

# ADVERTISED PLAN

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23<sup>rd</sup> January 2025

Laura Dixon  
Urbis Ltd  
Level 10  
477 Collins Streets,  
Melbourne, VIC 3000

Dear Laura Dixon,

## **123 Marshall Street, Ivanhoe - Response to the ESD Formal Referral Response P1181/2024**

Post the Sustainability Management Plan (SMP) dated 11 November 2024, a request to provide further information pursuant to section 54(1) of the Planning and Environment Act 1987 from the Department of Transport and Planning was issued on 30<sup>th</sup> of December 2024.

This letter has been produced by the IGS ESD team to respond to the ESD Formal Referral Comments raised by the City of Banyule Development Planner.

### **❖ ESD/WSUD & Clause 53.18**

- The council's ESD Officer has reviewed the proposal and provided the following comments /recommendations:
  - BESS score of 56% is relatively low for a development of this scale and improved ESD outcomes should be targeted.

### **Design Team's Response**

The revised Sustainable Management Plan targets a BESS score of 62% in total which is an improved BESS target compared to the previous 56% achieved.

The following ESD initiatives are targeted in the updated SMP resulting the improved BESS score:

- Minimum 10kW-e solar PV provision to the building.
- 80% reduction in potable water consumption for fire safety systems testing. Air-cooled chillers are proposed to the building.
- Increased WELS rating requirements for the Water taps to 6-star reducing potable water consumption.
- Specialist Lighting design and controls focusing on overall occupant health and wellbeing and building energy efficiency as part of the Innovation credits.
- Sustainability Reporting strategies increasing the occupants' interaction with the ESD elements of the building as part of the Innovation credits.

Other notable initiatives implemented for a better ESD outcome are as follows:

- Eco-friendly gardening practices such as composting to reduce organic waste dispatched from the site.
- Improved site biodiversity and ecology promoting native and indigenous species.
- Dedicated food production area on Level 01 Urban Farming Terrace.
- Consider external shading opportunities to north, west and east facing windows

### **Design Team's Response**

The development has been provided with vertical shading to major glazing elements to minimize excessive solar heat gain. The provision of horizontal shading additional to current design will impact the daylight outcome currently achieved for the building.

The current IEQ score of 50% will be impacted by a reduced daylight outcome. Furthermore, the introduction of additional shading will result in a lower internal natural light availability thus increasing the dependence on artificial lighting for an extended period of time. This will consequently result in increased annual energy consumption for lighting.

The energy efficient HVAC design with zonal temperature control will provide occupants with satisfactory thermal comfort in the regularly occupied areas.

- Hot water should be centralised heat pump hot water system for maximised energy efficiency, with insulated pipes throughout the building.

### **Design Team's Response**

The current Hydraulics Engineering design and documentation captures the requirements for a centralized heat pump type Hot water system with distribution pipes provided with lagging throughout the building to minimize energy loss in reticulation cycle. The energy performance of the system will be within one star of the best available rating or meet at least 85% of the efficiency of the most efficient equivalent capacity unit in line with BESS requirements.

The specified hot water system will be a centralised heat pump type DHW unit with a minimum COP of 3.5. The hot water piping will be provided with lagging throughout the building to minimize the energy loss.

- Solar photovoltaics to the roof should be included in the design.

### **Design Team's Response**

A minimum 10kW-e solar PV system is proposed to the development as renewable energy sources. The level 01 pergola will consist of a 4kW-e Solar PV system with the remaining solar panels being located on the Swimming Pool building roof totaling to at least 10kW-e solar PV provisions. The school is committed to providing 84kW-e of solar PV on the adjacent swimming pool building roof space. These solar panels will directly feed into the proposed Enterprise Centre.

- A draft Building Users Guide should be provided for review, as claimed in the BESS Report, Management credit 4.1.

### **Design Team's Response**

A Building Users Guide will be provided as part of the project handover documentation. This item to form part of the permit conditions.

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- Overall, as Ivanhoe Girls' Grammar School is both the owner and operator of this large-scale education building, the project has the opportunity to have a design which provides low operating costs (heating, cooling, ventilation) and high comfort (fresh air, daylight, stable indoor temperatures) such as the Passivhaus standard can provide. It is recommended that this standard is explored for the project, and initiatives such as thermal bridge free design, airtight building envelope and heat recovery ventilation with 100% fresh air is considered to uplift the project.

### Design Team's Response

Although the Passivhaus standards have not been explored for the project, the following design elements will result in low operating costs and Indoor environment comfort.

- HVAC design exceeding the minimum energy efficiency requirements stipulated by NCC 2022 Section J6.
  - Zonal temperature control (perimeter and center zones) to ensure uniform internal temperatures for occupant thermal comfort. The proposed building, a thermal comfort level of Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building.
  - The FCUs and AHUs serving the regularly occupied spaces will provide 60% additional outdoor fresh air to rates specified in AS1668:2:2012. The indoor CO2 levels will be monitored and maintained at or below 700ppm ensure improved indoor air quality.
  - Insulation R-values (Low U-value) equivalent or better than NCC Section J is targeted to the building thermal envelope in conjunction with double glazed windows to prevent heat loss during winter and improve occupants' thermal comfort. The required total R-Value will include allowance for thermal bridging in accordance with AS/NZS 4859.2 or Specification 38 of NCC2022 Section J.
  - Building sealing provisions as stipulated in NCC2022 Section J5 at minimum.
- Conditions should be used to improve ESD outcomes and/or require additional ESD information as the Department sees fit. Refer to draft conditions, for example wording and Council's standard ESD conditions.

### Design Team's Response

The council's referral comments have been reviewed and addressed in the revised SMP to improve the overall ESD outcome and increase the BESS score. The team has reviewed and noted the draft conditions, provided for example wording and appreciation towards the council's standard ESD conditions.

Yours sincerely,



Earnest Joseph  
Sustainability Engineer/VT Consultant  
Integrated Group Services

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