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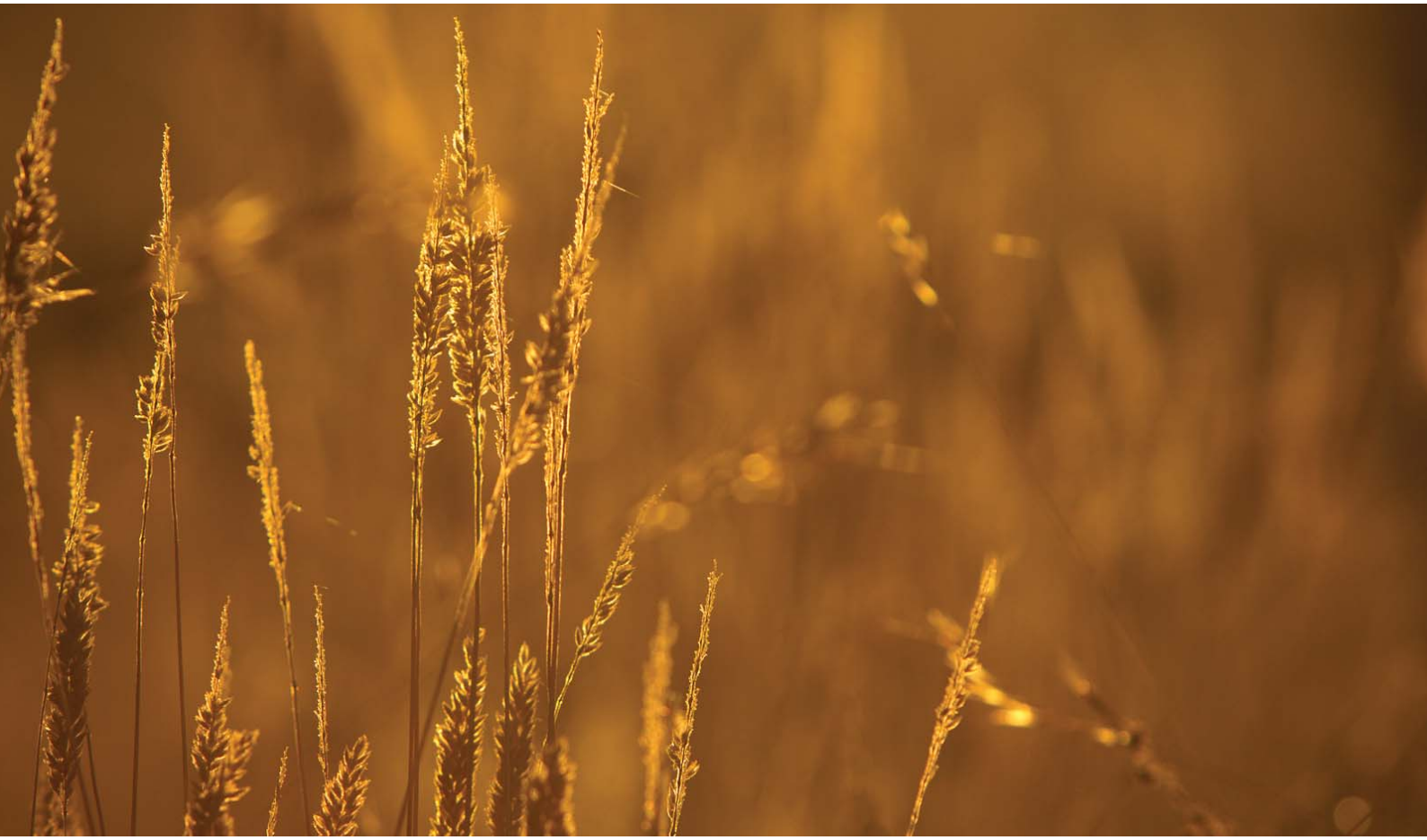

Environmentally Sustainable Design Report

Department Of Planning - Part 3a
Concept Plan Application For Achieve Australia Development

74 Belmore Street Ryde
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INTRODUCTION

Australia's National Strategy for Ecological Sustainable Development defines ESD as "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased." The strategy establishes core objectives and guiding principles which are general in nature and description. Reviewing these together with other agency's descriptions the concepts have been interpreted to establish the initiatives itemized below.

The elements of design, construction and ongoing operation have been considered and jointly incorporated into this document.

This project will be targeted to achieve a benchmark equal to and based on a 4 Star Green Star rating. This Concept plan commits to the following principles for the development.

1) INNOVATION

Objective:

- To amalgamate and integrate elements, designs and ideas from current technologies and the site environment into the development.

Initiatives:

- Assessment, interpretation and consideration of the site's unique environment.
- Research, selection of outcomes and implementation of design solutions to uniquely integrate current environmental objectives and ESD technologies into the design.

Implementation:

- Collection, assessment and interpretation of unique site data on landform shapes, foundation condition, flora and fauna assessment, building data,

natural environmental conditions sufficient to allow unique site planning solutions.

- Detail collection, sorting, selection and integration of building design information.

2) MANAGEMENT

Objective:

- Implement management plans and strategies to efficiently use, conserve and enhance the community's resources.

Initiatives:

- Establish ESD design statements for the site and built form development.
- Integrate ESD design objectives into the construction documents.
- Define construction ESD objectives, monitor and control outcomes.
- Develop briefing strategies for buildings and the site development for future occupants to ensure design ideas and objectives are maintained.

Implementation:

- Develop a site Environmental Management plan for the site.
- Brief all designers and obtain return briefs of ESD initiatives.
- Develop construction monitoring systems to ensure initiatives are achieved.
- Develop a Building Users Guide for future residents.

3) EMISSIONS

Objective:

- To select materials, methods of manufacturing and construction and encourage living practices which minimise the emission of toxic and caustic odours and gases.

Initiatives:

- To establish a protocol for evaluating and rating materials and methods of manufacturing and construction. Use the protocol to select the products and methods that are to be used in the development.

- To assess fit out elements in the buildings and procurement of fit out elements.
- To develop a guide document for residents on the emissions philosophy of the development including advisory data on living in the buildings

Implementation:

- Select only materials which achieve ratings and performance near or below the objectives.
- Issue the resident guide document.

4) ECOSYSTEMS

Objective:

- Development which creates a new healthy ecosystem consisting of the site and all its biological residents including humans, the buildings and all the built attachments and the flora and fauna.

Initiatives:

- Conduct a site analysis to determine key features including flora and fauna habitats, landforms, foundation (soil) condition, water runoff and hydrological issues.
- Purpose design and construct the new buildings to environmentally consider and enhance the existing ecosystem.
- Purpose design and construct the new buildings to create environments highly compatible with natural environments and obtain outcomes that will provide minimal interference.

Implementation:

- Retention of all significant and large landscape planting on the site.
- Retention and enhancement of existing Memorial gardens.
- Use of existing large trees and plant new species to provide extensive summer shading and reduce carbon footprint.
- Maximise landscape footprint.
- Maximize use of water efficient species.

- Removal of ground contamination.
- Removal of existing unhealthy buildings clad and lined in asbestos cement.
- Use selected native plant species to attract native fauna.

5) COMMUNITY

Objective:

- Encourage a development that establishes, develops and maintains a community with interaction and caring for each other.

Initiatives:

- Encourage community meetings.
- Design spaces for entry, gathering, social, passive and physical community activities as well as spaces that allow containment from community functions.
- Design buildings that encourage controlled community interaction.

Implementation:

- Prepare a community plan
- Provide a community functions building inclusive of meeting rooms, physical exercise rooms, change and toilet amenities.
- Maximise access of residents to the public on-site landscape amenity, gardens and facilities.
- Locate the buildings and access corridors to encourage ease of use of community mass transport.
- Design private external space for controlled private use.
- Provide on-site car parking determined from a whole of life real needs basis.
- Provide access to off-site cyclist facilities and include storage for individual bicycles.
- Design 10% of dwellings for adaptable living.
- Design all dwellings for disabled access.

6) WATER

Objective:

- To optimise the use of town water.

Initiatives:

- Reduce the use of town water.
- Supplement town water supply with onsite storage.
- Manage stormwater leaving the site in terms of quantity and quality

Implementation:

- Rainwater harvesting from top roofs for each building for landscape irrigation, car washing, terrace balcony and building maintenance and washing.
- High efficiency sanitary ware and tap-ware.
- Reduce the quantity of stormwater run-off.
- Reduce and remove watercourse pollutant with construction of wetlands and bio-retention systems into the landscape designed to filter and treat overland water run-off and filter pollutants prior to on site collection reuse and or disposal.

7) ENERGY

Objective:

- To reduce the use-age of external source energy.

Initiatives:

- Maximise the use of high efficiency electrical design.
- Include alternate on site power sources.
- Passive solar design.
- Reduce the need for mechanical ventilation and air conditioning.

Implementation:

- Design building envelopes that maximize full cross ventilation where possible and reduce the need for the use of energy consuming appliances.
- Maximise resident access to the on-site landscape amenity.

- Provide roof mounted clothes lines for natural air drying of washing.
- Design to encourage and facilitate daylight as the preferred option over artificial light.
- Design window opening protection to minimize radiant sky heat gain during summer.
- Design building envelopes to provide maximum insulation to the external environment temperature differences.
- Design building room volumes to implement thermal heating time lag principles.
- Design and detail window openings with overhangs to protect all openings from rain penetration to facilitate natural ventilation that can be used in all weather conditions.
- Fit high efficiency fluorescent or LED light fittings to all areas.
- Separate switch lighting to target smaller areas.
- Solar sensing switching to all external lighting.
- Solar heated hot water with central tank reticulation and natural gas boost for apartments in all buildings.
- Roof mounted photo cell solar energy panel power source with electric supplement to operate all common property areas.
- Lighting to unoccupied common property areas inside buildings all to be on movement sensor switching.
- Fit reversible cycle ceiling fans to all apartments.
- Fit dimmable lights where possible.
- Natural gas outlets to all accommodation for heating and to terrace areas.
- High efficiency natural gas cooking appliances throughout.
- Fit four star rated electrical appliances.
- Roof solar heating for the swimming pool.

8) MATERIALS

Objective:

- To select materials to reduce carbon footprint and green-house gas emissions.
- . To ensure long life and ease of maintenance for the development.

Initiatives:

- Establish high indoor air quality through selection of materials.
- Design to minimise construction waste.
- Design, select and use materials with low embodied energy and minimal carbon footprint.

Implementation:

- Hazardous Materials. Do not select and use hazardous materials.
- Buildings to be demolished to selectively dispose of nonhazardous materials to be used for recycling.
- Minimise the use of PVC
- Select materials that are Sustainable Material.
- Design and detail materials for reuse.
- Minimize use of manufacturing based pollutant generating materials.
- Select materials with low as possible CO2 emissions footprint.
- No use of materials endangering threatened eco-systems.
- Restrained use of natural resource non renewable raw material use.
- Select and use low emission VOC and formaldehyde materials.
- Preferred use of natural plantation wood product materials (increasing CO2 absorption rates) for all fit out including floor, wall and ceiling finishes.
- Preferred use of low embodied energy materials.
- Integrate building maintenance systems into the building design.
- Select durable materials that are easily cleaned.
- Select low maintenance landscape species and provide automatic irrigation systems.

9) WASTE

Objective:

- To encourage a development that reduces waste and has efficient use of materials.

Initiatives:

- Evaluate existing lands and site infrastructure for potential reuse and waste minimisation.
- Design solutions that do not include waste encouraging activities.
- Design solutions that allow resident selection to minimise waste.
- Design solutions that select construction methods and procedures that minimises waste.
- Design inclusions that encourage waste minimisation by future residents.

Implementation:

- Conservation and refurbishment of the existing heritage building “Tellaraga”
- Retain significant and large landscape planting on the site.
- Promote the recycling of vegetative organic waste with the design and construction of on-site mulch recycling bins and bays for resident use.
- Implement and target efficient space planning to minimize the built footprint on the site and reduce building material usage.
- Prepare waste management plans for future construction certificates.
- Composting facilities for the use of future residents.