

5 June 2013

610.08304 Atchison 75W Application Revised Wind Impact 20130605.docx

HOLDMARK
Suite 2, 2-4 Giffnock Avenue
MACQUARIE PARK NSW 2113

Attention: Mr George Khouri

Dear George

**6-16 Atchison Street, St Leonards
75W Application - Revised Wind Effects**

SLR Consulting Australia Pty Ltd (SLR) has previously conducted several wind impact assessments of ongoing redevelopment options for 6-16 Atchison Street, St Leonards. The site is bounded by Atchison Street to the south, Atchison Lane to the north, an existing 3-storey development to the east and an existing 17-storey mixed-use development to the west. Our assessments were documented in:

- Heggies Report 10-8304-R2, *"6-16 Atchison Street, St Leonards, Proposed Residential Tower, Environmental Wind Tunnel Test"* (June 2010)
- SLR Report 610.08304, *"6-16 Atchison Street, St Leonards, Revised Development Wind Impact"* (March 2011)

Windbreak mitigation recommendations were made in the above reports to assist in achieving appropriate wind comfort criteria throughout the year. Since that time, the development design has undergone further refinements, with the main change being a further decrease of two storeys (now 26 storeys in total) but with a similar overall floor plate design for the remaining floors and some internal layout modifications.

We have carried out a review of the changes to the development and the previously proposed windbreak mitigation recommendations and provide the enclosed, updated wind assessment for the project.

If any further information is required, do not hesitate to call me on (02) 9428 8100 or (0421) 915 597.

Yours sincerely



PETER GEORGIU
Director
(Call at any time on 0421 915 597

1 JUNE 2010 WIND ASSESSMENT OF PROPOSED DEVELOPMENT

SLR Consulting Australia Pty Ltd (SLR, formerly Heggies Pty Ltd) has previously conducted several wind impact assessments of ongoing redevelopment options for 6-16 Atchison Street, St Leonards.

The site is bounded by Atchison Street to the south, Atchison Lane to the north, an existing 3-storey development to the east and an existing 17-storey mixed-use development to the west.

The outcomes of our previous assessments and the accompanying windbreak recommendations were documented in:

- Heggies Report 10-8304-R2, *"6-16 Atchison Street, St Leonards, Proposed Residential Tower, Environmental Wind Tunnel Test"* (June 2010)
- SLR Report 610.08304, *"6-16 Atchison Street, St Leonards, Revised Development Wind Impact"* (March 2011)

In the initial 2010 study, an environmental wind tunnel test was carried out involving model scale physical testing, where windbreak features were added to the "baseline" building design test their efficacy in ameliorating potential adverse wind conditions. These were then re-examined in 2011, following design modifications, the chief of which involved a decrease in the original height of the building. The following points summarise the key recommendations from the previous assessments:

- There is potential for localised areas both at ground level and upper level to experience wind gusts exceeding criteria relevant to comfort conditions, eg walking (relevant to footpath areas), strolling, sitting, outdoor dining (relevant to the Outdoor Café), etc.
- Exposed ground level locations around the base of the proposed development have the potential to experience higher wind speeds due to the northerly and southerly wind funnelling in between buildings and then impacting these locations. This occurs for both northerly winds and winds from the southwest.
- Finally, upper levels and the roof level of the development will be exposed to potentially high winds of a mostly horizontal nature, requiring mostly vertical windbreak elements if it is foreseen to have publically accessible areas such as a roof garden, etc.

Our previous reports noted that windbreak elements had already been proposed for the development such as the enclosing of apartment balconies and wind sheltering landscaping around Podium areas. Some additional windbreak features were recommended, including:

- Additional landscaping for street footpath and internal lane areas, including some dense landscaping along the north and south perimeters of the several outdoor Podium areas.
- Vertical windbreaks and horizontal canopies for exposed upper level areas.

- This report updates the above recommendations -

2 CHANGES TO THE PROPOSED 75W DEVELOPMENT

Since the time of the DA Stage wind assessment, design changes have been made to the development. These are summarised in **Table 1**.

Table 1 Design Changes to Proposed Development

	June 2010 (DA, approved)	March 2011 (Revised DA)	April 2013 (75W)	Change since DA
Total Floor Height	33 Storeys	28 storeys	26 storeys	7 storeys SHORTER
Ground Floor Landscaping	Essentially the same significant landscaping		Modified with extensive landscaping including new pergola features	Landscaping configuration amended
Lobby, Entries, Café	Essentially the same floor plan footprint and layout		Altered Podium floor layout	Layout altered
Hotel Levels	Levels 2-5 essentially the same floor plan footprint changes in internal layout on Level 2		Levels 1-4 now replaced by: Serviced Units & Recreation Floors	Internal design and layout alterations
Residential Levels	Levels 6-33	Levels 6-28 similar layout less floors	Levels 5-23 similar layout less floor again	7 levels LESS
Roof	essentially the same floor plan and layout			No roof garden Solar Panels

As can be seen in **Table 1**, the building has essentially retained a similar floor plate design (footprint) above ground but has reduced its height by 7 storeys overall compared to the original DA design.

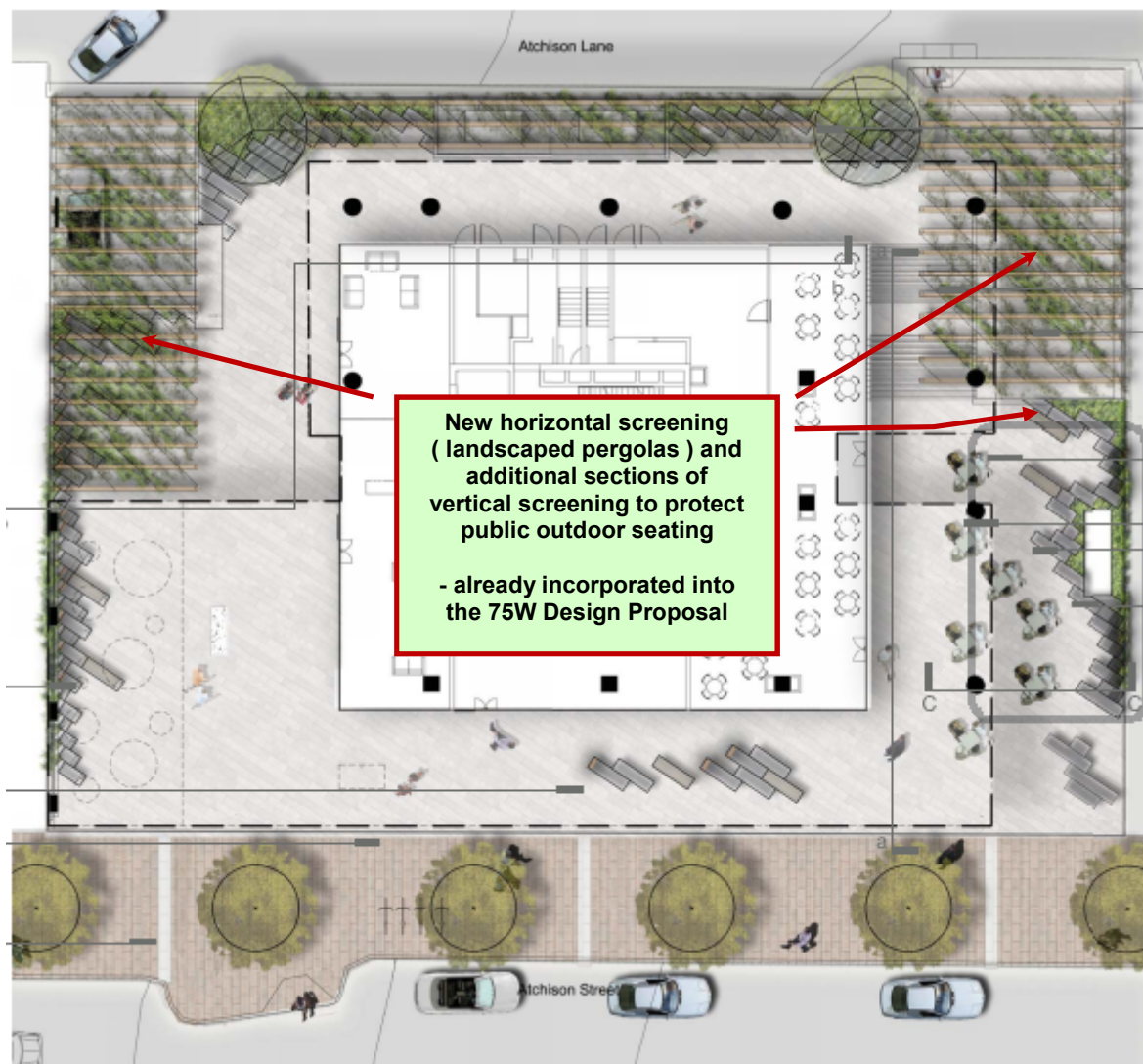
On this basis, the following can be concluded:

- There is still potential for previously identified adverse conditions to occur, eg channelling of winds between the proposed development and adjacent buildings for northerly and southerly winds.
- The magnitude of previously identified adverse conditions, especially at ground level, will almost certainly **decrease** (albeit modestly), compared to the previous building geometry, due to the decrease in overall building height.
- The “winter gardens” for all floors from Level 6 are fully enclosable and hence, these areas can be protected during high wind occurrences.
- No public access areas have been identified at roof level and hence, the previous recommendation for consideration of windbreaks is not required - unless they are included for structural reasons, eg for wind load reduction on the proposed solar panels to be located on the north half of the roof.

We have reviewed the revised ground level layouts, where **considerable additional landscaping** has been provided for the 75W design proposal, including **landscaped pergolas** to enhance wind comfort conditions in public seating areas – refer **Figure 1**.

It is expected that wind mitigation recommendations will be reviewed and further refined (ie specific dimensions for landscaping, any vertical screening, etc) during the detailed design stage of the development (following 75W approval) to ensure that wind comfort goals are achieved.

Figure 1 Revised Ground Level Windbreak Recommendations



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