2. Project Description

2.1 Location

2.1.1 Site Location

The project is situated on Hummock Hill Island approximately 30km south of Gladstone (60 km by road) and about 10km south of Tannum Sands which has become a seaside dormitory town for people working in the Gladstone and Boyne Island areas. The island is in Miriam Vale Shire immediately adjacent to the northern boundary with Calliope Shire. The general location of Hummock Hill Island is shown in Figure 2.

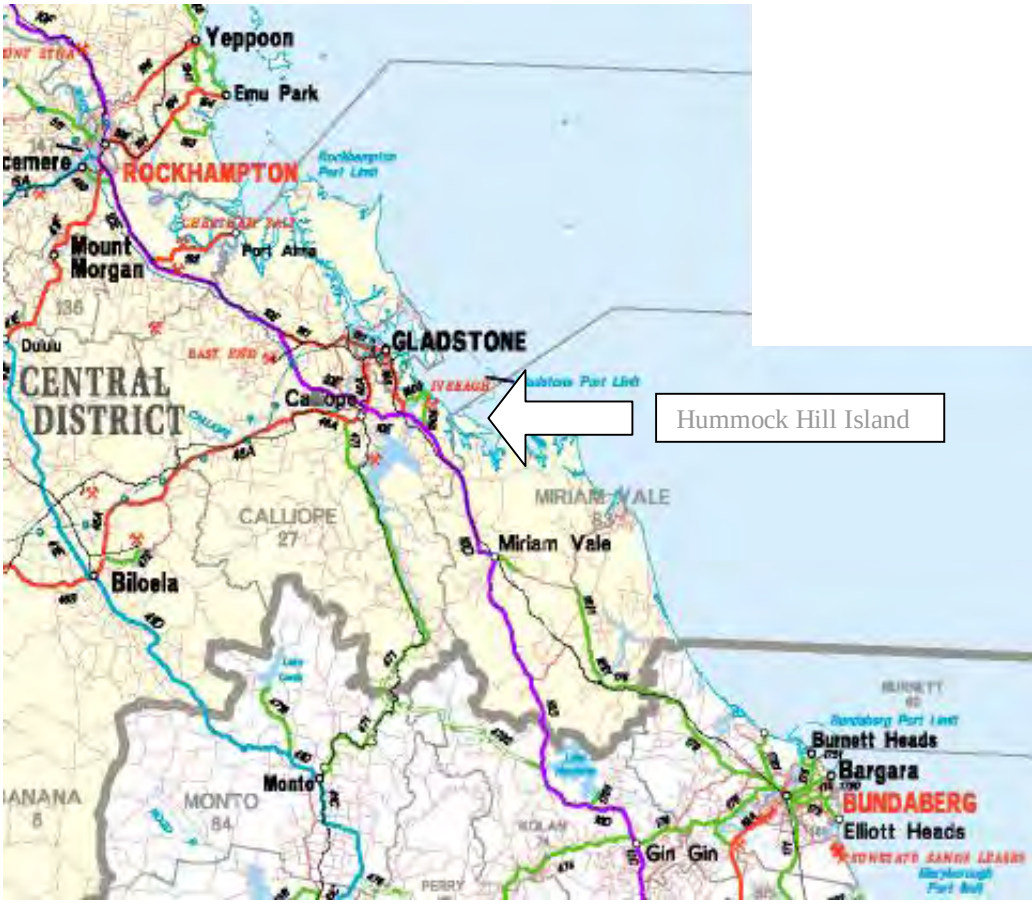

Figure 2: Project Context

2.1.2 Regional Context

The hinterland of the Curtis Coast Region has a total population of 170,000, with a diverse economic profile. It is the most important region of Queensland in terms of export output with major activities in beef and coal production.

The Gladstone Region (which includes the Curtis Coast) is of state and national economic significance. Gladstone, a rapidly growing city of about 27 000 people, is one of Queensland's and Australia's most important ports and industrial centres that has been identified for significant further industrial expansion.

The Gladstone area is a focal point for industrial activity in Queensland with key features supporting its industrial base including:

» The Gladstone State Development Area, a 21,000 ha area set aside for major industrial development. The Gladstone State Development Area is already home to major mineral processing and chemical manufacturing facilities;

» Major industrial developments including an aluminium refinery and the Boyne Aluminium Smelter;

» Gladstone Port, the largest multi cargo port in Queensland and fifth largest port in Australia. Upgrades to this port will make it the largest coal export terminal in Australia;

» Close proximity to major coal and mineral resources of Central Queensland;

» A major power station;

» A major water supply facility Awoonga Dam;

» Connection to the national road and rail network.

Although tourism is not a major activity for the region at present, the Central Queensland region does have a unique variety of natural attractions for the visitor and holiday maker, including:

» The southern end of the Great Barrier Reef Marine Park and islands including
  - Heron Island
  - Wilson Island
  - Lady Musgrave Island
  - North West Island
  - Masthead Island
  - Curtis Island

» National parks including Deepwater National Park, Eurimbula National Park, Kroombit Tops, Isla Gorge, Cania Gorge National Park and Carnarvon Gorge.

» Beaches and coastal communities at Agnes Waters and 1770, some 125 km by road from Gladstone. These communities have shown a rapid growth in the past 5-10 years and appear to be attracting high levels of retired people as well as holiday makers from the region and state. Limitations on services exist particularly water supply and wastewater management, with these towns around 60km from the Bruce Highway.

» Coastal and offshore fishing and boating

» Awoonga Dam which offers boating and picnicking, about 35 km by road from Gladstone.

Figure 3 shows Hummock Hill Island in relation to the Gladstone city.

Figure 3: Regional Context and Proximity to Gladstone

2.1.3 Local Context

Hummock Hill Island is a mainland island separated from the mainland by a narrow inlet and creek system (Colosseum Inlet/Boyne Creek) consisting of mangrove areas, intertidal and sub-tidal mud flats, and a deep sandy channel. The island lies entirely within the Great Barrier Reef World Heritage Area. The high tide mark forms the boundary of the Great Barrier Reef Marine Park. Access to the island is currently via a causeway only useable at very low tide at the end of an unmade road, some 15km from the Bruce Highway.

2.1.4 Land Tenure and Development Lease

East Wing Corporation holds a development lease over the area (refer Section 4.1). The development lease requires that development approvals be substantially progressed by November 2006.

Figure 4: Existing Causeway

Figure 5: View of Hummock Hill Island from North

2.2 Proposed Development

2.2.1 Development Concept

The proposed development is based on an integrated master planned community, with components including:

- Establishment of residential and holiday residential development (approximately 2000 residential lots and units with an estimated population of about 4,000 people) within the nominated development footprint (refer Master Plan H in Section 1).
- A footprint that avoids areas of environmental sensitivity including of concern and endangered Regional Ecosystems, coastal zone and wetlands
- 150 room tourist hotel (4 star)
- 200 room resort hotel
- A campground facility including school camp
- A conference centre and motel

- The development of an 18 hole golf course and associated sporting facilities
- An educational centre focussing on either mining or research and development into sustainable use of the Coastal Zone.
- A Town Centre including low level commercial and retail development, restaurants/cafes and community and professional services.
- A village centre providing local level retail
- A marine commercial precinct associated with the boat ramp and providing services to recreational boating and fishing activities.
- Controlled access to parts of the beach (northern coastline) adjacent to the development footprint and to the beach on Coloseum inlet adjacent to the proposed boat ramp.
- Day visitor parking and facilities including picnic areas.
- Prepared to dedicate a primary school site.

The development will be undertaken and marketed on the basis that:

- 50-60% of the residential properties will be holiday homes/apartments and used by their owners for holidays or rented to holidaymakers.
- 20-30% of the properties will be purchased by persons who will take up employment or business opportunities in servicing the tourism market or by investors who will rent the properties to person employed in the tourism industries on the island
- The remaining 20% of the properties will be sold to persons who will take up permanent residence on the island.

The proposed land uses and areas included in the Master Plan are contained in Appendix A.

2.2.2 Infrastructure and Services

Water supply will be through a combination of rainwater tanks and reticulated water from the Tannum Sands reservoir. Current water balance predictions are that at least 70% of water demand will be met through rainwater tanks. Greywater reuse will occur on larger land lots.

A tertiary wastewater treatment plant will be installed on the Island and treated effluent will be polished to class A and A+ for reuse in irrigation and approved uses via a dual reticulation system. Golf course irrigation water will be entirely sourced from treated effluent.

Wind and solar power and diesel generators will be used to power initial stages of development. Electrical power will be brought in from the mainland once the development population warrants this, however wind and solar generating devices will be retained for ongoing use.

Infrastructure requirements will include:

» A landing strip and terminal facilities for light aircraft (note that a regular commercial service is not anticipated)

» A boat ramp providing access into Boyne Creek adjacent to the proposed bridge. A small jetty or queuing pontoon may be provided subject to Queensland Transport requirements

» A boat ramp providing access into Colosseum Inlet as shown on the attached Master Plan H. A small jetty or queuing pontoon may also be provided at this location subject to Queensland Transport requirements.

» Construction of a bridge across Boyne Creek between the mainland and Hummock Hill Island. The bridge will be located on the alignment of the existing causeway.

» Upgrading of about 7 km of road within an existing road reserve (Clarke's Road) and upgrading of intersections at Turkey Beach Road/Foreshores Road and Intrepid Drive/Clarke's Road as required to allow for projected traffic volumes.

» Establishment of a water main from the mainland to the island along existing infrastructure corridors (high voltage power line, roads). The water main would be intended to supplement rainwater supplies collected at a household level.

» Potential establishment of a desalination plant to provide potable water and supplement rainwater supplies.

» Provision of gas and or electrical power from the mainland to the island along existing infrastructure corridors (roads, high voltage power lines), with potential on-site power generation from wind turbines.

» Electricity, gas, water and wastewater distribution networks within the development footprint

» Stormwater collection and management systems based on principles of Water Sensitive Urban Design (WSUD).

» A network of roads and cycle/pedestrian paths throughout the development footprint

» Social infrastructure including a fire station, police station, ambulance and medical centre to augment facilities already available in the region.

2.2.3 Employment and Expenditure

The proposed Hummock Hill Island development represents a significant economic opportunity for the Central Queensland region, in terms of dollars spent in the region as well as temporary and permanent employment opportunities.

Construction activities associated with the proposed development are expected to create about 4,500 employee years, with typical employment rates for each stage of the project as follows:

» Phase 1 - Major infrastructure - 2007 to 2009: 60- 80 employees

» Phase 2 – Urban services - 2010 to 2015: 30 to 40 employees

- Phase 3 –Urban services – 2016 to 2020: 20 employees
- Building construction – 2009-2029 200 employees

Employment opportunities will include skilled and unskilled positions in engineering design, construction supervision and trades, earthmoving, equipment operation, building and landscaping. Average salary/wage for construction employees is in the order of $75,000 pa.

Estimated expenditure for the 15 year project development program, including provision of infrastructure to Hummock Hill Island and preparation and servicing of land is $125 Million. Itemized costs are shown in Table 1.

Estimated costs of building construction are estimated to be in the order of $700 million as shown in Table 1. This expenditure is likely to occur over about 20 years from 2009.

Table 1 Project Development Costs

Development Component (refer Appendix A)	Estimated Cost
Development Approvals	$1,500,000
Infrastructure:	$28,000,000
» Access Road to the Island	
» Bridge over Boyne Creek	
» Water Supply to the Island	
» Waste Water Treatment Plant	
» Power Supply	
» Solid Waste Transfer Station	
» Trans Island Boulevard and Trunk Road Services	
Social Infrastructure:	$29,000,000
» Colosseum Boat Ramp and Jetty	
» Beachside Public Parks	
» Retail And Commercial Centre Land	
» Education Precinct and Community Services Land	
» Boyne Channel Marine Centre and Boat Ramp	
» Boyne Channel Home Offices	
» Airport	
» Tourist Park	
» School Recreational Camping Ground	
» Golf Course	
» Landscaping	
Resort and Residential Land Development:	$67,000,000
Building Construction Costs	$700,000,000

The project will provide significant stimulation to the local, regional and State economies as most of the materials required for construction, can be locally sourced:

» Sand and aggregates –local quarries

» Cement, steel, bitumen, pipes, structural steelwork, –Gladstone

» Pipes, valves and fittings –Brisbane

» Building materials- Gladstone

» Treatment Plant components- Brisbane/Sydney

» Fuel – Gladstone

» Building materials including bricks, wood, fittings and furnishings – Gladstone.

This will maximise local, regional and State benefits from the project.

Once fully operational, around 400 full time equivalent jobs are likely to be directly generated by the proposed development in areas such as:

» Maintenance workers and operators for infrastructure and services

» Hospitality and recreation

» Retail and commercial activities

» Educational activities

» Cleaners, gardeners.

Economic activity associated with construction and operation will also result in flow on effects in the local, regional and State economies, with increased economic activity and employment.

2.3 Master Planning Context

2.3.1 Development Principles

Three key development principles have been established for this project:

» Natural environment is maintained, protected and enhanced so that areas of conservation significance are retained and the human population can enjoy living in close proximity to, and harmony with the natural ecosystems.

» Social environment will be based on a vibrant, dynamic and diverse community that has a strong environmental awareness and is committed to sustainable living and self development. Individuals and households will come to Hummock Hill Island seeking quality of life in its fullest sense and fulfilling educational and outdoor recreational experiences.

» Built environment will be appropriate to the scale of the development and the natural environmental setting. Infrastructure systems will be based on latest advances in sustainable living, but will be suitable for management and basic maintenance by the householders.

Master planning is the nexus by which elements of the natural, social and built environment will be brought together to form the community of Hummock Hill Island in a way that the development principles outlined above can be attained.

The master plan presented in this document demonstrates a manner in which tourist, urban and semi rural footprints may be integrated with the intrinsic natural beauty of the Island. The final layout of the development has been dictated by the regional ecosystem mosaic across the island and drainage patterns and flows.

The elements of natural, social and built environment that have influenced the Master Plan are described in more detail below.

2.3.2 The Natural Environment

Hummock Hill Island is separated from the mainland by a tidal channel. The channel always contains water, even at low tide, although a causeway has been put in place by previous pastoralists to allow vehicle access at low tide.

Previous disturbance to the Island has occurred as a result of cattle grazing. This activity ceased in the 1980's. Fences, a cattle dip, house and other remnants of this activity remain. An access track remains in reasonable condition and a grass airstrip is still discernible on aerial photographs and on the ground. Regrowth has occurred on some of the grazed areas, however others remain relatively bare of trees, with grasses and weeds providing groundcover.

The natural systems and features of Hummock Hill Island are quite diverse and include:

- Beaches
- Riparian zones incorporating dunes, creeks and dry rainforests
- Rainforests with dune lagoon systems along and behind beach zones
- Open woodland
- Closed woodland
- Endangered and of concern regional ecosystems
- Ephemeral lagoons in lower terrain areas
- Coastal wetlands
- The main central Hummock spine
- The cleared headland to the north east which once supported a house, stockyards and a cattle dip
- Fenced paddocks that have been cleared for cattle grazing
- Mangrove areas and tidal channels.

Features and values of these systems have been taken into consideration when planning for development of the Island, such that those that are less tolerant to disturbance are preserved and enhanced.

Far from being a constraint, the sensitive natural environments of the Island offer excellent opportunities for development that allows residents and visitors to be amongst and appreciate these values. The value of 'inclusiveness' of such natural assets is now recognised as an intrinsic component of property development. This holistic approach is the underlying philosophy of the development strategy. Specific responses to natural environmental features are described in Table 2.

Figure 6: Vegetation of Hummock Hill Island

Table 2 Natural Environmental Features and Development Principles

Feature	Development Principles
Beaches and dunes	No direct disturbance to beaches. Controlled beach access points to be provided through littoral rainforest in dune systems Provide public access to beach Low key public facilities (barbecue, shelters, picnic areas) to be provided away from erosion prone coastal areas
Regional ecosystems	Avoid disturbance to areas where dominant ecosystem is endangered or of concern. Where subdominant ecosystem is endangered or of concern, protect these areas, and linkages between them and manage for habitat value. Provide controlled access to designated conservation areas to ensure that the community can enjoy these areas without damaging them.
Wetlands, drainage lines, lagoons	Minimise alteration of natural catchments and flows Avoid areas that are naturally waterlogged
Slopes and hills	Avoid significant changes to topography Avoid unstable slopes where significant engineering solutions are required to ensure stability
Mangroves and tidal channels	Avoid large scale disturbance Provide boat ramps and jetties with minimal disturbance
Headland	Maximise use of the view from this area
Cleared areas	Maximise use of already cleared areas.

The Master Planning approach to ensuring sympathy and harmony with the natural environment has been to propose a number of different development "units" which provide a combination of high, medium and lower density development and various recreational, educational and commercial activity centres which have been arranged to fit with the natural environmental features. The range of units is shown in Figure 7 and Figure 8.

Archaeological sites have been identified in the form of middens along the eastern end of the northern beaches and a location on the south edge east of the current causeway. Of Concern and Endangered regional ecosystems have been identified in surveys of the site. The surrounding waters include Fish Habitat Area and the Great Barrier Reef Marine Park/Coastal Marine Park.

For Hummock Hill Island, a comprehensive set of controls and guidelines for living within the natural environment will be produced. These are likely to include:

» Building envelopes on larger lots requiring retention of vegetation outside the area designated for construction of houses and outbuildings

» Conservation covenants or similar controls over land of high conservation significance

» Guidelines advising on preferred landscaping species and maintenance of remnant vegetation on and adjacent to residential lots.

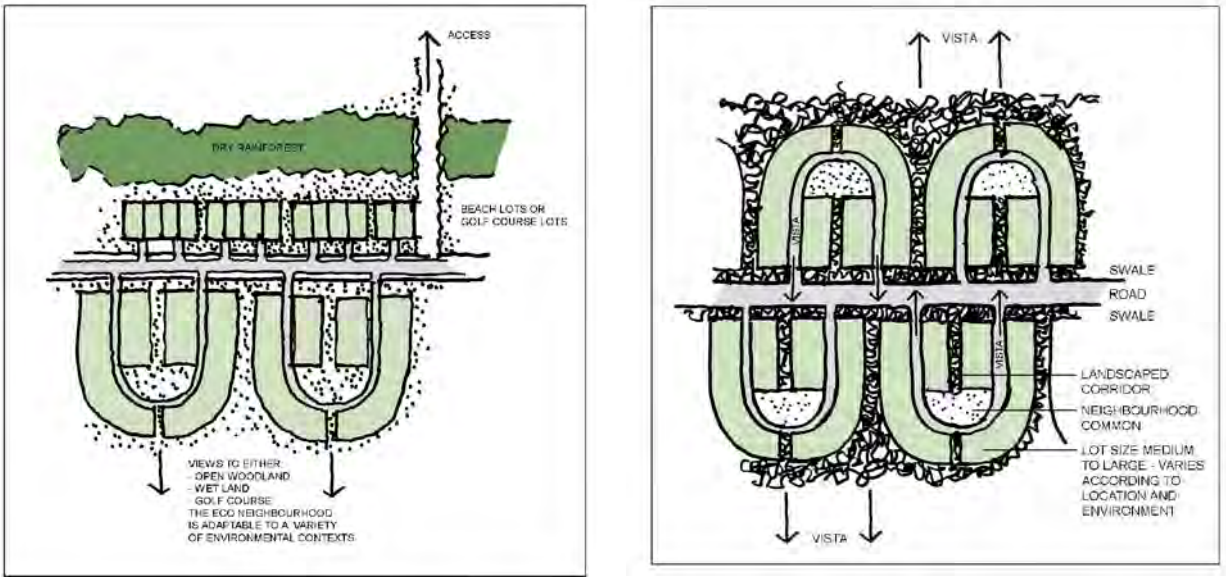

Figure 7: Residential Lots

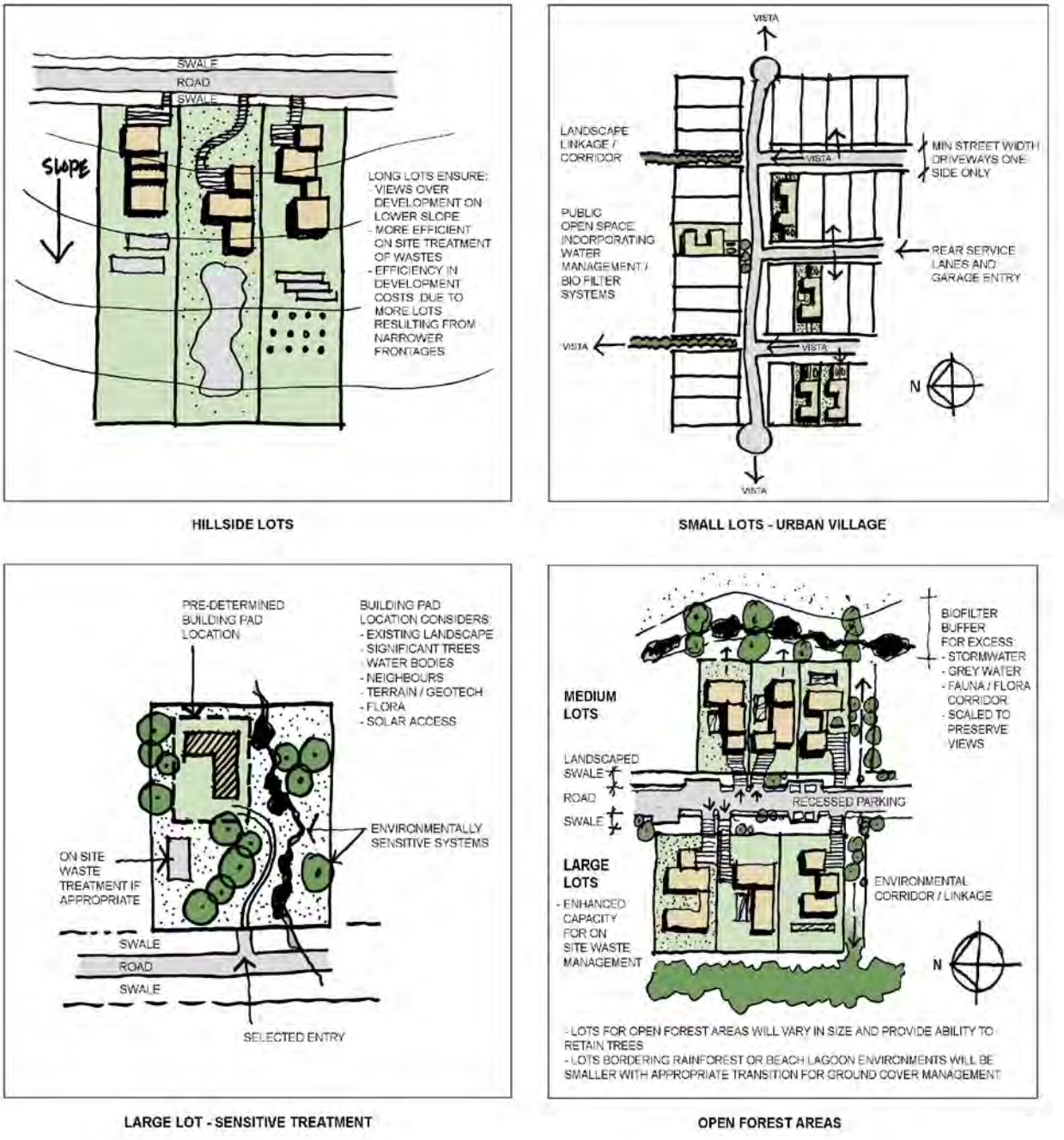

Figure 8: Conceptual Development Units

2.3.3 The Social Environment

The expanding activities and population growth in Gladstone and Central Queensland have created a demand for a 21st century lifestyle that provides high quality amenities in a relaxing and peaceful environment. The sea change phenomenon has created a heightened awareness of living in proximity to the ocean as an antidote to the

commercial and industrial environments that many exist in. At the same time, awareness of the impacts of our lifestyles on the environment is growing and, for the first time, is matched by affordable solutions for sustainable living.

Hummock Hill Island will be able to offer residents and visitors a blend of 21st century lifestyle and synergy with the natural environment that is unique to Central Queensland. Proximity to the regional service and employment centre of Gladstone as well as mining activities in Central Queensland further enhances the attractiveness of the location both for those seeking a recreation and holiday destination, as well as potential permanent residents.

The social environment at Hummock Hill Island is based on achieving social diversity to reflect the natural diversity of the Island. The features of the Island allow the development to offer a range of different lifestyles and activities attractive to both temporary and permanent populations. These will attract a range of different people from retirees to students, members of remote mining communities seeking a coastal retreat and families looking for a high quality coastal destination that is in limited supply in the Gladstone/Central Queensland area.

The anticipated final population of the new community would be 4,000 to 4,500 people including tourists, holiday residents, permanent residents and employees, with the number of properties being in the vicinity of 2000 lots. Staging of the development will allow final population levels to be achieved over a 15-20 year period. This is critical in terms of providing sufficient time for market based drivers to react to increased demand for various services in adjacent urban centres and to avoid sudden increases in populations that might affect social infrastructure planning.

The Master Plan is focused on a Town Centre, with integrated urban neighbourhoods and community facilities providing the necessary sense of activity and destination. A smaller hub at the eastern end of the development near the bridge will provide the necessary balance of amenity and an opportunity for marine commercial facilities associated with the proposed boat ramp, for example, boat storage, fishing supplies and basic boat maintenance.

The overall population size is aimed at creating a community with enough depth and diversity to be largely self-contained, with basic services available on the island. For example, the population of the proposed development, together with nearby developed areas on the mainland would be large enough to attract a General Practitioner and possibly visiting specialists.

Figure 9: Northern Beach Looking Towards Headland

The lifestyle emphasis is on living in a relaxed, sustainable and thoughtfully planned community with a wide range and mix of residents. This range of lifestyles would be provided with choices ranging from:

- Large semi rural lots on flat land
- Recreational (golf course) lots
- Waterfront (beachside) lots (set back from the coastline to protect the Coastal Management District)
- Hillside lots featuring ocean and mountain views
- residential neighbourhoods of various size lots with a strong sense of community
- Village centre with small-scale commercial activities
- Small lot, “urban village” within the town centre
- Medium density units where views are a feature

Recreational opportunities that have been incorporated into the master plan at this stage include:

- Beach access (controlled but available to all) and picnic/barbecue areas
- Golf course, with country club house
- Other sports such as tennis courts, squash courts

- A network of walking/running/cycling tracks including controlled access into areas of conservation significance
- Boating activities supported by boat ramps and small jetties or pontoons (a marina or mooring area is not proposed)
- Passive recreational activities such as scenic lookouts
- A public park in village centre incorporating a bandstand/outdoor performance area.

These will be a mixture of public and private facilities. Full public access will be retained to the beach and coastal zone as well as conservation areas (provided that human access is compatible with the management of these areas). The golf course and some sporting facilities are likely to be privately operated. Recreational and commercial activities will need to cater for a transient population of visitors, both day trippers and longer overnight stays, as well as the resident population.

The 18 hole golf course will be a focus of the recreational aspects of the development, as well as creating desirable residential opportunities adjacent to the golf course by opening up vistas that would showcase the Island.

A key focus of the village centre will be an educational facility that will serve the Island's population as well as attracting participants from the region and beyond.

2.3.4 The Built Environment

The master planning principles identified for Hummock Hill Island require a built environment that is specifically designed to fit the features of the island, while minimising environmental impacts from the development, providing a high quality lifestyle and not draining regional infrastructure services and resources.

Access to the Island will require some upgrading of existing roads and a gateway entry bridge that will provide one end of the axis about which the development will be created. The other end of this axis will be the village centre and resort hotel. In between will be the range of lifestyle and recreational opportunities discussed in Section 2.3.3.

An internal road network of public and private roads will give access to the various components of the developed area. Road design will be sensitive, particularly in relation to maintaining privacy of residential enclaves and neighbourhoods, minimisation of visual impact, compatibility with topography and incorporating drainage measures that minimise velocity and quantity of stormwater and maximise retention of potential pollutants such as soils and sediments.

The concept of the Eco neighbourhood creates limited direct access off the main road system which creates an impression of low density. It is basically a 'module' of predetermined lot sizes and numbers connected by an internal ring road. This modular concept also applies to services, private and public space including a central common, providing immediate access to park areas for recreation within each neighbourhood – (Playgrounds, Ball games, BBQ's, Pool etc).

A network of environmental arteries or corridors / linkages are planned to provide character boundaries to precinct creation and create permeability for residents, link habitat and enhance rainwater management, serving as water treatment, storage and conveyance arteries. The visual amenity provided by this network is coupled with road design to provide green visual corridors and create the general sense of living close to nature that is fundamental to the master plan.

An existing track from the centre of the Island currently crosses the national park to the Colosseum inlet. This offers the opportunity for a jetty or boat ramp to be constructed at the water's edge.

Major environmental impacts of residential development are typically associated with water and energy consumption and waste generation. Solutions for provision of these services are based on maximising self sufficiency at the household, community and Island level, with as little dependence on outside sources as possible, including:

- Water sensitive urban design, which recognises the importance of managing the entire water cycle in urban areas to maintain water quality and other environmental values
- Harvesting of stormwater, particularly through roof top catchments
- Water reuse and recycling at household, community and Island level
- Renewable energy, including solar energy and wind turbines with ultimate grid connection to allow sale back to the grid when demand on the Island allows.
- Waste avoidance measures built into design features
- A waste transfer station that maximises waste sorting and recycling.

Infrastructure alignments would typically follow existing roads and high voltage power easements on the mainland. Within Hummock Hill Island, underground power transmission and other services will minimise visual impact.

At the household level, sustainable housing principles will be incorporated into design controls and guidelines for development of each lot. These will aim at maximising water and energy efficiency and minimising waste generation throughout the lifecycle of the house. "Smart Housing" and "Universal Home" principles will guide both the social and environmental aspects of each dwelling and also yield capital and maintenance cost savings to residents.

The development of lots would be based on a variety of sizes depending on their proximity to environmentally sensitive areas, views, recreation and geography.

Hillside lots could be narrow and long to increase their numbers and yet have a flexibility to retain vegetation by varying the house location. They would also suit waste management due to the longer slope area. Other larger lots would also permit predetermined positioning of house pads to control environmental impacts.

Lots facing rainforest zones or water courses would have strict covenants regarding setbacks and vegetation management. Lot sizes would vary from 1200m^2 to 4000m^2 depending on location and guided by market research.

Architecture for dwellings and other private and public buildings will need to be consistent with the natural features and also provide a high degree of social and visual amenity. Generally, buildings will be designed to integrate with rather than stand out from the landscape and the only significant coastal development visible from the ocean site will be the resort hotel.

A comprehensive set of Architectural, Landscape and Site Management Design Guidelines would accompany all Development Approvals. These approvals would be passed on to all purchasers of land in the proposed development.

An Island maintenance service will also be considered. This would be a private service which home owners could hire to perform a range of maintenance and repair tasks, from total management of the household's water and energy management systems to provision of replacement parts for pumps and other equipment. All services offered by the maintenance service would be consistent with the sustainable "smart housing" principles identified in the master plan.

2.4 Development Activities and Schedule

2.4.1 Project Development Team

The Master Plan and Environmental Impact Assessment is being undertaken by an experienced team of environmental, engineering and project management specialists as shown in Table 3.

Table 3 Project Development Team

Role	Company	Key People
Project management and marketing	Dockside Developments	John Kelly Peter Marshall
EIS, Environmental and Planning Approvals	GHD	Claire Gronow, Michael Scott
Environmental Studies	SKM	Lesley Morris, Ken Gilbert
Master plan and landscape architecture	ML Design	Graeme Thiedeke Brian Toyota
Infrastructure and services	Cardno	Graeme McIlwain
Cultural Heritage	Archaeo	Ann Wallin, Michael Strong
Legal	Philips Fox	Tom Nulty
Survey	Qasco	David Sinclair
Coastal Engineering	Coastal Engineering Solutions	Paul O'Brien

2.4.2 Project Construction and Development Activities

The activities to be undertaken on site to achieve this development are:

» Around $28 million of infrastructure including;
  – 11 km of upgraded access road along Clark's Drive and Foreshores Road
  – A significant bridge over Boyne Creek.
  – Upgrade of Bruce Highway intersection, including deceleration lanes and turning lanes
  – Water supply pipeline from Tannum Sands to the island
  – Power transmission lines from the Ergon HV supply on the Turkey Beach Road

» Construction of boat ramp/pontoon and water supply connection with associated minor excavation in the coastal zone.

» Earthworks associated with the preparation of the site for development including preparation of sites for building construction and road construction. Major changes to the existing landform will not be required and natural landforms will be retained as much as possible. Generally, excavation and earthworks will not result in changes to topography of more than 1-2 metres in flatter areas and 5 metres on hill slopes.

» Construction of internal infrastructure, including roads, cycle/pedestrian paths, water, power, sewerage and stormwater drainage on Hummock Hill Island.

» Landscaping of public areas

» Subdivision of community title lots in community title scheme stages.

» Construction of hotel, residential, commercial, educational and industrial buildings.

2.4.3 Schedule

The proposed development will be undertaken in stages and it is estimated that it will be completed in stages over a 20 year timeframe. Major infrastructure development will occur in Stage I and tourism and educational components of the proposed development will also take priority. A full development program is provided in Appendix B.