



Residential Case Study

Genesis Coomera

**Australian
Green
Development
Forum**

Address:

Corner of Foxwell and Amity Roads
Coomera
Gold Coast, Queensland

Developer:

Heritage Pacific

Project Team:

Urban Design, Planning and Landscape: Place Design
Engineering (Civil): Burchills
Engineering (Hydraulic): Bell Engineering

Case Study Information Source:

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PROJECT INFORMATION

Project Background

> Development size and dwellings

- Total development area = 75ha (includes 15ha of wooded open space, walkways and waterways)
- Number of Dwellings = approx. 700
- Size breakdown: 7 precincts = allotments ranging between 400m² and 700m²
- Allotments sold as:
 - a) allotment only
 - b) house and land package
 - c) completed homes

> Development issues

- Proposed density for the development was lower than the council required

> Target market for development

- Third home buyers

> Allotment prices

- Allotments only = approx \$220,000 (2006 pricing)
- Completed house and land = approx. \$500,000 - \$700,000 (2006 pricing)

> Aims of development

- Nature and technology in perfect harmony - human values make the difference between a development and a community; and of the need to equip the Genesis community to stay ahead of a rapidly changing future.
- Blend eco-sensitive design and smart thinking to create a relaxed living environment focused on the pillars of community, sustainability, innovation, location and healthy living.

Genesis Vision

The Genesis Masterplan
A blueprint for the future

- Genesis Residents' Club
- Genesis Sales Office
- Parks
- Lakes
- Shelters



- > *What are the learnings from this project*
 - Water Sensitive Urban Design
 - Heritage Pacific was proposing best practice WSUD and council did not have the understanding to approve, leading to delays in DA processing.

- > *Ratings Tools*

- No

Project Costs

- > *Key upfront cost items*

- Costs of installation of infrastructure for the area (roads and sewerage)

- > *Return on upfront costs (eg marketing advantage, lifestyle improvement etc)*

- No quantifiable return but improved community outcomes

Project Inception Process

- > *Establish sustainable design objectives and targets*

- > *Use an integrated collaborative process to establish design outcomes. Include client, consultant team, local and state government, all stakeholders.*

- Collaborative design process involving all stakeholders

Sustainable Design Strategy

- > *Establish council Development Approval strategy to achieve sustainability outcomes*

- Council required higher density (25 dwelling per ha) however the services were not in place to support it, making it undesirable from a functional, lifestyle and therefore marketing point of view.

- > *Implementation of sustainability*

- Design Guidelines incorporating architectural and landscape code (75 page doc)

- > *Implement sustainable policy and code for future development*

- No

COMMUNITY

Consultation

- > *Community consultation process and takeholders involved.*

- No specific community consultation required – not a contentious site. However all relevant community groups addressed.

Transport

- > *Bicycle Parking – provision of bicycle parking, storage and change facilities*

- Yes – to be provided at community facilities

- > *Pathways – walking and cycling*

- Extensive walking tracks and bicycle paths

- > *Public transport*

- 3km from Coomera railway station
- School bus

- > *Working from home – provide fast communications technology.*

- Yes – Multiservices Broadband connection

- Community business centre in the community facilities provides facilities for work or study

Community Design



> Safety (passive surveillance)

- Yes - community design for safety
- Roving security patrols

> Central facilities

- Resident's Club
- 25m lap pool
- Gymnasium
- Business Centre
- Indoor/outdoor community areas
- Main BBQ pavilion

> Community communication system

- Community Portal to be established on the web for communication – maintained by Body Corporate

> Community structures to run community facilities

- Community Management Scheme
- Development titling will provide the following split between services:
 - a) Gold Coast City Council - roads, water, sewerage, waste collection
 - b) Community - open space and parklands, individual lots, architectural control, services (eg. security)

> Diversity of housing types and sizes

- Yes – allotments vary in size across precincts

> Provision of affordable housing

- Not applicable

> Crime Prevention CPTED principles

- Yes - community design for safety and security

> Development of design to encourage community interaction

- Community facilities – see above
- Fully equipped BBQ areas with BBQ facilities, shelters and playgrounds
- Lakes
- Landscaped parks

Safe and Accessible Housing

- > Comfortable, accessible and safe for all ages and abilities
- > 'Smart' design features incorporated
- > Perceived benefits / benefits from incorporating 'smart' housing design
 - Yes – incorporated into design guidelines

Indoor Environment Quality

- > Good ventilation with outdoor air free from noise and pollutants
- > Selection of non-toxic materials
 - Yes – incorporated into design guidelines

Cost Efficiency

- > Design to ensure cost efficiency in construction
- > Design to ensure cost efficiency in use – reduced maintenance and running costs
 - Yes – incorporated into design guidelines

Sense of Place

- > Establish the site history, ecological significance etc and reflect through the design
- > Design to respect the character of local built form and climate
- > Use design to promote or frame views and vistas
- > Design to beautify areas and enhance areas for community benefit

Site History

- No importance historically – initially the site was logged, then contained a cattle property and then zoned as rural residential.
- Design guidelines – address requirement for contemporary Queensland design to suit the climate

Education

- > Provide education for the end owner and user, such as guidelines for use and interpretation for the development natural and built features
 - Community Portal
 - Innovation House 2 (IH2) – display house in development
 - Part of Sustainable Homes Program
 - Joint venture between GCCC and Heritage Pacific to demonstrate the benefits of sustainable housing to the public.
 - House contains extensive interpretation and information on building sustainably.

Local Facilities

- > Locate facilities within a 2km of a range of services and facilities
 - 5km from services and facilities

ENVIRONMENT

Ecosystems

Water Quality

- > WSUD and Site hydrology
 - Maintain existing dams and convert to bioretention / wetland treatment areas
 - Maintain existing vegetation, including melaleucas, along stormwater flow paths to improve water quality and soil stability

- Turf, vegetated swales, gross pollutant traps and wetlands reduce nutrient runoff, capture sediment, divert excessive flows and create visual amenity
- Water use strategies will create:
 - 86% reduction in treated waste water released to the Pimpama River.
 - 17% reduction in stormwater runoff



Land Form

- > *Retain topography and soil structure, reduce the heat island effect*
- Road layout design to minimise cut and fill and maintain natural drainage reducing the need for underground stormwater piping.
- Design guidelines require minimisation of retaining walls - 1m maximum – and encourage building design to follow the slope. However this leads to a requirement for stair and therefore has implications for accessibility.

Flora

- > *Preservation and regeneration of native / endemic flora*
- Eco-sensitive planning provides 20% of Genesis dedicated to green space
- Xeriscape landscaping techniques were used to reduce water use. They also reduced need for pest control and provided a habitat for wildlife.
- Trees retained where possible - all trees mapped and this was a key design issue
- All native species used for landscaping

Fauna

- > *Preservation of native fauna*
- Wildlife corridors retained and regenerated through the site
- Surveys were undertaken to establish any site fauna. A limited number of species were found to exist on site.

Energy

- > *Alternative energy supply, passive thermal design, energy conservation*
- Access to natural gas

- Energy efficient fittings and fixtures
- Passive thermal design

Materials

- > *Sustainable materials selection; reused or recycled content, renewable, non-toxic, locally made etc*
- Guidelines require healthy materials selection – to retain indoor air quality.

Waste

- > *Infrastructure stage*
- All trees removed from the site were milled to become landscape features including fences, bollards and mulch.
- > *Construction stage*
- Guidelines require the use of steel roof sheeting rather than roof tiles. This has major benefits for waste minimisation.

Water

- > *Stormwater*
- No reuse of stormwater
- > *Recycled water (dual reticulation)*
- 2007/2008, a dual water reticulation system will provide recycled water for toilets and irrigation, which will reduce average household drinking water consumption by up to 80%.
- Coomera Pimpama Water Futures promotes integrated greywater (dual reticulation) using a network of purple pipes reducing potable water demand.



- > *Greywater reuse (individual allotments)*
- Not applicable

> *Rainwater Harvesting*

- Every home at Genesis will be supplied with a rainwater tank – uses include laundry and outside the home.
- 3000L rainwater tanks (Bluescope slimline)

> *Water Use Efficiency*

Houses

- Minimum 3 star WELS fittings (taps, WC, shower roses)
- Minimum 3 star WELS appliances (washing machine and dishwasher)

Landscaping

- Water efficient landscaping (all natives) and strategies
- Xeriscape landscaping techniques were used to reduce water use. The also reduced need for pest control and provided a habitat for wildlife.