

Identification

<i>Nomination</i>	The Defence Line of Amsterdam (Stelling van Amsterdam)
<i>Location</i>	Provinces of Noord-Holland and Utrecht
<i>State Party</i>	The Netherlands
<i>Date</i>	23 October 1995

Justification by State Party

The Stelling van Amsterdam is a system of permanent defensive structures which has remained intact. The technique is specifically Dutch: a defensive work with a complex water-management system which derived its efficacy from inundations. This type of defensive work is a unique combination of nature and culture. In combination with the Nieuwe Hollandse Waterlinie, a system of this kind is unique in the world. **Criterion i**

In 19th century Europe the Stelling van Amsterdam was considered to be an outstanding example of a ring of forts. **Criterion iv**

The length, surface area, and circumference of the Stelling van Amsterdam are considerable. The main defence line has facilities extending over 135 km, within a range of 15-20 km from the centre of Amsterdam. In time of war the area enclosed could be sealed off, and would also serve the needs of the population within it.

It had a direct influence on the environmental development of the City of Amsterdam itself and on land use and the structure and infrastructure of the landscape in and around the area in which the Stelling is situated since the 1874 Vestingwet (law on the use of fortresses) came into effect. Moreover, the provisions of the 1853 Kringenwet (law on military zones), the 1874 Vestingwet, and the 1896 Inundatiewet (inundation act) have influenced environmental planning and design. As a result of the restrictive provisions of these statutes, much of the Stelling area remains unchanged, despite the fact that population density in this area is among the highest in the world. The Stelling van Amsterdam, as a "military landscape," plays a controlling role in the man-made landscape of The Netherlands. The military landscape and the agricultural and urbanized landscape blend in a unique way. **Criterion ii**

The forts of the Stelling illustrate the transition from brick construction in the 19th century to the use of reinforced concrete in the 20th century. This transition, with its experiments in the use of concrete and emphasis on the use of non-reinforced concrete, is an episode in the history of European architecture of which material remains are only rarely preserved. **Criterion iv**

Hydraulic works are very characteristic of the landscape of the Low Countries. Technological development derives from civil hydraulic engineering; in typological terms hydraulic works for military purposes are extremely rare and do not occur anywhere else in the world. **Criteria iv and vi**

The construction of rings of forts was not uncommon in 19th century Europe, but the rapid development of mobile warfare, increase in the scale of warfare, and the growth of larger political associations has meant that these have been a thing of the past since 1945. Because of extensive and expanding urbanization there are very few surviving examples of permanent defensive structures. **Criterion iv**

The Stelling van Amsterdam is an exceptionally rich example of European defensive works of this kind. The fact that it was built reflects the rise of national awareness in the 19th century: a nation could only grow if it could secure its independence and unity. **Criterion vi**

Category of property

In terms of the categories of property set out in Article 1 of the 1972 World Heritage Convention, the Stelling van Amsterdam is a *group of buildings*. It may also be considered to be a linear *cultural landscape*, as defined in the *Operational Guidelines* (1995), paragraphs 35-39.

History and Description

History

The Stelling van Amsterdam is an excellent illustration of how The Netherlands defended itself against attack, ie by means of water. Water control and defence have gone hand in hand in the country since the 17th century. From time immemorial dikes, sluices, and canals have been built to drain the land; temporary flooding of the land forms the basis of the defensive system. This principle was first applied in the 16th century, during the struggle for independence from Spain, with the development of the Oude Hollandse Waterlinie.

The introduction of the new defensive system laid down in the 1874 Vestingwet (law on the use of fortresses) meant that a number of old fortified towns, mostly in the east and south of The Netherlands, were relieved of their defensive role and so could expand outside their ramparts, which largely dated from the 17th century.

Under the terms of the Vestingwet, The Netherlands would be defended by nine defensive systems, most of which were already in existence. The new element was the defensive line around the nation's capital, Amsterdam, which would become the last redoubt. It had a predecessor in the form of earth batteries and semi-permanent entrenchments to defend Amsterdam. This defensive line (the Nieuwe Hollandse Waterlinie) was almost complete in the mid 19th century, but it was partly superseded by the Stelling van Amsterdam. The new system was so extensive that the entire infrastructure of the country was affected.

Work began on the Stelling in 1883 after lengthy discussions on its military and financial implications. Because it was based on flooding, use was made of the intricate polder system of the western part of The Netherlands. The decision was taken to build the forts along the main defence line in unreinforced concrete, a very early application of this material (first used at Newhaven in the United Kingdom in the 1860s).

In 1892 the northern end of the Nieuwe Hollandse Waterlinie was transferred to the Stelling, to form the eastern part of the defensive system. Certain modifications were carried out to the forts, in line with current military thinking. In the first phase forts were built at the mouths of the main watercourses leading into Amsterdam: a coastal fort at the mouth of the Noordzeekanaal, near IJmuiden and an island fort and two coastal batteries in the IJ east of the city where it joined the former Zuiderzee.

The standard forts on the Stelling were built in two stages. Between 1897 and 1906 eighteen forts were built, and ten more, built to a modified design, were added between 1908 and 1914. The entire Stelling was manned throughout World War I, even though The Netherlands was neutral in that conflict. During this period construction work continued, to be completed in 1920.

Two years later the Netherlands Government revised its defensive plan and decided to build the Holland Vesting, which included part of the Stelling, which had become obsolete with the introduction of the aeroplane into warfare. Part of the flooding was activated when the German army invaded The Netherlands in May 1940, but no fighting took place. The early forts were not abandoned as defensive works until some time after the end of World War II; some structures are still in use by the Ministry of Defence.

Description

The defensive line of the Stelling van Amsterdam is roughly circular, on a radius of approximately 15 km from the city centre, and extends over two provinces. The main defence line is c. 135 km long and comprises 45 forts, with a number of ancillary works. The soil is largely peat and clay, with sand in places. The sites of the forts are directly linked with the existing infrastructure of roads, waterways, dikes, and settlements. The main defence line runs mainly along pre-existing dikes.

The specific qualities of the landscape through which the line passes determined the character of the constructions; there are six main zones. The northern sector provides excellent facilities for flooding because of the large polders and reclaimed land, and so the forts here were only added in the final phase. The north-western sector runs over existing dikes, adapted for military use. The flooding capacity of the western sector was limited because of the city of Haarlem outside the Stelling and the higher ground behind the dunes; as a result there is a relatively larger number of forts, that at Spaarndam being the main one. In the south-western sector, covering the Haarlemmermeerpolder (reclaimed in 1848-52), it was necessary to build a complete new defensive line with closely linked forts. The defences in the southern and south-eastern sector run through a region of relatively inaccessible peat bog and link with the earlier Nieuwe Hollandse Waterlinie system. Finally, the eastern sector, running along the coast of the former Zuiderzee, was primarily defended by marines operating offshore; however, two batteries and the Pampus island fort were built to close the entrance to Amsterdam harbour.

The Stelling is based on temporary flooding of dry land. The area is divided into polders, each at a different level and surrounded by dikes. Each polder has its own flooding facilities. The depth of flooding is critical: it must be too deep for soldiers to wade through it but too shallow for ships or barges to sail over it, which means in practice 0.5-1 m. Water levels are maintained by means of sluices, of two types: inlet sluices and barrage sluices. The former are closed in peacetime and can be opened to flood the polders; the latter work in the opposite manner. To avoid damage to farmland from flooding with sea-water, an intricate system of canals is needed to supply fresh river water when needed.

Forts were built on higher ground and reached by dike roads and in some cases railways and waterways. They were carefully sited at a distance of not more than 3500 m apart, the spacing being determined by the range of the artillery in the forts. For the first time the defences were located outside the main fort structures, in the form of batteries between which mobile guns could be moved. This made it more difficult for attackers to pinpoint the locations of the forts.

A fort ensemble consisted of linked concrete buildings on an island defined by a moat. The structures were narrow, making them more difficult targets. The main building was equipped to withstand a long siege with accommodation for the soldiers, kitchens, canteens, washrooms, infirmaries, officers' messes, telegraph rooms, water supply and purification plant, watch-towers, magazines, and the main defensive casemates and armoured turrets. A military structure behind the fort (ie within the Stelling) was used to house equipment and ordnance; there was also a house for the permanent superintendent of the fort and his family. The forts were camouflaged by planting trees and bushes. The forts were interconnected by means of ramparts and dikes

The oldest forts, from the Nieuwe Hollandse Waterlinie, were built in brick with thick walls and vaults, covered with earth and with surrounding ramparts (eg the forts at Uitermeer, Hinderdam, Weesp, and Muideren). Heavier artillery firepower led to the replacement of brick construction with the use of unreinforced concrete (the fort at Abcoude with its heavy concrete roof represents the transition).

The first concrete forts, at Vijfhuizen and Veldhuis, were built in 1897. They fall into two groups. They are typologically and functionally identical but differ significantly in design, according to the specific site requirements. Reinforced concrete was introduced in 1916, to provide shatter- and bomb-proof conditions (eg the Spaarndam fort).

The area proposed for inscription runs continuously in a 3-5 km wide zone from Edam, north of Amsterdam, to Muideren, to the east of the city, and out to the Pampus island fort in the IJmeer, passing through twenty-six municipalities. It includes forty-five forts and many smaller works.

Management and Protection

Legal status

Protection of the Stelling van Amsterdam is multi-level and comprehensive. Most of the individual elements are designated as historic monuments under the 1988 Monuments and Historic Buildings Act, which requires authorization to be sought from the State Agency for Monument Protection (Rijksdienst voor de Monumentenzorg). The 1989 Noord-Holland Provincial Monument Ordinance applies to those sectors of the Stelling within that province.

In addition, the Stelling is in whole or in part protected by environmental planning measures at central and provincial level.

Management

The properties making up the Stelling van Amsterdam are in various ownership. Sixteen of the forts are owned and managed by different ministries of the Netherlands Government, two by the Province of Noord-Holland, eleven by municipalities, three by partly state-controlled institutes, ten by nature conservation organizations, one by a private foundation, and four by private individuals.

A management policy was drawn up in 1994 by the Province of Noord-Holland - the *Plan van aanpak Stelling van Amsterdam* (Stelling van Amsterdam Action Plan). It lists the following initial activities: protection as a provincial monument; planning protection; research into condition; bringing owners and users together; creating a foundation for management of the Stelling; establishing a project office; identifying and coordinating new functions; tourist development; and the preparation of cultural-historical investigations.

The sectors within the Province of Utrecht are covered by the Management and Archaeology Policy Document of 1995. This raises the possibility of subsidies being available for protection and conservation work.

The Utrechtse Fortenstichting, founded in 1994 and backed by both the Province and the City of Utrecht, is an independent foundation whose objectives are the maintenance and restoration of all fortifications and defences (including the Stelling) within the Province.

The Province of Noord-Holland is the coordinating body between the various owners and users in the Province. It is currently developing an integral policy for long-term protection and conservation. It is making substantial financial resources available for aspects of this policy.

Conservation and Authenticity

Conservation history

When the Stelling van Amsterdam was in active military use it was regularly maintained by the Ministry of Defence, with special attention to the roofs of the forts and other elements. The Ministry began to dispose of redundant forts in the late 1970s; hydraulic installations were transferred to the water authorities. A more structured approach to its preservation began in 1987 with the Noord-Holland provincial policy document, *De Stelling van Amsterdam, een provinciale beleidsvisie* (The Stelling van Amsterdam, a provincial policy view). Since that time all decisions have been taken in terms of their impact on the cultural-historical value of the Stelling. Between 1990 and 1994 all elements of the Stelling not covered by national protection legislation were declared provincial monuments, and necessary repair and restoration works were carried out. A survey of the condition of all the forts was carried out in July 1995 and recommendations for maintenance and restoration were issued to owners and users.

The brick forts vary in condition, but little more than minor repairs are needed. The concrete forts are in reasonable condition. The linear ramparts remain intact and parts are being or have been replanted according to the original scheme. Of the hydraulic works, those still in use are in good condition. Some sections have also been restored as heritage properties, but some deterioration is occurring on certain sluices not now in use. In one or two cases ancillary buildings are in need of conservation and restoration work, though most are in acceptable condition.

Authenticity

The authenticity of the Stelling van Amsterdam as an integrated defensive system is complete, as is that of its individual components, which have only recently been released from full-time military use and occupation. Because the surrounding area has been a restricted military zone for many decades, that has also retained its authenticity to a high level, and this is being preserved through planning controls.

Evaluation

Action by ICOMOS

An ICOMOS expert on late military fortifications visited the Stelling van Amsterdam in February 1996 and provided reports on its condition and management, and also on its significance.

Qualities

The Stelling van Amsterdam is an example of the type of extensive defensive lines in use from the late 16th to mid 20th centuries, especially in Europe. It is especially noteworthy by virtue of its particular Dutch characteristics, its completeness, its remarkably high level of conservation, and the unique feature of being dependent upon the use of water inundation to reinforce the defences. It should not be overlooked that it is also a virtually intact cultural landscape of high quality.

Its cultural value is enhanced by the fact that it is part of a continuum of defensive measures that both anticipated its construction and were later to influence some portions of it immediately before and after World War II. The addition of reinforced concrete bunkers and a command post to the IJmuiden fort at the mouth of the Noordseekanaal to create an important element of the German Atlantic Wall of 1942-44 adds a further historical dimension.

The land forts have an important place in the development of military engineering worldwide. They mark the shift from the conspicuous brick/stone casemated forts of the Montalembert tradition, which are represented in some of the Nieuwe Waterlinie forts, and the bastioned trace of the Vauban tradition that had failed the French in 1870, in favour of the steel and concrete structures that were to be brought to their highest level of sophistication in the Maginot and Atlantic Wall fortifications. The combination of fixed positions with the

deployment of mobile artillery to the intervals between the forts was also advanced in its application. There are also several important civil engineering innovations, such as the development of mass concrete as additional protection to the bases of gun casemates or the fronts of batteries.

Comparative analysis

The concept of the continuous line of fortifications has a long ancestry: the Great Wall of China and Hadrian's Wall (United Kingdom) are outstanding examples already on the World Heritage List. The technique was revived again in The Netherlands in the 16th century, during the war of independence from Spain, but with a significant difference from earlier periods. The Dutch system integrated defensive structures with a system of controlled temporary flooding of defended areas, using the installations developed in that country to reclaim wetlands and areas inundated by the sea owing to sea-level changes.

The Stelling van Amsterdam represents the pinnacle of this type of defensive system, in use until well after World War II, when the character of warfare had changed in a way that rendered it obsolete. It survives virtually intact, unlike comparable systems, such as the Maginot Line (France) and the Siegfried Line (Germany), where much dismantling and demolition has taken place.

Recommendation

That this property be inscribed on the World Heritage List on the basis of *criteria ii, iv, and v*.

The Stelling van Amsterdam is an outstanding example of an extensive integrated defence system of the modern period which has survived intact and well conserved since it was created in the later 19th century. It is also notable for the unique way in which the Dutch genius for hydraulic engineering has been incorporated into the defences of the nation's capital city.

ICOMOS, October 1996