

Coastal erosion works

Working in partnership with the Environment Agency, we delivered a targeted shingle redistribution scheme at Preston Beach, Dorset, to restore the beach's protective function.

In summary

- Due to longshore drift, shingle had migrated along the beach, exposing sea defences
- Our work relocated the shingle over a two-week programme
- The sustainable design re-used existing sandstone aggregate and incorporated seeded soil bags to create a durable and natural finish

The need

Due to natural longshore drift processes, shingle had migrated from the western end of the beach to the east. This redistribution had left the western beach front severely depleted, exposing critical coastal defences including the rock armour, rock groynes, wave return wall and promenade.

The erosion had reduced the beach profile to such an extent that part of the beach was inaccessible to the public. With the protective shingle layer diminished, the defences were left increasingly vulnerable to wave attack, placing the promenade and road at risk.

The solution

We relocated accumulated shingle from the eastern end of the beach and reprofiled it at the western end, over an area approximately 500 metres long.

Following method and design agreements with our client, we implemented public access diversions and put clear communications in place to ensure the local community understood the purpose and duration of the works. The operation involved:

- Forming temporary stockpiles adjacent to the wave return wall with a dozer
- Loading material into two 40-tonne articulated dump trucks using a 40-tonne excavator
- Transporting the material to the deposition area
- Grading and profiling to create the required berm and crest levels

We took particular care to reinstate shingle coverage at the toe of the wave return wall, while ensuring the re-curve remained exposed so it would continue to function effectively. We reconstructed the beach crest with a strategic bias towards the groyne to help counteract future longshore drift.

To ensure the beach would continue to perform as a coastal defence asset, it was crucial to maintain the correct crest height and gradient in front of the gabion-reinforced areas. We carefully shaped the final beach profile to an angle of repose no steeper than 1:7.5 to increase long-term stability and resilience to future erosion.

Public feedback throughout the works was overwhelmingly positive, with clear recognition of the importance of maintaining the beach.

The benefits

- Restored the beach profile and reopened the area to the public
- Reinstated protection to the rock armour, groynes, promenade and adjacent road
- Reduced the risk of wave damage to the concrete coastal defence wave return structure
- Extended the operational life of the existing assets, minimising the need for costly repairs or replacements
- Delivered a visible and well-received improvement for the local community

20,000

tonnes of shingle relocated

500m

of a public beach coast reprofiled

