Daylight Report

Client:	South Road Developer Pty Ltd
Project:	17 Taylor Street, Moorabbin
Subject:	Daylight Report
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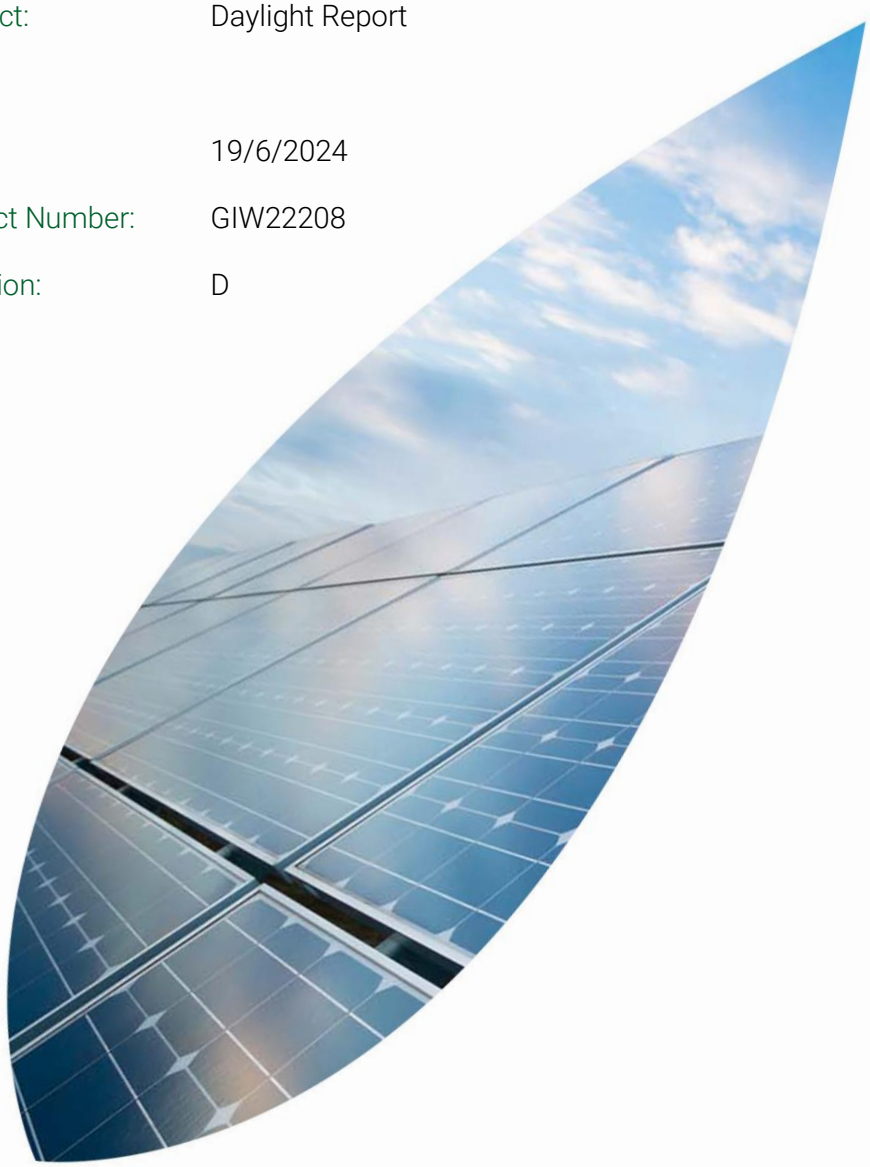
Project Number:	GIW22208
Revision:	D



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Introduction

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by South Road Developer Pty Ltd to provide comparative daylight assessment report for the mixed-use development at 17 Taylor Street, Moorabbin in consideration of the proposed development at 360-372 South Road, Moorabbin.

The apartments modelled at 17 Taylor St are 1.02-1.06, 4.02-4.05 and 9.01-9.03. The apartments are selected with consideration of interfacing with the subject site at 360-372 South Road, Moorabbin and represent an average for the north facing apartments at 17 Taylor Street.

GIW has prepared a comparative daylight assessment of the existing development at 17 Taylor Street, Moorabbin under the following scenarios applied to 360-372 South Road, Moorabbin:

(A) Scenario A: Existing mixed-use development with existing adjacent buildings.
(B) Scenario B: Existing mixed-use development with building of same height and setbacks as 17 Taylor St.
(C) Scenario C: Existing mixed-use development with proposed development.

Sources of Information

The following 'Sources of Information' have been used for the assessment:

- Architectural drawings for 17 Taylor St, Moorabbin by Chandler Architecture and Interior Design.
- Architectural drawings TP000-TP802 for 360-372 South Rd, Moorabbin by KUD
- Plan of Feature Survey for 360-372 South Rd, Moorabbin by JCA land Consultants.

Scope of Modelling

We have undertaken daylight modelling for the mixed-use development at 17 Taylor Street, Moorabbin in consideration of the proposed development at 360-372 South Road, Moorabbin. For the assessment, apartments 1.02-1.04, 4.02-4.05 and 9.01-9.03 will be modelled, which represents an average for the north facing apartments of the existing building.

GIW has prepared a comparative daylight assessment of the existing development at 17 Taylor Street, Moorabbin under the following scenarios applied to 360-372 South Road, Moorabbin:

(A) Scenario A: Existing mixed-use development with existing adjacent buildings.
(B) Scenario B: Existing mixed-use development with building of same height and setbacks as 17 Taylor St.
(C) Scenario C: Existing mixed-use development with proposed development.

Methodology

Daylight amenity has been calculated against the Built Environment Sustainability Scorecard (BESS) tool – Category: Indoor Environment Quality (IEQ) – Credits: Daylight Access - Living Areas; and Credit Daylight Access - Bedrooms.

The best practice standards are as follows:

"Dwellings should achieve the following daylight factors (DF)

- *Living rooms are to achieve a daylight factor greater than 1% to 90% of the floor area of each living area, including kitchens.*
- *Bedrooms are to achieve a daylight factor greater than 0.5% to 90% of the floor area in each room."*

The daylight modelling has been completed using the Radiance software suite, an accurate computing program used to predict light levels in a space. Scene geometric data and material properties are interfaced into the Radiance software using DesignBuilder.

Daylight Factors have been calculated using a CIE uniform cloudy sky.

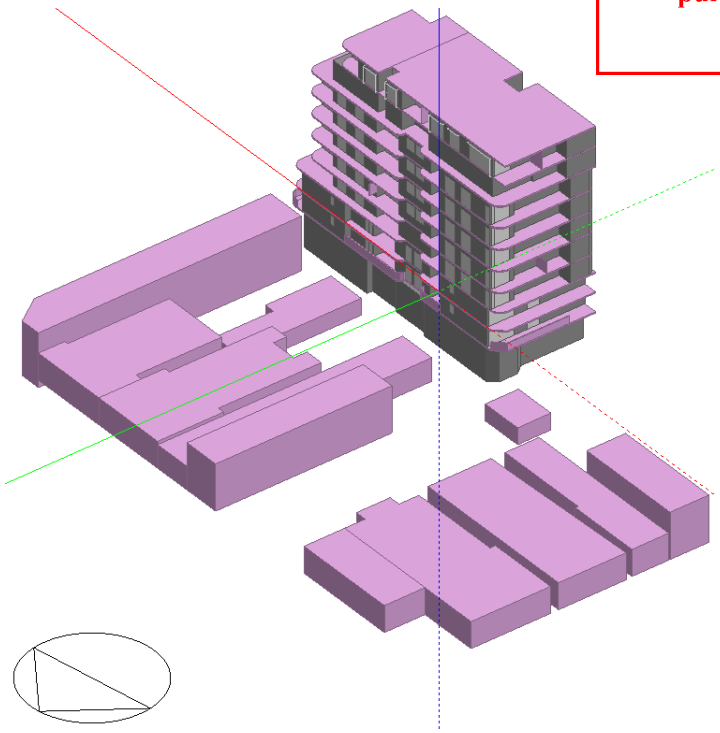

Figure 1 – DesignBuilder render of Scenario A: Existing mixed-use development with existing adjacent buildings.

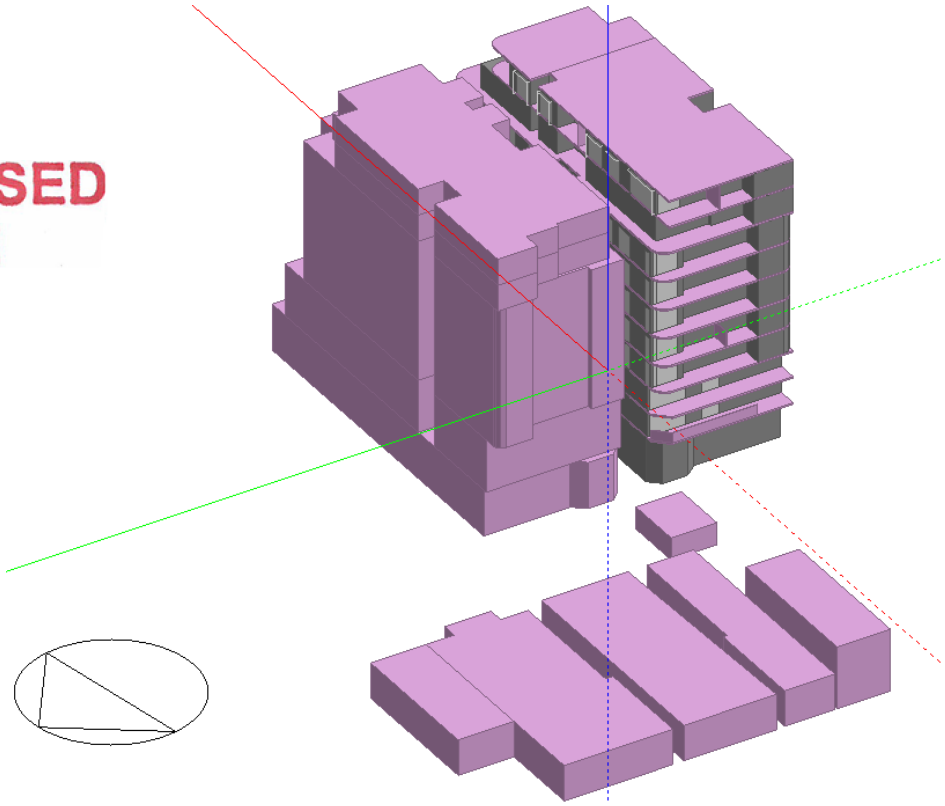

Figure 2 – DesignBuilder render of Scenario B: Existing mixed-use development with building of same height and setbacks as 17 Taylor St.

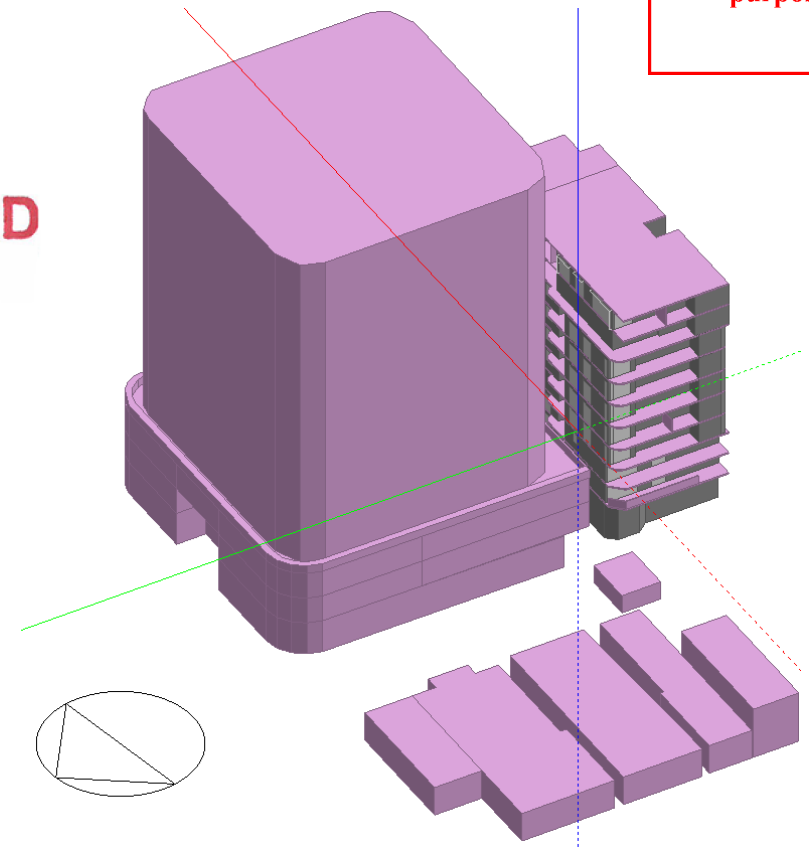

Figure 3 – DesignBuilder render of Scenario C: Existing mixed use development with proposed development.

Modelling Assumptions

The following assumptions have been made with respect to the modelling:

- Modelled window dimensions are as per the architectural documentation.
- The glazing performance used for external windows on the façade is representative of a double glazed, clear glass system with a total system VLT of 0.68.
- The glazing performance used for external windows on the façade shaded by a screen is representative of a double glazed, clear glass system with a total system VLT of 0.34.
- Screen opacity assumed at 50%.
- The reflectance of all materials is in accordance with Green Star Multi-Unit Residential credit IEQ-4 Daylight:
  - Floors: 0.3
  - Walls: 0.7
  - Ceilings: 0.8
- The reflectance of external buildings and structures is assumed to be 0.4.

Numerical Daylight Results

The results below demonstrate that the building of same height (Scenario B) and proposed development (Scenario C) will impact the daylight amenity in comparison to the existing conditions (Scenario A).

Table 1: Numerical Daylight Results – Living Rooms at DF – 1.00

	Scenario A		Scenario B		Scenario C	
Apartment No.	Area of living area above DF1 threshold	Average Daylight Factor	Area of living area above DF1 threshold	Average Daylight Factor	Area of living area above DF1 threshold	Average Daylight Factor
1.02	100%	4.33	99%	3.76	98%	3.58
1.03	77%	2.23	0%	0.06	0%	0.08
1.04	99%	3.7	79%	3.05	82%	3.01
4.02	100%	11.61	100%	9.75	100%	9.66
4.03	95%	2.81	0%	0.11	0%	0.21
4.04	66%	2.06	0%	0.06	0%	0.16
4.05	84%	4.68	82%	4.42	82%	4.42
9.01	100%	10.19	100%	9.8	100%	8.44
9.02	100%	3.22	76%	2.32	29%	0.86
9.03	99%	7.91	99%	6.85	99%	5.15
Average	**92%**	**5.27**	**63%**	**4.02**	**59%**	**3.56**

Table 2: Numerical Daylight Results – Bedrooms at DF – 0.50

	Scenario A		Scenario B		Scenario C	
Apartment No.	Area of bedroom above DF0.5 threshold	Average Daylight Factor	Area of bedroom above DF0.5 threshold	Average Daylight Factor	Area of bedroom above DF0.5 threshold	Average Daylight Factor
1.02 Bed1	100%	3.1	2%	0.12	2%	0.14
1.02 Bed2	98%	1.85	99%	1.9	98%	1.85
1.03 Bed1	100%	6.47	7%	0.24	19%	0.36
1.03 Bed2	100%	5.51	4%	0.17	14%	0.32
1.04 Bed1	98%	3.19	0%	0.08	0%	0.13
1.04 Bed2	100%	3.22	100%	3.16	100%	3.14
4.02 Bed1	98%	7.84	68%	0.85	97%	1.18
4.02 Bed2	100%	9.4	100%	1.85	100%	2.19
4.03 Bed1	100%	5.03	20%	0.47	51%	0.59
4.03 Bed2	98%	2.1	0%	0.08	5%	0.17
4.04 Bed	100%	5	14%	0.31	45%	0.53
4.05 Bed1	100%	10.82	38%	0.61	100%	2.35
4.05 Bed2	99%	10.15	85%	1.11	99%	3.76
9.01 Bed1	100%	9.53	100%	7.37	100%	2.73
9.01 Bed2	100%	10.76	100%	10.86	100%	10.82
9.02 Bed1	85%	2.64	74%	2.31	52%	0.86
9.02 Bed2	100%	9.26	100%	7.22	100%	2.6
9.03 Bed1	58%	1.04	52%	0.77	16%	0.28

	Scenario A		Scenario B		Scenario C	
Apartment No.	Area of bedroom above DF0.5 threshold	Average Daylight Factor	Area of bedroom above DF0.5 threshold	Average Daylight Factor	Area of bedroom above DF0.5 threshold	Average Daylight Factor
9.03 Bed2	100%	11.16	100%	8.55	100%	3.56
9.03 Bed3	100%	9.68	100%	7.05	100%	3.56
Average	97%	6.39	58%	2.75	65%	2.06

Visual Daylight Results

The following daylight mapping displays the relative daylight outcomes for the assessed areas.

Level 1

Figure 4 – Scenario A: Daylight map L1 of 17 Taylor Street, Moorabbin modelled with existing developments adjacent.

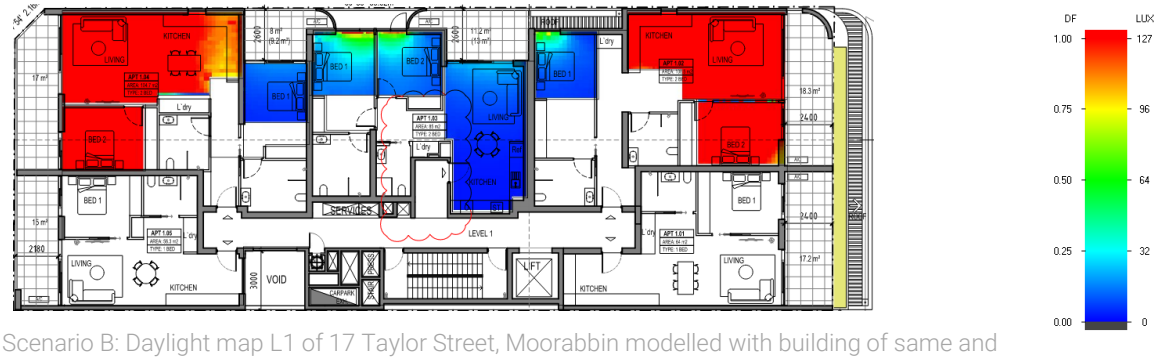

Figure 5 – Scenario B: Daylight map L1 of 17 Taylor Street, Moorabbin modelled with building of same and setback as 17 Taylor St

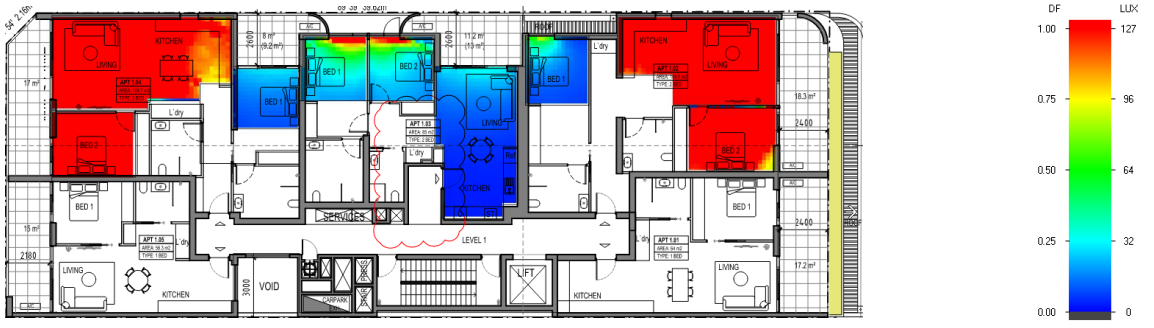

Figure 6 – Scenario C: Daylight map L1 of 17 Taylor Street, Moorabbin modelled with proposed development

Level 4

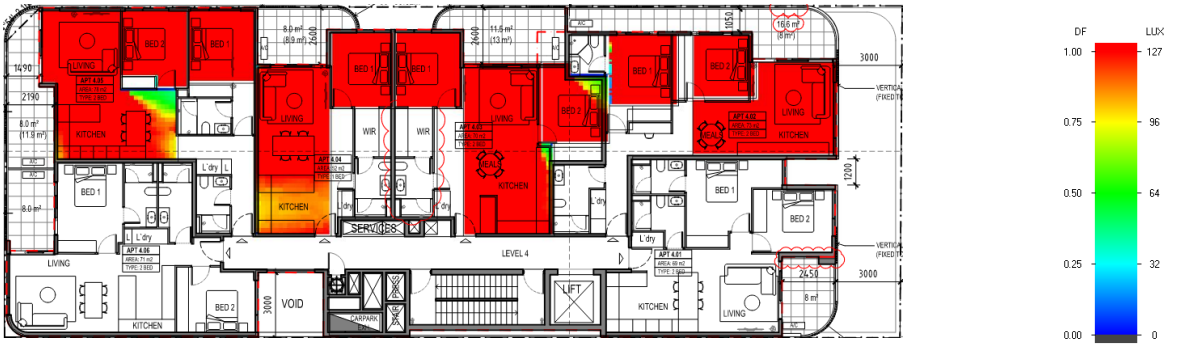

Figure 4 – Scenario A: Daylight map L4 of 17 Taylor Street, Moorabbin modelled with existing developments adjacent.

Figure 5 – Scenario B: Daylight map L4 of 17 Taylor Street, Moorabbin modelled with building of same height and setbacks as 17 Taylor St.

Figure 6 – Scenario C: Daylight map L4 of 17 Taylor Street, Moorabbin modelled with proposed development.

Level 9

Figure 4 – Scenario A: Daylight map L9 of 17 Taylor Street, Moorabbin modelled with the existing buildings adjacent.

Figure 5 – Scenario B: Daylight map L9 of 17 Taylor Street, Moorabbin modelled with building of same height and setbacks as 17 Taylor St.

Figure 6 – Scenario C: Daylight map L9 of 17 Taylor Street, Moorabbin modelled with proposed development.

Summary of Findings

Finding 1: The daylight assessment results of the existing development at 17 Taylor Street, Moorabbin suggests that the daylight access is reduced in Scenario B and Scenario C as compared to Scenario A. However, it is unrealistic to assume that no building will be built, or existing development will be maintained on the adjacent site at 360-372 South Rd as it is located in an activity zone close to a train station and has the same zoning as 17 Taylor Street, Moorabbin. Therefore, a comparison between Scenario A and Scenario B or C does not hold any value in determining adequacy of off-site daylight amenity.

Finding 2: It was found that results for daylight access to the existing development with equitable development (Scenario B) and proposed development (Scenario C) at 360-372 South Road, Moorabbin are comparable with marginal differences. Overall, it was found that the average floor area achieving a daylight factor of 1 in living areas is marginally higher under Scenario B (63%) than under Scenario C (59%). This difference can be attributed to the additional height of proposed building in Scenario C relative to that of Scenario B. The bedrooms achieve a higher average floor area above daylight factor 0.5 under Scenario C (65%) than under Scenario B (58%). The lower levels of 17 Taylor St, Moorabbin were found to have an improved result in Scenario C relative to that of Scenario B. This improvement is due to adequate setbacks provided for the tower levels of the proposed development, whereas 17 Taylor St, Moorabbin has not allowed for any setbacks in the design and has not taken due consideration of the future development of the adjacent site to its north.

Finding 3: It was also found that internal apartments 1.03, 4.03-4.04 and 9.02 were the most impacted apartments while corner apartments 1.02, 1.04, 4.02, 4.05, 9.01 and 9.03 have minimum impact on daylight access to living rooms and bedrooms in both Scenario B and Scenario C.

Finding 4: The proposed development will impact on the upper levels of the existing building at 17 Taylor (Apartment 9.02) due to the additional height of the proposed building. All other apartment types at upper levels remain largely unaffected.

Conclusion

We conclude that the proposed development at 360-372 South Rd, Moorabbin will have an equivalent or minimal impact to an equitable development building with respect to daylight amenity to the existing mixed-use development at 17 Taylor St, Moorabbin. It is therefore determined that the proposal meets the test in respect to off-site daylight amenity considerations.