



Fig. 1: painting of the Tower from the north-west by John Warrender, c 1870.

Getting into deep water?

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Proposals to re-flood Tower moat attract Lottery grant

LAST SEPTEMBER the National Heritage Memorial Fund announced that the Historic Royal Palaces Agency has been awarded £500,000 of Lottery money to finance technical studies into proposed improvements to the surroundings to the Tower of London. A further £500,000 has been provided by the Tower Environs Consortium, which includes Tower Hamlets Council, Taylor Woodrow and the Port of London Authority. The centrepiece of HRPAs Millennium Project, with an estimated cost of £23,350,000, is the excavation and re-flooding of the Tower moat and associated works to the gardens. The moat has a long and varied history, and like the building of the castle, any alterations to it deserve, and require, close scrutiny.

The original excavation of the moat between 1275 and 1281 is the single most expensive item revealed in the great works of Edward I which gave the Tower the concentric pattern it retains to this day¹. Cut through Eocene London Clay and overlying gravels, the outer edge of the moat was destined to be a vulnerable feature. Nowhere was this more acute than along the north side, where the City's defensive ditch discharged into the moat and where, according to the Chronicle of William Gregory, disaster struck on 17 July 1431, when the Postern Gate at the extremity of the City wall 'sanke downe into the erthe vii fote and more'². The discovery of the remains of the gatehouse during the excava-

1. H. Colvin (ed.) *History of the King's Works*, vol. 2 (1963) 716.

2. G. Parnell *The Tower of London* (1993) 42.

tion of the subway into the moat gardens in 1978 confirmed the historic account, and also revealed the silted outer edge of the medieval moat which, if projected, extended approximately to where the iron railings about the gardens stand.

In a report on the state of the Tower and its outlying Liberties prepared between 1564 and 1570, numerous complaints were made about activities considered detrimental to the moat. Drains discharged into it, and nearby residents cast their rubbish into it. The porter in the Postern Gate was grazing his cattle on the banks, while tanners were washing their skins in the waters and poisoning the fish. The situation deteriorated over the next few years as the Gentleman Porter of the Tower began leasing the margins of the moat to craftsmen and small traders eager to place themselves beyond the reach of the authority of the City and the jurisdiction of the Guilds that operated there³. These encroachments formed the subject of a letter from the Lieutenant of the Tower and two senior officers of the Works in 1606, when it was suggested that a brick wall revetting the bottom of the bank by the Postern Gate should be extended throughout, and another provided about the top of the slope in an effort to stop further erosion⁴.

The issue surfaced again in 1620, when a Privy Council committee inspected the Tower and expressed indignation and dismay at the extent of the encroachments and the way that private interests were encouraging neglect⁵. A detailed report was called for which, when it arrived at the end of 1623, described the banks of the moat as being encumbered with some two hundred and twenty houses, sheds, timber yards, coal yards, wheelers' yards and such like. Again it was recommended that a brick retaining wall should be built. It was to be 16ft high and 5-6ft thick, and was estimated to cost £2,378⁶.

The accounts reveal no evidence for the construction of the proposed wall, and it is not until after the offending encroachments were summarily demolished in 1666, to prevent the flames of the Great Fire from reaching the fortress, that measures to deal with the moat were finally put in hand. On 13 April 1667 Sir Bernard de Gomme, the Ordnance Chief Engineer, was 'staking out the Graft' so that it could be 'inlarged and deep'ned'. Subsequently, between July 1670 and December

1672, the north and west banks were cut back and revetted with a substantial brick wall which, albeit partly refaced, and in places rebuilt, is the masonry that exists today⁷. The operation involved considerable expenditure, with labour costs alone accounting for some £3,000. To combat adverse ground conditions, elaborate foundations of timber and brick were laid in a trench 7ft deep and 7ft wide, which contained 497 timber piles driven-in at 12 shillings a piece. The main body of the wall was strengthened with buttresses to the rear, themselves braced with timber anchors, while drains and culverts were incorporated at the base of the masonry to allow water egress. The laying of foundations in wet and hazardous conditions was permitted by some engineering ingenuity, with temporary dams being thrown across the moat to produce contained areas in which the water table could be lowered using pumps and scoops.

The wall down the east side of the moat was added in 1683. Once again the masonry required a substantial footing and the contract with the carpenter refers to 18-20ft long piles being driven-in to the floor of the construction trench until firm ground could be reached⁸.

Over the next hundred years or so the moat continued to silt, with periodic and costly cleansing operations being required to keep the water circulating. In an effort to reduce the problem, a counterscarp wall, set beyond the retaining wall, was constructed in 1789-90⁹. A wooden fence associated with the wall stood until 1829 when the Ordnance deemed it rotten and sought to replace it with iron railings. Almost immediately the Lord Mayor of London, seniors officers of the Mint, directors of St Katherines House and a number of inhabitants from the wards of Portsoken and St Botolph Aldgate, urged the Ordnance to carry the railings around a vacant piece of ground against the north-east corner of the moat in an effort to prevent 'idle and dissolute characters' from assembling there 'for the purpose of Gambling and other Vicious pursuits'. After consultations, the Office was able to oblige, the extant railings on their granite curb (evidently seated on the 18th-century counterscarp wall) being provided by Messrs Collam and Hallen¹⁰.

After the Napoleonic Wars, the open *glacis* (i.e. the slope between the counterscarp and retaining walls) was judged to have little military value, and in 1839

3. British Library, Add. MS. 14044, ff. 38-42.

4. Hatfield House, Cecil Papers, 119, f. 160.

5. British Library, Harl. MS. 1326.

6. *Ibid.*, Harl. MS. 5913.

7. Parnell, *op cit* fn 2, 75-6.

8. Photocopy of manuscript held by Royal Armouries.

9. Parnell, *op cit* fn 2, 91.

10. Public Record Office, WO 44/301 & 302.

the Duke of Wellington, the then Constable of the Tower, gave permission for it, and the plot of land to the north-east, to be turned into a garden. Then, as now, the garden comprised an informal planting of trees, bushes and shrubs. In 1843 the Duke ordered the moat itself to be drained and infilled, after Sir George Cathcart, the Lieutenant of the Tower, came to the conclusion that it was the mud and stagnant waters of the moat that were to a large extent responsible for the poor health of the Tower garrison¹¹. Probably contemporary with this operation, and certainly shown on drawings dating from 1850, was the construction of a large brick drain located some 4-5ft beneath the surface of the moat to take away rain water from the castle. The numerous iron down-pipes along the outer curtain wall, with hopper heads featuring the VR monogram, are all part of this impressive and still functioning system designed by the Royal Engineers.

11. Parnell, *op cit* fn 2, 91.

In the wake of the Chartist riots, the north and west outer curtain walls were repaired, with many of the existing loops and gun emplacements dating from that time. Also added was the massive North Bastion opposite the Postern Gate, which was destroyed by bombing during the last war, but whose foundations lie only a few inches below the present level of the grass. At about this time the castle's 'dead house' or mortuary was erected in the extreme south-east corner of the moat, replacing a temporary arrangement whereby the Proof House on Tower Wharf performed the role.

The last significant building operation that impacted on the moat began in 1888 with work on Tower Bridge. The line of the northern approach did not, in fact, follow that of the 17th-century retaining wall. The southern part of the retaining wall may exist within the structure of the viaduct, whereas the foundations of the northern extension may be anticipated within the area of the present moat.



Fig. 2: photograph of the Tower from Tower Hill in c 1850, showing the iron railings and gardens in the foreground. (Royal Armouries)

After infilling, the moat acted as a sheep pasture (Fig. 1), parade ground and allotment. In more recent times it has hosted charity events, tournaments and operettas, and last, but not least, it provides the principal recreation ground for the surprisingly large number of people who still live within the walls of the fortress.

Comparing the present view of the fortress from Tower Hill with that captured on the earliest known photograph of the Tower, taken c.1850 (Fig. 2), there is no doubt that the gardens and the infilled moat form part of a landscape that remains predominantly early Victorian in composition and appearance. Importantly, this view includes the reconstructed and refaced towers and walls of the inner curtain defences and the rising mass of the Waterloo Barracks beyond. All these works were executed by the Office of Ordnance in the wake of the burning of the Grand Storehouse in 1841, and with the guiding hand of the Duke of Wellington never far away. The programme was completed before Anthony Salvin began work on the Beauchamp Tower in 1852, an act that heralded the start of a second wave of restorations under the aegis of the Office of Works.

Looking at the proposals put together by Historic Royal Palaces and their consultants in the Millennium Project Report, what is so depressing is the absence of any understanding or appreciation of the prevailing historic landscape, coupled with the suggested removal of features which the authors

have not even bothered to date. The futility of trying to 'restore' the moat to any particular pre-1843 period is compounded by a proposed 'towpath', which may prove to be a necessary means of underpinning repaired sections of the retaining wall that rest on the infill, or are weakened by its removal. Apart from losing the Royal Engineers' drain during the excavation of the moat, the instinct to preserve is dealt a further blow by a scheme to replace the western gardens and their late Georgian railings with a set of stone steps for visitors to sit on. Given that the Tower is a World Heritage Site, and one of the country's most important scheduled monuments, why not explain to the visitor what he or she sees now, rather than invest large sums of money in new creations? Surely to avoid the sort of damage that historic buildings and sites have suffered in the past, when accretions deemed to have no aesthetic value were removed or concealed, preservation rather than alteration should be the goal.

As it stands, the 'Historic Background' in HRPAS Millennium Project Report comprises only three paragraphs taken from a handful of published works, and is quite worthless. The absence of historic data seems, therefore, to be at the heart of the problem. Doubtless if asked the authors of the report will argue that all of this will be addressed during the £1,000,000 feasibility study. A few days in the Public Record Office should, however, prove to be a quicker and more cost-effective approach.

Excavations and post-excavation work

City of London. Enquiries to Museum of London Archaeology Service, Number One, London Wall, London EC2Y 5EA (0171-972 9111).

Croydon & District, processing and cataloguing of excavated and museum collections every Tuesday throughout the year. Archaeological reference collection of fabric types, domestic animal bones, clay tobacco pipes and glass ware also available for comparative work. Enquiries to Mrs Muriel Shaw, 28 Lismore Road, South Croydon, CR2 7QA (0181-688 2720).

Greater London (except north-east and south-east London), by Museum of London Archaeology Service. Excavations and processing in all areas. General enquiries to MOLAS, Number One, London Wall, London EC2Y 5EA (0171-972 9111).

Borough of Greenwich. Cataloguing of excavated and other archaeological material, the majority from sites in the borough. For further information contact Greenwich Borough Museum, 232 Plumstead High Street, London SE18 1JT (0181-855 3240).

Hammersmith & Fulham, by Fulham Archaeological Rescue Group. Processing of material from Fulham Palace. Tuesdays, 7.45 p.m.-10 p.m. at Fulham Palace, Bishop's Avenue, Fulham Palace Road, SW6. Contact Keith Whitehouse, 86 Clancarty Road, SW6 (0171-731 4498).

Kingston, by Kingston upon Thames Archaeological Society. Rescue sites in the town centre. Enquiries to Kingston Heritage Centre, Fairfield Road, Kingston (0181-546 5386).

North-east London, by Passmore Edwards Museum. Enquiries to Pat Wilkinson, Newham Museum Service, Archaeology and Local History Centre, 31 Stock Street, E13 0BX (0181-472 4785).

Surrey, by Surrey County Archaeological Unit. Enquiries to Rob Poulton, Archaeological Unit Manager, Old Library Headquarters, 25 West Street, Dorking, RH4 1DE (01306-886 466).

Vauxhall Pottery, by Southwark and Lambeth Archaeological Society. Processing of excavated material continues three nights a week. Enquiries to S.L.A.S., c/o Cuming Museum, 135 Walworth Road, SE17 (0171-703 3324).

Individual membership of the Council for British Archaeology includes 10 issues a year of British Archaeology, as well as the supplement CBA Briefing, which gives details of conferences, extra-mural courses, summer schools, training excavations and sites where volunteers are needed. The subscription of £18 p.a. includes postage, and should be sent to C.B.A., Bowes Morrell House, 111 Walmgate, York, YO1 2UA (01904 671417).