Purpose of the project:
The improvement scheme delivers coastal protection for an active Jurassic coastal town; securing the local tourist and marine economy, whilst maintaining historic character and World Heritage status and increasing flood protection for the residential community.
Description of the project:

West Bay is a small town in Lyme Bay on the Dorset and East Devon UNESCO World Heritage Site. The town is protected from coastal flooding by a sea frontage comprising three main defence elements: West Beach, East Beach and Harbour frontage which is flanked by the two previously named beaches.

West Beach and the Harbour are owned and managed as a tidal defence by Dorset Council and a beach management plan is in place. The Standard of Protection (SoP) along the town’s frontage is greater than 1:200 years in terms of structural safety, however, the SoP is less in terms of public safety, particularly at the eastern end of the recharged groyne bay, and there are some reservations around the safe dispersal of waters arising from wave overtopping of the West Beach seawall.

East Beach is owned by Dorset Council and managed for tidal defence by the Environment Agency (EA). East Beach is regularly re-profiled and at best provided a SoP of 1:136 years. Studies showed that the drift of beach material is variable, with some years accreting and some eroding, thou overall no new sediment enters the system. Following storm events, the beach was recharged using shingle, this is seen as unsustainable activity at a UNESCO World Heritage Site, and a Local Planning Authority requirement was for a long term alternative solution to be developed. The project objectives were:

- Reduce flooding by providing a consistent and reliable standard of flood protection across the West Bay settlement.
- Develop multi-functional assets that support local businesses by offering both flood defence and encouraging tourism
- Retain integrity of SSSI, SAC and World Heritage Sites.

A buried revetment at East Beach and an enhanced set-back wall and stub groyne at West Beach provided a whole settlement solution. This met Natural England’s requirements; protecting the flora and fauna Annex 1 species growing in the shingle and offshore reef Special Area Conservation. Also maintained the archaeology and landscape requirements of the Jurassic coast and area of outstanding natural beauty; with the need to enable geological coherence and natural erosion to progress.

The construction required the importation of 40,000 tonnes of rock with the condition that the beaches need to be open during the summer season. The contractor and suppliers addressed concerns of anchorage, sharding of the rock during placement and limited the beach closure to just one spring season.

Key Issues:

- Delivering £9M construction between Easter Spring high tides and the start of the summer holidays <12 weeks. To ensuring the beaches were open and bringing joy in use to visitors and community.
- 40,000 tonnes of rock delivered and placed with no impact to coastal Special area of conservation, Annex 1 species beach habitat, World Heritage site, Listed buildings and ANOB status.
In quiet fishing heritage village, gaining positive public support to celebrate and promote the scheme from local community and working in partnership with the Local Authority.

The environmental constraints drove the construction project programme. Gaining multiple approvals from Marine Works EIA, Town and Country planning EIA and Habitats regulations alongside ensuring all stakeholder had informed the design and programme.

Integration of the works with the existing landscape and local character.

**Lessons Learnt:**

A rigorous assessment and reporting method for World Heritage Sites that ensures the EIA considers and meets all requirements of UNESCO designation.

The value of early contractor engagement to creating robust design and delivery programmes and method statements as needed to demonstrate compliance with requirement of EU designated habitats and Marine Works EIA and licencing requirements.

The integration of coastal protection within an environment that is required to continue its natural dynamic erosion pathway- creating alignment between what can seem to be diversely apposing requirements.

The extent to which the working areas can be managed and maintained whilst enabling extensive moving and resultant sharding of rock during placement of substantive rock revetment structures.

The ongoing role of the client to manage the expectation of stakeholders; beyond the process of gaining a positive decision informed by a comprehensive Environmental Statement.

The potential for coastal habitat enhancement, through creating rock pools and the opportunity of providing compensatory habitat suitable for local marine life.

**Contact Details:**

Environment Agency

For access to more EIA case studies and hundreds of non-technical summaries of Environmental Statements visit: [https://www.iema.net/eia-quality-mark/eia-quality-mark-case-studies](https://www.iema.net/eia-quality-mark/eia-quality-mark-case-studies)