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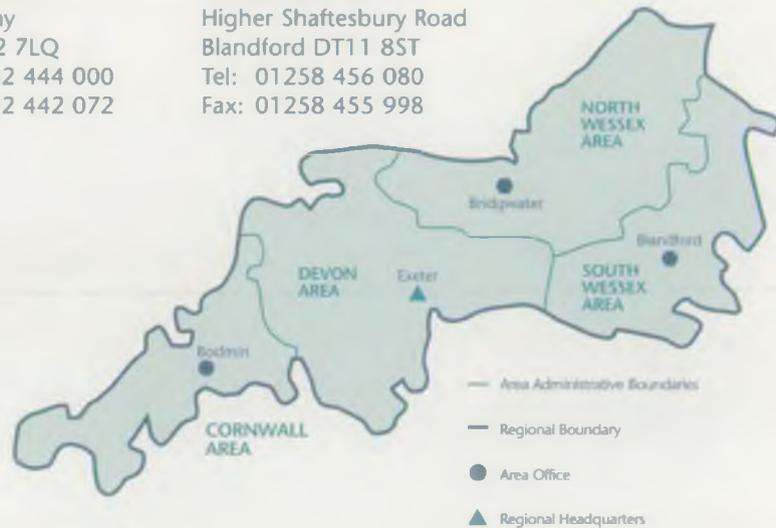
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For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

**ENVIRONMENT AGENCY  
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The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

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**Appledore  
Tidal  
Defence  
Scheme**

# Appledore and the tides

The North Devon town of Appledore is situated at the mouth of the Taw and Torridge Estuary, four kilometres north of Bideford. Its maritime position has been the foundation for thriving boat building, shipping and fishing industries. But the potential threat of flooding from high tides has constantly hung over the community.

It was flourishing trade with North America, and particularly Virginia and Newfoundland, that Appledore's sea-faring status was built on, especially from the sixteenth century onwards.

Major shipyards were built in the town, including the 330' long stone lined dry

There are records of flood events as far back as October 1886. In February 1899 the Bideford Gazette reported that "At Appledore, the quay was completely under water, houses being flooded, and their contents damaged." Such was the "terrible inrush of water" that two boats docked for repairs "collided violently". The paper said that "hundreds of people visited the scene of the disaster during the day, such an occurrence never having happened here before."

Flooding has continued throughout the twentieth century with the



Above: March, 1989  
Main Photo:  
January, 1990



dock at Richmond Yard (constructed between 1849 and 1856) and the modern undercover operation (1969).

One early guide book described Appledore as consisting of "clusters of narrow streets, almost entirely occupied by fishermen, sailors and their accompanying crafts". It concluded that "the whole place has a more foreign aspect than that of any other village in the West of England".

The tides may have brought prosperity, but they also carried the misery of flooding too.

most recent event in the latter part of 1996. Five properties were flooded on this occasion. The event would have been more serious, but the Environment Agency had completed half of the tidal defence scheme and this saved further damage occurring in the town.

Prior to this there were two occasions in March 1989 and February 1990 when substantial flood damage affected properties and vehicles parked along the Quay. On these occasions, eyewitnesses reported a depth of water up to 1m on the Quay road.

The prime cause of flooding was attributable to a combination of tide, wind and wave action. These were exacerbated by the poor state of the existing defences.

It was clear a comprehensive solution was required and with Appledore an increasingly popular spot for visitors there was a unique opportunity to enhance the quayside at the same time. The result was a double boost to the town. The Environment Agency's £2.2 million project has not only minimised flood risk, but also greatly improved the look of the popular waterside area. This booklet tells the story of the scheme.

## THE LOCATION

The Quay in Appledore is a prominent and historic feature overlooking the estuary. It is about 300 metres long and the main coastal road runs alongside of it. The area includes private houses, several small shops, a public house and holiday accommodation.



Further south is the Richmond Dock area which was also vulnerable to flooding. The aim of the project was to provide flood defences in both the Quay and Dock areas.



Left: The historic Richmond Dock - pre scheme Above: Appledore from the air in 1995  
Above right: The Quay is important as a mooring place

# the

The works at the Quay provided a new 145 metre long quay wall, 4.5 metres in front of the existing quay and a new promenade up to a maximum of 900 mm higher than before.

The extended Quay option was chosen because the existing wall would not have been able to support the raising of defences and a new flood wall set back from the edge would have visually cut off the view of the Quay.

The new wall was built in reinforced concrete and finished with masonry from a local quarry to match the existing quay. Around 4,750 cubic metres of concrete, 5,820 cubic metres of crushed rock, 2,280 square metres of facing stone and 350 tonnes of steel were used during the project.

During the scheme consultation period a compromise between the height of the new wall and the amount of wave overtopping in a storm had to be made. The planners and local people accepted the 900 mm rise provided it was disguised by the use of steps. These have been provided. However, this rise is not high enough to prevent some wave water flooding the quay road. To alleviate this problem the Agency were able to provide overtopping water storage between the old and new walls within the voids in the rock backfill. This water is released at low tide.

## Richmond Dock

A new concrete and masonry faced flood wall was built on the perimeter of the Richmond Dock complex. Special care was taken to blend in with the historic site and measures taken to maintain the existing boundary walls.

The new 260 metre long defences are situated within the docks and are largely out of public view.

## SCHEME COMPLETION

By 26 March 1997 the scheme had progressed to the stage when the defences were effective against high tides. To mark the occasion the large old anchor displayed on Richmond Dock corner was unveiled at a small ceremony. The anchor was kindly donated by local resident and ferryman Mr Chris Ommanney and restored by the Appledore shipyard.

The overall scheme, including the promenade works, was completed in May 1997 and a formal opening ceremony was held in July 1997 when a plaque was unveiled on the Quay itself.



The scheme is now a proud addition to the North Devon landscape serving the dual purpose of flood defence and enhanced amenity.

*Unveiling ceremony,  
March 1997*

## Scheme Acknowledgements

The scheme was approved by the Environment Agency's South West Regional Flood Defence Committee and grant-aided by the Ministry of Agriculture, Fisheries and Food.

Sir William Halcrow and Partners Ltd undertook the appraisal, detailed design, contract administration and site supervision.

Engineering Geologists were Frederick Sherrell Ltd and the Archaeological Study was completed by Exeter Museum Archaeological Field Unit.

The Quay construction was undertaken by E Thomas Construction Ltd and Richmond Dock by Dean & Dyball Construction.

## ENVIRONMENTAL CONSIDERATIONS

The Environment Agency has important duties to protect and enhance conservation and recreation.

Among the many considerations that had to be taken into account were:

- The Taw/Torridge estuary - including the entire coastline and inter-tidal area - is a designated Site of Special Scientific Interest (SSSI)
- The area is close to Braunton Burrows which is a national nature reserve and a Biosphere reserve
- The Quay is popular for water-based sporting activities including canoeing, sailing and angling.
- The Quay and Richmond Dock areas have historic importance. A large part of the town is designated as a Conservation area and the Dock is a Grade II listed structure.
- The Quay is used by people as a viewing area for the estuary as well as for fishing boats and yachts.
- The Quay slipway is used by the RNLI lifeboat and local ferry services.

## PREPARING THE PROJECT

Consultants were engaged to consider options for the scheme. Among the various suggestions put forward were:

- a barrage across the estuary
- a hydraulic barrier along the Quay frontage
- strengthening the existing wall
- construction of a completely new quay wall and flood walls at Richmond Dock

A major element of the success of the whole project was the emphasis placed on consultation with local residents and interested organisations.

A public exhibition was held in the town in December 1994 and was well attended.

An Environmental Appraisal was also produced, including the results of an archaeological survey, and sent to a wide range of consultees including English Nature, English Heritage, Countryside Commission, RSPB, Devon Wildlife Trust and the local County, District and Town Councils.



After construction

Responses to this document and comments from the public, following the exhibition proved invaluable and greatly shaped the final proposals.

## THE SCHEME

Having considered all the comments a planning application was made and approved for a scheme entailing two major elements

- A new quay wall and raised promenade area
- A new flood wall alongside Richmond Dock

Work on the Quay area started in January 1996 and was carefully phased in two parts; January to June 1996 and September 1996 to May 1997. Work was restricted to the winter months to minimise disturbance to the vital local summer tourist industry. The work at Richmond Dock took a few months and was completed by autumn 1996.

Below: During construction

