Case Study

Access road is banking on

SECUTEX® GREEN...

... but not for long!

NAUE

For the first time in the UK, a new and innovative biodegradable geotextile from NAUE Geosynthetics has been used in the construction of an elevated access road and car parking area for the Visitor Centre at Northam Burrows Country Park on the North Devon coast.

Northam Burrows is Common Land and, as well as being home to the Royal North Devon Golf Club, it is still actively grazed by the ‚Potwallopers' of the ancient manor of Northam.

Because it's common land, the Burrows has not been subjected to the normal development and intensive use of other similar seaside dune systems, which has given rise to a great diversity in the flora and fauna, and the area is designated as a Site of Special Scientific Interest (SSSI) and an Area of Outstanding Natural Beauty (AONB). The site is particularly noted for its bird life; especially wading birds visiting from the saltmarsh and estuary.

Northam Burrows Country Park is owned and managed by Torridge District Council and the access road to the site is also used by Visitor Centre staff, Country Park Rangers, and members of the public accessing the parking area around Sandymere Lake.

Originally constructed in 1985, the Visitor Centre has been extensively refurbished, and the 400-metre-long vehicular access road, which was regularly inundated by tidal waters, has been reconstructed and elevated to sit above the 1 in 200-year, plus climate change, tidal level.

Wholly sympathetic to the site's SSSI and AONB status, all works on the site were carried out in an environmentally-friendly manner. Despite enduring the frequently harsh coastal weather for almost 40 years, timber cladding removed from the building has been reused or recycled, and even the surrounding turf was moved to a temporary location, then reinstated when construction works were completed.

Other materials recovered during the refurbishment, such as roofing slates, are being re-purposed elsewhere by Torridge District Council (TDC). Consistent with the other green policies being adopted at the Northam Burrows site, Natural England had required that any geotextiles used in the construction should be plastic-free.

Design consultancy, Craddys, taking advice on board from NAUE's technical team, specified a new and innovative biodegradable geotextile – Secutex® Green – for use in construction of the elevated access road and hardstanding car parking area which will enable year-round access to the Visitor Centre. Northam Burrows is the first project in the UK to benefit from the use of this new geotextile – the first to be launched from NAUE's planned 'GreenLine' range.

For the hardstanding area, Craddys' design specification utilised three separate layers of Secutex® Green 30G1 GRK 2...

The first layer was installed directly to the prepared base of general fill, then a 450mm layer of Type 3 aggregate was overlaid with a second layer, followed by a 150mm topping of Type 1 material.

The final layer of Secutex® Green was then laid prior to installation of a 20mm blinding layer of sharp sand, in readiness for installation of the permeable Grasscrete™ paving system which was backfilled with material excavated onsite and left to self-seed from adjacent grassland.

A layer of Secutex® Green 30G1 GRK 2 was also used on the embankment prior to installation of further Grasscrete™ paving.

Craddys' Senior Engineer on the project commented: "Having recently achieved ISO14001: Environmental Management System certification, we endeavour to improve environmental performance, and encourage sustainability, ecology and biodiversity, wherever possible. NAUE's Secutex® Green is the only product on the market that's readily biodegradable but, for this project, it was the perfect solution."

"In a couple of years', the natural ‚living' embankment and car parking area will be flourishing as rapidly as the geotextile layers are biodegrading – the roadway will virtually 'disappear' from view and, within three years, the geotextile material will have completed its task, reached the end of its service life, and nature will have taken over once again."

At just 300g/m² and 3mm in thickness, Secutex® Green 30G1 GRK 2 is a lightweight material that can be simply unrolled ahead of operations yet, with a resistance to stresses in excess of 1,000N, it's robust enough to withstand the impact of aggregate fill.

The Grasscrete™ system employed on the embankment and hardstanding areas is reinforced with steel, rather than plastic, and vegetation will be allowed to recolonise the sides of the new roadway without the introduction of seed from external sources. The permeable hardstanding area has also minimised the use of tarmac and will improve surface water run-off.

NAUE's Secutex® Green is manufactured exclusively from organic, natural, renewable raw materials, and is certified as 100% biodegradable by TÜV Austria. It is an eco-friendly, nonwoven, mechanically-bonded geotextile which delivers similar properties of separation, filtration and protection as NAUE's original Secutex® product which has been acclaimed by the industry for decades… except that its effective service life, depending on prevailing site conditions, is typically in the region of just 3 years.

Soil organisms, micro-organisms and fungi, as well as exposure to oxygen, contribute to the biological degradation of the product and, since animals' stomach acid attacks the material, there is no danger to living creatures if fibres are absorbed.

NAUE's production process guarantees consistent quality and optimum mechanical properties of the industrially produced staple fibres and, as well as road construction in ecologically sensitive environments, other uses include temporary construction roads, bank protection in waterway construction, and for scour protection in marine and coastal applications.

For the Northam Burrows project, NAUE supplied 3,600 square metres of Secutex® Green 30G1 GRK 2; a total of 8 rolls, at 6m wide and 75m in length.

Also available on 2m and 4m wide rolls, and in grades from GRK 2 to GRK 5, Secutex® Green is capable of resisting mechanical stresses in excess of 5,000N during installation and construction.

In short, for applications where a long lifespan is unnecessary, or even undesirable, Secutex® Green now provides the industry with an environmentally neutral alternative.

Project name:
Visitor Centre Access Road & Car Park Area
Northam Burrows Visitor Centre,
North Devon

Client:
Torridge District Council

Designer/Consultant:
Craddys (Craddy Pitchers Ltd)

Contractor/Installer:
S.E.L. Clarke Contractors Ltd

Products:
Secutex® Green 30G1 GRK 2

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