HUNTER WATER SECTION s170 REGISTER



ITEM NAME:

Newcastle Reservoirs

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ITEM DET	TAILS					(:≡)	
Item Name		Newcastle	Reservoirs				
Other / Former Names		The Hill 1 and Hill 2 Water Reservoirs					
NSW SHI No.		3630023					
GID		WR-THL-0	02-RES				
Plant No.		400428					
Local Government Area		Newcastle					
Lot and DP		Lots 346–3	347 DP758769, Lots 1–5	DP1141417			
Address		51 Brown	Street, The Hill NSW 230	0			
Curtilage		The curtilage of this asset is defined by its legal allotment boundaries (defined by the relevant Lot and DP). This corresponds with the State heritage listing curtilage for this item.					





Asset location and curtilage (red boundary) (refer to Figure 1 for additional detail)

HUNTER WATER | SECTION S170 REGISTER



HISTORICAL OVERVIEW

Current Use	No 1 Reservoir: decommissioned
	No 2 Reservoir: water storage
Former Use	No 1 Reservoir: water storage
	No 2 Reservoir: N/A
Designer / Builder	Public Works Department
Historical Notes	Ongoing drought throughout the 1860s resulted in frequent water shortages (Extent 2016: 12). There was increasing public concern over the lack of reliable water for public health, domestic hygiene, and firefighting requirements. In 1866, the first Water Committee was established by Newcastle Council. For the next decade, the Committee investigated a number of potential schemes to secure the water supply. None of these came to fruition, and, in 1877, a commission was appointed to rectify the situation. The hydraulic engineer William Clark was placed at the head of the commission. He concluded that the Hunter River was the only secure source of water for the area and devised a scheme to pump water from the river to a nearby tank, then to Buttai Hill, and then to various reservoirs to serve local townships.
	The Newcastle No 1 Reservoir was intended to be part of this scheme. Construction on the scheme commenced in 1880, with many of the components completed by 1885. The Newcastle No 1 Reservoir was completed in 1882 and received its first water in December 1885.
	Towards the end of the nineteenth century, the Hunter District Water Supply and Sewerage Board realised that the Hunter River could not continue to meet the water requirements of the region as the population grew. Droughts in the early twentieth century confirmed the untenable supply and restrictions had to be placed on how much water could be drawn from the reservoir network. The chief engineer of the Board, J B Henson, explored the potential of drawing water from the rivers north of the Hunter River, such as the Goulburn or Chichester Rivers. The Chichester River was eventually favoured, and construction on a dam commenced in 1916.
	As part of the Chichester Dam scheme, alterations had to be made to the existing reservoir network to prepare for the additional water. In 1918, construction on the Newcastle No 2 Reservoir was completed.
	In the late 1920s, a pumping station was added to Tyrell Street due to issues with maintaining water levels at the Newcastle Reservoirs. Not only would the pumping station increase the water supply from the main water network, but it would also allow for additional water to be drawn from the nearby Waratah Reservoir if required.
HERITAGE STATUS	

HERITAGE STATUS

Listing Details	S170 Heritage and Conservation Register
	☑ Local heritage listing
	State heritage listing
Conservation Management Plan	Extent Heritage Pty Ltd, 2016, <i>Newcastle Reservoirs Site, Conservation Management Plan</i> , prepared for Hunter Water Corporation
Heritage Asset Action Plan	□ N/A
Aboriginal Sites Registered within the Site	AHIMS search undertaken on 20 October 2022 of Lat, Long from: -32.9308, 151.7769, Lat, Long to: -32.9298, 151.7788. No sites were registered within the search area.
Historical Archaeological	The CMP states:
Potential	due to the high level of disturbance to this site during the construction of the reservoirs, the archaeological potential of the area is considered negligible.
	As such, the historical archaeological potential of the asset is assessed as nil.



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HERITAGE SIGNIFICANCE

Level of Significance	State
Statement of Significance	The Newcastle Reservoirs Site is of State heritage significance for its historical associations with the Walka and Chichester water supply schemes, respectively the first and second water supply schemes for the Hunter district. The Walka scheme was the first in Australia to incorporate both filtration at source and fully enclosed water distribution and storage and led to the formation of the Hunter District Water Supply and Sewerage Board, a State entity important in the social and economic development of New South Wales.
	The Newcastle Reservoirs Site is of State heritage significance in demonstrating the transition from ad-hoc local water sources to centralised reticulated water supply systems characterised by reliability and freedom from contamination. It is of State heritage significance for its association with several persons important in the history of NSW civil and hydraulic engineering. These include William Clark; Edward Orpen Moriarty; Cecil West Darley; and Robert Rowan Purdon Hickson.
	Newcastle Reservoir No. 1 is of State heritage significance in demonstrating the importance of aesthetic treatment in nineteenth century NSW water supply infrastructure, and as one of only two NSW water reservoirs known to feature tied brick arches as developed by William Clark. Reservoir No. 1 is of State heritage significance in demonstrating the manner in which nineteenth century NSW water supply infrastructure was influenced not only by UK practice but also by that of British India.
	Newcastle Reservoir No. 2 is of State significance as an early application in NSW of reinforced concrete construction to a water reservoir on an urban site with design treatment dictated by the surrounding streetscape. Reservoir No. 2 is of State heritage significance in demonstrating the use of contemporary design treatments in the introduction of reinforced concrete construction to the NSW urban environment.
	Both Newcastle Reservoir No. 1 and Newcastle Reservoir No. 2 are of State significance for the intactness of their fabric, and are of local heritage significance because of the esteem in which they are held by past and present employees of the Hunter District Water Board and its successor entities.
NSW SHR Criteria	🔀 a) Historical
	🔀 b) Associative
	🔀 c) Aesthetic / Technical
	🔀 d) Social
	🔀 e) Research Potential (yield new information)
	🔀 f) Rare
	🔀 g) Representative
Significant Elements	• No 1 Reservoir entrance portico is stylistically similar to Four Mile Creek 1 Reservoir.
	• Overall form, structure, scale and design of all buildings on site including reinforced concrete construction.
	Terraced landscaping across the site.
	Prominent position and visual relationship to surrounding streetscapes.
	this asset:
	No 1 Reservoir:
	 Reservoir structure (overall form, shape and design).

 $\circ \quad \text{Reservoir roof-stone coping.}$



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- Boundary wall brickwork, stone coping, render coping.
- Entry portico structure, stone steps.
- \circ $\;$ Tied brick arches.

No 1 Reservoir Valve House:

• Valve House brickwork.

No 2 Reservoir:

- Reservoir structure (overall form, shape and design).
- o Boundary wall brickwork, precast concrete details, render coping, bronze plaque.

No 2 Reservoir Valve House:

- Valve House brickwork, render details (plinth, sills, architraves), terracotta roof tile, soffit and fascia, valve stems.
- o Depth gauge.

Note: reference should be made to the significance gradings provided within the most recent CMP for the asset when considering works.

DESCRIPTION	(i)
Setting	The reservoir complex is located south of the Newcastle CBD within a predominantly residential area. It is surrounded by buildings of mixed age, dating from the late nineteenth century through to recent additions.
External Appearance	The reservoir complex contains two reservoirs (No 1 Reservoir and No 2 Reservoir) and associated valve houses surrounded by a substantial brick wall. The external wall consists of brick varying in colour from red to brown laid in English bond (southern extent) and Flemish bond (northern extent). Sandstone quoins are present on the corners of the southern extent. The wall also features detailing such as shallow arches, sandstone capping, and exposed faux rafter ends. Within the walled space, terraced landscaping provides access to the structures across several levels.
	The entrance gate opens onto the No 1 Reservoir valve house and No 1 Reservoir entrance. Sandstone steps lead up to a brick landing at the valve house, a decorative stretcher bond brick building. Two entrances are present on the western façade, which are set with arched flush green-painted timber doors. The southern-most door is slightly taller and narrower than the northern door. A porthole window is set in each of the northern and southern façades, and arched windows in the eastern façade. The northern porthole window is the only window that has not been boarded up. The building has a flat roof.
	A continuation of the sandstone steps leads up to the entrance to the No 1 Reservoir, which consists of a sandstone portico in the Victorian Academic Classical style. It features a pilaster either side of an arched entry door and a pedimented bay inscribed with '1882'. The reservoir is surrounded by an earthen embankment supported by brick walls laid in English bond and capped with sandstone. A set of metal steps lead to the grassed tops of No 1 and No 2 Reservoir.
	Across a level grassy terrace, brick steppingstones lead to the No 2 Reservoir and valve house. The valve house is stylistically complimentary to the earlier valve house. The bricks have been laid in Flemish bond and feature column and faux rafter end detailing on the southern entrance façade. The entrance is set with arched double flush green-painted timber doors. A single arched window is present in each of the eastern and western façades, and a porthole window is present in the northern façade. Decorative render highlights the door and window arches. The roof is clad with Marseille ceramic tiles. A timber gauge board is present adjacent to the door.
	The No 2 Reservoir does not have its own entrance and is accessed through the valve house. The reservoir is surrounded by an earthen embankment supported by brick walls laid in stretcher bond and capped with concrete.



Internal Appearance	The valve house to No 1 Reservoir internally consists of a single room. Brick columns in the centre of the space suggests that the building may have once functioned with two rooms. The floor is concrete and has been replaced recently. The ceiling has also been re-rendered. Electrical infrastructure is mounted to the walls.
	No 1 Reservoir is currently empty. An archway and metal steps at the rear of the sandstone entrance portico provide access to the internal space of the reservoir. The reservoir is square shaped with multiple aisles. The arched brick ceiling is supported by regularly spaced squared brick columns with stepped bases and sandstone tops. The surrounding internal wall is brick laid in English bond The floor is concrete. Original iron pipes and pump infrastructure are present within the northern aisle.
	The valve house to No 2 Reservoir internally consists of a single room. The floor consists of timber floorboards. Pump machinery is present throughout the room. No 2 Reservoir is accessed from within the valve house but is currently in use and was not inspected.
Overall Condition	Fair.
Moveable Heritage Objects	None identified.

MANAGEMENT	
Approval and Assessment Requirements	Any works to this asset will require consideration against the <i>Heritage Act</i> 1977 as it is a State listed heritage item.
	If works fall within the parameters of a Standard Exemption under s57 of the Act, heritage advice and a self-assessment report and record will be required.
	If works do not fall within the parameters of an exemption, approval from Heritage NSW will be required via an application under s60 of the Act.
	In all instances, confirmation of the appropriate assessment/approval pathway should be sought from the Environment Team prior to works commencing.
General / Ongoing Management	• Changes within the defined curtilage should be preceded by the appropriate level of heritage assessment and approval. Advice and/or confirmation should be sought from the Environment Team prior to undertaking any works.
	Maintain overall form, shape and scale of the asset.
	• Changes to fabric may be supportable if no feasible alternative is available to ensure ongoing operation and/or safety.
	 Replacement/removal of redundant or failing elements or equipment is acceptable to facilitate ongoing operation.
	 Removal of non-significant elements is supportable. Any replacements must be appropriate/sympathetic.
	• Undertake review of and update the applicable CMP every 5-7 years. The 2016 CMP requires revision as soon as possible.
	 The policies contained within the CMP should be followed to conserve and manage the heritage values of the asset in line with the operational needs of Hunter Water.
Priority Conservation Works	It is noted that conservation works are currently being undertaken to this asset based on recent (2023) investigation and professional advice. The following Priority Conservation Works are therefore generalised advice:
	 Assess and repair damage to brickwork, concrete and sandstone, including mortar loss, spalling, delamination, and cracking. Re-point brickwork as required.
	 Clean surface of bricks, concrete and sandstone to remove discolouration and prevent deterioration.
	 Undertake structural repairs as required and based on professional advice. In particular, rusted or failing metal elements should be repaired/replaced to avoid ongoing structural issues.



KEY IMAGES



Image 1: Terraced landscaping across the site, view to No 1 Reservoir entrance portico and valve house.



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Image 2: Terraced landscaping across the site, view to rear of No 1 Reservoir entrance portico and No 2 Reservoir valve house.



Image 3: Entrance to valve house for No 1 Reservoir.



Image 5: Internal space of valve house for No 1 Reservoir.



Image 4: Roof of valve house for No 1 Reservoir.



Image 6: Internal space of valve house for No 1 Reservoir.

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Image 7: Sandstone entrance portico to No 1 Reservoir.



Image 8: Steps leading to the internal space of No 1 Reservoir.



Image 9: Central aisle of No 1 Reservoir.



Image 10: Brick columns of No 1 Reservoir.





Image 11: Iron pipes and pump machinery within No 1 Reservoir.



Image 12: Arched ceiling of No 1 Reservoir.



Image 13: Entrance to valve house for No 2 Reservoir.

Image 14: Rear of valve house for No 2 Reservoir.





Image 15: Interface between the 1882 wall (red, background) and 1918 wall (brown, foreground).



Image 17: Cracking and mortar loss in 1882 wall.



Image 16: Staining, brick and mortar loss, damage to concrete and sandstone detailing in 1918 wall.



Image 18: Staining, sandstone sugaring and damage in 1882 wall.



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