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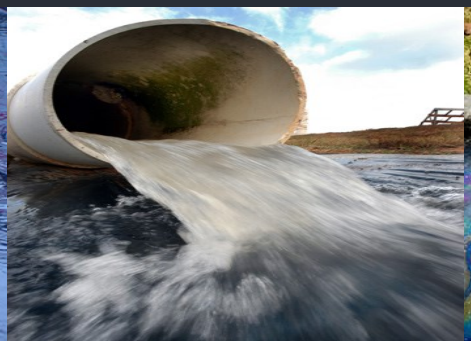
Stormwater Quality Management Plan

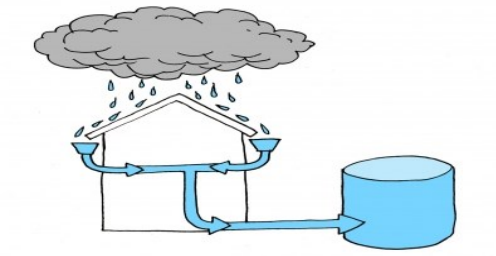




Water Sensitive Urban Design (WSUD) is a modern approach to managing stormwater that is now a requirement by councils across Australia. It uses the integration of physical and biological treatment systems to achieve sustainable water quality outcomes without compromising flood security or aesthetics.

The primary purpose of a Stormwater Management Plan is to protect waterways from pollution carried in stormwater runoff. Stormwater supplements as an alternative water source for proposed developments and current infrastructure as required under Queensland Development Codes.

WSUD aims to minimise stormwater peak flows and to improve stormwater runoff quality through use of:

- Rainwater tanks to collect roof water to enable reuse for irrigation, toilet flushing and general cleaning as well as reducing peak flow velocities;
- Stormwater tanks to collect stormwater runoff to enable reuse;

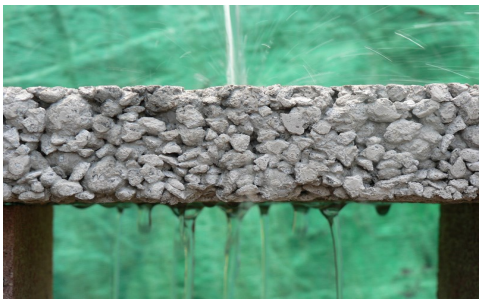


- Vegetated swales, landscaped infiltration swales and rock drains to treat and convey stormwater throughout the site whilst providing an aesthetically pleasing alternative to grated drains;

- Stormwater treatment using gross pollutant traps (left), bioretention basins (middle) or constructed wetlands (right) to ensure the quality of stormwater leaving the site is compliant with the water quality objectives of the receiving water body;



- Source controls, such as surface treatments or covered bunded areas to ensure industrial wastes do not enter the stormwater system; and
- Porous paving to reduce stormwater runoff from hard surfaces.



SSI can provide stormwater management advice for any size development. Each stormwater management plan will comply with any local Council or regulatory requirements and incorporate WSUD elements which are both appropriate for the site and offer multi-beneficial outcomes. We will work in with architects, planners, engineers, hydraulic designers and the client to ensure that the best and most integrated outcome is achieved.

Through computer modeling (MUSIC) we can determine the effectiveness of stormwater quality improvement devices and ensure that the water quality objectives for the site are met.

For more information please contact:
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SSI has also developed a Rainwater Harvesting Model to determine the optimum tank size for the collection of rainwater based on the roof area, water demand and daily historic rainfall data for the region of interest. The model is able to accurately quantify the supply potential of rainwater, savings in water consumption, and the reduction in stormwater discharge from the site.

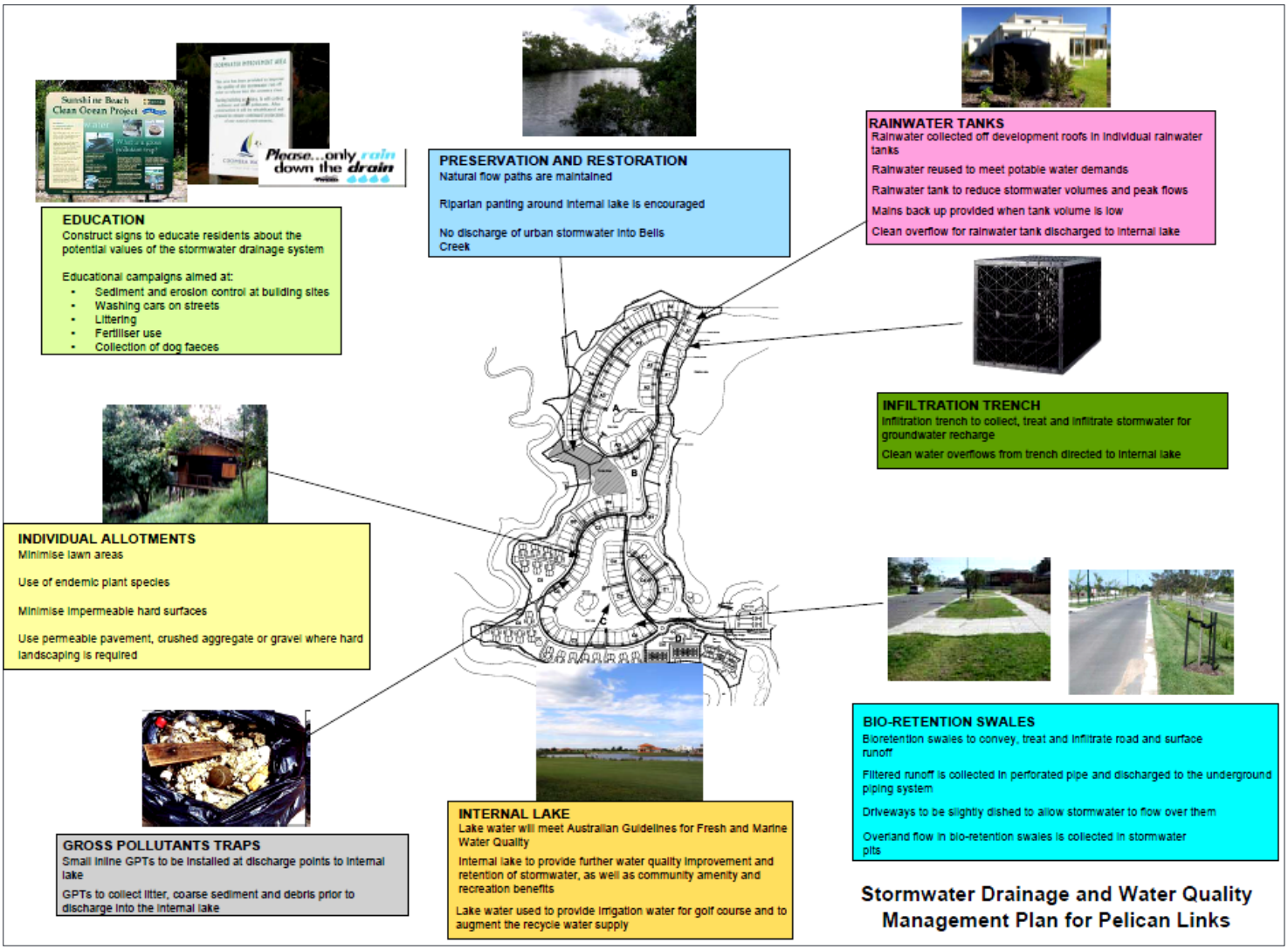
Key Projects

Pelican Links Sustainable Subdivision

Pelican Links is a unique residential community enjoying a prime location adjacent to the Club Pelican Golf Course and the natural environment of Bell's Creek at Caloundra in South East Queensland.

SSI prepared a stormwater drainage and water quality management plan (below) for the development which incorporated the following key features:

- The preservation and restoration of existing natural valuable elements, such as riparian planting around Bells Creek;
- An education campaign aimed at reducing stormwater pollutants at their source;
- Rainwater tanks to provide potable water supply for the allotments as well as to reduce stormwater volumes and peak flows;
- Infiltration trenches located along the rear of allotments to collect, treat and infiltrate surface water runoff for groundwater recharge;
- Bio-retention swales located along the sides of roadways to convey, filter and biologically treat surface runoff from roads and other hard surfaces;
- Gross Pollutants Traps (GPTs) to collect litter, coarse sediment and other debris prior to discharge into the internal lake; and
- An internal lake to provide community amenity as well as stormwater retention and additional water quality improvement.



Kelvin Grove Urban Village Student Accommodation Building

The Kelvin Grove Urban Village (KGUV) is a redevelopment site located within close proximity to the Brisbane CBD. The development was under strict sustainable design guidelines for the approval process.

SSI was commissioned to produced a Sustainable Stormwater Management Plan for the student accommodation building within the KGUV that incorporated the following WSUD components:

- Source controls to minimise contamination and ensure downstream water body quality, through the use of covered bins and signage;
- Rainwater storage tank with 200 kL capacity to enable rainwater harvesting and onsite reuse;
- Stormwater storage tank with 50 kL capacity to reduce stormwater runoff peak flows and enable on site reuse;
- Bio-retention system to treat stormwater before it leaves the site and ensure its quality; and
- Vegetated swales to divert and treat stormwater from an upstream catchment, reducing peak flows and contamination.

Marvel Street, Byron Bay

SSI completed a cutting edge Stormwater Management Plan for a prestige medium density housing development in Byron Bay. The WSUD elements adopted for the site include:

- Composting toilets to reduce mains water demand and sewage discharge
- Rainwater tanks that will be located under each of the residences for potable and non-potable water supply
- An infiltration trench that will collect, treat and discharge all overland flow and overflows from the rainwater tanks
- A grassed swale and vegetated contour banks to direct and dissipate overland flow on the site to the infiltration device
- Porous paving to infiltrate flows off impervious areas and minimising runoff from the site to the street.

SSI Stormwater Management Plans deliver improved environmental performance and increase the value of your development through increased visual amenity and reduced reliance on mains water.

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