



ENVIRONMENT
AGENCY

West Sedgemoor Pumping Station



Background

The pumping station was constructed during the War in 1944. At this time, 'Dig For Victory' was the national slogan and every available scrap of arable land was required to grow much needed food for the populace. The Somerset Levels and Moors had to be drained first before farmers could grow crops or graze animals to help with the war effort.

The station was designed to be able to drain a total catchment of 4450 hectares which includes a substantial proportion of upland catchment. The moor is networked by a series of drainage channels and ditches which serve several purposes. In the winter period, they allow drainage of the moor and convey the upland water to the pumping station, whilst in the summer period they provide a supply of water to the land for livestock watering, 'wet' fencing (a barrier to the livestock) and to sustain the ditch flora and fauna. A further vital role is the supply of water to the raised water level area on land owned by the Royal Society for the Protection of Birds (RSPB). The slightly larger drainage channels are controlled by West Sedgemoor District Drainage Board; the main river watercourses are controlled by the Environment Agency.

There are two large pumps that are installed purely for the disposal and movement of flood water and there is one smaller pump which is used for moving water around to maintain the correct summer penning levels on the moor.



Geography

The pumping station is sited near Stathe on West Sedgemoor at the junction of the River Parrett and West Sedgemoor Main Drain. The site is just downstream of the river's tidal limit.



Nature Conservation

Once the war was over and life began to return back to normality, farmers had become used to cultivating the fields on the Moors. As time went on, it became apparent that the drier land was having an impact on the habitat of native plants and animals. Within West Sedgemoor there is now a major wet grassland Site of Special Scientific Interest (SSSI) created in 1983 under the Wildlife and Countryside Act 1981, which promotes a raised water level scheme and an important RSPB reserve. Delicate negotiations were instigated between the then National Rivers Authority and farmers to establish a reasonable balance between the demands of nature and the needs of agriculture. The area became a designated Environmentally Sensitive Area (ESA) and farmers are given grants to maintain suitable habitats for the flora and fauna. This part of the Levels is thought to be one of the premier British inland waterfowl sites. An estimated 50,000 birds are attracted to the area for over-wintering. Amongst the species identified are: Wigeon, Teal, Lapwing, Bewick Swans, Snipe,



Willow spiling



Golden Plover, Whimbrel, Black Tailed Godwit and Quail. The RSPB nature reserve covers approximately one third of the West Sedgemoor catchment.

The area also has one of the largest tracts of botanically rich wet meadows in England and is nationally important for its ditch flora and fauna and meadow fauna which include rare or scarce species. These require protection to maintain and, hopefully, increase their numbers.

Archaeology

The Somerset Levels and Moors are rich in artefacts such as wooden trackways, wetland settlements, log boats, fish traps, etc. The moorland peat itself contains vital information for historical research. The Agency has a duty to ensure that the archaeological potential is not threatened in any way.

Agriculture

The greatest proportion of land is used for grazing dairy cattle, there is a small amount of beef farming and some arable land. Withy growers (for basketmaking) are to be found on this particular part of the Moors. This activity is very labour intensive and dependent on the right water level. Too much at cutting time and the growers cannot reach their crop. The importance of this industry is clearly displayed in a nearby Willow & Wetlands Visitor Centre at Stoke St Gregory.

Teasel is also grown on a small scale on the Moors. This crop is used for combing wool and is often used in preference to synthetic products. There are also a few apple orchards on the higher ground, out of reach of the floods, which supply fruit for the cider market.

The pumping station has had, and continues to have, a very important role to play in controlling the water levels in this valuable area. The quality of the land can be described in three tiers. Waterlogged, boggy land has a very low value for agriculture, wet and damp grassland is suitable for arable use and grazing. Fully dry land is of high value for intensive arable farming.



The Pumping Station

When the station was originally constructed in 1944, it had diesel driven pumps installed. The pumps were manufactured by Gwynnes of Bedford. The diesel engines that drove the pumps were manufactured by Ruston and Hornsby of Lincoln. Each engine operated on a four stroke cycle developing a 132 BHP at 265 RPM. Each pump when running at full capacity, was capable of pumping water at a rate of 2200 litres per second.

A few years ago, a serious failure of a major component in one of the diesel engines highlighted the potential difficulty in obtaining spares for such old machinery within a reasonable timescale. It was then decided that a capital scheme should be implemented to refurbish the entire works.

The Pumping Station

The scheme included the replacement of the diesel engines with electrical drives, refurbishment of the buildings, including the creation of a more spacious dry inspection chamber. The old chamber required anybody wishing to enter to have undergone confined space training. The non-return flaps and penstocks were upgraded, and the weed screen area was improved. These new works have extended the life of this station to the year 2020.

improved control of water levels at any given time. The telemetry system provides a full monitoring facility of the equipment so that any failure or defect is indicated instantly, enabling a rapid response should the need arise.

The old Ruston and Hornsby diesel engine is now with the Westonzoyland Engine Trust.



Refurbishment work in progress

The Agency's capital works section managed the project following detailed environmental and engineering appraisals carried out by Consultant, W S Atkins. The Consultants also managed the mechanical and electrical work, whilst the Agency's In House Workforce carried out the civil engineering tasks. The total cost of the project amounted to £780,000.

The station is now operated automatically and it could be remotely controlled through the Agency's telemetry system. There is also provision for the use of remote level measurements and this enables

Ruston and Hornsby diesel engine



The River Parrett

The River Parrett Catchment covers an area of around 1251 km². Its source is near Cheddington, to the south of Crewkerne. From source to Stert Point, Bridgwater where it enters the Severn Estuary, the river is about 59 km long and falls 160m to sea level. The Parrett flows north, passing Martock and is joined by the rivers Isle and Yeo south of Langport. It becomes tidal at Oath Sluice and has a particularly long tidal reach. Much of the catchment is below high spring tide level. Flood tides carry large quantities of silt up the tidal reaches from the Estuary and this has to be addressed in channel management.

The River Tone is a major tributary of the Parrett and joins it at Burrowbridge. The River Cary rises at Castle Cary and travels in a westerly direction and enters the Kings Sedgemoor Drain at Henley Corner. This continues across the Somerset Moors and reaches the Parrett downstream of Bridgwater at Dunball Sluice.

The middle and lower reaches of the river have a very low gradient and it is therefore relatively ineffective in draining the Levels and Moors.

Facts and Figures

Original building erected in 1944. Refurbishment will extend its life to 2020.

Catchment:	4450 hectares
Total Cost of Project:	£780,000
Consultants:	W S Atkins
Motors supplied by:	MPTC Electrotechnics Ltd
Gear Boxes supplied by:	David Brown Special Products Ltd
Building Refurbishment:	Environment Agency North Wessex Contracts Dept.
Penstocks & Flaps:	Simon Hartley
Acoustic Haven:	Sound Attenuators Ltd

Original diesel engines replaced by electric motors with new gearboxes.

The pumping station controls flows from West Sedgemoor and Wickmoor drains, discharging into the River Parrett.

West Sedgemoor Main Drain



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For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

**ENVIRONMENT AGENCY
GENERAL ENQUIRY LINE**

0645 333 111

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