

Unrivalled load transfer for online retail giant's high-traffic service yard

When commercial real estate investor and developer, Graftongate, were selected to manage the redevelopment of Enfield Distribution Park, a 24-acre North London industrial estate, they needed to do so with sustainability and longevity in mind. In particular, with one of the world's largest retailers due to open a distribution facility from the site, the 2545m² hardstandings and service yards would need to withstand high traffic from heavy goods vehicles. It was also crucial to throughput that the site would require minimal maintenance and promote uptime throughout the life cycle of the installation.

Contractor Readie Construction was appointed to conduct a full technical audit of the site. The company recommended the Danley Strategic Reinforcement Design™, a concrete reinforcement system that goes above and beyond the performance of traditional mesh support systems.



Instead of using traditional mesh reinforcement for the service yard, Readie Construction appointed Greystone Construction Ltd to install the Danley Strategic Reinforcement Design™ to better manage the natural behaviour of the concrete and reduce common failures.

Most deterioration of concrete slabs happens at the joints, but by removing the steel from the mid-panel, and placing the support at the joints instead, Readie and Greystone were able to optimise load transfer and control cracks in a way that would considerably reduce service yard maintenance and improve the structural integrity of the slabs.

Mark Lofthouse, Site Manager at Readie Construction Ltd explains: **"Danley's unique reinforcement method uses tapered dowel plates at the joints, rather than traditional mesh reinforcement through the middle of the slabs.**

"Not only does this concept offer outstanding load transfer, but it also reduces time on site, consumes less CO₂ during the build phase and reduces the volume of materials required to produce a performance-grade service yard.

"For organizations operating at the pinnacle of their industry like this customer, these are important considerations – speed, sustainability and uptime."

Strategic Reinforcement™ Design Danley® PD3® Dowel Cradles Danley® Dowels

Project information

- Client: Graftongate
- Project: Enfield Distribution Park
- Location: Enfield
- Concrete Hardstanding Area: 2545m²
- Main Contractor: Readie Construction
- Design Slab Engineer: Adept Consulting Engineers
- Concrete Contractor: Greystone Construction Ltd
- Completion Date: October 2022

Danley's Services

- Technical design support to the engineer
- On-site installation training and guidance on best practices for quality assurance
- Danley® design warranty

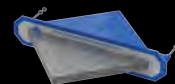


Danley® Strategic Reinforcement™ Design

- 175mm thick PAV2 C32/40 Concrete Slab
- No steel reinforcing mesh
- PD3® Dowel Cradles at contraction joints
- Danley® Dowels at construction joints
- Joints spaced at 4.2mx4.2m



PD3® Dowel Cradle



Danley Dowel

Original Design Design

- 190mm C35A Concrete Slab
- Single layer of A252 mesh
- H12 600mm dowelled construction joints
- Joints spaced 7mx5m



(1) Danley PD3 Cradle™ (2) Danley™ Dowels

The Danley method requires fewer deliveries to site and reduces the time it takes to install the concrete hardstanding, meaning the installation was completed in a time-efficient manner. The finished service yard has so far surpassed expectations.

By using the Danley Strategic Reinforcement Design™ Readie Construction was able to reduce the site's use of concrete by 8% and its use of steel by an impressive 71%. These savings translate to an overall cost saving of 12% and a Co2e/m2 saving of 18%.

This online retail giant will now benefit from dramatically reduced maintenance, and reliable uptime for the duration of the product lifecycle.

The Strategic Reinforcement™ Design complies with Concrete Society TR66 Rev 1: External in-situ Concrete Paving, ACI 330.2R-17: Guide for the Design and Construction of Concrete Site Paving for Industrial and Trucking Facilities and ACI 360-R-10: Guide to Design of Slabs-on-Ground.

To find out more about Danley's Strategic Reinforcement solution, visit: <https://danley.co.uk/strategic-reinforcement/>