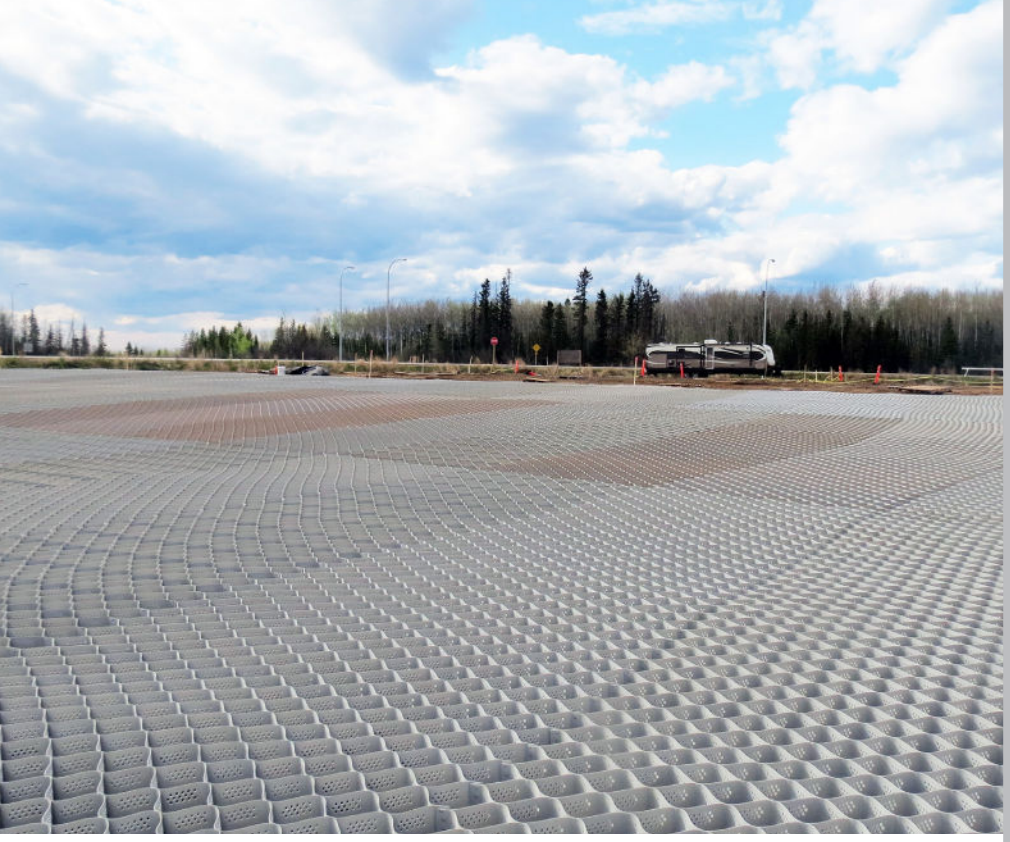

CASE STUDY

LOAD SUPPORT

PROJECT AT A GLANCE

APPLICATION:
Laydown/Industrial yards and parking lot

LOCATION
Alberta, Canada

DATE OF INSTALL:
May 2013 - June 2014

CLIENT:
Camdon Property Solutions

Alberta-based Design/Build Contractor & Project Manager, dedicated to creating successful partnerships, and striving to exceed client expectations.

CONSTRUCTION:
Paradox Access Solutions

The authorized Tough Cell® Master Distributor in North America, specializing in the supply and installation of high quality access solutions and services to customers in the pipeline, utility, municipal, general construction and oil & gas industries.

ENGINEERING DESIGN
Stratum Logics Inc.

Global geotechnical engineering design specialists exceptionally proficient in the deployment of cutting-edge geosynthetics for civil engineering across North America in all types of challenging soils and climates.

Reinforced industrial yards and parking lot

Camdon Property Solutions
Rickard's Landing, Ft. McMurray

Camdon Property Solutions, a developer of commercial and industrial properties needed a new laydown/industrial yard and parking lot capable of withstanding the stress of heavy load cycles. Located in northern Alberta, the Fort McMurray region suffers frigid winter temperatures of -45°C, and seasonal thaws that saturate the native clay subgrade.

With gravel being a rare commodity in the region, Camdon looked for a solution that would reduce the need for aggregate. In addition, the high construction costs and ongoing maintenance and repair costs of a conventionally-built structure motivated the privately owned developer to seek out an alternative and innovative solution that would prove durable and cost-effective.

Paradox Access Solutions proposed the use of Tough Cell® geocells to create a solid sub-base using almost 40% less gravel, which meant the three-stage yard could be built less expensively, yet provide the same performance as traditional construction and better withstand the environmental stresses of the region.

PERFORMANCE RESULTS:

Camdon has realized further cost savings since the unpaved section of the yard has required little maintenance and virtually no repair work. Tough Cell® construction maintains structural integrity regardless of environmental conditions, thereby reducing rut and pothole formation as well as the need for frequent grading.

Project Highlights

Reinforcement and surfacing of multi-phase industrial yards and parking lot

THE CHALLENGE

The existing subgrade showed a CBR of only 3%, rendering conventional construction methods very costly due to the high quantity of aggregate needed to achieve the desired design life. Extreme weather conditions in the area historically reduce the lifespan of traditional pavement structures, subjecting them to frost heave damage and severe rutting issues, especially during spring thaw.

THE SOLUTION

7,000m^2 unpaved laydown yard section was constructed with a single layer of 150 mm Type D Tough Cell® Geocells, infilled and capped with gravel. A 700m^2 lighty duty industrial section received 120mm Type D geocells capped with 75mm of asphalt, and a heavy duty 850m^2 section used 150mm Type D geocells with 100mm asphalt surface. A separation layer of woven geotextile was installed between the subgrade and geocell layers.

Total area: 8,500 m^2

Product(s): 330-150 Type D Tough Cell® Geocells; 330-120 Type D Tough Cell® Geocells; woven geotextile.

Infill: 25-40mm aggregate.

Completion: 150mm gravel cap for unpaved yard, 75mm ACP light pavement section; 100mm ACP for heavy pavement section.

THE BENEFITS

The client benefitted from a nearly 40% reduction in aggregate costs, realizing initial construction savings. After three years in service, the pavement structure has performed to expectations, showing no loss of integrity due to environmental conditions, and no rut or pothole formation. Greatly reduced maintenance and repair needs have contributed to additional operational savings since installation.

Site prior to construction.

Preparation of drainage ditches.

Installation of ToughCell® over geotextile.

Infilling in progress.

Yard area infilled and surfaced with gravel.

PARADOX ACCESS SOLUTIONS

An industry leader in innovative access solutions, Paradox Access Solutions has provided industrial access and ground reinforcement for the oil and gas, pipeline, utility, municipal and construction industries since 2004. We are COR, CQN, PICS, ISN, ACSA, and ComplyWorks qualified and employ the highest safety standards.

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