Dar Al-Handasah Consultants
(Shair and Partners)

dar
Sidara Company

Table of
CONTENTS

Who we are

Abraj Kudai, KSA

Al Maktoum International Airport, UAE

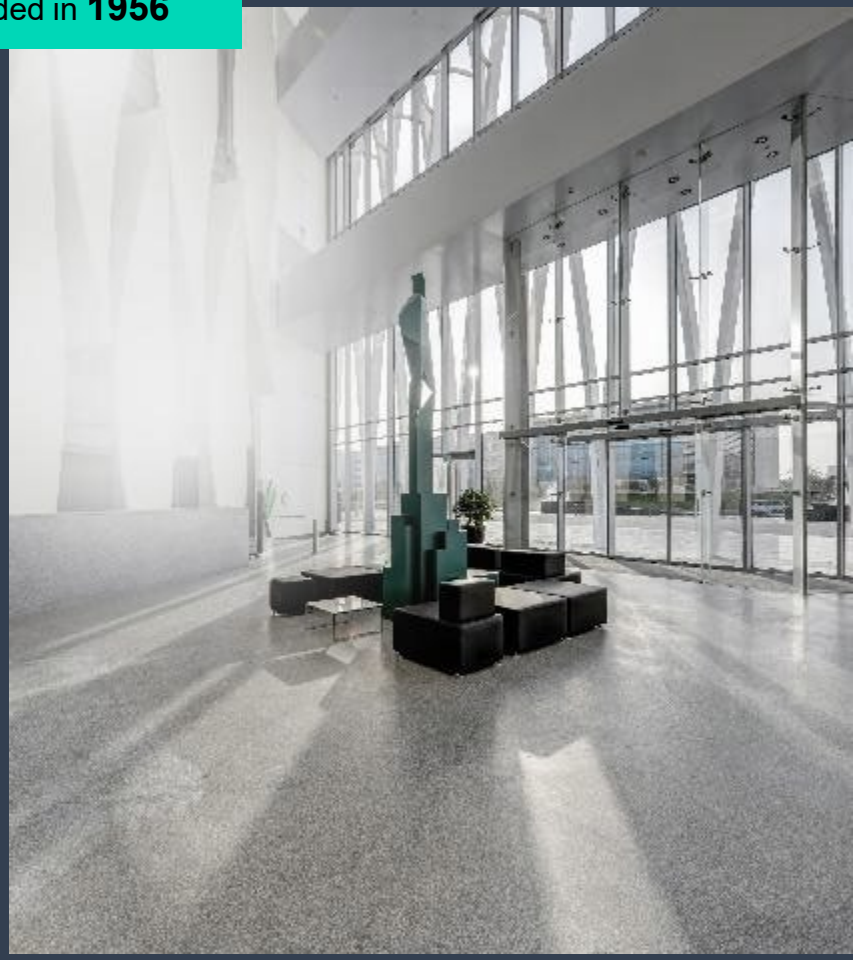
Boavista Slopes Stabilization and Protection, Angola

Versova Bandra Sea Link (VBSL), India

Who
we are

Dar
at a glance

Founded in **1956**



4,500+
projects successfully delivered, collectively worth over US$ 540 billion

1,000+
clients served, in 60 countries

10,200+
professionals

60
local offices spread across the Middle East, Asia, Africa, and Europe

Sidara
at a glance

21,500+
employees

60+
countries

20
Companies

300+
offices

ENR Rankings

We are committed to service excellence and have been consistently ranked among the top ten consultancies by Engineering News Record (ENR) for over 15 years.

Top 225
Design Firms Working Abroad

9th
Overall Ranking

Top 10
By Region

2nd
Middle East

5th
Africa

6th
USA

10th
Canada

Top 10
By Market

2nd
Buildings

9th
Transportation

4th
Marine and Port Facilities

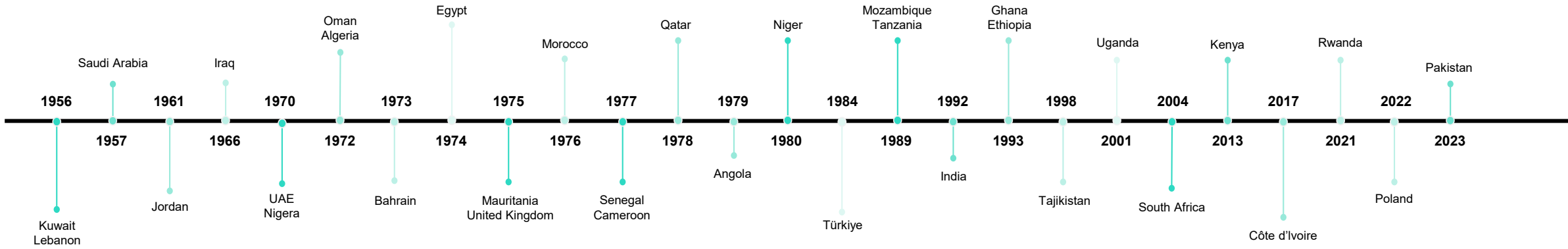
2024

- 2nd Aviation
- 1st Healthcare
- 1st Education
- 1st Religious & Cultural

What we stand for

Renowned global expertise,
deep local roots

30+
countries

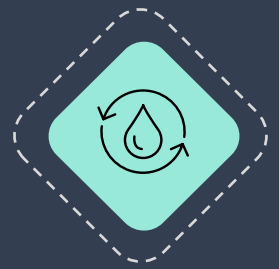


Our market sectors and services

Dar is a full-service provider for end-to-end planning, design, engineering, sustainability consulting, and multidisciplinary services in six market sectors:

Buildings and cities

Transportation and civil infrastructure



Water and environment

Project management

Facilities management

Digital solutions and services

the geotechnical design of large-scale projects

- Abraj Kudai, KSA
- Al Maktoum International Airport, UAE
- Boavista Slopes Stabilization and Protection, Angola
- Versova Bandra Sea Link (VBSL), India

Abraj Kudai,

KSA

Location

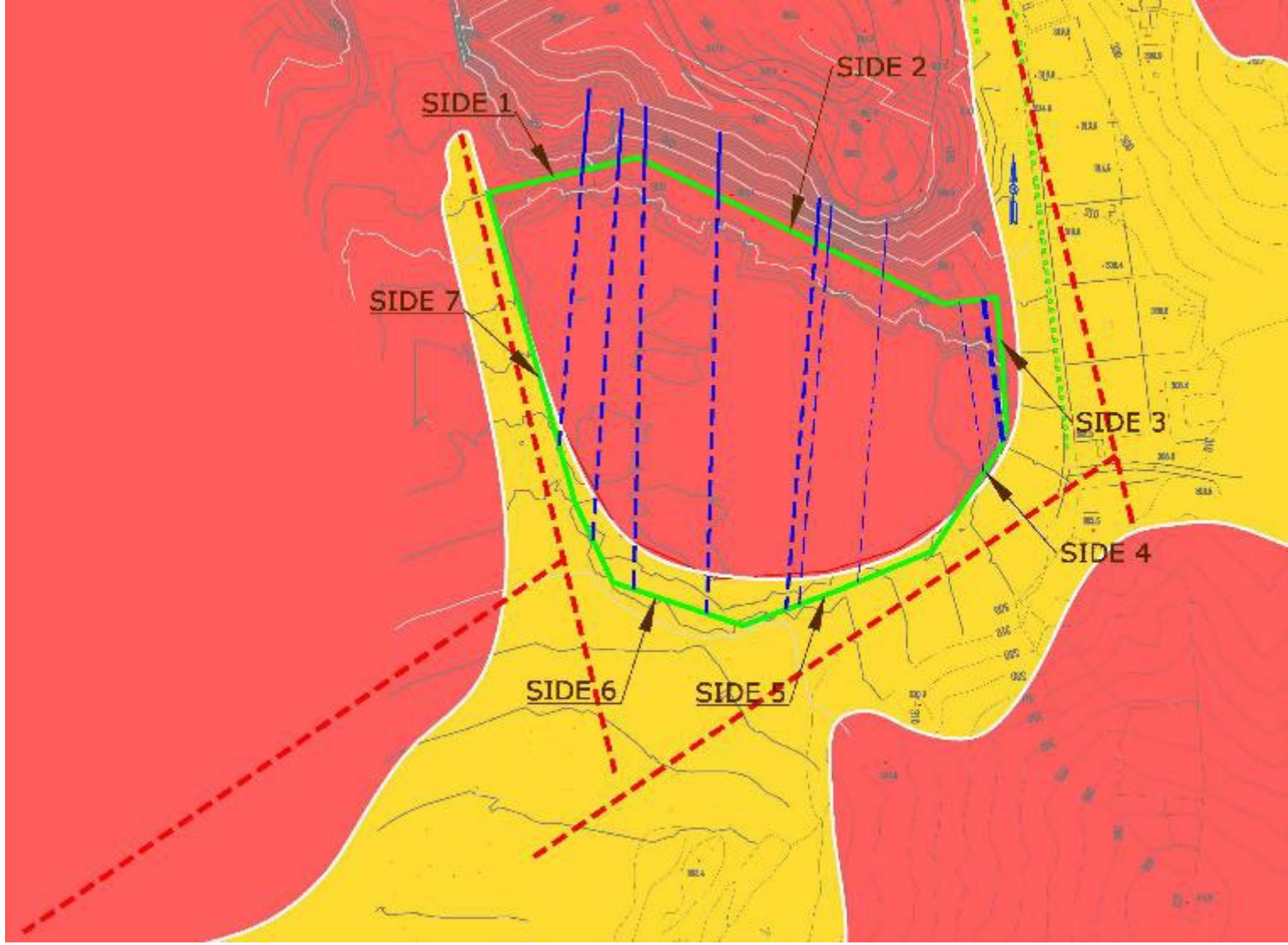
The Project


T5B
31Floors
T5A
31Floors
T6B
44Floors
T6A
44Floors
T4B
31Floors
T4A
31Floors
T3B
31Floors
T3A
31Floors
T2B
31Floors
T2A
31Floors
T1B
36Floors
T1A
36Floors

Site Views

The Problem

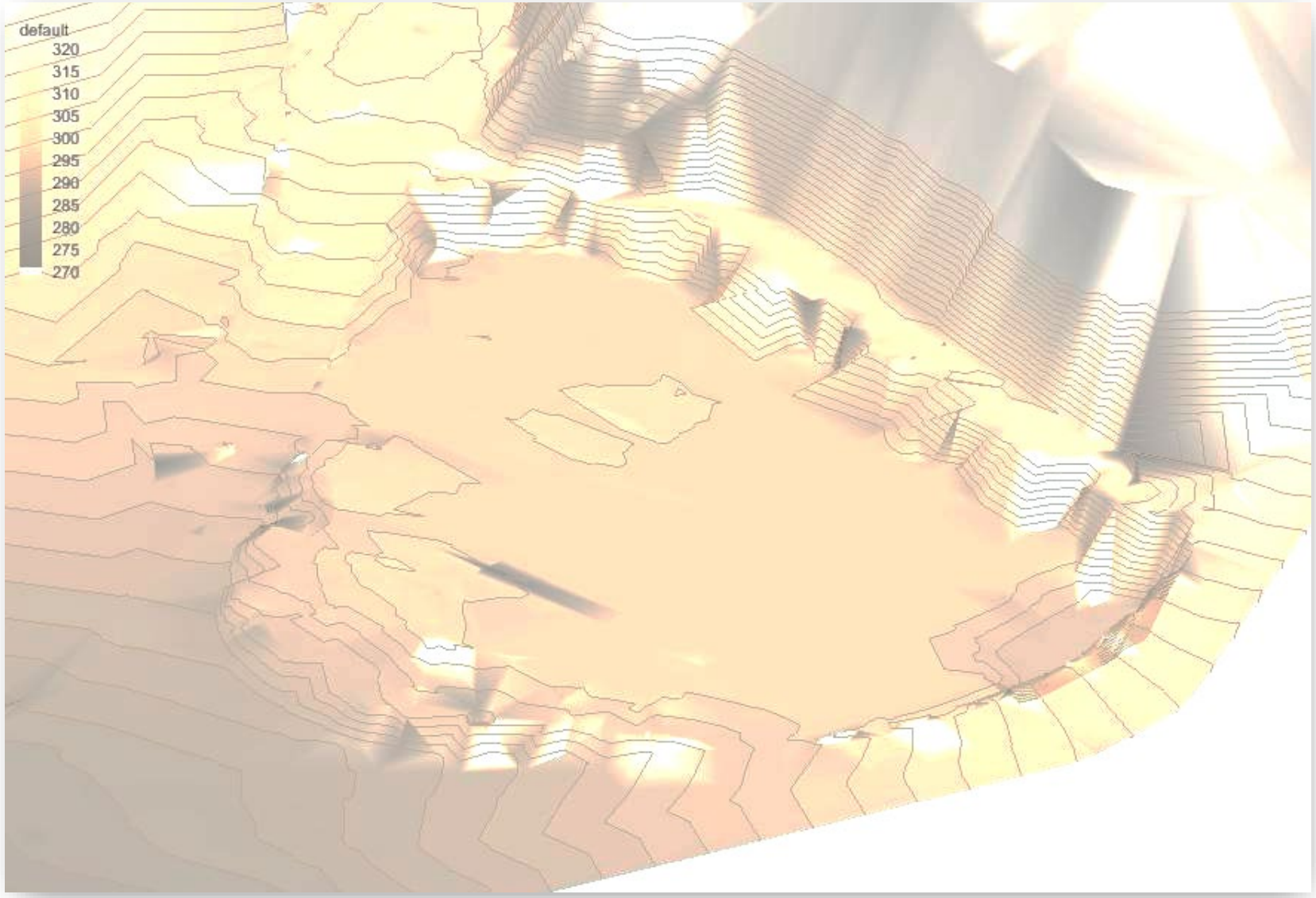
- **Andesite dykes observed at the northern site border and identified in some Boreholes**
- **Faults are suspected within the nearby wadis**



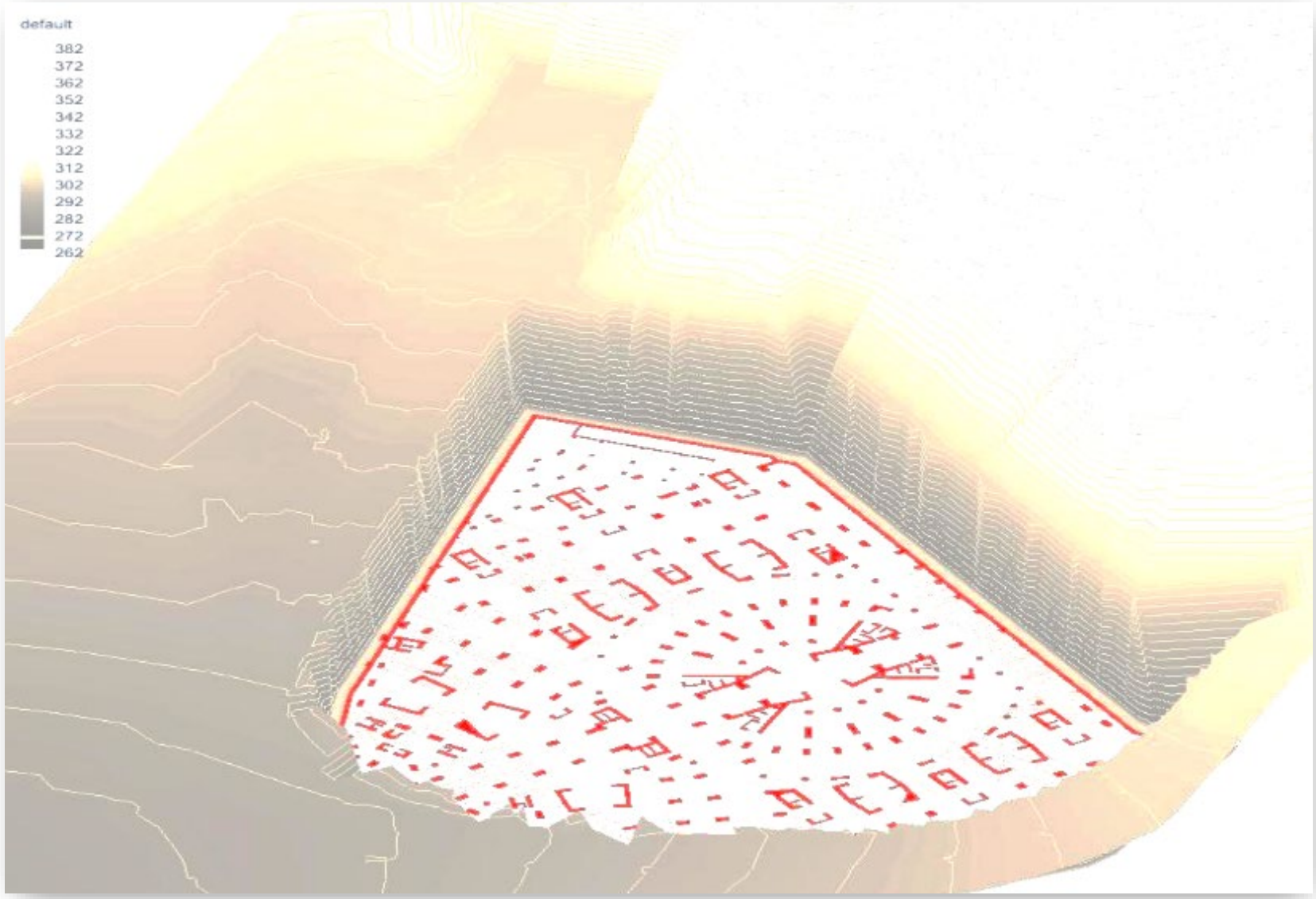
LEGEND

- Alluvium Deposits
- Quartz Diorite – Gneissic Quartz Diorite
- Site limit
- Fault
- Mafic dyke
- Inferred dyke

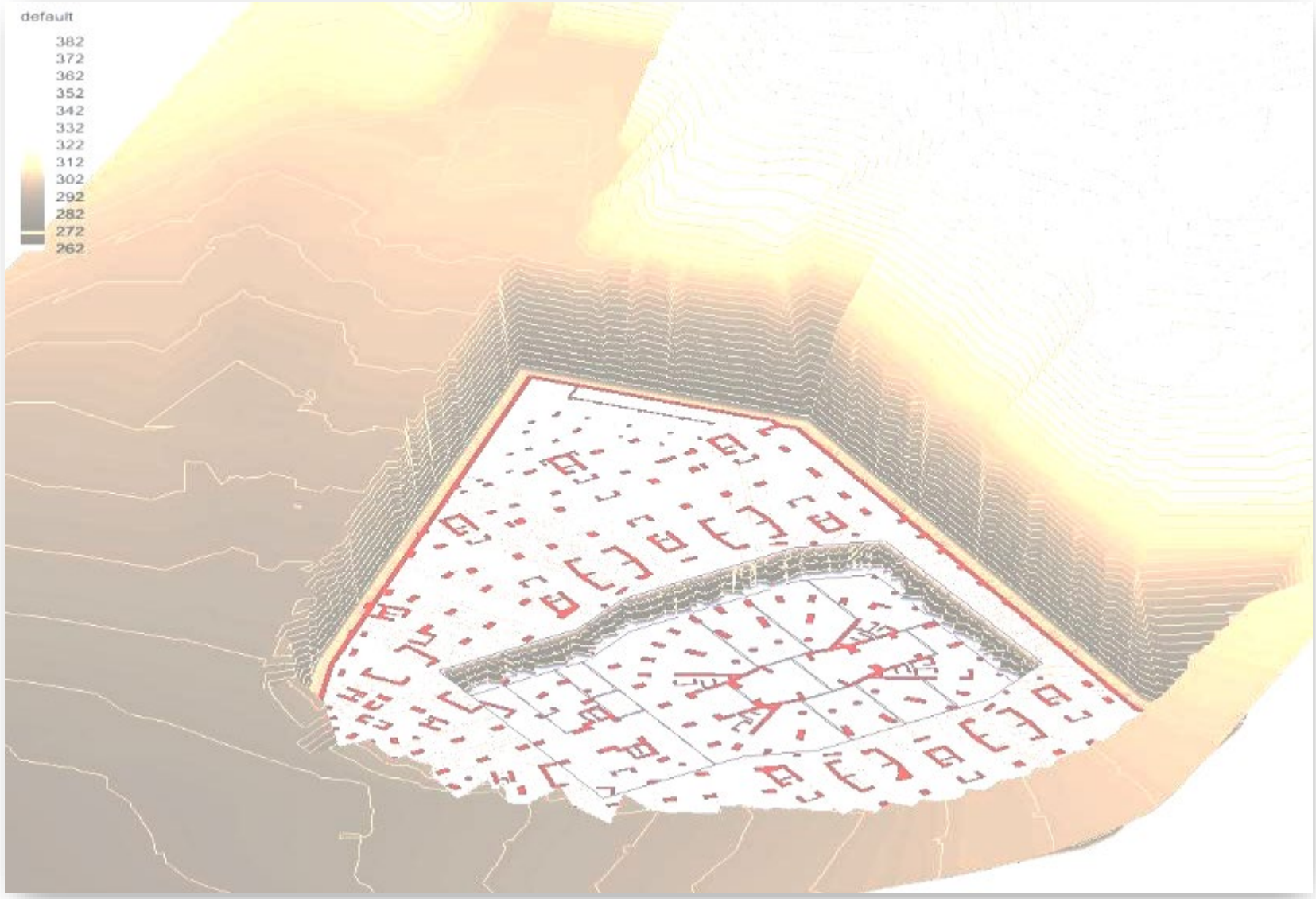
The Problem



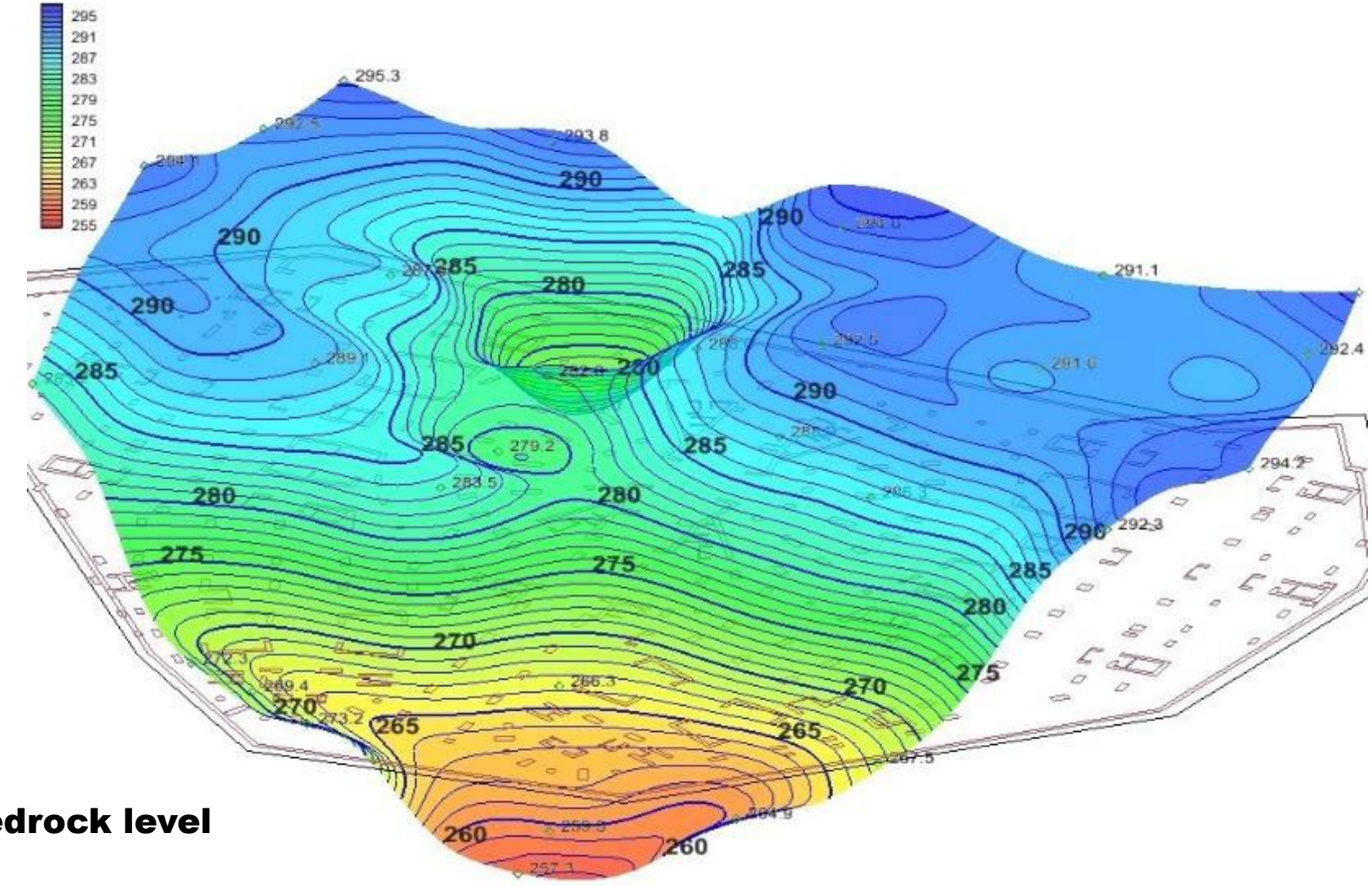
The Problem



The Problem



The Problem

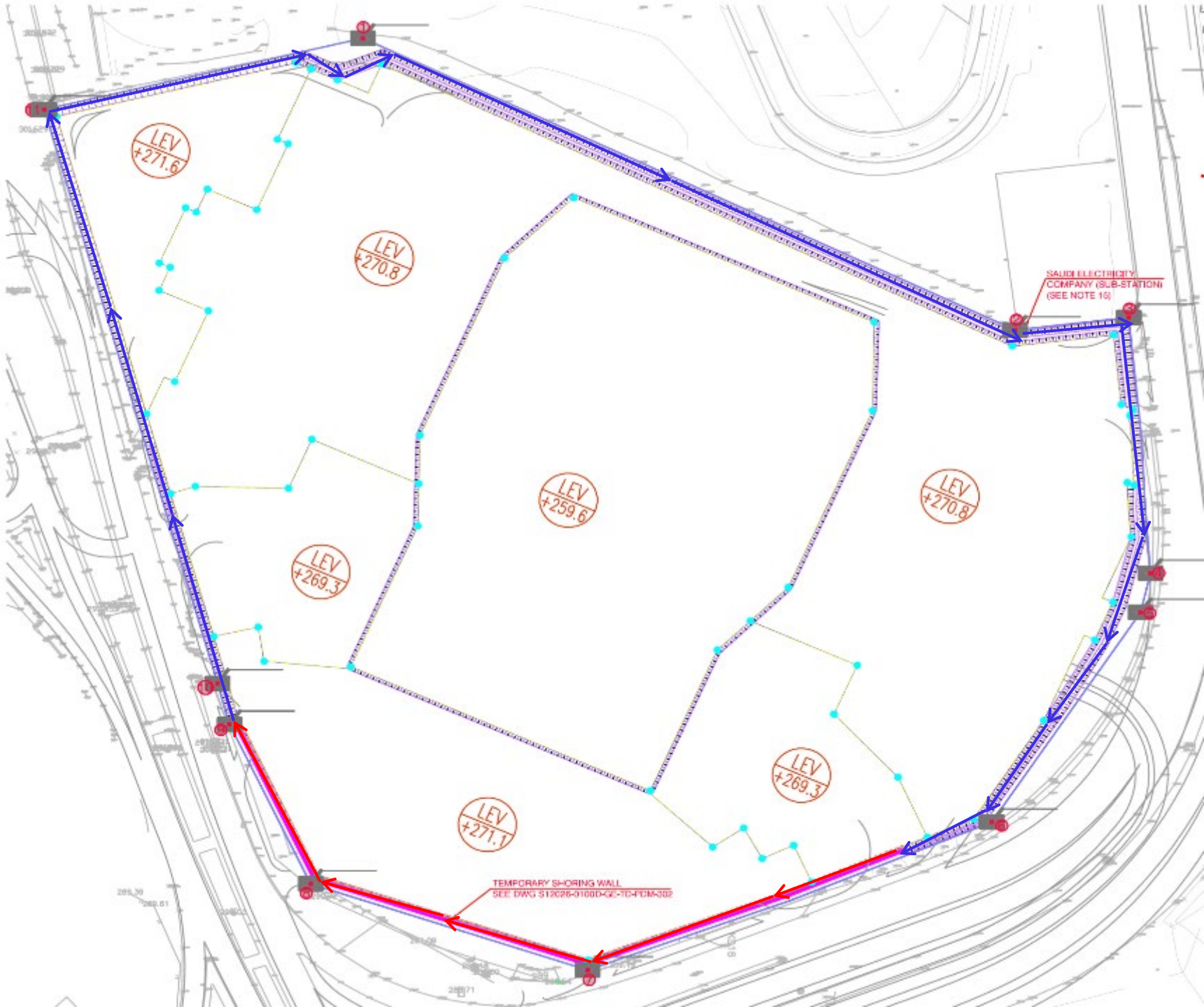


Variable bedrock level

The Solution

The excavation edges marked in red will necessitate temporary shoring wall

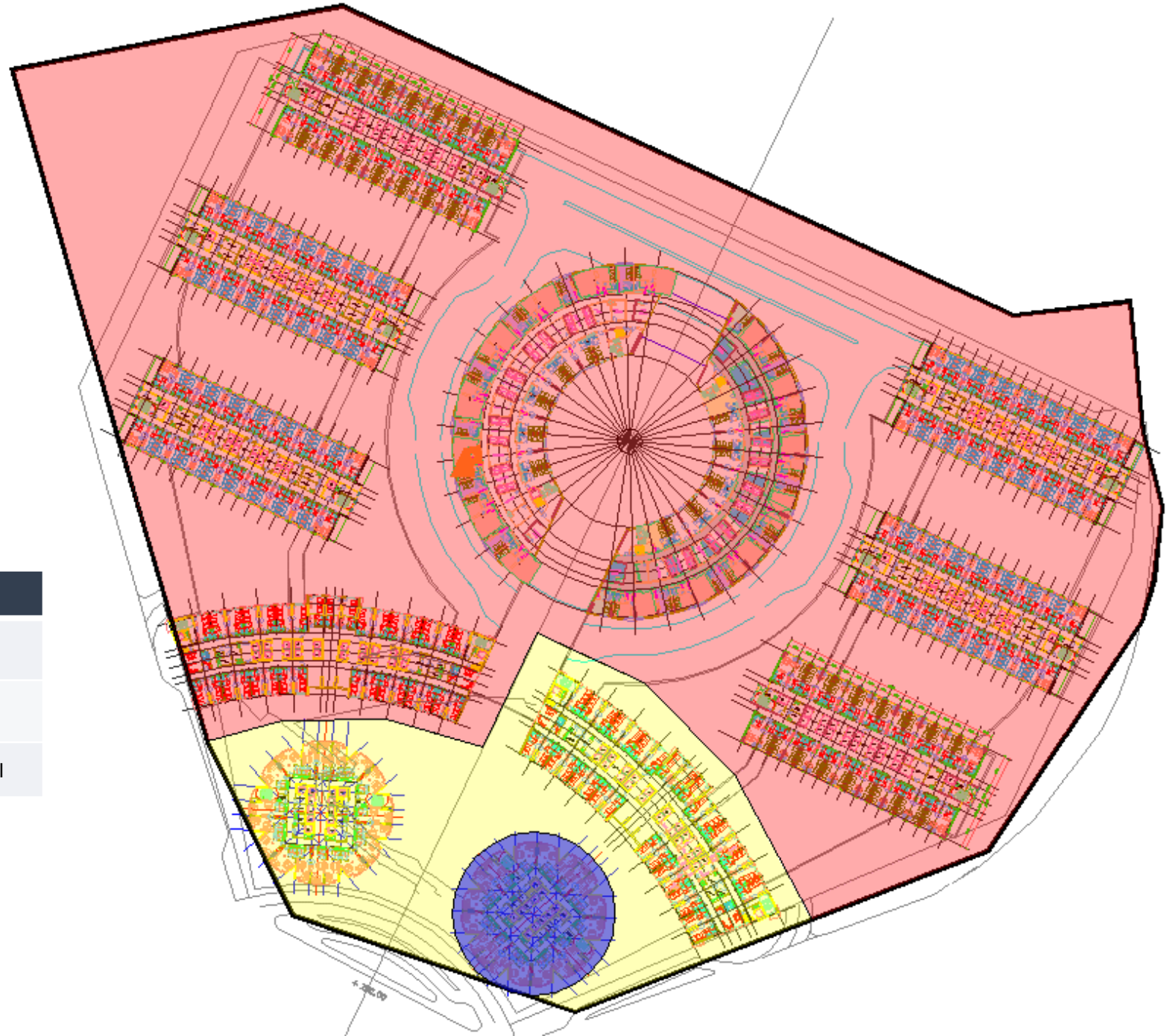
The excavation edges marked in blue may necessitate Rock Stabilization measures



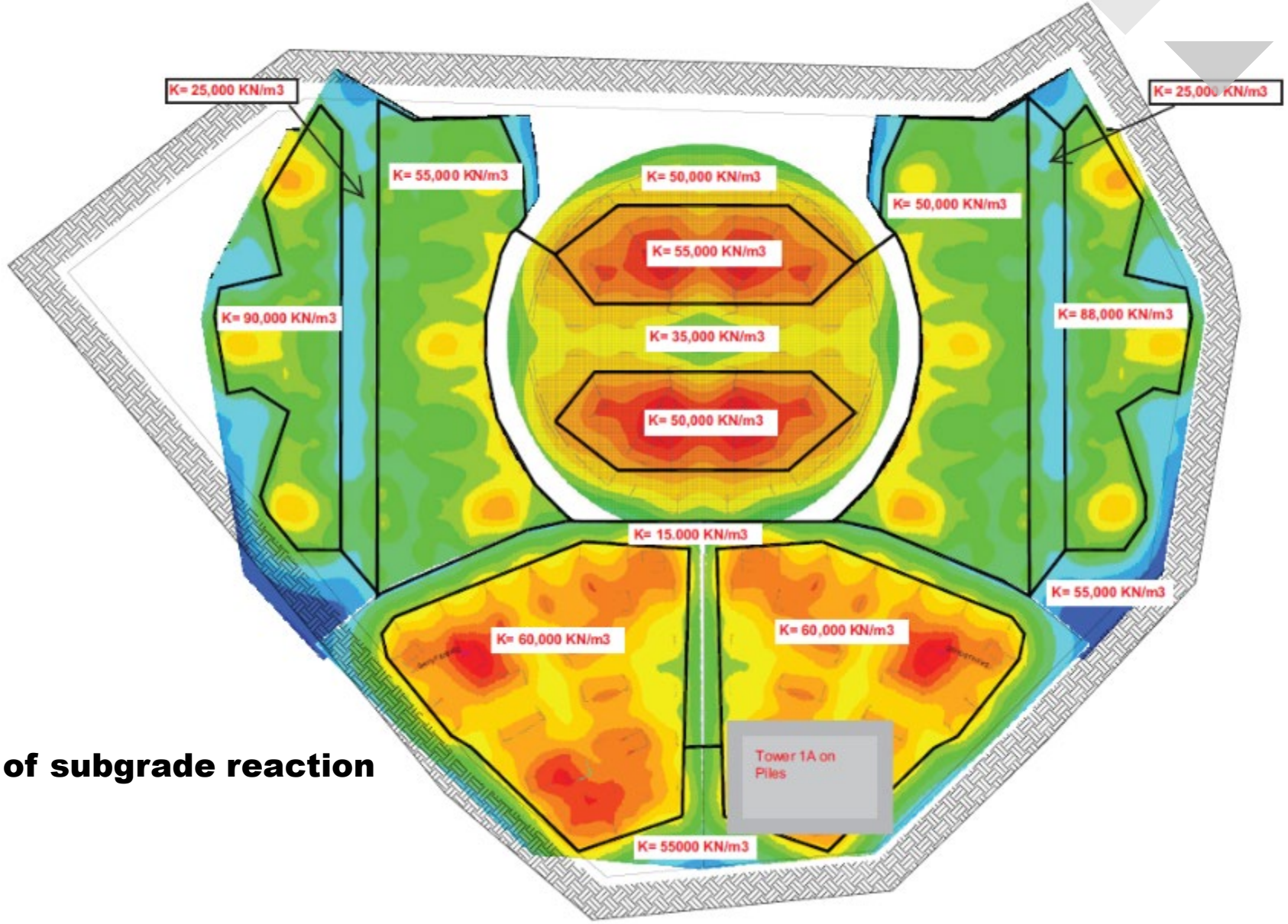
dar Sidara Company

The Solution

Tower	Foundation	Comments
2B, 3A, 3B, 4A, 4B, 5A, 5B, 6A and 6B	Raft	
1B, 2A	Raft	Bedrock treatment locally needed
1A	Piles	Foundation at B2 level

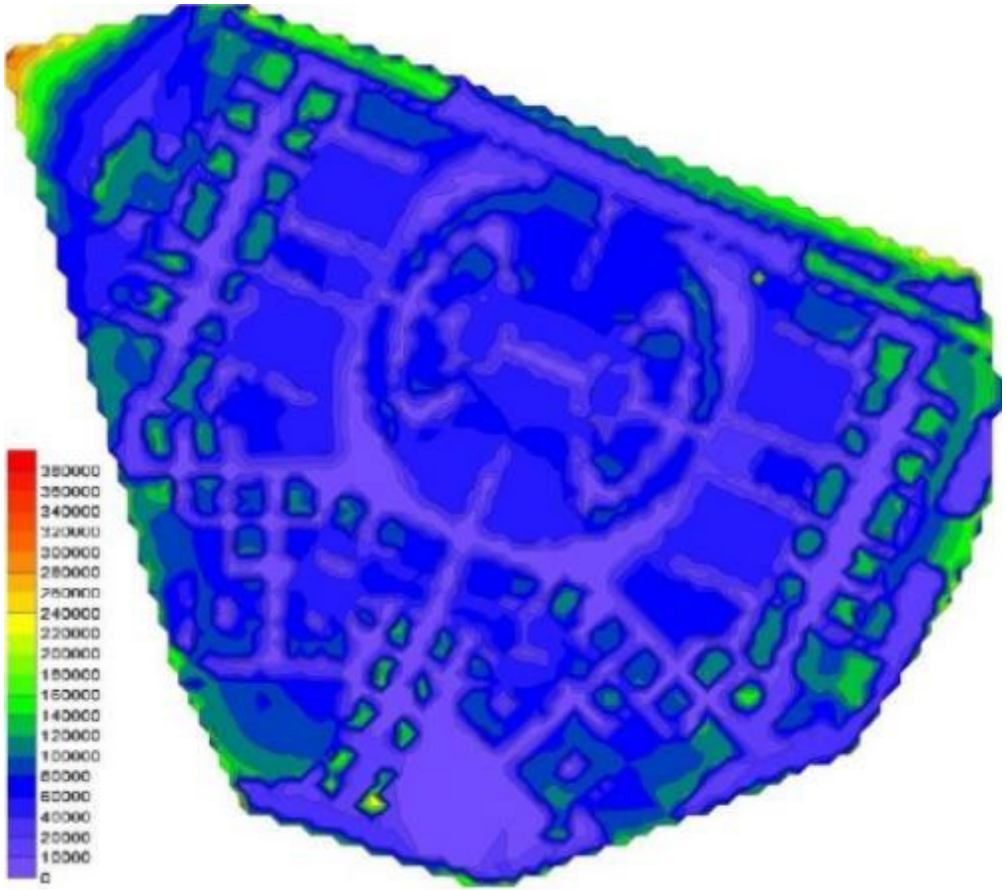


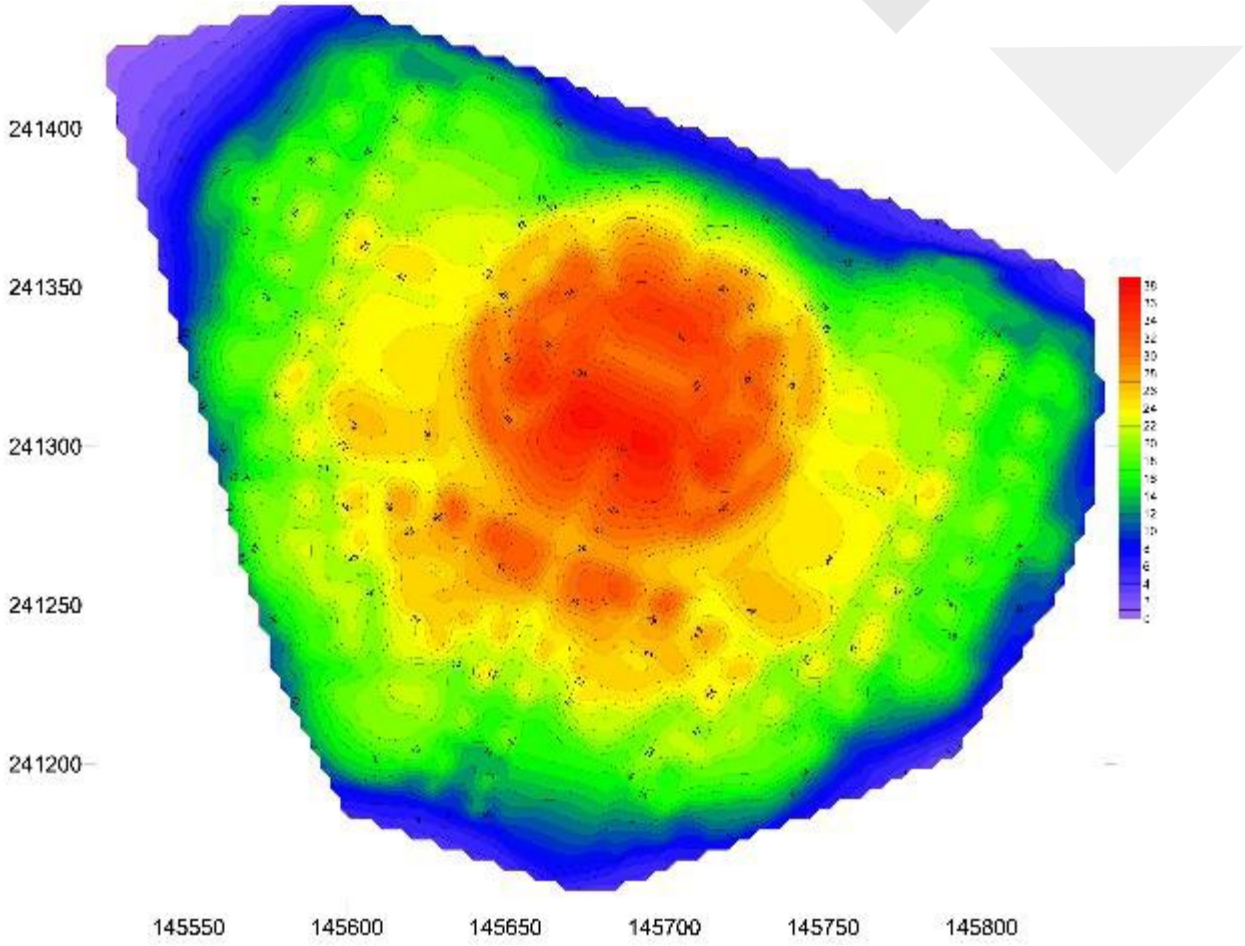
The Problem



Simplified Modulus of subgrade reaction

The Solution





Award

INTERNATIONAL SOCIETY FOR SOIL MECHANICS AND GEOTECHNICAL ENGINEERING — SOCIÉTÉ INTERNATIONALE DE MÉCANIQUE DES SOLS ET DE LA GÉOTECHNIQUE

ISSMGE SIMSG

CAPG PAPER AWARD

A New Design Tool for Shallow Foundations Offering Enhanced Accuracy, Reduced Design Time, and Cost Savings

by

dar -&- rocscience

in appreciation by the society for this outstanding paper voted 1st for its significant contribution during the Innovation & Achievements in Geotechnical Engineering Practice session at the 20th ICSMGE in Sydney Australia., 1 to 5 May, 2022

Dr. Marc Ballouz
President of ISSMGE

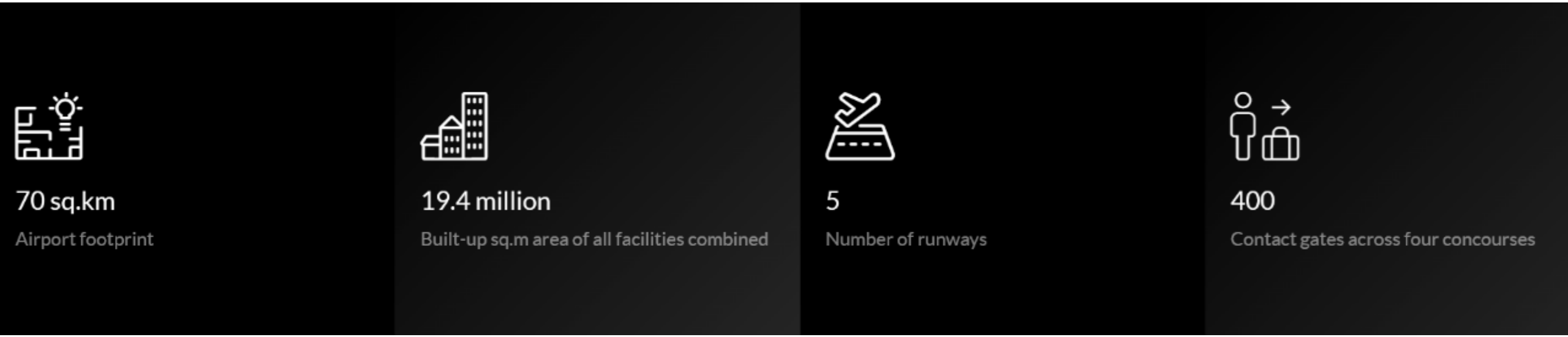

Al Maktoum
International Airport,
UAE

Location

Location

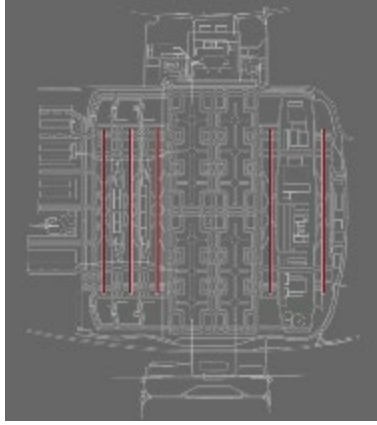

N
Al Maktoum
International
Airport
EPFL
Google Earth
Image © 2025 Airbus
9 km

The Project

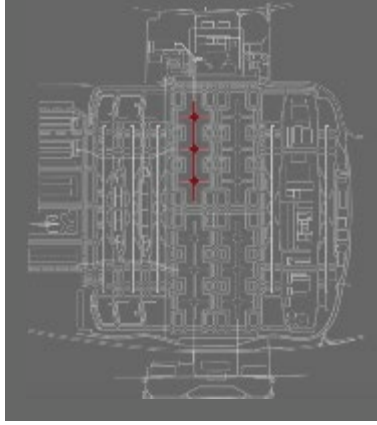


When the last phase is completed, AMIA will be able to process **260 million passengers** and 12 million tonnes of freight annually

The Project



The Project



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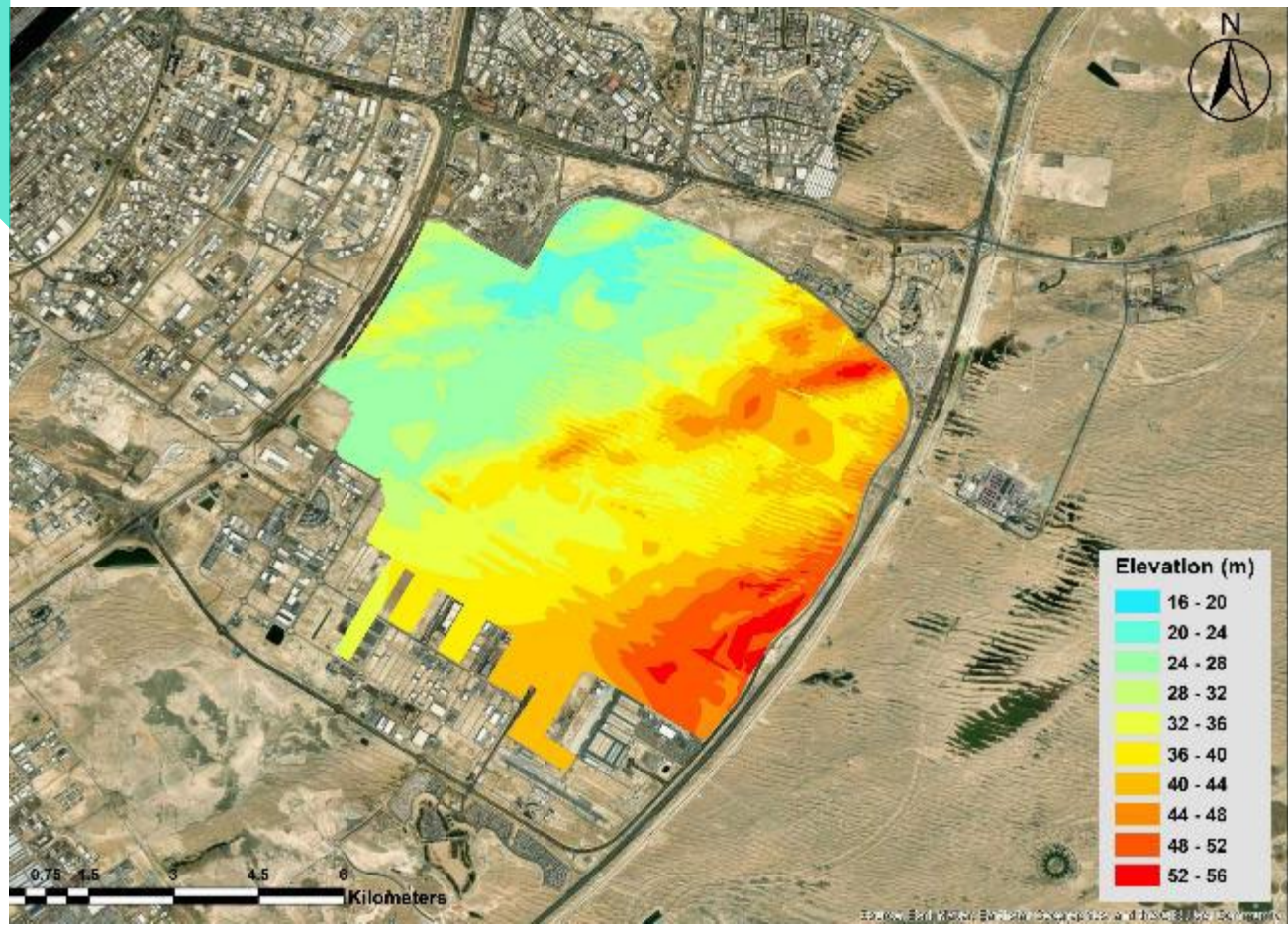
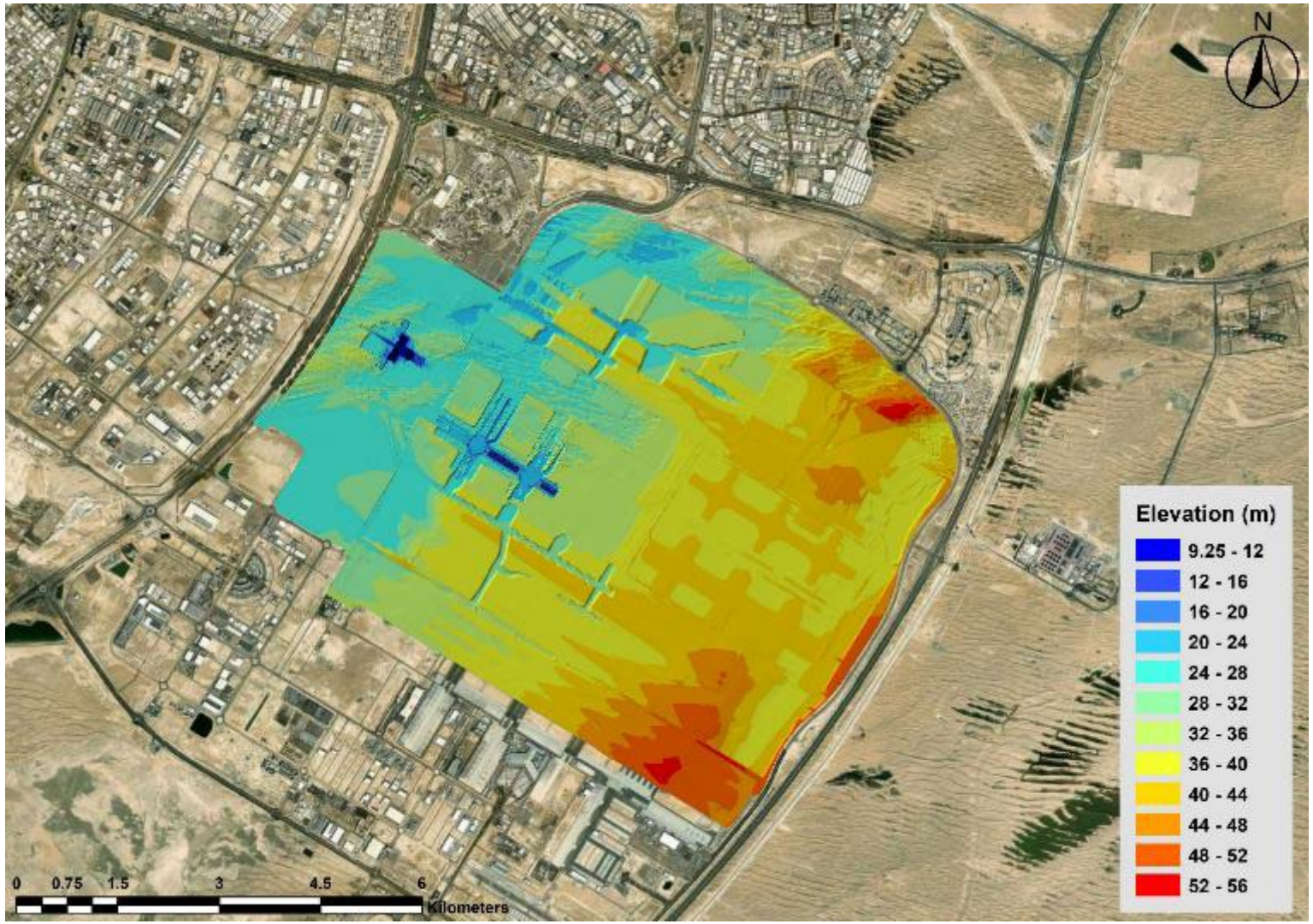
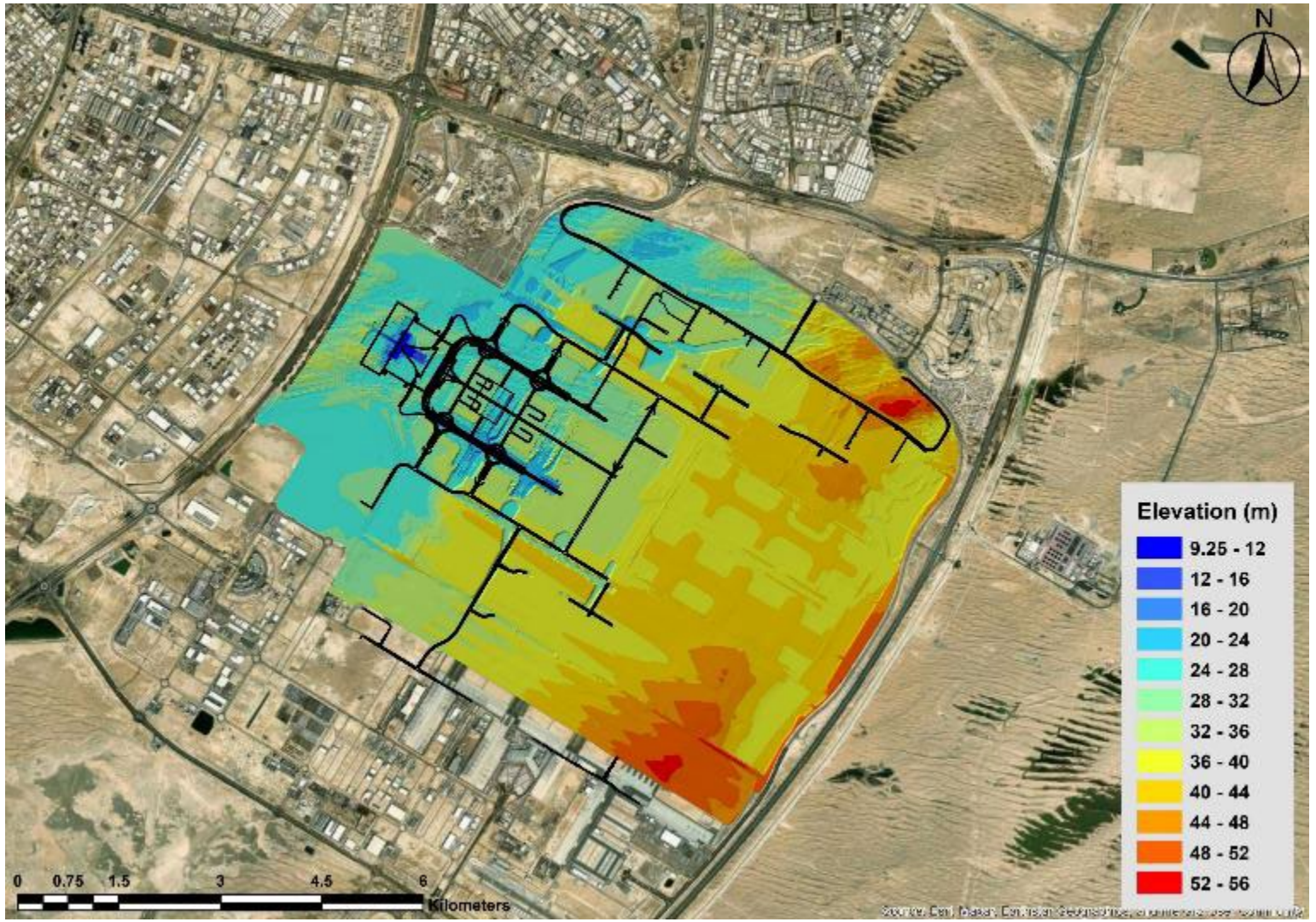

N
Elevation (m)
16 - 20
20 - 24
24 - 28
28 - 32
32 - 36
36 - 40
40 - 44
44 - 48
48 - 52
52 - 56
0.75 1.5 3 4.5 6
Kilometers

The Problem


N
Elevation (m)
9.25 - 12
12 - 16
16 - 20
20 - 24
24 - 28
28 - 32
32 - 36
36 - 40
40 - 44
44 - 48
48 - 52
52 - 56
0 0.75 1.5 3 4.5 6
Kilometers

The Problem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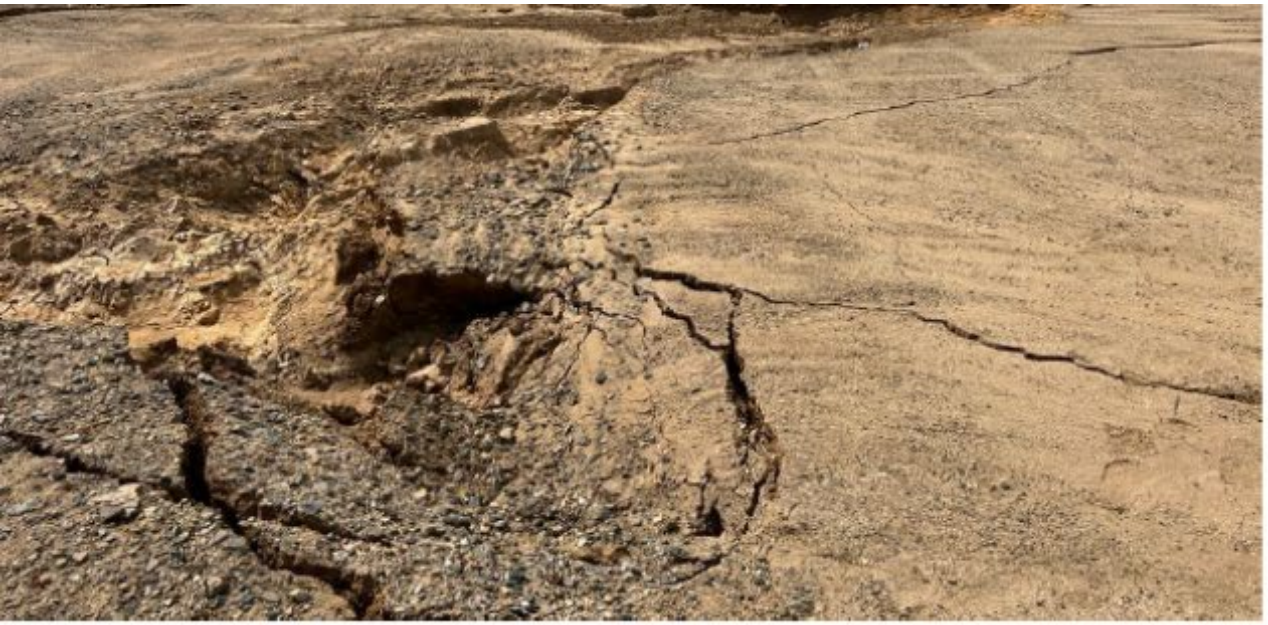
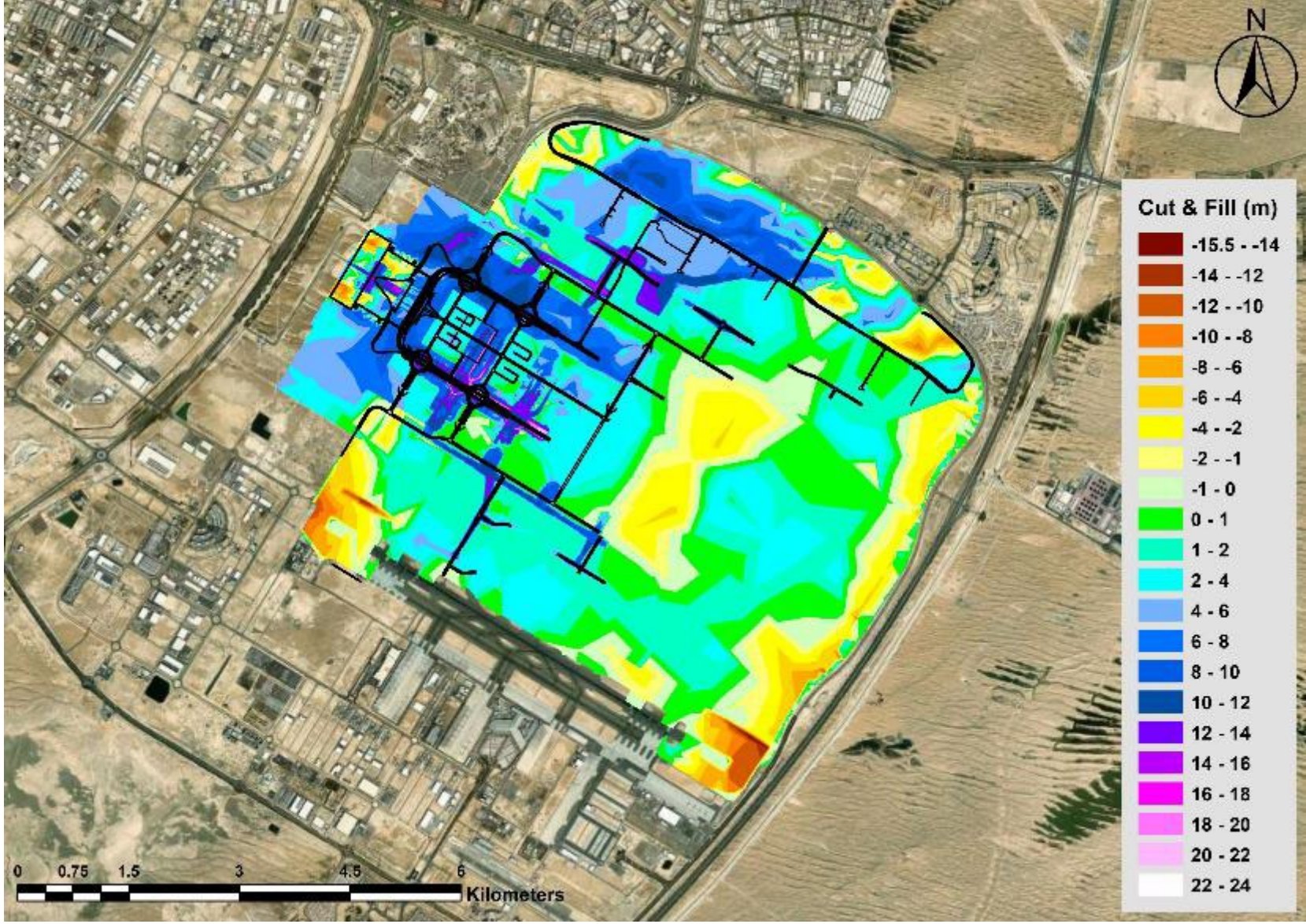
Kilometers

The Problem

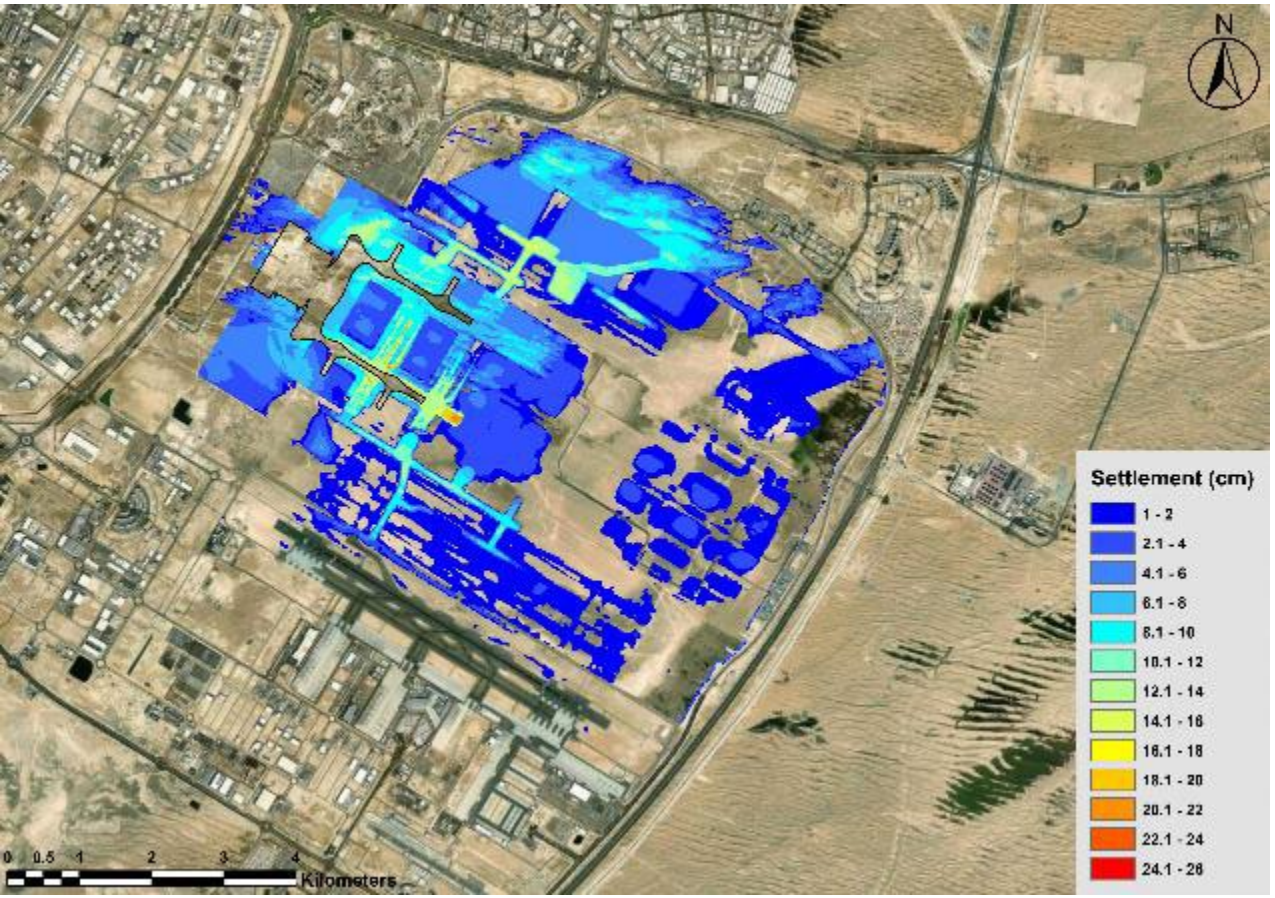


The Solution



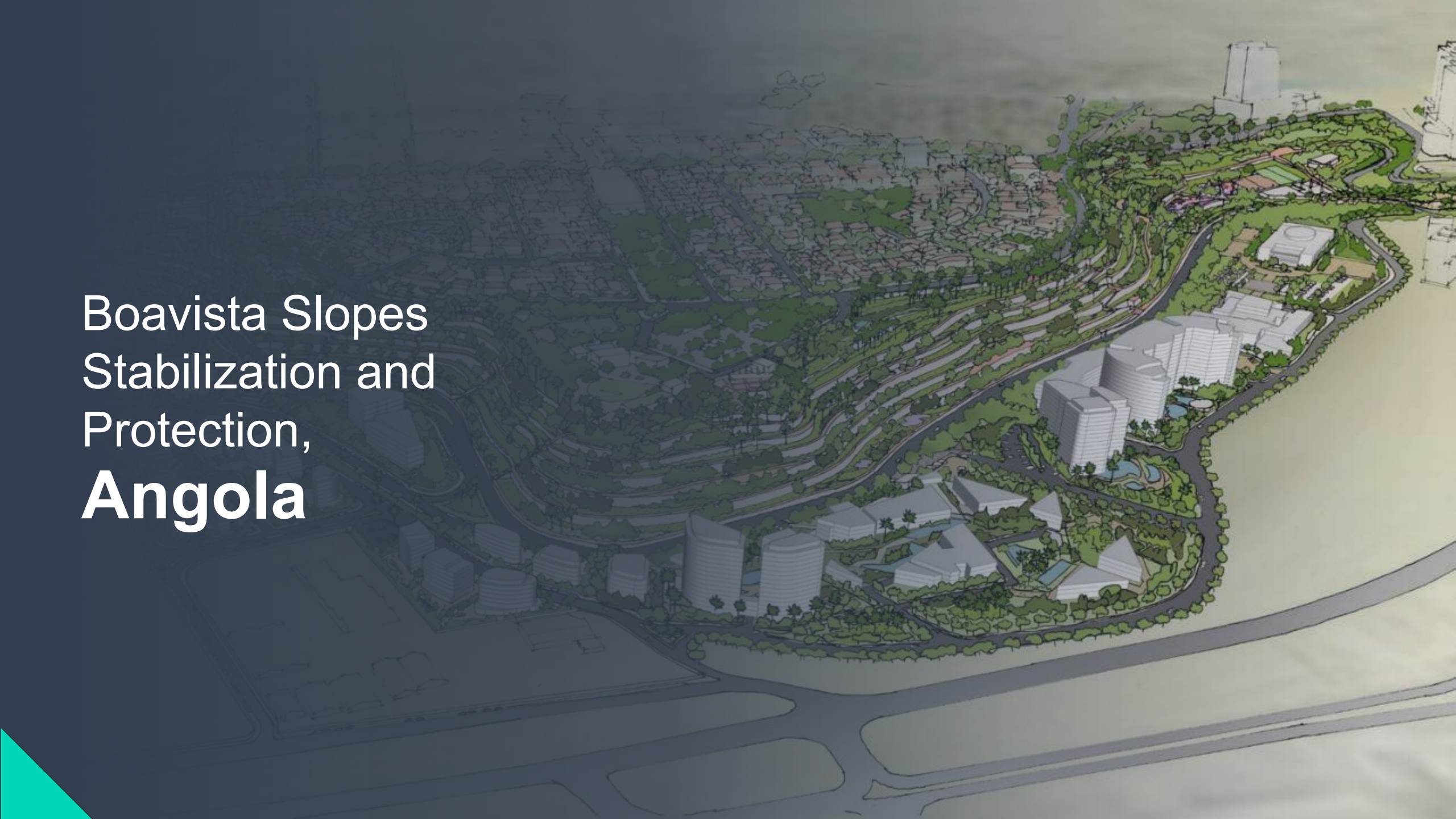
The Result

Creep Settlement 1%

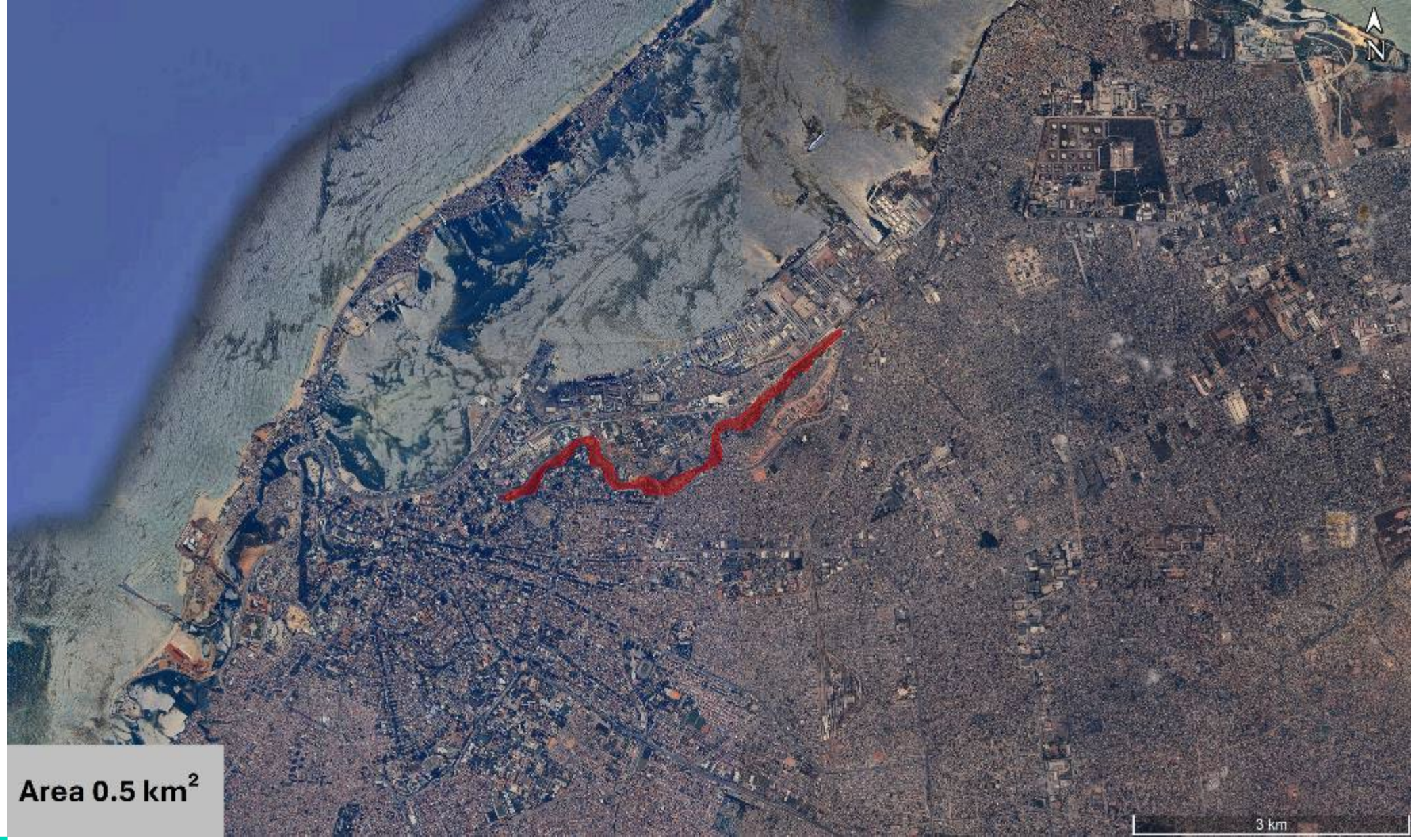


Creep Settlement 1%

Boavista Slopes Stabilization and Protection, **Angola**



Location



Location

Site Views

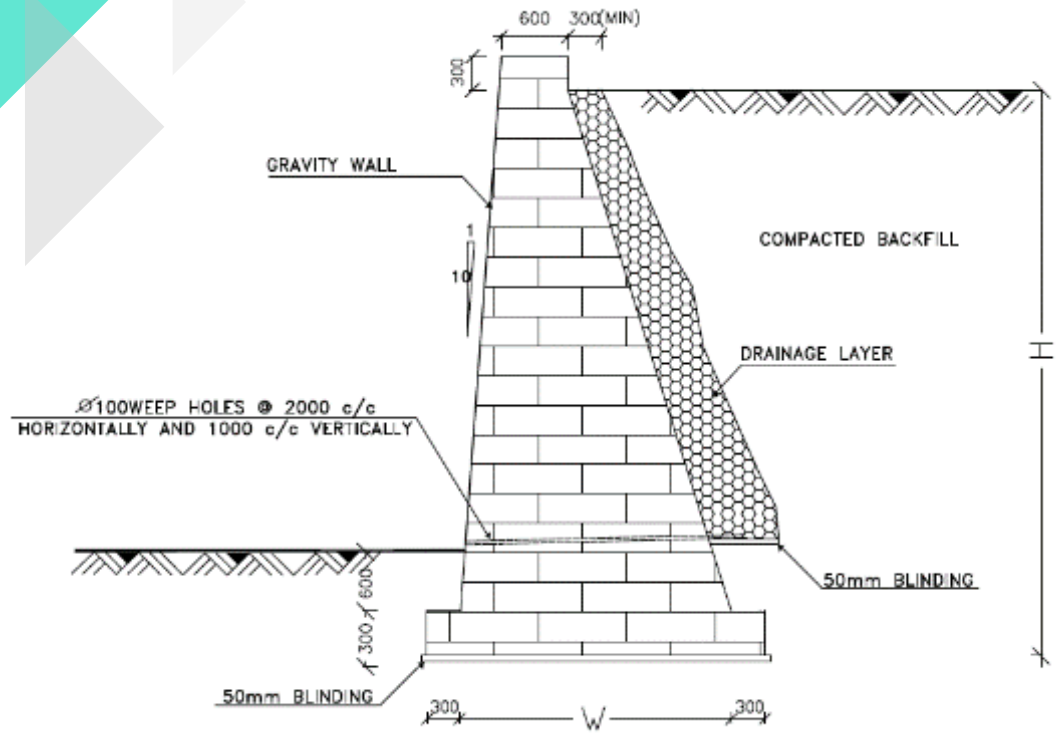
The Project

What We Know

The Problem

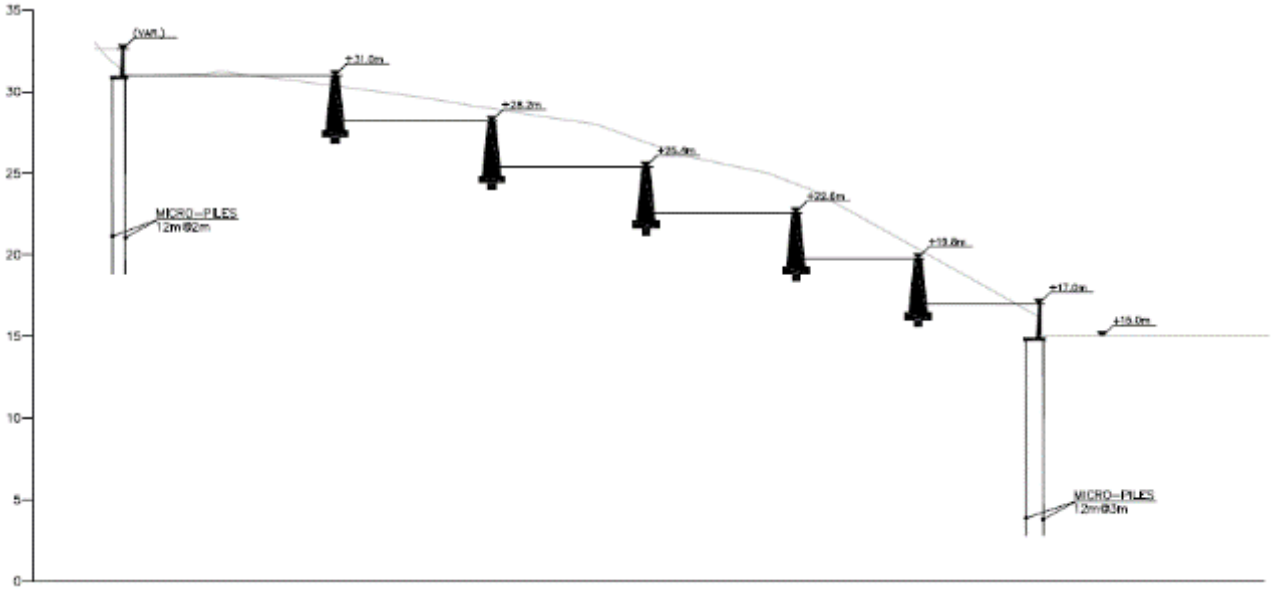
The Solution

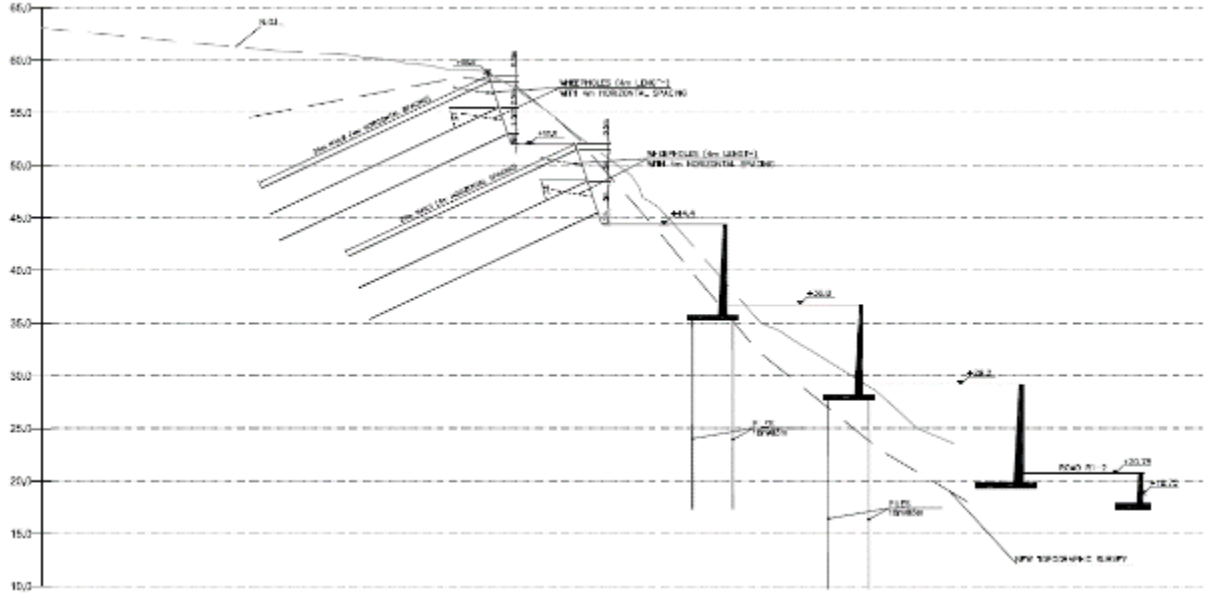
The Solution



The Solution

The Solution





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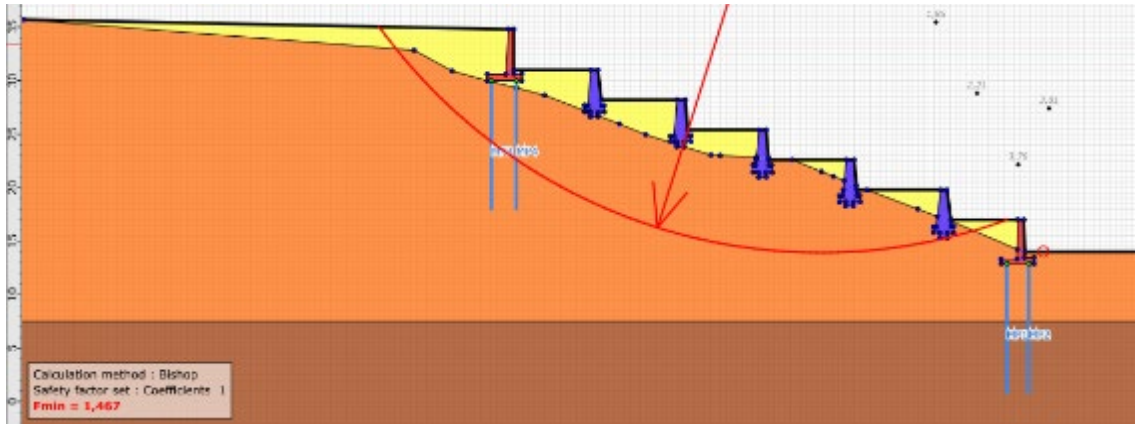
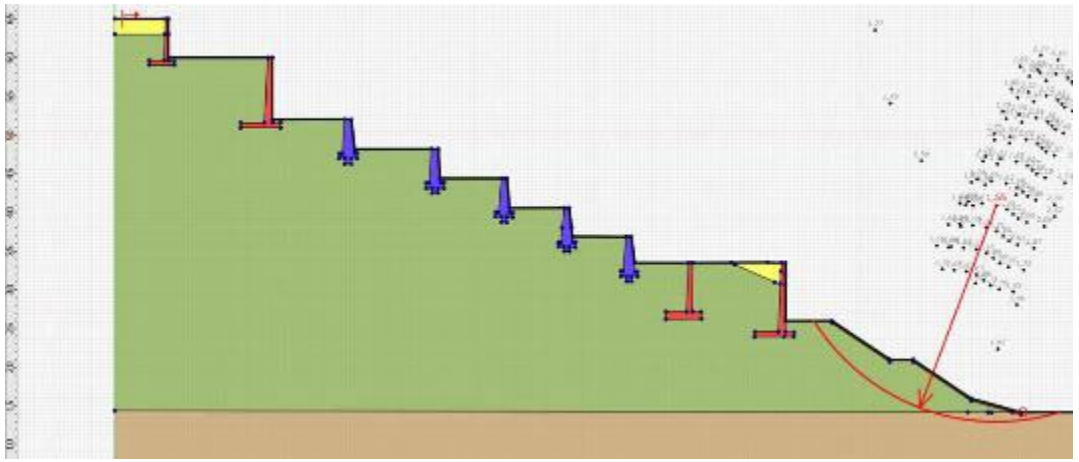
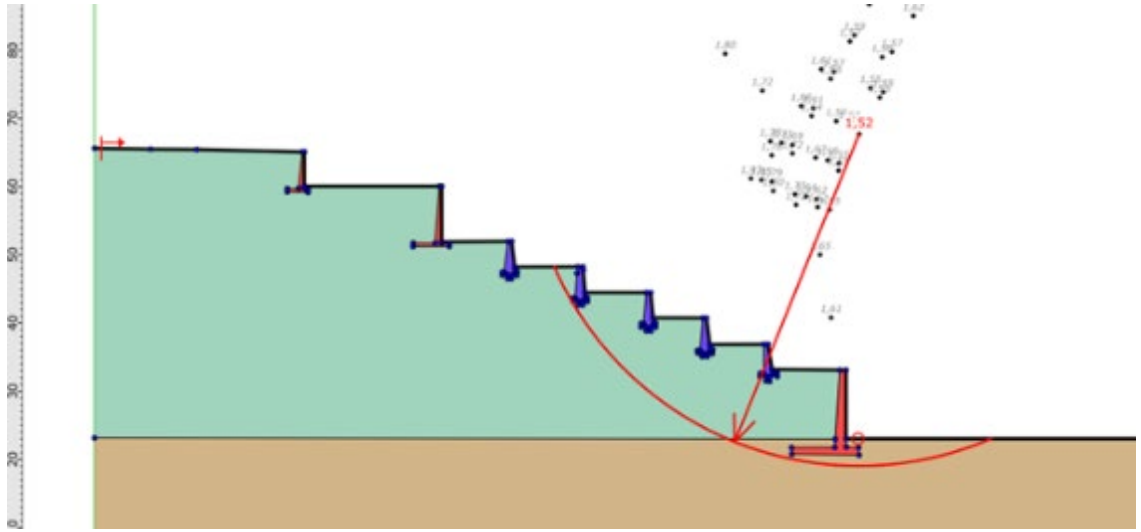
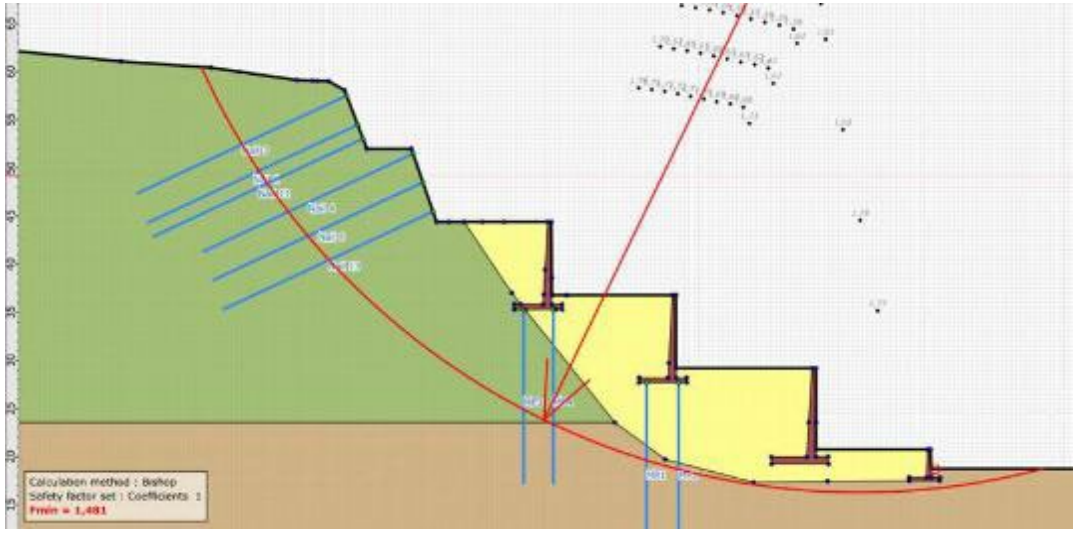








The Solution

The Result

The Result

The Result

The Result

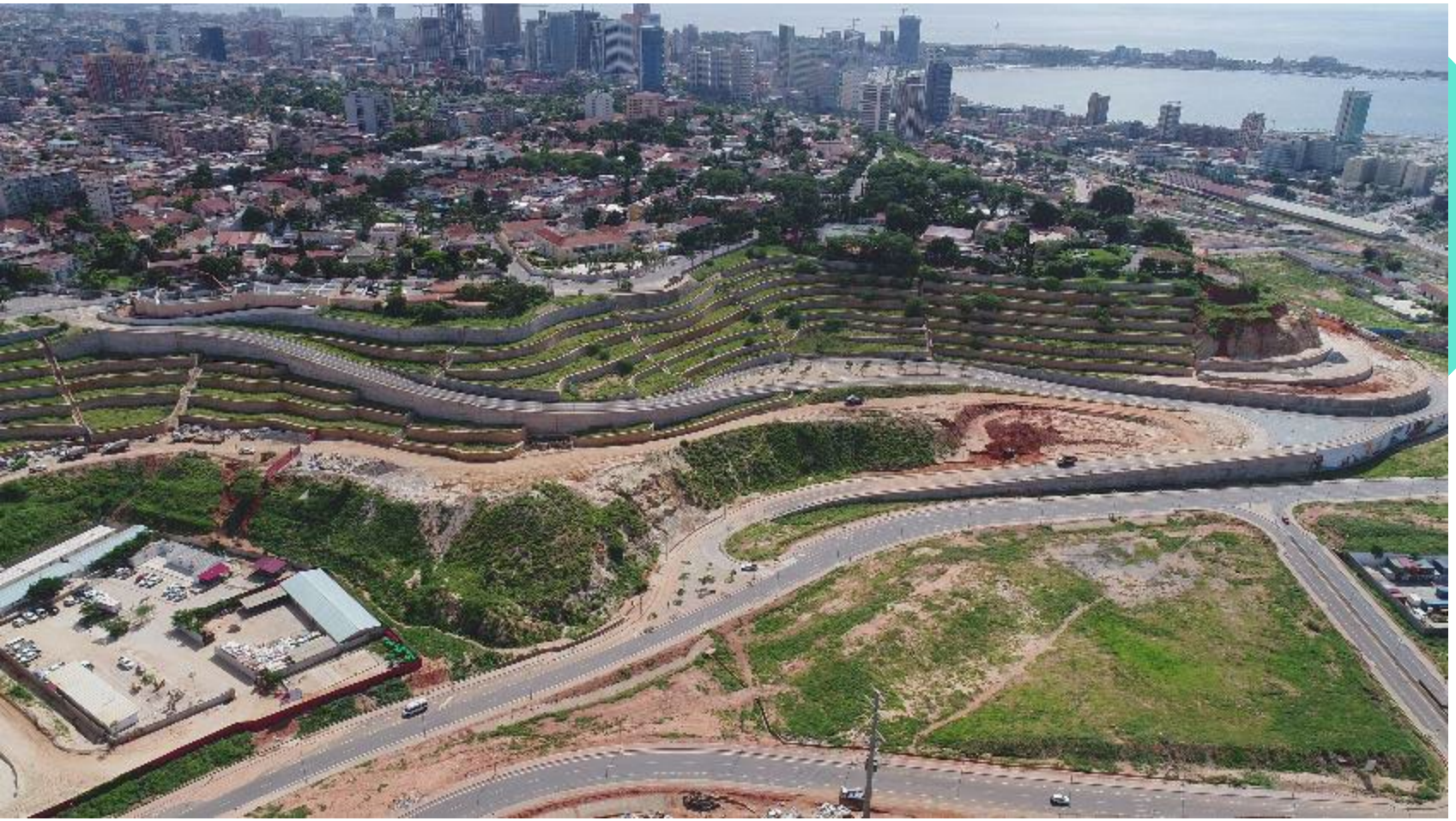
The Result

The Result


Jardim Oásis Urbano
Embaixada da Bélgica
Embaixada do Brasil
Clube dos Oficiais
Estádio MCA
FLAVIO LOUGE BAR

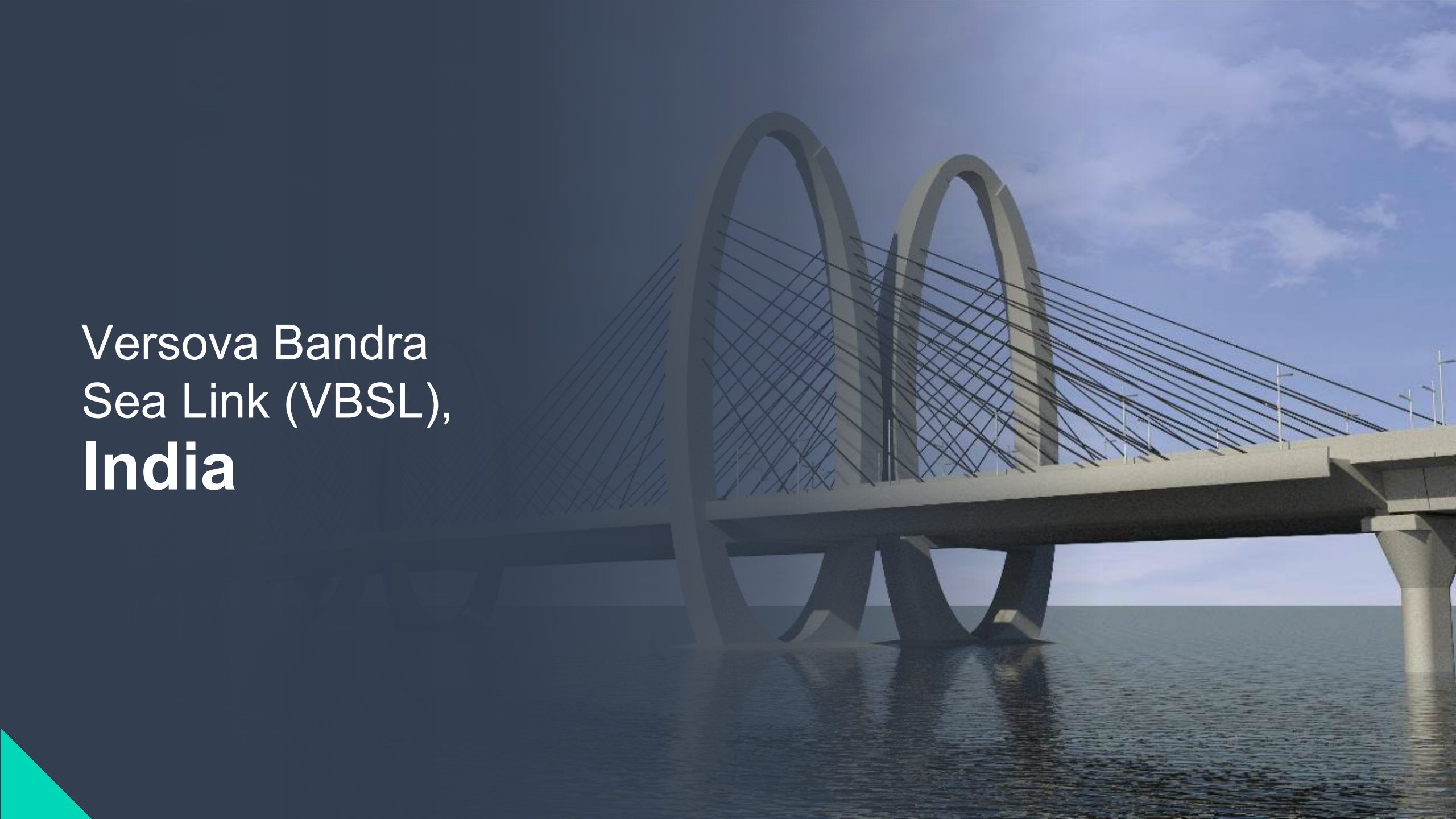
The Result

The Result

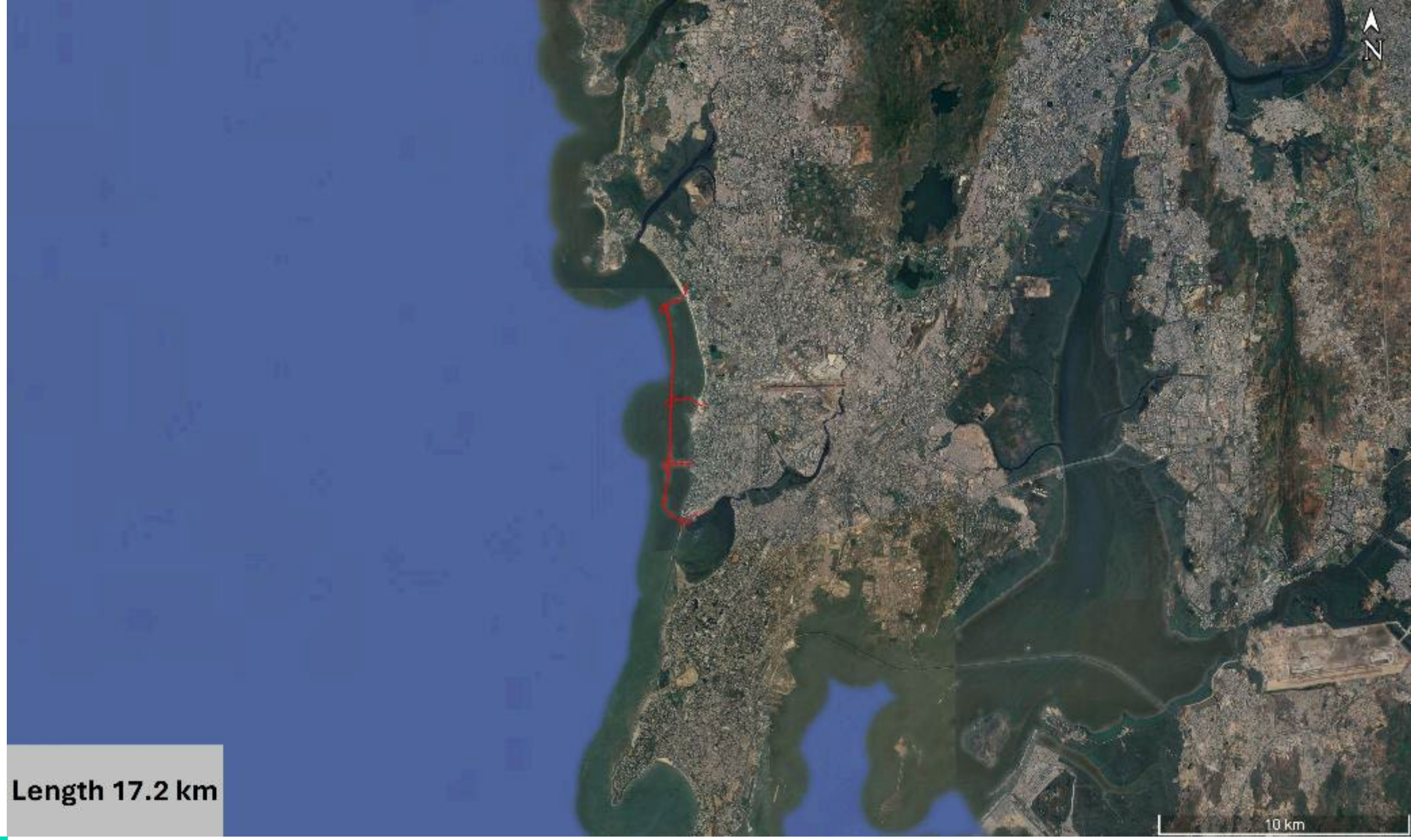


Versova Bandra Sea Link (VBSL),

India

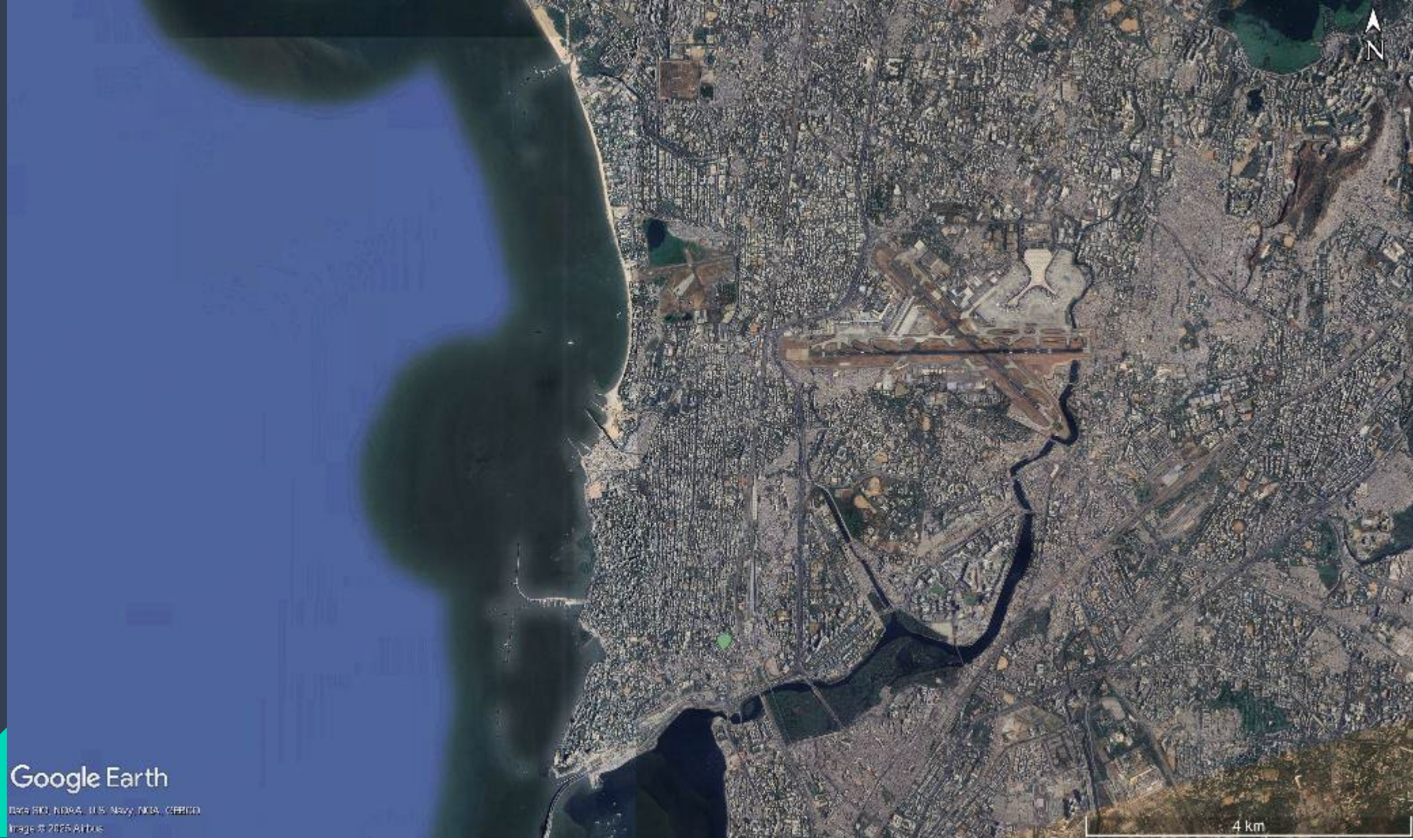


Location



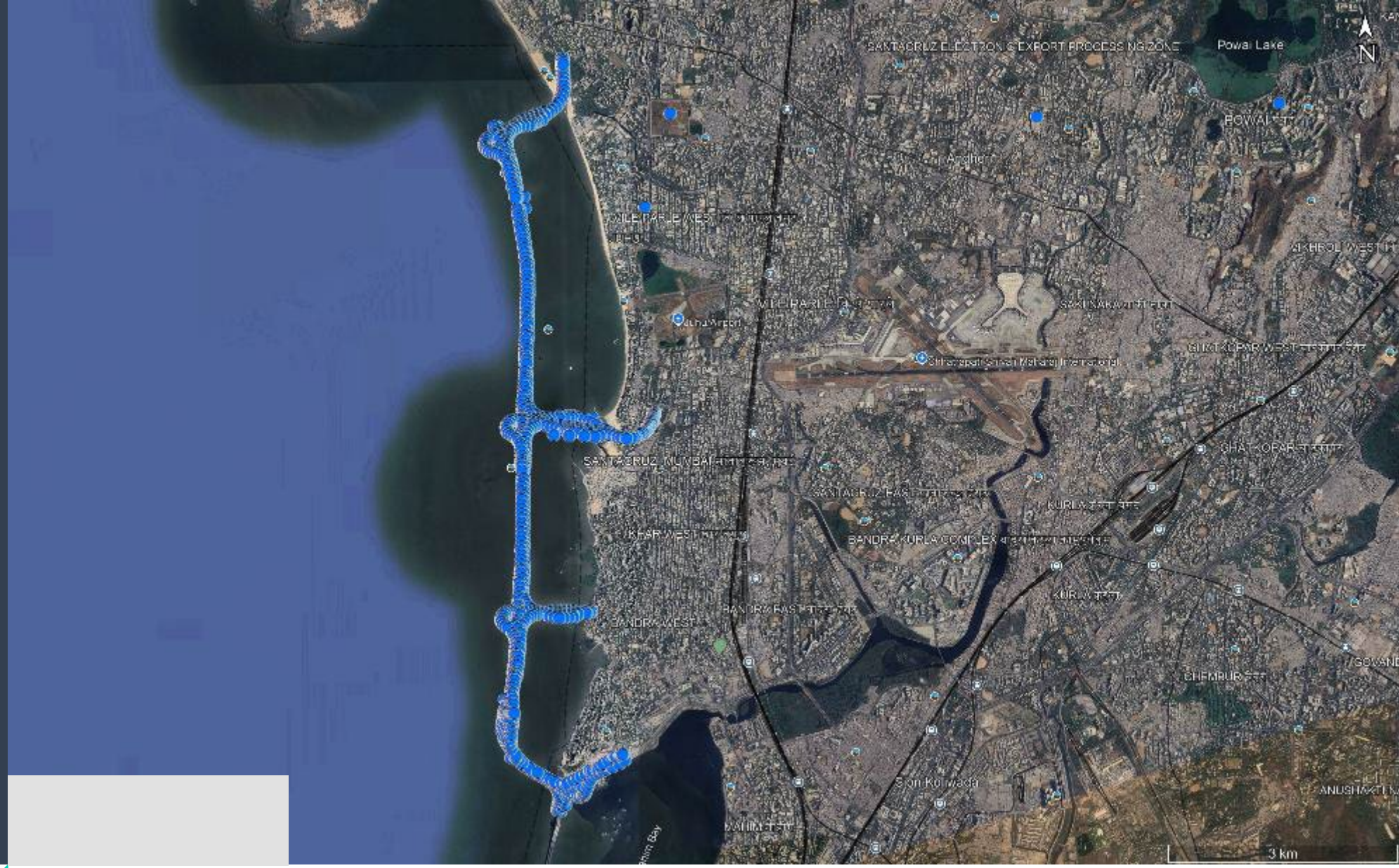
Location

Site Views



The Project

Site Views



dar Sidara Company

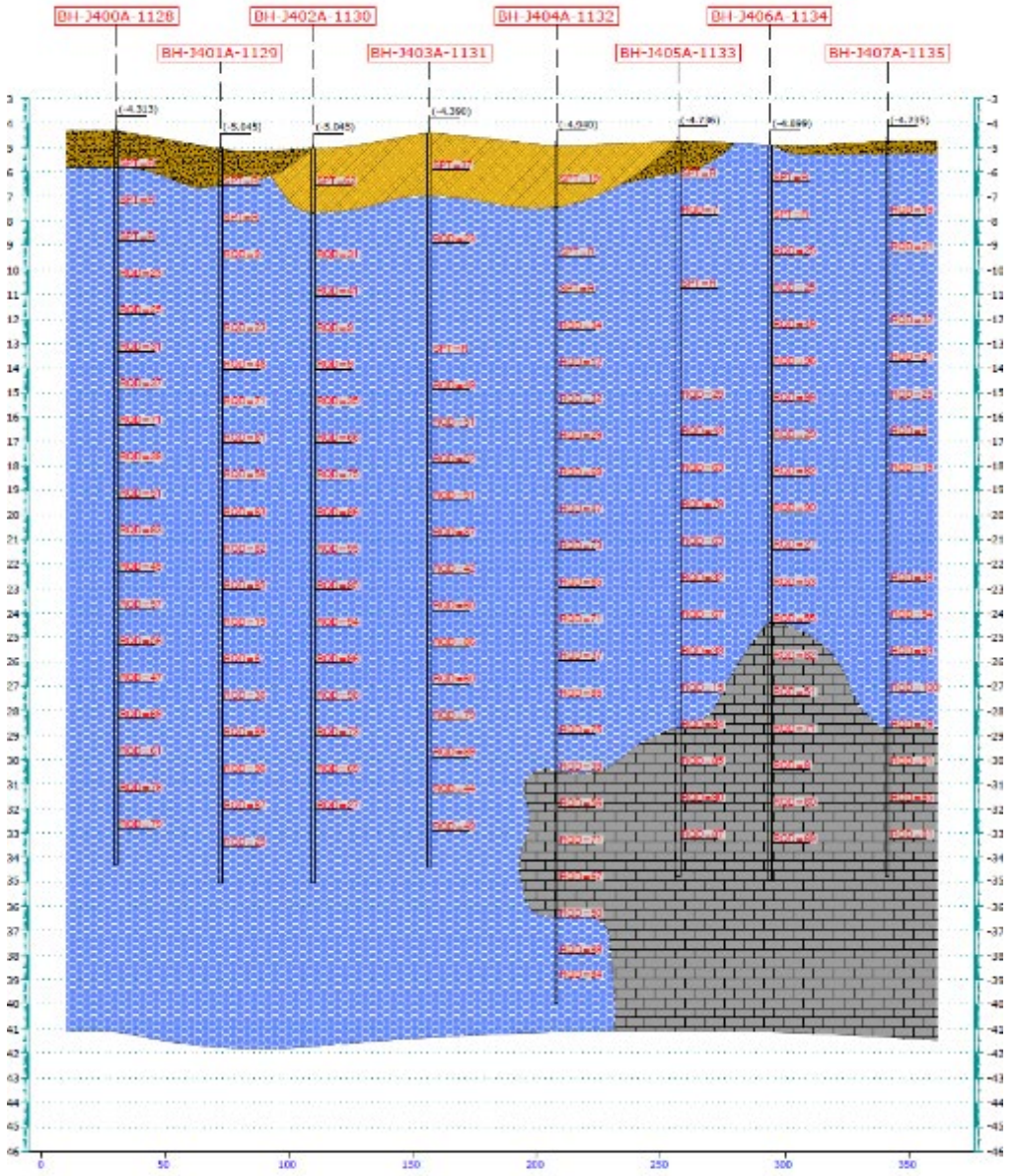
What We Know

1211 Boreholes
(1 Borehole under every Abutment and Pier)

What We Know

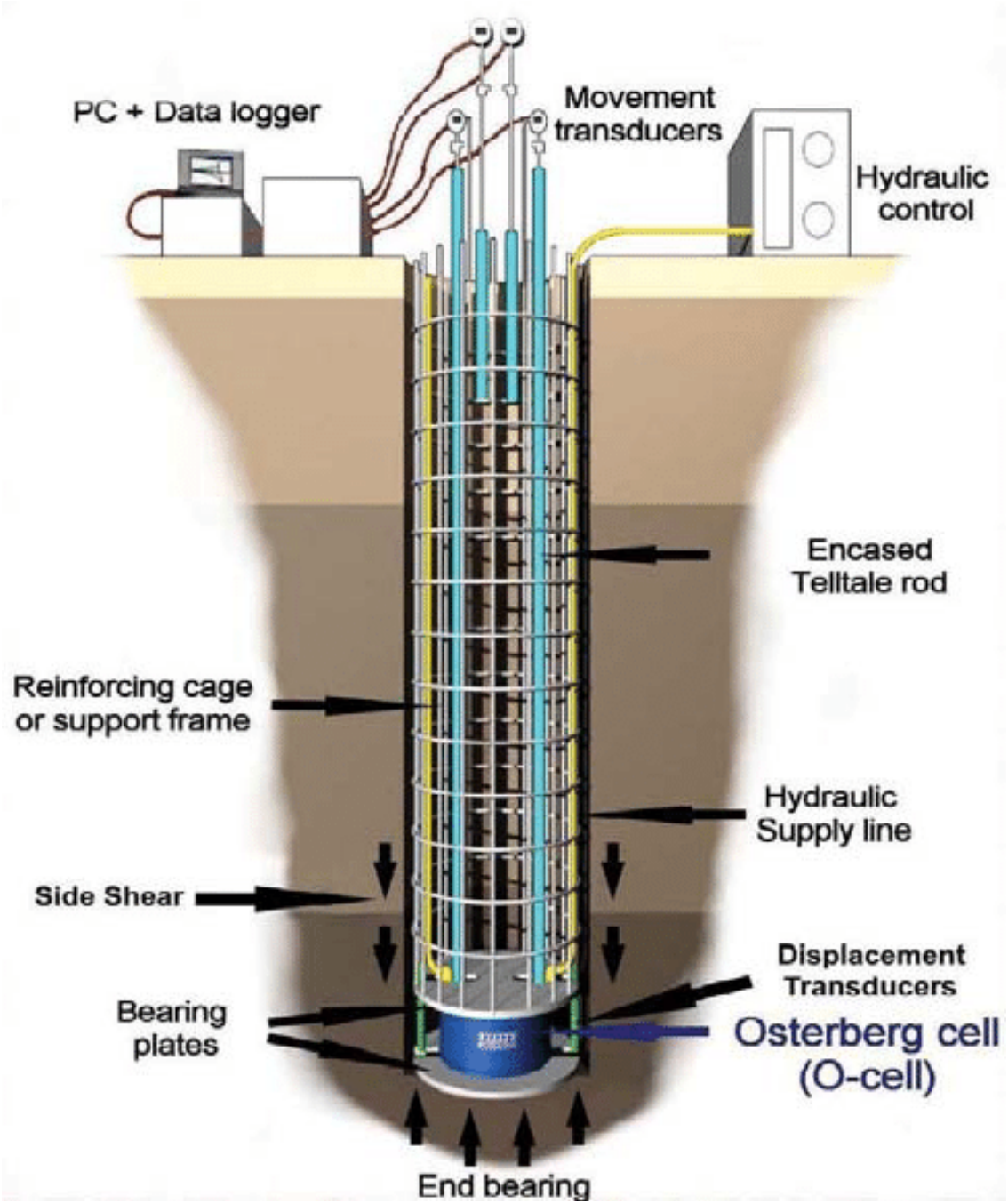
Types of Piled Foundation

What We Know


BH-J400A-1128
BH-J401A-1129
BH-J402A-1130
BH-J403A-1131
BH-J404A-1132
BH-J405A-1133
BH-J406A-1134
BH-J407A-1135
SUBSURFACE PROFILE FOR PIER- J400A-J407A
LEGEND:
SAND
CLAY
BRECCIATED TUFF/TUFF
BOULDER OF BASALT/ BASALT

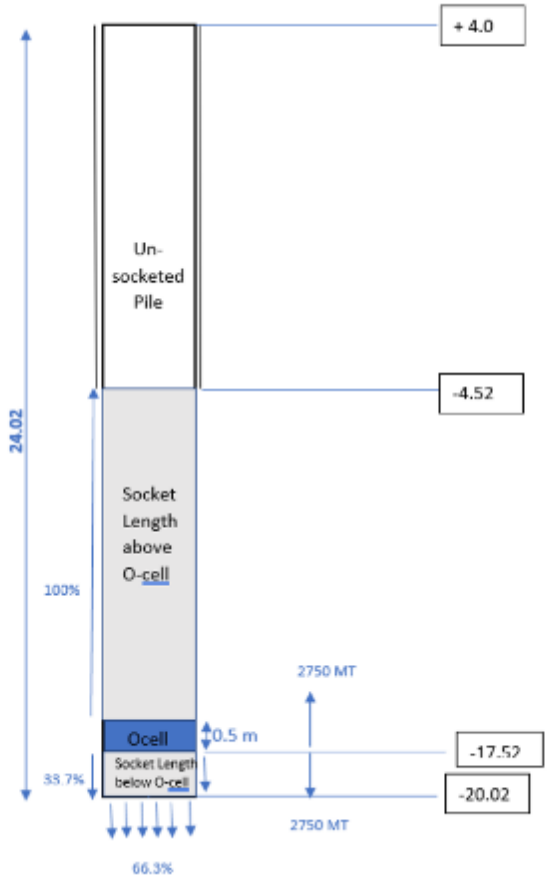
The Solution

O-Cell Test



The Result

Sample Pile Load Test:



The Result

The Result

Thank You