



## Media Release

21 November 2012

### **BARANGAROO SOUTH WATER COOLING SYSTEM COULD SAVE 100 MILLION LITRES OF FRESH WATER PER YEAR**

Lend Lease has lodged a modification to its approved project plans for the basement works at Barangaroo South (MP 10\_0023) that seeks approval to include key infrastructure for the centralised cooling system. It also proposes amendment to the vehicle access arrangements at the north end of the basement site.

Using a centralised District Cooling Plant with a harbour water cooling system is a key sustainability initiative for Barangaroo, saving both energy and water. A centralised district cooling system is more energy efficient than individual building systems and consumes much less energy for a given cooling load. Also, using harbour water means the system consumes virtually no potable water compared to cooling towers, which require large amounts of water to reject heat.

The centralised cooling system at Barangaroo South will be the largest harbour water system operating in Sydney, designed to support the cooling systems of all of the buildings proposed in the precinct. Once the development is complete and the buildings are fully occupied, the harbour water cooling system could save up to 100 million litres of water from the Sydney Water mains network each year. This is equivalent to 40 Olympic sized swimming pools of water that would otherwise be needed to operate a cooling tower based system for each building.

The use of harbour water in cooling systems is not new for Sydney and has been operating for more than a century, predominantly as cooling systems for the early power stations at Ultimo (1902), Balmain (1903), Pyrmont (1904) and White Bay (1912). The emergence of commercial air conditioning in the 1960's led to a number of building based harbour water cooling systems being installed. Examples include:

- Sydney Opera House – Circular Quay
- AMP Building – Alfred Street – Circular Quay
- Park Hyatt Hotel – Circular Quay
- Museum of Contemporary Art – Circular Quay
- Sydney Convention & Exhibition Centre – Darling Harbour
- Star Casino – Pyrmont Bay
- Power House Museum – Darling Harbour
- Macquarie Bank Building – Shelley Street - King Street Wharf

At Barangaroo the harbour seawater will enter the cooling system at the Southern Cove and will pass through a series of screens, filters and strainers to protect and filter out marine life and small organisms. The clean harbour water will then be pumped through separate circuits to a number of electric chiller sets. The number of chillers used at any one time, and therefore the volume of water used, will be dependent on the cooling requirement, which in turn will vary on a daily, weekly and seasonal basis.

Once the water has passed through the cooling system it is all returned back into the harbour through a number of outfall pipes located below the water surface along the western waterfront of Barangaroo. In performing its heat exchange function, the returning water will be at a slightly higher temperature than the ambient harbour water temperature (up to a maximum of seven degrees centigrade), in accordance with Australian Standards and ANZECC Guidelines.

Extensive modelling and environmental assessment, which has been reviewed with the NSW Office of Environment and Heritage, NSW Maritime and Sydney Harbour Authority, has demonstrated that this water temperature differential is quickly dissipated within a number of metres of the discharge point and will have no negative impact on the marine environment of Darling Harbour.

The 75W planning application documents, MP 10\_0023 Mod 5 (Bulk Excavation and Basement Car Parking), are on public exhibition from 21 November 2012 until 14 December 2012 and are available to view and comment on at the Department of Planning and Infrastructure's Information Centre, 23-33 Bridge Street, Sydney and online at [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au).

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