

CASE HISTORY

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REHABILITATION OF PARKING AREA USING TECHCELL GEOCELL AT LOWER PAREL, MUMBAI MUMBAI, MAHARASHTRA, INDIA



Ground Improvement application

Client:	Products used:
BALKRISHNA INDUSTRIES LIMITED, MUMBAI	TECHCELL - 445X100
Main contractor:	Quantity supplied:
	10000 SQ.FT.
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2019

Project brief:

This case study describes the restoring of parking area by Techcell Geocell. The main application of Techcell Geocell here is to increase the level of existing parking area at the same time providing the strong base for the concrete flooring.

Project challenges & Solution:

The parking area of BKT Tower was very old and distress at number of places, the approach roads and other surrounding areas floor levels are comparatively higher than this parking area, so during monsoon there were lots of issue of water logging which had resulted in failure of flooring and settlement at fewer places. It is very much necessary to raise the level of existing parking and also make it durable.

The site is located in the busiest area of Mumbai, i.e. in Lower Parel, the parking area and surrounded area are very much busy during weekdays, so to remove the old flooring and reconstruct the new parking area with traditional method seems to be challenging due to lack of time and space availability to store the removable materials and new materials.

Considering all the above aspects , we suggested using the Techcell Geocell with infill materials as grit/crushed stone above the existing parking without removing it., which will not only raise the level but also give very strong base for the concrete flooring without much hassle. The perforation of Techcell Geocell also takes care of the drainage function, which will not be possible in our conventional base system.

The main advantage of using Geocell here is the speed of construction, with the Techcell Geocell here the base prepared in only 2 days' time without affecting the busiest parking space for vehicles and after preparing the base with Techcell Geocell we can immediately use it for parking which is the need of the project.

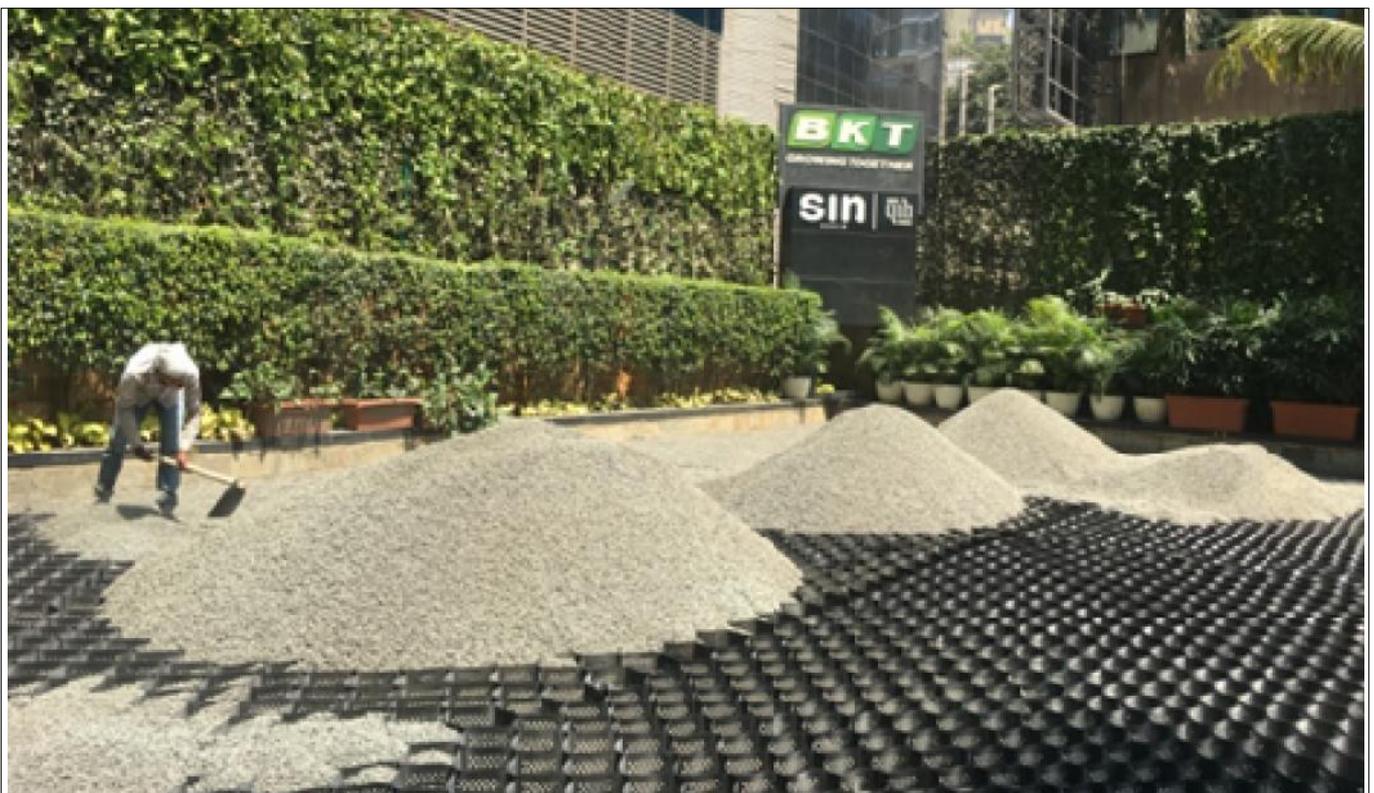


Old damaged parking area

The 3D confinement of Geocell prevents movement and shearing of soil infill under cyclic loading, while reducing aggregate attrition. The confinement system also maintains soil compaction, thereby providing long term soil reinforcement and structural strength as well as improves moduli of infill materials, while increasing the bearing capacity of the structural pavement layers of load support.



Expanded Techcell Geocell



Filling of Geocell with Crushed stone / Grit

Execution on Site:

Existing parking flooring were kept as it is. Folded Techcell sections were delivered to site and installation performed by inexperienced work crew immediately, the deployment is very easy and fast. Techcell is expanded fully as per its given dimensions on-site to form a honeycomb like structure, which was filled with crushed stone which create unique cellular confinement system and gave the strongest base.

Techcell Geocell was filled with crushed stone aggregate and compacted with plate then 100 mm thick PCC was done in stages. While constructing levels are checked at multiple points, proper drainage arrangements were done by giving proper slope so that there won't be water logging issue in future.



Concrete flooring above Techcell Geocell



Finished parking area in less than week time

Conclusion:

Techcell is easy and quick to install which enabled the contractor to finish the project work within 7 days. The client was very happy with product quality as well as quality of work.

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