

Thermal Environmental

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1 High Street, Carlton
NSW 2218, Australia

24th June 2013

Allen Jack + Cottier Architects

79 Myrtle St
Chippendale, NSW 2008

Attention: Pip Bowling

Dear Pip,

Re: Natural Ventilation SEPP 65 Compliance – Macquarie Park Village

1 Background Information and Summary

State Environmental Planning Policy 65 (SEPP 65) and the Residential Flat Design Code (RFDC) consider a broad range of design quality issues; however this summary report is limited to Natural Ventilation compliance for the apartments of the above site.

We hereby confirm that the drawings and apartment list, as per Schedule A of this letter, have been reviewed with regard to the requirements of Natural Ventilation under the RFDC amenity provisions of SEPP 65. A summary table complying with the performance objective for natural ventilation is contained in Table 1 and 2 for each building of the proposed site.

We have identified compliant apartments that are described to achieve cross ventilation and satisfy the following requirements:

- All habitable rooms with direct access to outdoor air; and
- Utilise the building layout to facilitate cross ventilation by providing a dual aspect; or
- Facilitating convective currents by designing units which draw cool air in at lower levels and allow warm air to escape at higher levels.

On this basis, it is our opinion that the proposed development can generally be considered fully compliant with the requirements of Natural Ventilation under the RFDC.

2 Natural Ventilation Compliance

The RFDC has following Natural Ventilation rules of thumb:

- Building depths, which support natural ventilation, should typically range from 10 to 18 meters;
- Sixty per cent (60%) of residential units should be naturally cross-ventilated;
- Twenty five per cent (25%) of kitchens within a development should have access to natural ventilation;
- Developments which seek to vary from the minimum standards, must demonstrate how natural ventilation can be satisfactorily achieved, particularly in relation to habitable rooms.

Qualitative “Best-practice” design advice regarding the site, building and internal layout and opening locations types are provided in the RFDC. The RFDC also give a quantified recommendation for interpreting SEPP 65 with respect to “Cross Ventilation”. Note that SEPP 65 uses the term cross-ventilation or natural ventilation interchangeably.

Cross-ventilation describes where a dwelling has operable openings (doors or windows) to two or more distinctly different orientations thus making possible that, in various wind direction the relative pressure differentials will ensure some air movement through internally connected spaces via openable doors or windows or some other forms of opening in the dwelling. In the proposed development, all such apartments are classified as cross-ventilated.

3 Ventilation Compliance

Table 1 lists the apartments with their natural ventilation status as assessed against the criteria described in Section 2.

Table 1: Natural Ventilation Compliance Status - Apartments

Building ID:	Total Number of Apartments	Number of Cross-Ventilated Apartments	% of Cross-Ventilated Apartments
Adelaide	74	70	95%
Perth	78	53	68%
Darwin	61	48	79%
Brisbane	127	91	72%

Table 2: Natural Ventilation Access to Kitchen Compliance Status

Building ID:	Total Number of Apartments	Ventilation Access to Kitchen	% Ventilation Access to Kitchen
Adelaide	74	16	22%
Perth	78	16	21%
Darwin	61	28	46%
Brisbane	127	66	52%
Total Units within the Development and (%) Access to Ventilation	340	126	37%

4 Conclusion

Cross ventilation is achieved due to dual aspect, corner location and stack effect for most of the units apart from the units located in the ground floor of Darwin and Brisbane building. All the buildings satisfy the cross ventilation criterion of 60% of residential units within the Stage 1 of the development.

The ventilation access to kitchen within the Stage 1 of the development is 37% which exceeds the minimum requirements (25%). The Stage 1 of the development is therefore fully compliant for natural ventilation under the RFDC.

Yours Sincerely

Thermal Environmental

Arjun Adhikari



Senior ESD/Mechanical Engineer

Reviewed By

Paul Smith



Senior Mechanical Engineer

Encl:

1. Schedule A – List of Drawings

SCHEDULE A – LIST OF DRAWINGS

- Cover Sheet – DA 0000 – Issue G
- Ground Floor Plan – DA2100 – Issue E
- Level 1 Plan – DA2101 – Issue E
- Level 2 Plan – DA2102 – Issue E
- Level 3 Plan – DA2103 – Issue F
- Level 5 Plan – DA2105 – Issue F
- Level 6 Plan – DA2106 – Issue C
- Level 7 Plan – DA2107 – Issue C
- Level 8 Plan – DA2108 – Issue C
- Level 9 Plan – DA2109 – Issue C
- Level 10 Plan – DA2110 – Issue F
- Level 11 Plan – DA2111 – Issue D
- Level 12 Plan – DA2112 – Issue C
- Level 13 Plan – DA2113 – Issue D
- Level 15 Plan – DA2115 – Issue D
- Level 16 Plan – DA2116 – Issue D