

A flood defence scheme for Downton, near Salisbury, Wiltshire

The village of Downton is situated about seven miles south of Salisbury in the county of Wiltshire within the River Avon catchment. The River Avon system has some of England's highest national and international environmental designations for nature conservation.

History of flooding

The village has a long history of flooding dating back several centuries. It has been significantly flooded at least seven times since 1960, the most recent event being in December 2000 when 40 properties were flooded for up to two weeks and 17 families were evacuated. Major rivers contributing to the flooding are the River Avon, Newcourt Carrier and The Bunny which flow through the village.



▲ Winter 2000

Scheme history

Following the floods of 2000 and the damage and distress caused to residents and businesses, Downton was granted Special Case Status by the Government and made a priority by the Environment Agency and the Department for Environment, Food and Rural Affairs (Defra).

The Agency considered several options to reduce the risk of severe fluvial - river - flooding and control groundwater within the village. These included: replacement of the iron bridge to improve flow, watercourse improvements and upstream storage on the Avon tributaries. The scheme selected, justified by a sound economic case and support from the public, interested bodies and authorities, has reduced the risk of flooding to a minimum of once in 75 years and defends approximately 130 properties in the village. Groundwater flooding cannot be eliminated but levels have been controlled by upgrading the drainage system within The Borough and building a pumping station to pump excess waters into the River Avon. However, some properties will continue to be at risk of flooding from groundwater.



▶
January
1915



▲ Winter 2000

Scheme construction

Construction work began in March 2003 and was substantially complete, with the defences around the village made watertight, by 19 December 2003. Minor works continued into 2004.

The flood defences were difficult to construct as they were in the grounds of residential properties. The co-operation and patience of local residents and businesses was highly appreciated by the Agency and its site staff - the scheme would not have been possible without it.



▲ Flood walls alongside the River Avon, downstream of the Iron Bridge

Construction of both the flood defence walls and embankments rely on shallow foundations due to the depth of permeable gravels that lie beneath the ground surface stretching across the flood plain. These gravels could not be

sealed because it would have restricted the flow of groundwater down the flood plain during times of flood and would have increased the overall fluvial flooding problem. However, control measures have been put in place to divert any excess ground and surface waters that occur to the pumping station at the end of Green Lane and hence to the river.

The North Eastern Borough flood defence wall flanking the western bank of the River Avon to the north of the Iron Bridge is in two parts. The lower concrete wall is an old existing wall owned by Wiltshire County Council and this will continue to be maintained by them. The upper brick wall is structurally independent of the lower wall and is supported on a series of mini piles driven beneath the Avon footpath. Being the owner the Environment Agency is responsible for the wall. The combination of the two walls and the co-operation of the two authorities ensures a high level of protection against flooding at this point.

Due to the sensitive and diverse nature of the Avon catchment the scheme had to be carefully designed to minimise any adverse impact on the environment. In conjunction with Salisbury District Council, English Nature, English Heritage and the Countryside Agency this was achieved.



▲ The River Avon downstream of Downton

Components of the scheme, like the River Avon channel improvements to the south of the Iron Bridge, water level control structures on the Newcourt Carrier and drainage works, improve riparian habitats, create new habitats for rare and protected species (e.g. water vole, Desmoulin's whorl snail and lamprey), provide habitats for over-wintering wild fowl and waders and increase aquatic habitats for fisheries and protected species.

Support and funding

The £2.5 million scheme was jointly funded by the Avon and Dorset Local Flood Defence Committee and Salisbury District Council, with grant-aid from the Department for Environment, Food and Rural Affairs (Defra). Considerable assistance was given by the Downton Parish Council, English Nature and Wiltshire County Council.

The Environment Agency managed the implementation of the scheme. Design of the scheme was by Halcrow Group Ltd of Exeter and Swindon; construction by Van Oord/T.J.Brent of Reading and Bodmin; cost consultants E.C.Harris of Exeter; and mechanical and electrical installation by KPR Engineering Ltd of Bristol.

Defending Downton



Scheme layout

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