



‘Droogmakerij De Beemster’ (‘The Beemster polder’) (The Municipality of Beemster, Province of North-Holland)

The Beemster is the best example of an early 17th-century polder which was realised purely on rational planning principles. A chequerboard pattern still characterises the plan of the polder. The Beemster comprises an important concentration of farmhouses and other buildings and structures which are typical for the region, the time in which they were constructed and the intellectual and material climate of the day. The Beemster was inscribed on the World Heritage List in 1999.

The former Lake De Beemster was impoldered by means of more than 40 drainage mills. The mills drained the water from the lake over a ring-dyke into a ring canal, which functioned as a temporary storage (‘boezem’, reservoir) and discharge canal. The surface area of the Beemster lies at 3 to 4 metres below NAP (Normal Amsterdam Level, and not New Amsterdam Level). The mills were designed by Jan Adriaenszoon Leeghwater from the town of De Rijp. The old 17th-century mills were replaced in the latter part of the 19th century by three pumping stations. These pumping stations have in turn been replaced by new drainage systems. Some remnants of the old pumping stations still remain.

It is worth noting that the southern area of the Beemster is part of what is called the ‘Stelling van Amsterdam’ (Defence Line of Amsterdam), which has also been inscribed on the World Heritage List. The ‘Stelling van Amsterdam’ is essentially a circular defence line around Amsterdam, the capital of the Netherlands, based on inundation zones (areas that can be flooded) and a ring of forts.

The natural structure of the Beemster polder is irregular but compact, with two branches protruding towards the north-east. The main planning structure of the polder is referred to as a ‘chequerboard’ pattern. The squares of the chequerboard each measure 930 x 930 metres (a multiple of a measure in use at the time, namely the ‘roede’ – a Dutch rod measuring approximately 10 metres). The ideal of human control of space and nature, which was reflected in urban development, garden design and land development during the Renaissance, was applied in the Beemster as well. That the planning of this man-made landscape was based on a mathematical approach went without saying. The plan deviates from the chequerboard pattern mainly in places where the polder connects up to the existing mainland, so where old and new had to be ‘reconciled’. The main structure of the polder is based on a rigid system of alternating watercourses and principally two pairs of five roads placed at right angles to each other. The manner in which the polder was subdivided was in line with this main structure and was therefore very regular as well.

The roads provided access to and from the elongated lots of 930 x 185 metres, which were created by subdividing the squares into five equal strips of land. Farmhouses were built at the head of the many dozens of lots along these roads, resulting in extremely thinly populated ribbon developments stretching many kilometres. Buildings were concentrated around five road crossings and at some places bordering on the old land. The main concentration was Middenbeemster, which developed into the principal town.

The investors who had financed the reclamation of the Beemster leased their new land to farmers, but country houses and pleasure gardens were constructed there as well, particularly in the south-east part of the polder, close to Purmerend, which could be reached by tow barge from Amsterdam. Around the middle of the 17th century the polder counted more than 200 farms and over 50 country houses.



Not much has remained of the country houses; they were replaced in the 18th and 19th centuries by farms and market gardens. Some of the last large country houses were situated in what today is called Boschrijk and Arcadia, north of Westbeemster, but they disappeared in the second half of the 19th century. However, there are still many farms and houses dating from the 17th, 18th and 19th centuries. The wealth of historical farms in the Beemster is remarkable. The pyramid-shaped, cheese-cover farmhouse so typical of the province of Noord-Holland is particularly well represented in this polder. The farms are often richly endowed with ornamentation derived from urban architecture. So there is a clear link between the founders of the polder who were city dwellers and the buildings in the polder.

The Beemster covers over 7,200 hectares of land and lies in the green heart of the Province of Noord-Holland.

The Beemster, a brief history

During the Middle Ages numerous watercourses transected the northern part of the province of Noord-Holland. At several places on the Zuyder Zee side they had developed into wide river mouths. After these were closed off inland lakes developed, many of which – in addition to other pools and lakes – were reclaimed over the course of the centuries. Limmermeer (Lake Limmer) (1430) was one of the first to be impoldered, followed in the 16th century by the Bergermeer (Berger Lake) (1565) and others. Most impolderings in Noord-Holland were carried out in the first half of the 17th century. The patent (= the authorisation) for the impoldering of the Beemster was applied for in 1592. In 1597 the States of Holland and West-Friesland granted the requested patent, but work did not commence until 1607. The authorisation was granted at that time to the Beemstercompagnie. This company of financiers comprised merchants from Amsterdam and a few people from courtly circles.

Pieter Cornerlisz Cort of Alkmaar drew up a plan for the reclamation. A ring dyke and a ring canal were constructed under Lucas Jansz Sinck of Amsterdam and 21 windmills were built based on a design by Jan Adriaenszoon Leeghwater. The number of windmills soon grew to 43. Despite a few setbacks the Beemster was reclaimed by the summer of the year 1612. The new land was subdivided immediately thereafter, mainly based on mathematical principles of the Renaissance. The polder was shaped according to a perfectly square modulus, also devised by Sinck. This modulus was based on a square measure of 400 ‘morgen’ (a ‘morgen’ is approximately 0.85 ha; so the sides of a square are approximately 930 m.; this measure is in turn a multiple of a long measure of those days, namely the ‘roede’, which is approximately 10 metres). Each of the squares was divided into five strips of 100 ‘morgen’, each of which could in principle contain five standard farmsteads of 20 ‘morgen’, each with a (gross) width of 185 metres. The planning of the polder further called for alternating roads and watercourses constructed at right angles to each other on the basis of the squares. The polder would eventually comprise seven complete blocks of four modules plus another 20 units which were fairly consistent with the modulus. It is only along the edges of the polder that a rather large number of units developed with one irregularly shaped boundary.

The first farms were built soon after the reclamation and spatial planning of the Beemster. By 1640 the polder already counted more than 200 farms. A part of the Beemster land was used to establish country houses. These country houses were used by the owners themselves, and otherwise leased to others. Most of the country houses were built in the vicinity of the town of Purmerend, which was within easy access from Amsterdam by tow barge. But some were built in other parts of the Beemster as well. By far the majority of the farmhouses were built along the long through roads, resulting in extremely thinly populated ribbon developments stretching many kilometres.



But buildings eventually also concentrated around some crossings and connections to the old land. The largest of these concentrations was the town of Middenbeemster, which became the centre of the polder and later of the Municipality of The Beemster. It eventually comprised not only houses and farms but also a church and parsonage, a school, a town hall, some facilities and a cemetery.

A remarkable facet of building in the Beemster was the construction of some sections of the 'Stelling van Amsterdam' (Defence Line of Amsterdam). This circular defence line around the country's capital was primarily a strip of land that could be flooded, so sluices and other dams were constructed or deployed at several places, including Middenbeemster. The line was reinforced with forts, some of which were built in the Beemster, among which Fort Spijkerboor, the Fort along Middenweg and the Sluice at Volgerweg.

Today, the Beemster still boasts dozens of historical structures dating from the 17th through to the 20th centuries. Many of them are listed buildings. As from 1895 the steam tram between Alkmaar and Purmerend stopped at Middenbeemster. This was an important factor in the area's development.

A particularly important aspect of the Beemster is its reclamation and drainage history. The Beemster was created where a lake of the same name had developed after the mouth of a watercourse had been closed off. One of the reasons for creating the Beemster was the need for land in which to invest capital mainly earned through trade (by merchants in Amsterdam). In 1607, a ring canal was dug around the outside of a ring-dyke circling the lake. Subsequently, dozens of windmills were built at various places on the dyke. These mills drained the water from the lake into the ring-canal by means of waterwheels or Archimedean screws. Twenty-one mills were operating in 1608; by 1610 this number had increased to 30 and by 1612 to 43. Of those 43 windmills, 21 stood at Kruisoord along the north-eastern edge of the polder. After the polder had been completely drained, the required drainage capacity dropped and the mills gradually disappeared. During the last quarter of the 19th century steam-driven pumping stations were introduced. Consequently all of the remaining wind-driven drainage mills were demolished. Today only one flourmill remains; it was of course not used to drain the polder. Three steam-driven pumping stations were built: the first in 1877 at Oosthuizen, the second in 1880 at De Rijp and the third in 1885 at Beets. The pumping stations in Oosthuizen and De Rijp were modernised in the 1920s and the one at Beets in 1947. Two new pumping stations were built around 1980 along the Oostdijk (East Dyke) and along the Westdijk (West Dyke). These are both still in operation, but the old pumping stations were shut down. Some remnants of these old pumping stations are still visible today.

The clay soil of the Beemster was initially intended for agriculture but over the years, milk and cattle farming became the predominant sources of income. By the middle of the 19th century virtually no arable land was left. After drainage improved through the use of pumping stations, arable farming became more popular again and horticulture also began to win more ground. Today, approximately 70% of the polder is still pasture-land.



The Beemster today

The Beemster is the largest 17th-century polder in the Netherlands and also one of the oldest. It has served as an example for dozens of later polders. The greater part of the polder is still in authentic condition. It is still characterised by panoramic views and by land division and land use that go back to and correspond with those of the 17th century. Over time, the originally intended agriculture was eclipsed by cattle farming. Development has been limited over the years, but the main town of Middenbeemster expanded considerably in the 20th century and some transition areas along the edge of the polder have become built up, particularly Zuidoostbeemster near Purmerend. This is where most of the country houses were situated in the 17th and 18th centuries and where the land had already begun to be parcelled. The polder forms the independent municipality of the Beemster that presently has a population of approximately 8,500.

Its inscription on the World Heritage List in 1999 generated a lot of publicity, especially through the municipality itself and its residents. Many residents are proud of the Beemster's unique heritage and recognise that it has a rich history with respect to its land and buildings.

The Beemster represents a development stage in the land use technique applied in the Netherlands – and soon after elsewhere in the world. This technique was applied frequently to newly gained and regained land in the Netherlands, which has always had to cope with great amounts of water, but it had never before been planned in such detail and carried through with such mathematical precision. In the following decades and in later centuries this design was elaborated on as evidenced in many Dutch polders and other land use projects and developments. A related land use technique has been applied elsewhere in the world, mostly to existing but still undeveloped (marsh)land and frequently by Dutch hydraulic engineers. The outstanding significance of the Beemster as a pioneering project is therefore not only apparent in the polder itself, but also indirectly in many other hydraulic engineering and land use ventures in the Netherlands and abroad. Yet this consistently applied symmetry on this scale has remained unique even in the Netherlands.

Today we can regret that none of the original windmills have been preserved and that the country houses, mostly owned by the Amsterdam patriciate, have been lost. On the other hand, the original spatial layout has remained intact as have dozens of structures which are specific to the polder's development. Approximately 80 of these are listed buildings.

The town centre around the central co-ordinate system of Middenbeemster has been designated a protected townscape. This protected townscape includes the buildings, watercourses and bridges and the central square. The Beemster is a public and freely accessible area – with the exception of private properties – with few restrictions as to where one may roam. Consequently, places of interest are not over-crowded.

Its inscription on the World Heritage List contributes significantly to the preservation and attention paid to the unique qualities of the Beemster, namely how it epitomises man's battle against water, seen in the transformation of water into land and the implementation of an 'ideal' layout on this newly gained land. Its preservation results primarily from the Dutch government's duty to maintain the site ensuing from its inscription on the World Heritage List.



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