

27 MAY 2021

IMPLEMENTATION OF SILENT PILING IN NEWLY INDEPENDENT STATES

15 YEARS OF EXPERIENCE



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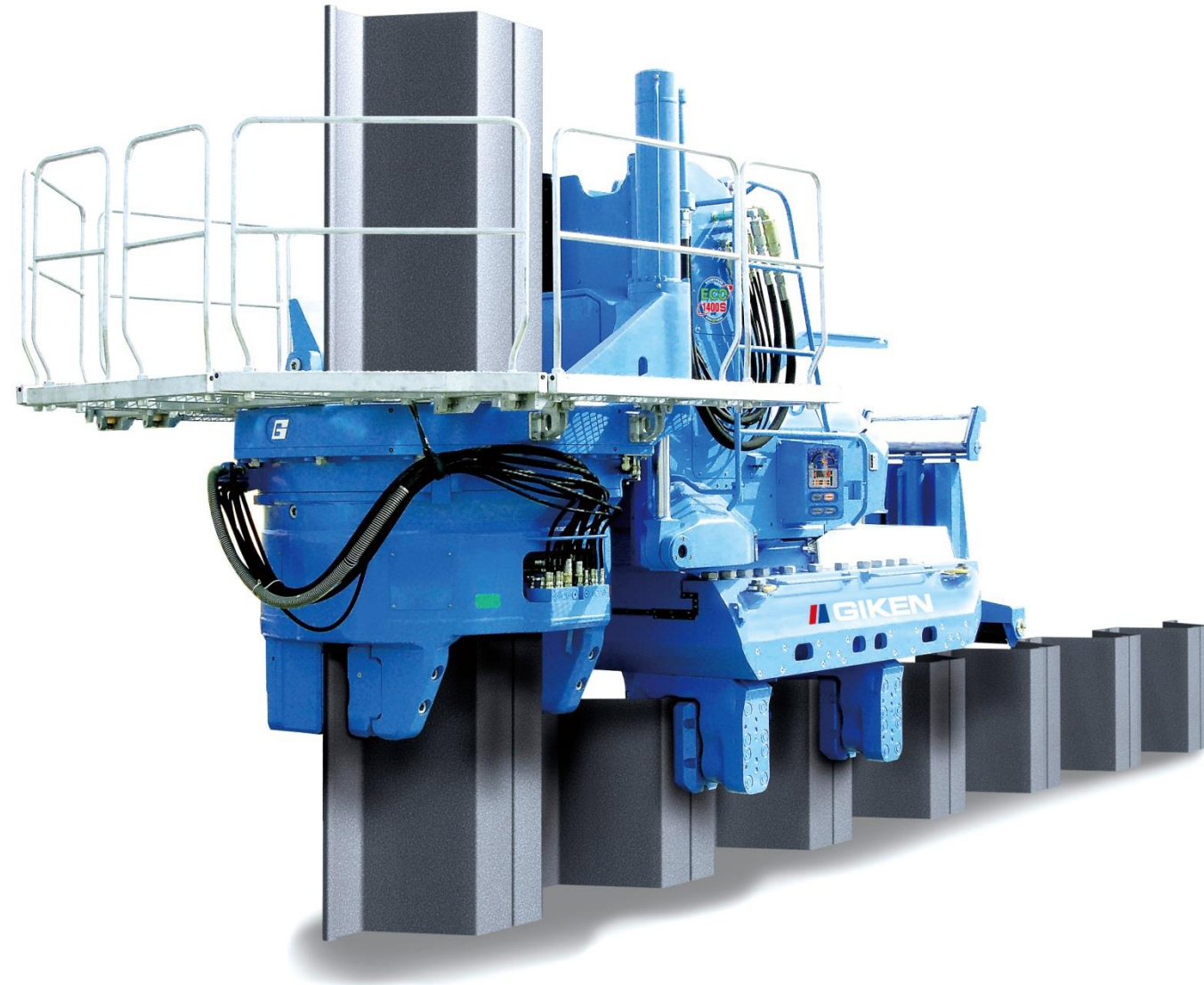
Alex Pougovkine
MSc. MBA
Nord Metallica Nederland,
The Netherlands

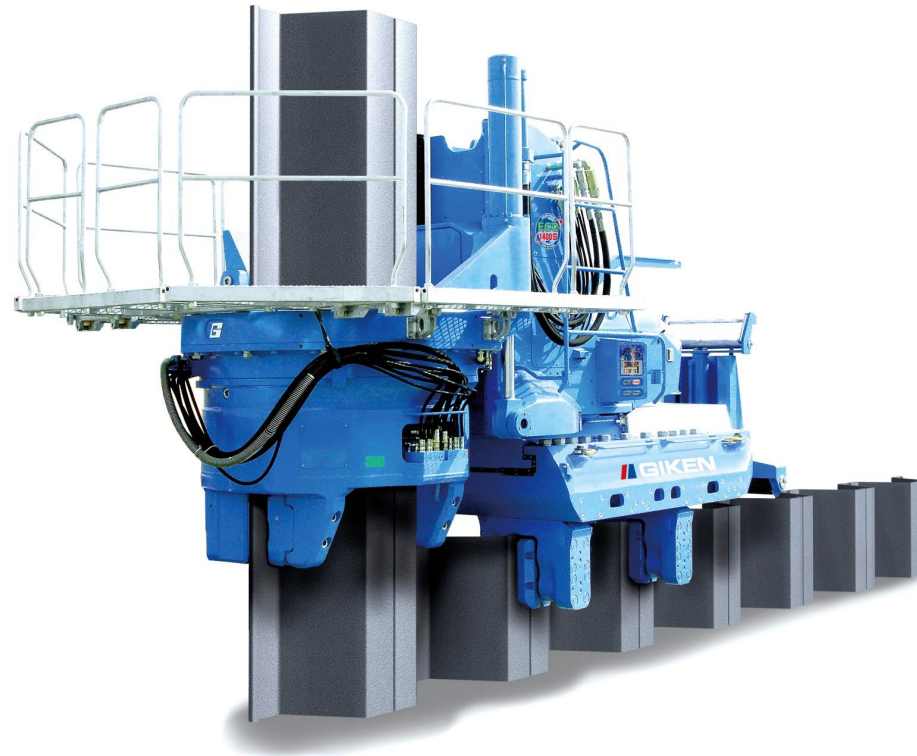


Beqa Gurgenidze
Eng. MSc.
Erti Co. Ltd,
Republic of Georgia



Press-In Piling Method





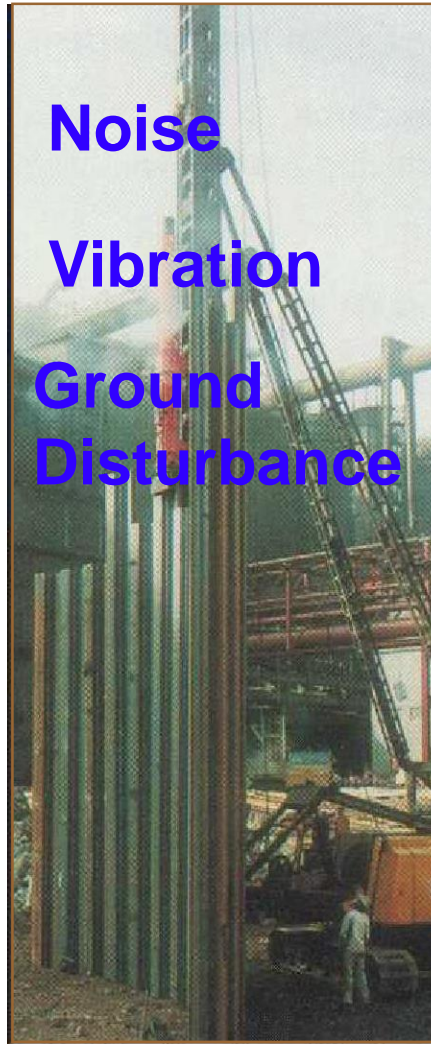
Different Effects by Various Installation Methods

Percussion

Vibration

Pre-drilling

Press-in

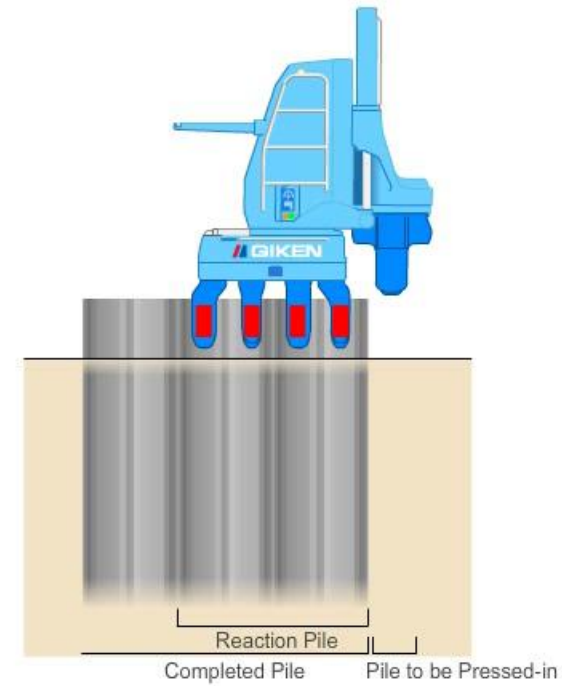


THE PRESS-IN PRINCIPLES

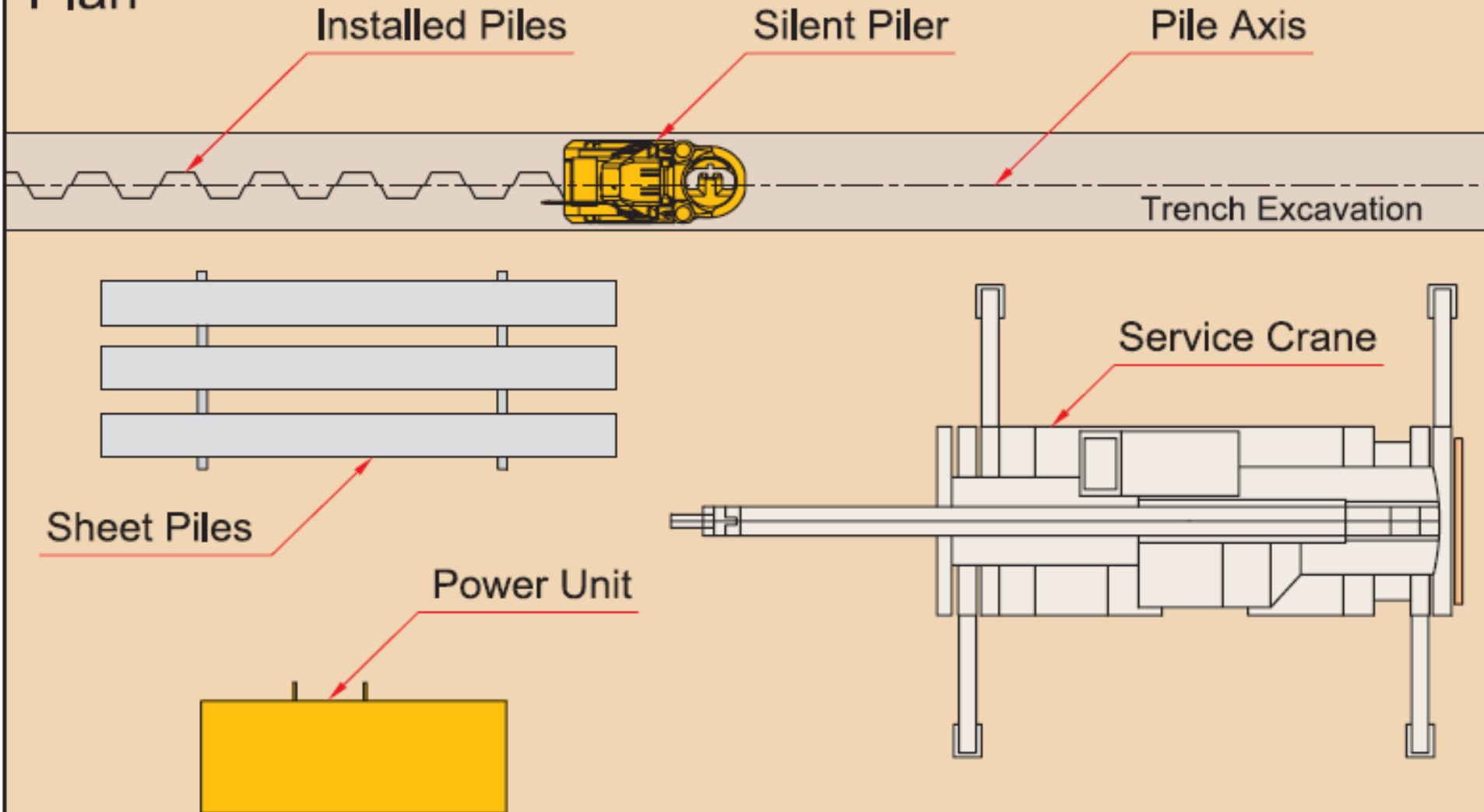
USING OF REACTION FORCE



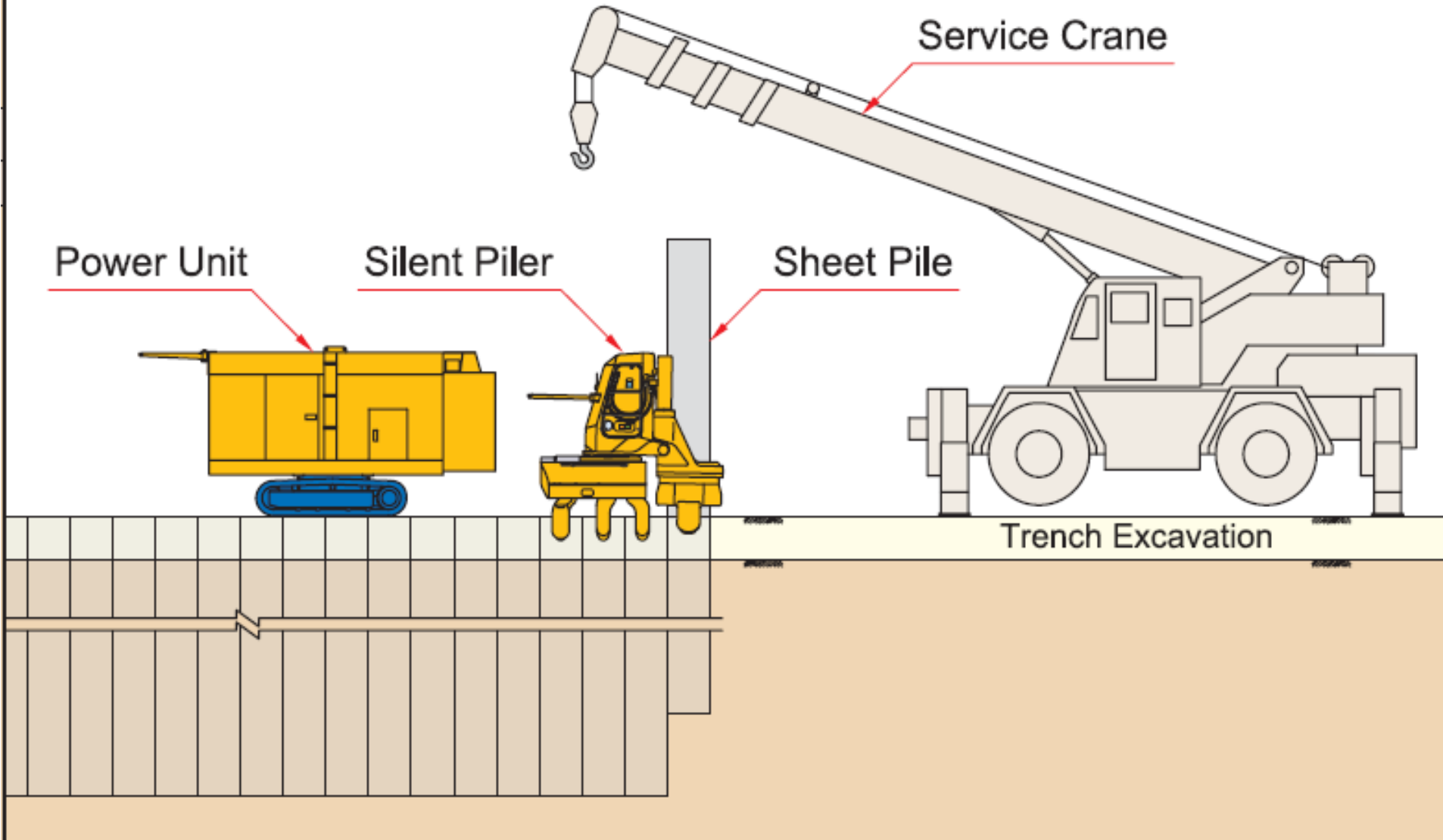
- : Press-in Force
- : Penetration Resistance Force
- : Reactive Lifting Force
- : Reaction Force

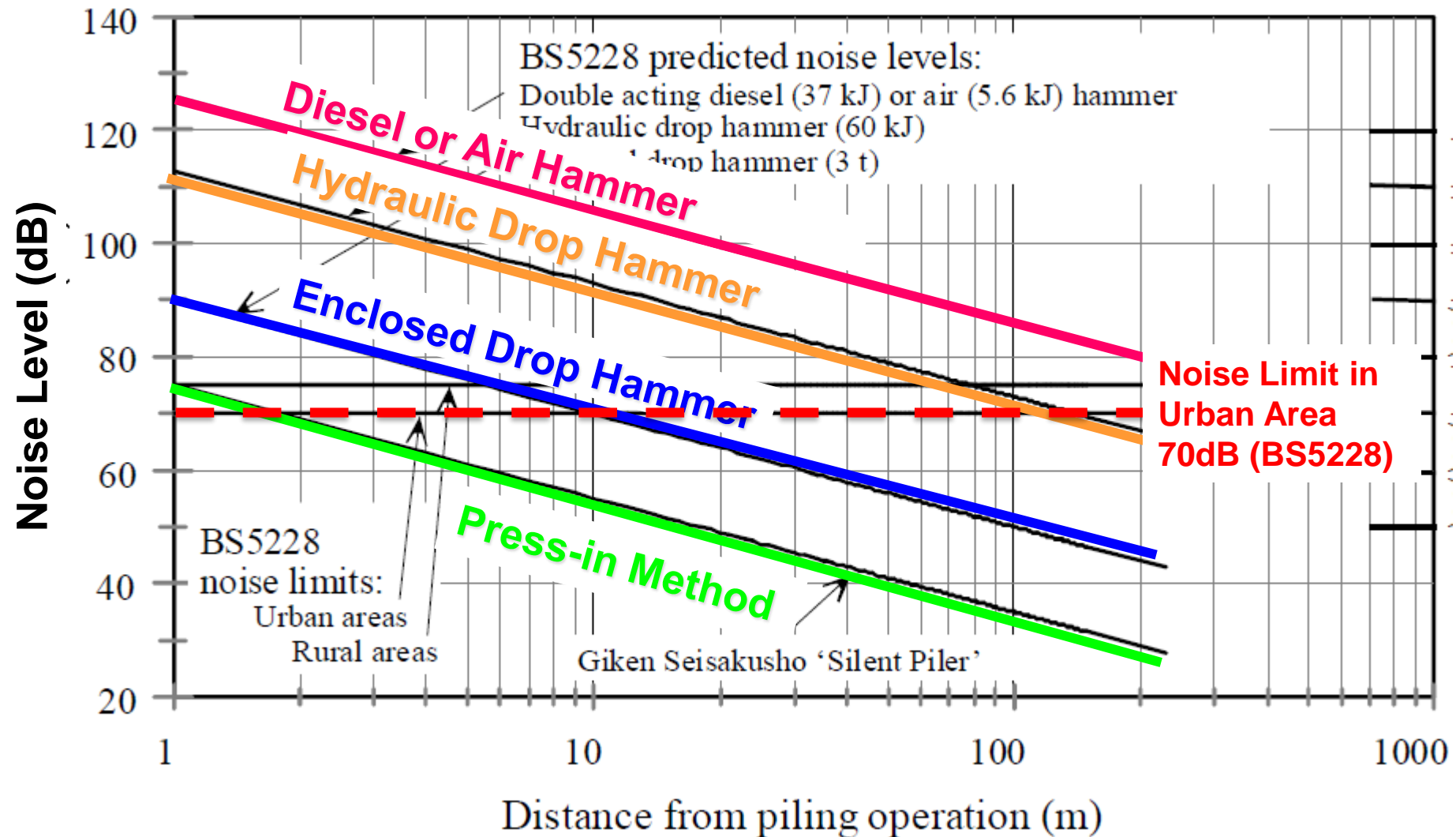


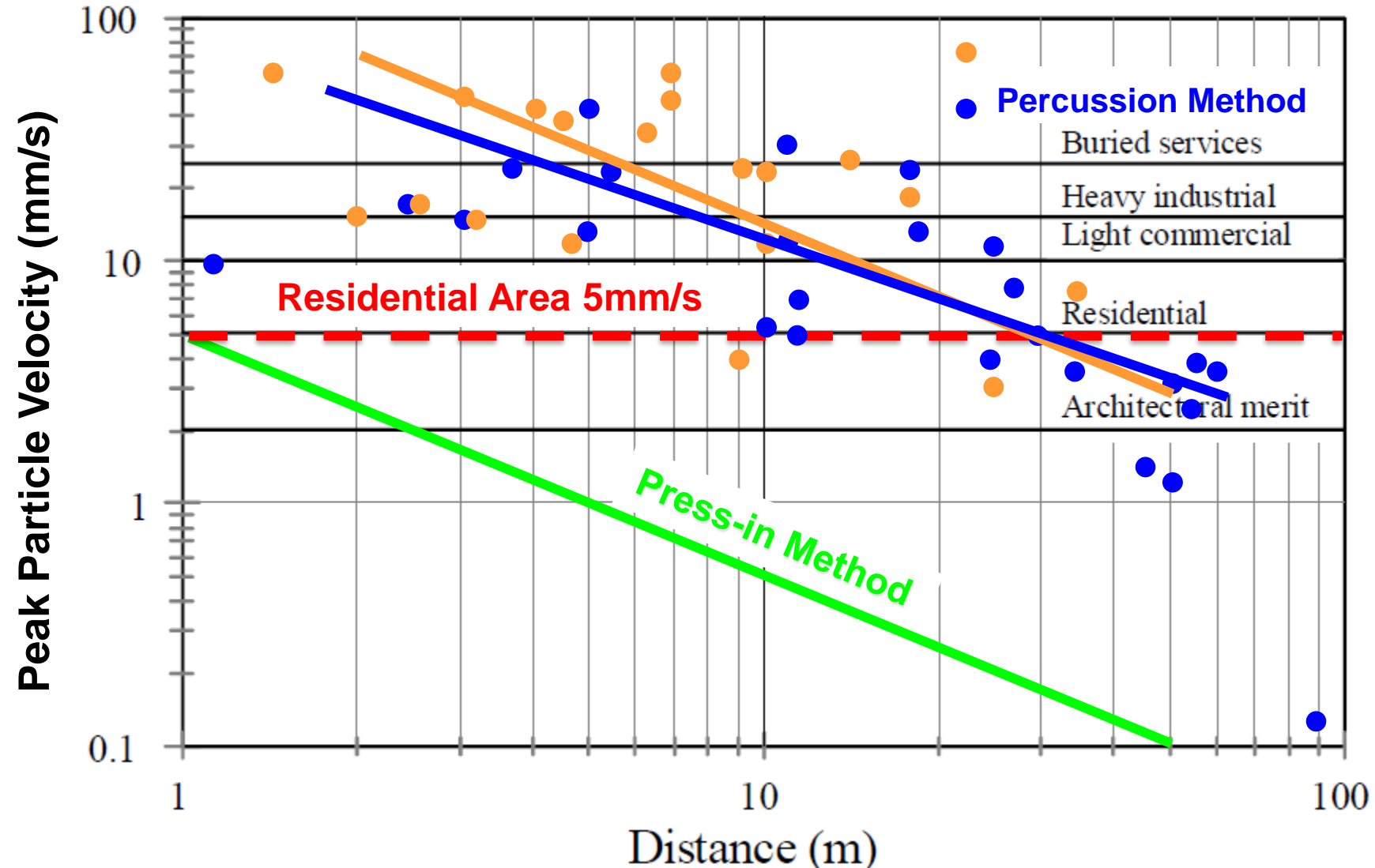
Plan



Elevation



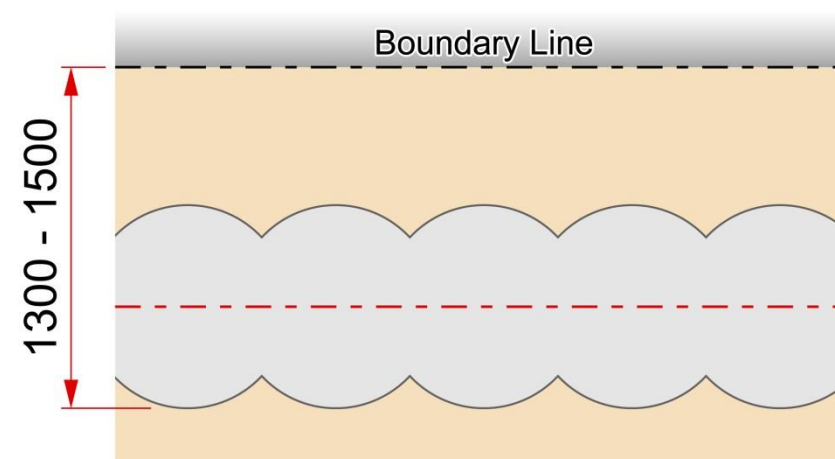
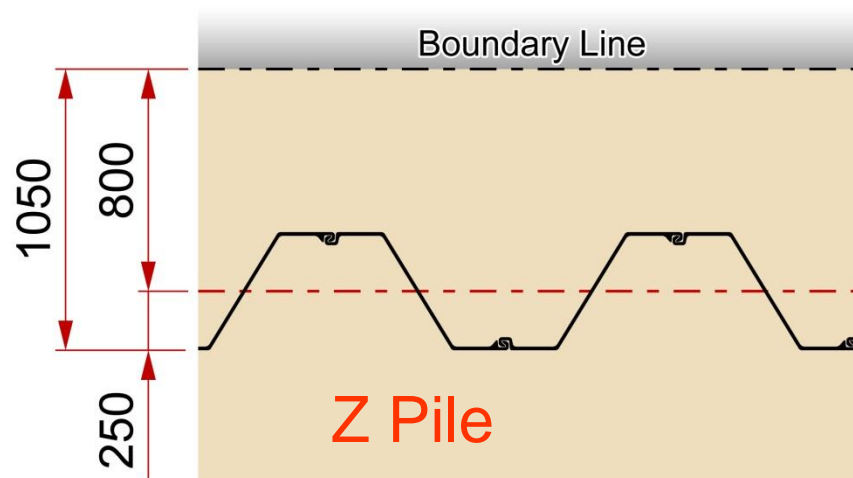




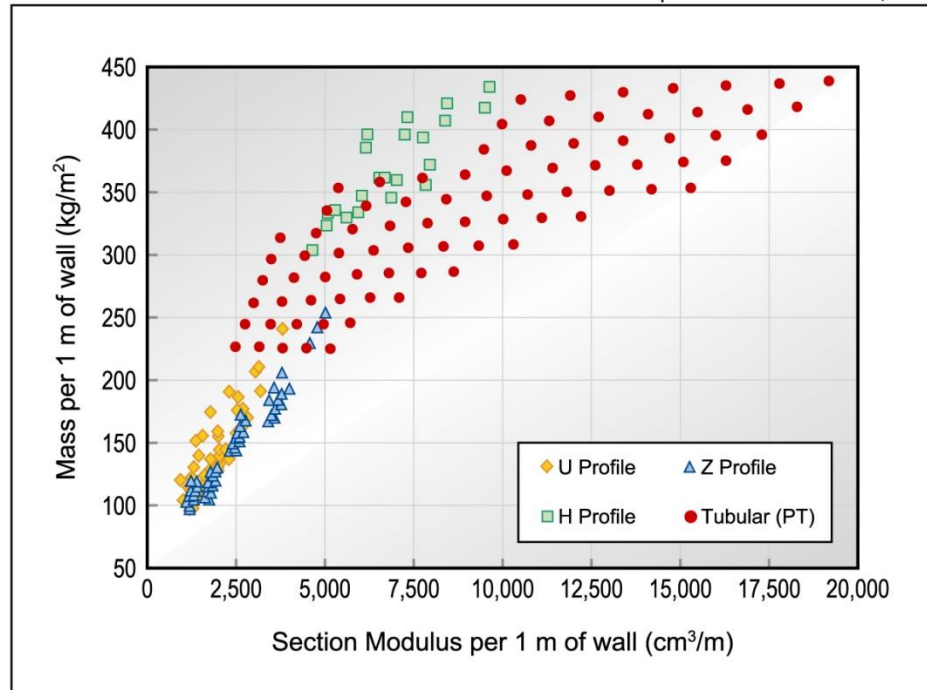
Steel Sheet Pile Wall



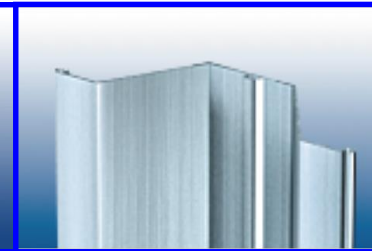
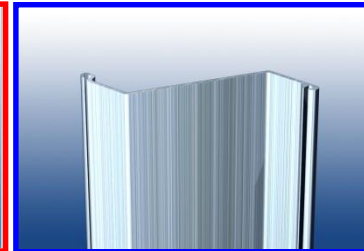
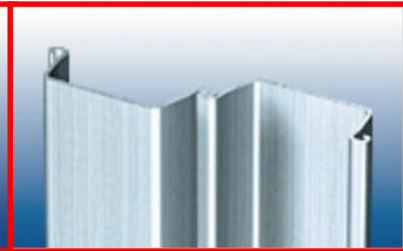
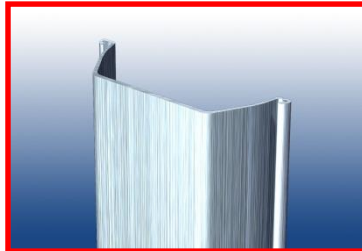
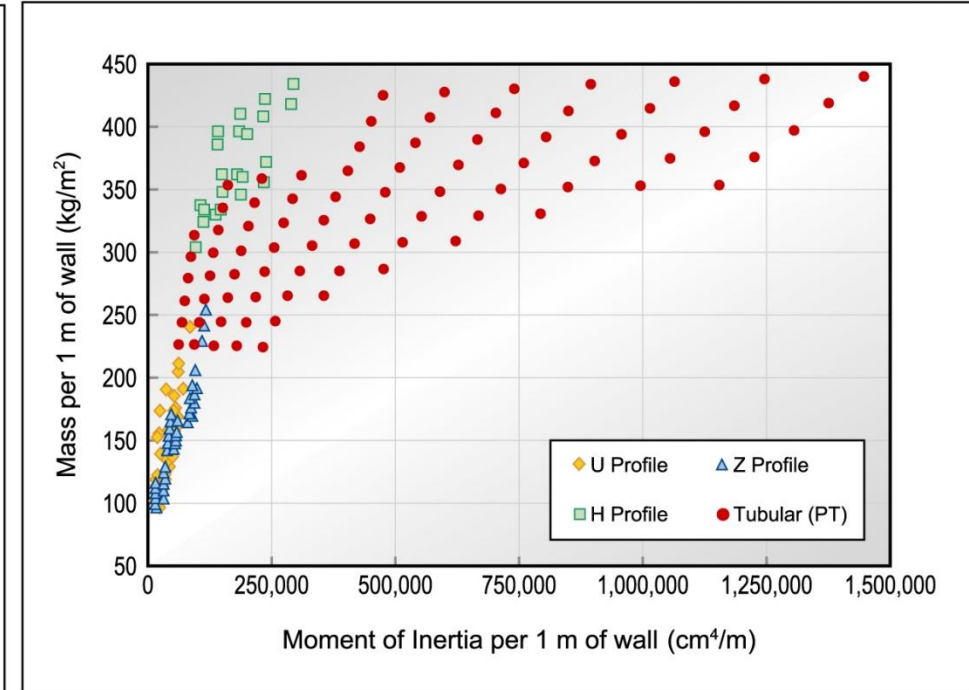
In-situ Concrete Pile Wall



Section Modulus 800cm³/m – 27,000cm³/m



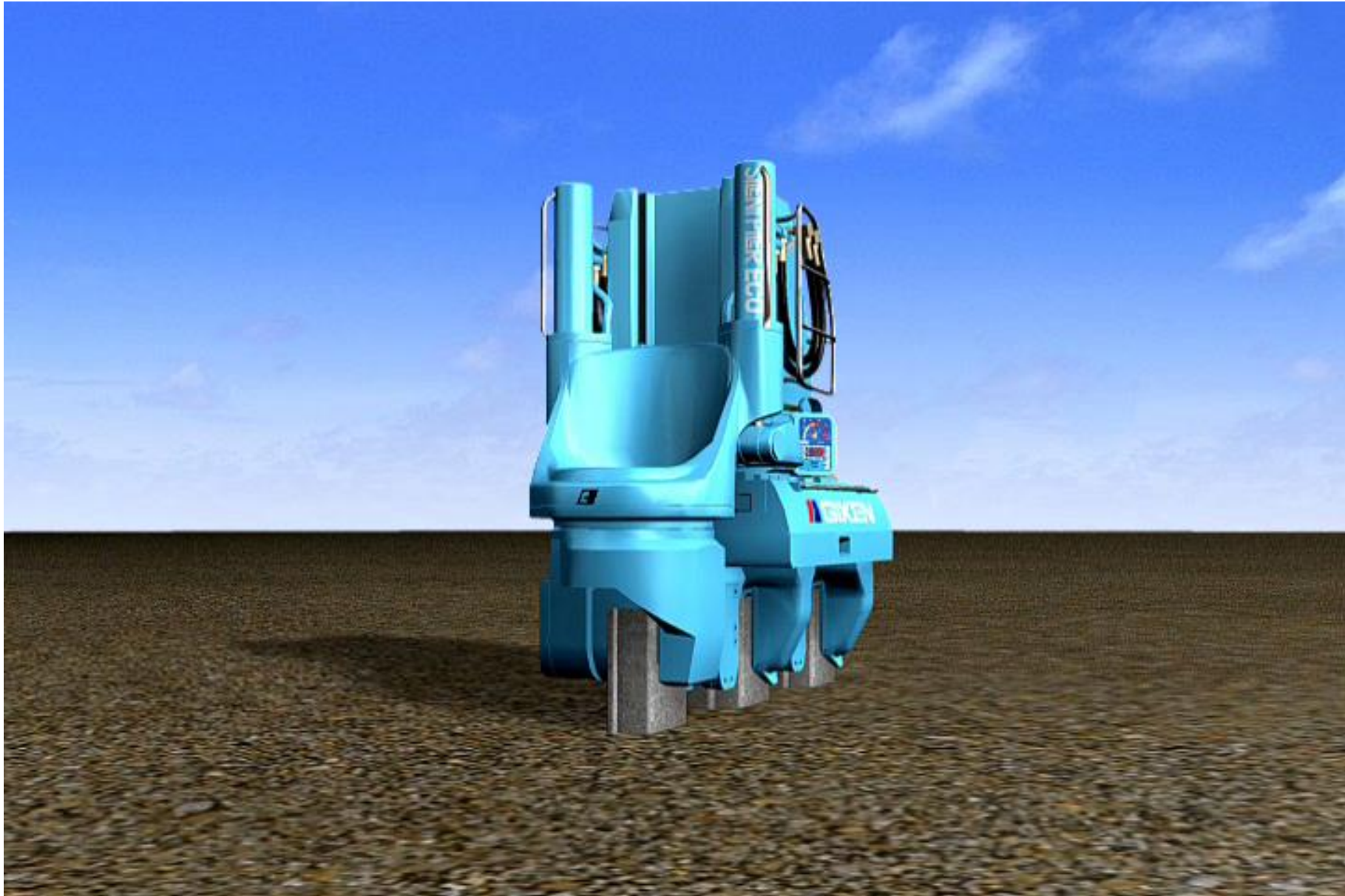
Moment of Inertia 20,000cm⁴/m – 2,000,000cm⁴/m



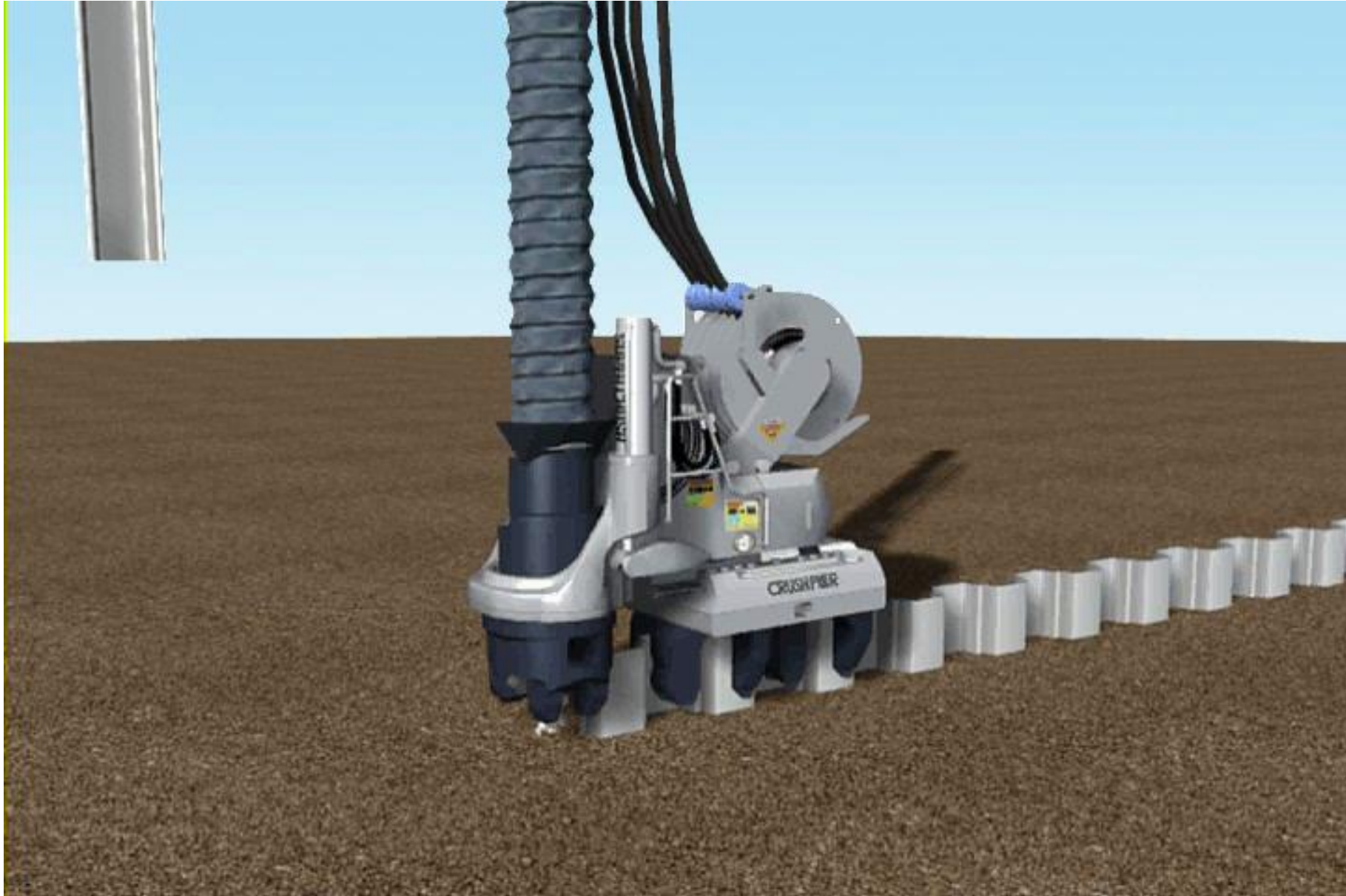
U Sheet Pile

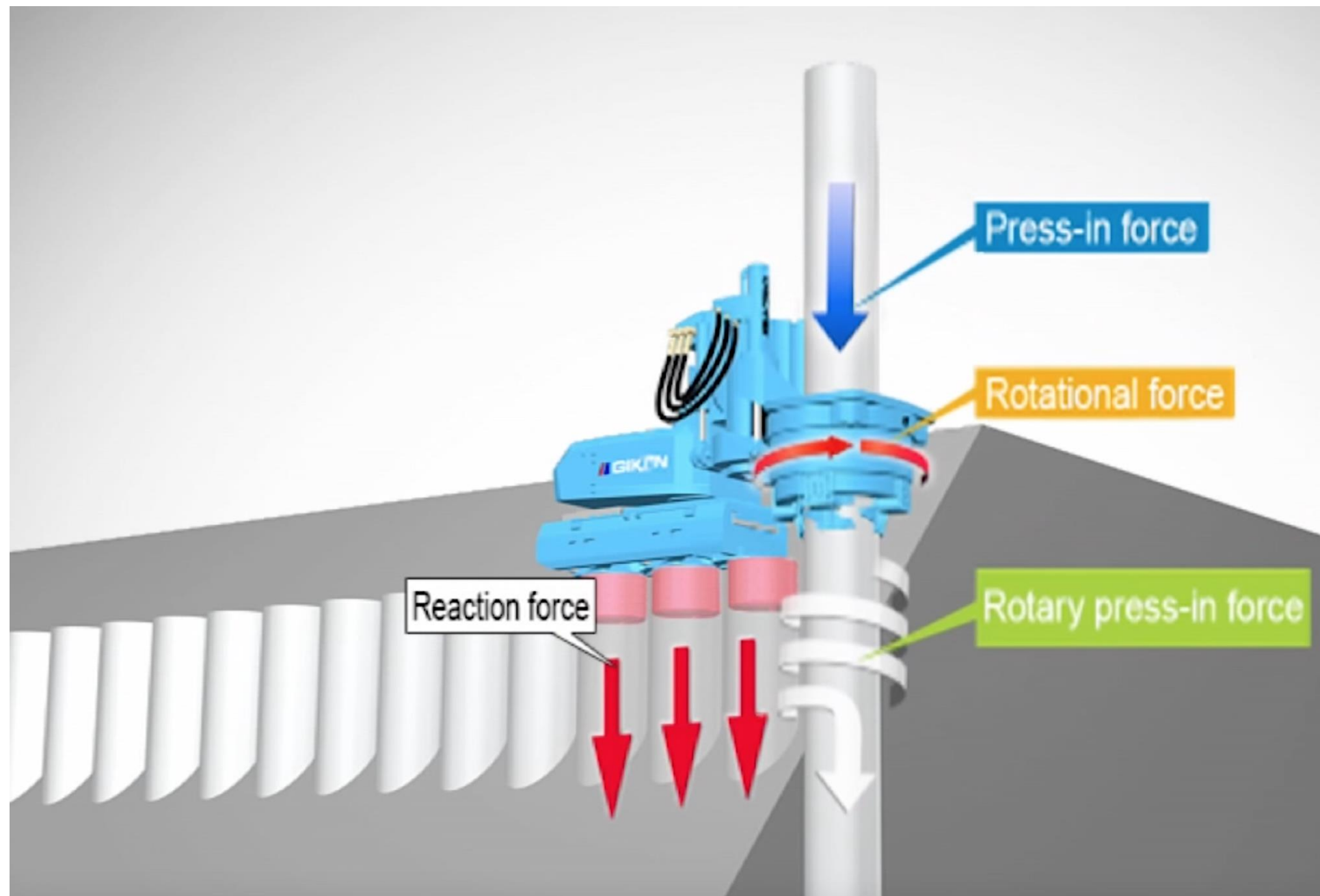
Z Sheet Pile

Tubular Pile

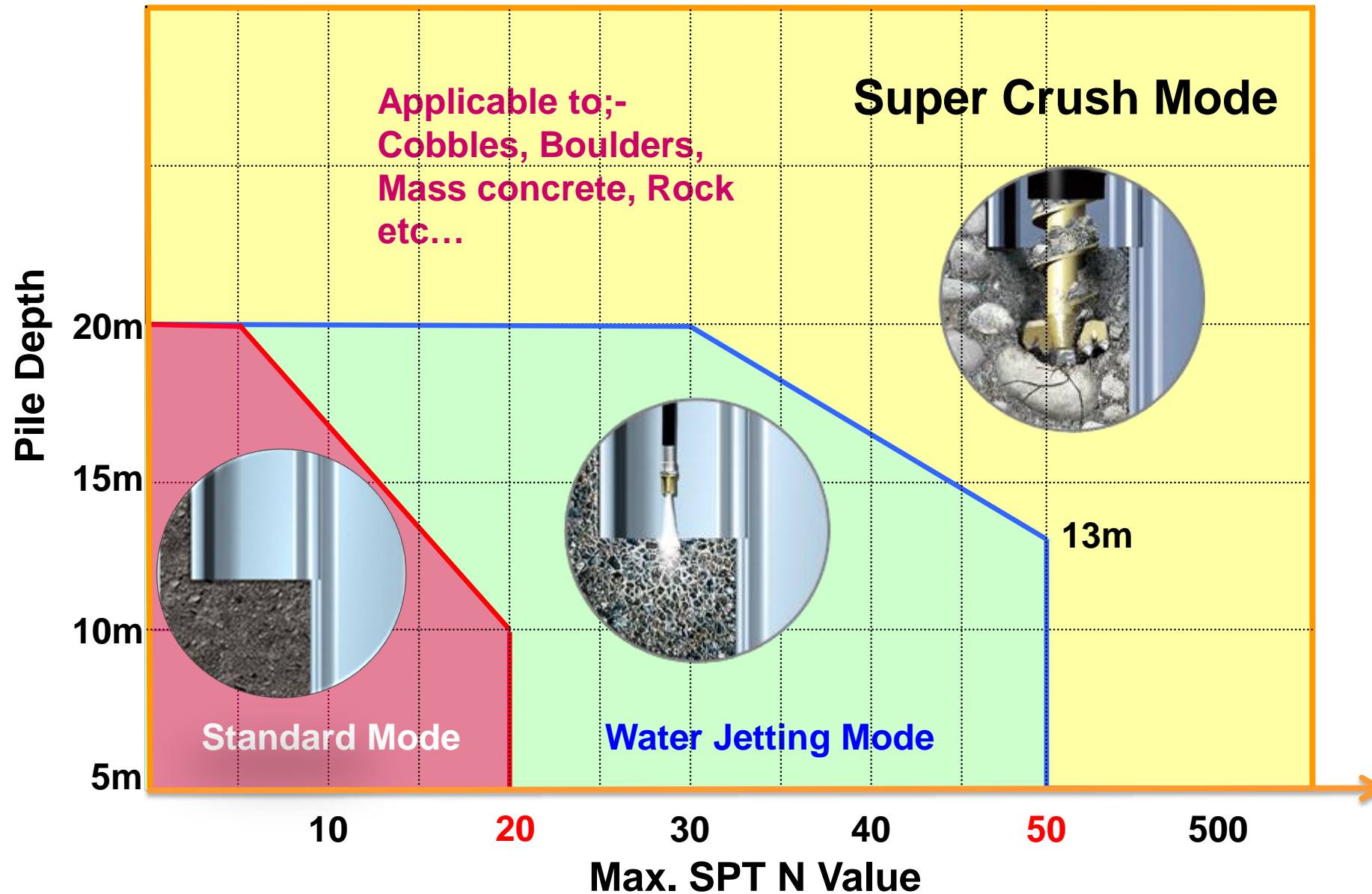




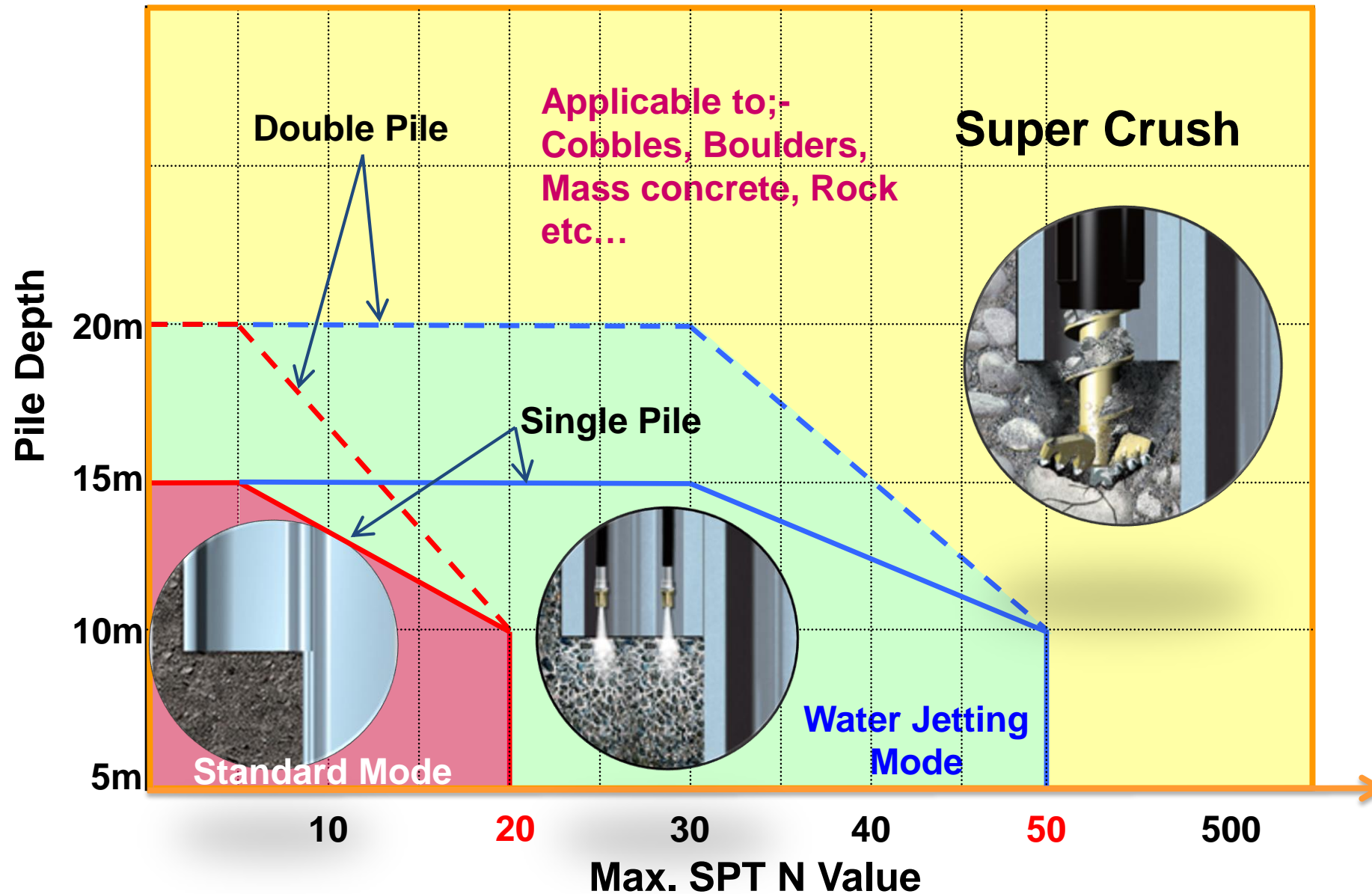




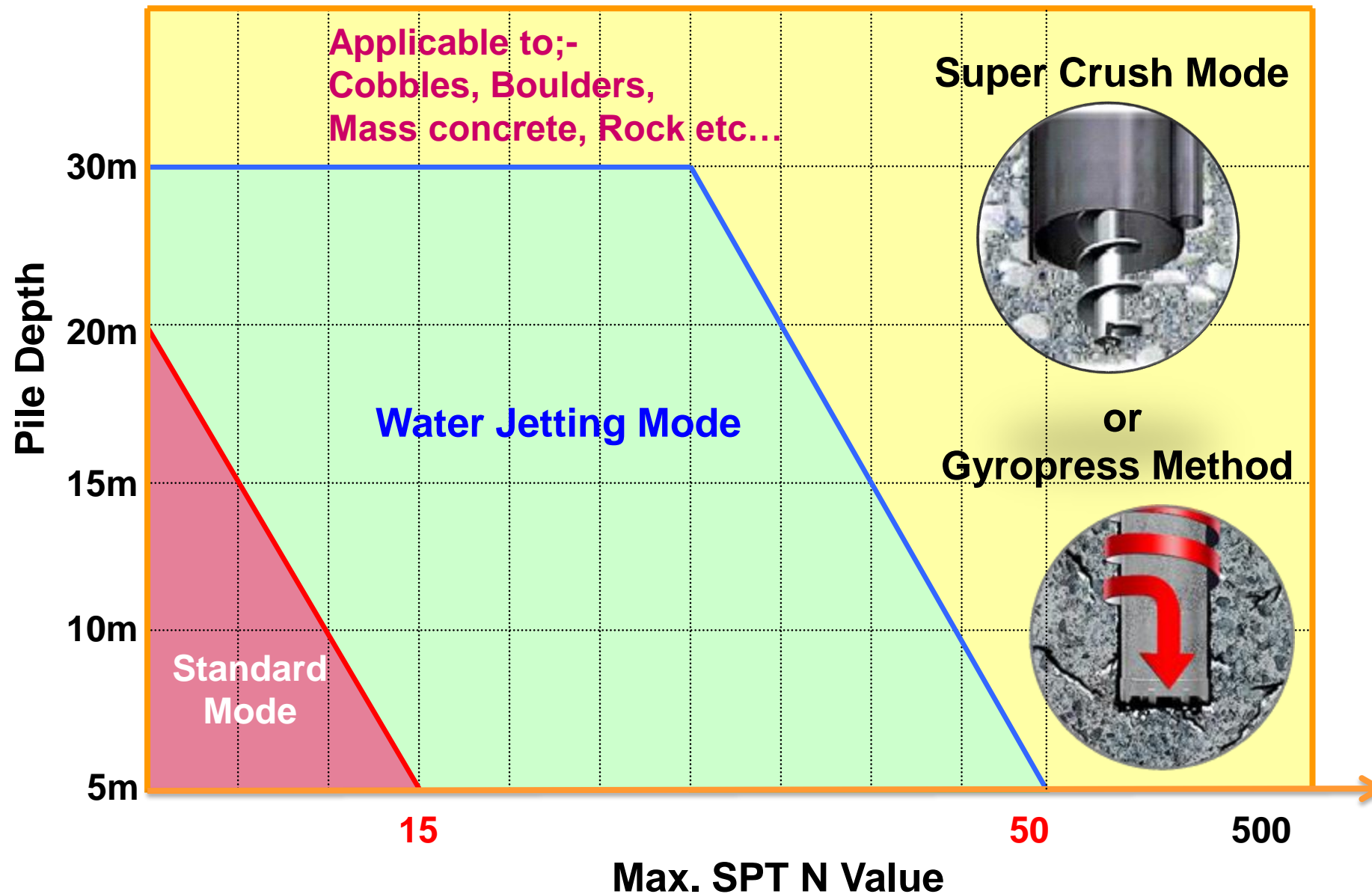
Case1; U Sheet Pile (600mm Wide) vs SPT N

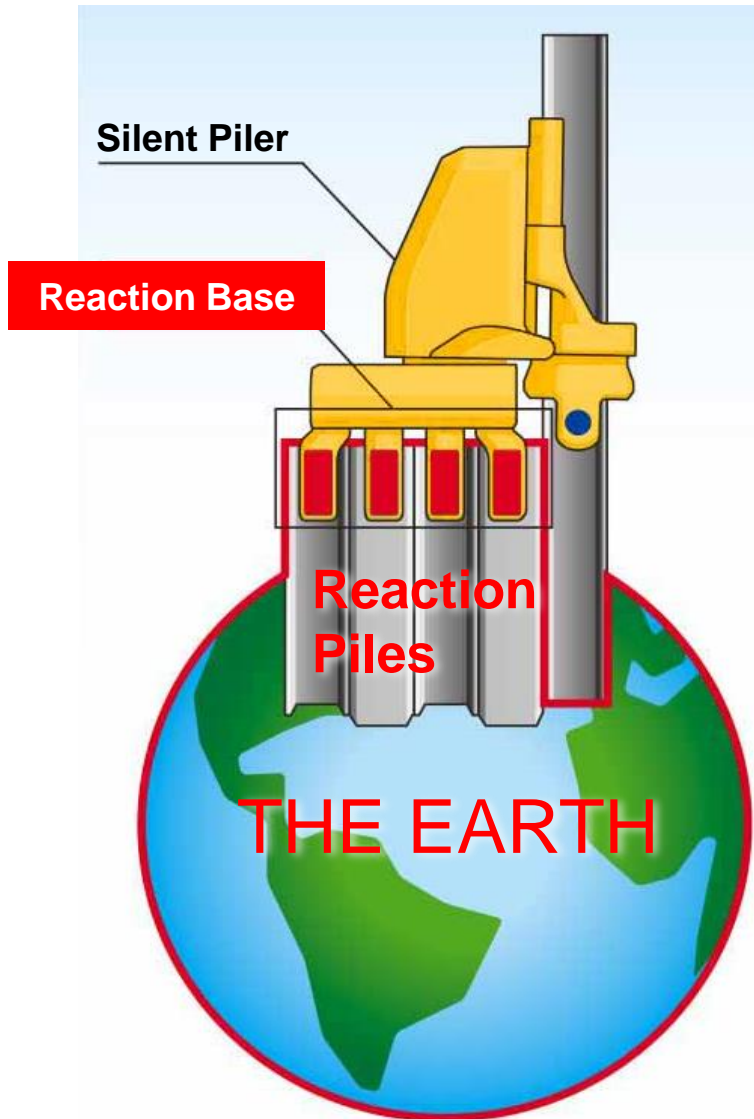


Case2; Z Sheet Pile vs SPT N

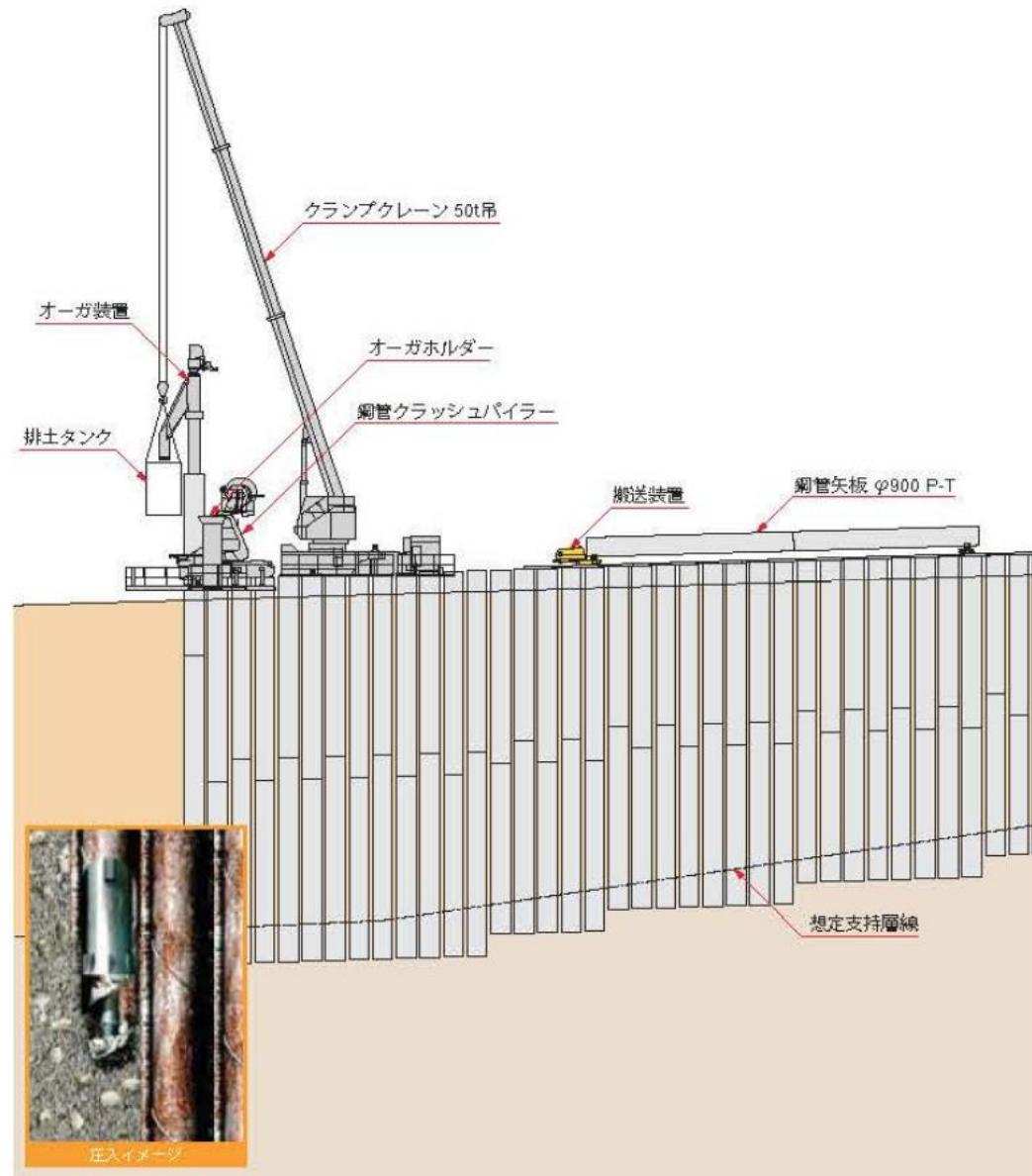


Case3; Tubular Pile vs SPT N



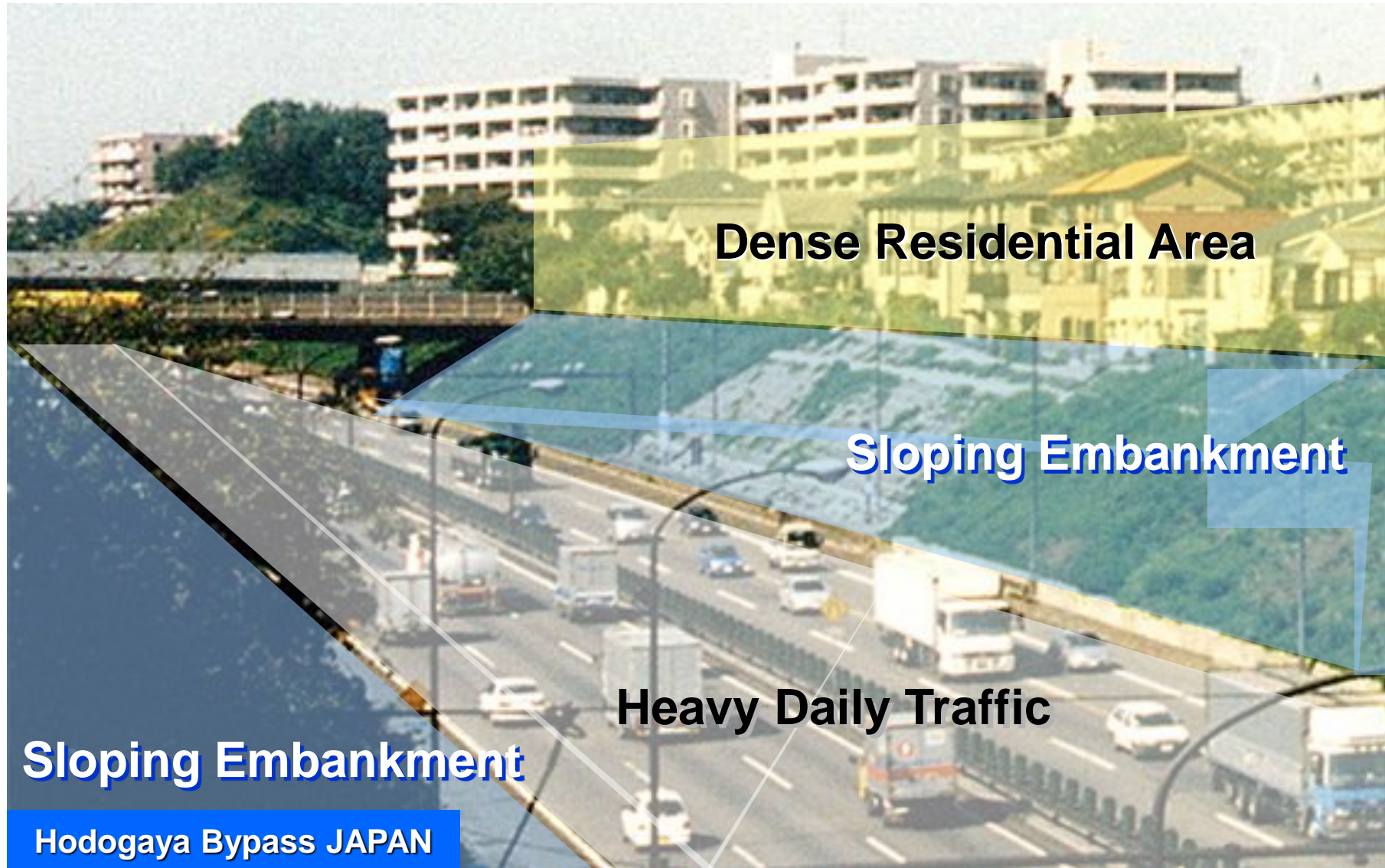


- ➔ **Large Working Force**
Small / Compact Machine
- ➔ **Piling without Vibration & Noise**
Use of Static Load
- ➔ **Minimize Working Space**
Systemized Operation
- ➔ **Stable Press-in Operation**
Firm Grip on Completed Piles



COMPARISON OF PRESS-IN METHOD & CONVENTIONAL METHOD

Road Widening

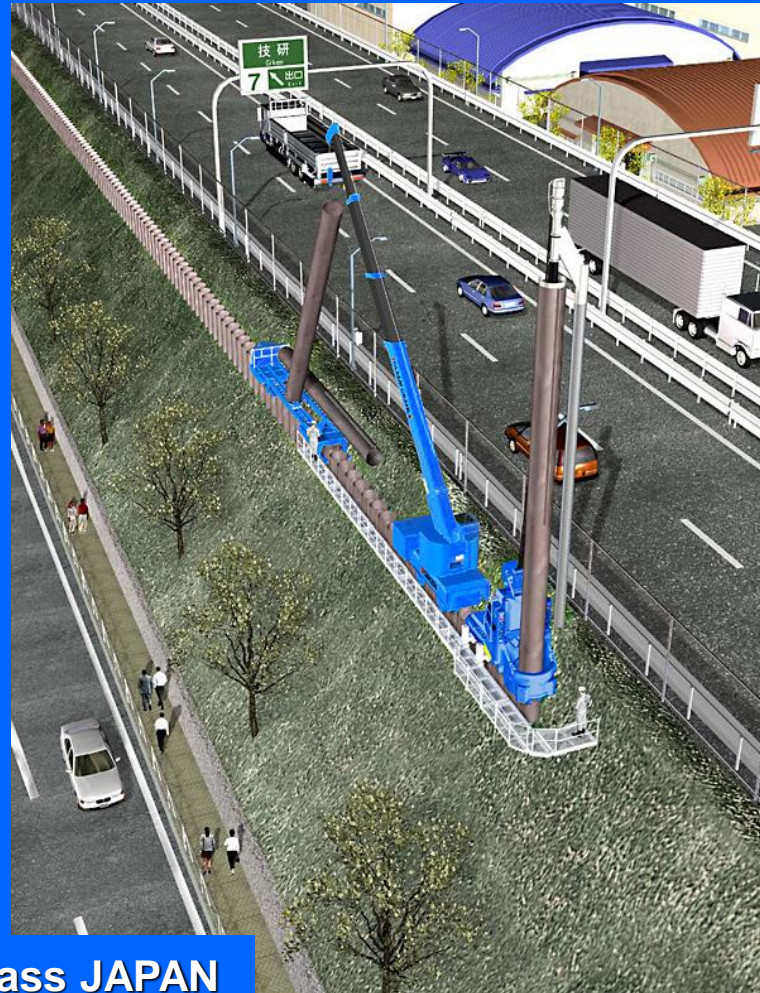


COMPARISON OF PRESS-IN METHOD & CONVENTIONAL METHOD



Hodogaya Bypass JAPAN

Press-in Method



Conventional Approach



COMPARISON OF PRESS-IN METHOD & CONVENTIONAL METHOD

Road Widening



Hodogaya Bypass JAPAN

River Improvement Works

After Completion



Press-in Method



Conventional Approach



Conventional Methods

- Initially Cheap
- Noise & Vibration
- Damage & Repairs
- Complaints
- Temporary Works
- Less Safe



Ultimately EXPENSIVE

Press-in Method

- Initially More Expensive
- No Noise & Vibration
- No Risks of Damage
- No Complaints
- Min. Temporary Works
- Safe



**Ultimately
More ECONOMICAL**



*The entire building and
basement of BBC
Broadcasting House
were reconstructed.*

In order to minimize the temporary move period, the piling works needed to be carried out prior to its demolition works.








Case Study: Batumi Sea Port

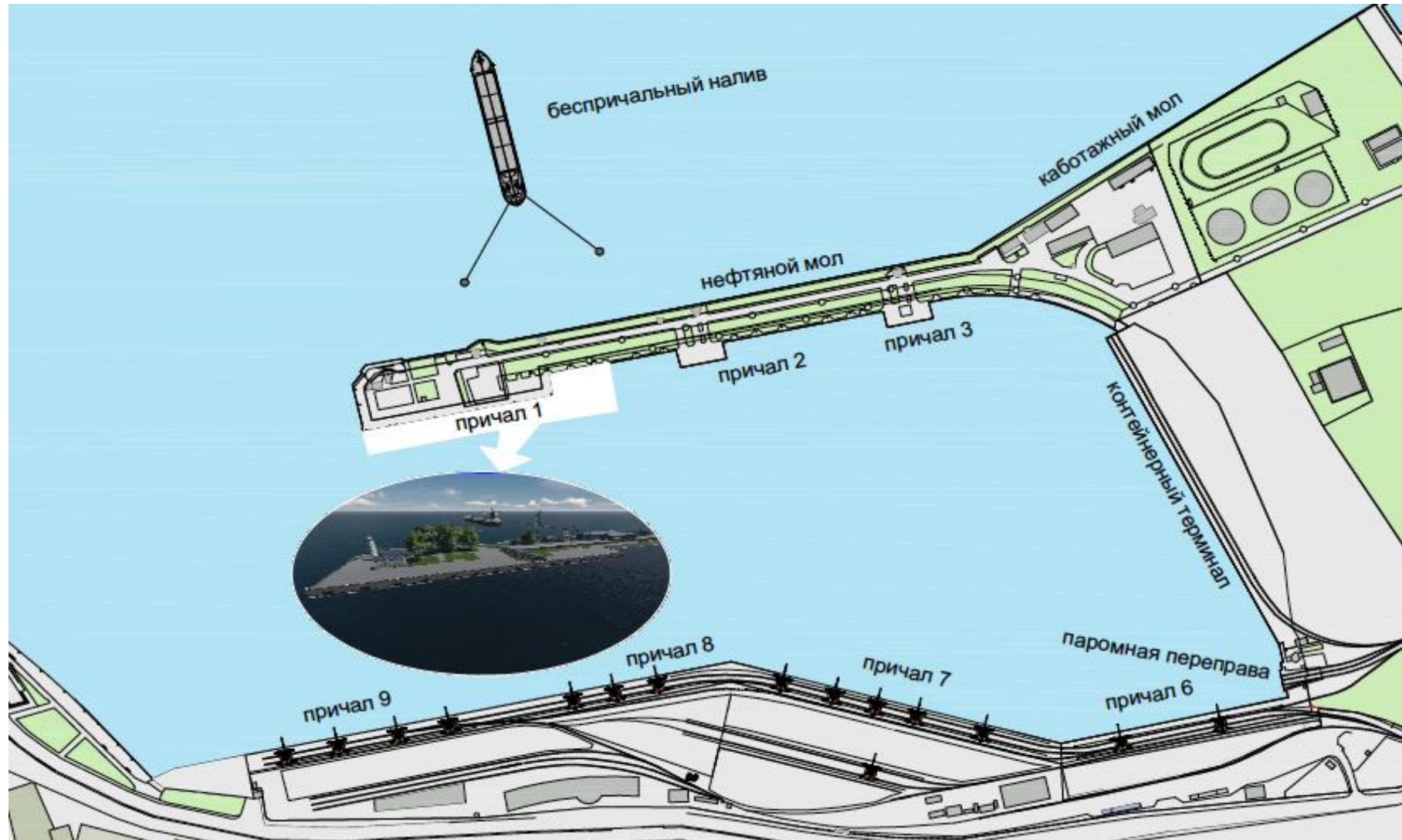
Although the far-going plans had to be shelved (Corona, etc.), some important improvements could be made, at little cost with high efficiency.





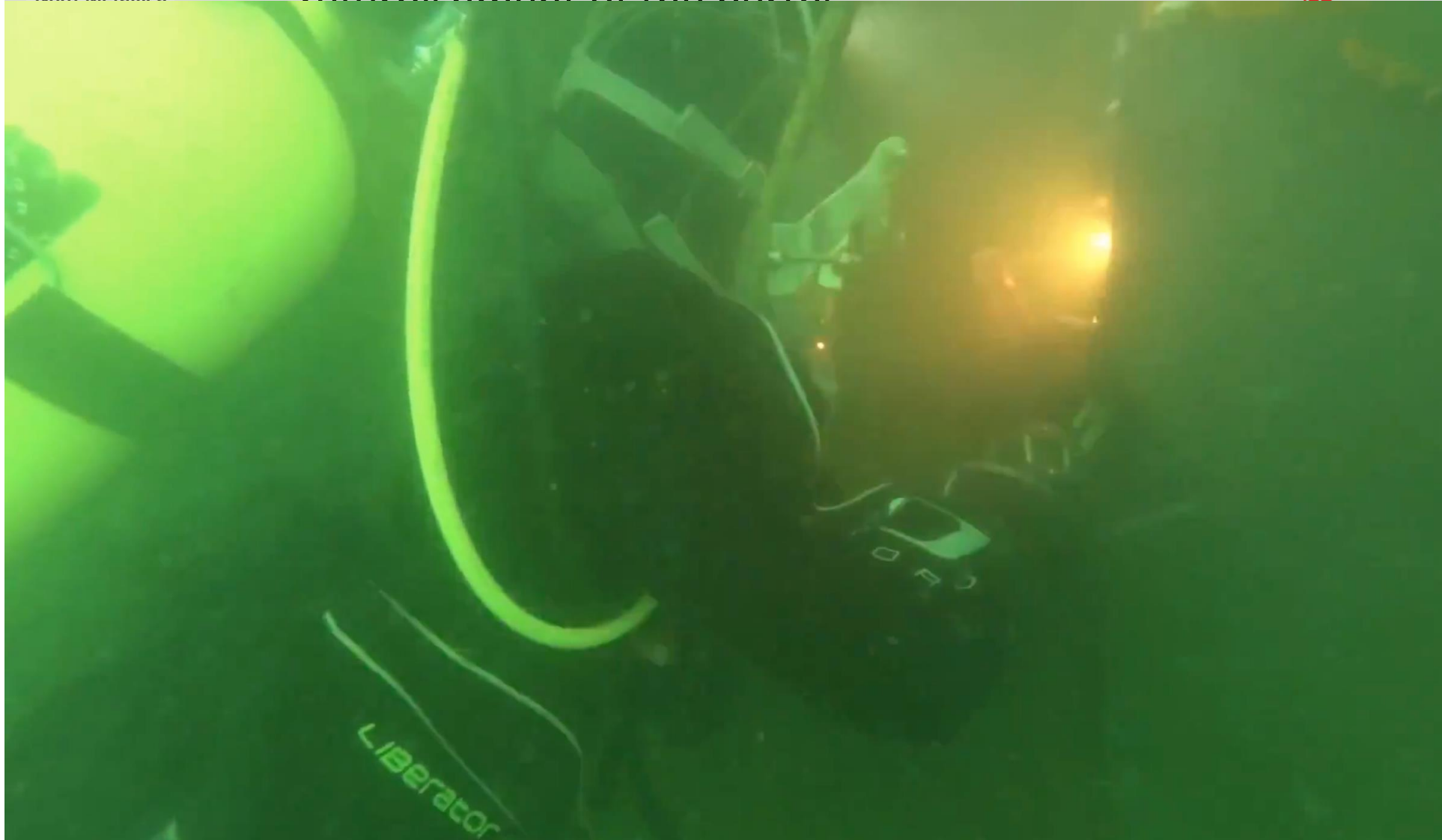
				1101-П1-ГР			
				ООО "Батумский морской порт"			
Разраб.	ФИО	Подп.	Дата	Причал №1	Стадия	Лист	Листов
						2	28
Исполнил				Ситуационная схема			
Проверил							

Batumi Sea Port: refurbishment of the berths



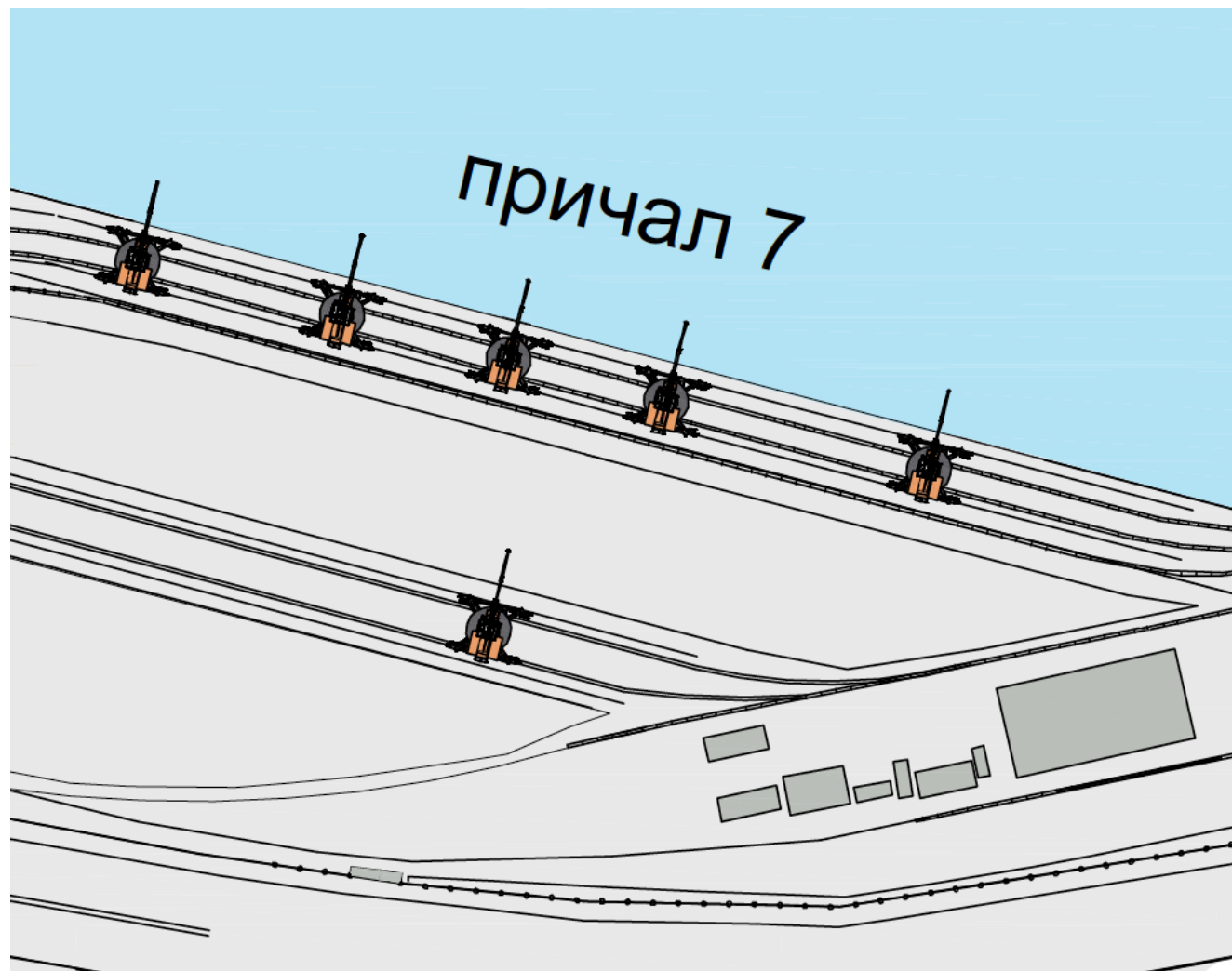
Batumi Sea Port: refurbishment of the berths











Batumi Sea Port: Chemical Bulk Terminal



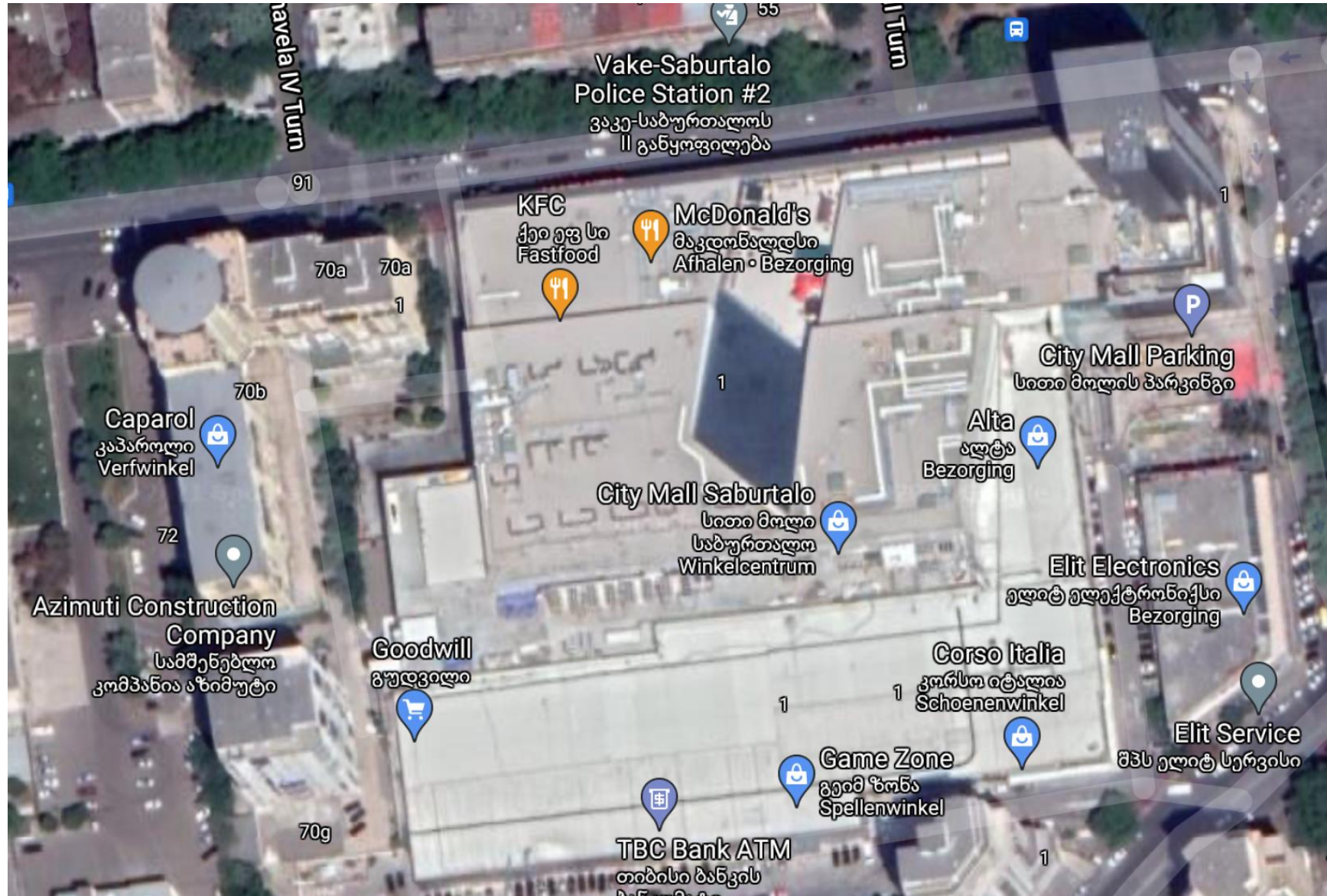


Case Study: Saburtalo City Mall

The area of the shopping centre more than doubled,
plus an office tower was built, without disruption in
the shopping centre's work

Case Study: Saburtalo City Mall

Vazha Pshavela ave.70, Tbilisi



Case Study: Saburtalo City Mall

Vazha Pshavela ave.70, Tbilisi



Saburtalo City Mall

- Existing mall: 17,000 m²
- Newly developed area: 57,000 m²
- Office tower





Saburtalo City Mall





Case Study: Saburtalo City Mall

Vazha Pshavela ave.70, Tbilisi



Saburtalo City Mall



The use of silent piling is essential when:

- Working in fragile environments
- Working in potentially hazardous environments (chemical plants, power plants, etc.)
- Working close to active motor- or railways
- Working on slopes
- Working in shallow waters

Questions?

Questions?

info@nordmetallica.com

info@shpunt.ge

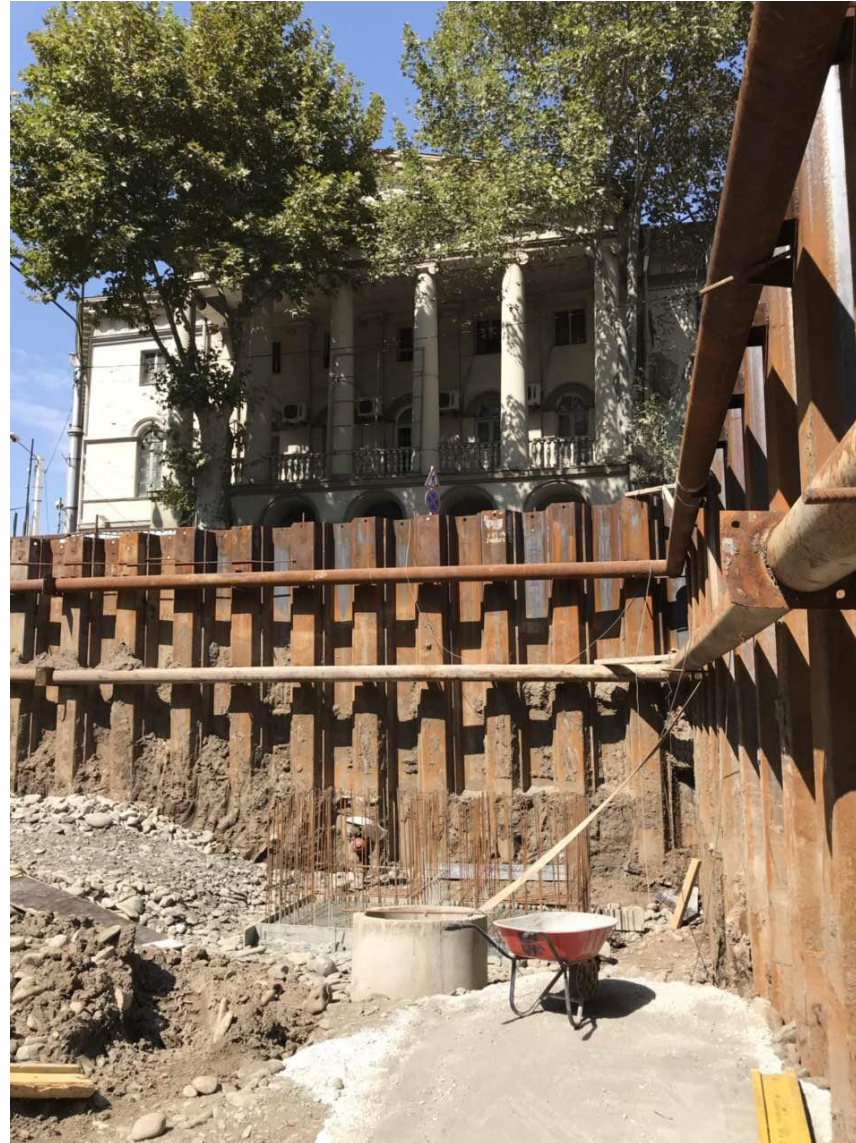
THANK YOU





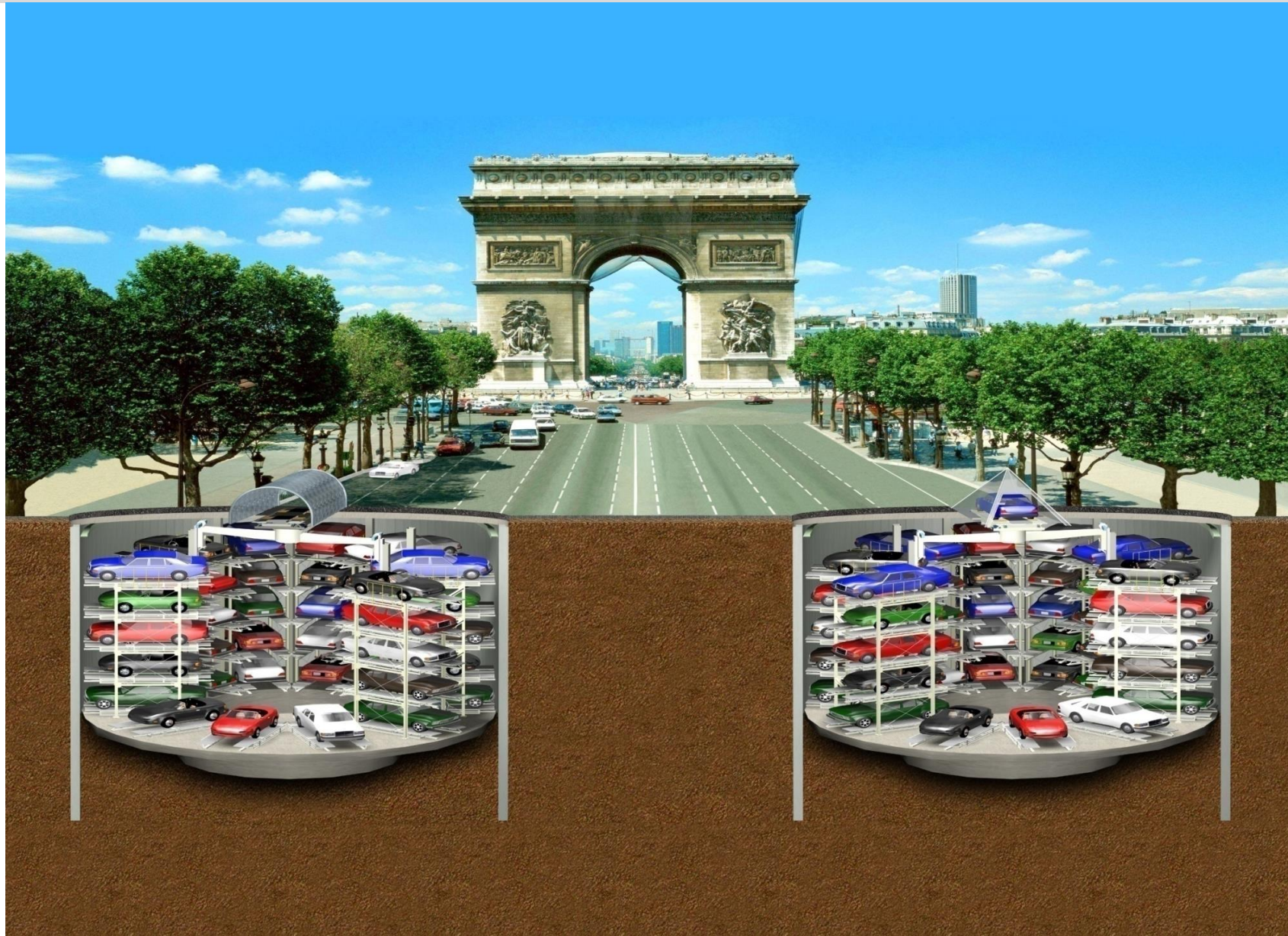












Landslide Prevention

IMPLANT Structure

Implant Landslide Prevention

Rapid Construction of Highly Resilient Preventive Pile
with Minimum Environmental Impact

Gyropress Method
with Skip Lock System

Combi-gyro Method

Hard Ground Press-in Method

Disaster Prevention

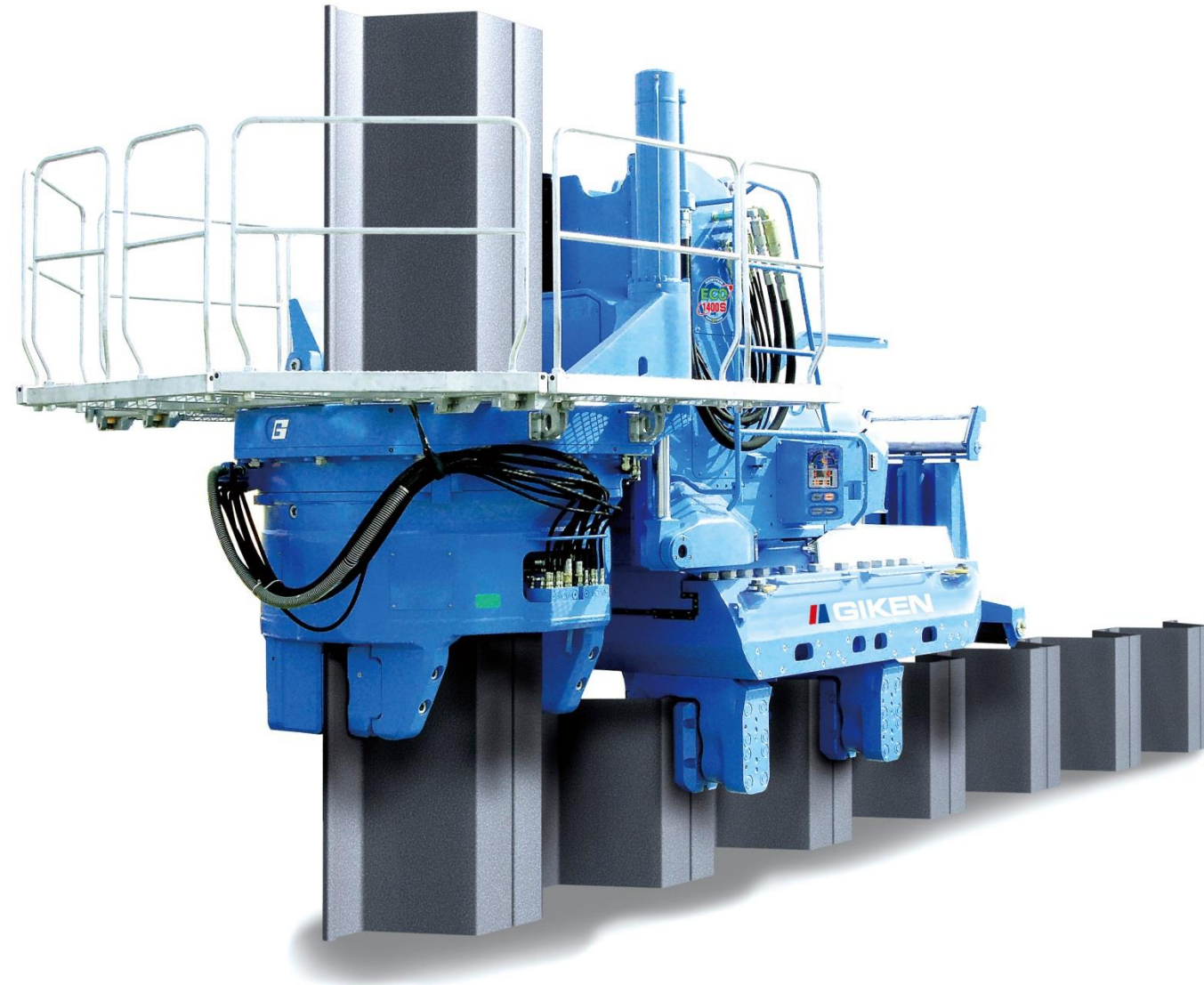
Resilient Implant Preventive Piles prevent landslide caused by strong earthquakes and torrential downpour.

Effective Design

Piles embedded into stable ground hold soils and allow excessive ground water to flow down through pile gap.

Rapid Execution

All procedure is rapidly carried out top of the piles without disturbance of daily lives and surrounding environment.



Questions?

Questions?

info@nordmetallica.com

info@shpunt.ge

THANK YOU





Saint-Petersburg Sheet Piling Works
in Residential Area



BBC, Central London Sheet Piling Works
in Commercial Area







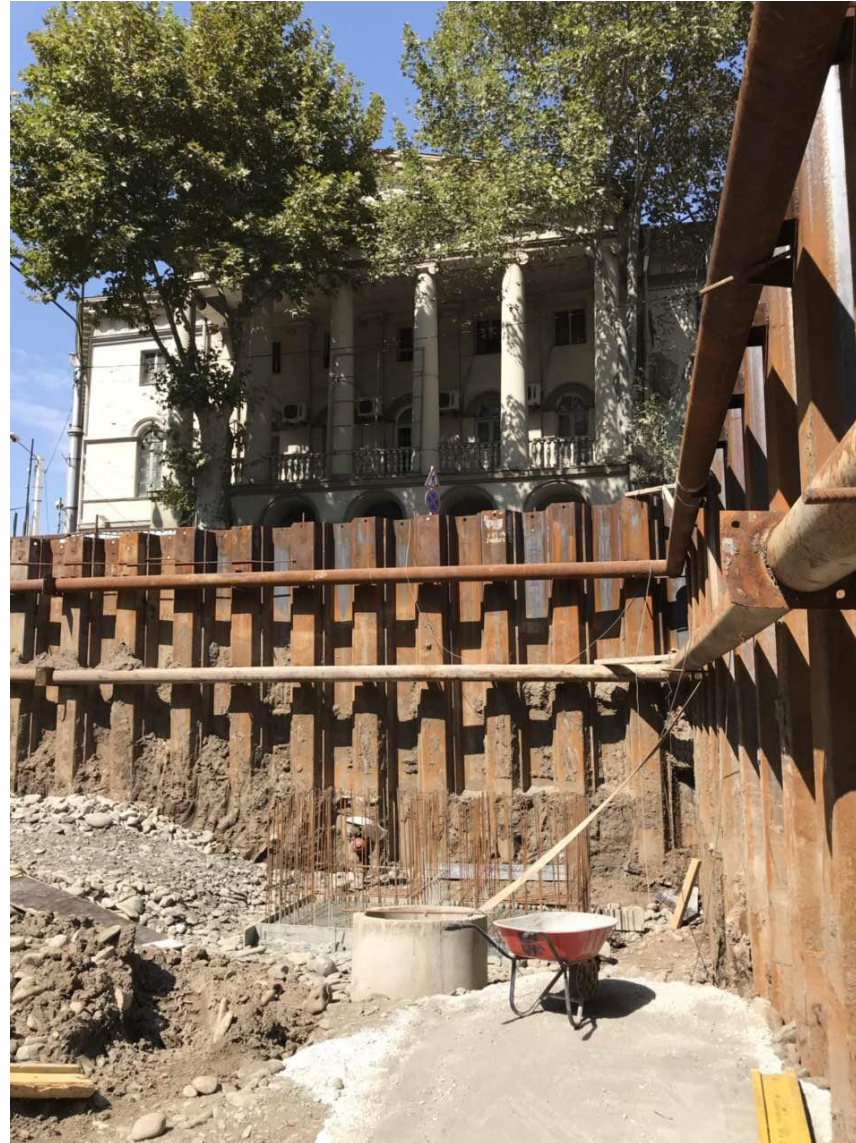




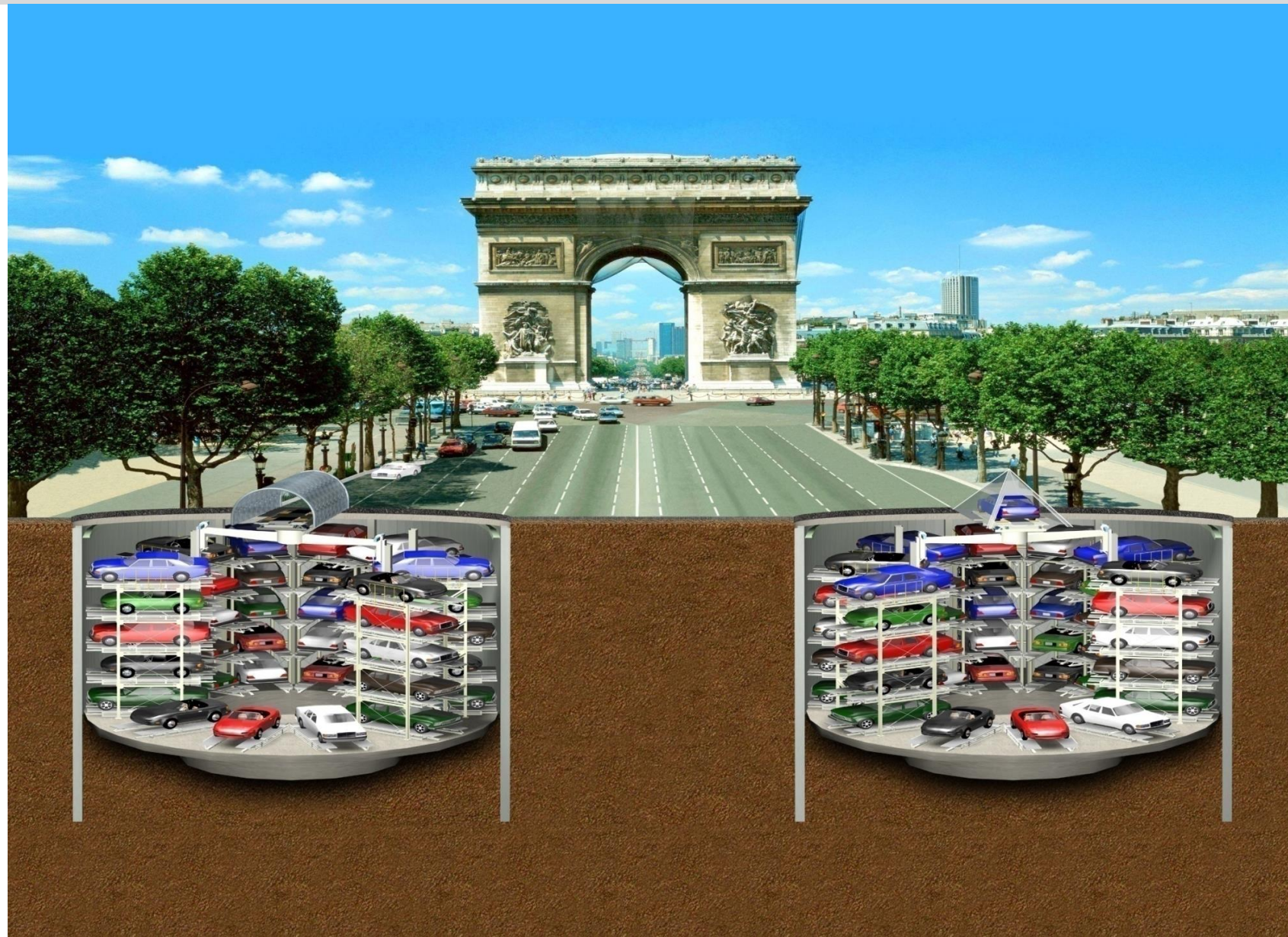














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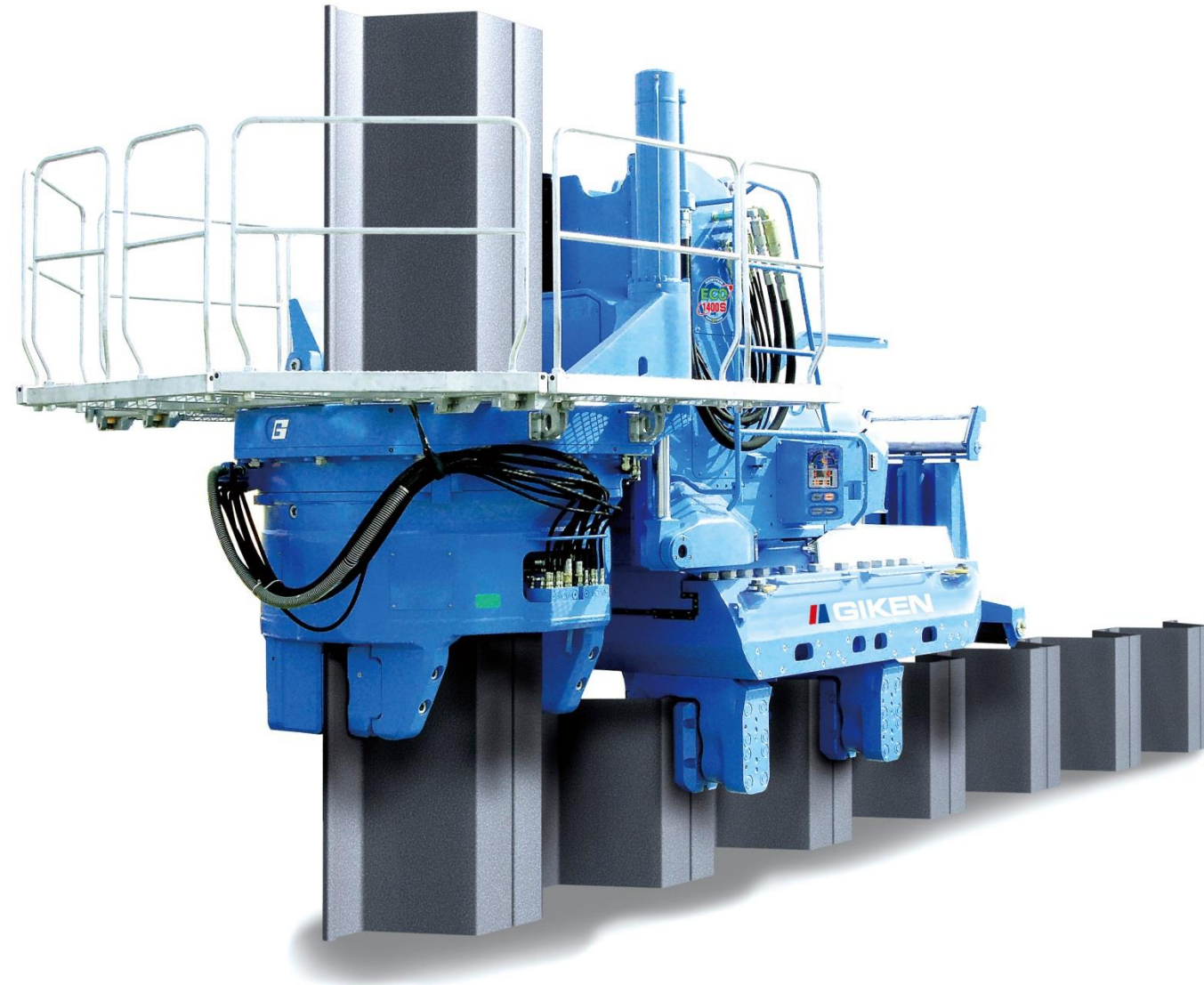
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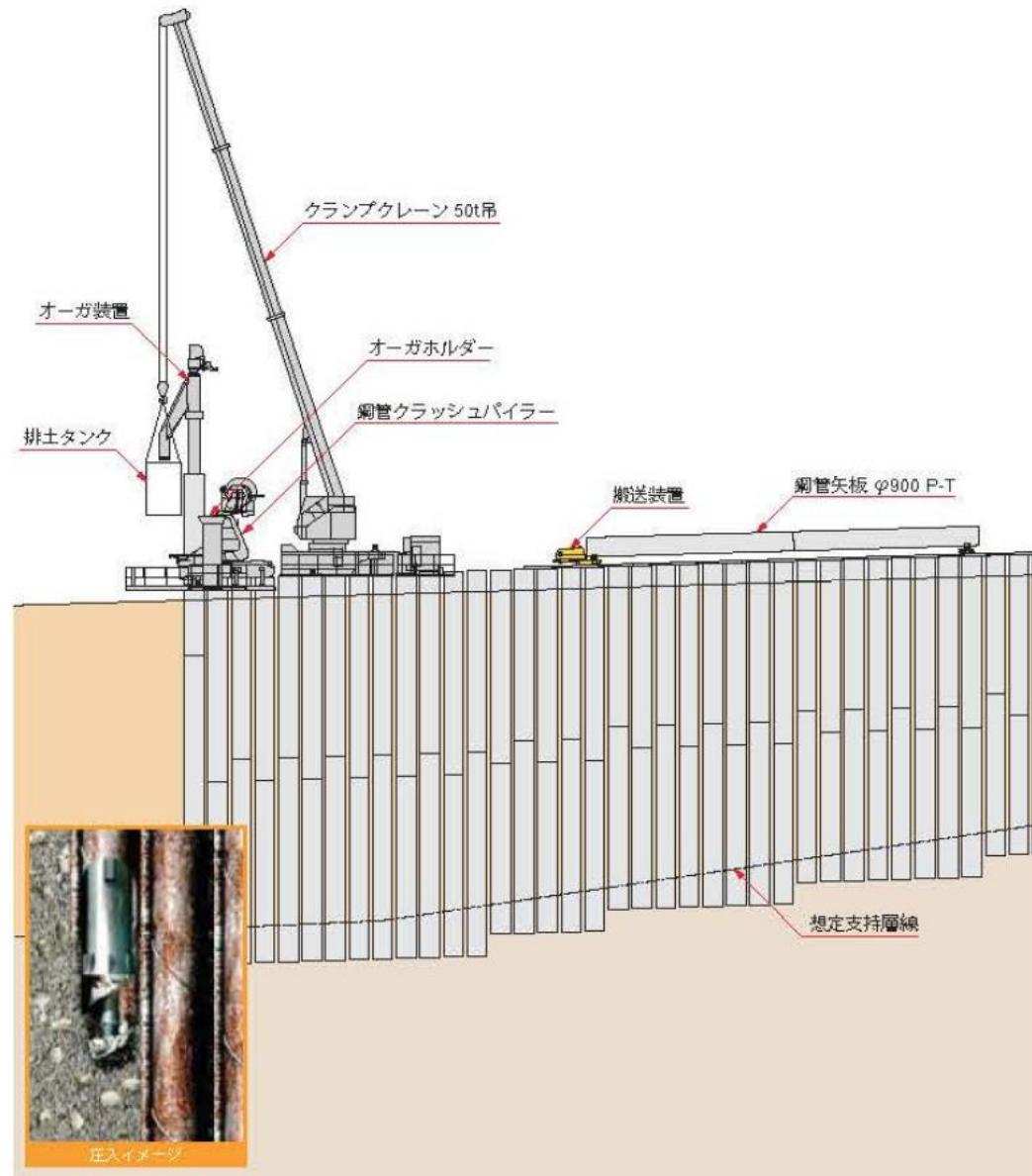
Piles embedded into stable ground hold soils and allow excessive ground water to flow down through pile gap.

Rapid Execution

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Steel-Intensive Basement



THE PENETRATION TECHNOLOGY

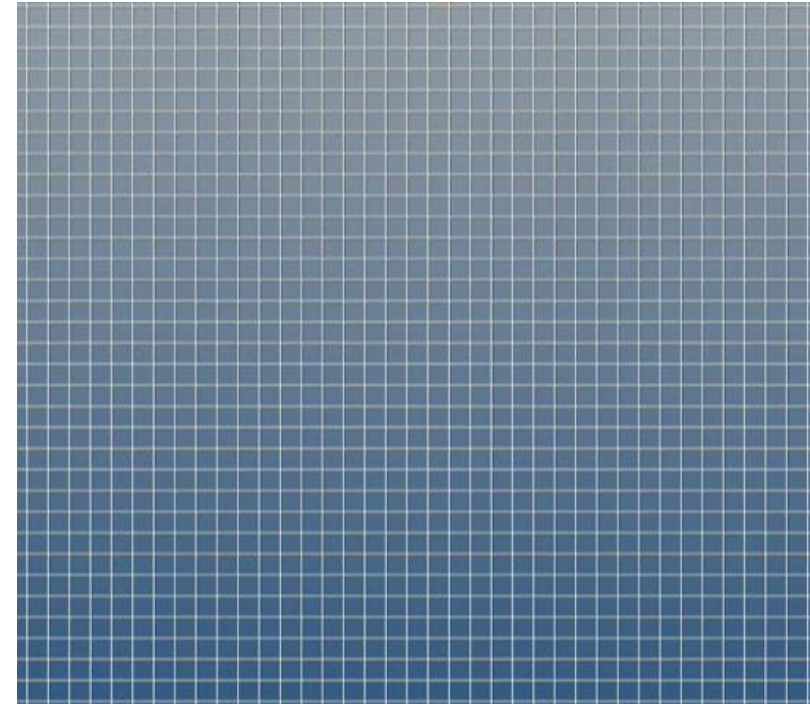
Press-in Mechanism: Initial Piling



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THE PRESS-IN PRINCIPLES

Press-in a Pile using Static Load



Pressure Bulb