Queenslander Highrise
Intertidal Urbanity for Coastal Neighbourhoods

John McGrath
Engineer Coastal Management
Gold Coast City Council
Queenslander Architecture

- Enjoying the planets surface under the house
- Evolved here for our climate and lifestyle
- Hover above ground – small footprint
- Minimal disturbance to drainage
- Climate Control
- New Architectural Language evolved to dress void
- Space
- Water tank
Queenslander Highrise

• Give foreshores weight that penetrates coastal highrise.
• Delete residential floors below endemic canopy height
• Develop public open space and foreshore ecology in under highrise buildings
• Improve view to waterline and horizon for pedestrians and neighbours at street level.
Coastal Management as Frontier for Emerging Environmentalism

- Coastal Engineers first discipline forced to embrace deep environmentalism.
- You can muscle a creek or river to submit to the demands of an urban form but coastlines are more difficult.
- Natural Coastal Design – Urban Form muscling is just wrong – Embrace and celebrate your foreshores
Foreshores and Cities

• Not common to have sandy foreshore in older Cities.
• Cold climates, urban land valued so as climate changes, foreshores bleed away from edges within the city. Costs money to keep foreshores.
• Values for foreshores – ecological, social, economic
• No such thing as erosion – just poor city planning and management
Concrete Jungle?
Littoral Rainforest

- Dark / Shade
- Microclimate
- Surface Waterflow
- Tread lightly on boardwalks

- Poor Shallow Soils
- Towering Canopy
- Ground level changes with climate

Gold Coast City Council
Mangroves Intertidal Community

Factors Influencing Daintree Mangroves

Intertidal distribution of downstream mangroves

Intertidal distribution of upstream mangroves

Retro fitting - Mangrove Planting

Space for Full Profile

Gold Coast City Council
Shade, Congestion, Obesity, Fashion
EDAW Intern Swarm

- Intertidal Urbanity
- Layers
- Green Mode movements
- Transit Orientated Development, ZED
- More Public Open Space
- Larger ecological areas
- FODs – Foreshore Orientated Dev?
Sea View – Street View
Selling what to who?
You’d have to be in a balloon in mid hinterland to see the view promoting highrise. Designers more concerned with design competitions and website resumes then local pedestrian experience of their highrise.
Public gets back ground view and space - building adds more floors into sky

Coming over Burleigh Heads should be great view up the northern GC beaches. Instead we have a building with a sun painted on it ☀️

Coming around the Airport we should have a view of our Southern Points. Instead a oversized podium with a billboard on it with a picture of the southern points. ☀️

Qld highrise somewhat extreme – but helps to illustrate public value. If we could at least get the podiums and landscaping bulk reduced it would open up foreshores for public enjoyment.
New Understorey Edge for Architectural Expression

Roofs used to be boring. Now they are great Architectural statements when viewed from afar. Need language for dressing voids up close to buildings.
Space for Green Modes

- Coastal Footprint
- Healthy and Active
- Where will space come from
- Noosa Oceanway CPTED
- Green bridge – level one
- Dune Trample
- Boardwalk
More Public Open Space

• No Class on Beach – attractive to rich people.

• No gated estates, no body corporate yards

• Inclusion not exclusive

• Room on higher floors for private function rooms pools etc

• Neighbours support new highrise due to increased ground public open space.

• Coffee shops trade from lift foyers into public space
Dune Vandalism

- Trees vandalise buildings
- No residential floors below endemic canopy height
Under voids for Commercial

Commercial under highrise is established practice – but do we really need shops everywhere? Why not more public open space and ecology? True mixed use development – mix urban upstairs with non-urban ground use on the same site!!!!
View Value

Key Design Consideration
View Score

• + Waterline
• + Horizon
• + Oceanway
• + Passive Surveillance
• + Sky area without crinking neck
• + Coastline
Rainforest, CPTED, Up-pruning, Pass Surveillance

Credible Flow Ripples into urban landscape
Roof Gardens - Epiphytes

- Heavy Trees
- Heavy Soil
- High winds
- Only rich people can see them
- Habitat Corridors
- Vegetation Refuge
- Watercourses
- Column Hugging Structure
Sun Penetration Lines

• Level 7 void lots of sun
• Lift Foyer, fernery, walkways to shady side
• Cut building along sun penetration line
• Coffee Deck / Pool Deck
• Shade desirable part of public open space and green mode corridors
Climate Change

• Sea Level Rise – Galverston
  Whole city changed its ground level due to coastal flooding. Still see front doors in basements

• Cyclonic Waves swash through
  GC Buildings already required to have waves wash through to +6M AHD. Natural dunes veg copes well with wash though – keep urban floors safe upstairs

• Tsunami

• Wind Tunnels
  Less wind at ground.

• Mangrove / Dune Succession

• Vegetation Refuge

• Geomorphologic succession –
  Ecology will adjust ground for SLR – Our job is to get out of the way – and let the surface cope with climate change.
Qld Highrise Challenges

• **Holding up the building** technology will mean thinner columns.

• **Lift Shafts** A 30 storey building between floor 10 and floor 40 needs the same number of lifts as a 30 storey building on the ground.

• **Fire Stairs** Need to reach the ground. Qld Houses celebrate steps a key character element of hovering

• **Porte Cochere** Opportunity to have one at first basement level, open to void above – with views to coast from street level over.

• **Number of lifts**

• **Terror security**

• **Design Cringe**

• **Water Supply to Understorey Void**
  Ground under rainforests are dry – water managed on the way down and delivered to Niche.
Deck Lesson – Deep balconies Under the House?

Import

• Tuscan, Gothic

Export

• Buildings that respond to the environment. Small Hover Footprint
• Intertidal Urbanity Architecture.
• Social Inclusive - Ecology Inclusive
The Queenslander Highrise: Intertidal Urbanity for Coastal Neighbourhoods

Abstract

Many Queenslander’s earliest memories consist of wonderful worlds under high-set Queenslander houses. Many people criticise Surfers Paradise as being a concrete jungle of highrises that squashes the natural values typical of more remote Queensland beaches. Littoral Rainforest communities grow on thin coastal soils and create towering canopies that protect a shaded microclimate understory. People say they’d like to walk more but its just too hot out in the Queensland sun so they drive on increasingly congested coastal roads getting increasingly obese. Coastal highrise apartments attract huge prices due to their panoramic views of coastal landscapes, yet the view for the public moving around at street level is degraded.

A group of interns swarmed through Surfers Paradise in July 2007 and visualised an intertidal future of people enjoying lives in a climate changed world travelling along green mode urban infrastructure blended into foreshore ecology. Where will the space for new networks of green pathways and increased areas of coastal ecology come from for our coastal neighbourhoods accommodating high density living?

Often apartment dwellers on lower floors vandalise dune and mangrove vegetation to improve the quality of their view and hence the value of their apartments. Why not turn this equation around and take out the lower floors of the highrise to create places for intertidal ecology and views from public green mode corridors to the water and horizon? Density is not lost if residential floors are added to the top of the highrise. The Queenslander Highrise could have only support columns within an understorey void to the lowest apartment on level 5 or above. The lowest apartment would be located above the intertidal tree canopy height which would open up space for riparian environments to be enjoyed by people and plants. Queenslander houses hover above the natural landscape preserving the natural shape of the land and important drainage paths. Queenslander highrises may also allow ground level ecology, geomorphology and urbanity to evolve more naturally to challenges like climate change, seachange demographics and sea level rise.

Roof gardens for highrise is a growing trend around the world, yet the roofs are only visible to those rich enough to live up in the sky, roof gardens are heavy to support and roof gardens suffer from exposure to Queensland’s extreme weather conditions. A Queenslander highrise understorey void could accommodate understorey plants including larger trees, ferns that thrive under canopy shade and epiphytes clinging to support columns enjoyed by people at street level. Queenslander highrise can collect water and channel it to understorey voids in a similar way to rainforest trees. Ground level space within Queenslander highrise voids could be public open space while pools, gardens and function rooms occupy private space on higher floors.

Queenslander houses are famous for the trim added to the stumps to dress the understorey void. Roofs of coastal highrise have evolved from boring industrial slabs to cutting edge skyline elements that are enjoyed by those viewing the coast from the hinterland or at sea. For people walking around the local neighbourhood coastal highrise can appear bulky and oppressive blocking views to water. Queenslander highrises with understorey voids may open up a new understorey edge for architectural expression that frames the view to the horizon and waterline.

Peter Spearritt of the Brisbane Institute asks “Does the Queenslander have a future?”. We have seen slender balconies in Queensland highrise that were only useful for cleaning the outside of windows evolve towards deep balcony terraces that provide viable living spaces of the quality of the verandas and decks of Queenslanders. Why not also bring back the understorey voids of Queenslander houses into Queenslander highrise? This paper presents some ideas for coastal neighbourhoods of Queenslander highrises that open up new intertidal space for Queenslanders to enjoy sustainable coastal lifestyles.
References
1. Summer in the City - Does the Queenslander have a future? - Peter Spearritt, The Brisbane Institute
2. Intertidal Urbanity - Surfers Paradise - EDAW Intern Program 2007
   http://www.edaw.com/intern07/
3. IENCE Infrastructure to enhance the natural capacity of the environment. – The natural coastal design movement. – John McGrath – Gold Coast City Council.

Bio
John McGrath has a Civil Engineering degree from the University of Queensland and a Masters of Environmental Management from Griffith University. He has worked with Gold Coast City Council since 1993. His role includes beach protection, coastal and waterway management and advocacy for green mode transport infrastructure. His major projects include the Narrowneck reef, dune and riparian policy, the Gold Coast Oceanway, coastal planning scheme and green bridge networks.

Author
John McGrath
Coordinator Coastal Management
Gold Coast City Council
PO Box 5042
Gold Coast MC 9729
Ph (07) 5667 3766
Fax (07) 5667 3776
JMcGrath@goldcoast.qld.gov.au
Do Queenslanders have a future?