

WORLD HERITAGE LIST

Kinderdijk-Elshout (The Netherlands)

No 818

Identification

<i>Nomination</i>	The mill network at Kinderdijk-Elshout
<i>Location</i>	Province of Zuid-Holland
<i>State Party</i>	The Netherlands
<i>Date</i>	11 July 1996

Justification by State Party

The Kinderdijk-Elshout mill network is a group of buildings in a man-made landscape, which has developed organically over the centuries and is now protected by the government as a cultural monument as well as a nature reserve.

It is virtually unchanged, with its historic "high and low polder areas with natural drainage," watercourses, mills and mill races, pumping stations, outlet sluices, and Water Board Assembly Houses. It has succeeded in retaining its vast, typically Dutch features of the landscape and the environment, created from the Middle Ages onwards, most particularly in the first half of the 18th century.

Criteria i, ii, and iv

It is an extremely ingenious hydraulic system which is still functioning today and which throughout the ages has made it possible to settle and cultivate a large area of peat. It is nationally and internationally the only example of this extent, which makes it a unique example of an architectural ensemble as well as a landscape that typifies The Netherlands and illustrates a significant stage in human history.

Criterion iv

Category of property

In terms of the categories of cultural property set out in Article 1 of the 1972 World Heritage Convention, the Kinderdijk-Elshout mill network is a *group of buildings*. It should also be considered as a cultural landscape of the type proposed in paragraph 39(ii) of the *Operational Guidelines* (1997).

History and Description

History

The formation of the peat region of the Provinces of Holland and Utrecht began around 4000 BC and continued up to the beginning of the present era. Changes in the drainage of the region consequent upon cultivation resulted in a situation where farmlands lay below the level of the streams that had drained the peat. It therefore became necessary to construct dikes to prevent flooding of the land.

There has been human settlement in the Holland-Utrecht peat region since the 11th century AD, on higher land, on the embankments, and along the rivers and watercourses. The medieval developments were mostly subdivided into long strips averaging 14m wide by 1250-1300m long, with farms at their ends.

Reclamation of the Alblasserwaard (-waard = "land in or along the water"), part of which is the subject of this nomination, began on the northern, western, and southern sides in the 11th century, and later extended to the watercourses that traverse it. A low-level ring dike enclosed all except the western part as early as the 12th century, and this had been extended to include the whole area by 1320. The Alblasserwaard was crossed by two streams, the Alblas and the Giessen, the basins of which developed into De Nederwaard and De Overwaard respectively; the Alblas was extended by a man-made watercourse, the Graafstroom, around 1264.

In 1277 Count Floris V of Holland set up a central body to be responsible for the maintenance of the dikes in the Alblasserwaard, known as the Hoogheemsraadschap van den Alblasserwaard (District Water Board for the Alblasserwaard). It consisted of a dike reeve and 13 board members.

Prince Albrecht van Beieren (Bavaria) authorized the digging of a canal for draining De Overwaard from the Giessen to the river Lek at Elshout in 1365. Known as the Grote or Achter Waterschap (Large or Rear Internal Drainage District), it was 17km in length, with 12km of connecting watercourses. Four years later work began on another drainage canal, known as the Nieuw Waterschap, from the Alblas to the Lek. Both systems are still functioning today.

In 1612 the internal drainage district of De Nederwaard was granted a permit for the compulsory purchase of 70ha of polder-land to the west of the Nieuw Waterschap in order to increase the capacity of the reservoirs by creating a new elevated reservoir. This also involved raising the water-level in the reservoirs and, as a result, the levels of the roads and low-level inner dikes in the area all had to be raised.

Serious flooding in 1726 led to the decision being taken by the Nederwaard and Overwaard management boards each to build a series of eight "head" drainage mills to deal with the endless battle against water and transfer the water produced at that time by 43 polder mills from the lower to the elevated reservoirs. In 1740 a second sluice was installed at the elevated reservoir to handle the water flow, and in 1766 the elevated reservoir itself had to be enlarged.

However, this form of drainage using windmills proved to be inadequate, since the water-levels in the rivers were often too high, making it difficult to discharge water into them through the sluices from the lower reservoir. By 1860 the 25 mills in De Nederwaard could no longer cope, and so a steam-driven pumping station was installed in 1868, to raise water from the lower to the upper reservoir (successively replaced by modern equipment). A similar decision was taken on De Overwaard.

As a result of this process of modernization, the redundant wind-driven scoop mills were gradually demolished. The Kinderdijk mills came back into use during World War II, when there was no fuel for the diesel-fuelled pumping station, but closed down again after 1945. Today eight polder mills survive in both De Overwaard and De Nederwaard.

Description

The Kinderdijk-Elshout mill network is located in the north-western corner of the Alblasserwaard. It drained the internal drainage districts of De Overwaard and De Nederwaard until 1950, when the mills were closed. The nineteen mills that form this group of monuments are all in operating condition. The Alblasserwaard is bounded by the river Lek on the north, the Merwede on the south, and the Noord on the south.

The properties that make up this nomination consist of discharge sluices, Water Board Assembly Houses, pumping stations, and brick and wooden mills.

Owing to changed technical requirements, the Elshout discharge sluices were reduced to two and reconstructed in the mid 1980s.

The *Water Board Assembly Houses* of De Overwaard and De Nederwaard survive intact. The former was built in 1581 and purchased by the Water Board in 1595 to house the Elshout lockmaster. It was used for several other purposes until 1648, when it became the headquarters of the Water Board. It is a two-storeyed brick structure on a rectangular floor plan with a hipped roof. When it became the Water Board Assembly House the modifications carried out included the provision of a meeting room, the addition of a 16th century stone door arch decorated with coats of arms of the reeve and board members, new windows, and bedrooms in the attic for members. It underwent drastic alterations in 1918 when the dike there was raised and widened: 3m was removed from the front of the house and a new facade built. It was restored in 1981-83. The assembly house of De Nederwaard is a plain rectangular two-storeyed building of the 18th century with a hipped roof.

The *Wisbom pumping station* was originally an auxiliary steam-driven pumping station for De Overwaard, built in 1868 with four scoop water-wheels on the exterior of the engine house. It was converted to electricity in 1924. At this time some modifications were carried out to the plain gabled brick structure. The *Van Haaften pumping station*, built for De Nederwaard, also dates from 1868. It was converted to diesel operation in 1927 and the scoop wheels were replaced by Archimedean screws. It was

partly demolished in 1971-72 when the J U Smit pumping station was built.

The most characteristic features of this landscape are the *windmills*. They were used to pump water from the polders using internal or external scoops into reservoirs, on two levels. At one time there were more than 150 in the Alblasserwaard and Vijfheerenlanden area; this figure had dropped to 78 in the 1870s, but today the total is only 28, of which sixteen are in the Kinderdijk area.

The eight mills that survive on De Nederwaard were all built in 1738. They are bonnet mills (in which only the top section revolves with the wind), built in brick and with large sails that come within 30cm of the ground, hence their name, "ground sailers." The bonnets are thatched and the span of the sails is c 28m. Each has an internal iron scoop wheel c 6.30m in diameter and all contains living quarters.

Eight mills are also in place on De Overwaard. All date from 1740 (although one was reconstructed in the 1980s after a fire). They are bonnet mills and ground sailers but, unlike those on De Nederwaard, they are octagonal in plan and constructed of wood on brick substructures. The internal iron scoop wheels are slightly larger than those on De Nederwaard (6.70m), as are the spans of the sails. In addition to the mills on De Nederwaard and De Overwaard, the nominated area also contains two mills from the Nieuw-Lekkerland polder and one from the Alblasserdam polder. Both of the former are of the same type as on De Overwaard, but De Hoge Molen (The High Mill) has an internal steel Archimedean screw for raising water instead of a scoop wheel.

The De Blokker mill on the Alblasserdam polder is the only example in this nominated area of the earlier form of mill, the hollow post mill, in which the upper part of the structure that revolves with the wind is considerably larger than that of the bonnet mill. The date of its original construction is unknown, but records show that there has been a mill here since the late 15th century, and also that this was burned by Spanish soldiers in 1575. The substructure of the mill is pyramidal, and is built of wood. The top, also of wood, is tarred black. The iron scoop wheel is located outside the structure.

Although they went out of use in the late 1940s, all nineteen mills are still maintained in operating condition, since they function as fall-back mills in case of failure of the modern equipment.

So far as the landscape is concerned, the most striking feature apart from the mills is the evidence that still survives in two areas of the medieval land-tenure system, based on long thin strip fields. This is a landscape that has not changed significantly for centuries.

Management and Protection

Legal status

All the buildings (with the exception of the Wisboom and Nieuw-Lekkerland pumping stations) are

designated as monuments in accordance with Article 6 of the 1988 Dutch Monuments Act. Any form of intervention on protected monuments may only take place with the authorization of the relevant municipal executive council.

Article 35.1 of the same statute has been applied to the area, which is a protected townscape, where similar constraints apply as for individual monuments.

The area has also been designated a protected conservation area in accordance with Article 10.1 of the Nature Conservation Act, whereby strict controls are exercised over the use of the prescribed area.

The built heritage component is also protected by the Monuments Bye-Law of the Province of Zuid-Holland

Management

Ownership of the built properties is vested in governmental bodies and in an independent non-profit-making association set up with government encouragement.

The Province of Zuid-Holland has held the eight mills on De Overwaard on long lease since 1953 and has managed them through its Department of Welfare, Economics, and Administration. The District Water Board of the Alblasserwaard and the Vijfheerenlanden retains "bare property rights." That Board owns and manages the eight De Nederwaard mills, the Hoge Molen, and the pumping stations. It is worthy of comment that the De Overwaard and De Nederwaard mills are occupied, the tenants being millers, some of whose ancestors had been responsible for operating them for generations.

The Lage Molen on the Nieuw-Lekkerland polder and the Blokker on the Alblasserdam polder are owned by the Association for the Preservation of Windmills in the Alblasserwaard and the Vijfheerenlanden.

The Ministry of Education, Cultural Affairs, and Science is responsible for maintaining the register of protected buildings, which is managed by the Department for Conservation (Rijksdienst voor de Monumentenzorg). Permits for modifications and other interventions are issued by the Municipality of Nieuw-Lekkerland.

Under the provisions of the 1962 Environmental Planning Act, Provincial Executives are required to produce strategic plans, which are reviewed at least once every ten years. Municipalities have the responsibility of preparing zoning plans. Both levels of plan must take account of the provisions of the cultural and natural heritage protection legislation.

The 1990 Southern Zuid-Holland Regional Plan lays stress on the importance of maintaining the character of the Alblasserwaard peat-bog area, and singles out the nominated Kinderdijk-Elshout section as being "of more than regional significance." It provides for the protection of the open, large-scale agricultural quality of the landscape and the maintenance of a transitional zone between the urban areas and the Kinderdijk-Elshout mill network. It is also given a

tourist recreational value as part of the "green-recreational" network of the region.

The 1995 Eastern Zuid-Holland Regional Plan asserts that "To protect the existing cultural-historical values, such as land division patterns, mills and strips of farmland, not only the Monuments Act and Provincial Monument Bye-Laws are important, but also the set of planning instruments, especially with regard to the spatial context." Various mechanisms are invoked to ensure protection of the character of the Kinderdijk-Elshout mill network.

As a result of these overlapping but not conflicting planning provisions, the nominated area is well protected. There is no buffer zone shown on any of the maps in the dossier, but it is clear from a study from the different planning constraint maps supplied by the State Party that the setting of the nominated area is comprehensively protected.

Conservation and Authenticity

Conservation history

The Province of Zuid-Holland established a mills restoration fund in 1948. The mills included in the nomination were all in operation until around 1950, and up to that time they were regularly maintained and conserved. In 1951 a Provincial Bye-Law was enacted which prohibited further demolitions of mills: owners were required to maintain them or adapt them for re-use for another purpose. This was in part intended to ensure that they were available for emergency use.

The Province took the eight mills on De Overwaard on long lease in 1953, and in 1956 it was instrumental in setting up the Association for the Preservation of Mills in the Alblasserwaard and the Vijfheerenlanden, whose objective is the preservation of mills by managing them, providing subsidies to third parties, or advising on their conservation.

The Province drew up regulations for subsidizing repair work on mills in the 1960s. It applied a premium for mills that were never or seldom in use. They are required to be run occasionally so as to identify technical faults. It revised and increased its grant-aid programme in 1992. Protected monuments are eligible for grant-aid from central government funds. There are also possibilities for obtaining financial assistance for maintenance work on both functioning and non-functioning mills from the municipal administrations of Alblasserdam and Nieuw-Lekkerland.

The District Water Board has a five-year programme for the repair and maintenance of the mills in its ownership.

Authenticity

The authenticity in workmanship and setting of the structures and in the distinctive character and integrity of the man-made landscape is very high. No changes have been made to the functional hydraulic relationships between drainage machines, polders, and rivers since the sixteen mills of De Nederwaard

and De Overwaard were built in 1738 and 1740 respectively, and so the authenticity of the system is also high. The reservoir systems of both are also intact, the lower reservoir of De Nederwaard dating back to 1369 and that of De Overwaard to 1365.

protecting an area by the development and application of hydraulic technology.

ICOMOS, September 1997

Evaluation

Action by ICOMOS

An ICOMOS/TICCIH expert mission visited the Kinderdijk-Elshout mill network in November 1996.

Qualities

The Kinderdijk-Elshout mill network is an exceptional man-made landscape in which the centuries-long battle of the Dutch people to drain parts of their territory and protect them against further inundation is dramatically demonstrated through the survival of all the major elements of the complex system that was devised for this purpose. The area proposed for inscription on the World Heritage List retains all those features without any irrelevant or discordant intrusions.

The landscape is striking in its juxtaposition of its horizontal features, represented by the canals, the dikes, and the fields, with the vertical rhythms of the mill systems.

Comparative analysis

There is no land-reclamation and drainage network of this kind or of comparable antiquity anywhere else in The Netherlands or in the world.

ICOMOS recommendations for future action

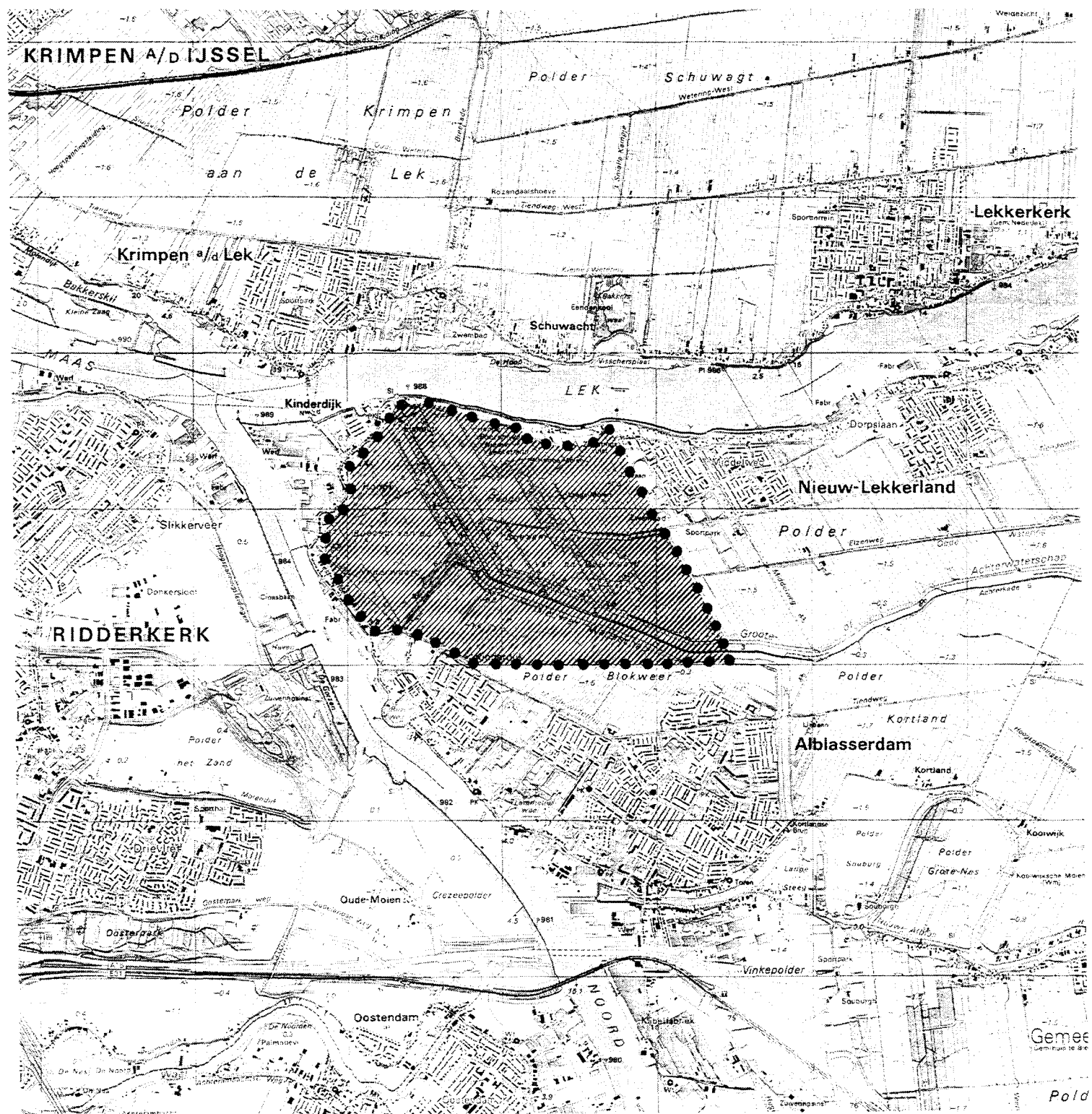
ICOMOS is concerned about the current condition of the Wisbom pumping station of 1868. It is no longer in use and the installations have been removed. There are currently no plans for it to be restored and conserved. Although it is much later than the main features of the mill network, it has an historical role in the development of these massive hydraulic works from the Middle Ages to the present day. For this reason it should be restored and an alternative use found for it within the overall complex.

One use might be in connection with the project for the greater tourist promotion of the mill network, perhaps as an interpretation centre. The attention of the State Party should be drawn to the need to develop a more detailed strategy to deal with the increase of visitors, from both The Netherlands and abroad, that may be expected in the event of inscription on the World Heritage List.

Recommendation

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

The Kinderdijk-Elshout mill network is an outstanding man-made landscape that bears powerful testimony to human ingenuity and fortitude over nearly a millennium in draining and



Kinderdijk :
Carte indiquant la zone proposée pour inscription /
Map showing nominated area



Kinderdijk :
Vue aérienne /
Aerial view



**Kinderdijk :
Moulins du Nederwaard /
Mills of the Nederwaard**



Kinderdijk :
Ancienne maison de l'Assemblée de l'administration des eaux de l'Overwaard /
Former Assembly Water Board House of De Overwaard