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Dear Patrick

**291-295 Swan Street, Richmond: Internal Daylight Assessment**

As you are aware, Ark Resources has been engaged by Mangomero Pty Ltd to undertake an assessment of internal daylight levels within the hotel rooms in the proposed development at 291-295 Swan Street, Richmond, with the objective of providing advice to ensure that the rooms have adequate levels of daylight.

There is no guidance within the Yarra Planning Scheme in relation to a definition of 'adequate daylight' for hotel rooms which are of course, by definition, only transiently occupied and therefore in my opinion should not be required to attain the same standard as residential apartments. Nevertheless, for the purposes of benchmarking internal daylight levels with an accepted metric, I have utilised the benchmarks incorporated in the Built Environment Sustainability Scorecard (BESS) for residential apartments for residential developments as the basis for a quantitative analysis.

The BESS tool sets the following performance standards for daylight within apartments:

- at least 80% of dwellings achieve a daylight factor greater than 1% to 90% of the floor area of each living area, including kitchens.
- at least 80% of dwellings achieve a daylight factor greater than 0.5% to 90% of the floor area in all bedrooms.

In order to quantify the daylight levels within typical rooms, I have undertaken computer modelling of room 103 (which incorporates an internal bedroom) and 109 which is an open plan type room. The result of the modelling is summarised in the table below.

Room	Level	% Floor > DF of 0.5	% Floor > DF of 1.0
Room 103 Bedroom	First Floor	94.3	-
Room 103 Living/ Kitchen	First Floor	-	76.1
Room 109	First Floor	100	74.5

**Table 1: Daylight Factor Results**

The contour plots below show the gradation and distribution of daylight within each room.

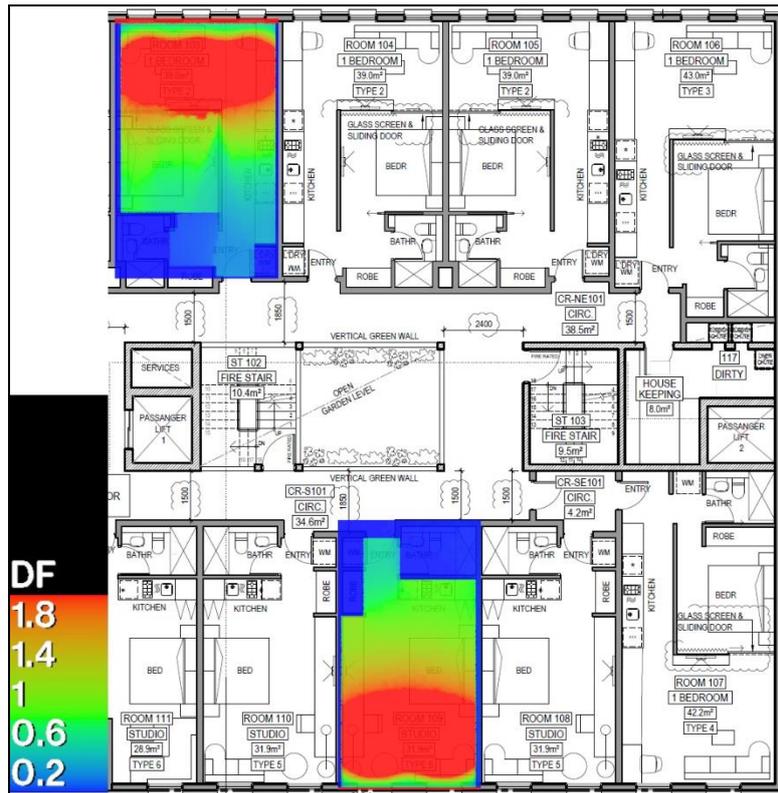


Figure 1: Level 01 Contour Plot

The threshold plots below indicate the area of each room which exceeds the relevant threshold illuminance (i.e. 0.5% daylight factor for bedrooms and 1% daylight factor for the living area).

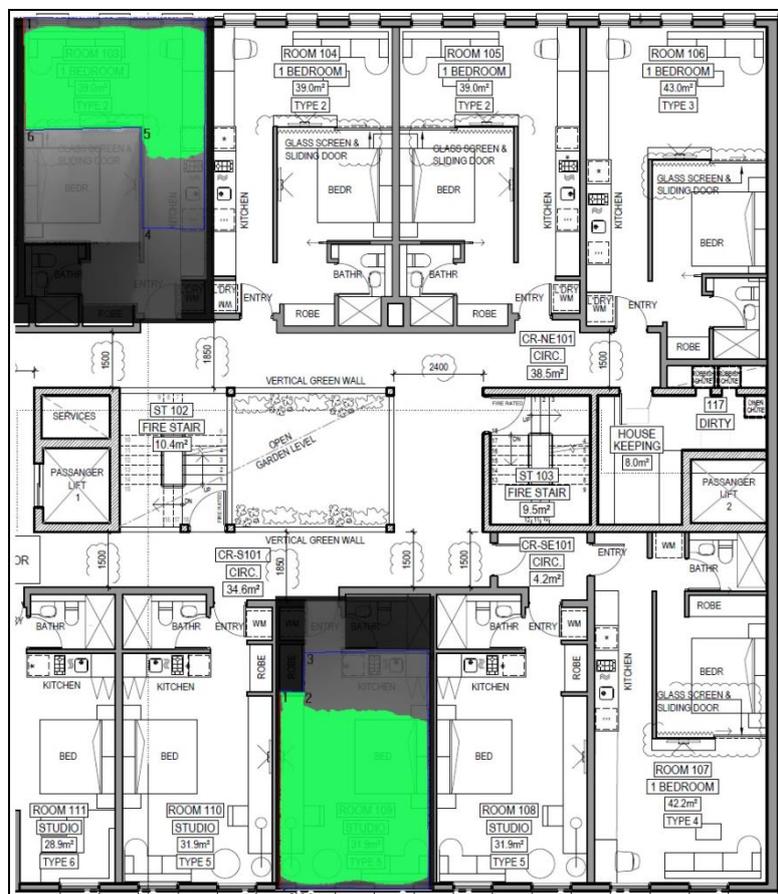


Figure 2: Level 01 Threshold Plot - Daylight Factor 1.0%



**Figure 3: Level 01 Threshold Plot - Daylight Factor 1.0%**

The daylight modelling indicates that both room types exceed the residential illuminance threshold for bedrooms over more than 90% of the floor area and approximately 75% of each room based on the threshold illuminance for living/kitchen zones. These results confirm that the bedrooms meet the City of Yarra's best practice standard for residential development for bedrooms whilst the living zones are only marginally below the residential standard. It should be noted that these results represent a 'worst case' outcome as the rooms modelled are on level 1 and internal illuminance levels will be higher on upper levels due which are less obstructed by adjacent buildings.

Given the transient occupancy of hotel accommodation, in my opinion the internal daylight levels achieved within both room types are adequate.

I trust this provides sufficient information in relation to internal daylight access within habitable rooms in the proposed development, however please don't hesitate to contact me if you require any further information.

Yours sincerely

Jan Talacko  
**Managing Director**