

Liv Rickman

From: Planning (Isles of Scilly)
Subject: FW: P/23/095/FUL Green Bay, Bryer
Attachments: Tech Data -GT Geobags Woven + Lifting Strap 600MS (300 614-td-0220).pdf

From: Stephen Swabey
Sent: 16 January 2024 17:52
To: 'Stella New' <Stella.New@southdowns.gov.uk>
Subject: RE: P/23/095/FUL Green Bay, Bryer

Stella

The Tencate Geobags are technically described in the attached specification sheet. The expectation is that they will not be exposed to sunlight, so they will retain their strength for long periods of time – we think this will be at least 20 years – the design life of the structure. The specification note includes the statement that they are designed to be used as permanent core fill in dyke structures (similar to the structural shape we're creating here).

They're also going to be wrapped in a geotextile, which will prevent the geobags being degraded by sunlight even if the geobags temporarily are exposed.

Drainage ditches can deal with steady flow of a specific size, but they can't cope readily with large volumes of water arriving all at once, as happens with sea flooding. Ditches can drain an area that has flooded, but not prevent it flooding in the first place once the flood flow has begun. If sea level is high from the storm and water is flooding onto the land, ditches cannot convey the water back into the sea because the sea level is too high for this to happen (there's nowhere 'downhill' for the water to go).

In the 14 February 2014 storm waves diffracting around Samson Hill to the south of Green Bay overtopped the foreshore SE of Bennett's boatyard and flowed in large quantities through the boatyard and out onto The Green. The water then stood for many weeks until it finally drained, which introduced saltwater to the fresh groundwater body.

Flood modelling by the Environment Agency shows that the 0.5% per annum event breaches through the embankment and through the boatyard onto The Green (see image below – the purple outline is the area affected by the 0.5% flood event today, the red line boundary is shown, plus the Scheduled Monuments in green and the MHWs line in dark blue; the brown line is where the embankment is proposed to be raised). This modelling is consistent with what was observed in 2014 and it represents a particular hazard for the boatyard because the overtopping is running downhill to The Green through the lower area of the boatyard.

The intent of the heightened embankment at southern Green Bay is to prevent sea water getting onto the land in the first place by raising the land surface.

Following the 2014 storm, ditches were dug on The Green and a pipe fitted to discharge the ditch water to the sea in northern Green Bay. This will drain future flooding back to the sea, so that it does not sit infiltrating into the groundwater for a long period of time. The project also proposes to extend the existing ditch further south and west beyond its current extent to improve the ability of the drainage to convey saltwater back to the sea. This also will convey seawater flooding that arrives from Rushy Bay or Great Porth South back to the sea without it sitting for too long, infiltrating into groundwater.

This is a 'belt-and-braces' approach: (1) Augment the height of the existing embankment with natural materials that can be released to the environment in future if needed (and the plastic geobags and geotextile removed) to prevent storm waves arriving on the land; and (2) Drain saltwater from the land more quickly over the days following a storm by extending the existing drainage ditches.

Stephen

From: Stella New <Stella.New@southdowns.gov.uk>
Sent: 16 January 2024 17:01
To: Stephen Swabey <Stephen.Swabey@scilly.gov.uk>
Cc: Planning (Isles of Scilly) <planning@scilly.gov.uk>
Subject: FW: P/23/095/FUL Green Bay, Bryer

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Dear Stephen

Further to my email below, please can you also advise the technical specs for the geobags – I could not locate these on any of the Tencate websites. Specifically the materials to be used for the bag and durability to be able to address local concerns that they will degrade/result in deposition of plastic/imported filling materials.

There is also a suggestion that drainage ditches would be a better solution – are you able to address this point please?

Kind regards

Stella New MSc MRTPI
Development Management Lead
South Downs National Park Authority

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