Completed reinforced soil structure (RSS) as a working platform at service stage

Working Platform
№ 488

Development of Kwu Tung North and Fanling North, Hong Kong

Kwu Tung North & Fanling North, Hong Kong

CONSTRUCTED IN 2021

Benefits

Rapid construction
using wraparound facing

Stable platform
withstands heavy surcharge load confidently

Flexible solution
can be constructed under limited space easily

One solution, checks all!

A temporary reinforced soil structure was required to support a piling rig operation at a real estate development. Tensar proposed a wraparound system incorporating Tensar uniaxial geogrids as it enables rapid construction whilst simultaneously meeting project specific requirements.

CLIENT'S CHALLENGE

The client requested a temporary reinforced soil structure (RSS) as a cost-effective platform that can withstand the weight of a piling rig to construct 2 pile points that are sitting on Mat Wa River. The structure was required to have a height of 4m and be constructed adjacent to a body of water whilst being built within a confined space.

TENSAR SOLUTION

Tensar proposed a wraparound facing system that needed minimal construction space whilst providing stable foundations for the piling rig and protection against scour. This system can be constructed swiftly and efficiently, reducing project costs whilst meeting the required standards described in Geoguide 6.

RSS being constructed within a limited working space.

PROJECT BACKGROUND

The development of Kwu Tung North and Fanling North involves the construction of a 4m high, 33m long, temporary RSS as a platform to support the piling rig for bored pile installation. As the structure's service life is short, building a wall with solid facing is proved to be expensive and less sustainable. The same goes to contractor's initial proposal of using concrete block which is expensive and will post a challenge for piling rig to bore through.

Instead of boring through concrete, boring through soil is more preferred at site. Tensar proposed a wraparound RSS made up of compacted soil, reinforced with Tensar RE uniaxial geogrids to form the wraparound facing with an 86° face inclination. The structure is design as per Hong Kong Geoguide 6 using in-house software. Adopting the wraparound facing system is an efficient and sustainable solution for ensuring the stability of the piling rig, particularly in situations where space is limited and the retaining wall structure is adjacent to a body of water.

Main contractor

CRCC - Paul Y. Joint Venture

Consultant

AECOM

Client

Civil Engineering & Development Department (CEDD), Hong Kong

Distributor

G and E Company Ltd.

