

1. A unique monument

The Stoomgemaal Mastenbroek has been declared a National Monument with nine other steam pumping stations in the Netherlands. Stoomgemaal Mastenbroek is one of the oldest in this group. Moreover, it still owns the original steam installation of Dutch manufacture from 1856, which is fully operational. In 1984 the pumping station was opened to the public after a thorough restoration. A recent restoration was carried out in the period 2008-2010. In 1999 a Visitor Center was built next to the pumping station with a surprising location and design. It hosts a permanent exhibition on the water state history of the area and its inhabitants. Information material can be obtained at the counter. In the coffee corner you can not only drink something, but also enjoy the unique view over the adjacent pond and the polder Mastenbroek.

2. Water management polder Mastenbroek

At the mouth of IJssel and Zwartewater lie the polder Mastenbroek and the Kampereiland. Mastenbroek, the oldest polder in the Netherlands, was already dug in 1390, so that the polder was considerably better protected against flooding of IJssel, Zwartewater and Zuiderzee.

At the completion of the dike, the three major watercourses had drainage locks, which meant that excess water could be drained at low tide on the Zuiderzee. The farms were built on mounds to be better protected against flooding.

Traditionally, polder residents have fought a battle against and with the water. Around 1490 four windmills were built to improve the drainage. Apparently they did not comply because in 1650 there were only three left that were sold in a public auction. Without mills, the drainage apparently did not seem to work well, considering the plans to build two large windmills in 1713.

In the end, three new windmills were built in 1818. However, in abundant rainfall they were unable to keep the land above water. This problem occurred mainly in the wet years between 1820 and 1830.

3. The steam pumping station Mastenbroek

In the period 1840 - 1880, the use of steam as a source of energy greatly increased. This also applies to the drainage of polders. Mastenbroek belonged to the forerunners in the Netherlands with the construction of d'Olde Mesiene in 1855-1856. With a steam pumping station the water level could be regulated much better and that obviously had a favorable effect on agricultural use. The pumping station was officially commissioned on 11 October 1856.

With the construction of the Veneriete electric auger pumping station in 1961, after 105 years of loyal service, the active period of the Stoomgemaal Mastenbroek came to an end.

Operation

The machine is a horizontal, double-acting, single cylinder, expansion machine with an injection condenser and operates with saturated steam of 4 atm. The steam is supplied by the 2-fire Lancashire boiler, which contains 26 m³ of water and is fired with fire coals or wood.

The steam is admitted through the inlet valves into the cylinder, in which a piston moves back and forth. After releasing energy, the steam is discharged through the exhaust valves to the injection condenser. In this condenser the steam is condensed to water by injection with outside water. The resulting vacuum is maintained by the large air pump which is driven by an eccentric on the crankshaft with a stroke of 0.70 m. The water and vapor mixture is pumped into the wooden hot water tank, where the vapor escapes. This water is used again to top up the boiler via the feed pumps.

The reciprocating movement of the piston is effected by means of the piston rod, the extremely long connecting rod with a wooden body and the crankshaft converted into a rotating movement.

The immense flywheel ensures a smooth running of the machine. This flywheel is of very special construction and weighs 16 tons; the diameter is 7.5 m. The rim consists of 9 cast iron pieces, connected by 9 spokes to the cast iron star wheel on the crankshaft, not welded, but riveted and spied.

Gearwheels transfer the movement of the crankshaft with a delay of 2 to 1 to the axis of the paddle wheels that rotate at about 5 revolutions per minute. The scoops have a diameter of 6 m and at the time had a yield of 390 m³ / minute at a head of 0.60 m. One scoop wheel can be uncoupled.

4. Technical data

Manufacturer: "The Atlas" in Amsterdam - 1856

1-cylinder horizontal steam engine

Cylinder diameter: 740 mm

Stroke: 2440 mm

Steam pressure: 4 ato (injection condensation)

Power: 93 hp at 10 rpm.

Connecting rod: made of ash, with steel coating

Flywheel: cast iron rim of round cross section with a diameter

300 mm, outer diameter of the flywheel 7500 mm.

Weight: 16 tons

The machine drives 2 waterwheels with wooden vanes.

Diameter 6000 mm; width 2 x 2150 mm.

Speed 5 rpm.

Yield at low head 390 m³ / min.

At high head, one of the waterwheels can be switched off.

Steam distribution: The inlet and outlet valves are opened by weights and closed by means of an ingenious mechanism in which, inter alia, leather-coated lever systems are used.

5. Visit to the Stoomgemaal Mastenbroek

The visitor center and steam pumping station Mastenbroek is open during the construction holiday period from 11 am to 4 pm for a period of 3 days a week.

In addition, so-called steam days are held monthly during the months of May through October, during which you can admire the pumping station under steam and in operation.

These steam days are always on Saturdays (from 10 am to 4 pm) and in May and September respectively coincide with the national Windmill and Gemalenday and the Heritage Day.

Access is free on visiting days and steam days.

On request, and for a fee, we also receive groups outside the normal opening hours.

School classes, company outings, associations and other groups can request a reservation and / or a tour at info@stoomgemaal.nl or through calling 038-3446494. For current visiting days, steam days, prices and possibilities see: www.stoomgemaal.nl

6. Become a donor of the Stoomgemaal Mastenbroek:

The pumping station is managed by the Stichting Oude Stoomgemaal Mastenbroek, which is responsible for maintaining the steam pumping station in the broadest sense of the word.

The maintenance of the steam pumping station, the running of the machine and the opening up is done by the volunteers of the Stichting Vriendenkring d'Olde Mesiene.

They spend a large part of their free time on the steam pumping station. You can support the steam pumping station by making a donation or becoming a donor.

Do you want to support the maintenance of the steam pumping station, then become a donor / friend of the Stoomgemaal Mastenbroek; you can do this in different ways:

Fill out the form below, send it and for a minimum amount of € 10.00 per year you will become a donor.

Make a Donation:

The Oude Stoomgemaal Mastenbroek Foundation is a Public Benefit Organization (ANBI). This means that private individuals and companies can make use of additional tax benefits with the income tax return in the context of the ANBI scheme. Consult your advisor or the website of the tax authorities. You can transfer donations to account number NL18RABO0321459768

Stichting Oude Stoomgemaal Mastenbroek
Apeldoornsestraat 36 8266 AM KAMPEN
ANBI data: RSIN / fiscal number ANBI: 5747260

7. Visit and contact

The Stoomgemaal Mastenbroek is located on the Kamperzeedijk 7, which runs from Genemuiden to IJsselmuiden / Kampen, at a distance of 3 km outside Genemuiden. A number of tourist walking and cycling routes run along the steam pumping station. Gemaal and Visitor Center are an ideal opportunity for a stopover.

Visiting address:

Steam pumping station Mastenbroek
Kamperzeedijk 7
8281 PA GENEMUIDEN

Postal address:

Oude Stoomgemaal Mastenbroek
Apeldoornsestraat 36
8266 AW KAMPEN

Contact:

Information: 038 - 3312377
Bookings: 038 - 3446494
Secretariat: 038 - 3312377
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For further details and detailed information, please consult the website: www.stoomgemaal.nl