

SOUTHWEST ROCKS DEVELOPMENT, NEW SOUTH WALES. A 900-LOT LOW IMPACT RESIDENTIAL DEVELOPMENT PROVIDING TANGIBLE BENEFITS FROM STORMWATER - FROM CONCEPT TO IMPLEMENTATION

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The proposed development site at South West rocks consists of 111.79 ha located on the outskirts of the township adjacent to the golf club. The land was considered extremely sensitive, as it is the catchment for the local wetlands that provide habitat for a large number of species of flora and fauna. Over the past 5 years development of this land was stalled, as an appropriate proposal for a residential subdivision could not be formulated. With the sensitivity of the wetland, Kempsey Council had strict criteria for assessing the proposed developments.

All previous proposals failed to gain council approval, as they could not adequately address the hydrology and water quality issues of the site. Iplex/TTS was engaged by the land owner to use innovative products and engineering to ensure Council requirements were met as well as providing a cost effective solution for the developer.

Only high quality stormwater runoff could be discharged from the development to maintain the biodiversity of the wetlands. In addition, a balance had to be made regarding the quantity of water directed to the wetland as the solution needed to ensure environmental flows were maintained.

Residential development significantly increases the volume of stormwater runoff as well as reducing the time to peak discharge. Iplex/TTS developed a solution based on separating lot roof and pavement water for harvesting and consumption in non-potable applications and road reserve water for controlled release to the lagoon and re-use in grey water systems.

The on-site retention process included an analysis of the water usage in each home and developing a rainwater tank and absorption trench solution for each lot. Using absorption trenches allowed the developer to take advantage of the high permeability of the sands underlying the site and also provides the environmental benefit of supplementing ground water flows.

Enforcing rainwater re-use on each residential lot allowed stormwater to be disposed off in a controlled manner and significantly reduced demand pressure on the potable water supply. Rainwater will be used for toilet flushing, laundry and controlled garden watering.

To control the flows and quality of the stormwater runoff from the roadways, Iplex/TTS's FloFast™ bio-treatment systems were utilised. These systems provide first flush treatment of runoff from the roads and allow a portion of the flow to be infiltrated into the soil strata. The balance of the higher water quality stormwater would then be directed to the wetlands allowing environmental flows to be maintained.

The combination of on-site retention and consumption, ground water recharge and high quality treatment provided an environmentally and economically sustainable outcome. The solution ensures local ecosystems will not be adversely impacted, and minimized the demand on the potable water supply. The net result satisfied the requirements of the land owner, the regulators and the local community.