

Visit to Thames Barrier Thursday 13 February 2004

This visit has been organised by David Pick / Dennis Hill

The Thames Barrier is part of the Flood Defence for London. The control of flooding is one of the Environment Agency's most important responsibilities. In the lower part of the tidal Thames the main threat comes from the sea and the defences include a number of moveable gate structures, which are maintained and operated by the Agency. By far the largest of these is the Thames Barrier. Together with the Barking Barrier and significant gates at the entrances to the old Royal Docks, the Thames Barrier is currently the responsibility of the Agency's Thames Region.

"There was last night the greatest tide that was ever was remembered in England to have been in this River all Whitehall having been drowned". Thus wrote Samuel Pepys in his diary on 7th December 1663. Even in Pepys' day the menace of flooding on the Thames had a long established history. In 1923 the river was reported as overflowing "and in the great Palace of Westminster men did row with wherries in the midst of the hall" The last time that central London flooded was in 1928 when 14 people drowned. In 1953 there was disastrous flooding on the East Coast and the Thames Estuary with a toll of over 300 lives. If this flood had reached central London's highly populated low lying areas the result could have been horrifying beyond measure.

Tide levels are steadily increasing owing to a combination of factors. These include higher mean sea levels, greater storminess, increasing tide amplitude, the tilting of the British Isles (with the south eastern corner tipping downwards) and the settlement of London on its bed of clay. As a result tide levels are rising in the Thames Estuary, relative to the land, by about 60cm per century, Surge tides are a particular threat and occur under certain meteorological conditions. When a trough of low pressure moves across the Atlantic towards the British Isles, the sea beneath it rises above the normal level thus creating a 'hump' of water, which moves eastwards with the depression.

Basically the barrier is a series of ten separate movable gates positioned end-to-end across the river. Each gate is pivoted and supported between concrete piers that house the operating equipment. Closing the barrier seals off part of the upper Thames from the sea. When not in use the six rising gates rest out of sight in curved recessed concrete cills in the riverbed, allowing free passage of river traffic through the openings between the piers. If a dangerously high tidal surge threatens, the rising sector gates are moved up through about 90° from their riverbed position and the four radial gates are brought down into the closed defence position. The gates thus form a continuous steel wall facing down river ready to stem the tide. Further rotation of the gates to the horizontal maintenance position renders them accessible for routine maintenance. The width of the Barrier from bank to bank is about 520m with the four main openings each having a clear span of 61m. The four main gates are massive. Each is constructed as a hollow steel-plated structure over 20m high and weighing, with counterweights, about 3700 tonnes. Each is capable of withstanding an overall load of more than 9000 tonnes. There are two further gates of similar concept, albeit smaller, with 31m navigation openings and the four falling radial gates have non-navigable openings.

We meet at the café in the Thames Barrier Information and Learning Centre (1 Unity Way, Woolwich, SE18 5NJ) for a 11.00 start. This will be an engineering guided tour of the barrier and its interior, which involves going up and down gantries in a working environment. The cost will be £9/pp. Lunch can be had at the local café and the visitors' centre explored after lunch. Numbers are limited to 30.