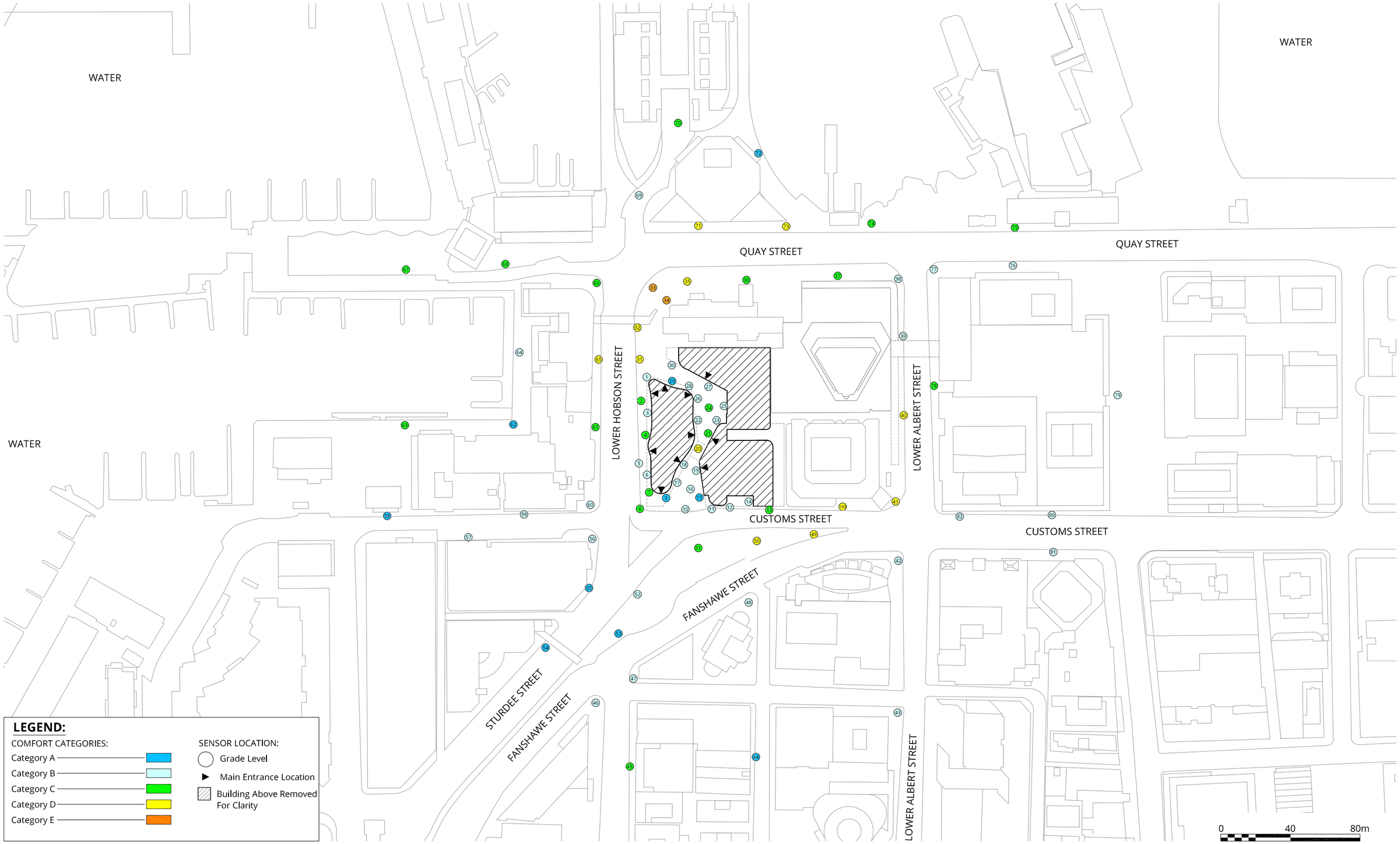

Pedestrian Wind Comfort Conditions
Proposed Configuration - Grade
Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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Approx. Scale:	1:2000
Date Revised:	June 20, 2023

Pedestrian Wind Comfort Conditions
Mitigation(Run- 5) - Grade
Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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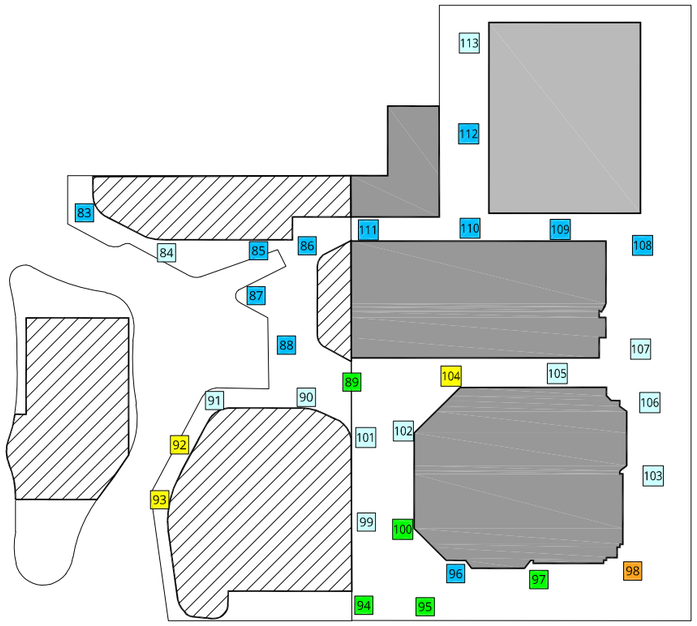

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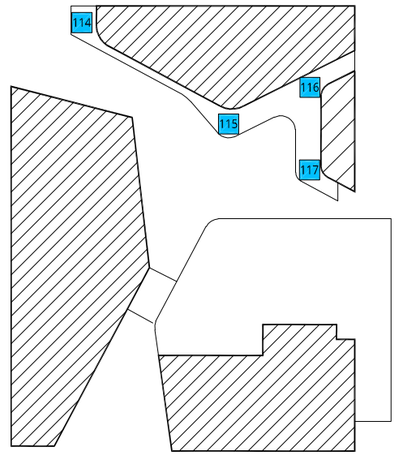

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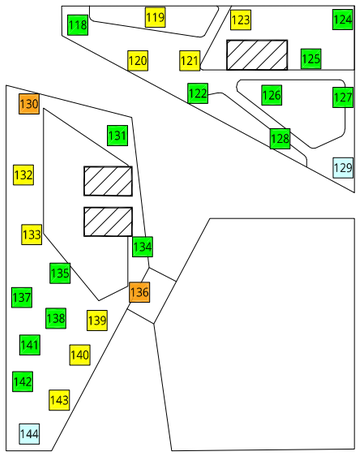

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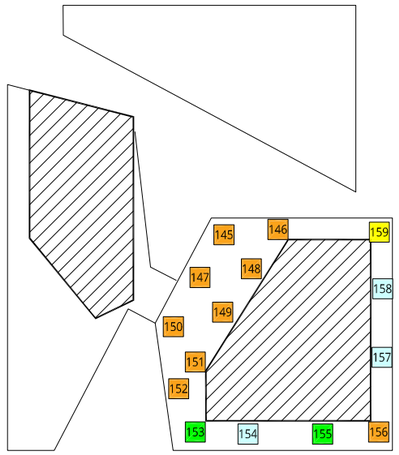

LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces

0 25 50m

Pedestrian Wind Comfort Conditions

Proposed Configuration - Terraces

Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 2.2B
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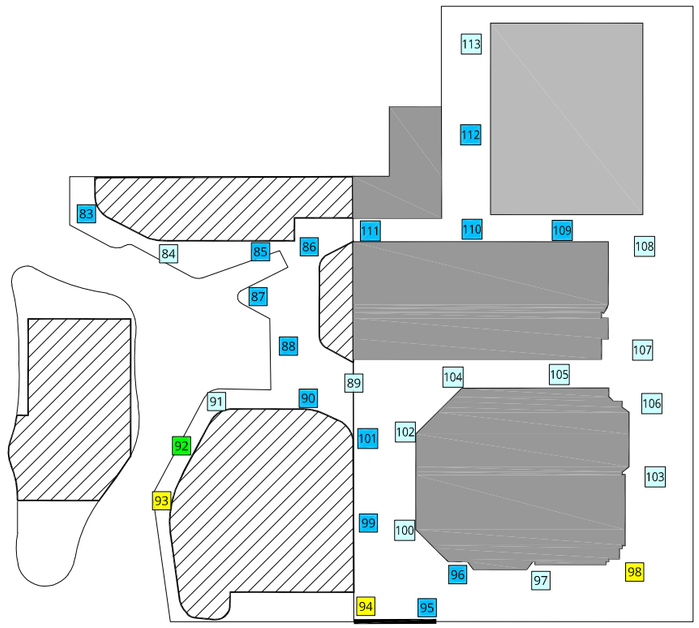
Date Revised:	June 20, 2023



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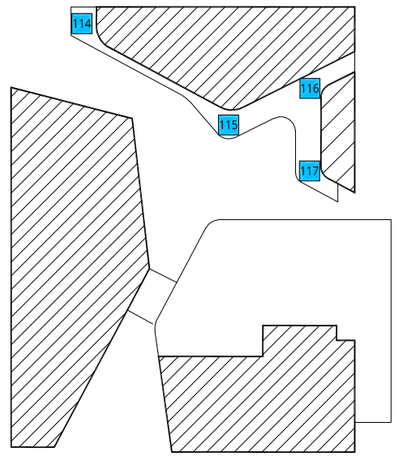

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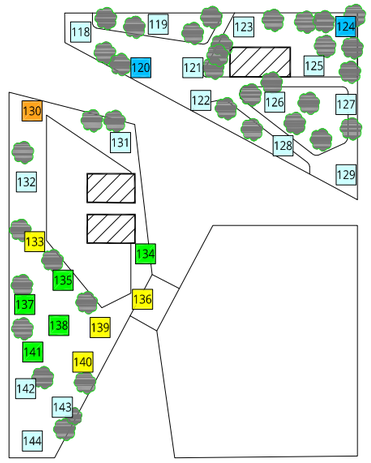

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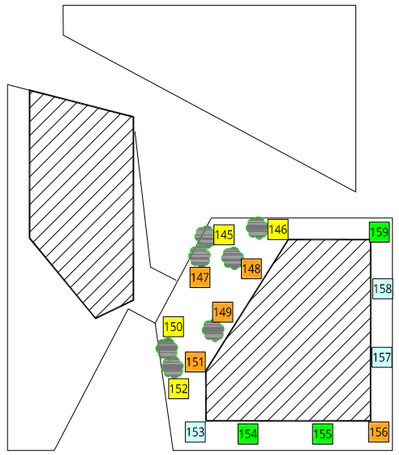

LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces
- Porous screen

0 25 50m

Pedestrian Wind Comfort Conditions

Mitigation(Run- 5) - Terraces

Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 2.2C
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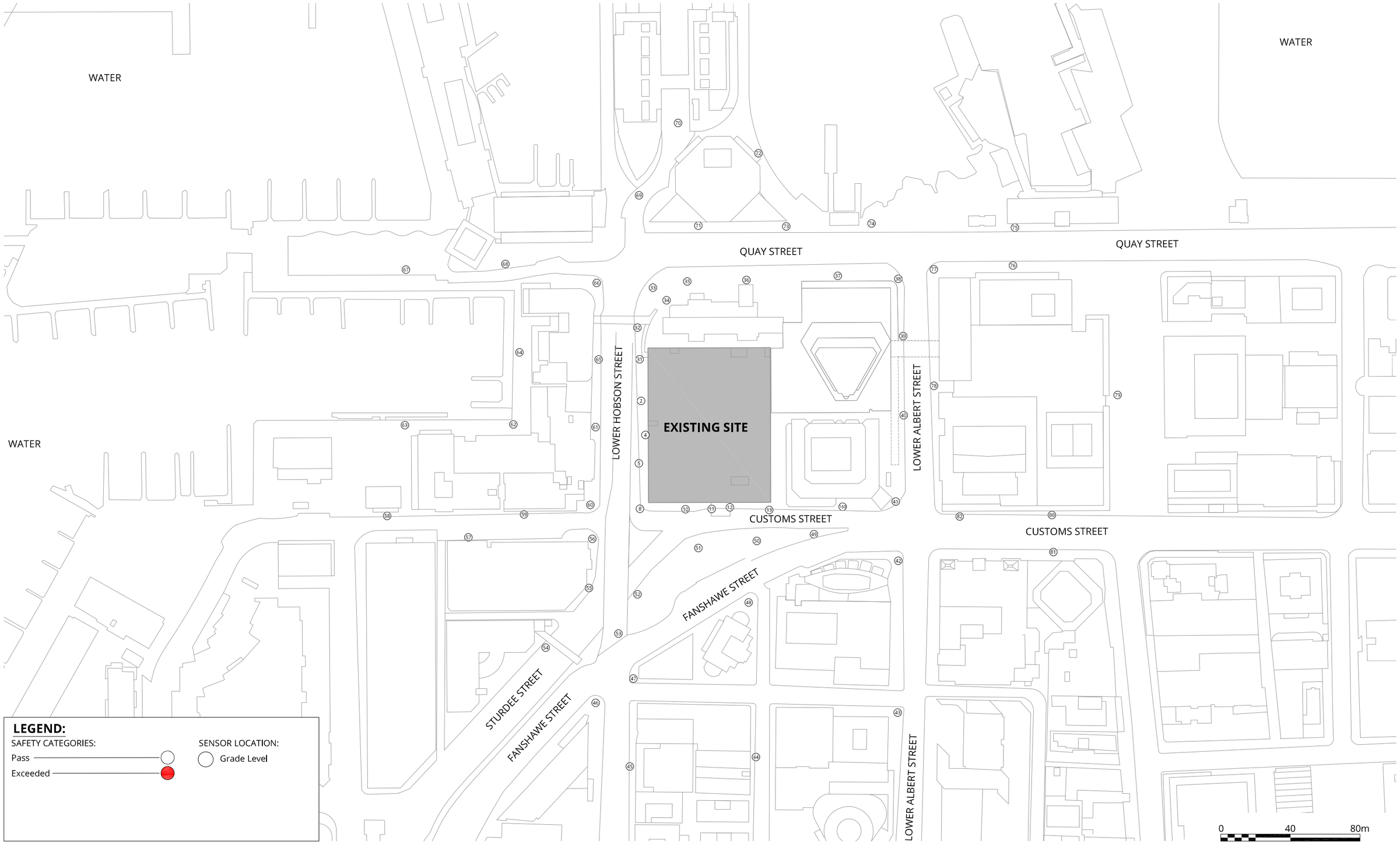

Pedestrian Wind Safety Conditions
Existing Configuration - Grade
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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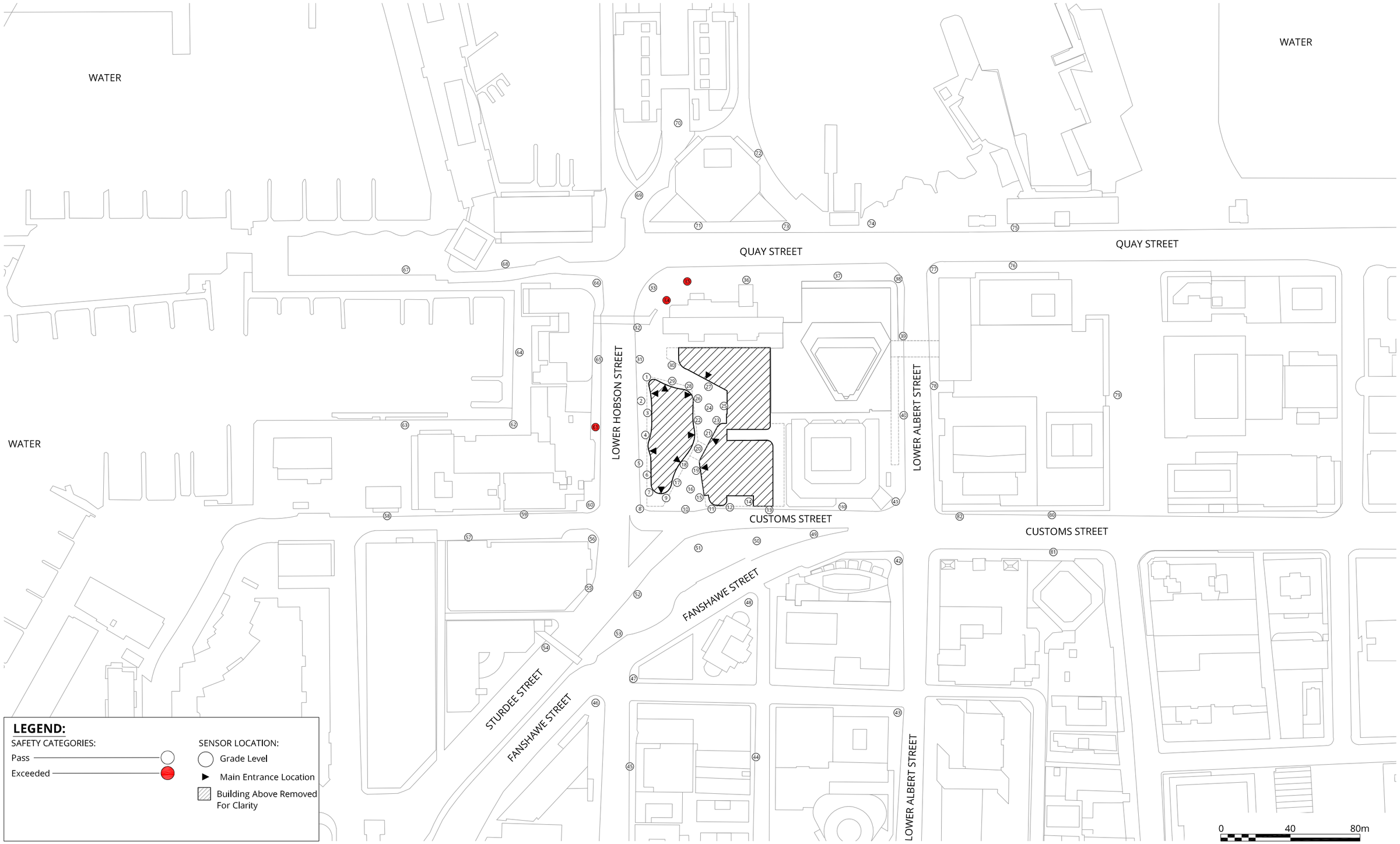
Approx. Scale:	1:2000
Date Revised:	June 20, 2023



Pedestrian Wind Safety Conditions
Proposed Configuration - Grade
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 3.1B	
Approx. Scale: 1:2000		
Date Revised: June 20, 2023		

Pedestrian Wind Safety Conditions
Mitigation(Run- 5) - Grade
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

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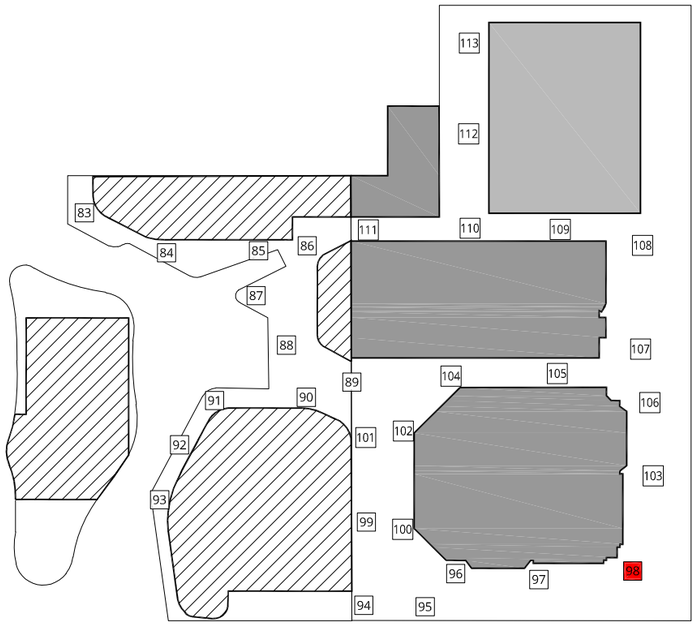

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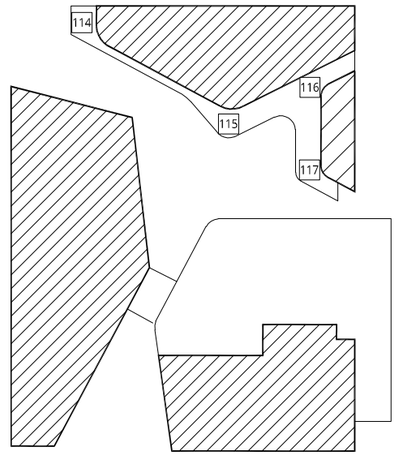

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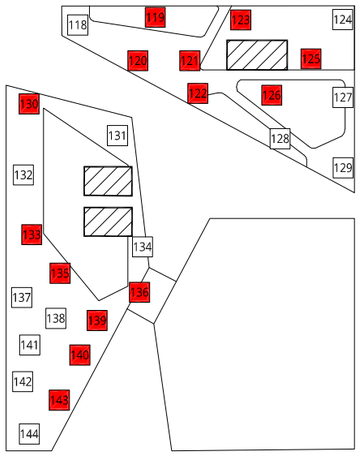

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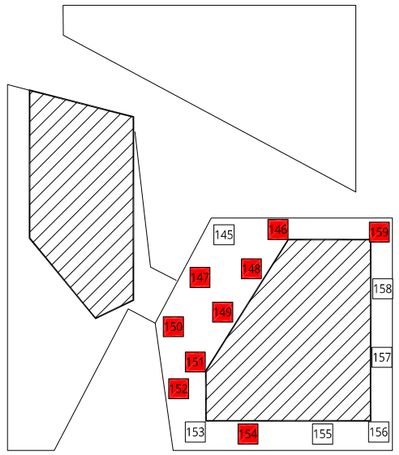


LEVEL - 7

LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Terraces

0 25 50m

Pedestrian Wind Safety Conditions

Proposed Configuration - Terraces

Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

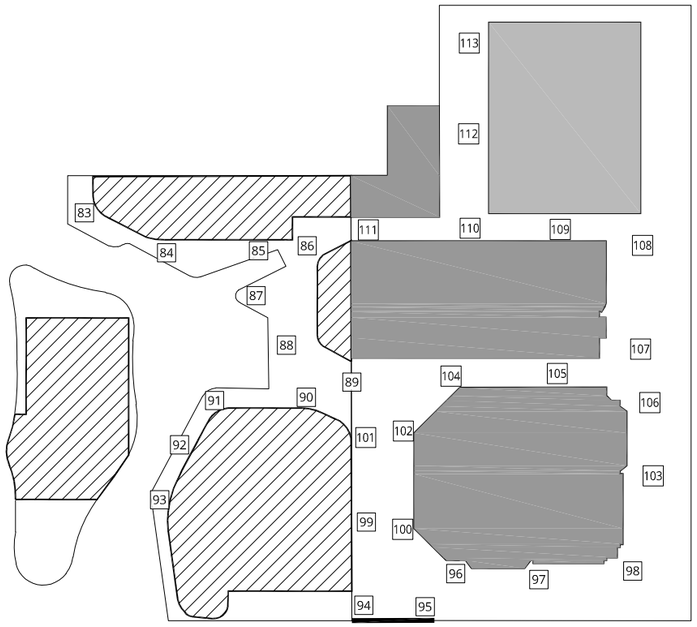
True North

Project #2303718

Drawn by: AKA | Figure: 3.2B

Approx. Scale: 1:1250

Date Revised: June 20, 2023



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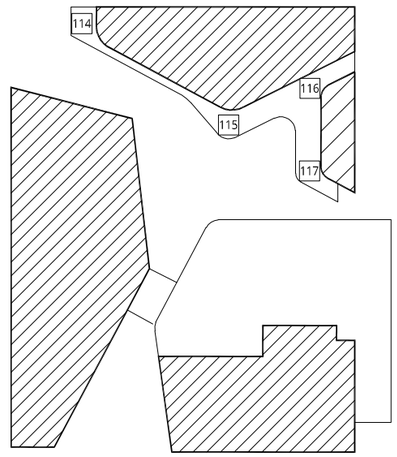

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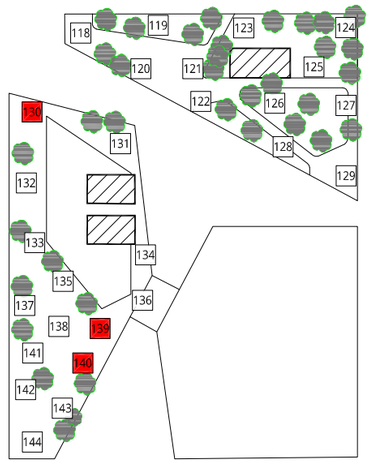

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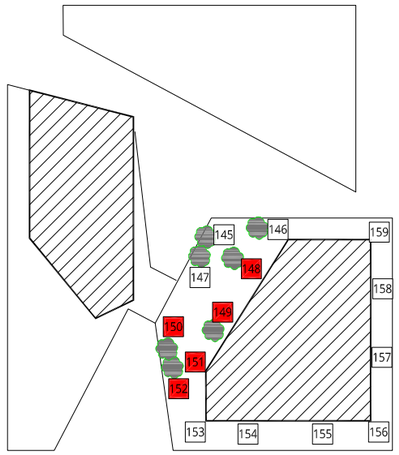


LEVEL - 7

LEGEND:

SAFETY CATEGORIES:
Pass
Exceeded

SENSOR LOCATION:
Terraces
Porous screen

0 25 50m

Pedestrian Wind Safety Conditions

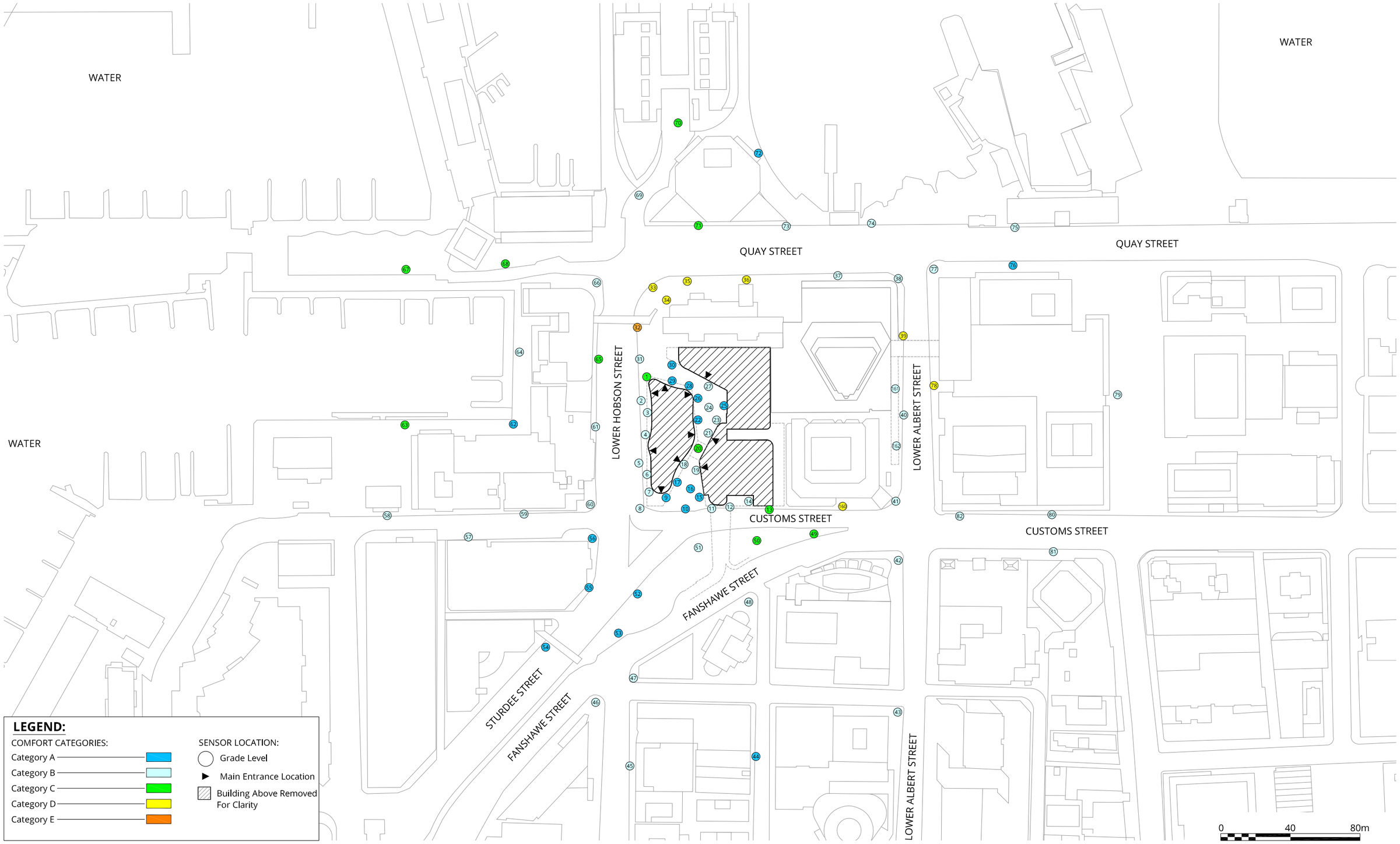
Mitigation(Run- 5) - Terraces
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 3.2C
Approx. Scale:	1:1250
Date Revised:	June 20, 2023



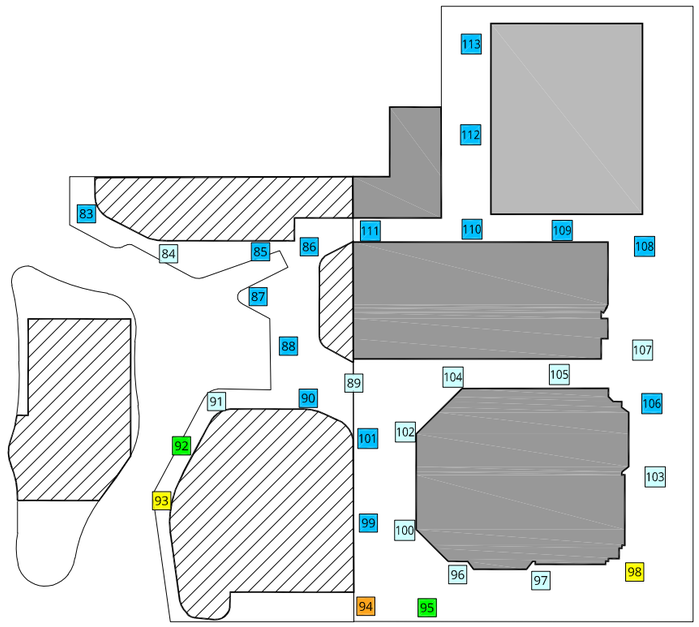
Pedestrian Wind Comfort Conditions
Mitigation(Run-4) - Grade
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.1G	
Approx. Scale:	1:2000	
Date Revised:	Jun. 5, 2023	



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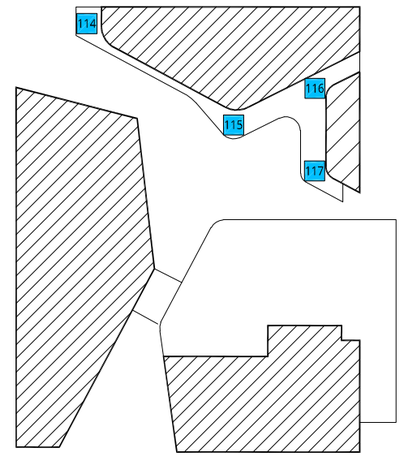

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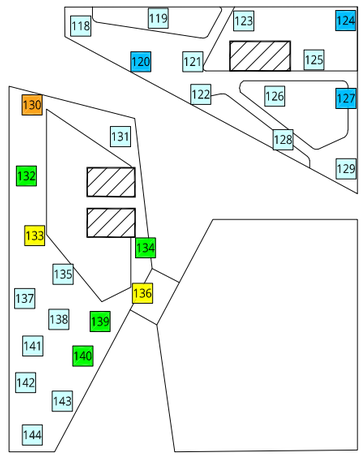

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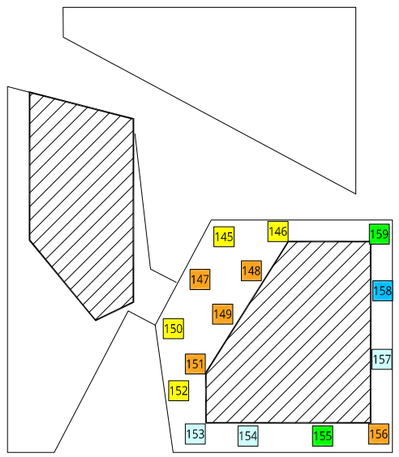


LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces & Podium

0 25 50m

Pedestrian Wind Comfort Conditions

Mitigation(Run-4) - Terraces

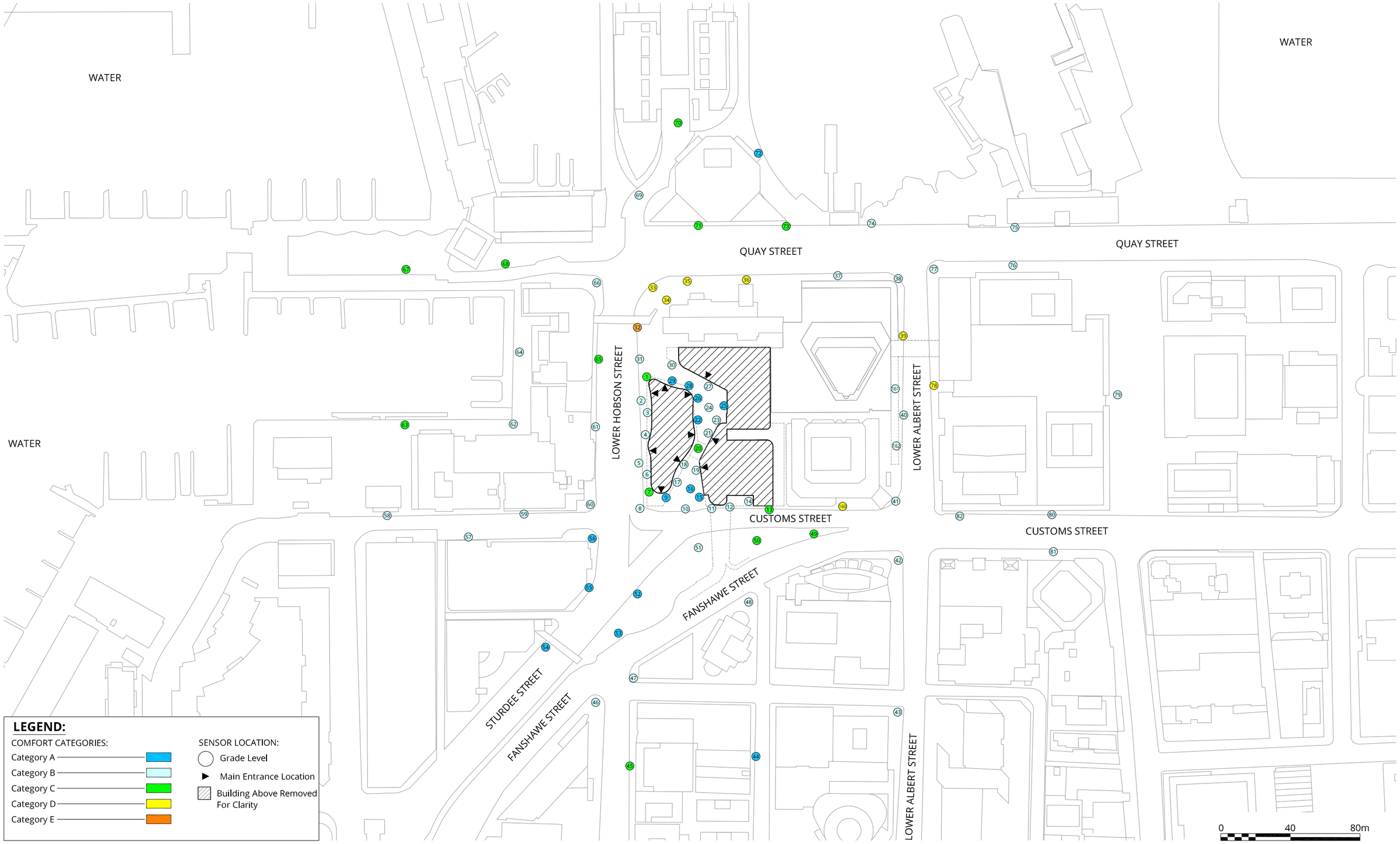
Summer (November to April, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by:	AKA	Figure:	1.2G
Approx. Scale:	1:1250		
Date Revised:	Jun. 5, 2023		



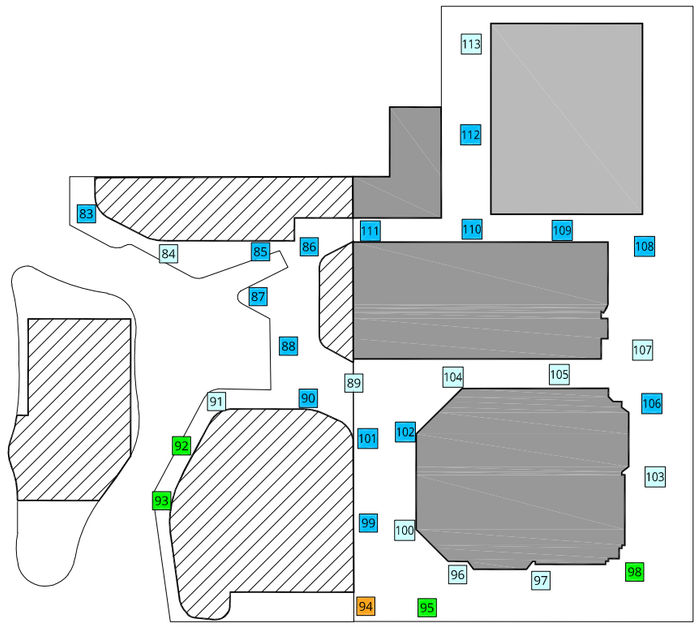
Pedestrian Wind Comfort Conditions
Mitigation(Run-4) - Grade
Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by:	AKA	Figure:	2.1G
Approx. Scale:	1:2000		
Date Revised:	Jun. 5, 2023		



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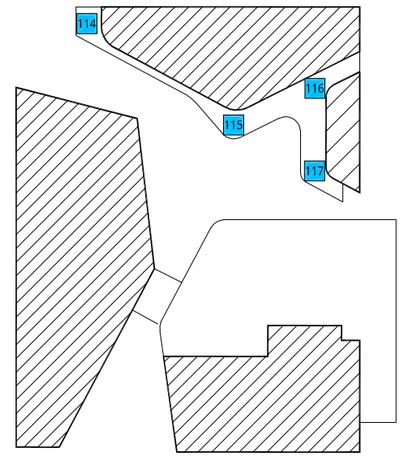

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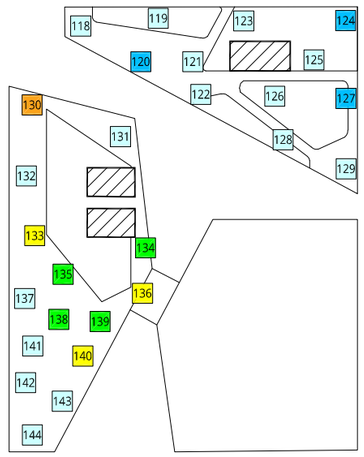

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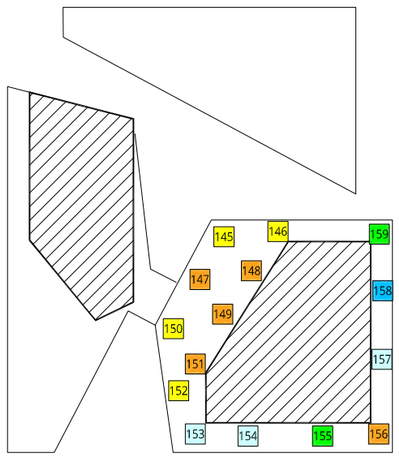


LEVEL - 7

LEGEND:

COMFORT CATEGORIES:

- Category A
- Category B
- Category C
- Category D
- Category E

SENSOR LOCATION:

- Terraces & Podium

0 25 50m

Pedestrian Wind Comfort Conditions

Mitigation(Run-4) - Terraces

Winter (May to October, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 2.2G	
Approx. Scale:	1:1250	
Date Revised:	Jun. 5, 2023	

WATER

WATER

QUAY STREET

QUAY STREET

WATER

LOWER HOBSON STREET

LOWER ALBERT STREET

CUSTOMS STREET

CUSTOMS STREET

FANSHAWE STREET

STURDEE STREET

FANSHAWE STREET

LOWER ALBERT STREET

LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level

Main Entrance Location

Building Above Removed For Clarity

0 40 80m

Pedestrian Wind Safety Conditions

Mitigation(Run-4) - Grade

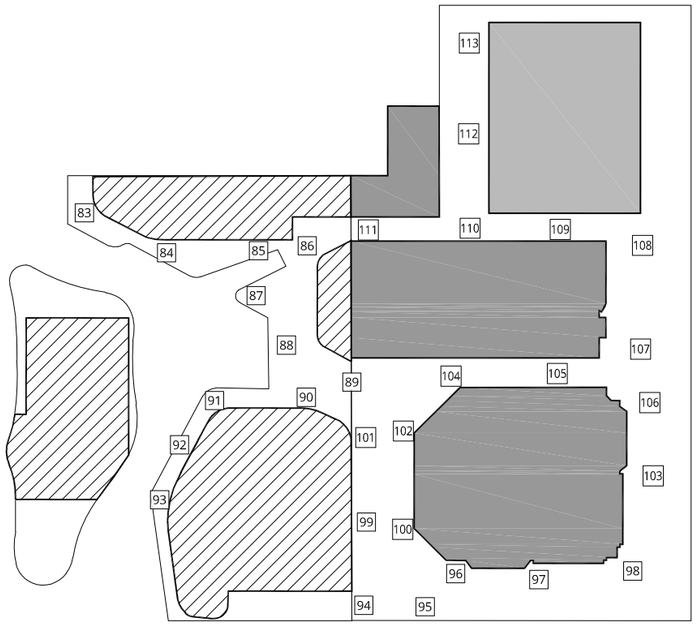
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

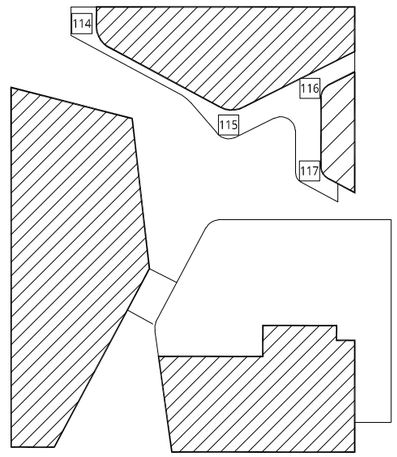
True North

Project #2303718

Drawn by:	AKA	Figure:	3.1G
Approx. Scale:	1:2000		
Date Revised:	Jun. 5, 2023		



LEVEL - 1



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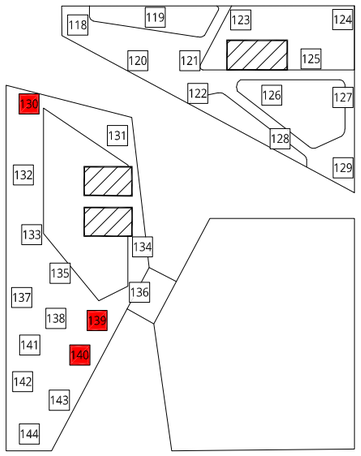

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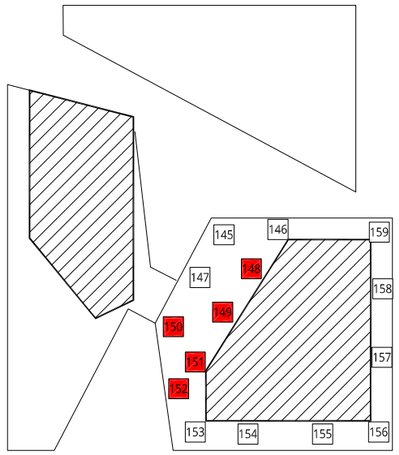


LEVEL - 7

LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Terraces & Podium

0 25 50m

Pedestrian Wind Safety Conditions

Mitigation(Run-4) - Terraces

Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 3.2G	
Approx. Scale: 1:1250		
Date Revised: Jun. 5, 2023		

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
1	Summer	Existing	–	–	–	–
		Proposed	2.9	Category B	22.1	Pass
		Mit (Run5)	3.6	Category C	20.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.3	Category B	23.8	Pass
		Mit (Run5)	4.0	Category C	21.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.1	Category B	23.0	Pass
		Mit (Run5)	3.7	Category C	21.7	Pass
2	Summer	Existing	2.2	Category B	13.6	Pass
		Proposed	4.1	Category C	19.8	Pass
		Mit (Run5)	3.0	Category B	15.3	Pass
	Winter	Existing	2.2	Category B	14.0	Pass
		Proposed	4.1	Category C	19.5	Pass
		Mit (Run5)	3.0	Category B	14.9	Pass
	Annual	Existing	2.2	Category B	13.9	Pass
		Proposed	4.1	Category C	19.7	Pass
		Mit (Run5)	3.0	Category B	15.3	Pass
3	Summer	Existing	–	–	–	–
		Proposed	3.2	Category B	23.9	Pass
		Mit (Run5)	2.7	Category B	13.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.3	Category B	23.0	Pass
		Mit (Run5)	2.8	Category B	13.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.3	Category B	23.5	Pass
		Mit (Run5)	2.8	Category B	13.7	Pass
4	Summer	Existing	1.9	Category A	16.3	Pass
		Proposed	3.4	Category C	18.7	Pass
		Mit (Run5)	2.8	Category B	13.8	Pass
	Winter	Existing	2.0	Category A	16.7	Pass
		Proposed	3.6	Category C	18.0	Pass
		Mit (Run5)	2.9	Category B	14.2	Pass
	Annual	Existing	1.9	Category A	16.7	Pass
		Proposed	3.5	Category C	18.5	Pass
		Mit (Run5)	2.9	Category B	14.1	Pass
5	Summer	Existing	2.3	Category B	18.3	Pass
		Proposed	3.2	Category B	21.3	Pass
		Mit (Run5)	2.5	Category B	14.5	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	2.5	Category B	19.0	Pass
		Proposed	3.2	Category B	21.2	Pass
		Mit (Run5)	2.7	Category B	14.7	Pass
	Annual	Existing	2.4	Category B	18.4	Pass
		Proposed	3.2	Category B	21.3	Pass
		Mit (Run5)	2.6	Category B	14.5	Pass
6	Summer	Existing	–	–	–	–
		Proposed	2.4	Category B	15.8	Pass
		Mit (Run5)	2.2	Category B	14.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.6	Category B	16.7	Pass
		Mit (Run5)	2.4	Category B	16.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.5	Category B	16.4	Pass
		Mit (Run5)	2.3	Category B	15.5	Pass
7	Summer	Existing	–	–	–	–
		Proposed	3.5	Category C	23.4	Pass
		Mit (Run5)	3.3	Category B	20.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.8	Category C	24.8	Pass
		Mit (Run5)	3.5	Category C	21.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.7	Category C	24.4	Pass
		Mit (Run5)	3.4	Category C	20.8	Pass
8	Summer	Existing	2.4	Category B	16.7	Pass
		Proposed	3.3	Category B	20.6	Pass
		Mit (Run5)	2.3	Category B	13.9	Pass
	Winter	Existing	2.5	Category B	18.2	Pass
		Proposed	3.6	Category C	21.3	Pass
		Mit (Run5)	2.5	Category B	14.9	Pass
	Annual	Existing	2.4	Category B	17.7	Pass
		Proposed	3.4	Category C	20.7	Pass
		Mit (Run5)	2.4	Category B	14.4	Pass
9	Summer	Existing	–	–	–	–
		Proposed	2.0	Category A	16.9	Pass
		Mit (Run5)	1.9	Category A	13.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.1	Category A	19.9	Pass
		Mit (Run5)	2.0	Category A	16.2	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	2.0	Category A	18.7	Pass
		Mit (Run5)	2.0	Category A	15.2	Pass
10	Summer	Existing	1.6	Category A	9.7	Pass
		Proposed	2.4	Category B	17.5	Pass
		Mit (Run5)	2.2	Category B	16.5	Pass
	Winter	Existing	1.7	Category A	10.3	Pass
		Proposed	2.6	Category B	19.1	Pass
		Mit (Run5)	2.3	Category B	18.3	Pass
	Annual	Existing	1.6	Category A	10.1	Pass
		Proposed	2.5	Category B	18.6	Pass
		Mit (Run5)	2.2	Category B	17.9	Pass
11	Summer	Existing	2.3	Category B	12.8	Pass
		Proposed	2.4	Category B	16.2	Pass
		Mit (Run5)	2.7	Category B	14.7	Pass
	Winter	Existing	2.3	Category B	12.3	Pass
		Proposed	2.5	Category B	17.7	Pass
		Mit (Run5)	2.8	Category B	16.4	Pass
	Annual	Existing	2.3	Category B	12.7	Pass
		Proposed	2.4	Category B	17.0	Pass
		Mit (Run5)	2.7	Category B	15.8	Pass
12	Summer	Existing	2.4	Category B	14.0	Pass
		Proposed	2.4	Category B	14.2	Pass
		Mit (Run5)	2.5	Category B	14.2	Pass
	Winter	Existing	2.4	Category B	13.5	Pass
		Proposed	2.5	Category B	16.8	Pass
		Mit (Run5)	2.6	Category B	15.5	Pass
	Annual	Existing	2.4	Category B	13.7	Pass
		Proposed	2.5	Category B	16.2	Pass
		Mit (Run5)	2.5	Category B	15.0	Pass
13	Summer	Existing	2.3	Category B	13.6	Pass
		Proposed	3.3	Category B	17.6	Pass
		Mit (Run5)	3.6	Category C	16.5	Pass
	Winter	Existing	2.3	Category B	12.5	Pass
		Proposed	3.5	Category C	19.8	Pass
		Mit (Run5)	3.9	Category C	18.1	Pass
	Annual	Existing	2.3	Category B	13.0	Pass
		Proposed	3.4	Category C	19.1	Pass
		Mit (Run5)	3.7	Category C	17.5	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
14	Summer	Existing	–	–	–	–
		Proposed	2.8	Category B	14.5	Pass
		Mit (Run5)	2.7	Category B	14.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.8	Category B	14.5	Pass
		Mit (Run5)	2.7	Category B	13.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.8	Category B	14.5	Pass
		Mit (Run5)	2.7	Category B	13.9	Pass
15	Summer	Existing	–	–	–	–
		Proposed	2.0	Category A	16.1	Pass
		Mit (Run5)	1.7	Category A	11.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.0	Category A	16.8	Pass
		Mit (Run5)	1.8	Category A	12.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.0	Category A	16.8	Pass
		Mit (Run5)	1.7	Category A	12.2	Pass
16	Summer	Existing	–	–	–	–
		Proposed	2.4	Category B	15.0	Pass
		Mit (Run5)	1.9	Category A	12.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.6	Category B	16.2	Pass
		Mit (Run5)	2.1	Category A	13.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.5	Category B	15.6	Pass
		Mit (Run5)	2.0	Category A	12.9	Pass
17	Summer	Existing	–	–	–	–
		Proposed	2.2	Category B	15.5	Pass
		Mit (Run5)	2.0	Category A	13.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.5	Category B	16.8	Pass
		Mit (Run5)	2.2	Category B	14.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.4	Category B	16.6	Pass
		Mit (Run5)	2.1	Category A	14.4	Pass
18	Summer	Existing	–	–	–	–
		Proposed	2.9	Category B	14.7	Pass
		Mit (Run5)	2.9	Category B	16.8	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	2.9	Category B	15.6	Pass
		Mit (Run5)	3.1	Category B	18.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.9	Category B	15.1	Pass
		Mit (Run5)	3.0	Category B	17.4	Pass
19	Summer	Existing	–	–	–	–
		Proposed	2.9	Category B	15.7	Pass
		Mit (Run5)	2.7	Category B	14.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.9	Category B	15.9	Pass
		Mit (Run5)	2.9	Category B	15.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.9	Category B	15.8	Pass
		Mit (Run5)	2.8	Category B	15.4	Pass
20	Summer	Existing	–	–	–	–
		Proposed	4.8	Category D	21.8	Pass
		Mit (Run5)	4.6	Category D	20.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.7	Category D	22.4	Pass
		Mit (Run5)	4.3	Category D	21.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.8	Category D	21.9	Pass
		Mit (Run5)	4.6	Category D	21.1	Pass
21	Summer	Existing	–	–	–	–
		Proposed	3.4	Category C	16.9	Pass
		Mit (Run5)	2.7	Category B	12.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.5	Category C	17.4	Pass
		Mit (Run5)	2.8	Category B	13.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.5	Category C	17.3	Pass
		Mit (Run5)	2.8	Category B	13.3	Pass
22	Summer	Existing	–	–	–	–
		Proposed	2.2	Category B	13.5	Pass
		Mit (Run5)	1.8	Category A	11.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.2	Category B	14.3	Pass
		Mit (Run5)	1.9	Category A	12.4	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	2.2	Category B	13.9	Pass
		Mit (Run5)	1.9	Category A	12.1	Pass
23	Summer	Existing	–	–	–	–
		Proposed	2.9	Category B	15.3	Pass
		Mit (Run5)	2.2	Category B	11.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.1	Category B	16.1	Pass
		Mit (Run5)	2.3	Category B	12.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.9	Category B	15.7	Pass
		Mit (Run5)	2.3	Category B	12.5	Pass
24	Summer	Existing	–	–	–	–
		Proposed	3.8	Category C	18.7	Pass
		Mit (Run5)	3.6	Category C	18.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.8	Category C	19.4	Pass
		Mit (Run5)	3.5	Category C	18.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	19.2	Pass
		Mit (Run5)	3.6	Category C	18.5	Pass
25	Summer	Existing	–	–	–	–
		Proposed	3.1	Category B	16.9	Pass
		Mit (Run5)	2.4	Category B	14.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.2	Category B	17.4	Pass
		Mit (Run5)	2.3	Category B	14.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.2	Category B	17.1	Pass
		Mit (Run5)	2.4	Category B	14.1	Pass
26	Summer	Existing	–	–	–	–
		Proposed	2.6	Category B	15.6	Pass
		Mit (Run5)	2.3	Category B	13.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.7	Category B	16.2	Pass
		Mit (Run5)	2.4	Category B	13.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.6	Category B	16.0	Pass
		Mit (Run5)	2.4	Category B	13.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
27	Summer	Existing	–	–	–	–
		Proposed	2.6	Category B	17.9	Pass
		Mit (Run5)	2.5	Category B	13.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.8	Category B	19.6	Pass
		Mit (Run5)	2.5	Category B	14.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.7	Category B	18.6	Pass
		Mit (Run5)	2.5	Category B	14.0	Pass
28	Summer	Existing	–	–	–	–
		Proposed	2.5	Category B	19.5	Pass
		Mit (Run5)	2.0	Category A	11.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.7	Category B	20.6	Pass
		Mit (Run5)	2.1	Category A	12.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.6	Category B	19.5	Pass
		Mit (Run5)	2.0	Category A	11.7	Pass
29	Summer	Existing	–	–	–	–
		Proposed	1.9	Category A	14.4	Pass
		Mit (Run5)	1.6	Category A	11.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.1	Category A	15.4	Pass
		Mit (Run5)	1.8	Category A	13.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.0	Category A	14.9	Pass
		Mit (Run5)	1.7	Category A	12.3	Pass
30	Summer	Existing	–	–	–	–
		Proposed	2.6	Category B	19.9	Pass
		Mit (Run5)	2.0	Category A	13.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.7	Category B	22.6	Pass
		Mit (Run5)	2.2	Category B	15.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.6	Category B	22.1	Pass
		Mit (Run5)	2.1	Category A	15.0	Pass
31	Summer	Existing	2.7	Category B	19.2	Pass
		Proposed	4.6	Category D	22.3	Pass
		Mit (Run5)	3.6	Category C	16.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	2.8	Category B	18.5	Pass
		Proposed	4.6	Category D	20.7	Pass
		Mit (Run5)	3.7	Category C	17.9	Pass
	Annual	Existing	2.8	Category B	18.5	Pass
		Proposed	4.6	Category D	21.6	Pass
		Mit (Run5)	3.6	Category C	17.8	Pass
32	Summer	Existing	4.3	Category D	23.9	Pass
		Proposed	4.8	Category D	23.4	Pass
		Mit (Run5)	4.5	Category D	19.7	Pass
	Winter	Existing	4.3	Category D	22.7	Pass
		Proposed	4.9	Category D	23.4	Pass
		Mit (Run5)	4.6	Category D	19.0	Pass
	Annual	Existing	4.3	Category D	23.5	Pass
		Proposed	4.8	Category D	23.4	Pass
		Mit (Run5)	4.6	Category D	19.7	Pass
33	Summer	Existing	3.8	Category C	21.4	Pass
		Proposed	5.2	Category D	21.8	Pass
		Mit (Run5)	4.4	Category D	19.7	Pass
	Winter	Existing	3.8	Category C	20.9	Pass
		Proposed	5.3	Category E	21.2	Pass
		Mit (Run5)	4.5	Category D	19.7	Pass
	Annual	Existing	3.8	Category C	21.3	Pass
		Proposed	5.3	Category E	21.7	Pass
		Mit (Run5)	4.4	Category D	19.7	Pass
34	Summer	Existing	4.1	Category C	22.4	Pass
		Proposed	5.7	Category E	24.9	Pass
		Mit (Run5)	4.5	Category D	21.0	Pass
	Winter	Existing	4.2	Category D	21.9	Pass
		Proposed	6.0	Category E	27.2	Exceeded
		Mit (Run5)	4.8	Category D	22.0	Pass
	Annual	Existing	4.1	Category C	22.3	Pass
		Proposed	5.9	Category E	26.8	Exceeded
		Mit (Run5)	4.7	Category D	21.7	Pass
35	Summer	Existing	4.4	Category D	21.0	Pass
		Proposed	4.9	Category D	24.0	Pass
		Mit (Run5)	4.2	Category D	18.2	Pass
	Winter	Existing	4.5	Category D	20.4	Pass
		Proposed	5.2	Category D	26.8	Exceeded
		Mit (Run5)	4.4	Category D	20.0	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	4.5	Category D	20.8	Pass
		Proposed	5.0	Category D	25.8	Exceeded
		Mit (Run5)	4.2	Category D	19.2	Pass
36	Summer	Existing	4.3	Category D	21.1	Pass
		Proposed	3.8	Category C	20.8	Pass
		Mit (Run5)	4.2	Category D	18.7	Pass
	Winter	Existing	4.3	Category D	19.7	Pass
		Proposed	4.0	Category C	22.7	Pass
		Mit (Run5)	4.3	Category D	18.7	Pass
	Annual	Existing	4.3	Category D	20.3	Pass
		Proposed	3.8	Category C	22.1	Pass
		Mit (Run5)	4.2	Category D	18.7	Pass
37	Summer	Existing	3.9	Category C	19.8	Pass
		Proposed	3.1	Category B	20.6	Pass
		Mit (Run5)	2.9	Category B	18.9	Pass
	Winter	Existing	4.1	Category C	20.9	Pass
		Proposed	3.4	Category C	24.4	Pass
		Mit (Run5)	3.2	Category B	21.5	Pass
	Annual	Existing	4.0	Category C	20.5	Pass
		Proposed	3.2	Category B	23.1	Pass
		Mit (Run5)	3.0	Category B	20.8	Pass
38	Summer	Existing	3.2	Category B	17.5	Pass
		Proposed	2.9	Category B	20.4	Pass
		Mit (Run5)	3.1	Category B	16.9	Pass
	Winter	Existing	3.4	Category C	18.9	Pass
		Proposed	3.2	Category B	24.1	Pass
		Mit (Run5)	3.1	Category B	19.4	Pass
	Annual	Existing	3.3	Category B	18.4	Pass
		Proposed	3.0	Category B	22.6	Pass
		Mit (Run5)	3.1	Category B	18.7	Pass
39	Summer	Existing	2.2	Category B	16.8	Pass
		Proposed	2.4	Category B	15.8	Pass
		Mit (Run5)	4.3	Category D	21.6	Pass
	Winter	Existing	2.3	Category B	16.9	Pass
		Proposed	2.5	Category B	16.4	Pass
		Mit (Run5)	4.3	Category D	21.6	Pass
	Annual	Existing	2.2	Category B	16.9	Pass
		Proposed	2.4	Category B	16.1	Pass
		Mit (Run5)	4.3	Category D	21.6	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
40	Summer	Existing	3.2	Category B	21.6	Pass
		Proposed	4.3	Category D	21.0	Pass
		Mit (Run5)	2.8	Category B	14.8	Pass
	Winter	Existing	3.3	Category B	20.0	Pass
		Proposed	4.4	Category D	20.2	Pass
		Mit (Run5)	2.8	Category B	14.7	Pass
	Annual	Existing	3.3	Category B	20.9	Pass
		Proposed	4.4	Category D	20.3	Pass
		Mit (Run5)	2.8	Category B	14.7	Pass
41	Summer	Existing	3.0	Category B	20.9	Pass
		Proposed	4.7	Category D	21.9	Pass
		Mit (Run5)	3.6	Category C	17.9	Pass
	Winter	Existing	3.1	Category B	21.7	Pass
		Proposed	4.7	Category D	22.1	Pass
		Mit (Run5)	3.4	Category C	17.6	Pass
	Annual	Existing	3.1	Category B	21.6	Pass
		Proposed	4.7	Category D	22.1	Pass
		Mit (Run5)	3.5	Category C	17.7	Pass
42	Summer	Existing	2.6	Category B	17.3	Pass
		Proposed	3.2	Category B	19.0	Pass
		Mit (Run5)	3.1	Category B	17.6	Pass
	Winter	Existing	2.7	Category B	16.4	Pass
		Proposed	3.3	Category B	17.7	Pass
		Mit (Run5)	3.2	Category B	17.2	Pass
	Annual	Existing	2.7	Category B	16.8	Pass
		Proposed	3.3	Category B	18.1	Pass
		Mit (Run5)	3.1	Category B	17.3	Pass
43	Summer	Existing	2.6	Category B	19.4	Pass
		Proposed	2.9	Category B	22.0	Pass
		Mit (Run5)	2.8	Category B	19.3	Pass
	Winter	Existing	2.8	Category B	19.8	Pass
		Proposed	2.9	Category B	22.0	Pass
		Mit (Run5)	2.9	Category B	19.7	Pass
	Annual	Existing	2.7	Category B	19.7	Pass
		Proposed	2.9	Category B	22.0	Pass
		Mit (Run5)	2.8	Category B	19.6	Pass
44	Summer	Existing	1.8	Category A	13.5	Pass
		Proposed	1.9	Category A	13.4	Pass
		Mit (Run5)	2.0	Category A	12.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	1.9	Category A	14.7	Pass
		Proposed	2.0	Category A	14.0	Pass
		Mit (Run5)	2.1	Category A	14.2	Pass
	Annual	Existing	1.8	Category A	14.3	Pass
		Proposed	2.0	Category A	13.9	Pass
		Mit (Run5)	2.0	Category A	13.6	Pass
45	Summer	Existing	3.4	Category C	21.3	Pass
		Proposed	3.1	Category B	22.4	Pass
		Mit (Run5)	3.0	Category B	21.9	Pass
	Winter	Existing	3.7	Category C	24.2	Pass
		Proposed	3.4	Category C	24.4	Pass
		Mit (Run5)	3.4	Category C	24.7	Pass
	Annual	Existing	3.6	Category C	23.3	Pass
		Proposed	3.1	Category B	23.5	Pass
		Mit (Run5)	3.2	Category B	23.8	Pass
46	Summer	Existing	2.8	Category B	19.0	Pass
		Proposed	2.8	Category B	19.1	Pass
		Mit (Run5)	2.8	Category B	19.5	Pass
	Winter	Existing	3.0	Category B	20.3	Pass
		Proposed	3.0	Category B	20.4	Pass
		Mit (Run5)	3.1	Category B	21.3	Pass
	Annual	Existing	3.0	Category B	20.0	Pass
		Proposed	2.9	Category B	20.1	Pass
		Mit (Run5)	2.9	Category B	20.9	Pass
47	Summer	Existing	3.1	Category B	16.3	Pass
		Proposed	2.7	Category B	15.6	Pass
		Mit (Run5)	2.7	Category B	15.6	Pass
	Winter	Existing	3.1	Category B	15.9	Pass
		Proposed	2.7	Category B	16.1	Pass
		Mit (Run5)	2.9	Category B	16.1	Pass
	Annual	Existing	3.1	Category B	16.1	Pass
		Proposed	2.7	Category B	15.7	Pass
		Mit (Run5)	2.8	Category B	16.0	Pass
48	Summer	Existing	2.5	Category B	15.5	Pass
		Proposed	2.9	Category B	19.2	Pass
		Mit (Run5)	2.8	Category B	18.9	Pass
	Winter	Existing	2.6	Category B	16.6	Pass
		Proposed	3.1	Category B	19.1	Pass
		Mit (Run5)	3.0	Category B	18.4	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	2.6	Category B	16.1	Pass
		Proposed	3.0	Category B	19.2	Pass
		Mit (Run5)	2.9	Category B	18.7	Pass
49	Summer	Existing	3.1	Category B	18.1	Pass
		Proposed	4.0	Category C	19.1	Pass
		Mit (Run5)	3.8	Category C	16.1	Pass
	Winter	Existing	3.2	Category B	16.7	Pass
		Proposed	4.3	Category D	19.9	Pass
		Mit (Run5)	4.0	Category C	17.0	Pass
	Annual	Existing	3.1	Category B	16.8	Pass
		Proposed	4.1	Category C	19.8	Pass
		Mit (Run5)	3.9	Category C	17.0	Pass
50	Summer	Existing	2.6	Category B	21.5	Pass
		Proposed	4.1	Category C	21.7	Pass
		Mit (Run5)	3.4	Category C	16.8	Pass
	Winter	Existing	2.7	Category B	19.9	Pass
		Proposed	4.4	Category D	21.1	Pass
		Mit (Run5)	3.5	Category C	16.3	Pass
	Annual	Existing	2.6	Category B	20.2	Pass
		Proposed	4.2	Category D	21.5	Pass
		Mit (Run5)	3.4	Category C	16.8	Pass
51	Summer	Existing	2.2	Category B	16.3	Pass
		Proposed	3.2	Category B	21.3	Pass
		Mit (Run5)	3.2	Category B	19.4	Pass
	Winter	Existing	2.3	Category B	15.1	Pass
		Proposed	3.4	Category C	22.6	Pass
		Mit (Run5)	3.4	Category C	21.2	Pass
	Annual	Existing	2.2	Category B	15.2	Pass
		Proposed	3.3	Category B	22.5	Pass
		Mit (Run5)	3.3	Category B	20.4	Pass
52	Summer	Existing	1.8	Category A	14.3	Pass
		Proposed	2.1	Category A	18.4	Pass
		Mit (Run5)	1.9	Category A	16.5	Pass
	Winter	Existing	1.9	Category A	16.7	Pass
		Proposed	2.3	Category B	20.1	Pass
		Mit (Run5)	2.1	Category A	18.6	Pass
	Annual	Existing	1.8	Category A	16.1	Pass
		Proposed	2.2	Category B	19.4	Pass
		Mit (Run5)	2.0	Category A	17.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
53	Summer	Existing	1.5	Category A	10.8	Pass
		Proposed	1.4	Category A	10.8	Pass
		Mit (Run5)	1.3	Category A	9.5	Pass
	Winter	Existing	1.5	Category A	10.7	Pass
		Proposed	1.5	Category A	10.8	Pass
		Mit (Run5)	1.4	Category A	10.7	Pass
	Annual	Existing	1.5	Category A	10.8	Pass
		Proposed	1.4	Category A	10.8	Pass
		Mit (Run5)	1.4	Category A	10.2	Pass
54	Summer	Existing	2.1	Category A	18.1	Pass
		Proposed	2.0	Category A	12.8	Pass
		Mit (Run5)	1.9	Category A	11.9	Pass
	Winter	Existing	2.1	Category A	17.5	Pass
		Proposed	2.0	Category A	13.0	Pass
		Mit (Run5)	2.0	Category A	12.9	Pass
	Annual	Existing	2.1	Category A	18.1	Pass
		Proposed	2.0	Category A	13.0	Pass
		Mit (Run5)	1.9	Category A	12.5	Pass
55	Summer	Existing	1.9	Category A	15.3	Pass
		Proposed	1.9	Category A	17.1	Pass
		Mit (Run5)	1.8	Category A	15.3	Pass
	Winter	Existing	2.0	Category A	14.3	Pass
		Proposed	2.0	Category A	17.8	Pass
		Mit (Run5)	1.9	Category A	16.2	Pass
	Annual	Existing	1.9	Category A	14.8	Pass
		Proposed	1.9	Category A	17.2	Pass
		Mit (Run5)	1.8	Category A	15.7	Pass
56	Summer	Existing	1.9	Category A	14.5	Pass
		Proposed	2.5	Category B	18.2	Pass
		Mit (Run5)	1.8	Category A	14.2	Pass
	Winter	Existing	1.9	Category A	13.4	Pass
		Proposed	2.5	Category B	17.8	Pass
		Mit (Run5)	2.0	Category A	15.6	Pass
	Annual	Existing	1.9	Category A	13.9	Pass
		Proposed	2.5	Category B	17.8	Pass
		Mit (Run5)	1.9	Category A	14.9	Pass
57	Summer	Existing	2.2	Category B	13.9	Pass
		Proposed	2.4	Category B	17.8	Pass
		Mit (Run5)	2.5	Category B	18.1	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	2.4	Category B	15.4	Pass
		Proposed	2.4	Category B	18.0	Pass
		Mit (Run5)	2.6	Category B	18.5	Pass
	Annual	Existing	2.3	Category B	14.9	Pass
		Proposed	2.4	Category B	18.0	Pass
		Mit (Run5)	2.5	Category B	18.5	Pass
58	Summer	Existing	1.8	Category A	11.9	Pass
		Proposed	2.2	Category B	13.6	Pass
		Mit (Run5)	2.2	Category B	14.3	Pass
	Winter	Existing	1.8	Category A	11.9	Pass
		Proposed	2.1	Category A	13.3	Pass
		Mit (Run5)	2.2	Category B	14.1	Pass
	Annual	Existing	1.8	Category A	11.9	Pass
		Proposed	2.2	Category B	13.6	Pass
		Mit (Run5)	2.2	Category B	14.3	Pass
59	Summer	Existing	2.1	Category A	13.9	Pass
		Proposed	2.1	Category A	13.1	Pass
		Mit (Run5)	2.2	Category B	13.6	Pass
	Winter	Existing	2.2	Category B	13.6	Pass
		Proposed	2.2	Category B	13.0	Pass
		Mit (Run5)	2.3	Category B	13.7	Pass
	Annual	Existing	2.2	Category B	13.7	Pass
		Proposed	2.2	Category B	13.1	Pass
		Mit (Run5)	2.3	Category B	13.7	Pass
60	Summer	Existing	2.2	Category B	17.4	Pass
		Proposed	2.5	Category B	16.0	Pass
		Mit (Run5)	2.2	Category B	14.8	Pass
	Winter	Existing	2.3	Category B	16.7	Pass
		Proposed	2.6	Category B	16.4	Pass
		Mit (Run5)	2.3	Category B	15.7	Pass
	Annual	Existing	2.2	Category B	16.9	Pass
		Proposed	2.5	Category B	16.3	Pass
		Mit (Run5)	2.3	Category B	15.4	Pass
61	Summer	Existing	2.4	Category B	20.4	Pass
		Proposed	3.7	Category C	26.2	Exceeded
		Mit (Run5)	2.9	Category B	19.8	Pass
	Winter	Existing	2.5	Category B	19.9	Pass
		Proposed	3.7	Category C	24.8	Pass
		Mit (Run5)	3.1	Category B	19.1	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	2.4	Category B	20.0	Pass
		Proposed	3.7	Category C	25.8	Exceeded
		Mit (Run5)	3.0	Category B	19.4	Pass
62	Summer	Existing	1.9	Category A	12.7	Pass
		Proposed	2.1	Category A	15.1	Pass
		Mit (Run5)	2.2	Category B	14.4	Pass
	Winter	Existing	2.0	Category A	12.3	Pass
		Proposed	2.1	Category A	15.0	Pass
		Mit (Run5)	2.2	Category B	14.5	Pass
	Annual	Existing	2.0	Category A	12.7	Pass
		Proposed	2.1	Category A	15.1	Pass
		Mit (Run5)	2.2	Category B	14.6	Pass
63	Summer	Existing	3.8	Category C	19.4	Pass
		Proposed	3.8	Category C	21.9	Pass
		Mit (Run5)	3.9	Category C	20.8	Pass
	Winter	Existing	3.8	Category C	18.7	Pass
		Proposed	3.8	Category C	21.0	Pass
		Mit (Run5)	3.9	Category C	20.0	Pass
	Annual	Existing	3.8	Category C	18.8	Pass
		Proposed	3.8	Category C	21.8	Pass
		Mit (Run5)	3.9	Category C	20.6	Pass
64	Summer	Existing	2.0	Category A	13.4	Pass
		Proposed	2.5	Category B	15.7	Pass
		Mit (Run5)	2.4	Category B	13.6	Pass
	Winter	Existing	2.0	Category A	12.9	Pass
		Proposed	2.5	Category B	15.6	Pass
		Mit (Run5)	2.5	Category B	13.5	Pass
	Annual	Existing	2.0	Category A	13.1	Pass
		Proposed	2.5	Category B	15.6	Pass
		Mit (Run5)	2.4	Category B	13.6	Pass
65	Summer	Existing	2.9	Category B	21.7	Pass
		Proposed	4.4	Category D	22.4	Pass
		Mit (Run5)	3.6	Category C	16.7	Pass
	Winter	Existing	3.0	Category B	21.3	Pass
		Proposed	4.6	Category D	21.9	Pass
		Mit (Run5)	3.8	Category C	17.9	Pass
	Annual	Existing	3.0	Category B	21.5	Pass
		Proposed	4.5	Category D	22.4	Pass
		Mit (Run5)	3.8	Category C	17.8	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
66	Summer	Existing	2.9	Category B	19.8	Pass
		Proposed	3.3	Category B	23.5	Pass
		Mit (Run5)	2.6	Category B	13.0	Pass
	Winter	Existing	2.9	Category B	19.1	Pass
		Proposed	3.4	Category C	22.7	Pass
		Mit (Run5)	2.6	Category B	14.2	Pass
	Annual	Existing	2.9	Category B	19.8	Pass
		Proposed	3.4	Category C	23.2	Pass
		Mit (Run5)	2.6	Category B	13.7	Pass
67	Summer	Existing	3.8	Category C	18.5	Pass
		Proposed	3.9	Category C	18.4	Pass
		Mit (Run5)	4.0	Category C	18.2	Pass
	Winter	Existing	3.9	Category C	17.9	Pass
		Proposed	3.9	Category C	17.5	Pass
		Mit (Run5)	4.2	Category D	17.6	Pass
	Annual	Existing	3.9	Category C	18.5	Pass
		Proposed	3.9	Category C	18.4	Pass
		Mit (Run5)	4.1	Category C	18.2	Pass
68	Summer	Existing	3.4	Category C	19.2	Pass
		Proposed	3.6	Category C	19.1	Pass
		Mit (Run5)	3.5	Category C	19.5	Pass
	Winter	Existing	3.6	Category C	18.4	Pass
		Proposed	3.7	Category C	18.6	Pass
		Mit (Run5)	3.7	Category C	19.0	Pass
	Annual	Existing	3.5	Category C	19.1	Pass
		Proposed	3.6	Category C	18.9	Pass
		Mit (Run5)	3.6	Category C	19.3	Pass
69	Summer	Existing	2.3	Category B	16.6	Pass
		Proposed	2.3	Category B	16.2	Pass
		Mit (Run5)	2.2	Category B	16.3	Pass
	Winter	Existing	2.3	Category B	16.0	Pass
		Proposed	2.4	Category B	15.6	Pass
		Mit (Run5)	2.3	Category B	15.7	Pass
	Annual	Existing	2.3	Category B	16.0	Pass
		Proposed	2.4	Category B	15.6	Pass
		Mit (Run5)	2.2	Category B	15.7	Pass
70	Summer	Existing	3.7	Category C	18.0	Pass
		Proposed	3.9	Category C	19.1	Pass
		Mit (Run5)	3.9	Category C	19.0	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	3.9	Category C	19.7	Pass
		Proposed	4.1	Category C	19.9	Pass
		Mit (Run5)	4.1	Category C	20.0	Pass
	Annual	Existing	3.8	Category C	19.3	Pass
		Proposed	4.0	Category C	19.5	Pass
		Mit (Run5)	4.0	Category C	19.8	Pass
71	Summer	Existing	4.2	Category D	20.0	Pass
		Proposed	4.7	Category D	20.0	Pass
		Mit (Run5)	3.8	Category C	18.5	Pass
	Winter	Existing	4.3	Category D	21.2	Pass
		Proposed	4.8	Category D	20.7	Pass
		Mit (Run5)	3.8	Category C	18.4	Pass
	Annual	Existing	4.2	Category D	20.6	Pass
		Proposed	4.8	Category D	20.6	Pass
		Mit (Run5)	3.8	Category C	18.4	Pass
72	Summer	Existing	1.8	Category A	16.1	Pass
		Proposed	1.7	Category A	14.8	Pass
		Mit (Run5)	1.7	Category A	13.1	Pass
	Winter	Existing	1.8	Category A	15.5	Pass
		Proposed	1.8	Category A	14.2	Pass
		Mit (Run5)	1.7	Category A	13.0	Pass
	Annual	Existing	1.8	Category A	16.1	Pass
		Proposed	1.7	Category A	14.8	Pass
		Mit (Run5)	1.7	Category A	13.0	Pass
73	Summer	Existing	4.7	Category D	21.9	Pass
		Proposed	4.6	Category D	23.0	Pass
		Mit (Run5)	3.2	Category B	17.9	Pass
	Winter	Existing	4.8	Category D	20.6	Pass
		Proposed	4.9	Category D	24.1	Pass
		Mit (Run5)	3.5	Category C	20.7	Pass
	Annual	Existing	4.8	Category D	20.9	Pass
		Proposed	4.9	Category D	23.7	Pass
		Mit (Run5)	3.4	Category C	19.9	Pass
74	Summer	Existing	3.3	Category B	18.1	Pass
		Proposed	3.1	Category B	20.8	Pass
		Mit (Run5)	2.4	Category B	16.6	Pass
	Winter	Existing	3.5	Category C	20.2	Pass
		Proposed	3.4	Category C	24.2	Pass
		Mit (Run5)	2.5	Category B	19.6	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	3.4	Category C	19.6	Pass
		Proposed	3.2	Category B	23.3	Pass
		Mit (Run5)	2.5	Category B	18.4	Pass
75	Summer	Existing	3.3	Category B	18.1	Pass
		Proposed	3.1	Category B	18.2	Pass
		Mit (Run5)	2.9	Category B	17.3	Pass
	Winter	Existing	3.5	Category C	18.4	Pass
		Proposed	3.4	Category C	19.3	Pass
		Mit (Run5)	3.1	Category B	17.5	Pass
	Annual	Existing	3.4	Category C	18.2	Pass
		Proposed	3.2	Category B	18.9	Pass
		Mit (Run5)	3.1	Category B	17.5	Pass
76	Summer	Existing	2.6	Category B	17.8	Pass
		Proposed	2.4	Category B	18.5	Pass
		Mit (Run5)	2.1	Category A	17.9	Pass
	Winter	Existing	2.9	Category B	19.0	Pass
		Proposed	2.7	Category B	20.0	Pass
		Mit (Run5)	2.3	Category B	18.5	Pass
	Annual	Existing	2.8	Category B	18.6	Pass
		Proposed	2.5	Category B	19.6	Pass
		Mit (Run5)	2.2	Category B	18.5	Pass
77	Summer	Existing	3.0	Category B	22.3	Pass
		Proposed	3.1	Category B	21.4	Pass
		Mit (Run5)	3.0	Category B	20.8	Pass
	Winter	Existing	3.2	Category B	22.5	Pass
		Proposed	3.2	Category B	22.1	Pass
		Mit (Run5)	3.1	Category B	20.3	Pass
	Annual	Existing	3.2	Category B	22.3	Pass
		Proposed	3.2	Category B	22.0	Pass
		Mit (Run5)	3.1	Category B	20.3	Pass
78	Summer	Existing	3.0	Category B	17.8	Pass
		Proposed	3.7	Category C	19.8	Pass
		Mit (Run5)	4.5	Category D	22.2	Pass
	Winter	Existing	3.3	Category B	18.5	Pass
		Proposed	3.8	Category C	21.1	Pass
		Mit (Run5)	4.5	Category D	21.5	Pass
	Annual	Existing	3.1	Category B	18.4	Pass
		Proposed	3.8	Category C	20.8	Pass
		Mit (Run5)	4.5	Category D	21.9	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
79	Summer	Existing	2.4	Category B	23.4	Pass
		Proposed	2.9	Category B	23.9	Pass
		Mit (Run5)	2.7	Category B	23.4	Pass
	Winter	Existing	2.5	Category B	23.0	Pass
		Proposed	3.0	Category B	23.1	Pass
		Mit (Run5)	2.9	Category B	22.8	Pass
	Annual	Existing	2.5	Category B	23.3	Pass
		Proposed	2.9	Category B	23.4	Pass
		Mit (Run5)	2.9	Category B	23.4	Pass
80	Summer	Existing	2.8	Category B	16.0	Pass
		Proposed	3.0	Category B	15.0	Pass
		Mit (Run5)	2.8	Category B	14.5	Pass
	Winter	Existing	3.0	Category B	16.2	Pass
		Proposed	3.1	Category B	16.1	Pass
		Mit (Run5)	3.0	Category B	15.8	Pass
	Annual	Existing	2.9	Category B	16.0	Pass
		Proposed	3.1	Category B	15.7	Pass
		Mit (Run5)	2.9	Category B	15.4	Pass
81	Summer	Existing	2.9	Category B	21.2	Pass
		Proposed	3.0	Category B	20.8	Pass
		Mit (Run5)	2.9	Category B	19.8	Pass
	Winter	Existing	3.0	Category B	20.4	Pass
		Proposed	3.1	Category B	20.0	Pass
		Mit (Run5)	3.1	Category B	19.5	Pass
	Annual	Existing	2.9	Category B	20.6	Pass
		Proposed	3.1	Category B	20.8	Pass
		Mit (Run5)	3.0	Category B	19.5	Pass
82	Summer	Existing	2.4	Category B	17.5	Pass
		Proposed	3.0	Category B	18.8	Pass
		Mit (Run5)	2.5	Category B	16.1	Pass
	Winter	Existing	2.8	Category B	19.0	Pass
		Proposed	3.0	Category B	18.7	Pass
		Mit (Run5)	2.5	Category B	16.1	Pass
	Annual	Existing	2.6	Category B	18.3	Pass
		Proposed	3.0	Category B	18.7	Pass
		Mit (Run5)	2.5	Category B	16.1	Pass
83	Summer	Existing	–	–	–	–
		Proposed	1.7	Category A	13.7	Pass
		Mit (Run5)	1.7	Category A	17.2	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	2.0	Category A	16.2	Pass
		Mit (Run5)	2.1	Category A	19.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.8	Category A	15.6	Pass
		Mit (Run5)	1.9	Category A	18.6	Pass
84	Summer	Existing	–	–	–	–
		Proposed	3.0	Category B	18.0	Pass
		Mit (Run5)	2.9	Category B	19.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.0	Category B	19.9	Pass
		Mit (Run5)	3.0	Category B	19.6	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.0	Category B	18.7	Pass
		Mit (Run5)	2.9	Category B	19.1	Pass
85	Summer	Existing	–	–	–	–
		Proposed	1.6	Category A	9.3	Pass
		Mit (Run5)	1.7	Category A	9.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.6	Category A	9.0	Pass
		Mit (Run5)	1.7	Category A	9.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.6	Category A	9.2	Pass
		Mit (Run5)	1.7	Category A	9.2	Pass
86	Summer	Existing	–	–	–	–
		Proposed	1.4	Category A	8.3	Pass
		Mit (Run5)	1.3	Category A	7.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.4	Category A	8.8	Pass
		Mit (Run5)	1.4	Category A	8.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.4	Category A	8.4	Pass
		Mit (Run5)	1.4	Category A	8.2	Pass
87	Summer	Existing	–	–	–	–
		Proposed	2.1	Category A	11.7	Pass
		Mit (Run5)	2.0	Category A	11.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.0	Category A	11.3	Pass
		Mit (Run5)	1.9	Category A	11.1	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	2.0	Category A	11.7	Pass
		Mit (Run5)	1.9	Category A	11.2	Pass
88	Summer	Existing	–	–	–	–
		Proposed	2.0	Category A	12.3	Pass
		Mit (Run5)	1.6	Category A	10.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.0	Category A	13.0	Pass
		Mit (Run5)	1.7	Category A	11.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.0	Category A	12.8	Pass
		Mit (Run5)	1.7	Category A	10.8	Pass
89	Summer	Existing	–	–	–	–
		Proposed	3.5	Category C	20.3	Pass
		Mit (Run5)	2.5	Category B	18.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	20.9	Pass
		Mit (Run5)	3.0	Category B	19.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	20.7	Pass
		Mit (Run5)	2.7	Category B	19.5	Pass
90	Summer	Existing	–	–	–	–
		Proposed	2.4	Category B	18.8	Pass
		Mit (Run5)	1.9	Category A	12.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.5	Category B	18.2	Pass
		Mit (Run5)	2.1	Category A	12.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.4	Category B	18.8	Pass
		Mit (Run5)	2.1	Category A	12.5	Pass
91	Summer	Existing	–	–	–	–
		Proposed	2.9	Category B	16.6	Pass
		Mit (Run5)	2.6	Category B	13.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.1	Category B	16.5	Pass
		Mit (Run5)	2.8	Category B	14.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.0	Category B	16.5	Pass
		Mit (Run5)	2.7	Category B	13.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
92	Summer	Existing	–	–	–	–
		Proposed	4.2	Category D	19.9	Pass
		Mit (Run5)	4.1	Category C	18.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.2	Category D	20.7	Pass
		Mit (Run5)	3.9	Category C	19.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.2	Category D	20.7	Pass
		Mit (Run5)	4.1	Category C	19.0	Pass
93	Summer	Existing	–	–	–	–
		Proposed	4.7	Category D	21.4	Pass
		Mit (Run5)	4.8	Category D	23.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.5	Category D	22.6	Pass
		Mit (Run5)	4.5	Category D	23.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.6	Category D	22.3	Pass
		Mit (Run5)	4.7	Category D	23.1	Pass
94	Summer	Existing	–	–	–	–
		Proposed	3.8	Category C	19.3	Pass
		Mit (Run5)	5.2	Category D	22.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.9	Category C	20.2	Pass
		Mit (Run5)	5.2	Category D	23.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	19.8	Pass
		Mit (Run5)	5.2	Category D	23.2	Pass
95	Summer	Existing	–	–	–	–
		Proposed	3.8	Category C	18.7	Pass
		Mit (Run5)	2.0	Category A	12.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.1	Category C	21.4	Pass
		Mit (Run5)	2.1	Category A	14.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.9	Category C	20.7	Pass
		Mit (Run5)	2.0	Category A	14.2	Pass
96	Summer	Existing	–	–	–	–
		Proposed	1.7	Category A	10.1	Pass
		Mit (Run5)	2.0	Category A	13.1	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	1.7	Category A	11.2	Pass
		Mit (Run5)	2.1	Category A	13.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.7	Category A	10.9	Pass
		Mit (Run5)	2.1	Category A	13.5	Pass
97	Summer	Existing	–	–	–	–
		Proposed	4.2	Category D	19.3	Pass
		Mit (Run5)	2.8	Category B	13.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.9	Category C	19.9	Pass
		Mit (Run5)	2.7	Category B	13.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.0	Category C	19.6	Pass
		Mit (Run5)	2.8	Category B	13.3	Pass
98	Summer	Existing	–	–	–	–
		Proposed	5.8	Category E	25.2	Exceeded
		Mit (Run5)	4.5	Category D	19.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	5.8	Category E	25.7	Exceeded
		Mit (Run5)	4.2	Category D	19.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	5.8	Category E	25.7	Exceeded
		Mit (Run5)	4.4	Category D	19.8	Pass
99	Summer	Existing	–	–	–	–
		Proposed	2.1	Category A	14.5	Pass
		Mit (Run5)	1.3	Category A	8.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.2	Category B	14.3	Pass
		Mit (Run5)	1.4	Category A	8.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.2	Category B	14.5	Pass
		Mit (Run5)	1.3	Category A	8.2	Pass
100	Summer	Existing	–	–	–	–
		Proposed	3.2	Category B	18.2	Pass
		Mit (Run5)	2.7	Category B	16.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.6	Category C	19.6	Pass
		Mit (Run5)	2.5	Category B	15.7	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	3.4	Category C	18.9	Pass
		Mit (Run5)	2.6	Category B	15.8	Pass
101	Summer	Existing	–	–	–	–
		Proposed	2.8	Category B	17.9	Pass
		Mit (Run5)	1.7	Category A	11.4	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.9	Category B	19.1	Pass
		Mit (Run5)	1.7	Category A	11.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.9	Category B	18.8	Pass
		Mit (Run5)	1.7	Category A	11.4	Pass
102	Summer	Existing	–	–	–	–
		Proposed	2.7	Category B	17.3	Pass
		Mit (Run5)	2.5	Category B	15.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.9	Category B	16.2	Pass
		Mit (Run5)	2.3	Category B	15.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.8	Category B	16.8	Pass
		Mit (Run5)	2.4	Category B	15.8	Pass
103	Summer	Existing	–	–	–	–
		Proposed	2.2	Category B	22.1	Pass
		Mit (Run5)	2.4	Category B	20.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.2	Category B	21.9	Pass
		Mit (Run5)	2.4	Category B	21.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.2	Category B	22.0	Pass
		Mit (Run5)	2.4	Category B	20.9	Pass
104	Summer	Existing	–	–	–	–
		Proposed	4.7	Category D	24.2	Pass
		Mit (Run5)	2.8	Category B	14.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.6	Category D	23.2	Pass
		Mit (Run5)	3.0	Category B	15.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.6	Category D	24.0	Pass
		Mit (Run5)	2.9	Category B	15.4	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
105	Summer	Existing	–	–	–	–
		Proposed	3.0	Category B	16.5	Pass
		Mit (Run5)	2.4	Category B	13.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.1	Category B	16.7	Pass
		Mit (Run5)	2.7	Category B	14.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.1	Category B	16.6	Pass
		Mit (Run5)	2.5	Category B	13.6	Pass
106	Summer	Existing	–	–	–	–
		Proposed	2.4	Category B	21.5	Pass
		Mit (Run5)	2.1	Category A	15.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.4	Category B	21.2	Pass
		Mit (Run5)	2.2	Category B	15.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.4	Category B	21.5	Pass
		Mit (Run5)	2.1	Category A	15.2	Pass
107	Summer	Existing	–	–	–	–
		Proposed	2.6	Category B	19.3	Pass
		Mit (Run5)	2.3	Category B	20.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.5	Category B	17.9	Pass
		Mit (Run5)	2.4	Category B	19.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.5	Category B	18.7	Pass
		Mit (Run5)	2.3	Category B	20.2	Pass
108	Summer	Existing	–	–	–	–
		Proposed	2.1	Category A	15.7	Pass
		Mit (Run5)	2.0	Category A	14.4	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.1	Category A	15.7	Pass
		Mit (Run5)	2.2	Category B	16.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.1	Category A	15.7	Pass
		Mit (Run5)	2.1	Category A	16.1	Pass
109	Summer	Existing	–	–	–	–
		Proposed	1.3	Category A	9.2	Pass
		Mit (Run5)	1.3	Category A	7.3	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	1.4	Category A	10.3	Pass
		Mit (Run5)	1.3	Category A	8.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.3	Category A	9.9	Pass
		Mit (Run5)	1.3	Category A	8.0	Pass
110	Summer	Existing	–	–	–	–
		Proposed	1.3	Category A	8.5	Pass
		Mit (Run5)	1.2	Category A	6.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.4	Category A	9.6	Pass
		Mit (Run5)	1.2	Category A	7.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.3	Category A	9.1	Pass
		Mit (Run5)	1.2	Category A	7.3	Pass
111	Summer	Existing	–	–	–	–
		Proposed	1.4	Category A	11.4	Pass
		Mit (Run5)	1.3	Category A	6.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.5	Category A	12.9	Pass
		Mit (Run5)	1.4	Category A	7.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.5	Category A	12.3	Pass
		Mit (Run5)	1.4	Category A	7.2	Pass
112	Summer	Existing	–	–	–	–
		Proposed	1.4	Category A	8.8	Pass
		Mit (Run5)	1.4	Category A	8.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.4	Category A	9.9	Pass
		Mit (Run5)	1.5	Category A	10.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.4	Category A	9.5	Pass
		Mit (Run5)	1.4	Category A	10.0	Pass
113	Summer	Existing	–	–	–	–
		Proposed	2.0	Category A	14.4	Pass
		Mit (Run5)	2.1	Category A	14.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	2.3	Category B	15.6	Pass
		Mit (Run5)	2.3	Category B	15.5	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	2.1	Category A	15.4	Pass
		Mit (Run5)	2.2	Category B	15.4	Pass
114	Summer	Existing	–	–	–	–
		Proposed	1.5	Category A	20.7	Pass
		Mit (Run5)	1.7	Category A	22.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.8	Category A	22.3	Pass
		Mit (Run5)	2.0	Category A	24.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.6	Category A	21.4	Pass
		Mit (Run5)	1.8	Category A	24.1	Pass
115	Summer	Existing	–	–	–	–
		Proposed	1.9	Category A	11.7	Pass
		Mit (Run5)	1.8	Category A	14.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.9	Category A	12.3	Pass
		Mit (Run5)	1.9	Category A	15.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.9	Category A	12.0	Pass
		Mit (Run5)	1.9	Category A	15.3	Pass
116	Summer	Existing	–	–	–	–
		Proposed	1.1	Category A	6.9	Pass
		Mit (Run5)	1.3	Category A	6.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.2	Category A	7.5	Pass
		Mit (Run5)	1.3	Category A	6.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.1	Category A	7.3	Pass
		Mit (Run5)	1.3	Category A	6.5	Pass
117	Summer	Existing	–	–	–	–
		Proposed	1.8	Category A	9.8	Pass
		Mit (Run5)	1.7	Category A	9.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	1.8	Category A	9.8	Pass
		Mit (Run5)	1.6	Category A	9.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	1.8	Category A	9.8	Pass
		Mit (Run5)	1.7	Category A	9.2	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
118	Summer	Existing	–	–	–	–
		Proposed	3.8	Category C	23.6	Pass
		Mit (Run5)	2.5	Category B	14.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.9	Category C	24.5	Pass
		Mit (Run5)	2.7	Category B	15.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.9	Category C	24.3	Pass
		Mit (Run5)	2.6	Category B	15.5	Pass
119	Summer	Existing	–	–	–	–
		Proposed	4.8	Category D	27.4	Exceeded
		Mit (Run5)	2.5	Category B	15.4	Pass
	Winter	Existing	–	–	–	–
		Proposed	5.2	Category D	31.5	Exceeded
		Mit (Run5)	2.6	Category B	16.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.9	Category D	30.6	Exceeded
		Mit (Run5)	2.6	Category B	16.3	Pass
120	Summer	Existing	–	–	–	–
		Proposed	4.1	Category C	28.1	Exceeded
		Mit (Run5)	1.9	Category A	13.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.5	Category D	29.6	Exceeded
		Mit (Run5)	1.9	Category A	12.6	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.3	Category D	28.5	Exceeded
		Mit (Run5)	1.9	Category A	12.9	Pass
121	Summer	Existing	–	–	–	–
		Proposed	4.3	Category D	24.8	Pass
		Mit (Run5)	2.6	Category B	16.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.6	Category D	26.6	Exceeded
		Mit (Run5)	2.6	Category B	15.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.4	Category D	26.6	Exceeded
		Mit (Run5)	2.6	Category B	15.9	Pass
122	Summer	Existing	–	–	–	–
		Proposed	3.5	Category C	25.9	Exceeded
		Mit (Run5)	2.2	Category B	12.4	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	26.6	Exceeded
		Mit (Run5)	2.3	Category B	12.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.7	Category C	26.6	Exceeded
		Mit (Run5)	2.2	Category B	12.8	Pass
123	Summer	Existing	–	–	–	–
		Proposed	4.4	Category D	27.5	Exceeded
		Mit (Run5)	2.4	Category B	17.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.8	Category D	30.9	Exceeded
		Mit (Run5)	2.5	Category B	16.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.6	Category D	29.8	Exceeded
		Mit (Run5)	2.4	Category B	16.7	Pass
124	Summer	Existing	–	–	–	–
		Proposed	3.1	Category B	18.6	Pass
		Mit (Run5)	1.6	Category A	10.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.4	Category C	20.5	Pass
		Mit (Run5)	1.6	Category A	10.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.2	Category B	19.8	Pass
		Mit (Run5)	1.6	Category A	10.3	Pass
125	Summer	Existing	–	–	–	–
		Proposed	3.7	Category C	24.3	Pass
		Mit (Run5)	2.1	Category A	15.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.1	Category C	25.3	Exceeded
		Mit (Run5)	2.2	Category B	15.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	25.3	Exceeded
		Mit (Run5)	2.2	Category B	15.6	Pass
126	Summer	Existing	–	–	–	–
		Proposed	3.7	Category C	24.7	Pass
		Mit (Run5)	2.7	Category B	17.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	26.3	Exceeded
		Mit (Run5)	2.6	Category B	17.1	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	3.9	Category C	25.7	Exceeded
		Mit (Run5)	2.7	Category B	17.1	Pass
127	Summer	Existing	–	–	–	–
		Proposed	3.2	Category B	22.0	Pass
		Mit (Run5)	2.1	Category A	15.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.4	Category C	21.9	Pass
		Mit (Run5)	2.2	Category B	15.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.4	Category C	22.0	Pass
		Mit (Run5)	2.1	Category A	15.4	Pass
128	Summer	Existing	–	–	–	–
		Proposed	3.2	Category B	21.7	Pass
		Mit (Run5)	2.5	Category B	15.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.4	Category C	22.5	Pass
		Mit (Run5)	2.5	Category B	14.4	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.3	Category B	21.9	Pass
		Mit (Run5)	2.5	Category B	15.0	Pass
129	Summer	Existing	–	–	–	–
		Proposed	3.0	Category B	18.0	Pass
		Mit (Run5)	2.4	Category B	14.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.2	Category B	17.5	Pass
		Mit (Run5)	2.3	Category B	13.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.0	Category B	17.5	Pass
		Mit (Run5)	2.4	Category B	14.0	Pass
130	Summer	Existing	–	–	–	–
		Proposed	6.5	Category E	31.0	Exceeded
		Mit (Run5)	5.6	Category E	26.2	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	6.6	Category E	30.1	Exceeded
		Mit (Run5)	5.8	Category E	26.7	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	6.6	Category E	30.1	Exceeded
		Mit (Run5)	5.7	Category E	26.7	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
131	Summer	Existing	–	–	–	–
		Proposed	3.4	Category C	21.9	Pass
		Mit (Run5)	2.6	Category B	20.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.5	Category C	22.6	Pass
		Mit (Run5)	2.6	Category B	21.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.5	Category C	22.4	Pass
		Mit (Run5)	2.6	Category B	21.2	Pass
132	Summer	Existing	–	–	–	–
		Proposed	4.4	Category D	20.5	Pass
		Mit (Run5)	3.3	Category B	21.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.2	Category D	20.8	Pass
		Mit (Run5)	3.3	Category B	21.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.3	Category D	20.8	Pass
		Mit (Run5)	3.3	Category B	21.8	Pass
133	Summer	Existing	–	–	–	–
		Proposed	5.1	Category D	25.5	Exceeded
		Mit (Run5)	4.7	Category D	21.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.9	Category D	25.5	Exceeded
		Mit (Run5)	4.7	Category D	21.8	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.9	Category D	25.5	Exceeded
		Mit (Run5)	4.7	Category D	21.7	Pass
134	Summer	Existing	–	–	–	–
		Proposed	4.0	Category C	24.8	Pass
		Mit (Run5)	3.9	Category C	17.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	23.8	Pass
		Mit (Run5)	3.7	Category C	17.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.0	Category C	23.9	Pass
		Mit (Run5)	3.8	Category C	17.4	Pass
135	Summer	Existing	–	–	–	–
		Proposed	3.7	Category C	23.0	Pass
		Mit (Run5)	3.3	Category B	20.9	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	26.3	Exceeded
		Mit (Run5)	3.7	Category C	23.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	25.4	Exceeded
		Mit (Run5)	3.5	Category C	22.4	Pass
136	Summer	Existing	–	–	–	–
		Proposed	6.6	Category E	33.6	Exceeded
		Mit (Run5)	5.0	Category D	24.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	6.6	Category E	34.5	Exceeded
		Mit (Run5)	4.6	Category D	25.4	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	6.6	Category E	34.5	Exceeded
		Mit (Run5)	4.8	Category D	25.0	Pass
137	Summer	Existing	–	–	–	–
		Proposed	3.5	Category C	20.5	Pass
		Mit (Run5)	3.4	Category C	17.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.6	Category C	23.0	Pass
		Mit (Run5)	3.4	Category C	17.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.6	Category C	22.0	Pass
		Mit (Run5)	3.4	Category C	17.6	Pass
138	Summer	Existing	–	–	–	–
		Proposed	3.6	Category C	22.2	Pass
		Mit (Run5)	3.2	Category B	22.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.0	Category C	24.3	Pass
		Mit (Run5)	3.7	Category C	24.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	23.6	Pass
		Mit (Run5)	3.4	Category C	23.7	Pass
139	Summer	Existing	–	–	–	–
		Proposed	4.2	Category D	31.7	Exceeded
		Mit (Run5)	3.6	Category C	25.7	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	4.6	Category D	33.2	Exceeded
		Mit (Run5)	4.2	Category D	25.7	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	4.4	Category D	32.7	Exceeded
		Mit (Run5)	3.9	Category C	25.7	Exceeded
140	Summer	Existing	–	–	–	–
		Proposed	3.9	Category C	30.6	Exceeded
		Mit (Run5)	4.0	Category C	29.6	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	4.2	Category D	28.9	Exceeded
		Mit (Run5)	4.3	Category D	28.4	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	4.0	Category C	29.5	Exceeded
		Mit (Run5)	4.2	Category D	29.0	Exceeded
141	Summer	Existing	–	–	–	–
		Proposed	3.4	Category C	20.7	Pass
		Mit (Run5)	3.2	Category B	18.4	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.6	Category C	20.9	Pass
		Mit (Run5)	3.4	Category C	18.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.5	Category C	20.9	Pass
		Mit (Run5)	3.3	Category B	18.6	Pass
142	Summer	Existing	–	–	–	–
		Proposed	3.4	Category C	21.0	Pass
		Mit (Run5)	2.9	Category B	19.2	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.6	Category C	21.4	Pass
		Mit (Run5)	3.1	Category B	20.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.5	Category C	21.1	Pass
		Mit (Run5)	3.0	Category B	19.8	Pass
143	Summer	Existing	–	–	–	–
		Proposed	3.9	Category C	31.9	Exceeded
		Mit (Run5)	3.0	Category B	17.1	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.2	Category D	30.7	Exceeded
		Mit (Run5)	3.2	Category B	17.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.2	Category D	31.9	Exceeded
		Mit (Run5)	3.0	Category B	17.6	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
144	Summer	Existing	–	–	–	–
		Proposed	2.8	Category B	18.8	Pass
		Mit (Run5)	2.4	Category B	20.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.0	Category B	19.1	Pass
		Mit (Run5)	2.7	Category B	22.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	2.9	Category B	19.1	Pass
		Mit (Run5)	2.6	Category B	22.3	Pass
145	Summer	Existing	–	–	–	–
		Proposed	5.4	Category E	22.7	Pass
		Mit (Run5)	5.4	Category E	22.7	Pass
	Winter	Existing	–	–	–	–
		Proposed	5.5	Category E	25.8	Exceeded
		Mit (Run5)	5.0	Category D	24.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	5.5	Category E	25.0	Pass
		Mit (Run5)	5.3	Category E	23.9	Pass
146	Summer	Existing	–	–	–	–
		Proposed	6.1	Category E	24.9	Pass
		Mit (Run5)	4.5	Category D	20.6	Pass
	Winter	Existing	–	–	–	–
		Proposed	6.1	Category E	26.2	Exceeded
		Mit (Run5)	4.6	Category D	22.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	6.1	Category E	26.1	Exceeded
		Mit (Run5)	4.5	Category D	21.9	Pass
147	Summer	Existing	–	–	–	–
		Proposed	7.3	Category E	27.6	Exceeded
		Mit (Run5)	5.5	Category E	24.4	Pass
	Winter	Existing	–	–	–	–
		Proposed	7.4	Category E	30.4	Exceeded
		Mit (Run5)	5.7	Category E	24.9	Pass
	Annual	Existing	–	–	–	–
		Proposed	7.3	Category E	29.5	Exceeded
		Mit (Run5)	5.6	Category E	24.8	Pass
148	Summer	Existing	–	–	–	–
		Proposed	7.0	Category E	29.5	Exceeded
		Mit (Run5)	6.4	Category E	26.2	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	7.1	Category E	30.7	Exceeded
		Mit (Run5)	6.4	Category E	27.6	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	7.1	Category E	30.3	Exceeded
		Mit (Run5)	6.4	Category E	27.3	Exceeded
149	Summer	Existing	–	–	–	–
		Proposed	7.5	Category E	29.2	Exceeded
		Mit (Run5)	5.5	Category E	25.6	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	7.7	Category E	29.8	Exceeded
		Mit (Run5)	5.5	Category E	24.6	Pass
	Annual	Existing	–	–	–	–
		Proposed	7.6	Category E	29.8	Exceeded
		Mit (Run5)	5.5	Category E	25.5	Exceeded
150	Summer	Existing	–	–	–	–
		Proposed	6.8	Category E	29.5	Exceeded
		Mit (Run5)	4.8	Category D	23.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	7.1	Category E	30.7	Exceeded
		Mit (Run5)	5.0	Category D	25.5	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	6.9	Category E	30.3	Exceeded
		Mit (Run5)	4.9	Category D	25.4	Exceeded
151	Summer	Existing	–	–	–	–
		Proposed	6.5	Category E	32.7	Exceeded
		Mit (Run5)	5.8	Category E	32.2	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	6.6	Category E	32.2	Exceeded
		Mit (Run5)	6.0	Category E	31.1	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	6.6	Category E	32.6	Exceeded
		Mit (Run5)	6.0	Category E	31.8	Exceeded
152	Summer	Existing	–	–	–	–
		Proposed	5.4	Category E	28.6	Exceeded
		Mit (Run5)	4.2	Category D	26.8	Exceeded
	Winter	Existing	–	–	–	–
		Proposed	5.4	Category E	29.1	Exceeded
		Mit (Run5)	4.4	Category D	26.9	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Annual	Existing	–	–	–	–
		Proposed	5.4	Category E	28.9	Exceeded
		Mit (Run5)	4.3	Category D	26.8	Exceeded
153	Summer	Existing	–	–	–	–
		Proposed	3.2	Category B	21.2	Pass
		Mit (Run5)	3.1	Category B	20.5	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.5	Category C	20.5	Pass
		Mit (Run5)	3.3	Category B	19.7	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.4	Category C	20.9	Pass
		Mit (Run5)	3.2	Category B	19.9	Pass
154	Summer	Existing	–	–	–	–
		Proposed	3.0	Category B	26.0	Exceeded
		Mit (Run5)	3.0	Category B	21.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.3	Category B	27.8	Exceeded
		Mit (Run5)	3.4	Category C	25.5	Exceeded
	Annual	Existing	–	–	–	–
		Proposed	3.2	Category B	27.0	Exceeded
		Mit (Run5)	3.2	Category B	24.6	Pass
155	Summer	Existing	–	–	–	–
		Proposed	3.7	Category C	19.6	Pass
		Mit (Run5)	3.5	Category C	19.3	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.9	Category C	21.0	Pass
		Mit (Run5)	3.7	Category C	21.1	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.8	Category C	20.5	Pass
		Mit (Run5)	3.6	Category C	20.8	Pass
156	Summer	Existing	–	–	–	–
		Proposed	5.7	Category E	23.1	Pass
		Mit (Run5)	5.6	Category E	23.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	5.5	Category E	22.5	Pass
		Mit (Run5)	5.5	Category E	22.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	5.7	Category E	22.9	Pass
		Mit (Run5)	5.6	Category E	22.3	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
157	Summer	Existing	–	–	–	–
		Proposed	3.3	Category B	21.5	Pass
		Mit (Run5)	2.8	Category B	18.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.3	Category B	20.9	Pass
		Mit (Run5)	2.8	Category B	17.3	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.3	Category B	21.5	Pass
		Mit (Run5)	2.8	Category B	17.7	Pass
158	Summer	Existing	–	–	–	–
		Proposed	3.1	Category B	22.2	Pass
		Mit (Run5)	2.1	Category A	14.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	3.1	Category B	23.1	Pass
		Mit (Run5)	2.2	Category B	15.0	Pass
	Annual	Existing	–	–	–	–
		Proposed	3.1	Category B	22.8	Pass
		Mit (Run5)	2.2	Category B	15.0	Pass
159	Summer	Existing	–	–	–	–
		Proposed	4.0	Category C	27.4	Exceeded
		Mit (Run5)	3.8	Category C	24.8	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.2	Category D	26.6	Exceeded
		Mit (Run5)	4.0	Category C	24.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.1	Category C	27.4	Exceeded
		Mit (Run5)	3.9	Category C	24.8	Pass
160	Summer	Existing	–	–	–	–
		Proposed	4.5	Category D	20.0	Pass
		Mit (Run5)	4.6	Category D	19.9	Pass
	Winter	Existing	–	–	–	–
		Proposed	4.5	Category D	20.6	Pass
		Mit (Run5)	4.4	Category D	20.6	Pass
	Annual	Existing	–	–	–	–
		Proposed	4.5	Category D	20.5	Pass
		Mit (Run5)	4.5	Category D	20.6	Pass
161	Summer	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.8	Category B	17.0	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

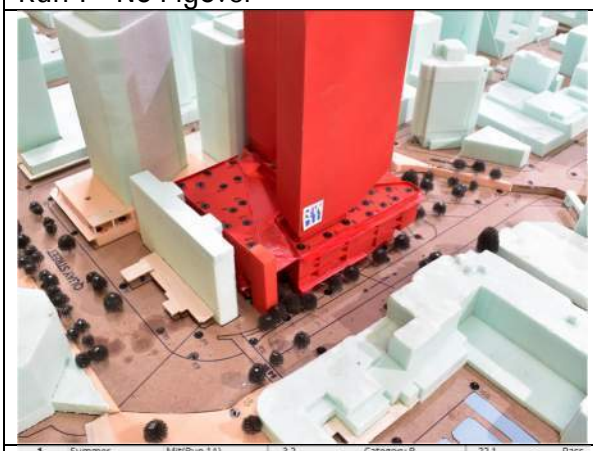
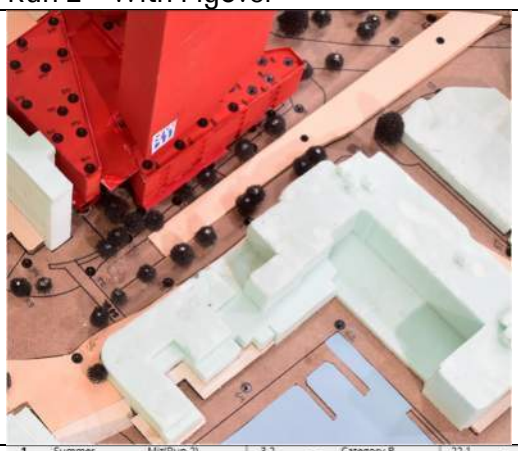
Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed	Rating	Speed	Rating
	Winter	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.9	Category B	16.5	Pass
	Annual	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.8	Category B	16.6	Pass
162	Summer	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.5	Category B	16.0	Pass
	Winter	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.6	Category B	16.2	Pass
	Annual	Existing	–	–	–	–
		Proposed	–	–	–	–
		Mit (Run5)	2.5	Category B	16.1	Pass

Seasons	Months	Hours		Wind Safety (m/s)
Summer	November - April	0:00 - 23:00	Category A	Pass
Winter	May - October	0:00 - 23:00	Category B	Exceeded
Annual	January - December	0:00 - 23:00	Category C	
			Category D	
			Category E	

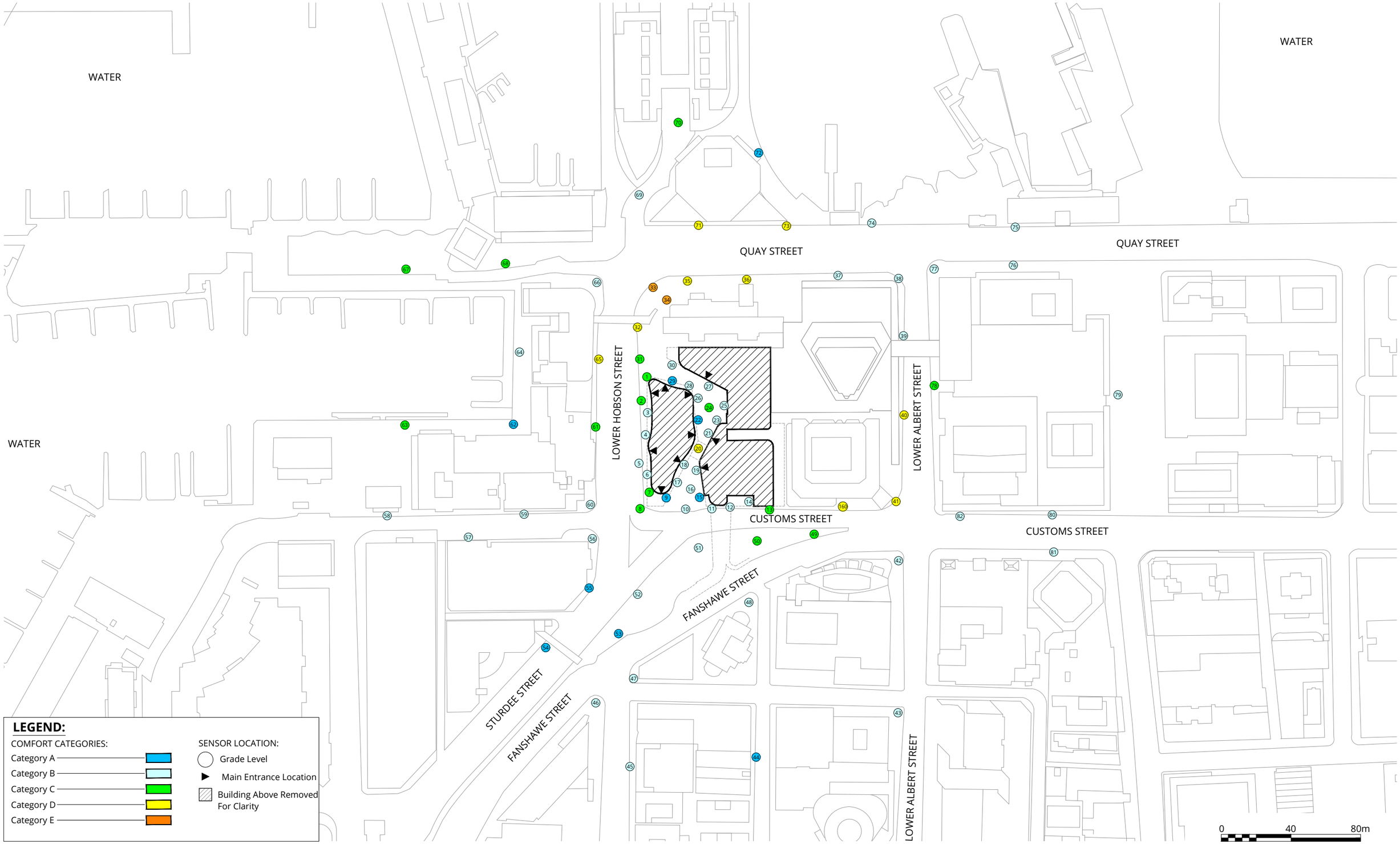
Configurations	
Existing	Existing site and surroundings
Proposed	Study building with existing surroundings
Mit(Run5)	Study building and landscaping features with existing surroundings

Appendix B

Conditions with V. without fly-over

Run 1 – No Flyover	Run 2 – With Flyover
	
1 Summer Mit(Run 1A) 3.2 - Category B 22.1 - Pass Winter Mit(Run 1A) 3.6 - Category C 23.8 - Pass Annual Mit(Run 1A) 3.4 - Category C 23.0 - Pass 2 Summer Mit(Run 1A) 3.5 - Category C 17.3 - Pass Winter Mit(Run 1A) 3.6 - Category C 17.9 - Pass Annual Mit(Run 1A) 3.6 - Category C 17.7 - Pass 3 Summer Mit(Run 1A) 2.9 - Category B 22.6 - Pass Winter Mit(Run 1A) 3.1 - Category B 20.7 - Pass Annual Mit(Run 1A) 3.0 - Category B 21.7 - Pass 4 Summer Mit(Run 1A) 3.3 - Category B 17.9 - Pass Winter Mit(Run 1A) 3.4 - Category C 17.2 - Pass Annual Mit(Run 1A) 3.3 - Category B 17.5 - Pass 5 Summer Mit(Run 1A) 3.2 - Category B 21.2 - Pass Winter Mit(Run 1A) 3.2 - Category B 21.1 - Pass Annual Mit(Run 1A) 3.2 - Category B 21.1 - Pass	1 Summer Mit(Run 2) 3.2 - Category B 22.1 - Pass Winter Mit(Run 2) 3.6 - Category C 23.8 - Pass Annual Mit(Run 2) 3.4 - Category C 23.0 - Pass 2 Summer Mit(Run 2) 3.5 - Category C 17.3 - Pass Winter Mit(Run 2) 3.6 - Category C 17.9 - Pass Annual Mit(Run 2) 3.6 - Category C 17.7 - Pass 3 Summer Mit(Run 2) 2.9 - Category B 22.6 - Pass Winter Mit(Run 2) 3.1 - Category B 20.7 - Pass Annual Mit(Run 2) 3.0 - Category B 21.7 - Pass 4 Summer Mit(Run 2) 3.3 - Category B 17.9 - Pass Winter Mit(Run 2) 3.4 - Category C 17.2 - Pass Annual Mit(Run 2) 3.3 - Category B 17.5 - Pass 5 Summer Mit(Run 2) 3.2 - Category B 21.2 - Pass Winter Mit(Run 2) 3.2 - Category B 21.1 - Pass Annual Mit(Run 2) 3.2 - Category B 21.1 - Pass
60 Summer Mit(Run 1A) 2.4 - Category B 16.0 - Pass Winter Mit(Run 1A) 2.5 - Category B 16.4 - Pass Annual Mit(Run 1A) 2.5 - Category B 16.3 - Pass 61 Summer Mit(Run 1A) 3.7 - Category C 24.9 - Pass Winter Mit(Run 1A) 3.7 - Category C 23.9 - Pass Annual Mit(Run 1A) 3.7 - Category C 24.7 - Pass	60 Summer Mit(Run 2) 2.4 - Category B 16.0 - Pass Winter Mit(Run 2) 2.5 - Category B 16.4 - Pass Annual Mit(Run 2) 2.4 - Category B 16.3 - Pass 61 Summer Mit(Run 2) 3.7 - Category C 24.9 - Pass Winter Mit(Run 2) 3.7 - Category C 23.9 - Pass Annual Mit(Run 2) 3.7 - Category C 24.7 - Pass

Appendix C Results for Run 1



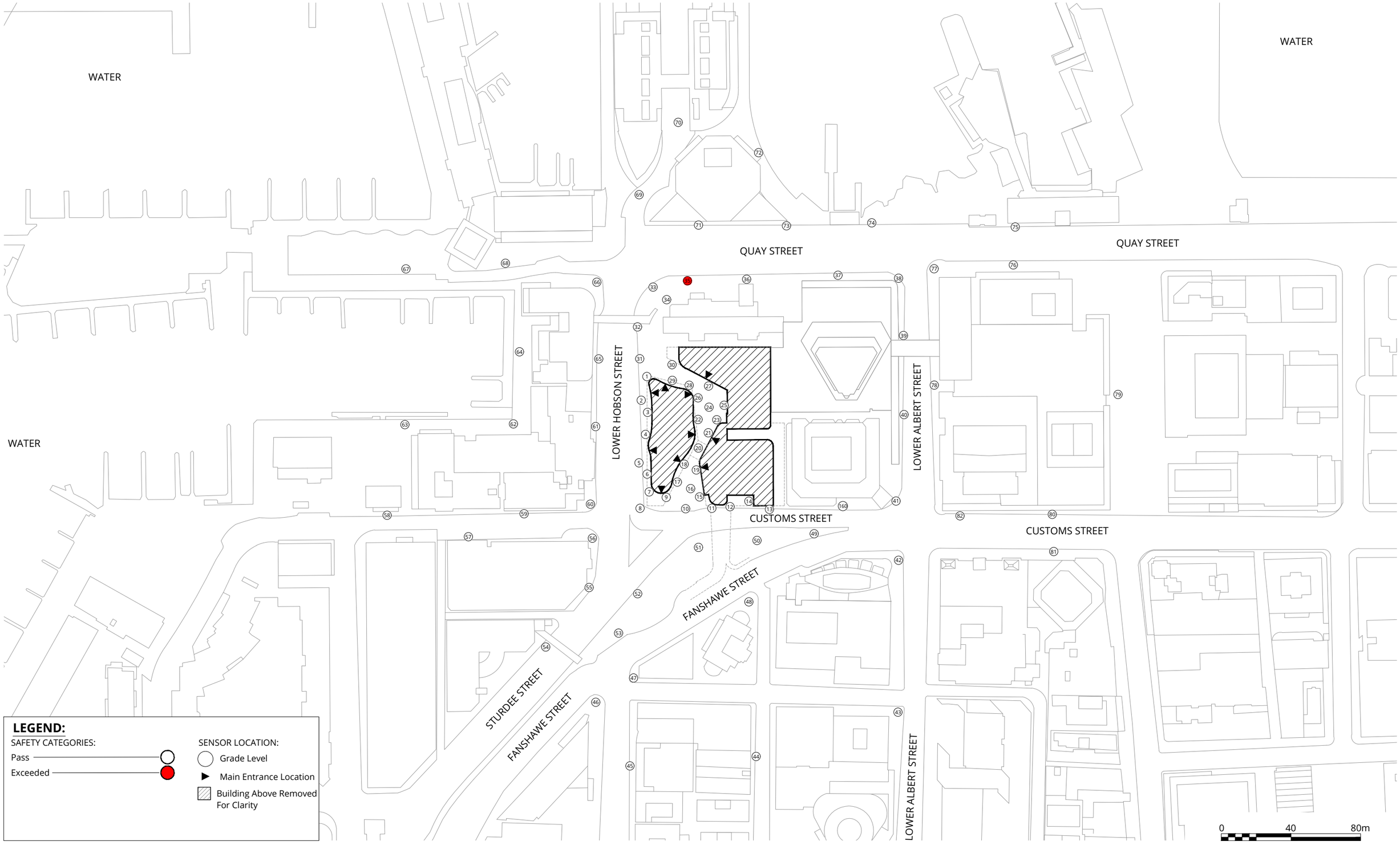
Pedestrian Wind Comfort Conditions
Mitigation(Run- 1A)
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 1.1
Approx. Scale:	1:2000
Date Revised: Nov. 28, 2024	



Pedestrian Wind Safety Conditions
Mitigation(Run- 1A)
Annual (January to December, 0:00 to 23:00)

Downtown Carpark Redevelopment - Auckland, NZ

True North

Project #2303718

Drawn by: AKA	Figure: 2.1
Approx. Scale:	1:2000
Date Revised:	Nov. 28, 2024

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
1	Summer	Mit(Run 1A)	3.2	-	Category B	22.1	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	23.8	-	Pass
	Annual	Mit(Run 1A)	3.4	-	Category C	23.0	-	Pass
2	Summer	Mit(Run 1A)	3.5	-	Category C	17.3	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	17.9	-	Pass
	Annual	Mit(Run 1A)	3.6	-	Category C	17.7	-	Pass
3	Summer	Mit(Run 1A)	2.9	-	Category B	22.6	-	Pass
	Winter	Mit(Run 1A)	3.1	-	Category B	20.7	-	Pass
	Annual	Mit(Run 1A)	3.0	-	Category B	21.7	-	Pass
4	Summer	Mit(Run 1A)	3.3	-	Category B	17.9	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	17.2	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	17.5	-	Pass
5	Summer	Mit(Run 1A)	3.2	-	Category B	21.2	-	Pass
	Winter	Mit(Run 1A)	3.2	-	Category B	21.1	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	21.1	-	Pass
6	Summer	Mit(Run 1A)	2.5	-	Category B	16.0	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	16.7	-	Pass
	Annual	Mit(Run 1A)	2.6	-	Category B	16.5	-	Pass
7	Summer	Mit(Run 1A)	3.6	-	Category C	23.4	-	Pass
	Winter	Mit(Run 1A)	3.9	-	Category C	24.8	-	Pass
	Annual	Mit(Run 1A)	3.7	-	Category C	24.3	-	Pass
8	Summer	Mit(Run 1A)	3.3	-	Category B	20.7	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	21.4	-	Pass
	Annual	Mit(Run 1A)	3.4	-	Category C	20.9	-	Pass
9	Summer	Mit(Run 1A)	1.9	-	Category A	15.7	-	Pass
	Winter	Mit(Run 1A)	2.1	-	Category A	18.7	-	Pass
	Annual	Mit(Run 1A)	2.0	-	Category A	18.0	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
10	Summer	Mit(Run 1A)	2.3	-	Category B	17.5	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	18.8	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	18.2	-	Pass
11	Summer	Mit(Run 1A)	2.4	-	Category B	15.9	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	17.0	-	Pass
	Annual	Mit(Run 1A)	2.5	-	Category B	16.5	-	Pass
12	Summer	Mit(Run 1A)	2.3	-	Category B	13.9	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	15.7	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	15.5	-	Pass
13	Summer	Mit(Run 1A)	3.4	-	Category C	17.5	-	Pass
	Winter	Mit(Run 1A)	3.5	-	Category C	18.6	-	Pass
	Annual	Mit(Run 1A)	3.4	-	Category C	18.3	-	Pass
14	Summer	Mit(Run 1A)	2.8	-	Category B	14.1	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	14.0	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	14.1	-	Pass
15	Summer	Mit(Run 1A)	2.0	-	Category A	16.1	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	16.8	-	Pass
	Annual	Mit(Run 1A)	2.0	-	Category A	16.8	-	Pass
16	Summer	Mit(Run 1A)	2.3	-	Category B	14.7	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	16.1	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	15.6	-	Pass
17	Summer	Mit(Run 1A)	2.2	-	Category B	15.5	-	Pass
	Winter	Mit(Run 1A)	2.4	-	Category B	16.7	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	16.6	-	Pass
18	Summer	Mit(Run 1A)	2.9	-	Category B	14.7	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	15.6	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	15.1	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
19	Summer	Mit(Run 1A)	2.8	-	Category B	15.2	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	15.7	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	15.7	-	Pass
20	Summer	Mit(Run 1A)	4.5	-	Category D	21.2	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	21.8	-	Pass
	Annual	Mit(Run 1A)	4.5	-	Category D	21.8	-	Pass
21	Summer	Mit(Run 1A)	3.2	-	Category B	16.6	-	Pass
	Winter	Mit(Run 1A)	3.3	-	Category B	17.4	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	17.1	-	Pass
22	Summer	Mit(Run 1A)	1.9	-	Category A	13.5	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	14.3	-	Pass
	Annual	Mit(Run 1A)	2.0	-	Category A	13.9	-	Pass
23	Summer	Mit(Run 1A)	2.7	-	Category B	15.1	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	16.0	-	Pass
	Annual	Mit(Run 1A)	2.8	-	Category B	15.6	-	Pass
24	Summer	Mit(Run 1A)	3.6	-	Category C	18.6	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	19.2	-	Pass
	Annual	Mit(Run 1A)	3.6	-	Category C	18.7	-	Pass
25	Summer	Mit(Run 1A)	2.9	-	Category B	16.4	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	17.1	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	16.9	-	Pass
26	Summer	Mit(Run 1A)	2.4	-	Category B	15.0	-	Pass
	Winter	Mit(Run 1A)	2.6	-	Category B	16.2	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	16.0	-	Pass
27	Summer	Mit(Run 1A)	2.5	-	Category B	17.9	-	Pass
	Winter	Mit(Run 1A)	2.6	-	Category B	19.6	-	Pass
	Annual	Mit(Run 1A)	2.5	-	Category B	18.6	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
28	Summer	Mit(Run 1A)	2.3	-	Category B	19.5	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	20.6	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	19.5	-	Pass
29	Summer	Mit(Run 1A)	1.7	-	Category A	14.3	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	15.3	-	Pass
	Annual	Mit(Run 1A)	1.8	-	Category A	14.8	-	Pass
30	Summer	Mit(Run 1A)	2.3	-	Category B	19.9	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	21.4	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	20.6	-	Pass
31	Summer	Mit(Run 1A)	3.9	-	Category C	18.7	-	Pass
	Winter	Mit(Run 1A)	3.9	-	Category C	19.2	-	Pass
	Annual	Mit(Run 1A)	3.9	-	Category C	19.2	-	Pass
32	Summer	Mit(Run 1A)	4.8	-	Category D	22.1	-	Pass
	Winter	Mit(Run 1A)	5.0	-	Category D	24.0	-	Pass
	Annual	Mit(Run 1A)	4.9	-	Category D	23.1	-	Pass
33	Summer	Mit(Run 1A)	5.4	-	Category E	22.5	-	Pass
	Winter	Mit(Run 1A)	5.4	-	Category E	24.1	-	Pass
	Annual	Mit(Run 1A)	5.4	-	Category E	23.9	-	Pass
34	Summer	Mit(Run 1A)	5.2	-	Category D	23.6	-	Pass
	Winter	Mit(Run 1A)	5.4	-	Category E	26.0	-	Exceeded
	Annual	Mit(Run 1A)	5.3	-	Category E	25.0	-	Pass
35	Summer	Mit(Run 1A)	4.9	-	Category D	24.0	-	Pass
	Winter	Mit(Run 1A)	5.3	-	Category E	27.1	-	Exceeded
	Annual	Mit(Run 1A)	5.0	-	Category D	26.1	-	Exceeded
36	Summer	Mit(Run 1A)	4.1	-	Category C	21.6	-	Pass
	Winter	Mit(Run 1A)	4.3	-	Category D	25.3	-	Exceeded
	Annual	Mit(Run 1A)	4.2	-	Category D	23.7	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
37	Summer	Mit(Run 1A)	3.1	-	Category B	20.6	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	24.5	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	23.1	-	Pass
38	Summer	Mit(Run 1A)	2.9	-	Category B	18.6	-	Pass
	Winter	Mit(Run 1A)	3.2	-	Category B	21.8	-	Pass
	Annual	Mit(Run 1A)	3.1	-	Category B	21.0	-	Pass
39	Summer	Mit(Run 1A)	2.9	-	Category B	21.4	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	21.3	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	21.4	-	Pass
40	Summer	Mit(Run 1A)	4.5	-	Category D	22.0	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	21.4	-	Pass
	Annual	Mit(Run 1A)	4.5	-	Category D	21.6	-	Pass
41	Summer	Mit(Run 1A)	4.5	-	Category D	21.4	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	22.4	-	Pass
	Annual	Mit(Run 1A)	4.5	-	Category D	21.9	-	Pass
42	Summer	Mit(Run 1A)	3.2	-	Category B	18.5	-	Pass
	Winter	Mit(Run 1A)	3.3	-	Category B	18.0	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	18.1	-	Pass
43	Summer	Mit(Run 1A)	2.8	-	Category B	20.8	-	Pass
	Winter	Mit(Run 1A)	2.8	-	Category B	21.4	-	Pass
	Annual	Mit(Run 1A)	2.8	-	Category B	21.2	-	Pass
44	Summer	Mit(Run 1A)	1.9	-	Category A	13.4	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	14.0	-	Pass
	Annual	Mit(Run 1A)	2.0	-	Category A	13.9	-	Pass
45	Summer	Mit(Run 1A)	3.0	-	Category B	22.4	-	Pass
	Winter	Mit(Run 1A)	3.3	-	Category B	24.4	-	Pass
	Annual	Mit(Run 1A)	3.1	-	Category B	23.5	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
46	Summer	Mit(Run 1A)	2.8	-	Category B	19.4	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	20.9	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	20.3	-	Pass
47	Summer	Mit(Run 1A)	2.7	-	Category B	15.6	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	16.1	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	15.7	-	Pass
48	Summer	Mit(Run 1A)	2.8	-	Category B	18.9	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	18.9	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	18.9	-	Pass
49	Summer	Mit(Run 1A)	4.0	-	Category C	19.1	-	Pass
	Winter	Mit(Run 1A)	4.3	-	Category D	19.9	-	Pass
	Annual	Mit(Run 1A)	4.1	-	Category C	19.8	-	Pass
50	Summer	Mit(Run 1A)	4.0	-	Category C	21.7	-	Pass
	Winter	Mit(Run 1A)	4.2	-	Category D	20.9	-	Pass
	Annual	Mit(Run 1A)	4.1	-	Category C	21.2	-	Pass
51	Summer	Mit(Run 1A)	3.2	-	Category B	21.3	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	22.6	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	22.5	-	Pass
52	Summer	Mit(Run 1A)	2.1	-	Category A	17.3	-	Pass
	Winter	Mit(Run 1A)	2.2	-	Category B	19.5	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	18.5	-	Pass
53	Summer	Mit(Run 1A)	1.4	-	Category A	12.1	-	Pass
	Winter	Mit(Run 1A)	1.5	-	Category A	11.6	-	Pass
	Annual	Mit(Run 1A)	1.5	-	Category A	11.6	-	Pass
54	Summer	Mit(Run 1A)	1.9	-	Category A	12.8	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	13.0	-	Pass
	Annual	Mit(Run 1A)	1.9	-	Category A	13.0	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
55	Summer	Mit(Run 1A)	1.8	-	Category A	17.1	-	Pass
	Winter	Mit(Run 1A)	1.9	-	Category A	17.4	-	Pass
	Annual	Mit(Run 1A)	1.9	-	Category A	17.1	-	Pass
56	Summer	Mit(Run 1A)	2.2	-	Category B	17.9	-	Pass
	Winter	Mit(Run 1A)	2.3	-	Category B	17.8	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	17.8	-	Pass
57	Summer	Mit(Run 1A)	2.4	-	Category B	18.4	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	18.7	-	Pass
	Annual	Mit(Run 1A)	2.5	-	Category B	18.7	-	Pass
58	Summer	Mit(Run 1A)	2.2	-	Category B	14.6	-	Pass
	Winter	Mit(Run 1A)	2.2	-	Category B	14.1	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	14.5	-	Pass
59	Summer	Mit(Run 1A)	2.2	-	Category B	13.8	-	Pass
	Winter	Mit(Run 1A)	2.2	-	Category B	13.7	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	13.7	-	Pass
60	Summer	Mit(Run 1A)	2.4	-	Category B	16.0	-	Pass
	Winter	Mit(Run 1A)	2.5	-	Category B	16.4	-	Pass
	Annual	Mit(Run 1A)	2.5	-	Category B	16.3	-	Pass
61	Summer	Mit(Run 1A)	3.7	-	Category C	24.9	-	Pass
	Winter	Mit(Run 1A)	3.7	-	Category C	23.9	-	Pass
	Annual	Mit(Run 1A)	3.7	-	Category C	24.7	-	Pass
62	Summer	Mit(Run 1A)	2.1	-	Category A	14.6	-	Pass
	Winter	Mit(Run 1A)	2.1	-	Category A	14.3	-	Pass
	Annual	Mit(Run 1A)	2.1	-	Category A	14.6	-	Pass
63	Summer	Mit(Run 1A)	3.8	-	Category C	20.9	-	Pass
	Winter	Mit(Run 1A)	3.8	-	Category C	20.5	-	Pass
	Annual	Mit(Run 1A)	3.8	-	Category C	20.8	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
64	Summer	Mit(Run 1A)	2.4	-	Category B	14.6	-	Pass
	Winter	Mit(Run 1A)	2.4	-	Category B	14.2	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	14.6	-	Pass
65	Summer	Mit(Run 1A)	4.7	-	Category D	23.6	-	Pass
	Winter	Mit(Run 1A)	4.8	-	Category D	23.6	-	Pass
	Annual	Mit(Run 1A)	4.7	-	Category D	23.6	-	Pass
66	Summer	Mit(Run 1A)	3.2	-	Category B	23.0	-	Pass
	Winter	Mit(Run 1A)	3.2	-	Category B	22.3	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	22.9	-	Pass
67	Summer	Mit(Run 1A)	3.9	-	Category C	18.8	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	18.2	-	Pass
	Annual	Mit(Run 1A)	3.9	-	Category C	18.8	-	Pass
68	Summer	Mit(Run 1A)	3.6	-	Category C	19.9	-	Pass
	Winter	Mit(Run 1A)	3.7	-	Category C	19.2	-	Pass
	Annual	Mit(Run 1A)	3.6	-	Category C	19.3	-	Pass
69	Summer	Mit(Run 1A)	2.3	-	Category B	16.0	-	Pass
	Winter	Mit(Run 1A)	2.4	-	Category B	15.4	-	Pass
	Annual	Mit(Run 1A)	2.4	-	Category B	15.4	-	Pass
70	Summer	Mit(Run 1A)	3.9	-	Category C	19.1	-	Pass
	Winter	Mit(Run 1A)	4.1	-	Category C	19.9	-	Pass
	Annual	Mit(Run 1A)	4.0	-	Category C	19.6	-	Pass
71	Summer	Mit(Run 1A)	4.3	-	Category D	19.9	-	Pass
	Winter	Mit(Run 1A)	4.4	-	Category D	20.4	-	Pass
	Annual	Mit(Run 1A)	4.3	-	Category D	20.2	-	Pass
72	Summer	Mit(Run 1A)	1.7	-	Category A	14.0	-	Pass
	Winter	Mit(Run 1A)	1.7	-	Category A	13.6	-	Pass
	Annual	Mit(Run 1A)	1.7	-	Category A	14.0	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
73	Summer	Mit(Run 1A)	4.3	-	Category D	22.5	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	23.7	-	Pass
	Annual	Mit(Run 1A)	4.4	-	Category D	23.2	-	Pass
74	Summer	Mit(Run 1A)	2.9	-	Category B	19.9	-	Pass
	Winter	Mit(Run 1A)	3.2	-	Category B	22.1	-	Pass
	Annual	Mit(Run 1A)	3.0	-	Category B	21.4	-	Pass
75	Summer	Mit(Run 1A)	3.1	-	Category B	18.2	-	Pass
	Winter	Mit(Run 1A)	3.3	-	Category B	18.8	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	18.4	-	Pass
76	Summer	Mit(Run 1A)	2.3	-	Category B	18.3	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	19.3	-	Pass
	Annual	Mit(Run 1A)	2.5	-	Category B	19.3	-	Pass
77	Summer	Mit(Run 1A)	3.1	-	Category B	20.9	-	Pass
	Winter	Mit(Run 1A)	3.3	-	Category B	20.5	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	20.7	-	Pass
78	Summer	Mit(Run 1A)	4.1	-	Category C	21.5	-	Pass
	Winter	Mit(Run 1A)	4.1	-	Category C	21.7	-	Pass
	Annual	Mit(Run 1A)	4.1	-	Category C	21.7	-	Pass
79	Summer	Mit(Run 1A)	2.8	-	Category B	24.2	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	23.7	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	24.1	-	Pass
80	Summer	Mit(Run 1A)	3.0	-	Category B	15.0	-	Pass
	Winter	Mit(Run 1A)	3.1	-	Category B	15.7	-	Pass
	Annual	Mit(Run 1A)	3.0	-	Category B	15.6	-	Pass
81	Summer	Mit(Run 1A)	3.0	-	Category B	20.2	-	Pass
	Winter	Mit(Run 1A)	3.1	-	Category B	19.9	-	Pass
	Annual	Mit(Run 1A)	3.0	-	Category B	20.2	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
82	Summer	Mit(Run 1A)	2.9	-	Category B	18.7	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	18.7	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	18.7	-	Pass
83	Summer	Mit(Run 1A)	1.9	-	Category A	16.0	-	Pass
	Winter	Mit(Run 1A)	2.2	-	Category B	17.5	-	Pass
	Annual	Mit(Run 1A)	2.1	-	Category A	17.2	-	Pass
84	Summer	Mit(Run 1A)	2.9	-	Category B	18.0	-	Pass
	Winter	Mit(Run 1A)	2.9	-	Category B	19.9	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	18.7	-	Pass
85	Summer	Mit(Run 1A)	1.6	-	Category A	9.1	-	Pass
	Winter	Mit(Run 1A)	1.6	-	Category A	9.0	-	Pass
	Annual	Mit(Run 1A)	1.6	-	Category A	9.1	-	Pass
86	Summer	Mit(Run 1A)	1.4	-	Category A	8.3	-	Pass
	Winter	Mit(Run 1A)	1.4	-	Category A	8.9	-	Pass
	Annual	Mit(Run 1A)	1.4	-	Category A	8.4	-	Pass
87	Summer	Mit(Run 1A)	2.0	-	Category A	11.7	-	Pass
	Winter	Mit(Run 1A)	2.0	-	Category A	11.3	-	Pass
	Annual	Mit(Run 1A)	2.0	-	Category A	11.6	-	Pass
88	Summer	Mit(Run 1A)	1.8	-	Category A	12.3	-	Pass
	Winter	Mit(Run 1A)	1.8	-	Category A	13.0	-	Pass
	Annual	Mit(Run 1A)	1.8	-	Category A	12.8	-	Pass
89	Summer	Mit(Run 1A)	3.1	-	Category B	20.2	-	Pass
	Winter	Mit(Run 1A)	3.5	-	Category C	20.9	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	20.4	-	Pass
90	Summer	Mit(Run 1A)	2.2	-	Category B	18.8	-	Pass
	Winter	Mit(Run 1A)	2.3	-	Category B	18.1	-	Pass
	Annual	Mit(Run 1A)	2.3	-	Category B	18.5	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
91	Summer	Mit(Run 1A)	2.9	-	Category B	16.0	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	16.5	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	16.4	-	Pass
92	Summer	Mit(Run 1A)	4.0	-	Category C	19.3	-	Pass
	Winter	Mit(Run 1A)	3.9	-	Category C	20.6	-	Pass
	Annual	Mit(Run 1A)	3.9	-	Category C	19.9	-	Pass
93	Summer	Mit(Run 1A)	4.5	-	Category D	20.8	-	Pass
	Winter	Mit(Run 1A)	4.3	-	Category D	21.6	-	Pass
	Annual	Mit(Run 1A)	4.5	-	Category D	21.5	-	Pass
94	Summer	Mit(Run 1A)	3.8	-	Category C	21.1	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	21.7	-	Pass
	Annual	Mit(Run 1A)	3.9	-	Category C	21.7	-	Pass
95	Summer	Mit(Run 1A)	3.7	-	Category C	17.6	-	Pass
	Winter	Mit(Run 1A)	3.9	-	Category C	18.9	-	Pass
	Annual	Mit(Run 1A)	3.8	-	Category C	18.5	-	Pass
96	Summer	Mit(Run 1A)	1.8	-	Category A	10.6	-	Pass
	Winter	Mit(Run 1A)	1.8	-	Category A	11.2	-	Pass
	Annual	Mit(Run 1A)	1.8	-	Category A	11.0	-	Pass
97	Summer	Mit(Run 1A)	3.9	-	Category C	18.7	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	18.9	-	Pass
	Annual	Mit(Run 1A)	3.7	-	Category C	18.8	-	Pass
98	Summer	Mit(Run 1A)	5.5	-	Category E	24.3	-	Pass
	Winter	Mit(Run 1A)	5.4	-	Category E	25.1	-	Exceeded
	Annual	Mit(Run 1A)	5.5	-	Category E	24.7	-	Pass
99	Summer	Mit(Run 1A)	1.9	-	Category A	13.8	-	Pass
	Winter	Mit(Run 1A)	1.9	-	Category A	13.4	-	Pass
	Annual	Mit(Run 1A)	1.9	-	Category A	13.7	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
100	Summer	Mit(Run 1A)	3.0	-	Category B	17.7	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	19.5	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	18.9	-	Pass
101	Summer	Mit(Run 1A)	2.6	-	Category B	17.7	-	Pass
	Winter	Mit(Run 1A)	2.8	-	Category B	19.1	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	18.8	-	Pass
102	Summer	Mit(Run 1A)	2.5	-	Category B	17.3	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	16.1	-	Pass
	Annual	Mit(Run 1A)	2.6	-	Category B	16.8	-	Pass
103	Summer	Mit(Run 1A)	2.3	-	Category B	21.5	-	Pass
	Winter	Mit(Run 1A)	2.3	-	Category B	21.7	-	Pass
	Annual	Mit(Run 1A)	2.3	-	Category B	21.7	-	Pass
104	Summer	Mit(Run 1A)	4.4	-	Category D	24.0	-	Pass
	Winter	Mit(Run 1A)	4.2	-	Category D	23.2	-	Pass
	Annual	Mit(Run 1A)	4.2	-	Category D	24.0	-	Pass
105	Summer	Mit(Run 1A)	2.7	-	Category B	14.1	-	Pass
	Winter	Mit(Run 1A)	2.8	-	Category B	14.8	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	14.8	-	Pass
106	Summer	Mit(Run 1A)	2.2	-	Category B	20.7	-	Pass
	Winter	Mit(Run 1A)	2.2	-	Category B	18.6	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	20.0	-	Pass
107	Summer	Mit(Run 1A)	2.7	-	Category B	19.5	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	18.6	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	19.5	-	Pass
108	Summer	Mit(Run 1A)	2.1	-	Category A	14.7	-	Pass
	Winter	Mit(Run 1A)	2.1	-	Category A	15.0	-	Pass
	Annual	Mit(Run 1A)	2.1	-	Category A	14.7	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
109	Summer	Mit(Run 1A)	1.3	-	Category A	9.2	-	Pass
	Winter	Mit(Run 1A)	1.4	-	Category A	10.3	-	Pass
	Annual	Mit(Run 1A)	1.3	-	Category A	9.9	-	Pass
110	Summer	Mit(Run 1A)	1.3	-	Category A	8.5	-	Pass
	Winter	Mit(Run 1A)	1.4	-	Category A	9.6	-	Pass
	Annual	Mit(Run 1A)	1.3	-	Category A	9.1	-	Pass
111	Summer	Mit(Run 1A)	1.4	-	Category A	11.4	-	Pass
	Winter	Mit(Run 1A)	1.5	-	Category A	12.9	-	Pass
	Annual	Mit(Run 1A)	1.5	-	Category A	12.3	-	Pass
112	Summer	Mit(Run 1A)	1.4	-	Category A	9.2	-	Pass
	Winter	Mit(Run 1A)	1.4	-	Category A	11.1	-	Pass
	Annual	Mit(Run 1A)	1.4	-	Category A	10.4	-	Pass
113	Summer	Mit(Run 1A)	2.1	-	Category A	15.4	-	Pass
	Winter	Mit(Run 1A)	2.3	-	Category B	16.8	-	Pass
	Annual	Mit(Run 1A)	2.2	-	Category B	16.5	-	Pass
114	Summer	Mit(Run 1A)	1.7	-	Category A	20.7	-	Pass
	Winter	Mit(Run 1A)	2.1	-	Category A	22.3	-	Pass
	Annual	Mit(Run 1A)	1.9	-	Category A	21.4	-	Pass
115	Summer	Mit(Run 1A)	1.9	-	Category A	12.0	-	Pass
	Winter	Mit(Run 1A)	1.9	-	Category A	14.0	-	Pass
	Annual	Mit(Run 1A)	1.9	-	Category A	13.1	-	Pass
116	Summer	Mit(Run 1A)	1.1	-	Category A	6.9	-	Pass
	Winter	Mit(Run 1A)	1.2	-	Category A	7.5	-	Pass
	Annual	Mit(Run 1A)	1.1	-	Category A	7.3	-	Pass
117	Summer	Mit(Run 1A)	1.6	-	Category A	9.6	-	Pass
	Winter	Mit(Run 1A)	1.6	-	Category A	9.0	-	Pass
	Annual	Mit(Run 1A)	1.6	-	Category A	9.2	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
118	Summer	Mit(Run 1A)	3.6	-	Category C	22.0	-	Pass
	Winter	Mit(Run 1A)	3.7	-	Category C	23.4	-	Pass
	Annual	Mit(Run 1A)	3.7	-	Category C	22.8	-	Pass
119	Summer	Mit(Run 1A)	4.6	-	Category D	26.6	-	Exceeded
	Winter	Mit(Run 1A)	5.0	-	Category D	30.2	-	Exceeded
	Annual	Mit(Run 1A)	4.8	-	Category D	29.4	-	Exceeded
120	Summer	Mit(Run 1A)	4.0	-	Category C	28.1	-	Exceeded
	Winter	Mit(Run 1A)	4.3	-	Category D	29.6	-	Exceeded
	Annual	Mit(Run 1A)	4.1	-	Category C	28.5	-	Exceeded
121	Summer	Mit(Run 1A)	4.1	-	Category C	24.8	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	26.4	-	Exceeded
	Annual	Mit(Run 1A)	4.3	-	Category D	25.9	-	Exceeded
122	Summer	Mit(Run 1A)	3.6	-	Category C	25.9	-	Exceeded
	Winter	Mit(Run 1A)	4.0	-	Category C	26.6	-	Exceeded
	Annual	Mit(Run 1A)	3.7	-	Category C	26.6	-	Exceeded
123	Summer	Mit(Run 1A)	4.2	-	Category D	27.5	-	Exceeded
	Winter	Mit(Run 1A)	4.6	-	Category D	30.8	-	Exceeded
	Annual	Mit(Run 1A)	4.4	-	Category D	29.7	-	Exceeded
124	Summer	Mit(Run 1A)	3.2	-	Category B	18.6	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	20.3	-	Pass
	Annual	Mit(Run 1A)	3.2	-	Category B	19.8	-	Pass
125	Summer	Mit(Run 1A)	3.6	-	Category C	22.7	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	23.9	-	Pass
	Annual	Mit(Run 1A)	3.8	-	Category C	23.8	-	Pass
126	Summer	Mit(Run 1A)	3.7	-	Category C	24.7	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	26.0	-	Exceeded
	Annual	Mit(Run 1A)	3.8	-	Category C	25.4	-	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
127	Summer	Mit(Run 1A)	3.3	-	Category B	21.0	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	20.9	-	Pass
	Annual	Mit(Run 1A)	3.4	-	Category C	20.9	-	Pass
128	Summer	Mit(Run 1A)	3.1	-	Category B	21.7	-	Pass
	Winter	Mit(Run 1A)	3.4	-	Category C	22.5	-	Pass
	Annual	Mit(Run 1A)	3.3	-	Category B	21.9	-	Pass
129	Summer	Mit(Run 1A)	2.9	-	Category B	16.7	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	16.9	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	16.9	-	Pass
130	Summer	Mit(Run 1A)	6.4	-	Category E	29.9	-	Exceeded
	Winter	Mit(Run 1A)	6.6	-	Category E	29.8	-	Exceeded
	Annual	Mit(Run 1A)	6.5	-	Category E	29.9	-	Exceeded
131	Summer	Mit(Run 1A)	3.4	-	Category C	22.4	-	Pass
	Winter	Mit(Run 1A)	3.5	-	Category C	23.2	-	Pass
	Annual	Mit(Run 1A)	3.4	-	Category C	22.6	-	Pass
132	Summer	Mit(Run 1A)	4.5	-	Category D	23.3	-	Pass
	Winter	Mit(Run 1A)	4.3	-	Category D	23.3	-	Pass
	Annual	Mit(Run 1A)	4.4	-	Category D	23.3	-	Pass
133	Summer	Mit(Run 1A)	5.1	-	Category D	25.2	-	Exceeded
	Winter	Mit(Run 1A)	4.9	-	Category D	25.9	-	Exceeded
	Annual	Mit(Run 1A)	4.9	-	Category D	25.5	-	Exceeded
134	Summer	Mit(Run 1A)	4.0	-	Category C	24.8	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	23.8	-	Pass
	Annual	Mit(Run 1A)	4.0	-	Category C	23.9	-	Pass
135	Summer	Mit(Run 1A)	3.7	-	Category C	23.1	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	26.3	-	Exceeded
	Annual	Mit(Run 1A)	3.9	-	Category C	25.4	-	Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
136	Summer	Mit(Run 1A)	6.5	-	Category E	33.6	-	Exceeded
	Winter	Mit(Run 1A)	6.5	-	Category E	34.5	-	Exceeded
	Annual	Mit(Run 1A)	6.5	-	Category E	34.5	-	Exceeded
137	Summer	Mit(Run 1A)	3.5	-	Category C	21.0	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	23.2	-	Pass
	Annual	Mit(Run 1A)	3.5	-	Category C	22.0	-	Pass
138	Summer	Mit(Run 1A)	3.6	-	Category C	22.2	-	Pass
	Winter	Mit(Run 1A)	4.0	-	Category C	24.3	-	Pass
	Annual	Mit(Run 1A)	3.8	-	Category C	23.7	-	Pass
139	Summer	Mit(Run 1A)	4.2	-	Category D	31.7	-	Exceeded
	Winter	Mit(Run 1A)	4.7	-	Category D	33.2	-	Exceeded
	Annual	Mit(Run 1A)	4.4	-	Category D	32.7	-	Exceeded
140	Summer	Mit(Run 1A)	3.8	-	Category C	26.7	-	Exceeded
	Winter	Mit(Run 1A)	4.1	-	Category C	26.6	-	Exceeded
	Annual	Mit(Run 1A)	4.0	-	Category C	26.6	-	Exceeded
141	Summer	Mit(Run 1A)	3.4	-	Category C	20.7	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	21.3	-	Pass
	Annual	Mit(Run 1A)	3.5	-	Category C	20.9	-	Pass
142	Summer	Mit(Run 1A)	3.4	-	Category C	21.0	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	21.3	-	Pass
	Annual	Mit(Run 1A)	3.5	-	Category C	21.1	-	Pass
143	Summer	Mit(Run 1A)	3.9	-	Category C	29.2	-	Exceeded
	Winter	Mit(Run 1A)	4.1	-	Category C	28.1	-	Exceeded
	Annual	Mit(Run 1A)	4.0	-	Category C	29.2	-	Exceeded
144	Summer	Mit(Run 1A)	2.8	-	Category B	19.1	-	Pass
	Winter	Mit(Run 1A)	3.0	-	Category B	19.1	-	Pass
	Annual	Mit(Run 1A)	2.9	-	Category B	19.1	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
145	Summer	Mit(Run 1A)	5.5	-	Category E	23.2	-	Pass
	Winter	Mit(Run 1A)	5.6	-	Category E	25.8	-	Exceeded
	Annual	Mit(Run 1A)	5.5	-	Category E	25.0	-	Pass
146	Summer	Mit(Run 1A)	5.9	-	Category E	24.7	-	Pass
	Winter	Mit(Run 1A)	5.9	-	Category E	25.8	-	Exceeded
	Annual	Mit(Run 1A)	5.9	-	Category E	25.4	-	Exceeded
147	Summer	Mit(Run 1A)	7.2	-	Category E	28.0	-	Exceeded
	Winter	Mit(Run 1A)	7.5	-	Category E	29.9	-	Exceeded
	Annual	Mit(Run 1A)	7.3	-	Category E	29.5	-	Exceeded
148	Summer	Mit(Run 1A)	7.1	-	Category E	29.5	-	Exceeded
	Winter	Mit(Run 1A)	7.1	-	Category E	31.7	-	Exceeded
	Annual	Mit(Run 1A)	7.1	-	Category E	30.7	-	Exceeded
149	Summer	Mit(Run 1A)	7.5	-	Category E	29.3	-	Exceeded
	Winter	Mit(Run 1A)	7.7	-	Category E	30.4	-	Exceeded
	Annual	Mit(Run 1A)	7.6	-	Category E	30.3	-	Exceeded
150	Summer	Mit(Run 1A)	6.8	-	Category E	29.6	-	Exceeded
	Winter	Mit(Run 1A)	7.0	-	Category E	31.1	-	Exceeded
	Annual	Mit(Run 1A)	6.9	-	Category E	30.9	-	Exceeded
151	Summer	Mit(Run 1A)	6.4	-	Category E	31.7	-	Exceeded
	Winter	Mit(Run 1A)	6.5	-	Category E	31.5	-	Exceeded
	Annual	Mit(Run 1A)	6.4	-	Category E	31.7	-	Exceeded
152	Summer	Mit(Run 1A)	5.4	-	Category E	28.0	-	Exceeded
	Winter	Mit(Run 1A)	5.5	-	Category E	31.4	-	Exceeded
	Annual	Mit(Run 1A)	5.4	-	Category E	30.3	-	Exceeded
153	Summer	Mit(Run 1A)	3.4	-	Category C	24.5	-	Pass
	Winter	Mit(Run 1A)	3.6	-	Category C	23.5	-	Pass
	Annual	Mit(Run 1A)	3.6	-	Category C	23.6	-	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort			Wind Safety		
			Speed	%	Rating	Speed	%	Rating
154	Summer	Mit(Run 1A)	2.9	-	Category B	26.0	-	Exceeded
	Winter	Mit(Run 1A)	3.3	-	Category B	28.6	-	Exceeded
	Annual	Mit(Run 1A)	3.1	-	Category B	28.0	-	Exceeded
155	Summer	Mit(Run 1A)	3.6	-	Category C	19.3	-	Pass
	Winter	Mit(Run 1A)	3.8	-	Category C	21.4	-	Pass
	Annual	Mit(Run 1A)	3.8	-	Category C	20.6	-	Pass
156	Summer	Mit(Run 1A)	5.7	-	Category E	23.1	-	Pass
	Winter	Mit(Run 1A)	5.7	-	Category E	22.2	-	Pass
	Annual	Mit(Run 1A)	5.7	-	Category E	22.5	-	Pass
157	Summer	Mit(Run 1A)	3.2	-	Category B	21.5	-	Pass
	Winter	Mit(Run 1A)	3.1	-	Category B	20.9	-	Pass
	Annual	Mit(Run 1A)	3.1	-	Category B	21.5	-	Pass
158	Summer	Mit(Run 1A)	2.7	-	Category B	21.6	-	Pass
	Winter	Mit(Run 1A)	2.7	-	Category B	23.0	-	Pass
	Annual	Mit(Run 1A)	2.7	-	Category B	22.2	-	Pass
159	Summer	Mit(Run 1A)	3.9	-	Category C	25.3	-	Exceeded
	Winter	Mit(Run 1A)	4.1	-	Category C	24.7	-	Pass
	Annual	Mit(Run 1A)	4.1	-	Category C	25.3	-	Exceeded
160	Summer	Mit(Run 1A)	4.5	-	Category D	19.5	-	Pass
	Winter	Mit(Run 1A)	4.5	-	Category D	20.1	-	Pass
	Annual	Mit(Run 1A)	4.5	-	Category D	20.1	-	Pass

Seasons	Months	Hours	Wind Comfort (m/s)		Wind Safety (m/s)	
Summer	November - April	0:00 - 23:00	≤ 2.1	Category A	≤ 25	Pass
Winter	May - October	0:00 - 23:00	≤ 3.3	Category B	> 25	Exceeded
Annual	January - December	0:00 - 23:00	≤ 4.1	Category C		
			≤ 5.2	Category D		
			> 5.2	Category E		

Configurations	
Proposed	Study building with existing surrounds and Mitigation Measures 1A