

# The Thames at War: foreshore archaeology and the Blitz

*Gus Milne and the Thames Discovery Programme team contribute to the expanding field of 'Conflict Archaeology' from a proactive non-combatant perspective, with this study of how Londoners responded to the Blitz.*



**ABOVE:** Sir Thomas Peirson Frank (1881–1951) LCC's Chief Engineer during the Blitz (Frank O Salisbury Estate)

**BELOW:** Rapid response: location of the LCC's four Flood Prevention teams in relation to the boundaries of London Boroughs in 1940 (MOLA)

## Introduction: London under water

On the morning of 8 January 1928, the capital city of the great British Empire awoke to find itself flooded. The highest spring tide since 1881 caused the Thames to burst its banks in Bermondsey, Southwark and west from Westminster to Hammersmith. People were drowned in their basements, the moat round the Tower of London was flooded, as was the Tate Gallery, and Lambeth Bridge was seriously undermined. London had been caught napping, as it simply was not prepared for such a catastrophe.

## Flood prevention

The Chief Engineer of the London County Council (LCC), the post responsible for flood defence in the city, retired shortly afterwards. The new man brought in to take his place was not going to make the same mistakes again. Thomas Peirson Frank arrived in the capital in 1932 with a wealth of engineering experience in Plymouth, Cardiff and Liverpool, not to mention a distinguished military career with the Royal Engineers in the Great War. But it was not just abnormally high tides that he would face, but also the Luftwaffe.

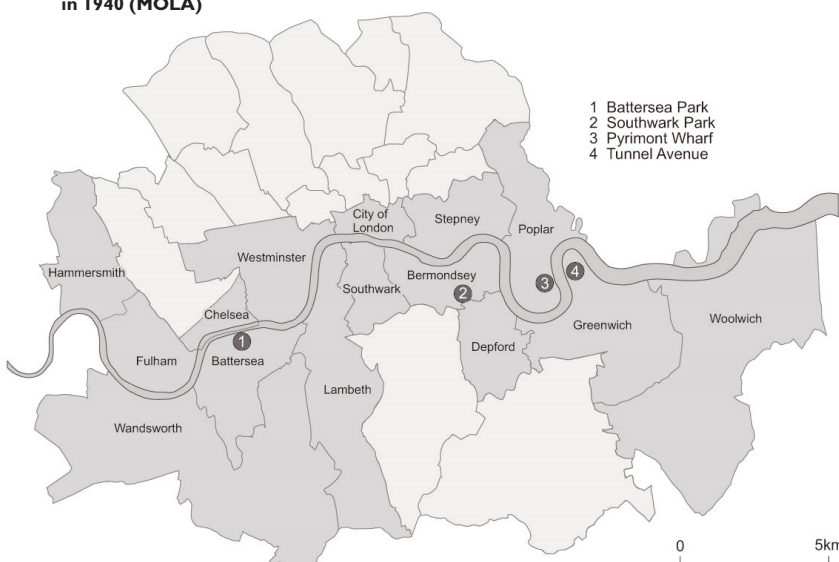
## The London Blitz

Black Saturday, 7 September 1940, saw the start of what became known as the London Blitz.<sup>1</sup> We all know that London suffered horribly from the high explosives, incendiaries, flying bombs and rockets that rained down on it from 1940 to 1945: the result is recorded in the lists of 80,000 fatalities and casualties, and graphically demonstrated by the LCC's 'Bomb Damage' maps.<sup>2</sup> But to that ordeal by fire, there was yet another threat: if the river wall had been breached, then low-lying London could also have been flooded once again. Londoners would be drowned in their basement shelters, with water supplies contaminated with sewage, and utilities such as gas, electricity and telephones cut off.

The results of such inundations could have been horrendous, as demonstrated by the RAF in the 'Dambuster' raid of 1943. That destroyed armaments factories, but also killed 1,600 civilians in one night. But surely London was never flooded during the Blitz? Research just published shows how very, very close our capital city came to just such a fate.

We now know that the river wall suffered more than 121 bomb strikes, a truly frightening statistic. But not one of these incidents led to a major inundation: so how did London survive? The answer lies at the door of the London County Council's Thames Flood Prevention Emergency Repair unit. This was just one of many major contributions to the saving of London made by the LCC's new proactive Chief Engineer, Peirson Frank. Ever mindful of the recent 1928 flood, he quickly established rapid-response units to deal with such emergencies, with depots on permanent standby in Millwall, Southwark, Battersea and Greenwich, all areas that were particularly susceptible to flooding.

The teams were obliged to work in secret, so as not to alarm Londoners or to alert the Luftwaffe to the extreme vulnerability of the port city. When the river wall suffered a direct hit, the breach had to be rapidly infilled with whatever debris was to hand to secure the site before the next high tide, as is shown by photographs taken by the LCC'S Flood Prevention





team of a wharf in Lambeth, blown apart on 8 October 1940. Work was often done at night, while the air raid was still in progress. It is only now that this major contribution to the war effort can be revealed. Peirson Frank not only provided the necessary plan of action but ensured it was fully implemented.

The remarkable story was uncovered by research in the London Metropolitan Archives (LMA),<sup>3</sup> initially by Peter Kennedy, who located the “Thames-Flood” unit’s logbooks and opened them up for the first time in over 70 years. This was followed by fieldwork on the open foreshore by the Thames Discovery Programme (TDP) team. Although many of the bomb strike sites are now obscured by metal sheet piling, 1940s repairs are still visible at some of the incident locations, as an extensive survey noted. Although brick repair patches are known, shuttered concrete was the medium of choice for most of the 1940 river wall repairs that still survive today. Working with the LMA, the City of London Archaeological Society is developing a *Thames War Path* feature on the Layers of London website, showing the location of at least some of the major incidents.

### Victoria Tower incident

By way of a worked example of how the LCC’s Flood Prevention team operated, the bomb strike on the river wall at Victoria Tower Embankment Gardens is described here. The raid on the night of 16–17 April 1941 was particularly severe, involving 890 tons of high explosives and 100,000 incendiaries, causing eight major fires, 41 serious incidents and over 2,000 ‘smaller’ ones. There was widespread damage across London, including hits on the Houses of Parliament, while in the gardens adjoining the Victoria Tower, the River Police reported a serious bomb strike on the morning of 17 April: there was a breach in the river wall over 6m (20ft) across reaching almost down to the foreshore. The parapet and coping stones either side of the crater were also damaged and a debris field was still visible on the foreshore 75 years later. The ground level behind the wall is over just under 1m (3ft) below the ‘safe’ standard level of high tides, and the site lies ominously close to the location where the great flood of 1928 inundated a large area with many fatalities.

Having received the call via the vigilant River

Police, the LCC’s Flood Prevention team from the Battersea Park depot sprang into action. Their first task – the initial emergency response – was to build a temporary debris dam, rapidly piled up around the crater’s external perimeter, securing the site before the next high tide. Back at their depot in the Stoneyard, the second repair phase commenced, with the filling of 2,500 sandbags. These were loaded on to lorries and delivered to the site. A five-man team, seconded from the Borough of Westminster, then started repairs taking nine days to install a sandbag defence some 1m (3ft) wide at the base and just over 1m high all around the perimeter of the crater, designed to withstand the higher tides. There were two phases of operation – the emergency dam followed by temporary sandbag repair were all conducted as part of the LCC’s Flood Prevention team’s standard remit, as these photographs, taken in April 1941 by the LCC’S Flood Prevention team, show.

After that, responsibility for the permanent re-instatement of the site passed to the owner of the site. In the case of the City of Westminster, this was the government’s own Office of Works department. In addition to their other work on various badly bombed sections of the Palace of Westminster (including the Victoria Tower itself), they began the permanent re-instatement of the breached river wall, from 15 May to 1 August. But what precisely did that entail?

**ABOVE LEFT:** Emergency repairs to a wharf in Lambeth early in the Blitz (Peter Kennedy/LMA)

**ABOVE RIGHT:** An example of temporary repairs of a breach here at Bullivants Wharf, Millwall, secured with 1,000 sandbags until permanent works could begin (Peter Kennedy/LMA)

**OPPOSITE TOP:** The TDP team record bomb-blast debris on the Westminster foreshore

**BELOW:** The TDP team at Westminster, near the Houses of Parliament. The infilled breach can be seen centre-ground (Nathalie Cohen/TDP)





**ABOVE:** Serious damage to the Embankment in April 1941, next to the Victoria Tower, photographed by LCC's Thames Flood Prevention team (Peter Kennedy/LMA)

**RIGHT:** The permanent repair shows the breach infilled with concrete, as recorded by TDP in 2015 (Nathalie Cohen/TDP)



The TDP's fieldwork has shown that this phase of the repair involved refacing the Embankment wall with shuttered concrete, adding a reinforced concrete capping to replace its shattered masonry predecessor, and supporting the parapet on the landward side with a coarse mix concrete plinth. All these features still survive today – the plinth repair is visible on the landward side in Victoria Tower Gardens, while the infilled breach itself is clearly visible from the foreshore below. The concrete facade is scored with lines in an attempt to imitate the ashlar blocks of the rest of the Embankment wall. The surprise is surely that these concrete repairs are still here, 80 years on.

Civil Engineers, for whom Sir Thomas Peirson Frank served as President in 1945–6. This gesture goes some way towards affording long overdue recognition for the LCC's Chief Engineer, the man who, in its darkest hour, 'saved London from drowning.'

**Commemoration**

Of all the surviving examples of 1940s river-wall repair along the Thames noted in the archaeological survey, the Westminster location is arguably the most accessible and most obvious.

The parapet above the infilled breach is reinforced by a horizontal concrete plinth and can be viewed from the Victoria Tower Embankment Gardens. It marks the diameter of the crater made by the high explosive bomb in April 1941. The scar is even visible from the Albert Embankment on the opposite bank when the tide is out. In addition, County Hall, which was the Headquarters of the LCC in 1940, can also be seen from the gardens.

As a consequence, the site of this incident was selected for the installation of a plaque, fixed to the concrete plinth, to commemorate the work of the Thames Flood Prevention team in 2016.

The plaque was funded by the Institution of

**BELOW:** In commemoration: this plaque honours the memory of the man who 'saved London from drowning'



1. HMSO Frontline 1940–1 the official story of the Civil Defence of Britain (1942); P Ziegler London at War 1939–1945 (2nd ed, 2002).
2. A Saunders (ed) London County Council Bomb Damage Maps 1939–45, London Topographical Society (2005); L Ward The LCC's Bomb Damage Maps 1939–1945 (2015).
3. London Metropolitan Archive: unpublished sources for the LCC's Thames Flood Prevention Emergency Repairs unit: LCC/CE/WAR/.

**Acknowledgements**

The contribution of all the enthusiastic members of the TDP team is warmly acknowledged, but especially that of Peter Kennedy, who set the ball rolling.

Nathalie Cohen and Elliott Wragg led the TDP team with such inspiring commitment during the development and delivery of the 'Thames at War' project. Mention must also be made of the ever-helpful staff at the London Metropolitan Archives.



This story is one of the key themes studied by the TDP in their new book, *The Thames at War: saving London from the Blitz*. Written by Gustav Milne, it was published in March by Pen & Sword Military. You can buy it from any good bookshop or online from:

[www.pen-and-sword.co.uk/The-Thames-at-War-Hardback/p/17724](http://www.pen-and-sword.co.uk/The-Thames-at-War-Hardback/p/17724)

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