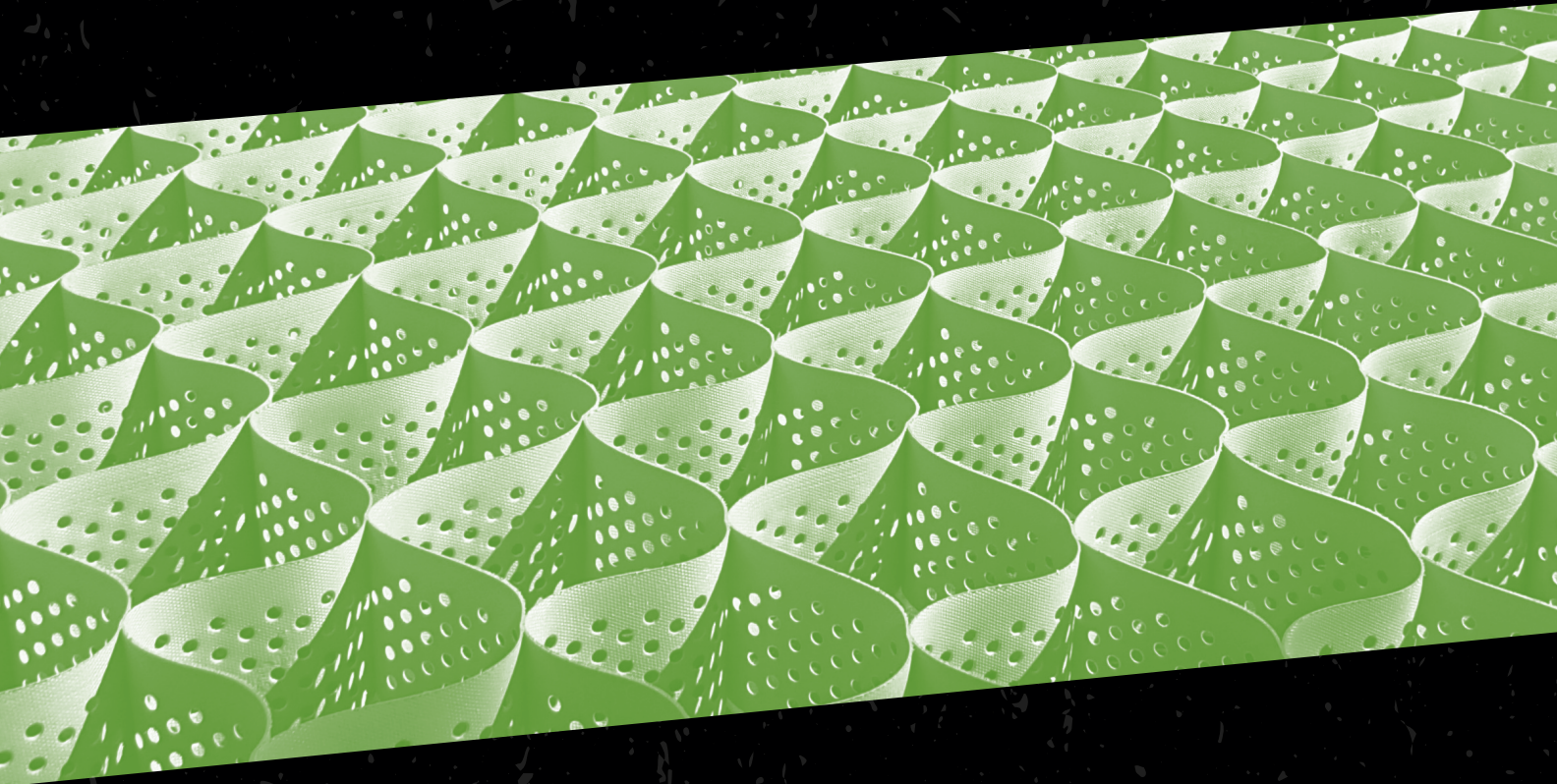


CONVENTIONAL ROADS & PARADOX ROADS — A COMPARISON

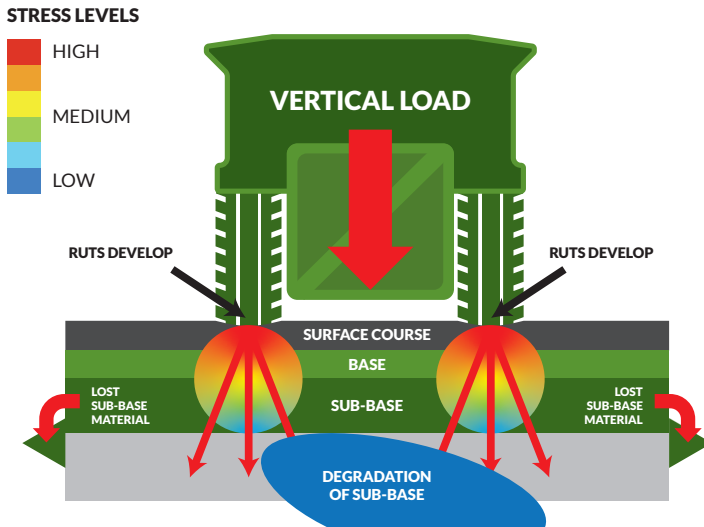


Conventional access solutions just don't cut it. Our civil infrastructure solutions and services give Paradox the capability to take on projects big and small — there's no limit to the magnitude of projects we can undertake. And, our solutions last longer and cost less than traditional road builds.

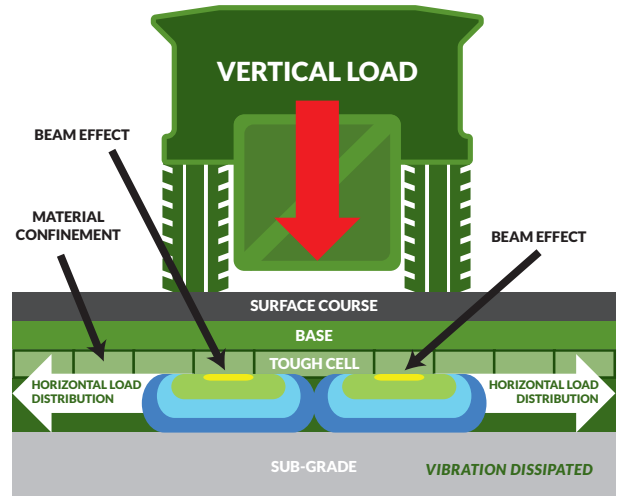


CONSTRUCTION

CONVENTIONAL CONSTRUCTION



TOUGH CELL® CONSTRUCTION



EVOLUTION OF ROAD DESIGN

HEAVY ROAD STRUCTURE



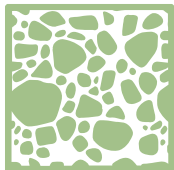
LIGHT ROAD STRUCTURE



CONVENTIONAL ROAD VERSUS TOUGH CELL®

Case #	CONVENTIONAL OPTION				NPA GEOCELL				
	Quantity (tonnes)	Total Hauling (km)	Muskeg Removal (m3)	CO2 Emission (kg)	Quantity (tonnes)	Total Hauling (km)	Muskeg Removal (m3)	CO2 Emission (kg)	Cost Savings
1	83,866	274,609	23,040	1,654,191	48,993	153,578	–	1,033,321	5% – 25% per project
2	110,670	398,042	57,600	2,410,457	51,744	219,288	–	1,633,276	5% – 25% per project
3	16,560	19,872	5,200	269,994	10,560	14,272	–	114,210	5% – 25% per project
4	28,152	90,086	–	736,006	18,768	63,159	–	547,466	5% – 25% per project

MAIN CO₂ CONTRIBUTORS IN ROAD CONSTRUCTION



Gravel Production and Placement
10 kg per ton

Gravel Hauling
0.197 kg per tonne.km



Asphalt Production and Placement
307 kg per 1 ton



CASE STUDY: VILLAGE OF RLEY — CO₂ SAVINGS

“The Village of Rley required a design for 50th Avenue, the main access into the village from Highway 14. This road has always been problematic, and... Tough Cell geocells were chosen to reinforce the road structure. Paradox Access Solutions was responsible for the construction of the project. The Village of Rley was happy with the construction process, work performed and degree of professionalism of Paradox Access Solutions’ construction crew.”

– Janet Winsnes, County Administration Officer,
Village of Rley

REDUCED CO₂ FOOTPRINT

Item	Construction Type	Quantity	Unit	CO ₂ (kg/unit)	CO ₂ (kg)	Reduction in CO ₂ (kg) % (%)	
Crushed Gravel	NPA Geocell	8,675	tonnes	10.0	86,750	28,910	25
	Conventional	11,566	tonnes		115,660		
Asphalt Pavement	NPA Geocell	3,016	tonnes	52.5	158,340	52,815	25
	Conventional	4,022	tonnes		211,155		
Aggregate Hauling	NPA Geocell	694,000	t/km.	0.197	136,718	45,562	25
	Conventional	925,280	t/km.		182,280		
NPA Geocell Manufacturing	NPA Geocell	17,506	kg	1.93	33,787	(33,787)	18.4
	Conventional						
					TOTAL	93,501	

RESEARCH FINDINGS & RESOURCES

Tough Cell has been featured in more than 55 papers and publications around the world including the Canadian Society for Civil Engineers and the American Society of Civil Engineers. According to Greening Alberta, there are over 3.5 Million m² of AT-approved Tough Cell working Canada-wide.

Don't let your project get stuck in the mud.

Call 1-877-MUD-UGLY to get your project back on solid ground.

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paradoxaccess.com

