

# HUNTER WATER

## SECTION s170 REGISTER



ITEM NAME:

## Dudley 1 Reservoir

Contents:



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### ITEM DETAILS



Item Name	Dudley 1 Reservoir
Other / Former Names	Dudley Reservoir
NSW SHI No.	3630010
GID	400416
Plant No.	WR-DUD-001-RES
Local Government Area	Lake Macquarie
Lot and DP	Lot 114 DP 1132668
Address	5 Banfield Lane, Dudley NSW 2290
Curtilage	The curtilage of this asset is defined by its legal allotment boundaries (defined by the relevant Lot and DP).



Dudley 1 Reservoir, looking south-east



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

## HISTORICAL OVERVIEW



Current Use	Water storage
Former Use	N/A
Designer / Builder	Hunter District Water Supply and Sewerage Board
Historical Notes	<p>The extension of the water supply from Charlestown to Dudley, and the reticulation of the township of Dudley, was completed in the year 1927-28. It was not until 1928 however, that Dudley Reservoir was completed (with the exception of the roof), being made available for the summer of 1928-29. The roof of the reservoir was originally fabricated in galvanised iron, and completed in 1930, however this roof has been replaced in modern materials in recent years.</p> <p>The date attached to the reservoir indicates it was fabricated in England in 1877 however there are very few records of its use between arriving in Australia and installation as Dudley Reservoir 1 in 1928. Two potential uses for the tank prior to this include: use by a private manufacture in Newcastle prior to its sale to the (then) Hunter District Water Supply and Sewerage Board or the tank was at Walka Waterworks and relocated to Dudley in 1928. Further historical archival research would be required to confirm the use of the tank prior to 1928.</p>

## HERITAGE STATUS



Listing Details	<input checked="" type="checkbox"/> S170 Heritage and Conservation Register <input checked="" type="checkbox"/> Local heritage listing <input type="checkbox"/> State heritage listing
Conservation Management Plan	<input checked="" type="checkbox"/> Futurepast Heritage Consulting Pty Ltd, 2013, <i>Dudley Reservoir Conservation Management Plan</i> , prepared for Hunter Water Corporation
Heritage Asset Action Plan	<input type="checkbox"/> N/A
Aboriginal Sites Registered within the Site	AHIMS search undertaken on 8 March 2023 for Lot 114 DP 1132668. No Aboriginal sites were registered within the search area.
Historical Archaeological Potential	<p>The following assessment was prepared for the Dudley Reservoir CMP in 2013.</p> <p><i>The subject site is highly disturbed by the construction of the reservoir, which is submerged into the earth approximately one metre below current ground level. It is presumed that the present ground level represents backfill over the site following the completion of the reservoir. The second concrete reservoir would have caused further disturbance, running to a considerable depth in its immediate vicinity. Analysis of the condition of the site leads to the conclusion that there is unlikely to be any significant archaeological material and there is no historical evidence that the site has been used for another other purpose prior to the construction of the reservoir (FuturePast 2013).</i></p>



Level of Significance	State
Statement of Significance	<p>Dudley Reservoir is a segmented cast iron reservoir fabricated in England in 1877 and established on its current site in 1928. It comprises cast-iron plates that are bolted together and strapped with tensile steel bands.</p> <p>It is the oldest reservoir (by fabrication date) in the Hunter Water network and the only bolted-together segmented cast iron reservoir known to exist in New South Wales.</p> <p>This style of prefabricated construction was unusual for a large water reservoir, being more typically used for small-scale header tanks in a rectangular configuration within buildings or for the railways.</p> <p>The detailing of the cast iron segments is aesthetically interesting and provides an unusual texture of detail for a relatively small-scale reservoir. It continues to function as a reservoir supplying water to the Dudley area.</p>
NSW SHR Criteria	<p><input checked="" type="checkbox"/> a) Historical</p> <p><input type="checkbox"/> b) Associative</p> <p><input checked="" type="checkbox"/> c) Aesthetic / Technical</p> <p><input type="checkbox"/> d) Social</p> <p><input type="checkbox"/> e) Research Potential (yield new information)</p> <p><input checked="" type="checkbox"/> f) Rare</p> <p><input type="checkbox"/> g) Representative</p>
Significant Elements	<p>The CMP for the Dudley Reservoir provides the following grading of significant elements at the site.</p> <ul style="list-style-type: none"> <li>Dudley Reservoir 1 – exceptional. Significant components of the reservoir: <ul style="list-style-type: none"> <li>Walls, strapping, framing and signage – Exceptional.</li> <li>Internal reservoir membrane – little (low).</li> <li>Reservoir Paintwork – little (low).</li> <li>Reservoir Roof – little (low).</li> <li>Water pipework – some (moderate).</li> <li>Scour valves – little (low).</li> <li>Electrical water level monitoring equipment – little (low).</li> <li>Ladder and framing – little (low).</li> <li>Access hatch and guard fence – little (low).</li> </ul> </li> <li>Dudley Reservoir 2 (1965 concrete tower) – little (low).</li> <li>Landscaping, gates and fencing – little (low).</li> <li>Telecommunications equipment – intrusive (nil).</li> </ul>

## DESCRIPTION



<b>Setting</b>	<p>Dudley 1 Reservoir is located on a grassy hilltop, in an irregularly shaped piece of land between Ocean Street, Twiston Street and Banfield Lane.</p> <p>The site contains the 1927/1928 cast iron tank located next to Dudley Reservoir 2; a concrete tower reservoir added at a later date. A drainage ditch is located to the north of the Dudley Reservoir, intended to direct scoured water away from neighbouring urban development. The site also contains a pump installed below ground.</p> <p>To the west of the Dudley 1 Reservoir is an area leased from Hunter Water for telecommunications infrastructure. This, along with the concrete tower for Dudley 2 Reservoir, are non-significant elements of the site and are excluded from the listing.</p>
<b>External Appearance</b>	<p>The Dudley 1 Reservoir is a segmented cast iron tank on an unknown base that is concealed by earth. There are three levels of segments that are bolted together at the edges and secured by a steel band that is chocked every seven to eight segments. A later galvanised steel roof on a timber frame has been added, possibly replacing an earlier roof.</p> <p>Each plate is near square-shaped and made of cast iron and reinforced with flanges in the casting at the edges and cross bracing. There are flanged quarter circles at the corners and a circle in the centre of each plate for strength and to allow space for the bolts. Each plate is bolted on each edge to its adjoining plates, which are arranged in a running bond pattern. Each plate has further cast flanges to hold the tie bands in place. The steel tie bands are joined with cast dowel and receptor joints, which are held in place with a cast steel spike. One cast plate bears the maker's mark, 'BIRTLEY IRON Co 1877'. Birtley is a small town in northern England, close to Gateshead, which is close to the city of Newcastle upon Tyne.</p> <p>Timber rafters support an eight-side pyramid roof that is clad in corrugated steel. The fascia is curved fibre cement that is nailed to the rafter ends. The access ladder appears to date from 1928 or later.</p> <p>The approximate dimensions of the Dudley 1 Reservoir tank are 65 feet (20 metres) x 14 foot 9 inches (4.5 metres) high, with an approximate volume of 311,000 gallons.</p>
<b>Internal Appearance</b>	<p>Interior lining of the reservoir is white epoxy coating to the walls, with a concrete base. The roof of the reservoir is supported internally by a central cast iron column (original) with additional supports installed onto concrete block footings around the interior perimeter of the reservoir (FuturePast 2013).</p>
<b>Overall Condition</b>	<p>Good.</p>
<b>Moveable Heritage Objects</b>	<p>None identified.</p>



## Approval and Assessment Requirements

**Minor or inconsequential impacts:** Anything other than routine repair and maintenance must be discussed with the Environment Team to determine the level of heritage assessment required.

**More than minor or inconsequential impacts:** As above. Reference should be made to the most up to date CMP for this asset as part of any works planning, in recognition of its State significance. Additionally, consultation with the relevant local council is required.

Demolition or removal from the register requires consultation with Heritage NSW and archival recording.

## 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 Reservoir. Original iron and steel details must be maintained.
- Changes to fabric may be supportable if no feasible alternative is available to ensure ongoing operation and/or safety. Wherever possible, changes should be restricted to the interior of the reservoir and be designed to minimise impact to significant fabric.
- 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.
- Consider nominating the Reservoir for inclusion on the NSW State Heritage Register.
- Undertake review of and update the applicable CMP every 5-7 years. The 2013 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

- Routine maintenance of existing fabric is essential. This includes maintaining the protective coating over all steel products and protecting the roof timbers from rain.
- Remove graffiti from external surface.

# KEY IMAGES



**Image 1:** The Dudley 1 Reservoir is the lower green reservoir, seen here looking north-east along Banfield Lane, Dudley 2 HLT in foreground



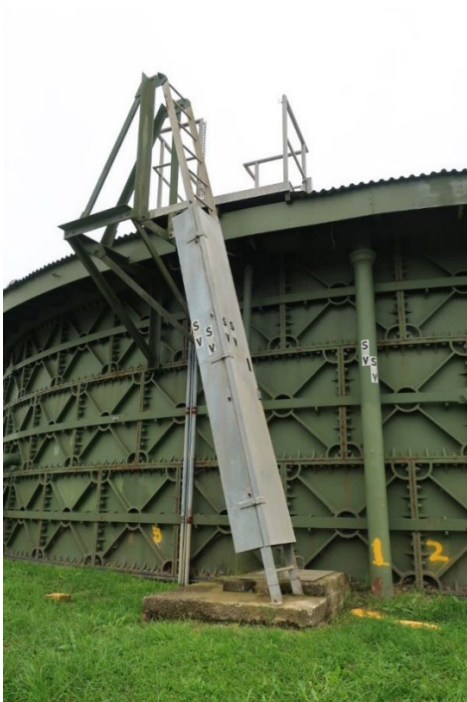
**Image 2:** Dudley 1 Reservoir, looking south-east



**Image 3:** Dudley 1 Reservoir maker's plaque



**Image 4:** Dudley 1 Reservoir, looking east



**Image 5:** Dudley 1 Reservoir's non-original access ladder



**Image 6:** Dudley Reservoir showing detail of the construction on the tank sides



**Image 7:** Dudley 1 Reservoir contemporary eave detail and maker's mark



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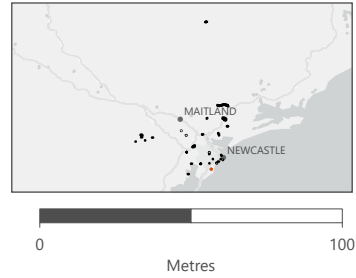
**FIGURE 1**

# S170 Review - Heritage Curtilages

**Legend**

- Road
- + Railway
- Lot Boundary
- ▭ Heritage Curtilages

## Dudley 1 Reservoir



Scale 1:2,500 at A4  
GDA 1994 MGA Zone 56



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