

Global Technology Initiative

# GTI Consortium

16:30～16:50 事例報告②

産学官連携グローバルPBL実例紹介

**Introduction the Global Project Based Learning  
in Industry-Academia-Government Collaboration**



三信建設工業株式会社

**SANSHIN**  
CORPORATION

# Civil Engineering Global PBL



**PBL activities started in 2019, now 6th time  
Japan 4 times 、 Thailand (Bangkok) 2 times**

# Company Profile

<b>Name</b>	三信建設工業株式会社
<b>English name</b>	<b>SANSHIN CORPORATION</b>
<b>Established</b>	<b>1956 / 11 / 16</b>
<b>Business</b>	<b>Special grout treatment and improvement techniques</b>
<b>Staff</b>	<b>190 ( engineer and staff )</b>
<b>License</b>	<b>Granted by Minister of Land, Infrastructure and Transport, No.8562</b>

**2022 is our 66th anniversary !**

# Ground treatment technology in construction work

## Supporting the underground, holding down mountains, and preventing liquefaction



# Our Three Promises for the Future

## Sustain the Land

Reliable Technological Capability  
That Produces Ease and Safety  
We will sustain the social  
infrastructure.



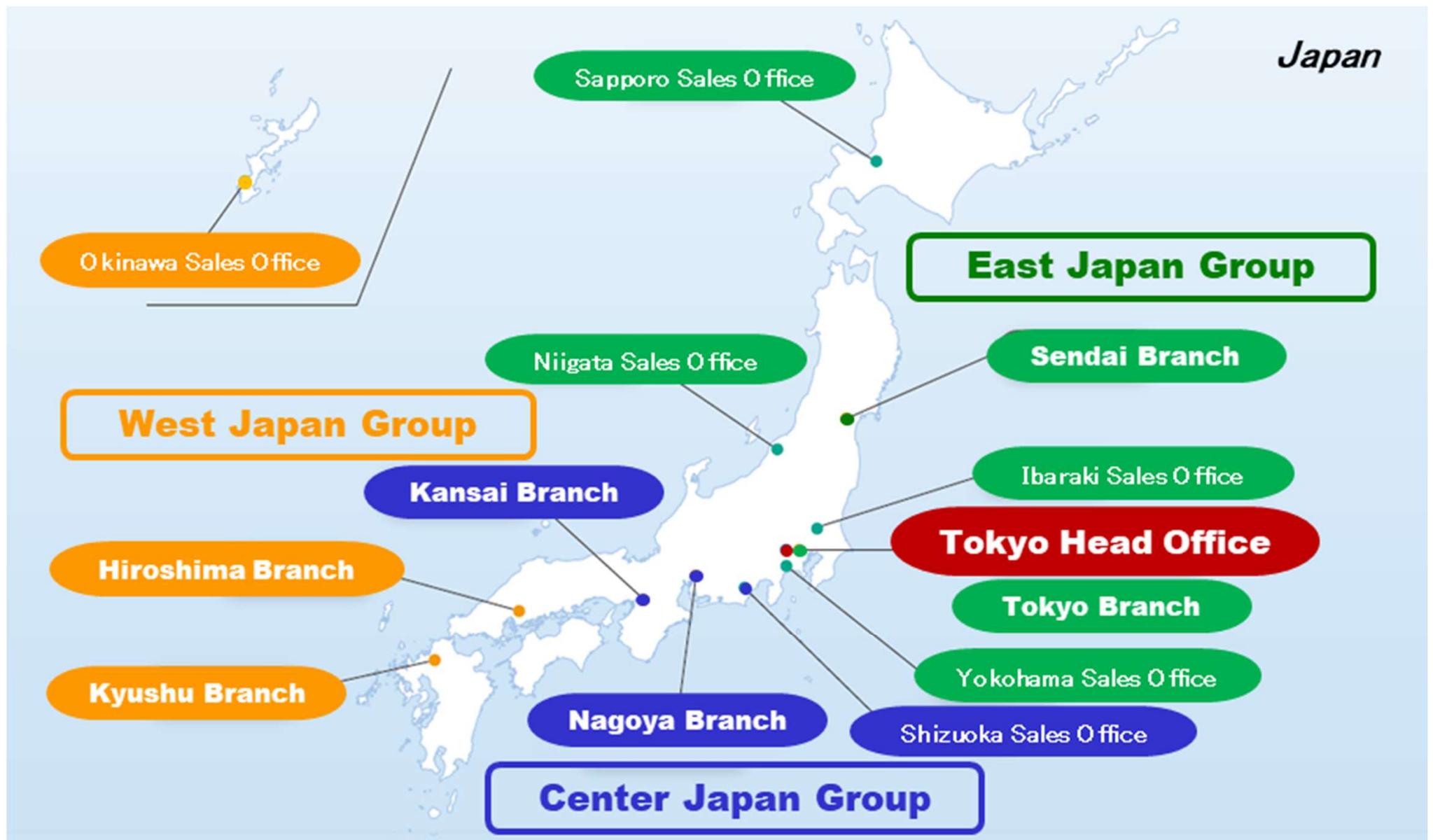
## Protect from Natural Disaster

Executive Power to Realize the Society  
Harmonizing with Nature  
We will protect the land from natural  
disaster.

## Mediate with the Next Generation

Creativity to Ensure the Future of the  
Country  
We will aim to create the sustainable  
land.

# Company Profile **organization**



# Company Profile **organization**



**Hong Kong**



**Taiwan**



**Vietnam**

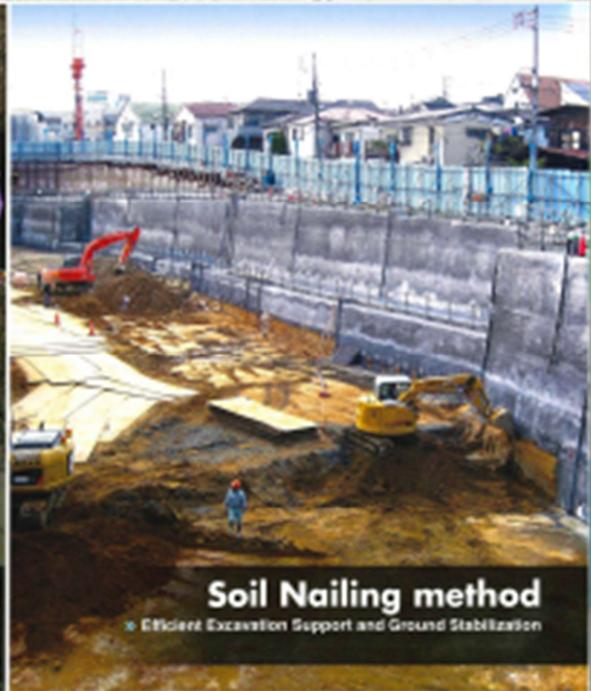
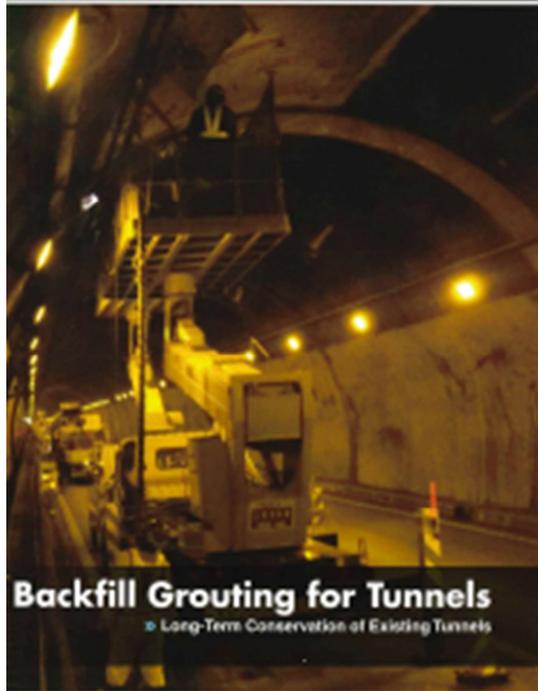


**Thailand**



**Singapore**

# Ground improvement method



# SANSHIN Corporation

## Compaction grouting method



# SANSHIN Corporation

## WILL method



# SANSHIN Corporation

## Tunnel backfill injection method



# SANSHIN Corporation

## V-JET method



# SANSHIN Corporation

## Soil nailing method



# **Global PBL example introduction**

## **Introduction the Global Project Based Learning in Industry-Academia-Government Collaboration**

**2019.2 ~ 2022.9**

# ① Memory in Japan 2019.2

Kasetsart University (KU) + 芝浦工大 (SIT) 39名



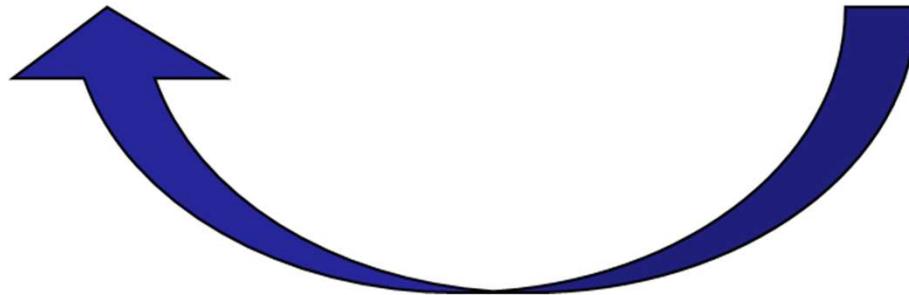
# ② Memory in Japan 2019.7

King Mongkut's University + 芝浦工大 (SIT) 37名



# ② Memory in Japan 2019.7

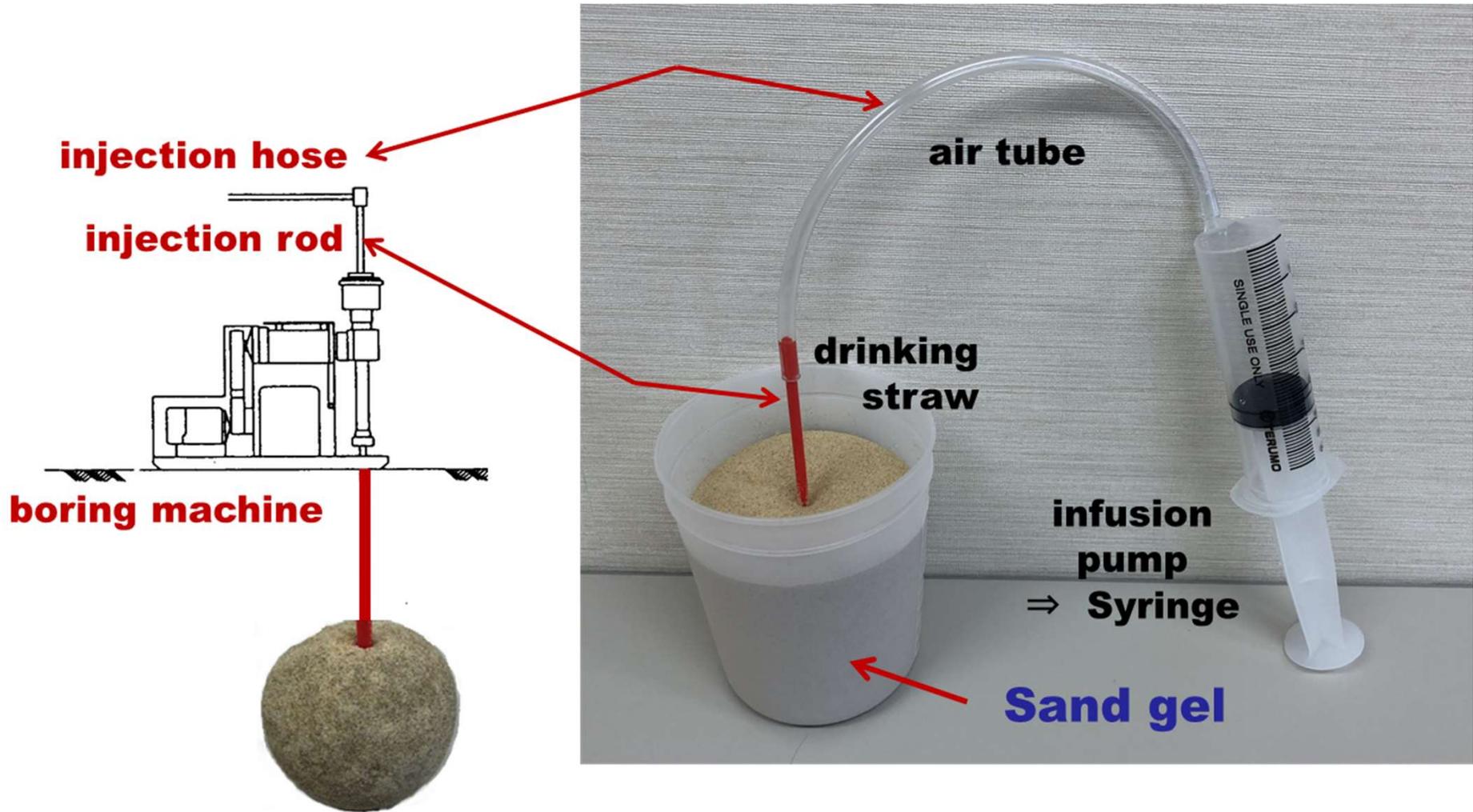
King Mongkut's University + 芝浦工大 (SIT) 37名



# Sand ground liquefaction

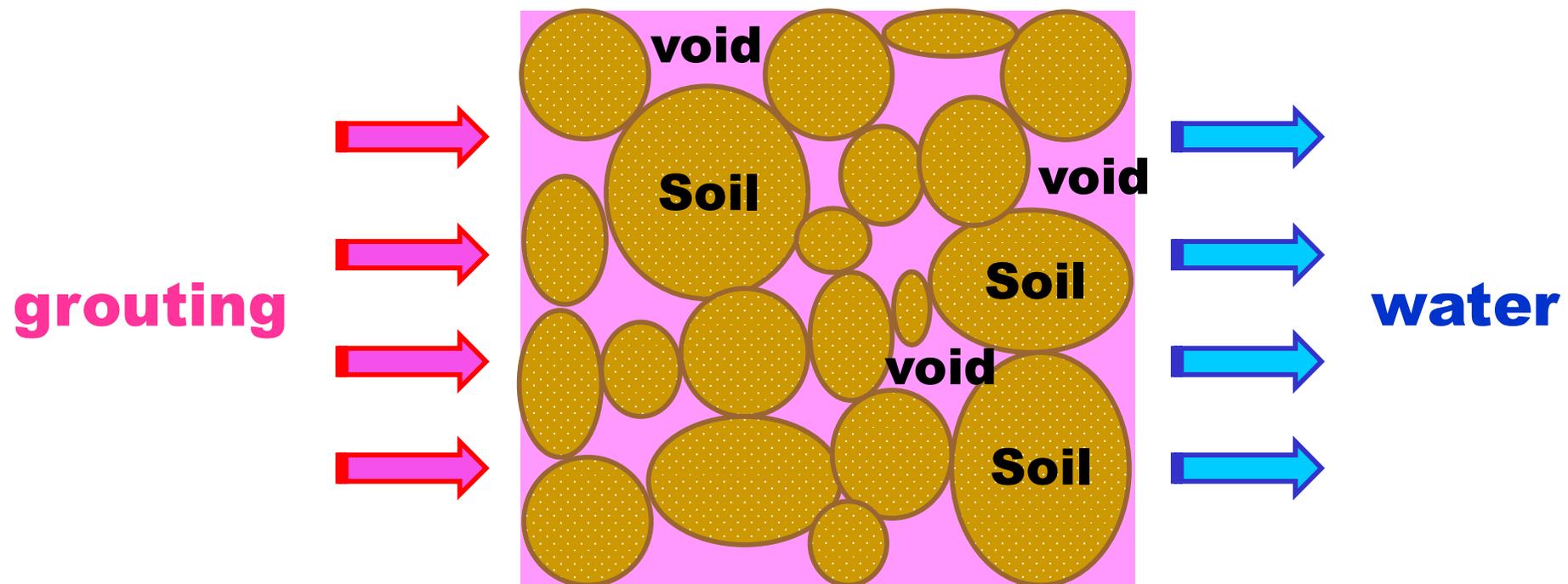


# Sand ground liquefaction and penetration experiment



# Sand ground liquefaction and penetration experiment

To push water out by grouting material that permeate and gel between soil particles without changing the soil particles Pore water

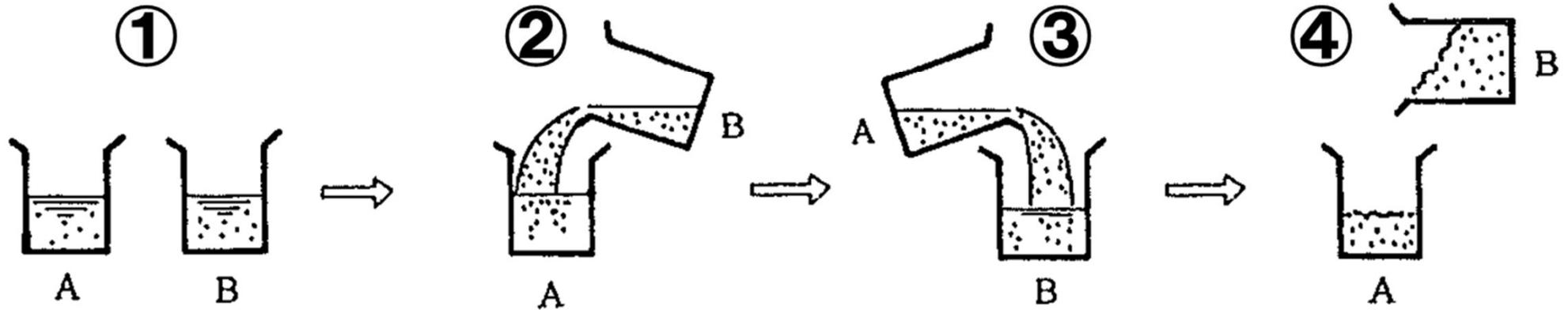


# Process of gel time test

**Solution**

**(short time setting)**

**Losing flow quickly**



**Equal amount  
of 2 liquids**



**Mixing 2 liquids**



**Gelling**

# Process of gel time test (short time setting)



# ③ Memory in Bangkok 2019.9

Kasetsart University (KU) + 芝浦工大 (SIT) 71名



# ③ Memory in Bangkok 2019.9

Kasetsart University (KU) + 芝浦工大 (SIT) 71名



# ③ Memory in Bangkok 2019.9

Kasetsart University (KU) + 芝浦工大 (SIT) 71名

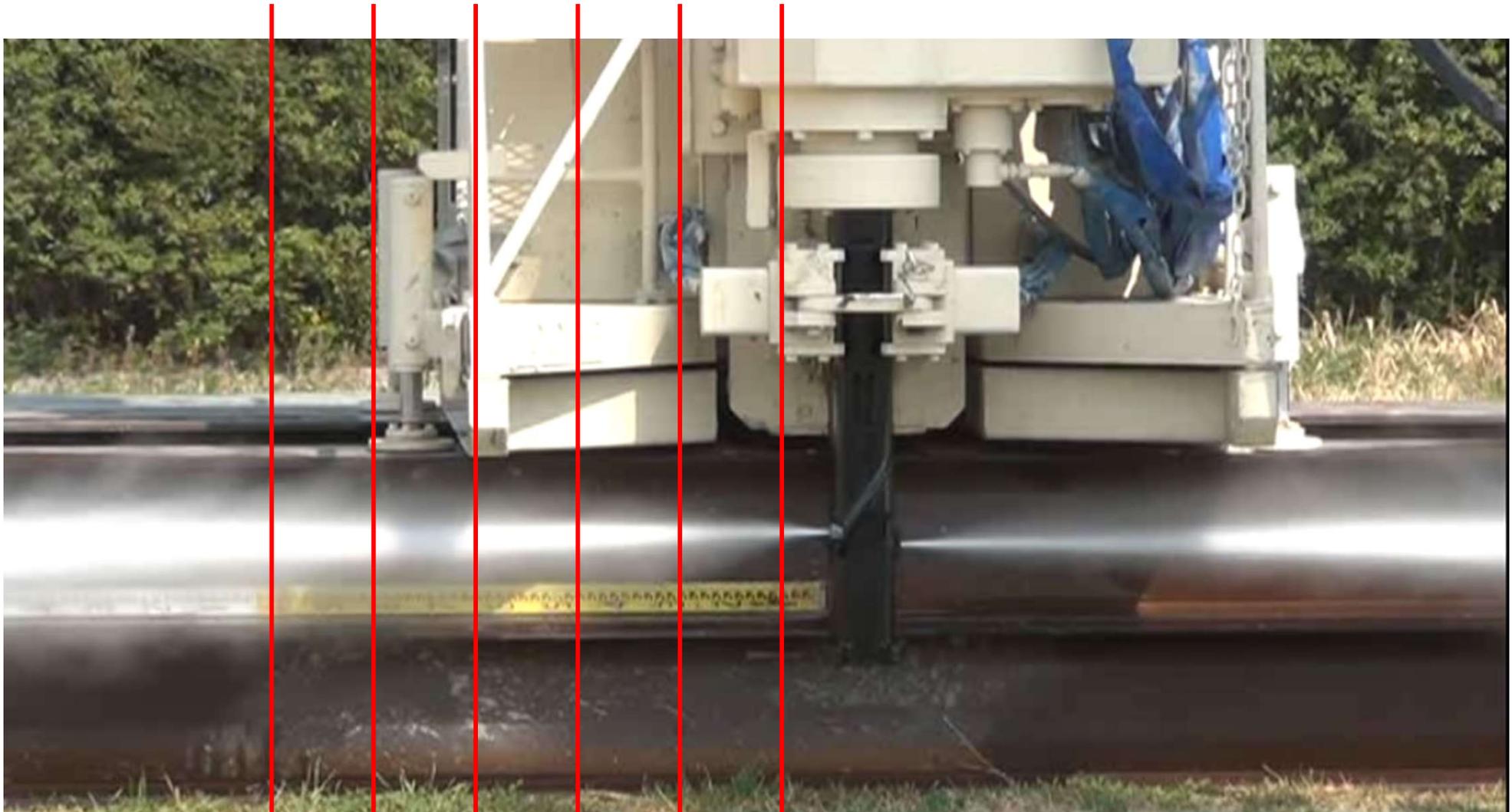


# ③ Memory in Bangkok 2019.9

Kasetsart University (KU) + 芝浦工大 (SIT) 71名



# Jet grouting method      V-JET method



5m    4m    3m    2m    1m    0

# ④ Memory in Japan 2020.2

## KU+SIT+National University of Civil Engineering

66名



# ⑤ Memory in Japan 2022.8.29

92名

芝浦工業大学 (SIT)

Kasetsart University (KU)

Asian Institute of Technology (AIT)

Suranaree University of Technology (SUT)

Hanoi University of Civil Engineering (HUCE)



# ⑤ Memory in Japan 2022.8.29

92名

芝浦工業大学 (SIT)

Kasetsart University (KU)

Asian Institute of Technology (AIT)

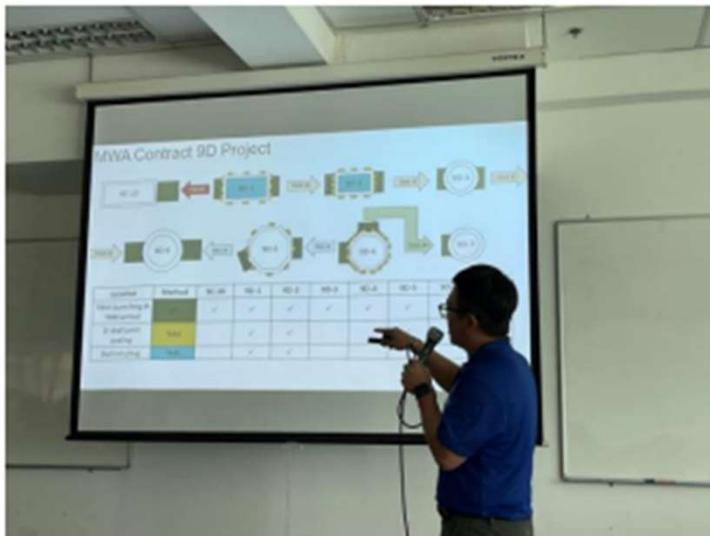
Suranaree University of Technology (SUT)

Hanoi University of Civil Engineering (HUCE)



# ⑥ Memory in Bangkok 2022.9.16

Kasetsart University (KU) + 芝浦工大 (SIT) 73名



# Overseas projects



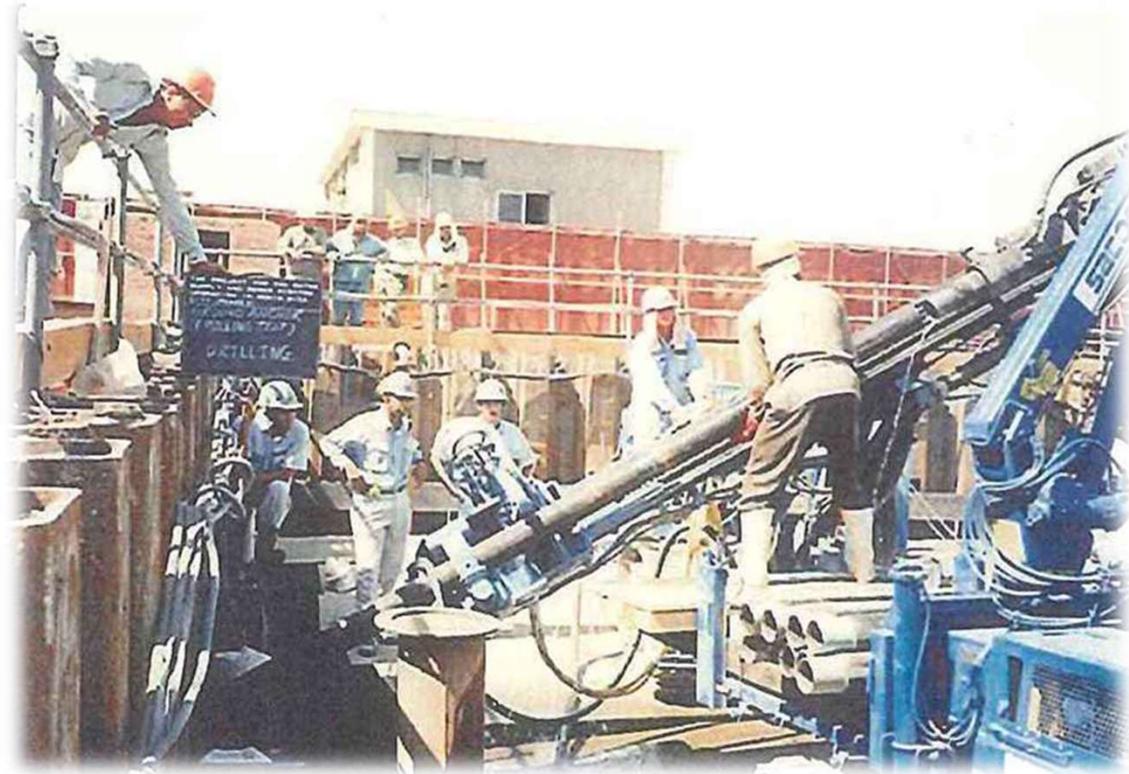
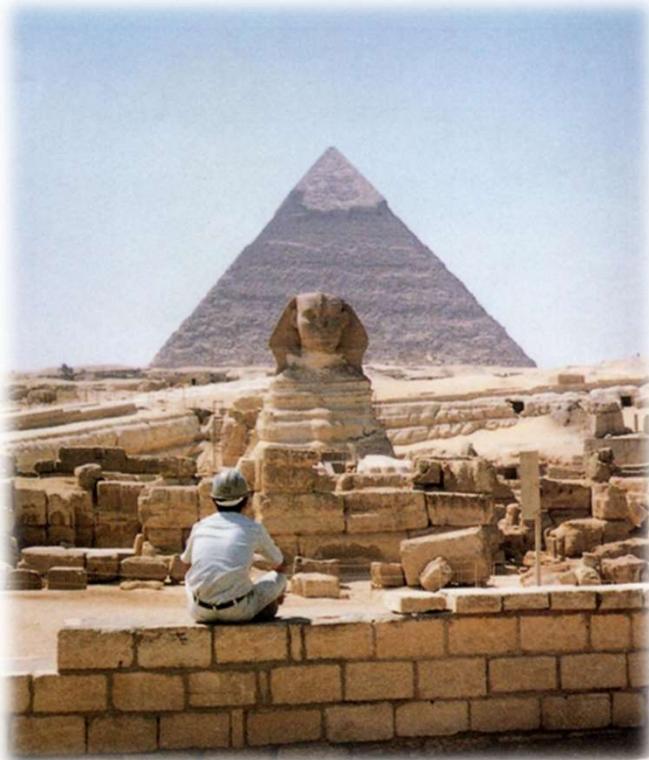
# Singapore

## Singapore subway construction **Jet grouting method**



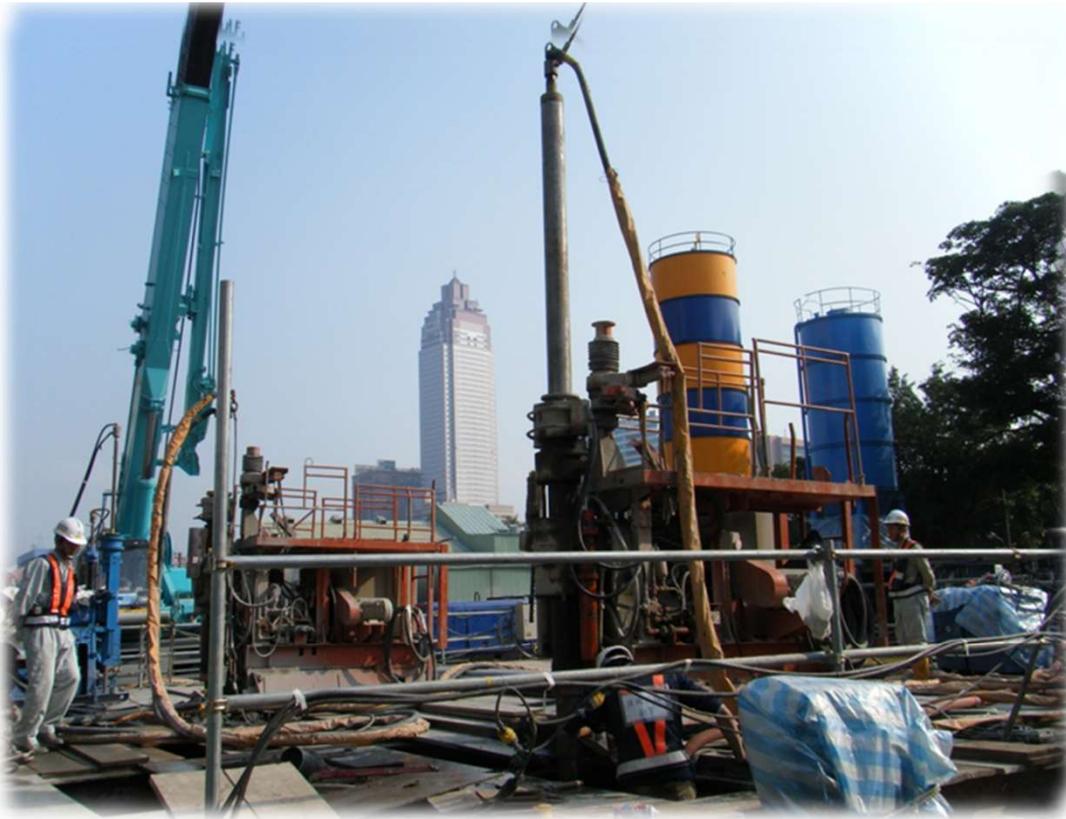
# Egypt

## Water and sewerage construction Ground anchor method



# Taiwan

## Airport line contract Jet grouting method



## MRT contract Chemical grouting →



# Taiwan

## Coal Ash Disposal Site **WILL construction method**



# Hong Kong

## MRT contract **Drilling condition**



# Malaysia

## Large-scale land reclamation work ground improvement **WILL method**



# Thailand Bangkok

## Jet grouting method



# Thailand Bangkok

## Jet grouting method



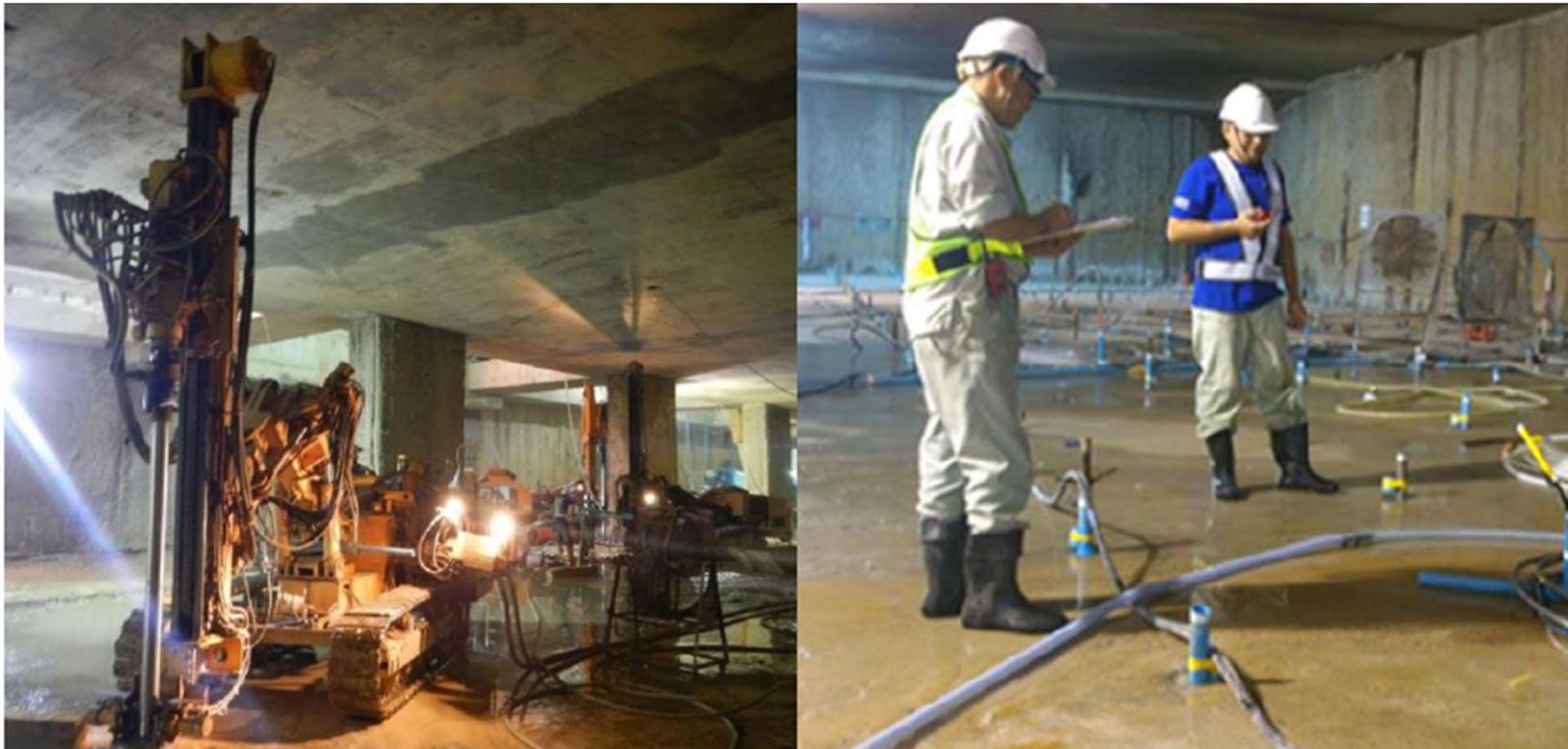
# Thailand Bangkok

## Ground improvement method ( Permeation grouting method )



# Thailand Bangkok

**Subway Station**  
**Implemented large-scale grouting**  
**work using the **double packer method****  
**to improve the bottom slab**



# Germany Berlin

**Excavation protection in the immediate vicinity of the adjacent existing building**  
**Jet grouting method ( V-JET method )**



**THANKYOU FOR YOUR  
ATTENTION!**

**SANSHIN**  
CORPORATION

