

CASE STUDY - SUSTAINABILITY

ALKIMOS BEACH, WESTERN AUSTRALIA

OVERVIEW

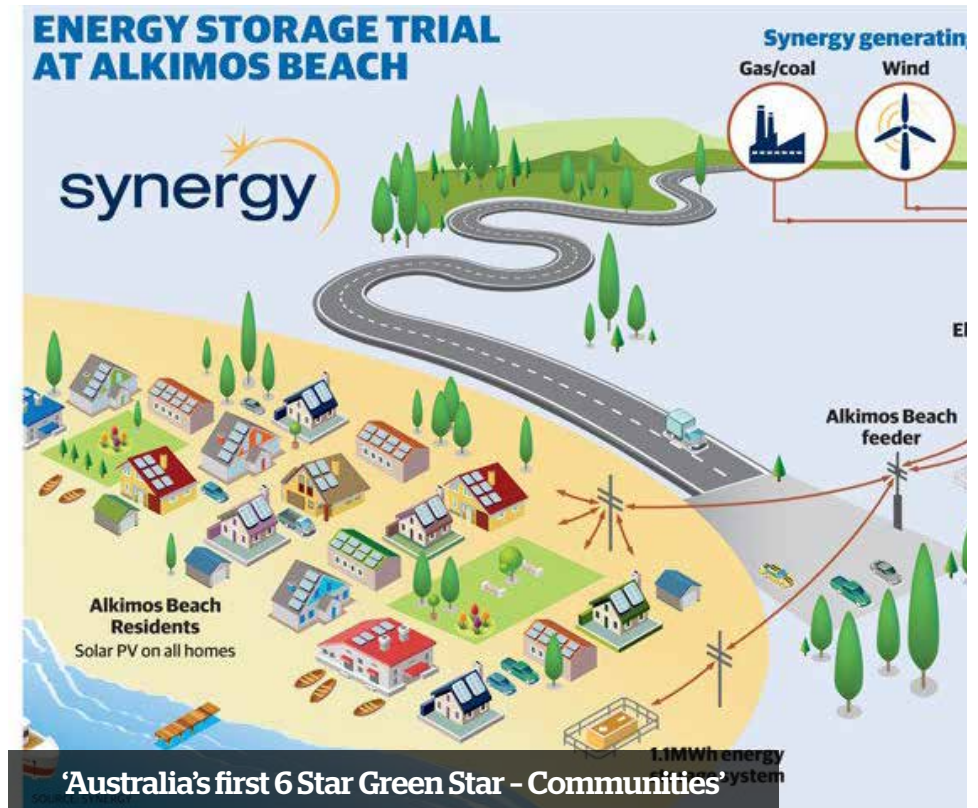
A 710 hectare master-planned community, awarded Australia's first 6 Star Green Star – Communities rating for a residential master-planned project from the Green Building Council of Australia (GBCA).

KEY FEATURES

- Mandatory solar panels and gas boosted solar hot water systems as well as other energy-efficient appliances for all homes.
- Smart water initiatives including stormwater retention, bore water irrigation and water efficient appliances in each home.
- Fibre-to-the-Premises internet connectivity.
- Australia's first community energy storage trial. More than 50 homes connected virtually to innovative solar energy storage to reduce peak electricity demand.
- A comprehensive education program providing energy, water and waste management tips.
- Connections to a regional town centre and transport links.
- Extensive park and shared trail networks (all homes are less than 200m from a park).
- Sprout Hub community facilities supporting micro and start up businesses.

LOCATION

Alkimos, Western Australia



WHY IS THIS PROJECT RELEVANT TO ROCKBANK?

- Community facility has the potential to support fledgling community groups and start ups.
- Both provide connections to metropolitan areas and regional towns.
- High exposure to open spaces and shared path/cycle networks, and public transport.

KEY IDEAS / OPPORTUNITIES FOR ROCKBANK

- Mandatory solar panels on all new buildings.
- Community education strategy around the environment, water and energy.
- Shared trail network linking to the broader environment.

CASE STUDY - SUSTAINABILITY

AURA, CALOUNDRA SOUTH

OVERVIEW

A masterplanned community awarded GBCA's 6 Star Green Star – Communities, anticipated to provide homes for over 50,000 people.

KEY FEATURES

- 700 hectares of former pine plantation to be rehabilitated and designated as a conservation area.
- New habitats for rare and endangered flora and fauna species created.
- Installation of the most advanced water reticulation, filtration, storage and treatment system ever installed in any Australian community
- Annual environmental reporting.
- Establishment of an environmental education facility and sustainability awareness programs
- A dedicated Caloundra South economic development strategy aimed at creating 19,500 direct jobs and long-term local employment opportunities.
- Business innovation and incubator hubs.
- All homes will be close to parks and a maximum of one kilometre away from community vegetable gardens.

LOCATION

Caloundra South, Sunshine Coast,



'Aura is the largest mixed-use development ever undertaken under single ownership in Australia'



WHY IS THIS PROJECT RELEVANT TO ROCKBANK?

- Community groups and gardens creating a sense of place and community engagement.
- Advanced water retention/recycling system.
- Environmental reporting to track performance of retail centres.

KEY IDEAS / OPPORTUNITIES FOR ROCKBANK

- Small business incubation spaces for new business to operate from.
- Creation of new habitats.
- Community vegetable gardens close to each house.

CASE STUDY - SUSTAINABILITY

BOWDEN, SOUTH AUSTRALIA

OVERVIEW

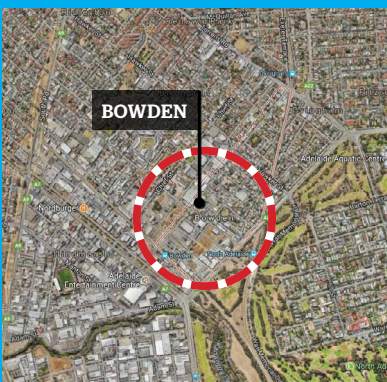
A 16.3 hectare and 6 Star Green Star – Communities, urban renewal project located on the western edge of Adelaide City Parklands.

KEY FEATURES

- All buildings at Bowden must meet 5 Star Green Star 'Australian Excellence' sustainability benchmarks.
- Highest concentration of Green Star homes in Australia.
- First terraces in Australia to receive a 5 Star Green Star rating.
- A transport and parking strategy that reduces the number of parking spaces allocated and encourages the use of public transport and alternatives to single car commuting.
- A state-of-the-art gym, cafes and restaurants, a pub, deli and a vintage shop.
- An artist-run, not-for-profit space for locals working in the arts.
- A photographic studio, art gallery and co-working space.
- A dance studio runs and a cyclists' collective.
- An Organic and Sustainable market on Sundays.

LOCATION

Bowden, Adelaide, South Australia



WHY IS THIS PROJECT RELEVANT TO ROCKBANK?

- Higher density residential options in close proximity to retail and open space.
- Mandated 5 Green star rated buildings.
- Proximity to railway line.
- Large number of community groups and areas to meet.

KEY IDEAS / OPPORTUNITIES FOR ROCKBANK

- Minimum green star rating benchmark for all new buildings.
- Foster community groups through providing community spaces.

CASE STUDY - SUSTAINABILITY

ECCO RIPLEY, QUEENSLAND

OVERVIEW

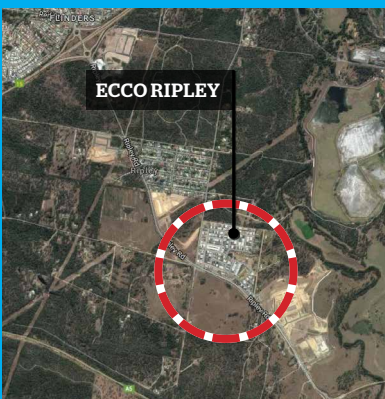
A masterplanned community awarded a 5 Star Green-Star Community rating from the Green Building Council of Australia.

KEY FEATURES

- Fibre optic cabling to all homes.
- Over 12,000 jobs expected to be created over the life of the project.
- 25% of housing will be affordable for first home buyers and key workers, 10% allocated for accessible housing and 5% for social housing.
- Development of an arts and culture program.
- Development of a 25-hectare Town Centre for Ripley Valley.
- Over 6 hectares of recreation parks and gardens.
- Every home within 400m of green open space.
- Large scale tree planting.
- An active transport plan, involving buses, on and off-road cycling, and pedestrian footpaths.

LOCATION

Ripley Valley, Ipswich, Queensland



WHY IS THIS PROJECT RELEVANT TO ROCKBANK?

- Rockbank can incorporate similar active and public transport options.
- Can facilitate social housing initiatives.
- Long term job creation

KEY IDEAS / OPPORTUNITIES FOR ROCKBANK

- Emphasis on affordable housing for first home buyers while still achieving environmental excellence
- High quality public realm landscaping

CASE STUDY - SUSTAINABILITY

BARANGAROO SOUTH, NEW SOUTH WALES

OVERVIEW

Barangaroo South is a 22ha urban renewal project located in Sydney. It will provide homes to around 1,500 residents and office space for 23,000 workers.

KEY FEATURES

- Over 50% of the site will be allocated to open public space.
- 100% of the waterfront will be publicly accessible.
- Aims to become Australia's first large scale carbon neutral community.
- One of only 17 projects globally to be part of the C40 Cities-Clinton Climate Initiative's Climate Positive Development Program.
- Capable of being water positive.
- On-site blackwater treatment plant capable of supplying one million litres of recycled water a day to the precinct and surrounding suburbs.
- Rainwater collection in each commercial tower.
- 6,000 square metres of solar panels on site.
- Energy education programs.
- Targeting zero net waste to landfill by 2020.
- Investigating on site energy generation including co-generation and tri-generation .

LOCATION

Sydney, New South Wales



WHY IS THIS PROJECT RELEVANT TO ROCKBANK?

- Recycled water and rainwater treatment and use options can be incorporated into Rockbank.
- Energy harvesting can be utilised within Rockbank.
- High ambitions for carbon neutrality.

KEY IDEAS / OPPORTUNITIES FOR ROCKBANK

- Incorporate high levels of water caving/recycling/reuse
- Include solar farm on rooftop
- Utilise WSUD best practice initiatives

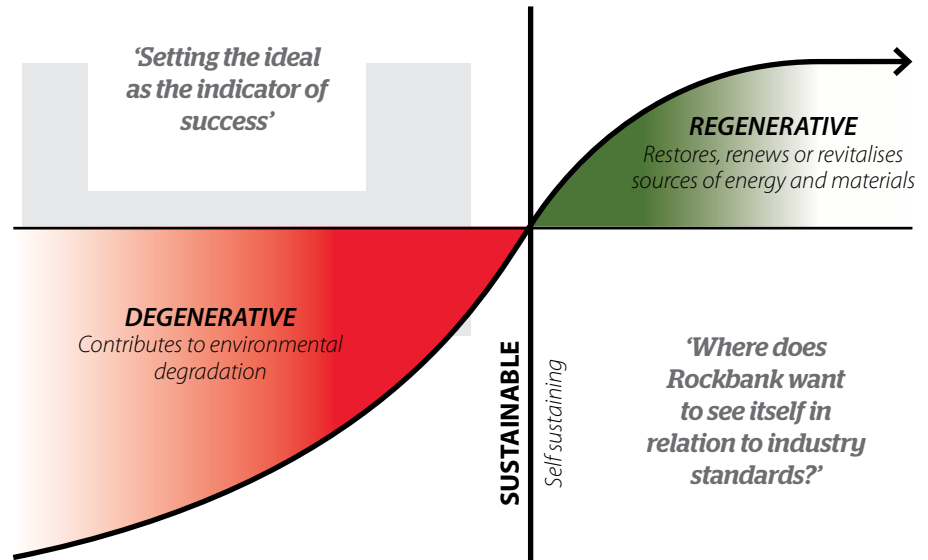
CASE STUDY - SUSTAINABILITY WATER SENSITIVE URBAN DESIGN

SUSTAINABILITY BENCHMARKING

In order to truly create a sustainable community, it is important to understand what the benchmark targets are, how these are achieved and look forward to even going further.

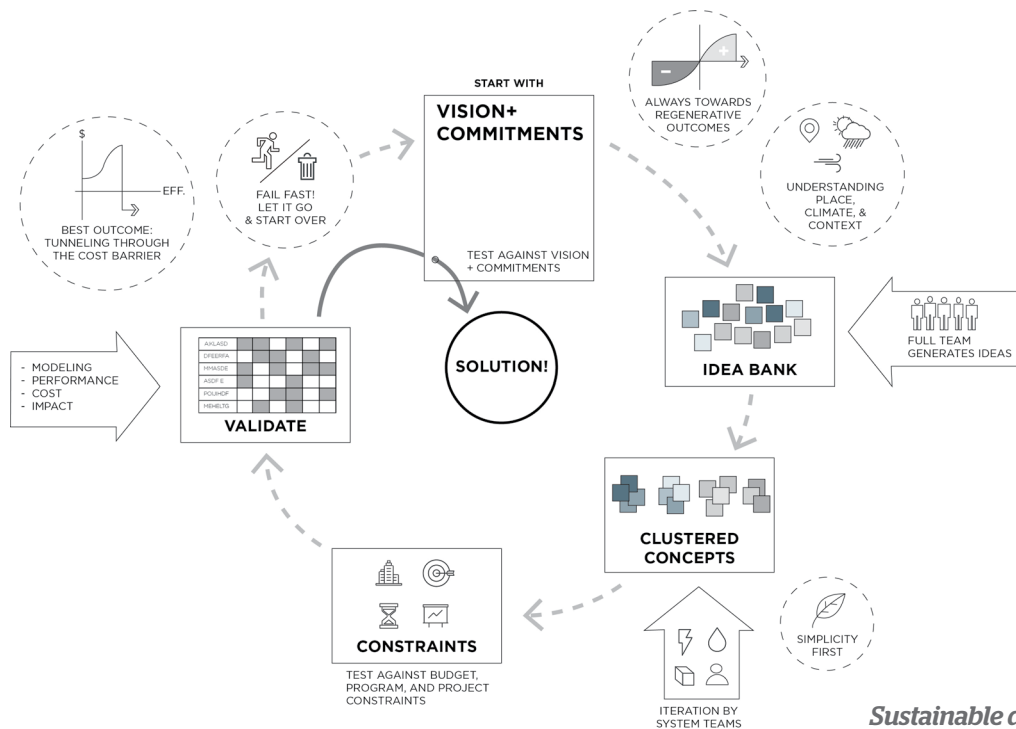
“We need to look beyond reducing our impact and towards regenerative design.”

2016 Future Green Leader Olivia Leal-Walker



THE REGENERATIVE DESIGN PROCESS

Regenerative design is a process driven theory that aims to not only be self-sustaining but also to improve the surrounding environment.



The Regenerative Design Process

Sustainable design aims to provide for fundamental human needs; regenerative design goes further in that it plans for the future co-existence and co-evolution of humans and other species.

CASE STUDY - SUSTAINABILITY

WATER SENSITIVE URBAN DESIGN

KEY CONCEPT

CONSTRUCTED WETLANDS, STREAMS AND LAKES

EXAMPLE:
Sydney Park, Sydney, New South Wales



OPPORTUNITY FOR ROCKBANK

- Where possible, maintain visible connection to drainage, constructed and natural water to enhance the communities connection to water and the environment.
- To be considered as part of an overall stormwater strategy.

PERMEABLE / POROUS SURFACES

EXAMPLE:
Jellico Street, Auckland, New Zealand



- Provide planting instead of hard-stand paving in the public spaces
- Use porous paving to be used in light traffic areas instead of asphalt
- Design guidelines to encourage the use of permeable surfaces in the private realm.

INFILTRATION TRENCHES, SWALES AND LITTER TRAPS



- Use infiltration trenches and swales in car park areas and streetscape, as appropriate, to treat stormwater.
- To be considered as part of an overall stormwater strategy.

RAINGARDENS / BIORETENTION

EXAMPLE:
Tanderrum Way, Broadmeadows Town Centre



- Use raingardens and bioretention in car park areas and streetscape, as appropriate, to treat stormwater
- Requirement for regular maintenance may restrict application.
- To be considered as part of an overall stormwater strategy.

STORMWATER HARVESTING

EXAMPLE:
Fitzroy Gardens Stormwater Harvesting System, City of Melbourne



- Use stormwater harvesting where there are large impervious surfaces such as car park areas and streets etc.
- Treated stormwater to be used to irrigate parks and sporting grounds, for industrial uses or in wetlands.
- Set targets for businesses / industry to use water from alternative sources.

CASE STUDY - SUSTAINABILITY

WATER SENSITIVE URBAN DESIGN

KEY CONCEPT

RAINWATER HARVESTING AND REUSE

EXAMPLE:
Victorian College of the Arts, St Kilda Road, Victoria



OPPORTUNITY FOR ROCKBANK

- Council / public buildings to provide a catalyst.
- Water to be used for toilet flushing and irrigation of parks and sporting grounds.
- Set targets for businesses / industry to use water from alternative sources.

GREEN ROOFS

EXAMPLE:
Tech Deck, Mountain View, California, USA



- Council / public buildings to provide a catalyst.
- Large footprint buildings associated with retail, employment and industrial uses provide opportunity for green roofs, however may require greater structural support (which may incur additional costs) and cooperation with building owner

ON-SITE GREYWATER TREATMENT AND USAGE

EXAMPLE:
INHouse, California, USA



- Council / public buildings to provide a catalyst.
- Limited application beyond an individual site / building.
- Work with developers / building owners to deliver for private sites.

BLACKWATER TREATMENT AND USAGE (ON SITE)

EXAMPLE:
Barangaroo, Sydney, New South Wales



- No applicable given potential access to Recycled Water Plant.

RECYCLED WATER RETICULATION (THIRD PIPE)

EXAMPLE:
Eynesbury Estate, Victoria



- A Recycled Water Plant (Melton Recycled Water Plant) already exists and receives waste water from Rockbank, Eynesbury and Melton. Expand and connect to existing network, if possible.
- Design guidelines to encourage and / or mandate connection to recycled water.

CASE STUDY - SUSTAINABILITY WATER SENSITIVE URBAN DESIGN

KEY CONCEPT

WATER EFFICIENT LANDSCAPING



OPPORTUNITY FOR ROCKBANK

- Design guidelines to encourage and / or mandate the use of water wise plant species.
- Brochures to inform the community on the benefits on planting water wise species.
- Use water wise plants in public spaces.

WATER EFFICIENT APPLIANCES AND FITTINGS

EXAMPLE:
Aurora Estate, Epping, Victoria



- Design guidelines to encourage and / or mandate the use of water efficient appliances and fittings.

BEHAVIOUR CHANGE PROGRAMS

EXAMPLE:
Melbourne Water's 10,000 Raingardens program



- Brochures to inform the community how they might help improve water quality and reduce water consumption.
- Set targets to encourage community participation.
- Acknowledge / celebrate achievements to encourage greater participation.