



## Preserving the National Park Aesthetic: Heavy-Duty Boat Storage in Cumbria

# National Trust, Fell Foot, Cumbria



 **Contractor:** I. T. Shaw & Son Ltd

 **Location:** Newby Bridge, Ulverston, Cumbria, LA12 8NN

 **Sector:** Sport, Leisure & Equestrian

 **Client:** National Trust

## Project Overview

In the summer of 2016, Total Traffic Exopave (TTE®) was installed at National Trust Fell Foot in Newby Bridge, Cumbria, ahead of an ambitious project to construct a new boat house. The primary objective was to provide a stable, durable surface for storing boats on trailers whilst remaining sympathetic to the sensitive landscape of the National Park. This required a solution that could handle heavy mechanical pressure without compromising the visual integrity of the woodland setting.

## The Challenge

The project site presented several rigorous technical and environmental constraints:

**Heavy Vehicle Traffic:** The surface had to support 4x4s pulling heavy three-axle trailers, alongside cars, vans, and minibuses.

**Unexpected Construction Use:** During the first year, part of the area unexpectedly became an access road for a variety of construction equipment, including excavators and dumpers.

**Extreme Weather Events:** In November 2017, the site saw over 200mm of rain in less than 24 hours, saturating the ground, followed by a parching dry spell in June 2018.

**Surface Integrity:** The heavy machinery introduced soil and mud to the surface, causing an initial loss of grass coverage.

## Innovative Solutions:

Geosynthetics Ltd specified Total Traffic Exopave (TTE®) to meet these demanding requirements through several key engineering features:

- ◆ **Advanced Load Distribution:**  
TTE® features a unique interlocking system that ensures excellent load distribution, preventing surface deformation even under heavy plant machinery.
- ◆ **Root Protection:**  
The system's internal chambers protect the grass roots from being crushed by tyres, allowing the vegetation to survive even when surface blades appear withered.
- ◆ **Permeability and Stability:**  
Designed to handle saturated ground conditions, the system remained stable and robust throughout Cumbria's intense rainfall periods.



## Results & Benefits Delivered:

1

**Zero Deformation:** Even the heaviest construction equipment failed to cause any deformation of the surface.

2

**Natural Recovery:** Despite the 2018 drought, the protected roots ensured the grass did not die, with green grass returning by November 2018.

3

**Heritage Sympathy:** The surface continues to look good, maintaining a "green" aesthetic that blends into the National Park whilst performing like a heavy-duty road.

4

**Proven Longevity:** The site has successfully coped with variables such as extreme weather and unplanned traffic which would cause traditional surfaces to fail.

## Measurable Impact

**The success at Fell Foot demonstrates how Total Traffic Exopave (TTE®) delivers a high-performance, load-bearing surface that respects the integrity of sensitive environments.**

It proves that with the right geosynthetic engineering, performance and environmental responsibility aren't mutually exclusive, even under the pressure of heavy construction traffic and extreme Cumbrian weather.

*"The technical team at Geosynthetics provided a range of options with the Trust ultimately opting for the heavier duty TTE® product with associated geotextiles.*

*On-going support and advice was provided during various stages of construction to ensure a successful delivery.*

*We are really pleased with the way in which the surface is performing and the outcome was above satisfactory."*

Tom Slater - Project Manager

