

**Geosynthetic**s

Delivering cost-effective ground reinforcement for residential development

The Barn at Parkfield Roadway Construction



Client: Howard Thorne



Sector: Housing & Residential



The Barn at Parkfield, Main Street, Brandon
Coventry, CV8 3FW

Project Overview

Discover how Geosynthetic Ltd engineered a sustainable and cost-effective solution for roadway construction at The Barn at Parkfield, Brandon.

The project required a stable 3-metre access road capable of supporting heavy construction traffic and long-term domestic use, while maximising the use of site-won materials.

Challenge

- **Poor Ground Conditions:** CBR testing revealed sandy soils with only 3% bearing capacity, indicating low cohesion and potential instability under heavy loads.
- **Heavy Construction Loading:** Roadway needed to withstand 32-tonne loads and 40 construction vehicles during the build phase, followed by domestic traffic.
- **Material Constraints:** The client had 400 tonnes of site-won crushed concrete and brick, requiring a solution that could utilise these materials instead of importing new aggregate.

Innovative Solutions:

Geosynthetics Ltd provided a bespoke design using Cellweb® Wide panels (3.1m width) to create a reinforced roadway:

- ◆ **3D Cellular Confinement System:** High-density polyethylene (HDPE) structure for superior load distribution.
- ◆ **Custom Panel Sizing:** Optimised for efficient use of site-won materials.
- ◆ **Engineered Aggregate Specification:** Ensured compatibility with crushed concrete and brick.
- ◆ **Technical Guidance:** Recommended aggregate sizing (max size $\leq 1/3$ of Cellweb® depth) for optimal performance.



Key Benefits Delivered:

1

Cost Efficiency:

- 50% cost reduction compared to traditional methods.
- Eliminated need for imported aggregate.
- Maximised value from 400 tonnes of site-won material.

2

Environmental Sustainability:

- Zero waste through complete reuse of site-won materials.
- Reduced carbon footprint by avoiding aggregate transport.

3

Technical Performance:

- Enhanced soil stability in sandy conditions.
- Robust foundation supporting 32-tonne loads.

Client Testimonial

"We are extremely pleased with the performance of the geosynthetics used in our project. The ability to utilise our on-site aggregate combined with superior load distribution has resulted in a robust and cost-effective solution."

We highly recommend these products for any construction project requiring reliable soil stabilisation."

— Howard Thorne, Client

For more information on how Geosynthetics Ltd can support your soil stabilisation needs, or other applications, please contact our technical team for a consultation on your project requirements.

