HONEYSUCKLE POINT LOCOMOTIVE TURNTABLE

EXCAVATION REPORT

NEWCASTLE, NEW SOUTH WALES

Prepared.
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HONEYSUCKLE DEVELOPMENT CORPORATION, NEWCASTLE.

Brief History

Northern railway development was begun at Honeysuckle Point Newcastle, in November, 1854 by Hunter River Railway Company. Following a takeover by the New South Wales Government, initial development continued until the opening on 27th March, 1857 of the Honeysuckle Point to East Maitland Line.

As the Great Northern Railway, the Honeysuckle precinct expanded with construction of the Per Way and Locomotive Workshops through the late 1880's and into this century.

Although Locomotive Workshop activity slowed following the opening of Cardiff Workshops in 1929, some of the workshops remained in use, on the site by this time known as the Civic Workshops, until 1993.

As early as 1987, State Rail Authority had identified the Honeysuckle Goods Yard as surplus to their future requirements. The Newcastle C.B.D. Business Plan identified Honeysuckle as the most significant development site in the proposed revitalisation of Newcastle.

Some aspects of the Honeysuckle Concept Master Plan, developed during 1991, have been acted upon in the Civic Workshops and Trackfast precincts. A number of buildings, considered to be of low heritage significance have been demolished and five historic railway workshop buildings are currently being restored. Whilst concept plans have been prepared, specific locations of new buildings, roads and some services have yet to be finalised in the next stage of the site development.

Background

The possible existence of the c.1857, Locomotive Turntable was noted in the 1990, “Honeysuckle Point Heritage Study” prepared by C. and M.J.Doring Pty. Ltd. with strong recommendations that the site of the Turntable should be precisely located and recorded.

The location and outline of the Turntable appeared on at least three early State Rail Authority [S.R.A.] drawings with slight variation from one to another. At a scale of 1:500, measurement from the drawings was not considered to be sufficiently accurate to guarantee the exact position of the Turntable. One of the drawings, c.1905 identifies the Turntable as "Old Turntable, Filled In." No other record has been found regarding the condition of the Turntable before it was filled in or any further action since 1905.
As the Turntable's possible location may fall in a specific development zone, it was proposed by the Corporation that its location and condition be confirmed by excavation. As the site is subject to the relics provision of the N.S.W. Heritage Act [ Section 139 ] the necessary Excavation Permit was obtained from the Heritage Council of N.S.W.

Excavation Procedure

Making use of the available drawing and site references of the existing District Engineers building and rail lines the "best estimate" position for the centre of the Turntable was marked by S.R.A. Survey Staff. The position was marked with a yellow star picket.

The use of a small mechanical excavator had been approved for initial ground opening. An excavation line was set out five degrees west of north from the picket. [ Aligning with an existing power pole. ]

With the expectation of contact with the Turntable northern wall the excavation of a 600mm wide trench was commenced from the marked centre at a depth of 500mm.

S.R.A. Electrical personnel visited the site and after consultation with appropriate drawings gave a clearance for excavation. S.R.A. Telephone and Signal Communication staff also inspected the site. An electronic detection device was used to locate a signals cable. The route of which was marked on the ground with a paint spray pack. Excavation clearance was given conditional to avoiding the position of the identified cable.

Work proceeded on the excavation trench with the ground being more friable than expected. The inner face of the turntable pit brick wall was struck by the mechanical excavator at approximately 5 metres from the star picket. One brick was dislodged. [ Plate 1 ] The top of the brickwork, approximately 200mm below ground level, was cleaned off by hand for about two metres in an easterly direction. [ Plate 2 ]

A second trench was commenced on the inside line of the wall to enable a inspection of the brickwork for the full depth of the pit. Two levels of brickwork were exposed at the bottom of the trench together with the remains of a section of hardwood timber on the upper platform, and a bolt with plate washer. [ Plates 3, 4 and 5 ]

Based on the reported diameter of approximately 11 metres and the now exposed curvature of the pit wall a new position was estimated for the centre of the Turntable. The mechanical excavator was again used to remove the major portion of the earth fill and at a depth of approximately 1200mm a solid base was uncovered. Further manual excavation revealed a circular solid surface with six 25mm [ one inch ] bolts set into a concrete base on a pitch circle diameter of 1220mm [ four feet ]. [ Plates 7 and 8 ]

With the exact centre now determined, the diameter was calculated as 12.270 metres [ 40 feet 3 inches ] and the southern side wall of the Turntable pit was located. Approximately 1500mm of the wall was exposed to a depth of 300mm, directly opposite the excavation on the northern side. Five or six bricks were missing from the top course of the wall. [ Plate 6 ]
At this stage SRA staff accurately surveyed the site in regard to both location and relative levels of the excavated sections of the Turntable.

It was suggested by Mr Larry Greentree, SRA Regional Technical Services Manager, that the exposed sections of the Turntable indicated a different type of construction than may have been expected, particularly in respect to drainage. To further examine this important aspect of the pit's construction a further trench was excavated to follow the floor line from the upper platform exposed on the northern side to the centre. An uninterrupted sloping brick floor was exposed. [Plate 9]

The Turntable pit had, for the most part been filled with soft, clean soil except in the area adjacent to the centre. In this area there was an excess of hard metallic rubbish, bolts, dogs, odd pieces of steel and the like, none of which appeared to be turntable related.

Necessary measurements and photographs were taken and all excavations back filled with dry washed sand. [Plate 10]

Interpretation

The 1990 Honeysuckle Project Historical Survey, prepared by C. & M.J. Doring Pty Ltd Quotes from "the first Annual Report of Commissioners of Railway that two 36 foot [ diameter ] turntables ........ were part of an equipment order with Glower [Glover?] & Co. on 17th August 1855, mainly for use on the Great Northern Railway " and additionally in 1857 " a 32 feet [10 metres ] Turntable was one of the first items of equipment installed at Honeysuckle Point. There was no known record as to the construction of the Turntable Pit. Either stone, brick or a combination of both.

When first exposed, the top of the circular brick wall of the Turntable Pit was coated with a layer of grease, making brick identification difficult. One loose brick was removed and scrubbed clean enabling a closer examination. The brick proved to be of red, hand pugged clay, hand pressed sand stock with no frog, consistent with 1850's manufacture. One brick exposed on the top of the northern side had a long impressed frog which may mean bricks from different manufacturers may have been used in the construction. The exposed wall has been laid in English Bond [one row stretchers to one row of headers] using lime mortar. [some crushed shell was visible in the mortar] and is 360mm thick. There are no identifiable marks on the exposed bricks.

At the full depth of excavation on the rim of the Turntable Pit the upper platform of brickwork was identified, by Mr Larry Greentree, as having supported the Turntable Running Rail. The rail would have been mounted on "railway sleeper" size hardwood blocks which in turn were fixed to the 460mm wide brick platform by the set in bolts. The lower, deeper section of brickwork, 285mm wide and 125mm deep, was identified as a drain.

The excavation at the centre of the Turntable Pit exposed a 1390mm diameter concrete [?] block with six set in bolts, being the mounting base for the central pivot of the Turntable.
The floor of the Turntable Pit, along the exposed line, was of plain brickwork laid longitudinally across the pit in a north-south direction, at a slope from the centre of 2 degrees 22 minutes. [calculated from relative levels]

The Turntable Pit was measured and is 12.270mm [40 feet 3 inches] diameter which varies from the earlier quoted dimension. It has been suggested by SRA personnel the planned diameter, as supplied, may have proved too small for the locomotives and was modified prior to installation.

The centre of the Turntable is located on the State Survey Grid at 1355 158.44n N, 371 819.55n E.

Recommendations

The brickwork of the Turntable Pit exposed in this exploratory excavation has verified the exact location of the c. 1857 Turntable.

The Turntable is by far the most significant item of railway heritage on the Honeysuckle Development Site and is a highly significant item in the history of railway development in Australia. For these reasons the Turntable should definitely be retained in situ.

Two alternatives are available.

* The Turntable could be fully exposed, cleaned out and set up as a very effective display of early railway technology and operational practice of the region's first railway.

* The Turntable could be left unexposed, and an area including the circular turntable retained as a paved pedestrian way. The outline of the Turntable could be picked out in a different paving and interpretive panels erected.

Before either alternatives are considered it is recommended that the top of the Turntable Pit brick wall be exposed for the full circle. The excavation should be carried out by hand and would serve to confirm the continuity of the wall and give an indication of its condition.

Inclusions

Photographs - Plates 1 to 10.

Drawings - No 9408 Sheets 1 to 6.
Plate 1
Honeysuckle Turntable
Initial Exploratory Trench from the estimated Centre to the Turntable Pit northern side Wall.
Plate 2

Honeysuckle Turntable
Top of northern side wall.
Ranging Pole 100mm divisions

Plate 3

Honeysuckle Turntable
Deepest excavation, Northern wall of Turntable Pit.
Section of Drain exposed, centre foreground.
Plate 4

Honeysuckle Turntable
Full depth Trench and inside of perimeter Wall.
Ranging Pole 200mm divisions
Plate 5
Honeysuckle Turntable
Inner face of northern side wall.
Note: Brickwork laid English Bond

Plate 6
Honeysuckle Turntable
Top of southern side wall.
No further exposure of this wall.
Ranging Pole 200mm divisions
Plate 7
Honeysuckle Turntable
Excavation at the centre of the Turntable Pit.

Plate 8
Honeysuckle Turntable
Holding down Bolts for Pivot Structure.
Set in concrete at the centre of the Turntable Pit.
Plate 9  Honeysuckle Turntable
Uninterrupted sloping Brick Floor exposed from centre to the northern side.

Plate 10  Honeysuckle Turntable
Excavation backfilled with washed dry sand.
Note: Proximity of Main Northern Rail Line to Newcastle.
LOCALITY PLAN
SCALE 1:500
N-S SECTION THROUGH
SCALE 1:50

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PROJECT LOCOMOTIVE TURNTABLE
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LOCATION HONEYSUCKLE DEVELOPMENT
SITE - NEWCASTLE
CENTRE HOLDING DOWN BOLTS
SECTION DETAIL SCALE 1:10

25 Ø BOLTS

SLOPE 29°

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