



JNP GROUP
CONSULTING ENGINEERS



Rattle Road Cutting

Overview

JNP Group were commissioned to remediate the failing slope with a design life of 50 years, the scope included the request to have minimal impact on the slope, and a Highways requirement to maintain the existing trees. JNP Group worked collaboratively with Platipus Anchors Ltd to deliver and implement a fully co-ordinated design.

Rattle Road is a stabilised cut slope along the northern site boundary of a Taylor Wimpey SE (TWSE) residential development, Honeysett Gardens. The slope is 64m long adjacent to the highway and up 3m in height with mature trees at the crest.

During S278 work, the groundworks contractor had to 'carve' a cut slope exposing soils that would be susceptible to deterioration due to weathering. Large sections were at risk of falling or slumping over the spring months washing fines onto the highway, if not stabilised and protected.

Case Study

Project Value: £0.5m

Client: Taylor Wimpey

Services Provided

- Design of ground anchors for slope stability and erosion control
- Optioneering remedial solutions
- Designers on-site representative/supervision
- Value engineering
- Anchor arrangement co-ordination



Project

A 'softer' engineered solution was used to protect mature trees and their root zones, with slope re-profiling designed to minimise disturbance and approved by an arboriculturalist. Residual soil issues were addressed with benching, Rootlok geotextile bags, and hydroseeding to stabilise slopes and prevent erosion.

To manage restricted access, an anchor solution was chosen to limit equipment needs and reduce traffic management to lane closures. Existing services were accommodated through design adjustments, ensuring safe standoffs while coordinating with third parties.

The tight timeline was met by expediting design finalisation with Platipus, enabling prompt anchor procurement and installation. Clear sectioning of slope gradients and regular site visits ensured precise implementation, completing the project on time and within budget.

Cut slope faced ongoing deterioration creating stability issues.



Case Study

Challenges

- The site included mature trees with roots extending into the cut slope crest, posing a risk of root zone damage during the project.
- The cut slope faced ongoing deterioration with fines being washed out during heavy rain, creating stability issues.
- Limited working space and restricted site access required careful planning to avoid road closures and maintain operational traffic flow.
- The presence of existing utility services and telecom infrastructure presented tight constraints, as diverting these services was not a viable option.
- A constrained timeline required a rapid design finalisation process, as the Client and groundworks contractor were set to demobilize from the site.
- Complex slope gradients and varying requirements across sections demanded meticulous design coordination for clarity and effective execution on-site.

Summary

The project preserved mature trees, reduced landfill waste, and stabilised slopes to prevent erosion and ensure commuter safety with a 50-year design life. Collaboration with stakeholders balanced environmental, technical, and community needs, while efficient design coordination met tight timelines, minimising disruption with lane closures. Using geotextiles, hydroseeding, and re-profiling, the project integrated erosion control with urban green enhancements, promoting sustainability and biodiversity. It exemplifies innovative engineering aligned with safety, environmental care, and sustainable urban development.

Soil stability ensured using Rootlok bags, benching, and hydroseeding.



Case Study

Solutions

- Slope re-profiling protected trees and roots
- Soil stability ensured using Rootlok bags, benching, and hydroseeding.
- Anchor solution reduced equipment needs and managed lane closures.
- Design adjusted for existing services with third-party coordination.
- Fast-tracked design and regular site visits ensured timely completion.

