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A flood defence scheme for **Sladesbridge**



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The village of Sladesbridge in North Cornwall has flooded no fewer than 28 times in the last 50 years, causing much misery and disruption to local residents. The neighbouring hamlet of Clapper and some properties on the edge of Egloshayle have also suffered repeated flooding as a

result of the rivers Allen and Camel overtopping their banks.

This leaflet describes the £1.75 million flood defence scheme built to reduce the risk of flooding - a project that has also created a valuable new wetland and considerably benefited local wildlife.



▲ Slades House Inn, June 1993

History of flooding

Surrounded by three rivers, Sladesbridge has a long history of flooding. The village is located at the confluence of the River Allen and the Croan Stream and situated on the edge of the River Camel. The Allen joins the tidal waters of the Camel just one kilometre downstream of the centre of the village and is tidal itself as far as the village.

When high flows in the River Allen and Croan Stream meet high water in the River Camel, the Allen and Croan are prevented from discharging for long periods of time, hence causing flooding.

The most recent serious flooding was in October 2000 when at least eight properties and the A389, the main road passing through Sladesbridge, were flooded.

And in June 1993, 20 residential and commercial properties were flooded, up to 1.4 metres deep. The A389 was closed for 14 hours, and seven properties in Clapper and Egloshayle were also affected.

The flood defence scheme

Designing a sympathetic flood defence scheme for Sladesbridge has been a challenge. Some of the cottages are built by the river, whilst others are situated very close to marshy ground. The steep sided river valleys converging on the village also offer very little opportunity for upstream storage.

For many years the works needed to protect Sladesbridge could not attract the necessary funding. Then, following the floods in October 2000, the Department for Environment, Food and Rural Affairs decided to treat the village as a special case and allow works to proceed. Consulting engineers Halcrow subsequently began investigating flood defence solutions in February 2001. Information on the suitability of ground conditions to support the foundations for potential flood defence structures was gathered in November 2001 and the various options for a scheme were shown to the public at a meeting in March 2002.

The chosen scheme includes new flood walls and embankments in and around Sladesbridge, offering a 1 in 75 year level of protection to 27 properties in the village.

Planning permission was granted by North Cornwall District Council in September 2002 and construction work began in March 2003.

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To Wadebridge and Egloshayle

▲ Stone-clad floodwalls are a feature of the flood defence scheme



▲ Flood walls and gate at Kestle Mill



▲ Bridge under construction



The elements of the scheme are shown on the schematic diagram and described below:

- A stone-clad reinforced concrete flood wall from the road at the eastern end of the village to the Croan Stream;
- A sheet-piled flood wall alongside the Croan Stream - installed with a 'silent piler' to reduce local disruption and noise;
- New bridge to replace the Kestle Mill access bridge - this allows a greater flow under the bridge and reduces the risk of floodwater backing up;
- A stone-clad reinforced concrete wall and flood gates at Kestle Mill;
- A stone-clad sheet piled flood wall around the edge of the marsh, at the rear of the properties, to meet the road next to Riverside Cottage;
- Raised road verge between Riverside Cottage and Slades Bridge;
- A stone-clad reinforced concrete wall between the car park of the Slades House Inn and the River Allen, with a bank in the field to meet Pendavey Hill;
- A stone-clad reinforced concrete wall alongside the A389;
- A raised verge from the end of the A389 wall until high ground is reached near Clapper Cottages;
- Earth embankments around Clapper Cottages and May Parc House/Goosey Cottage – the areas excavated to gain material for the banks form a wetland, providing a valuable new area of wildlife habitat;
- A stone-clad reinforced concrete wall between the bridleway alongside the River Allen and Trelawney Garden Leisure, with the lay-by regraded to continue the flood defence level to Slades Bridge;
- A new pipe to take high flows from the Treworder Stream, out into the River Allen flood plain.

Kestle Mill

▲ Treworder Stream by-pass



A great deal of effort has been put into ensuring the scheme blends into the local surroundings. As a result, the majority of the flood walls have been clad with local slate, and the shape of the walls resembles that of a typical Cornish hedge - wide at the bottom, narrower at the top. The top of the wall and the front part of the joints were filled with earth to encourage a natural, vegetated appearance. Approximately 1500 tonnes of stone were used to construct the walls and a wide variety of plants are already emerging.



▲ The stone-clad bridge at Kestle Mill

The flood defences to the north of the A389 were constructed by Cornish contractor Mowlem Civil Engineering, while work to the south was undertaken by the Environment Agency's Cornwall emergency workforce. Cornwall County Council's highways department has also carried out road drainage improvements to the A389 at the Bodmin end of the village.



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Interest and Area of Great Landscape Value. It is also a County Wildlife Site and home to internationally important species such as otter, salmon and bullhead. Great care was taken throughout the scheme to ensure the new defences maintain and enhance the natural qualities of the area.



Excavations to win material for flood embankments have created a new wetland area to the south west of Sladesbridge. This is already attracting wildlife such as dragonflies, waterfowl and waders. In time, as the redundant flood banks adjacent to the river start to deteriorate, the wetland will become inundated more frequently by high tides. The species attracted to the wetland will start to change, with the flora and fauna becoming more representative of brackish conditions. The Department for Environment, Food and Rural Affairs, the landowners and the Environment Agency are also researching the potential for actively restoring areas of saltmarsh in this location.

Sladesbridge flood defence scheme has both fulfilled its purpose of alleviating flooding to the properties in the village and made a positive contribution to wildlife habitats. It amply demonstrates the benefits of integrating engineering and environmental design.

Conservation

Environmental improvements have been included wherever possible - an otter pass was built in to the scheme at Slades Bridge, allowing otters safe passage under the main road, and bat and bird boxes have been erected. For people, there is an improved pavement link between Sladesbridge village and Clapper Cottages, alongside the main road.

The river and floodplain around Sladesbridge is designated a Special Area of Conservation, Site of Special Scientific

Support and funding

The Sladesbridge flood defence scheme was funded by the South West Regional Flood Defence Committee and grant-aided by the Department for Environment, Food and Rural Affairs, with financial contributions from North Cornwall District Council and Cornwall County Council.

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