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ESD Response: 56-74 Station Street, Nunawading

Proposed Stage 1 development plan at 56-74 Station Street, Nunawading
Prepared for: Nash Management
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Project Summary

The proposed development at 56-74 Station Street will meet the Environmentally Sustainable Design (ESD) requirements of the City of Whitehorse Development Plan Overlay Schedule 7 (DPO7) by committing to the measures identified in this report.

This report outlines measures that will meet and often exceed mandatory ESD requirements for this type of residential development. Specifically, this report addresses the following stated requirements of DPO7:

- The Development Plan must show or provide for (inter alia) any design and development techniques that incorporate environmentally sustainable design (ESD) principles.

Mandatory guidelines are mainly those from the National Construction Code (NCC) / Building Code of Australia (BCA) and Council planning schemes and are required prior to a building permit being granted. These requirements include:

- Minimum 6 star average energy efficiency ratings for dwellings (NCC/BCA - NatHERS assessments) – this development aims to achieve a 6.7 star average energy efficiency rating.
- Maximum lighting densities and performance efficiency limits for mechanical heating, cooling and ventilation (NCC - Volume Two part 3.12).
- Council planning scheme provisions (clause 22.10), including the Built Environment Sustainability Scorecard (BESS) and Water Sensitive Urban Design (WSUD) assessment.

In addition, initiatives identified in the following other non-mandatory guidelines will be included:

- Green Star tools
- Good design principles (identified in other publications such as YourHome)

It is considered that the detailed requirements associated with ESD performance can be suitably addressed at the relevant planning permit stage once the final configuration of the proposed dwellings is known. Final ESD measures are subject to Council approval as part of any future planning permit application(s).

Initiative Summary

Energy efficiency

- **Energy rating** - current mandatory star energy efficiency requirements for class 1a dwellings in Victoria will be exceeded by ensuring a 6.7 star average across all dwellings i.e. will ensure >10% improvement on the BCA minimum energy efficiency requirements.

Preliminary energy ratings will be undertaken at the town planning stage of this project when detailed specification and design occurs. Accredited verification energy ratings will be undertaken to confirm energy rating target at the relevant building permit stage.

- **Hot water supply** – will be from efficient solar pre-heat hot water systems where rainwater tanks of minimum 2,000L capacity are not provided (per BCA requirements for class 1a dwellings). Where solar pre-heat hot water systems are not incorporated, hot water will be supplied by efficient gas instantaneous units of minimum 6 star energy efficiency.
- **Heating and cooling** - will be efficient inverter reverse cycle air-conditioners of minimum 5 star efficiency, or within 1 star of the best readily available units for the required capacity. Units will be specified during the detailed design stage.
- **Natural ventilation** – all dwelling habitable room windows will include an openable component, subject to acoustic engineer's recommendations, to reduce the need for mechanical ventilation use. The openable component will be shown on the plans.
- **Lighting** density will be reduced to 20% below BCA allowances.
- **Street lighting** – current council standard high efficiency lights will be used instead of halogen type to all paths, roads and driveways, providing significant reductions in energy consumption. Final specification will be undertaken during the detailed design stage, and will be subject to electrical engineer's input as well as council engineering input.
- **Windows** will be aluminium double glazed as necessary to meet energy efficiency ratings/performance.
- **Skylights** – skylights will be included above upper floor bathrooms without windows to reduce daytime reliance on electric lighting in these spaces.

Water conservation

- **Water efficient fixtures, fittings and appliances** will be selected:
 - 3 star shower (6.0-7.5L/min);
 - 4 star toilets (3.0/4.5L flushing);
 - 5 star basin, kitchen sink, and laundry (4.5-6.0L/min); and
 - Minimum 4 star water efficiency dishwashers (where installed).
- **Rainwater collection and use** – a 2,000L rainwater tank will be included for each dwelling of type A1 and A2, whilst a 1,000L rainwater tank will be included for each dwelling of type C1, C2, C3, D1, D2, E1, and E2. Rainwater tanks will be connected to:
 - All toilets for flushing;
 - Irrigation (per below); and
 - General wash down.
- **Water efficient irrigation systems** – will be incorporated in the development, connected to individual dwelling water tanks.

Stormwater Management

- **Best Practice Stormwater treatment** – will be achieved through a combination of WSUD principles.
 - Rainwater tanks will be provided to all dwellings of type A, C, D and E. 2,000L rainwater tanks will be provided to dwellings of type A, while 1,000L rainwater tanks will be provided to dwellings of type C, D and E.
 - Refer to stormwater management plan as prepared by Reeds Consulting for further detail of WSUD measures.

Materials selection

- **Sustainable building materials** will be selected:

Greener asphalt mixes such as foam mix or warm mix asphalt will be incorporated delivering an environmental improvement on the standard hot-mix with potential for significant cost savings. The City of Whitehorse commonly specifies greener asphalt mixes for their road projects.

Environmental improvements include:

- Increased recycling opportunities
- Greater cost efficiency
- Low emission, energy saving technology
- Consistent product
- Quality controlled manufacturing
- Significant health and safety benefits

- **No unsustainable rainforest timbers** will be incorporated, ie no Oregon, Western Red Cedar, Meranti, Merbau, Teak or Luan.
- **All framing timber will be from accredited plantations** – either FSC or PEFC/AFS.

Indoor environment quality

- **Daylight** – appropriate levels of daylight will be facilitated by well sized windows, made possible by a commitment to clear glazing. Glazing levels will exceed the BCA minimum 10% room allowance in all rooms.
- **Low VOC products** – paints, adhesives, floor coatings and floor coverings are required to be low VOC types or water based. Contractors are required to provide evidence of these.

Waste Management

- **Construction waste** – during construction, a minimum of 70% of materials will be recycled.
- **Waste Management Plan** – a separate operational waste management plan will be produced for this development in accordance with the City of Whitehorse's waste management policy.

Transport

- **Bicycle parking** – bicycle rails will be installed in the public open spaces throughout the site for visitors. Resident and visitor bicycles will be able to be stored in the garages of each dwelling. Final locations for bicycle parking are to be shown on town planning drawings.

Urban ecology

- **Erosion control** – silt fences, erosion control blankets, and drain filters will be utilized during construction to ensure top soil/earth is not eroded to drains and creeks.
- **Gain in vegetation and ecological variety** – there will be a significant net gain overall in terms of plant numbers and ecological variety on the site.
- **Low maintenance planting** – new plantings will be predominantly low water consuming and low maintenance type.

Additional Details

Town planning drawings are to show the following sustainable design measures drawn and noted:

- *Show which outdoor areas are to be:*
 - *Permeable or impermeable*
 - *Covered versus uncovered*
- *Show north arrow indicating the direction of solar north in the plans of the dwelling types.*
- *All operable windows, doors & vents in plans or elevation drawings.*
- *Clotheslines*
- *Photovoltaic (PV) systems (where applicable)*
- *Hot water systems*
- *Rainwater tank (RWT) locations and capacities*
- *Rainwater end uses (i.e. toilet flushing, number of toilets serviced, irrigation, etc.)*
- *Roof area connected to the RWT (i.e. outlined or hatched)*
- *Location of all bicycle parking (for residents and visitors)*
- *Ensure that the development is easily accessible by people with prams, bikes and wheelchairs.*
This applies to all circulation areas, lifts and common areas.

Overall, it is considered that the detailed requirements associated with ESD performance can be suitably addressed at the relevant town planning stage once final configuration of the proposed dwellings is known. Final ESD measures are subject to Council approval as part of any future planning permit application(s).

As City of Whitehorse is a BESS member council, it is expected the development will address the ESD metrics associated with a BESS assessment at the town planning stage. This includes potable water, energy, and indoor environment quality.

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