



Integrated Water Management

"Bligh Tanner is at the forefront of integrated watercycle management practice in Australia, setting new benchmarks for the smart use of water..."

Dr Andrew O'Neill
Knowledge and Capacity Building Leader
Healthy Land and Water

Water is essential for human existence, yet urban population growth, climate change and environmental pressures are dramatically and permanently altering the ways in which we use and reuse water.

Bligh Tanner has set international benchmarks for innovative integrated water management.

The firm seeks to reduce the pressure of modern development on the water environment and create new development opportunities in an increasingly regulated landscape - balancing development objectives and sustainability initiatives.



Bligh Tanner is a structural, façade, civil, environmental and water engineering consultancy distinguished by its high level of expertise, personalised service and innovative approach.

The firm has been responsible for some of Australia's most innovative and complex engineering projects, from multimillion dollar special structures through to world leading integrated water management systems.

Bligh Tanner is known for solving complex problems and demonstrates a highly specialised approach to environmentally sustainable design.

We deliver engineering and consultancy services on a range of complex, cutting-edge projects across five key disciplines.

- + Building Structures
- + Land and Infrastructure Development
- + Water and Environment
- + Special Structures
- + Façade Engineering

With a commitment to integrating contemporary design with the surrounding built and natural environments, Bligh Tanner has a strong focus on environmentally sustainable design that provides impetus to innovation on all projects.

Alternative water supplies

1

Fitzgibbon Water Harvesting Project

This project is recognised internationally as a new model for hybrid centralised/decentralised water supply systems.

The innovative water management model allows the Fitzgibbon Chase housing community's water supply to grow as its population increases.

It features a potable roofwater harvesting system (PotaRoo) and non-potable stormwater harvesting system (the FiSH) that achieve a 60% savings on normal mains water use.

Bligh Tanner is currently project managing the recommissioning and operation of the treatment plants to demonstrate their effectiveness at supplementing and offsetting the community water demand.

Ongoing 2020-2022

Client Economic Development Queensland

Image credit Economic Development Queensland



1



2

2

Noosa North Shore Campground

The Noosa North Shore campground has previously been voted as one of the top ten campgrounds in Australia, but due to overuse it had become run down and was causing environmental problems.

Bligh Tanner assisted with the rejuvenation of the campground, including the design of an ecologically friendly approach to water supply and wastewater management.

The recommendations included utilisation of multiple water sources appropriate to the type of end use, and a novel zero-release wastewater system. This approach will minimise the need for water deliveries and proactively manage health and environmental risks.

Completed 2018

Client Noosa Council

3

Wamuran Recycled Water Scheme

To reduce environmental impacts on the Caboolture River, Unitywater is investigating the feasibility of supplying up to 8 gigalitres per annum of Class A recycled water to agricultural users in the Wamuran area. A guaranteed water supply of this nature has the potential to provide significant economic benefit to the region, through the ability to increase crop yields and allow for the production of higher value crops.

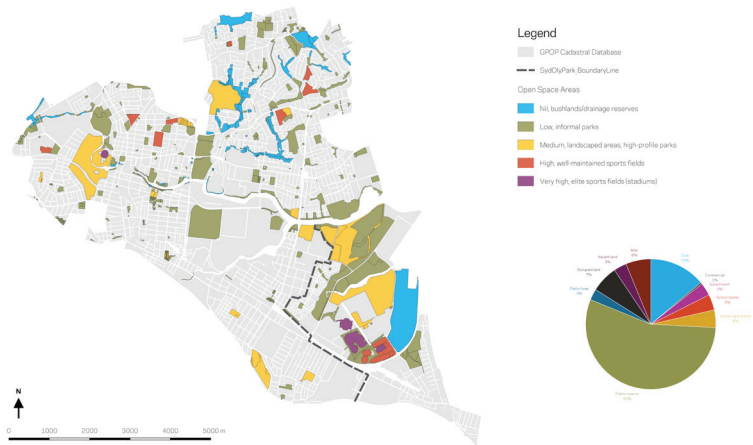
Bligh Tanner is providing expertise in recycled water quality and risk management, and is assisting Unitywater with the evaluation of contractor bids for the design, build, operation and maintenance of the scheme.

Completed in progress - 2019/2020

Client Unitywater



3



4

Parkland Stormwater Harvesting

Bligh Tanner designed four new stormwater harvesting schemes for Brisbane City Council at Norman Park, Langlands Park, Tarragindi and Downey Park, Windsor.

The systems combine existing stormwater drains with innovative floating flood gates to provide off-stream storage and treatment to supply an estimated 125 ML of water per year for the irrigation of nearby sporting fields.

Completed 2014
Client Brisbane City Council
Image credit clappstar

5

Melbourne Urban Potable Water Harvesting

The Melbourne Urban Potable Water Harvesting investigation evaluated options for harvesting roofwater and stormwater for potable use from existing urban areas in Melbourne, based on two specific residential study areas in Fitzroy North and Northcote.

The objective was to determine if, and at what scale, harvesting for potable use can become viable and assess a broad range of options for each catchment area.

Completed 2014
Client Yarra Valley Water
Image credit Peter Dunphy

6

Parramatta Irrigated Green Grid

This project involved an assessment of potential irrigation water demand and development of concepts for the irrigation of green spaces within the Greater Parramatta and Olympic Peninsula area in Sydney.

The review considered a range of alternative water supplies including use of an existing recycled water supply, and local sources including sewer mining and stormwater harvesting.

Heat mapping was also undertaken to assess the likely effects of the irrigated "Green Grid" in terms of mitigating the urban heat island effect.

Completed 2017
Client Sydney Water

Water management and planning

1

Western Sydney Liveability and Waterway Health

Bligh Tanner led a multidisciplinary team which developed a vision and scenarios for the major Western Sydney urban growth area, set to house one million extra people and 4,500 Ha of employment lands over the next 20 years. The project helped Sydney Water understand the role it can play in contributing to liveability and waterway health in the South Creek Catchment.

Urbanisation of the catchment means water and wastewater services need to be provided and stormwater and flooding managed. The project was intended to help build an understanding of the links between water and liveability, and stimulate thinking about Sydney Water's strategic servicing options.

Completed 2015
Client Sydney Water
Project partners V2i and CTEnvironmental

2

Moreton Bay Total Water Cycle Management Plan

The award-winning Moreton Bay Regional Council Total Water Cycle Management Plan (TWCMP) provides a blueprint for the future development of water systems within the region to meet the requirements for growth and the protection of the water environment.

Bligh Tanner worked with BMT WBM to assess engineering works associated with the TWCMP, specifically water supply, wastewater management, stormwater/roofwater harvesting and water recycling.

Completed 2012
Client Moreton Bay Regional Council
Project partners BMT WBM

3

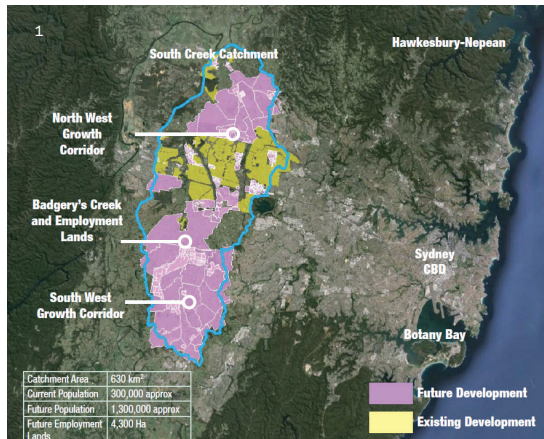
Drinking Water Management System Implementation

Bligh Tanner has been engaged by NSW Health on an ongoing basis since 2014 to provide assistance to regional and remote water service providers with the management of their drinking water supplies for the improvement of public health.

Challenges often include inadequate water treatment, staff shortages and capacity issues, and degrading infrastructure.

Bligh Tanner has undertaken over 40 discrete projects for NSW Health to date, each of which typically involves an on-site review, followed by a detailed risk assessment, review or development of critical control points, and update of their overarching management systems.

Ongoing 40+ projects to date
Client NSW Health



+ RELEVANT PROJECTS



4

Wastewater and recycled water risk management

Bligh Tanner was engaged to undertake a comprehensive review of wastewater and recycled water operations at Mount Isa, and develop operational documentation to ensure protection of public health and the environment.

These include:

- + Recycled water management plan
- + Receiving environment monitoring program
- + Integrated environmental management system

Completed Ongoing - 2019
Client Mount Isa City Council

5

Brisbane Stormwater Quality Priority Infrastructure Plan

Bligh Tanner helped Brisbane City Council incorporate stormwater quality provisions into its Priority Infrastructure Plan by developing a stormwater network planning methodology.

The methodology uses GIS data and a monte-carlo simulation approach to develop estimates of the most likely costs of meeting stormwater quality targets across different land uses and catchments in the Brisbane area, which can then inform infrastructure charges.

Completed 2013
Client Brisbane City Council
Image credit Nearmap

6

State Planning Policy Deemed-to-Comply Solutions for small development sites

As part of the review of the State Planning Policy, Bligh Tanner was engaged by the Queensland Department of Environment and Heritage Protection to address the management of stormwater quality for small development sites. In order to provide water quality benefits without imposing significant costs and delays, Bligh Tanner developed a range of deemed-to-comply site solutions which aim to provide improved water quality outcomes, with cost effective and practical solutions that will not constrain development.

Completed 2017
Client Queensland Department of Environment and Heritage Protection



7

7

Western Sydney

Western Sydney is one of Australia's most significant urban development areas, forecast to become home to one-million additional people over the next 20 years. It is a notoriously hot area, up to 10 degrees hotter than harbourside suburbs, and faces a myriad of water-cycle challenges including limitations on wastewater discharges into the Hawkesbury Nepean, soil salinity, and highly erodible waterways.

Bligh Tanner led the development of new urban typologies for this major new growth area (equivalent to a new city the size of Adelaide). The typologies resolve the combined challenges of urban density, housing affordability, and urban greening. The typologies are for low, medium and high density residential as well as commercial and industrial development, as well as typologies for the floodplain fringe. The typologies demonstrate that the parkland city objectives are able to be realistically implemented at a development scale, and are able to be facilitated through planning controls.

Water and energy efficiency

1

Moreton Bay Water & Energy Efficiency Strategy

Fuelled with momentum following the introduction of the Community Energy Efficiency Program, Moreton Bay Regional Council engaged Bligh Tanner to develop a water and energy efficiency strategy to further improve the environmental performance of Council facilities. The strategy assesses their performance on water and energy efficiency and provides a framework for further improvements in these areas.

Bligh Tanner identified opportunities for water savings including stormwater harvesting schemes for open space areas and expanded wastewater recycling.

Completed 2017

Client Moreton Bay Regional Council

Project partners Lossee Consulting



2

Drought Management and Water Restrictions Triggers

Council's priority for this project was to re-examine and further develop their water restrictions decision support tools; primarily the basis and appropriateness of their trigger limits but also the allowable uses.

Bligh Tanner developed a concise water restrictions framework which included decision support flowcharts and visually engaging water restriction trigger level wall-charts. One of the outcomes most beneficial to Council was the grouping of their 8 water schemes into 3 sub-regions for purposes of implementing water restrictions, providing consistency in customer messaging and ease of Operations.

Completed 2017

Client Gympie Regional Council



3

Water Efficiency Plan Development

Southern Downs Regional Council recognised the need to develop a framework for responsible water management in a future of climatic uncertainty.

Bligh Tanner was engaged to develop a generic Water Efficiency Plan (WEP) that could be provided to regional Councils in the Downs and Surat Basin region, as well as a specific WEP that addressed the individual needs and constraints of Southern Downs' drinking water supply schemes.

The project will involve working with the communities to manage demand, reduce consumption, and use alternative sources of water for long term security. This requires a focus on community education and behaviour change.

Completed 2019

Client Southern Downs Regional Council



4

Renewable Energy Projects

The sudden boom in solar farm construction represents a new and exciting growth area for Bligh Tanner.

Bligh Tanner is partnering with a Tier 1 contractor on their bids for a number of solar farm construction projects across Queensland, New South Wales and the Northern Territory.

Should the projects be won, we will provide a range of civil engineering advice covering stormwater management, erosion and sediment control, site access and roads.