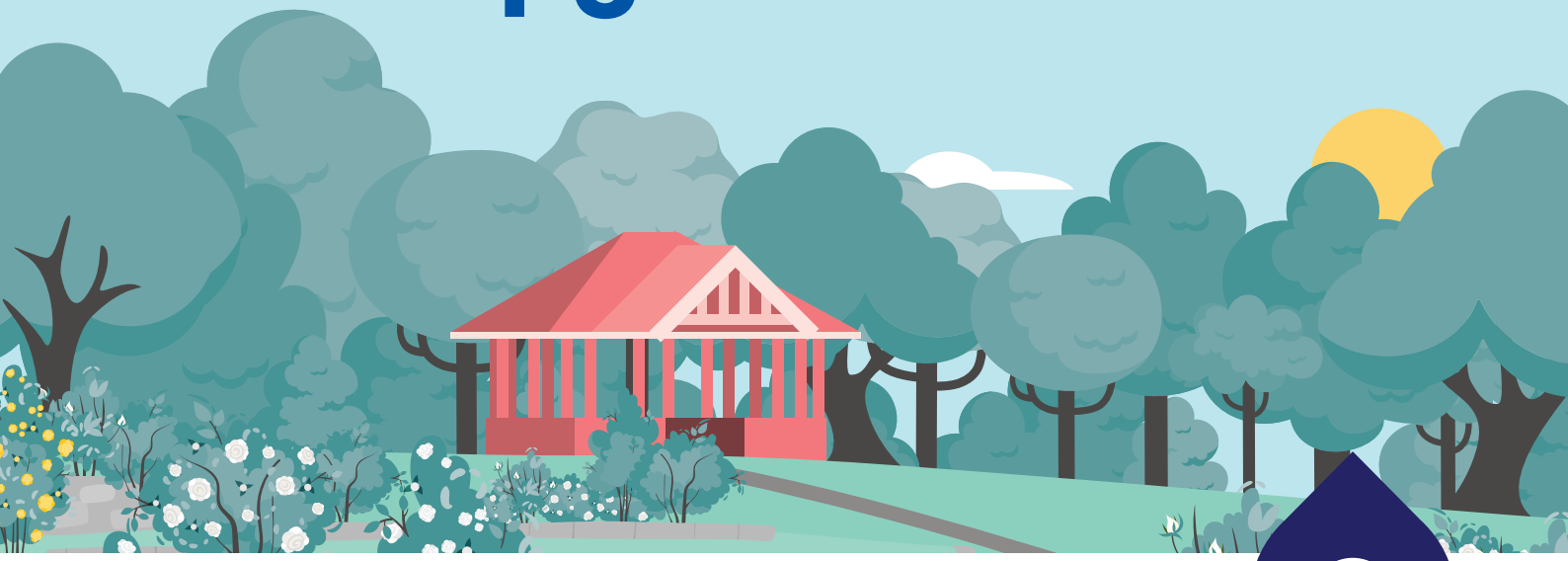
West Camden Water Recycling Plant Upgrade

Sydney WATER



Building for the future

Sydney Water together with their delivery partners Downer BMD JV are upgrading the West Camden Water Recycling Plant (WRP) to increase its treatment capacity to allow our city to grow while also protecting the public health and the environment.

We are close to completing the construction of all the structural buildings which have included many concrete pours.

The four Membrane Bioreactors (MBRs), Digestor and Blower Switch room have now taken shape and we can begin to see the final structure come together.

Once we finish the construction, we will start testing, connecting and commissioning. All our structures undergo vigorous testing and monitoring before the next stages can commence.

West Camden WRP upgrade in numbers: where we are at

30,000 tonnes
of dirt disposed offsite

75,000 tonnes
of enhanced soil imported and placed under MBRs

Approx.
6,000
cubic metres of concrete placed in structures

1.2km
of pipework laid

5M
litres of reycled water filled into MBR for leak testing

Hydrostatic Testing

In March 2023 we hit a major milestone in the upgrade by starting Hydrostatic testing of Membrane Bioreactors (MBR) 1 & 2 with the Digestor testing completed in April 2023.

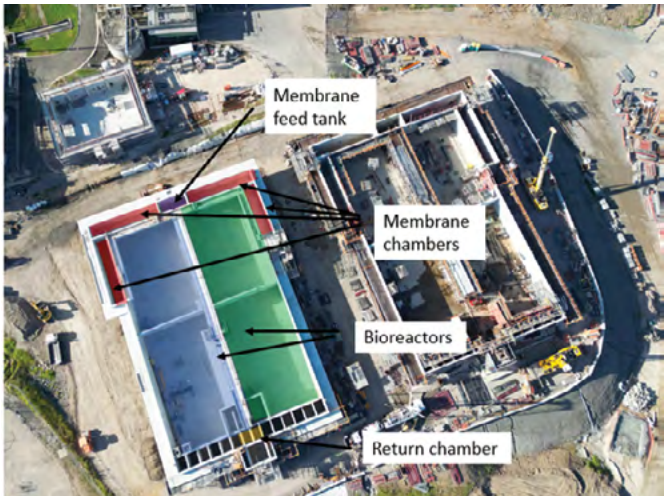
Hydrostatic testing is the process of subjecting equipment/structures to a controlled pressure and observing if any reaction occurs. It is a very important step in the engineering design and construction. Structures like the Membrane Bioreactors (MBR) and tanks are typically tested by filling the structures with water to the maximum operating level. Mechanical equipment like pipes, pumps, and pressure vessels are typically tested at much higher pressures.

The main purpose of hydrostatic testing is to test the structural integrity. At West Camden WRP, each of the four MBRs have been designed to operate while holding approximately 5 million litres of screened wastewater. During hydrostatic testing, the MBR's and digestor are filled to the top using recycled water and the structural strength is put to the test. This helps to verify the structure is adequately designed and the construction has been done to a high standard.

This testing period will also help us detect and rectify any leakages. This is an important step as it is easier to repair any leaks during the hydrostatic testing stage of the project, rather than to wait for the structure to be filled with wastewater.

We are currently testing MBRs 1 & 2 while construction continues on MBR's 3 & 4. The MBRs are one big structure with a number of chambers insidew. Each of these chambers will undergo testing independently to verify the strength of the internal walls.

The hydrostatic testing process begins by simultaneously filling up all chambers inside the MBR's 1 & 2. This is done to ensure there is equal absorption and settlement across all the concrete walls.
The water level is increased at a controlled rate to minimise the risk of shock loading on the structure. After the MBR's have been filled, the entire structure will then undergo a 'stabilising' period. This period will allow for moisture stabilisation of the concrete to take place. Small leakages observed on the structures outside wall are likely to repair itself during this period.



Hydrostatic testing chambers at West Camden

Once the stabilising period is complete, the 'testing' phase of the entire structure will then commence. During this period, water levels are monitored daily to ensure that the structure is watertight. Once complete, individual chambers inside the MBR are drained sequentially to ensure that the internal walls also undergo this testing phase. The hydrostatic test for the entire structure is expected to take approximately 30 days.

Our commissioning team plays a key role by establishing the hydrostatic test plan and drainage procedure. We also record the filling rates and water levels during the process. During the stabilising and testing periods, we regularly monitor the structures outer walls and identify areas of particular concern.

Planned Construction Timeline

May 2023 – September 2024

May
Pipework between the MBR, Inlet and Digester to connect all together

June
Installation of electrical and control systems begin

June
Completion of blower switch room construction

July
Installation of mechanical and electrical equipment on both MBR structures

August
Completion of concrete works of Inlet structure/MBR 3 & 4

January
Ultimate Completion MBR tanks

February
Commissioning of MBR

June
Major Construction completion

July to September
Commissioning of the new plant components

Home Amongst The Gumtrees

The ‘loss of hollow-bearing trees’ is a Key Threatening Processes listed under the Biodiversity Conservation Act 2016, with approximately 20% of native fauna species relying on tree hollows for roosting, nesting and breeding.

On 1 February 2023, ecologists installed 10 nest boxes into mature Eucalyptus moluccana (Grey Box) and Eucalyptus tereticornis (Forest Red Gum) trees at the West Camden WRP. The nest boxes were made from salvaged hollows from three hollow bearing trees that were felled earlier in the project.

The nest boxes were attached to trees using the Habisure System which uses a soft plastic-coated wire with a coil or spring and hosepipe to secure the hollow to the tree. This system ensures no damage is inflicted on the recipient tree and allows it to grow unimpeded.

The natural variation in hollow sizes and shapes and their positioning in different trees will create a habitat for a range of native fauna including small parrots, microbats and other hollow-dwelling mammals.

The Environmental team will eagerly monitor the hollows as the project continues.

Installation of nest boxes at West Camden WRP in February

Harmony Day

Harmony Day is a time for everyone to celebrate the enormous benefits of multiculturalism. The day recognises the importance of cultural respect, participation, and inclusiveness for everyone who calls Australia home.

In March 2023 we celebrated Harmony Day with an Aussie BBQ and orange Harmony Day cupcakes. During our celebrations we took the opportunity to ask our 110 employees and subcontractors on site a bit about their background and heritage.

Our team on site for Harmony Day in March

Here’s what we found out:

38%
were born in Australia

16%
in Mongolia

26%
in Ireland

and 22%
in other countries

There are 27 different nationalities with Irish and Mongolian ranking two of the highest.

Our team speaks 18 different languages other than English.

Blower and Switch Room: Did You Know?

North of the MBRs is the Blower and Switch room building, the heart and lungs of the wastewater treatment process. As the name suggests, the ground floor of the building houses the blowers that blow air through a combination of above ground and underground pipework into the MBRs to facilitate aerobic process. The first floor of the building houses all the low voltage switchboards and control panels that supply power to the new upgraded plant.

The Blower and Switch room building at West Camden WRP

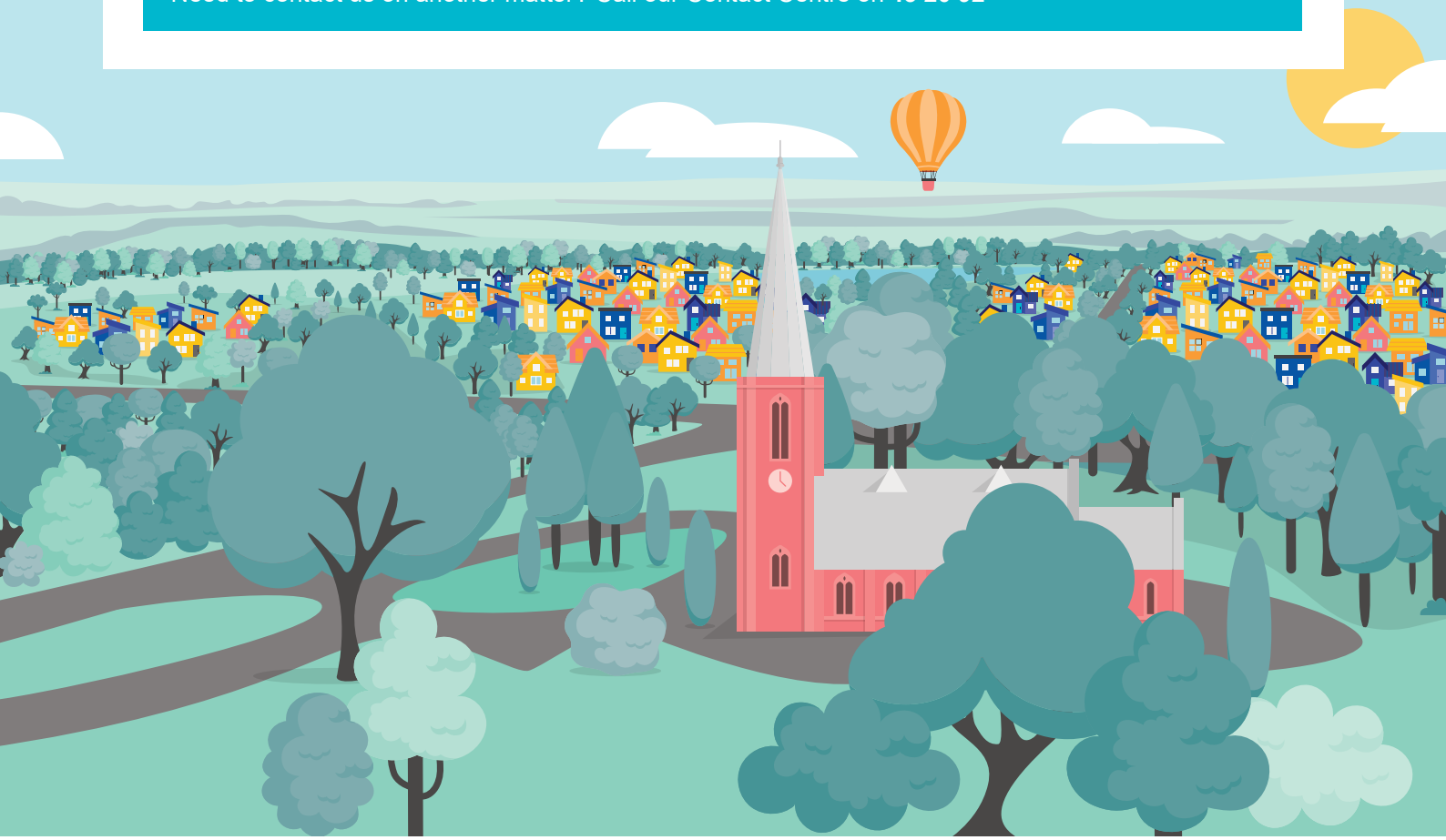
Staying updated – on time, every time

Web:
sydneywatertalk.com.au/west-camden

Email us:
WestCamdenWRP@sydneywater.com.au

To find out more about the project please visit our SydneyWater Talk Page

Need to contact us on another matter? Call our Contact Centre on **13 20 92**



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