

SUBJECT: Sustainability Issues – Submission prepared by the Ingleside Precinct Sustainability Group

Meeting: Ingleside Community Reference Group

Date: 4 March 2015

STRATEGY: Land Use & Development

ACTION: Progress the Ingleside Precinct Planning Process with the State Government

PURPOSE OF REPORT

- To inform the Ingleside Community Reference Group (ICRG) of a submission received from the Ingleside Precinct Sustainability Group (recently formed group).
 - Provide opportunity for discussion at the ICRG level about the matters raised in the submission.
 - Provide content responding to the matters in the submission.
 - A verbal presentation will also be made to the ICRG meeting.
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1.0 Background

- 1.1 At the Ingleside Community Reference Group (ICRG) meeting of 18 November 2014 a Draft Structure Plan for Ingleside was presented. Also at this meeting, consultants presented their findings to date. The members of this group were encouraged to attend the community workshops to be held in late November/early December 2014.
- 1.2 Community consultation workshops were then held seeking the community's feedback on the Draft Structure Plan. At these workshops a presentation of the outcomes from the last round of community workshops (held in March 2014) was provided.
- 1.3 On 19 December 2014, Council received a submission from the Ingleside Precinct Sustainability Group questioning the approach to sustainability being adopted in the planning and development of the Ingleside release. A copy of the submission is in **Attachment 1**.
- 1.4 The majority of the members of the Ingleside Precinct Sustainability Group are already members of the ICRG.
- 1.5 The response to the issues raised in the submission will be presented at the Ingleside Community Reference Group meeting. This will ensure an open and transparent process and provide an opportunity for engagement with this representative group. General opportunities and constraints associated with sustainability will also be discussed.

2.0 Issues

- 2.1 The following report seeks to respond to the issues as they appear in the submission:
 - Preamble – General approach to sustainability,
 - Sustainable Development Standards,
 - Financial Viability,
 - 'Similar developments' – Response to the examples provided.

3.0 Preamble - General approach to sustainability

- 3.1 'Sustainability' and key pillars of sustainability

- 3.1.1 The project partners (the Department of Planning and Environment (DPE), UrbanGrowth NSW and Pittwater Council) are committed to developing a sustainable community in Ingleside.
- 3.1.2 Sustainability and sustainable development comprise of four pillars that must be equally addressed:
- environmental,
 - economic,
 - social, and
 - governance.
- 3.1.3 The precinct planning process is a planning investigation that deals with these factors, all of which need to be considered in conjunction with the rest. All consultants that have been engaged will conduct expert investigations into all facets of sustainability and how the Ingleside precinct can become a sustainable community.
- 3.1.4 To create a sustainable community an orderly planning process needs to be conducted. This is to be in accordance with the objectives of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Additionally other legislative requirements must be considered and play a part in the sustainability of the land release such as the *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (PBC Act). The objectives of these Acts include the four pillars of sustainable development. Accordingly from this high level perspective, the principles of sustainability are embedded in the precinct planning process for Ingleside.
- 3.1.5 Assurance is provided that the absence of the term 'sustainability' and 'sustainable development' in some communication does not mean these principles are not at the forefront of precinct planning for Ingleside.

3.2 'Best Practice' standards in sustainability

- 3.2.1 The planning and development of a sustainable land release must ensure that the objectives can be 'implemented on the ground'.
- 3.2.2 There are clear challenges for the development of Ingleside, including implementing a sustainable land release that is viable. These challenges include:
- Land and ownership fragmentation. The Ingleside precinct has a myriad of owners/developers. Accordingly it is difficult to find common interests and goals. This differs from other Greenfield developments where a single developer who has 'sustainable' credentials would enable greater sustainable outcomes.
 - Land capability, topography and the surrounding environment. This will impact on the provision and feasibility of infrastructure.
 - Financial feasibility of development. If the development equation is not financially feasible, development can be stalled.
 - Limitations on the requirements Council can apply on developers that go above existing legislation such as BASIX.
- 3.2.3 Nonetheless, the project partners with the consultant team will continue to investigate best practice outcomes that could be incorporated into the planning and development of the release area such as:
- Biodiversity Certification (presentation on this process given at the ICRG of 8 October 2014);
 - Sustainability rating tools that deal with the whole land release precinct rather than the individual buildings i.e. GreenStar Communities (presentation by Green Building Council Australia at the ICRG meeting of 8 October 2014);

- Water Sensitive Urban Design/ water cycle strategies, including multifunctional creekline corridors;
- Active Transport Strategies;
- Green infrastructure such as community gardens. This infrastructure must be considered against land capability and lifecycle cost/financial impacts. Where some green infrastructure is provided through alternate servicing provisions outside of the normal arrangements, commercial arrangements between the developer and the alternate service provider may be required.
- Social strategies including key worker housing, NBN, and comprehensive community engagement strategies;

3.2.4 The vision for a sustainable community in Ingleside has been at the forefront of discussions and presentations to the community. This was demonstrated in previous ICRG meetings and workshop activities identifying sustainable features that the community wished to see contained within the development of Ingleside. It is considered by the project partners that it is critical for the community to provide their feedback on this issue so the sustainable outcomes of the precinct are collectively defined.

3.2.5 The project partners are dedicated to continued engagement with the Ingleside Community Reference Group and the wider community on the creation of a sustainable community.

3.2.6 Further sustainability initiatives, such as sustainability advisory services and community group management, will be investigated and implemented once the development starts and a community forms.

3.3 “Living Building Challenge – Communities Tool”

3.3.1 The Living Building Challenge is a building certification program that measures the sustainability of the built environment. It comprises of seven performance categories including Place, Water, Energy, Health and Happiness, Materials and Equity and Beauty. Under each of these categories there are “imperatives” that a project must achieve.

3.3.2 Currently projects being certified under the Living Building Challenge scheme are limited to being located in the United States of America and Canada.

3.3.3 This rating system is very similar to GreenStar Communities, with clear synergies between the requirements of each. Given that the Living Building Challenge is not currently certifying projects in Australia and the requirements are not as comprehensive as GreenStar Communities, a rating under the Living Building Scheme will not be pursued for Ingleside. GreenStar Communities is an internationally recognised system that currently certifies projects in Australia and rates all facets of sustainability in detail. Given this, investigations into the use of the GreenStar Communities tool for Ingleside will continue.

4.0 Sustainable Development Standards

4.1. Response to minimum criteria listed in submission

4.1.1 The option of localised sewerage treatment within Ingleside is being explored. The Water Cycle Management and Infrastructure Delivery studies are investigating the opportunities and constraints for water reuse options.

4.1.2 The reuse of greywater on the site through small waste water gardens requires further investigation. This use may be limited by land capability such as soil depth and profile. However other opportunities for the recycling of greywater are being explored.

- 4.1.3 Mains water demand is required to be reduced by 40% under BASIX. Rainwater harvesting is one option that can be used to achieve this target under BASIX. BASIX, as a State Environmental Planning Policy is the legislative requirement. Requiring higher standards to be achieved relating to water, thermal comfort and energy above BASIX is encouraged however, cannot be enforced if the proposal meets the requirements of BASIX.
- 4.1.4 The Water Cycle Management Study, in assessing water balance, will consider the downstream flow impacts on Warriewood Valley, Elanora Heights, Warriewood Wetlands, Narrabeen Lagoon, as well as the environmental flows in Mullet and McCarrs Creeks. A total Water Cycle Management Strategy is being developed for implementation to ensure no additional flow impacts arise from development in Ingleside.
- 4.1.5 The use of solar powered street lighting is being investigated. Part of the investigations will include consultation with the energy provider. However initial investigations have revealed concerns in regards to maintenance costs and life cycle impacts of batteries, as well as capacity of the solar powered lights to meet lighting codes. Notwithstanding this, further investigations will continue, including the opportunity to implement solar panels to offset the energy consumed by street lights.
- 4.1.6 The use of hot water systems powered by solar or photovoltaic systems will be encouraged but cannot be mandated due to the requirements of BASIX having precedence over local controls and policies.
- 4.1.7 Community gardens and related community programs will be included in the Ingleside development.
- 4.1.8 The Traffic and Transport consultants are considering all modes of transport, including public transport, walking and cycling.

4.2 Environmental Controls

- 4.2.1 The project team agrees possible impacts on flora and fauna is a critical consideration for any land release within Ingleside.
- 4.2.2 A detailed flora and fauna assessment is being prepared, with the view that the project will achieve Biodiversity Certification, administered by the NSW Department of Environment and Heritage.
- 4.2.3 The development is also subject to approval under the federal *Environmental Protection and Biodiversity Conservation Act 1999*.

4.3 Transport

- 4.3.1 Traffic and transport are critical issues for the development of a sustainable community in Ingleside. The study not only investigates the potential impacts from development but it is also required to provide solutions and mitigation measures to negate impacts.
- 4.3.2 An active transport strategy is being prepared for Ingleside in consultation with Transport NSW and Macquarie Connect. It will incorporate walking tracks and cycle paths with connections to the current Pittwater Walks and Rides masterplan and bush track networks and public transport.

5.0 Financial Viability

- 5.1 The feasibility of a project is critical to delivery and infrastructure. Service providers (private and public sectors) including utility agencies, Council and the NSW State Government e.g. RMS, Department of Education, all have financial responsibilities in the process and require the project to be feasible.
- 5.2 The project partners have engaged SGS Economics to undertake a financial feasibility assessment of the project incorporating the costings associated with delivering serviceable land to the market. Until such time as the costings are defined, the feasibility question remains.
- 5.3 The sector development approach is unlikely to be pursued in Ingleside as the land is potentially being rezoned in stages (not sectors). The sector approach has resulted in 'ad-hoc' delivery of infrastructure and stalling of development in parts of Warriewood Valley.
- 5.4 As it is a free market economy, it cannot be required that 'suitable developers' may be the only developers in Ingleside.
- 5.5 Financial viability is also a key criterion towards achieving a sustainable land release development.

6.0 'Similar Developments' – Response to the Examples Provided

- 6.1 The submission provided four examples of sustainable communities that have been achieved in a 'whole of precinct' development, namely:
 - Currumbin Ecovillage (Gold Coast City Council, QLD)
 - Narara Ecovillage (Gosford Council, NSW)
 - Mullum Creek (City of Manningham, VIC)
 - Googong (Queanbeyan City Council, NSW)
- 6.2 Currumbin Ecovillage
 - 6.2.1 This development comprises of 147 blocks on 110 hectares.
 - 6.2.2 As the development is in Queensland BASIX legislation is not applicable.
 - 6.2.3 The whole of the precinct was originally owned and developed by Landmatters Pty Ltd, who subdivided their property into individual lots, creating a community title. Given the single developer, a strong sustainability vision could be incorporated into the provision of infrastructure. The village has their own rigorous landscaping and architectural code which new owners and builders of the individual lots are required to achieve. This enabled the entire community to be developed to high sustainable development standards.
- 6.3 Narara Ecovillage
 - 6.3.1 This site comprises of 64 hectares, of which approximately 12 hectares is zoned for residential development.
 - 6.3.2 The land was purchased by a cooperative, Narara Ecovillage, with the vision of developing a sustainable community. The stage one development application with two clusters of dwellings was recently approved in August 2014. Construction has not yet commenced. It is anticipated the cooperative will implement high sustainability standards to which individual lots will need to adhere to.
- 6.4 Mullum Creek
 - 6.4.1 This development comprises of 56 lots on 20 hectares, with development being limited to 55 percent of the property.
 - 6.4.2 The project has been developed by one family who originally owned the property. The property was subdivided into smaller lots, with open spaces being handed back to the local government.

6.4.3 The development being in Victoria is not subject to BASIX requirements. Development design guidelines have been produced to ensure all homes achieve the sustainability vision of the sites original owner and developer. In addition all designs have to be approved by the Mullum Creek Design Review Committee at multiple stages.

6.5 Googong Development

6.5.1 The Googong Development is approximately 5,550 dwellings on 780 hectares.

6.5.2 The development is a joint venture between CIC Australia and Mirvac. A Voluntary Planning Agreement (VPA) worth \$292 million has been entered into with Queanbeyan City Council. This VPA will see the upgrading of local roads, the installation of a water and sewerage system, including recycled water infrastructure, the building of community facilities such as sporting fields and a multipurpose centre and ecological restoration works.

6.5.3 Given that the development is being undertaken by CIC and Mirvac, they have been able to dictate the direction of the development, achieving a community with high sustainability requirements. Sustainable initiatives devised and controlled by the joint venture include design guidelines which must be achieved by the owner/builder of the individual lots as well as the implementation of community wide sustainable facilities such as the integrated water cycle system.

6.6 Grant funding provided to assist sustainable development

6.6.1 Two of the examples given in the submission have been provided with grants to help lot owners/builders achieve the sustainable development requirements.

6.6.2 The Queanbeyan City Council provides a free Sustainable Building Advisory Board which has been provided through a \$100,000 grant obtained from the NSW Environmental Trust.

6.6.3 Individual lots owners within Currumbin Ecovillage have been provided with significant government grants to enable them to build sustainable homes.

6.6.4 Throughout the planning and development stages of Ingleside, grant funding for sustainable development initiatives in Ingleside will be applied for.

6.7 Comparison of these examples to Ingleside

6.7.1 A common theme of the development examples provided is that there has been one original owner/developer of the land who has then been able to drive their sustainable agenda. Whilst often the individual houses have been built by varying people, the development standards have been set by the original owner/developer. In addition the communal infrastructure has been delivered by the original owner/developer again including sustainable initiatives they wish to implement.

6.7.2 Where examples have demonstrated sustainable targets higher than legislation being achieved, this has been the requirement of the owner/developer.

6.7.3 The extensive variance in land owners and property sizes of Ingleside, results in different interests and outcomes being sought. This proves difficult to produce one sustainable community with higher sustainability targets than that of the existing legislation. Unless individual land owners in Ingleside require higher standards than BASIX, this legislation will remain as the benchmark.

6.7.4 Notwithstanding the above, lessons learnt from these communities will be investigated and where measures that were successful can be achieved, they will be implemented.

7.0 Forward Path

7.1 The principles of sustainability have and continue to be at the forefront of the project partner's investigations. It is clearly embedded in the precinct planning process for the

Ingleside Precinct and reinforced in the objectives of the EP&A Act, TSC Act and the EPBC Act.

- 7.2 Whilst many of the sustainable development outcomes identified in the submission are under investigation, there are other sustainable aspects that are being targeted for Ingleside. Some initiatives form part of the “business as usual” approach by Pittwater Council and others form part of the GreenStar Communities rating system.
- 7.3 Pittwater Council practice on sustainable development initiatives being included in Ingleside are:
- An affordable housing scheme requiring a percentage of housing to be set aside for key workers;
 - Incorporating the principles of Crime Prevention Through Environmental Design (CPTED) in the design and subdivision of the future community;
 - Identifying places of cultural and heritage significance for future protection and potentially facilitating interpretation opportunities as a way of preserving and enhancing the cultural fabric of the place;
 - Installation of a free Wi-Fi network in the new centre;
 - Reduction of the heat island effect by developing provisions in the Development Control Plan e.g. site coverage controls restricting the amount of hard surface;
 - New Council facilities incorporating sustainable initiatives e.g. irrigation of open spaces using non potable water; and
 - Waste recycling schemes, including recycling of hazardous materials and green waste.
- 7.4 Other initiatives that are being investigated as part of the GreenStar Communities certification include:
- Sustainability education facilities including a sustainability trail. Additionally a community user’s guide will be created to educate new owners on how to live sustainably;
 - Preparation of a Climate Adaptation Plan and Community Resilience Plan for Ingleside. This will ensure that the new community will be equipped to manage the impacts of climate change;
 - A community development officer will be employed, whose tasks will include organising community events and providing members of the community with information about the community; and
 - Street lighting will be required to have less than 5% upwards light ratio, reducing light pollution.
- 7.5 In considering the sustainable initiatives, lifecycle cost assessments must be undertaken. The feasibility of a strategy including maintenance costs and the overall impact on all aspects of sustainability must be considered. Items that fall short in these assessments or pose risk to Council may not be included in the new community.

8.0 Recommendation

- 8.1 Information provided in this report is the response to the Ingleside Precinct Sustainability Submission.
- 8.2 That sustainability remains on an item on the agenda for future meetings to ensure a collaborative approach continues to produce a sustainable community in Ingleside.

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INGLESIDE PRECINCT SUSTAINABILITY SUBMISSION

Setting the standard for a sustainable future

Summary

The planning process now underway for the Ingleside development is providing a good opportunity for residents to hear about progress and to contribute to the planning process. However a group of residents and Community Reference Group members are concerned at the lack of focus on the stated vision that Ingleside is to be a sustainable development.

The aim of this submission is to provide critical comment on the state of planning as evidenced at the recent round of Ingleside Workshops held in December 2014. The submission makes the following points:

- The Ingleside Vision Statement commits the development to provide a “sustainable community”. There has been no evident commitment so far in the planning process to provide any assurance that this goal will be achieved.
- Ingleside is in danger of becoming another mediocre development that is the product of a lack of foresight in the current planning phase.
- In the Table of Objectives in the Pittwater Precinct Project Plan there is no reference to the need for the Department of Planning to address the vision of a sustainable community.
- There has been little discussion or focus on the measures we must introduce for sustainable development.
- Current planning is lacking in a strong commitment to safeguarding biodiversity and wildlife.
- There has been no real consideration of the acute impending transport chaos that private car use will create when an additional 3,500 dwellings are occupied.
- To address these shortcomings and set a course for embracing sustainable development in all its aspects will require a further consultative meeting before the Planning Report is prepared.

Preamble

It is becoming increasingly clear that we must significantly reduce our impact on the planet's ecosystems if we are to mitigate and adapt to climate change, and preserve our native species from ongoing extinction. We will fail if we proceed with 'business as usual'. We must change the way we do business and development, and the current planning process for Ingleside does not appear to be delivering.

Throughout the world, including Australia, there is a growing number of innovative developments that have grasped the nettle and moved to meet the challenge. Ingleside is our chance to create a showcase development that shows how we can change direction and live more sustainably: meet the challenge, reap the rewards.

Neither the Reference Group meetings nor the Community Workshops have focused on developing Ingleside in line with world's best practice in sustainability goals. In facilitated table discussions at the Workshops making Ingleside a model of sustainable development has been conspicuously absent.

In the discussions so far there has been little or no reference to the Pittwater 2020 Strategic Plan or the 2025 Strategic Plan, or its Vision, Objectives, Strategic Initiatives, Measurement and Feedback. The Strategic Plan was developed by the community together with council, and includes strategies for the Built Environment, Transport, and the Natural Environment. The Vision for Pittwater is:

“to be a vibrant sustainable community of connected villages inspired by bush, beach, and water”

It is important to note that it was created at the direction of the State Government, and is the basis for all development in Pittwater. All development in Pittwater should therefore fulfill the vision set out in the Pittwater Strategic Plan.

This Pittwater vision for Ingleside is embedded in a Council resolution of 18 February 2013, which is referred to in documents tabled at the Ingleside Reference Group Meeting of 25 September 2013, specifically requesting that the planning process provides:...

"a sustainable and ecologically sensitive development form based on the highest standards".

To date, while every presentation by Council officers has referred to sustainability as the basis for the Ingleside development, this has not been reflected in the consultants' presentations.

The Ingleside development will take place over 20 years or so and we need to plan for these measures now. This is an opportunity to break free from the conventional path that leads to mere tokenism, and the all too common reality of unsustainable development.

To embrace the "highest standards", of sustainable development we recommend that the Ingleside planning process adopts the principles in the internationally recognised Living Building Challenge – Communities Tool, which sets a high standard for the design of sustainable developments. See Appendix - <http://living-future.org/lbc>

Sustainable Development Standards

For Ingleside to achieve anything even close to world's best practice in sustainable development it would need to incorporate as a minimum:

- A sewage treatment plant with tertiary wastewater distributed to all properties in the development
- Reuse of greywater on site using small waste water gardens
- Rainwater harvesting on all buildings with appropriate use, and balancing the reduction in mains water demand with ecological flows to Mullet Creek and the Warriewood wetlands.
- Buildings that have annual net zero energy requirements, through provision of solar panels (and potentially battery storage) to provide the net electricity energy requirements.
- A significantly tougher set of BASIX building requirements to reduce energy and water needs in accordance with Pittwater Council's *Steps to a Sustainable Home* document.
- Amendment to the BASIX SEPP, allowing local variations increasing the minimum standards, including explicit requirements for solar orientation and passive design.
- Solar powered street lighting.
- Every hot water system using solar power or PV powered heat pump technology.
- Community gardens to encourage local food production
- Measures to facilitate public transport both within Ingleside and also outside as a preferable option to car use

Environmental Controls

To provide an effective safeguard against impacts on vegetation and wildlife, the program will need to ensure that:

- The maximum amount possible of existing native vegetation is left undeveloped.
- Effective and proven wildlife corridors to enable easy movement of wildlife across the district.
- Areas of unique bio-diversity are protected from any development.

Transport

There are major problems in providing acceptable peak hour access to Ingleside. Main routes are already beyond 100% capacity during peak hours, causing significant delays, and a further 3,500 dwellings will create an utterly dysfunctional and economically counter-productive situation.

Measures to rectify this looming problem should be incorporated into the development program:

- The planning process must engage Transport for NSW for provision and coordination of public transport, including regular rapid local shuttle loop services linking to BRTs on both Pittwater Rd (south to Brookvale and Sydney) and Mona Vale Rd (west to Macquarie Park etc).
- Walkways and cycleways throughout to reduce private car dependence.

Financial Viability

At present there seems to be an ad hoc approach to provision of infrastructure, with a large degree of dependence upon the private sector. This may be a viable model, but there needs to be a clear economic pathway mapped out to ensure the vision is achieved.

One of the obstacles to delivery of well planned integrated sustainable development is the disparate interests of the plethora of owners. There are two clear strategies for overcoming this without disenfranchising current owner's opportunities to realise the value of their land:

- Sector development: this regulatory planning tool has already proven in Warriewood Valley.
- Aggregated ownership: encouraged in tandem with sector development, having suitable* larger land developer/builders buying up smaller lots gives those owners good economic returns, and also gives the best chance of good design and sustainability outcomes.

*suitable developers: those with a stated sustainability policies matched with a proven track record of high outcome developments. One has already expressed interest in pursuing this. The 'suitability' criteria will exclude at least one well known corporation.

Moving Forward

Vision

The Ingleside Vision Statement calls for a "sustainable community". Coupled with Pittwater Council's resolution for Ingleside to become "a sustainable and ecologically sensitive development form based on the highest standards", we expect Ingleside to be a shining example of how a modern vibrant community can live in harmony with nature and have a zero net impact on our environment.

To ensure Ingleside is developed in line with world's best practice with respect to achieving these sustainability goals, we request that the Planning Report (expected early in 2015) embodies clear and specific sustainability goals and makes it clear that the development is aiming for a very significant improvement over business as usual.

Objectives Update

In Table 3-1 - **Summary of Project Stakeholders and Objectives** – there is no mention of any sustainable objective for the Department of Planning. A suggested additional objective could be:

Ensuring that all aspects of the development meet or exceed the Pittwater Council objective that Ingleside will be a "sustainable and ecologically sensitive development form based on the highest standards."

Consultative Meeting

To set a course and embed the necessary objectives for embracing sustainable development in all its aspects will require a further consultative meeting before the next Planning Report. This could take the form of a special Ingleside Reference Group meeting.

Group Members

This submission has been prepared by:

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Appendix

Pittwater 2025 Strategic Plan – Extract

Defining Sustainability in Pittwater

Council's Sustainability Policy (2006) defines sustainability as:

“development that improves the quality of life, both now and into the future, in a way that maintains the ecological processes on which life depends”– the goal of Australia's National Strategy for Ecologically Sustainable Development.

Sustainability requires living within the limits of the earth's capacity to meet the needs of present and future generations of people, plants and animals. This requires the five interlinked and interdependent Key Directions working together and being taken into account when making decisions to ensure a truly sustainable Pittwater.

In the context of Pittwater 2025, sustainability is about considering the needs of the community, the environment and the economy to ensure future generations have the same or improved quality the current generation in relation to health, wellbeing, justice, access and equity.

Examples of similar developments

Currumbin Ecovillage

The Ecovillage at Currumbin achieves:

- Self-sufficiency in energy usage and complete autonomy in water and waste water recycling;
- 80% of site as open-space, 50% environmental reserve, and the same yield as standard development
- Food and material self-sufficiency through edible landscaping and streetscaping, household farming and other productive strategies
- Preservation of natural landforms and rehabilitation of the degraded site's environmental integrity
- Extensive wildlife corridors, negligible vegetation loss and extensive native plant regeneration
- Cutting edge integrated water quality measures to exemplify Water Sensitive Urban Design
- Cultural Heritage honoured and integrated
- Mix of socially-oriented innovative ecological, energy efficient housing catering for diverse needs
- On-site work strategies and facilities for village and local community
- Waste recycling strategies including an innovative RRR recycling centre
- Comprehensive traffic saving strategies to reduce vehicle impacts on and off site
- Well researched administrative framework providing social equity & enduring community integrity
- Initial and ongoing social planning to foster cohesion and promote sustainable community
- Continuing education of sustainable living and development practices via the Interpretive Centre
- Sustainable economic performance both with the development and the ongoing community.

To build a house in the ecovillage requires owners and builders to meet specific building codes that encourage sustainable building practices which improve quality of life for occupants and help to reduce on-going operation costs. For example, most residents have little or no electricity bills.

The innovative project design has followed a collaborative approach with an extensive and unprecedented Community Consultation program yielding strong design input from indigenous groups, residents, stakeholder groups, referral agencies and the general public.

Currently, the final stages of construction approach completion and the project has received an extraordinary market response with over 85% pre-commitment. The Interpretive Centre, officially opened by Qld Premier the Hon Peter Beattie in December 2005, publicly showcases the project's innovative subdivision design. The Ecovillage is a Queensland Govt

Energywise and Waterwise Demonstration Project and involves significant partnership with community universities, industry and various tiers of government. The Ecovillage has won 21 Awards from industry and Government, including the highest honour in the world, the FIABCI (International Real Estate Federation) Prix d'Excellence for Environmental Development.

The product of 11 years of worldwide research and design, **the developer established a benchmark standard for sustainable residential development, with environmental, social and economic sustainability as its driving principles.**

Narara ecovillage

<http://webfaction.nararaecovillage.com/about-us/our-vision/>

This development near Gosford has set high sustainable living goals

Mullum Creek

Design & Guidelines

To ensure the Mullum Creek vision of a sustainable and beautiful estate is achieved, guidelines have been prepared for homes and landscapes.

Sustainability is Mullum Creek's focus. We want to achieve this through excellence in home energy efficiency and solar power, water conservation, sustainable building materials and best-practice construction techniques.

Homes and landscapes on each lot will respect every neighbour's access to sunlight, safeguarding everyone's interest in energy-efficient solar design.

The estate's guidelines promote high-quality, attractive homes.

The main features of the guidelines are:

- 7.5 star energy efficiency ratings for all homes
- Generation and use of solar power
- Rainwater tanks for domestic and other uses
- Building materials and construction techniques that minimise environmental impact
- Generous building envelopes on each lot to promote the best home location and protect neighbours' access to sunlight and views
- Measures to ensure high-quality aesthetic character and appearance across the estate.

A design panel of architectural, landscape and sustainability experts will review and advise on the designs for all homes and landscaping.

A wide range of resources will be available to everyone who purchases a lot at Mullum Creek to help meet the guidelines easily. This includes free initial consultations with the estate's design and sustainability consultants, as well as access to listings of suitable professionals and suggestions for appropriate materials and building techniques.

At Mullum Creek we aim for homes that are not only light on the environment, but that are comfortable, attractive and save on energy and water bills for years to come.

<http://www.mullumcreek.com.au/>

Googong Township

Googong Township is a self-contained township located a 10 minute drive south of Queanbeyan which will eventually accommodate around 5,500 houses in a rural setting. The project will include schools, shops, community facilities, parks and playing fields.

Environmental requirements at Googong have been strengthened so that new houses built there are required to achieve a minimum 40% reduction in energy consumption compared to a standard house, and a 50% reduction in water consumption.

An innovative waste water management system has been installed which will provide recycled water to each housing lot for garden watering and toilet flushing.

In addition to these enhanced environmental initiatives, Queanbeyan City Council has developed a free Sustainable Building Advisory Service for new home-owners at Googong to encourage the take-up and incorporation of further sustainable building features to improve the comfort, energy efficiency and cost savings of new houses being built.

<http://www.googong.com.au>

The Living Building Challenge

THE LIVING **COMMUNITY** CHALLENGE IS A PHILOSOPHY, CERTIFICATION AND ADVOCACY TOOL FOR PROJECTS TO MOVE BEYOND MERELY BEING LESS BAD AND TO BECOME TRULY REGENERATIVE

The Living **Community** Challenge™ is the built environment's most rigorous performance standard. It calls for the creation of building projects at all scales that operate as cleanly, beautifully and efficiently as nature's architecture. - <http://living-future.org/lbc>