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ESD Statement

The following statement summarises the ESD principles to be incorporated into the design, construction and ongoing operation of Stage 1 of the PLC Masterplan Phase 2, the Aquatic and Fitness Centre. The ESD initiatives proposed demonstrate Pymble Ladie's College's continued commitment to environmental awareness, sustainability, recycling and carbon emissions.

The new Aquatic and Fitness Centre has been designed using the four main principles of ecologically sustainable development as a guide for determining siting, size, orientation, form, fabric, servicing and operation. These are addressed under the following principles listed below.

Precautionary Principle.

The siting of the new indoor pool facility in the same location as the existing outdoor pool was a decision made by the College to avoid damage to any existing natural habitat. From an operational and economic point of view it would have been advantageous for the College to propose a new structure on a vacant area of site in order to retain operation of the existing pool during construction of the new pool facility.

The School has also postponed the design and construction of the new pool facility until they were confident that the existing pool was near the end of its useful life, avoiding unnecessary wastage.

The siting of the building directly over the existing pool limits impact on the surrounding landscape. The building footprint is kept to a minimum by locating the fitness studio on an upper level mezzanine overlooking the main pool.

Intergenerational Equity.

A major consideration in the design of the new pool facility was to maintain or enhance the health, diversity and productivity of the environment for the benefit of future generations. Measures proposed to achieve this and minimise any impact on environment include

- Positioning the new Aquatic Centre in same location as existing outdoor pool, restricting impact on the surrounding environment to minor and repairable effects during the construction phase.
- Gas fired boilers as a carbon friendly means of heating the water for the pools and air handling units.
- Wherever possible, locally sourcing materials for construction.
- Use of low emission materials such as low VOC coatings, flooring coverings and the like.
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Conservation of Biological diversity and ecological integrity.

The conservation of biological diversity and ecological integrity has influenced the design in regard to the building's fabric, orientation and services to ensure that the operation of the facility minimises consumption of water, energy and resources.

a) Measures proposed to minimise consumption of water include

- An integrated water management plan to harvest and reuse rainwater for hose taps, irrigation and other uses.

- Inclusion of WELS rated tapware throughout.
- Pool covers over both pools to minimise evaporation.
- Limiting air supply velocity to reduce pool evaporation loss.

b) Measures proposed to minimise consumption of energy and resources include

- Design of Aquatic Centre as fully sealed box with a mixed mode AC design that has the flexibility to operate in mechanical and natural ventilation mode.
- Limiting air supply velocity to reduce energy use and running costs and improve user comfort.
- Inclusion of improved building insulation to walls, roof and under slab above minimum Section J requirements. With only 13% of heat loss through walls and roof the focus will be on increasing insulation between slab and ground.
- Gas fired boilers designed in a modular approach to fire up and down according to heating demand.
- Full height glazing to naturally light and passively heat the space in winter, reducing need for artificial lighting year round and energy required to heat the space in winter.
- Areas of translucent roof sheeting over pool area to provide diffused natural light deep within the building, reducing need for artificial lighting, particularly over inaccessible areas of ceiling.
- Inclusion of high performance glazing systems to limit solar gain in summer but still allow daylight.
- Heat exchange units to gain efficiencies from varied heating and cooling loads of different building elements.
- Inclusion of generous roof overhangs and vertical sunshading as integral parts of the architectural statement strategically placed to limit solar access and gain in summer.
- Inclusion of masonry wall elements within the facade to provide increased thermal mass for storing heat.
- Inclusion of an insulated concrete slab providing thermal mass for storing and retaining heat.

Improved Valuation, Pricing and Incentive Mechanisms.

The College's valuation of its assets and services has been a major driver for proposals to replace the existing pool, with its outdated, inefficient and high energy consuming plant, with a new facility specifically designed to incorporate the latest ecologically sustainable measures for construction, operation, servicing and disposal.

The measures outlined in this summary for the Aquatic Centre will be integrated into the College's campus wide masterplan for reduction in energy, which includes initiatives in operational efficiency, behavioural change and education and on site generation. One of the most recent of these is the College's installation of 60kW PV system as part of a progressive campus wide sustainability masterplan.

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