



# Gemeente Amsterdam

Dienstverlening en Facilitair Management

# N.A.P.

## Normal Amsterdam Level

The N.A.P. project was designed and executed by Louis van Gasteren and Kees van der Veer. The project was presented by the N.A.P. Foundation on the occasion of the opening of the Stadhuis (City Hall). This relief, 25 metres long, displays the difference in water levels between Amsterdam and other places in the Netherlands.

The Normal Amsterdam Level (N.A.P.) is the reference plane for height in the Netherlands and many other countries. In other words, all elevation figures in these countries are quoted with reference to this level. The "plane" can be visualised as the surface if the Netherlands were covered with water, with no wind or currents. The zero reference was established by measuring the level of the River IJ (harbour) at high and low tides at the Haarlemmersluis in Amsterdam between 1 September 1683 and 1 September 1684.

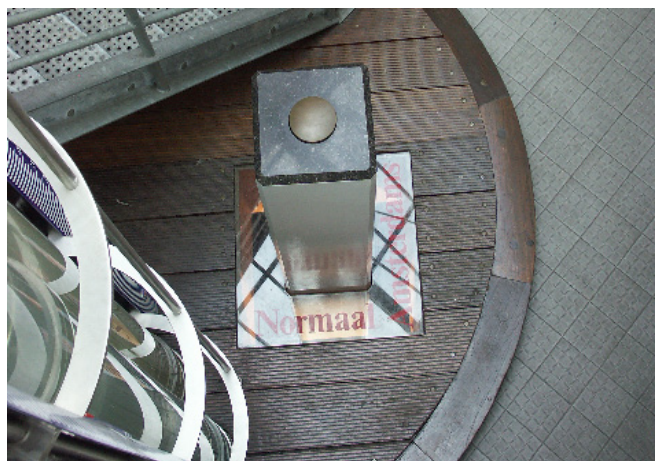


As far back as the 17th Century, the Amsterdam Level, as it was then called, was marked on the dikes and floodgates of Amsterdam with 8 stones bearing a horizontal groove.

Because of changes in the sea level, the level no longer corresponds with the average level that the IJ would have at high tide if it were still directly connected to the sea. In 1995, the average water level at Vlissingen (in the south-western Netherlands) was N.A.P. -1 cm; at Delfzijl (in the north of the Netherlands), it was N.A.P. +7 cm.

### The N.A.P. Pillar

The picture below shows the N.A.P. pillar rising through the building. This pillar has been driven down



as far as the second sand layer. On top of the pillar is the bronze N.A.P. reference point. The top is precisely at the Normal Amsterdam Level, i.e. the zero level. The reference point was set at correct height on 18 May 1988 by the Minister of Transport, Public Works and Water Management.



### **Water Columns**

Two water columns show the current tide levels at IJmuiden and Vlissingen. This is accomplished by means of a telephone connection with the central measuring station of the Tidal Waters Department of the Directorate-General for Public Works and Water Management. The third water column shows the water level at the time of the 1953 Zeeland flood disaster (4.5 metres above N.A.P.).

### **Cross Section of the Netherlands**

From east to west, from the Veluwe via the IJsselmeerpolders and the IJsselmeer to Amsterdam: Watergraafsmeer, the Stadhuis/Muziektheater, Amsterdam Centre (Dam), West Amsterdam and via the Haarlemmermeerpolder (Schiphol) to the dunes and the North Sea. The cross section is made up of sandstone (sand and ferruginous sand), dark grey bluestone (peat and clay), glass (the water of the canals, the lakes and the sea) and aluminium (all manmade structures such as dikes and houses). The sea is shown as it is at high tide. The water of Amsterdam's canals is normally 40 cm below N.A.P.

Amsterdam was built into and onto the peat. Piles are required to support the city. The round, wooden piles underneath the centre of Amsterdam rest on the first, mobile sand layer. The square, concrete piles in East Amsterdam and West Amsterdam were sunk down to the second, fixed sand layer using more modern methods.

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