

Before the Hearings Commissioners at Wellington City Council

under: the Resource Management Act 1991

in the matter of: an application by Ryman Healthcare Limited for resource consent to construct, operate and maintain a comprehensive care retirement village at 26 Donald Street and 37 Campbell Street, Karori, Wellington

between: **Ryman Healthcare Limited**
Applicant

and: **Wellington City Council**
Consent Authority

Statement of evidence of **Neil John Jamieson** on behalf of
Ryman Healthcare Limited

Dated: 29 August 2022

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STATEMENT OF EVIDENCE OF NEIL JOHN JAMIESON ON BEHALF OF RYMAN HEALTHCARE LIMITED

INTRODUCTION

- 1 My full name is Neil John Jamieson.
- 2 I am currently the Research Leader (Wind Engineering) at the WSP Research and Innovation Centre, a business unit of WSP New Zealand Limited.
- 3 I have a Bachelor of Science with Honours degree in physics and a Master of Science degree in physics, both from Otago University, relating to boundary layer meteorology.
- 4 I have been employed by WSP (and its predecessors) for over 35 years.
- 5 During that time, I have had extensive experience in carrying out wind assessments, wind tunnel model studies, full-scale measurements of pedestrian level wind conditions, and industrial aerodynamics investigations and design. The wind assessments and wind tunnel model studies have included developments in many major New Zealand centres, including Auckland, Hamilton, Rotorua, Napier, Palmerston North, Lower Hutt, Porirua, Wellington, Christchurch and Dunedin. Among these developments have been retirement village projects for Ryman, Summerset and Bupa.
- 6 I have appeared as an expert in Council, Board of Inquiry and Environment Court hearings for a number of developments. These have included hearings for the Commercial Bay development and Newmarket Viaduct in Auckland, the Overseas Passenger Terminal, Site 10, Frank Kitts Park and Basin Reserve developments in Wellington, and Summerset's Boulcott Retirement Village in Lower Hutt.
- 7 I am familiar with Ryman Healthcare Limited's (*Ryman*) resource consent application to construct and operate a comprehensive care retirement village (*Proposed Village*) at 26 Donald Street and 37 Campbell Street, Karori, Wellington (*Site*).
- 8 I prepared the Wind Assessment dated 27 July 2020 (*Wind Report*). I also prepared the further information response on wind matters dated 5 October 2020 (*Further Information Response*).
- 9 I have visited the Site and its surroundings on a number of occasions, including, initially, on 6th December 2019 and most recently on 16th June 2022.

CODE OF CONDUCT

- 10 Although these proceedings are not before the Environment Court, I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2014), and I agree to comply with it as if these proceedings were before the Court. My qualifications as an expert are set out above. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

- 11 My evidence sets out the following:
- 11.1 A summary of the Wind Report and Further Information Response;
 - 11.2 My response to the wind issues raised in submissions;
 - 11.3 My response to the wind matters addressed in the Council Officer's Report (*Officer's Report*), and particularly the report provided by Dr Michael Donn, the Council's Wind Consultant (Appendix 4);
 - 11.4 My comments on the draft conditions; and
 - 11.5 My conclusions.

SUMMARY OF EVIDENCE

- 12 The Site lies outside those zones within Wellington City where consideration of the wind effects of building developments is required under the operative Wellington City District Plan (*Operative Plan*).
- 13 I have therefore looked to other parts of the Operative Plan and good practice generally to guide my assessment. In particular, the Wind Report and Further Information Response were informed by the objectives, policies and rules relating to the wind effects of new buildings contained in the Centres Area Appendices of the Operative Plan.
- 14 The Operative Plan objectives, policies and rules relating to wind effects are intended to, in part, ensure that new buildings or additions to buildings avoid, remedy or mitigate any wind problems that they create. The focus is typically on the safety of pedestrians in public spaces, such as streets, footpaths and open spaces.

- 15 The assessment of existing wind conditions in the Wind Report and the Further Information Request prepared in 2020 was based on the buildings that existed at the time, including the former Teachers' College buildings. In the intervening two-year period, most of the former Teachers' College buildings have been demolished. I have therefore also assessed the wind conditions that currently exist following the demolition of buildings that has occurred in the intervening period. My assessment of the effects of the Proposed Village on existing wind conditions set out in this statement of evidence relates to the current conditions on the Site following further demolition of buildings. My previous conclusions regarding the effects of the Proposed Village on wind conditions in the wider area hold true irrespective of the demolition that has occurred on the Site.
- 16 In the intervening two-year period, a review of the Operative Plan has also been ongoing. The Wellington City Proposed District Plan has recently been notified (*Proposed Plan*) for public consultation. The Proposed Plan contains a number of changes relating to wind effects of buildings compared to the Operative Plan. However, the Site is zoned 'Medium Density Residential' and it remains the case that no specific wind provisions apply. Where wind provisions do apply elsewhere in the Proposed Plan, the focus is on public spaces and the pedestrian environment, rather than private spaces. The Proposed Plan does not otherwise suggest a materially different assessment approach is required for the Site. The Medium Density Residential Zone specifically permits the construction, alteration, or additions to buildings. I would therefore also assess the Proposed Village in the same way under the Proposed Plan provisions as I have under the Operative Plan provisions.
- 17 Overall, I consider that the Proposed Village design has included some intelligent design choices with respect to avoiding and mitigating wind effects. These include:
- 17.1 The alignment of the buildings approximately parallel to the prevailing wind directions;
 - 17.2 The massing of the lower height elements closer to the perimeter of the Site and higher rise elements towards the centre of the Site;
 - 17.3 The setbacks of the buildings from the Site boundaries;
 - 17.4 The inclusion of substantial boundary fences;
 - 17.5 The inclusion of substantial landscaping; and
 - 17.6 The inclusion of enclosed or covered linkages between many of the buildings within the Proposed Village.

- 18 For the reasons set out in detail in the body of my evidence, I am of the opinion that pedestrians are unlikely to notice any change in the wind-related amenity of the surrounding streets, footpaths and open spaces.
- 19 I am also of the view that some neighbouring properties will experience improvements in wind conditions, given the combined sheltering effect of boundary fencing, buildings and landscaping on the Site. Minor increases in wind may occur in some locations, but in my view they are unlikely to be perceptible to neighbouring residents.
- 20 Accordingly, I do not consider any additional mitigation of wind effects external to the Site to be necessary.
- 21 In terms of on-site wind conditions, the proposed buildings, fencing, landscaping and pedestrian treatments are appropriate in my view to help to avoid or mitigate wind effects, or to provide sheltered alternative routes. I also understand that Ryman will monitor the onsite wind conditions as the Proposed Village is developed and occupied to ensure that outside areas used in windy conditions are safe and comfortable for residents. I consider this approach to be appropriate.
- 22 I note I have reviewed the various public submissions relating to wind effects and consider my assessment has appropriately addressed those issues. The focus of the submissions is on neighbouring amenity and a concern that the Proposed Village will generate, increase or exacerbate wind effects. As explained, wind effects on neighbours will generally be neutral to positive following the completion of the Proposed Village. Any increases in wind are unlikely to be perceptible in my view.
- 23 The Officer's Report, which is based on the assessment report provided by Dr Donn, has highlighted some areas of potentially greater wind effect than assessed by me. It also suggests that conditions relating to fencing and landscaping are required to mitigate external and on-site amenity effects. The report concludes that, "*on balance, wind effects can be reasonably mitigated and will not be more than minor*". This view is reflected in the proposed Condition 61 requiring a wind assessment to be prepared and submitted for certification with details on wind mitigation measures, including fencing and planting, to be included in the Landscaping Plan.
- 24 I do not agree with the greater wind effects assessed by Dr Donn and outline the areas of difference in greater detail below. That said, I note these areas of difference appear to be matters of detail related to how much additional mitigation is needed. And, I understand following our recent discussions that Dr Donn and I are

generally agreed on most matters and that the Officer's Report commentary is therefore somewhat out of date.

- 25 Overall, I agree with the Officer's report that wind effects can be reasonably mitigated and that the general intent of the proposed conditions are appropriate. In my view, the detail of the conditions needs to reflect recent discussions and clarifications with the Council Officer and Dr Donn and other design refinements.
- 26 I also consider wind mitigation treatments should remain in the condition addressing the final landscaping plans rather than having a separate additional wind assessment (as proposed by the Council Officer). This approach will ensure the two disciplines are integrated, noting in some cases wind treatments such as fences and planting may not be appropriate given other safety and operational considerations. I do not consider a further "Wind Assessment" is needed for this process, provided a suitably qualified wind expert is involved in finalising the landscape design. I understand Mr Richard Turner will address the conditions in more detail.

ASSESSMENT OF EFFECTS ON WIND CONDITIONS

Existing wind conditions

- 27 Over Wellington City, including Karori, the prevailing strong winds are dominated by north to north-westerly and south to south-westerly wind flows. Northerly winds typically occur more frequently than southerly winds for light to moderate winds. However, the highest wind speeds occur with around the same frequency for both direction sectors. Strong southerlies tend to be noticed more by pedestrians because they are often also cold and frequently accompanied by rain.
- 28 Pedestrian level wind conditions in Karori are primarily determined by a combination of four factors, these being (1) the alignment of the streets to the prevailing wind directions, (2) the sizes, positions, designs and heights of the buildings, (3) the sizes and locations of open spaces, and (4) the local topography. To these four factors I would also add a fifth, being the trees and other vegetation, which provides localised and cumulative shelter.
- 29 Campbell Street and Donald Street are aligned more parallel to the prevailing wind directions and are therefore more exposed to moderate to strong horizontal wind flows. In comparison, Scapa Terrace is aligned more perpendicular to the prevailing wind directions and is therefore more sheltered.
- 30 I have conducted wind tunnel studies in areas of Wellington and Auckland with similar exposure to the prevailing winds (e.g. Waitangi Park, Kāinga Ora's Arlington development, the One Tasman development, and Summerset's Parnell village

development). Those studies suggest that maximum gust wind speeds, both within the Site, and in the streets, footpaths and other public spaces around the Site, currently range from very low in sheltered areas to moderately high in more exposed locations. These speeds will vary considerably with wind direction. For example, some locations that are exposed in northerly winds will be more sheltered in southerly winds.

- 31 The demolition of the former Teachers' College buildings will have reduced some of the high wind speeds that are likely to have previously occurred near the taller, more exposed former Teachers' College buildings. However, the removal of those buildings is also expected to have increased the exposure of the Site and some of the adjacent properties to the north and south of the demolished buildings to direct wind flows (as a result of the shelter that those buildings provided being removed). These more-exposed areas are typically those that were downwind of the demolished buildings.
- 32 For example, those neighbouring properties to the north of the Site (Karori Swimming Pool and Karori Normal School) are likely to be somewhat more exposed to southerly and south-westerly winds than they were prior to the demolition work. However, I expect that the changes in wind conditions are such that people in these neighbouring properties are unlikely to have identified a difference in the wind environment. The most significant changes to the existing environment following the demolition will have been to the wind environment within the Site itself.

District Plan

- 33 Under the Operative Plan, the Site is zoned Outer Residential Zone. This zone has no specific objectives, policies, rules, or assessment criteria relating to the wind environment. The Site is zoned Medium Density Residential Zone in the Proposed Plan. This zone also does not specifically address wind effects.
- 34 While the Proposed Village is not located in the Centres Area Zone under the Operative Plan, the objectives and policies for this zone identify that new buildings over three storeys in height have the potential to create negative wind conditions and require the assessment of the wind environment at ground level for new developments that breach height standards (12m in the Karori town centre and 9m in the Marsden Village, Nottingham/Standen Street Shops and Tringham Street Shops neighbourhood centres).
- 35 Under the Operative Plan provisions, consideration of wind effects is focused on "public space", that is, those areas to which the public has an expectation of largely unrestricted access, e.g. streets, footpaths and parks. The Proposed Plan is similar, although goes further in specifying that "*the provisions do not apply to private*

spaces such as adjacent properties or backyards".¹ The Site does not fall into this category, being private land, with some restrictions and controls on access. Nevertheless, I carried out a full assessment of wind conditions within the Site was carried out, given Ryman's desire to achieve appropriate levels of safety and amenity for its residents. I have also considered neighbouring properties, particularly given the taller buildings on the Site.

**Effects in North to North-Westerly Winds
Areas outside the Site**

- 36 I am of the opinion that pedestrian wind conditions on the streets and footpaths adjacent to the Site will be largely unaffected (and not materially worsened) by the Proposed Village, due to a combination of:
- 36.1 The two and three storey heights of the new buildings adjacent to Campbell and Donald Streets;
 - 36.2 The setbacks of these buildings from the Site boundaries;
 - 36.3 The alignment of the long axes of the buildings more parallel to the prevailing wind directions;
 - 36.4 The boundary fencing, primarily the solid sections and permeable sections backed by planting; and
 - 36.5 The planned landscaping.
- 37 Overall, I expect the wind conditions in Campbell Street will remain similar to the current conditions and will not be materially worse.
- 38 On Donald Street, I consider the combination of the factors listed above will result in wind conditions similar to, or better than, those currently experienced.
- 39 I assess that the outside spaces associated with the residential properties and other buildings north of the Site, including Karori Pool and carpark, Karori Normal School and Karori Kids Preschool, will not see any material adverse changes in wind conditions. This is because:
- 39.1 They are upwind of the Proposed Village in northerly conditions;
 - 39.2 The new buildings are mostly set well back from the northern site boundary;

¹ Part 2 – District Wide Matters, General District Wide Matters, Wind, Introduction.

39.3 Boundary fencing, including solid sections and permeable sections backed by planting, is included in the Proposed Village design;

39.4 The Lopdell Gardens are being retained where practical; and

39.5 New landscaping is proposed.²

40 I expect wind conditions in the outside spaces to the south of the Site, around the houses that sit between the Site and Scapa Terrace, to improve with the Proposed Village. This outcome is primarily due to the increased shelter from northerly winds provided by the new buildings along this boundary and the combination of the new landscaping and fencing.³ I address specific concerns raised by Scapa Terrace submitters later in my evidence, although I note it is unusual to address effects on neighbouring properties in the residential context.

41 In Scapa Terrace itself and in Ben Burn Park, I consider wind conditions will be largely unaffected (and not materially worsened in any case) because of their greater distance downstream of the Site.

Areas within the Site

42 On the northern part of the Site, wind speeds around the new buildings are expected to range from low (11-14m/s) to moderately high (18-20m/s), with some possibility of localised areas of high wind speeds (21-23m/s). Wind conditions will vary significantly with the wind direction, with some areas that are windy in northerly winds being much more sheltered in southerly winds. The range of wind conditions on the northern part of the Site is expected to be generally similar to the range of conditions that occurred around the previously existing Teachers' College building. Most locations will experience low to moderate wind conditions for most of the time, but some localised areas will be quite windy at very infrequent times.

43 Apart from the new buildings, the most significant determinant of wind conditions within the Site will be the balance between the effects of the removal of existing landscaping elements, mainly planting, and the effects of the addition of new landscaping and other wind mitigation elements. I comment further on these matters in the mitigation section below.

² The boundary treatments and landscaping can be seen on the proposed Landscape Plan (Sullivan and Wall, L0-010_P U).

Effects in South to South-Westerly Winds

Areas outside the Site

44 I consider the overall wind environment on the adjacent streets and footpaths (Donald Street and Campbell Street) will be largely unaffected by the Proposed Village (and not materially adversely affected). This outcome is because the proposed new buildings on the southern side of the Site are:

44.1 Aligned approximately parallel to the prevailing wind directions;

44.2 Only two or three storeys high; and

44.3 Set back from the Site boundaries.

In addition, the proposed boundary fencing, which consists of solid sections and permeable sections backed by planting and significant other landscaping will limit wind flowing from the Site into the adjacent streets.

45 I expect there to be some localised changes in wind conditions on the adjacent streets and footpaths, with these changes being driven by redirection of existing wind flows by the new buildings.

46 I consider wind conditions in the spaces to the north of the Site, including around the Karori Pool and carpark, Karori Normal School, Karori Kids Preschool and neighbouring residential open spaces, will improve. In my opinion, the new buildings, landscaping and fencing, will provide additional shelter for these spaces, which are downstream of the Site in southerly conditions. The conditions will primarily improve for those areas downstream of the western part of the Site as the playing fields provide no shelter.

47 I do not expect wind conditions in the areas to the south of the Site, including Scapa Terrace and Ben Burn Park to change in south to south-westerly winds as a result of the Proposed Village. This is because these areas are upwind of the Site, and the new buildings adjacent to the southern site boundary are only two to three storeys high and are set back from the Site boundary. As noted earlier, it is unusual to assess wind effects on neighbouring properties in the residential context.

Areas within the Site

48 As for northerly sector winds, I expect wind speeds in the open areas within the Site to range from low to moderately high, with some localised areas of high wind speeds around the windward corners of the taller buildings. I consider that, most of the open spaces within the Site are likely to be relatively well sheltered by the new buildings, with the perimeter fencing and the site landscaping also playing a part. I comment further on these matters in the mitigation section below.

Wind Mitigation

- 49 The Proposed Village includes beneficial design features that I consider will help to mitigate wind effects in pedestrian and public areas, neighbouring properties, and inside the Site. As noted earlier, these features include (1) the alignment of the new buildings approximately parallel to the prevailing wind directions, (2) lower building heights around the perimeter of the Site, (3) setbacks from the Site boundaries, (4) the boundary fencing, and (5) significant proposed landscaping.
- 50 Other features that will provide better wind and weather protection for residents, visitors and staff at the Proposed Village include the enclosed linkages and covered walkways between many of the buildings.
- 51 The overall effects of the Proposed Village on wind conditions external to the Site are expected to be relatively small and are unlikely to be noticed in the surrounding streets, due to the design features listed above. Similarly, neighbours are unlikely to notice adverse effects and are more likely to see benefits from increased shelter. I therefore do not recommend any additional mitigation for offsite effects.
- 52 In relation to the onsite wind conditions, the Proposed Village design includes significant fencing and landscaping, which at this stage of the proposal, I consider is appropriate to help address onsite wind. That said, some localised areas within the Site are expected to be windy at times, and there may be a need for additional wind mitigation to improve the amenity of specific areas depending on their actual use. Additional wind mitigation could be in the form of landscaping, including planting, vertical screens, or walls.
- 53 The need for additional wind mitigation targeting specific areas would be best considered as pedestrian/resident use patterns within the Proposed Village are better understood, as part of the detailed design of the landscaping for the Site and early operational stages. I understand Ryman is offering an amendment to the landscape condition to provide for any additional wind mitigation.
- 54 I also note that the benefits of planting (trees and shrubbery) as wind mitigation will not be fully realised unless, or until, it is fully mature. In addition, unless the planting is evergreen, with relatively dense foliage, the benefits may either be small or only be realised for some of the time. The Landscaping Plan proposes a mix of mature and younger species, evergreen and deciduous types, and larger and smaller trees and shrubbery. This plan is aimed at balancing the need for initial benefits as wind shelter and shade, establishment and healthy growth and I consider it appropriate in the circumstances.

RESPONSE TO SUBMISSIONS

- 55 There are 11 submissions relating to wind and wind effects⁴, with these submissions being from residents in Campbell Street, Scapa Terrace, Donald Street and Cooper Street respectively.
- 56 A number of these submissions⁵ are non-specific, with objections to “*wind funnelling*” or “*wind impacts*”, without specifying any locations or cause. Accordingly, it is difficult to respond specifically. However, I believe that the assessment I outlined earlier and the responses to the other submitters described below, address these concerns.
- 57 One other non-specific submission⁶ refers to “*no consideration to winds in Karori*”. I understand Ryman began consideration of wind effects in 2019 and have continued with that through ongoing design development. Further, as outlined above, I consider the Proposed Village design has included some intelligent design choices with respect to avoiding and mitigating offsite wind effects.
- 58 Six submitters⁷ raise a common theme, that the height, length, rectangular shape and north-south orientation of many of the buildings would generate, increase or exacerbate wind effects. Several of these submitters expressed concerns relating specifically to their properties, most of which are located between the Site and Scapa Terrace. One of these submitters⁸ also refers to the Council’s Design Guide for Wind. I address this point in paragraph 68 below.
- 59 The Proposed Village does include mostly rectangular buildings. However, these buildings are aligned with their long axes more parallel to the prevailing wind directions, which exposes less area to direct wind flows. In addition, the taller buildings are concentrated towards the centre and north end of the Site, so their effects on wind conditions will largely be contained within the Site and any offsite effects will be similar to or better than current conditions.
- 60 For submitters whose properties are on Scapa Terrace, it is my opinion, that there is not expected to be any materially adverse effects on wind conditions in southerly and southwesterly winds. In northerly and northwesterly winds, the overall result is expected to be an improvement in wind conditions for all of the adjacent Scapa

⁴ Submissions 16 (Tyler), 22 (Powell), 40 (Minson), 46 (Mattlin), 49 (Gestro), 56 (Cooper), 58 (Moran), 60 (Sprott), 65 (Responsible Development Karori Inc.), 72 (Ingham) and 75 (McKinnion-King).

⁵ Submissions 16 (Tyler), 22 (Powell), 40 (Minson), 46 (Mattlin).

⁶ Submission 75 (McKinnion-King).

⁷ Submissions 49 (Gestro), 56 (Cooper), 58 (Moran), 60 (Sprott), 65 (Responsible Development Karori Inc.), and 72 (Ingham).

⁸ Submission 65 (Responsible Development Karori).

Terrace properties, due to the combination of shelter afforded by the buildings, fencing and landscaping as described earlier.

- 61 One submitter⁹ makes a specific comment about the proposed planting, in that "*new planting will take years to take effect*". That is correct, wind shelter will take time to develop fully if the planting is based on young or immature specimens. I understand that Ryman intends, where practical and appropriate, to plant relatively mature plant specimens and, as I have stated, I consider the Landscape Plan to be appropriate. In any event, as noted earlier, landscaping is only one element that will contribute to the wind conditions within and outside the Site.
- 62 I have also considered wind concerns raised by a submitter¹⁰ at the pre-hearing meetings. The 26 Scapa Terrace property is located on the corner of Scapa Terrace and Campbell Street, south of the Site. It is also separated from the Site by the neighbouring residential properties to the north and east. The prevailing strong winds in the area are from the north to north-westerly and south to south-westerly.
- 63 In northerly sector winds, the Site is located upwind of 26 Scapa Terrace. 26 Scapa Terrace is currently exposed to northerly sector winds, predominantly because of the open exposure created by what were the Teachers' College sports fields and courts. The establishment of the Proposed Village buildings, together with the fencing and landscaping, will provide additional shelter for 26 Scapa Terrace and so, in my opinion, wind conditions are expected to improve rather than deteriorate. Buildings B02 and B03 will not cause wind conditions at 26 Scapa Terrace to deteriorate, as these buildings are relatively low, aligned more parallel to the prevailing winds, and there is a one-storey connection between their southern ends. I consider they will provide more shelter, rather than less.
- 64 In southerly sector winds, 26 Scapa Terrace is upwind of the Site. Accordingly, I consider the Proposed Village will have no effect on wind conditions at 26 Scapa Terrace for these winds.

RESPONSE TO COUNCIL OFFICER'S REPORT

- 65 I have read the Officer's Report prepared for this matter. In this report the Council Officer suggests that conditions relating to fencing and landscaping are required to mitigate external and on-site amenity effects. The report concludes that, "*on balance, wind effects can be reasonably mitigated and will not be more than*

⁹ Submission 60 (Spratt).

¹⁰ Submission 16 (Tyler).

minor".¹¹ This view is reflected in the proposed condition requiring the wind mitigation options, including fencing and planting, be included in the Landscaping Plan.

- 66 The Officer's Report considers my wind assessment report and Further Information Response, and the review of these by the Council's Wind Consultant, Dr Donn. I was involved in discussions with the Council Officer and Dr Donn to discuss his assessment report and the issues raised. These discussions have resulted in some agreement on matters raised, while some differences do remain (the upshot being that I understand many aspects of the Officer's Report commentary are now out of date).
- 67 Dr Donn suggests that "*in normal circumstances*" he would be assessing the results of a wind tunnel study for a development such as this. In my view, it would be more correct to say that if this development were in a central city environment, or one in which planning rules required wind tunnel testing, this would be the case. In this case a wind assessment was carried out, where no consideration of wind effects is specifically required. As Dr Donn acknowledges, "[a]lmost inevitably, assessments must be conservative".
- 68 It is suggested that the design of the Proposed Village does not reflect the principles of Wellington City Council's Design Guide for Wind, which provides design advice to reduce or mitigate the effects of buildings on pedestrian wind conditions. I consider the design of the Village does include several of the design principles in the Guide, including (1) the alignment of the new buildings approximately parallel to the prevailing wind directions, (2) lower building heights around the perimeter of the Site, (3) setbacks from the Site boundaries, (4) some articulation of the buildings' massing and facades, (5) the boundary fencing, and (6) significant proposed landscaping.
- 69 Dr Donn's report also raised concerns related to specific areas or design features. These are discussed in the following items, which highlight areas of agreement that have been reached and identify outstanding differences.

External effects

Northern boundary, including Karori Kids, 27A Campbell Street, 221A, 221B and 221C Karori Road Public walkway

- 70 I understand that a good deal of Dr Donn's concern in these two areas relate to his understanding that the fencing along much of the length of these boundaries was of a low picket fence design. This is not the case, and I understand the correct fence treatments are to be further clarified in the updated drawing set. I understand that

¹¹ Officer's Report, page 64, paragraph 336.

the "Type C" fencing is intended to be 1.8m high solid wooden fencing, with no gaps. In my view, this type of fencing is sufficient for wind mitigation. The remaining fencing along the northern boundary is "Type A", but which is adjacent to an area where existing planting is intended to be retained where practical. I understand from our discussions that Dr Donn and I generally agree that the walkway and adjacent properties would receive reasonable shelter from the combination of this type of fencing, planting and the Village buildings.

Campbell Street (eastern) boundary

71 I understand that Dr Donn and I generally agree that the overall effects on Campbell Street will be small, but that there will be some increases and reductions in wind conditions, depending on the wind direction. Wind conditions in more northwesterly and southwesterly directions may increase slightly, compared to reductions likely as wind tends towards the northeast and southeast.

72 Dr Donn expresses doubt about the efficacy of the fencing and planting along Campbell Street to provide wind shelter, based on what is shown on the Landscaping Plan. In my view, it should be realised that the Landscaping Plan shows mostly the larger planting elements, with lower-level planting (shrubby of various heights) also being intended. The overall shelter effects will be cumulative, and I consider they are appropriate.

Donald Street (western) boundary

73 I understand that there is general agreement that the overall effects on Donald Street will be small, but that there will be some increases and reductions in wind conditions, depending on the wind direction. Wind conditions in northerly winds are likely to increase in localised areas, compared to reductions likely to occur in southerly winds.

74 I also refer earlier to the lower-level planting contributing to the wind shelter, which is also proposed in this area, and I consider the proposed treatments are appropriate (noting the 'Pocket Park' boundary on Donald Street is discussed separately below).

Scapa Terrace (southern) boundary

75 As noted previously, the Type C fencing along the southern boundary will be 1.8m high solid timber fencing, with no gaps. I understand that Dr Donn and I agree that this fence (along with the buildings and landscaping proposed) would provide reasonable shelter for the neighbouring Scapa Terrace properties.

Internal effects

Courtyard (north of B01A)

76 The courtyard on the north side of Building B01A, adjacent to Donald Street, near the northeast corner of the Site, has been identified by Dr Donn as an area of concern. This space will experience reasonable shelter in southerly sector winds from the

Proposed Village buildings to the south and west. The planting and fences (Type B) will also provide somewhat better shelter than it currently receives from northerly sector winds. Accordingly, wind conditions will be largely the same, or better, than they currently are. Additional wind shelter would not specifically be required under the Operative Plan but could improve wind conditions. However, it would need to be balanced against other factors, such as access, shading and Crime Prevention through Environmental Design (CPTED).

Pocket Park

- 77 Some concern has been expressed by Dr Donn about wind conditions in the pocket park at the southeast corner of the Site, and a need for additional shelter. This is not a public park, in the terms of the Operative Plan. If it were a designated public park, improvement in wind conditions, while desirable, would not be required unless the Village development caused amenity of the space to deteriorate. I do not believe this is the case, with wind conditions expected to be similar to those experienced currently. Additional mitigation could further improve the amenity of this space, but would need to be balanced against other issues, including access and CPTED.

Building B02 – B06 balconies

- 78 Dr Donn considers conditions on the outdoor balconies between Building B02 through B06 will be windy, with wind flows being accelerated between the buildings, and with the balconies having little in the way of shelter. In my view, some wind will be channelled between these buildings for certain wind directions, but for other directions (tending more easterly and westerly) these areas will be relatively sheltered. Furthermore, the intention is not for these entire areas to be completely sheltered, but to provide more localised shelter, while retaining the open nature of these spaces. I am generally comfortable with the proposed treatments in these areas. I also understand that additional localised shelter elements can be added in these areas after construction if they are needed.

Courtyard between B01A and B01B

- 79 This area at the southern end of the “U-shaped” space between Buildings B01A and B01B is viewed by Dr Donn as being likely to be exposed to swirling wind flows that will be channelled through the gap between the buildings, in the area of the dementia terrace. I understand we both agree that this space will be mostly well sheltered in southerly winds. However, Dr Donn and I differ on how windy this area is likely to be in northerly winds. I consider that the orientation of this “U-shaped” space, combined with the rising topography, buildings and vegetation to the north offers limited exposure to this space. The design for this area currently envisages a 2.4m high solid fence backed with planting, with additional planting in the area to the north. Further options for treatments

specifically for the gap between the buildings, such as gates or screens, are also being considered and will be addressed by Mr Turner in the conditions and through detailed design. **Appendix 1** illustrates the initial gate and screen design options being considered. These also show the current planned 2.4m high fence and planting.

Building entries

- 80 The locations and design of building entries are suggested by Dr Donn as not recognising the prevailing wind directions, or the wind effects of the buildings. In my experience, building entrance locations are often dictated by factors other than wind. In this case some landscaping protection has been provided for some entrances, and there is the ability to address this further during detailed design. I am comfortable with this approach.

Identifying wind mitigation post-construction

- 81 As noted previously, the Village design includes features that help to manage potential effects on wind conditions. In addition, in contrast to a typical high-rise building development, the Village Site offers the scope to identify and include additional wind mitigation post-construction. This is an important consideration, as further wind mitigation can be targeted, based on pedestrian/resident use patterns.

COMMENTS ON DRAFT CONDITIONS

- 82 The Council's draft condition relating to wind effects (Condition 61) incorporates a number of items that have now been addressed through clarifications and discussions with the Council Officer and Dr Donn. These include the design of fencing and planting on the northern and southern boundaries, and also on the Campbell Street and Donald Street boundaries.
- 83 There are several other areas where the condition seeks additional wind mitigation, these being the pocket park, the courtyard on the Donald Street frontage, the Level 1 balconies between Buildings B02 and B06, and the courtyard between Buildings B01A and B01B. In my view, additional shelter in the first two of these areas might be desirable but would not specifically be required under any of the wind provisions in the Operative Plan, were they to apply. I consider that further wind mitigation in other areas, including the other two listed above, could best be integrated (1) into the Landscaping Plan and (2) in detailed design.
- 84 I also note that I do not consider a further "Wind Assessment" is needed for the detailed landscaping design process, provided a suitably qualified wind expert is involved in finalising the design.

CONCLUSION

- 85 In conclusion, I consider the Proposed Village design appropriately manages wind effects through a combination of features. These include (1) the alignment of the buildings approximately parallel to the prevailing wind directions, (2) the massing of the lower height elements closer to the perimeter of the Site and higher rise elements towards the centre, (3) the setbacks of buildings from the site boundaries, (4) the inclusion of substantial boundary fences, (5) substantial landscaping, and (6) the inclusion of enclosed or covered linkages between many of the Village buildings.
- 86 For the above reasons, pedestrians are unlikely to notice significant any changes in the overall wind environment of the surrounding streets, footpaths and open spaces.
- 87 In some areas around the perimeter of the Site, wind conditions will improve because of the increased shelter afforded by the combination of new buildings, fencing and landscaping.
- 88 Within the Proposed Village, many of the open spaces will be reasonably well sheltered by the new buildings, fences and landscaping. In addition, there are many alternative route options, including internal spaces within the Village buildings themselves. However, some localised areas are expected to be windy for particular wind directions.
- 89 Wind conditions within the Site could potentially be further improved using additional planting (trees and shrubbery), screens and fencing. The need for such additional wind mitigation, as well as consideration of appropriate scale and location can best be assessed once pedestrian/resident use patterns are understood, and I support these additional items being integrated into the detailed landscaping plan condition.

Neil John Jamieson
29 August 2022

APPENDIX 1: INDICATIVE TREATMENT OPTIONS (COURTYARD BETWEEN BUILDINGS B01A AND B01B)

The following options also show the current planned perimeter fence and planting.



Option 1 Gate (2.4m high) between Buildings B01A and B01B



Option 2 Gate (2.4m high) between Buildings B01A and B01B, with additional screen and planting