

Construction Management for Narakium Yeoksam-dong A&B Building



SHINHWA
ENGINEERING | ARCHITECTURE

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I. Project Outline

Narakium Yeoksam-dong A&B Building



Building Site

35 Seolleung-ro 93-gil, Gangam-gu, Seoul
40 Seolleung-ro 93-gil, Gangam-gu, Seoul

Facility Usage

Office & Retail

Space Planning

[A-Building] B1/F7
[B-Building] B2/F8

Total Costs

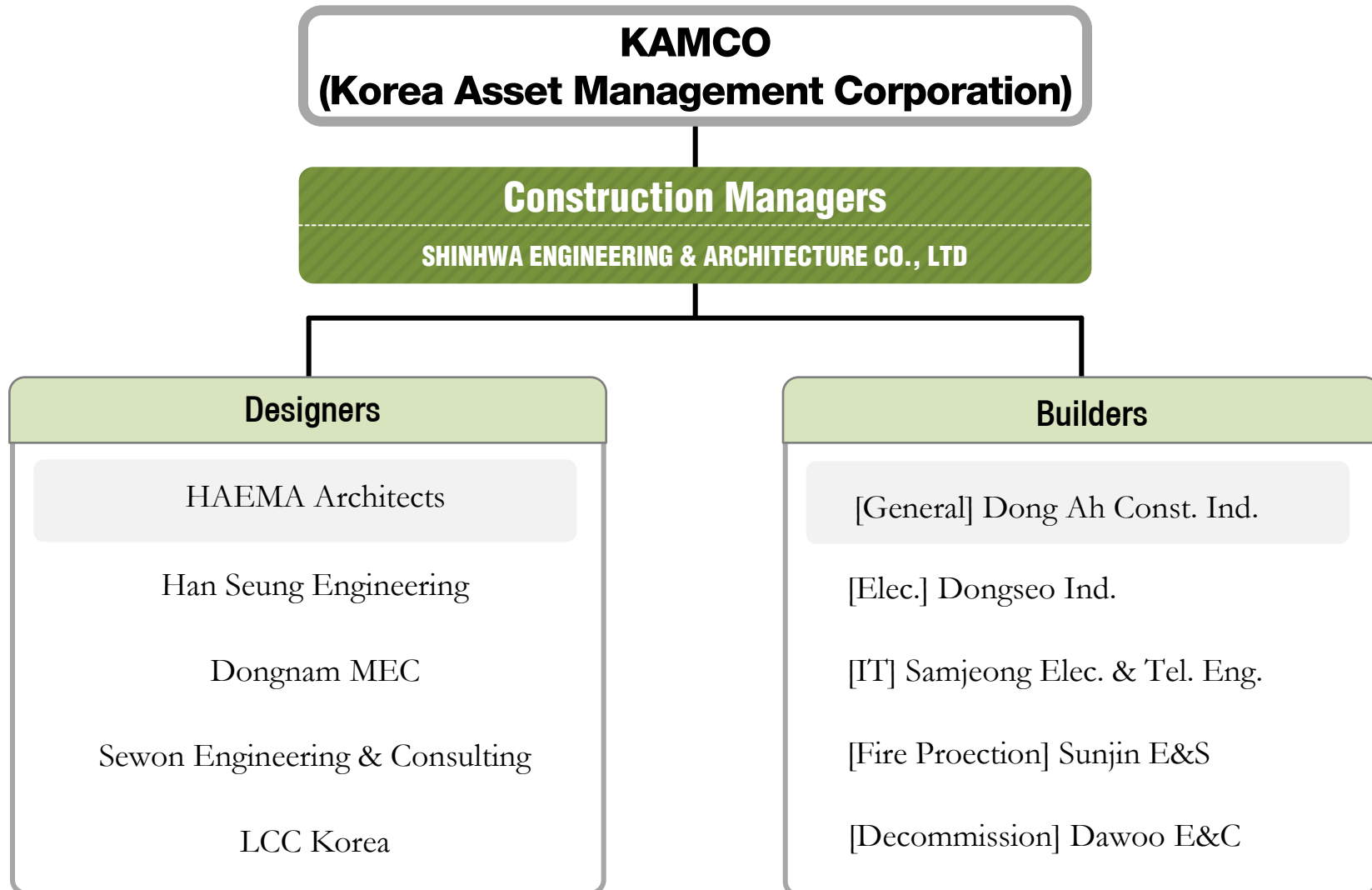
KRW 31.5b

Bidding Process

Design-Bid-Build
(Architecture Competition)

Service Period

Jan.'16 ~ Aug.'18 (32mths)



1.3 Project Time Frame

I. Project Outline

Jan. 16

Jun. 16

Sep. 16

Feb. 17

Jul. 18

Aug 18

CM
Commencement

Design
Completion

Construction
Commencement

Decommissioning
previous facilities

Construction
Completion

CM Completion

Earthworks

[Mar. 17 ~ Aug. 17]



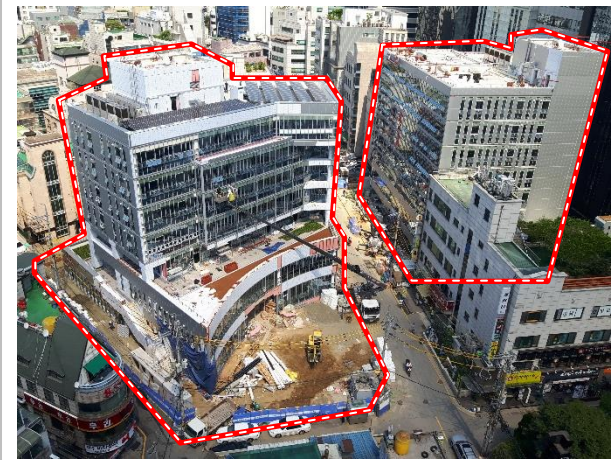
Framing

[Aug. 17 ~ Mar. 18]



Completion Stage

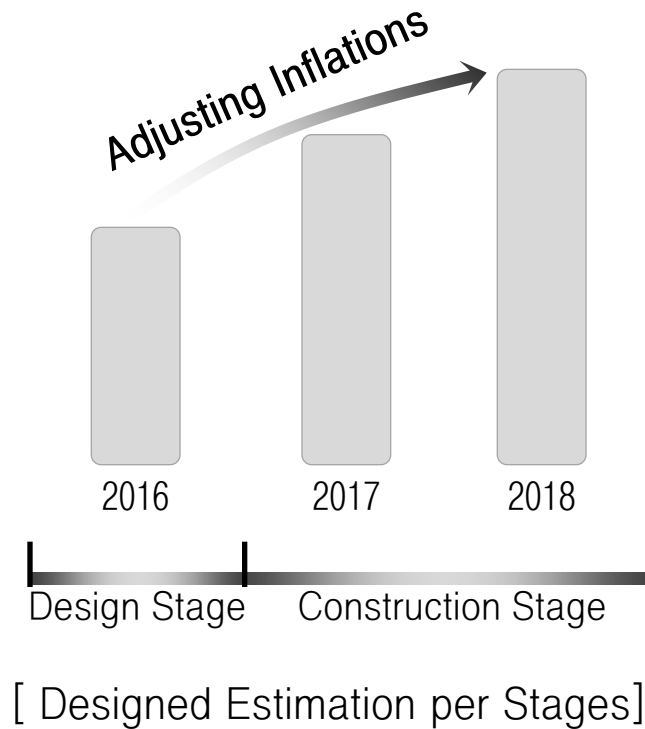
[Nov. 17 ~ Jun. 18]



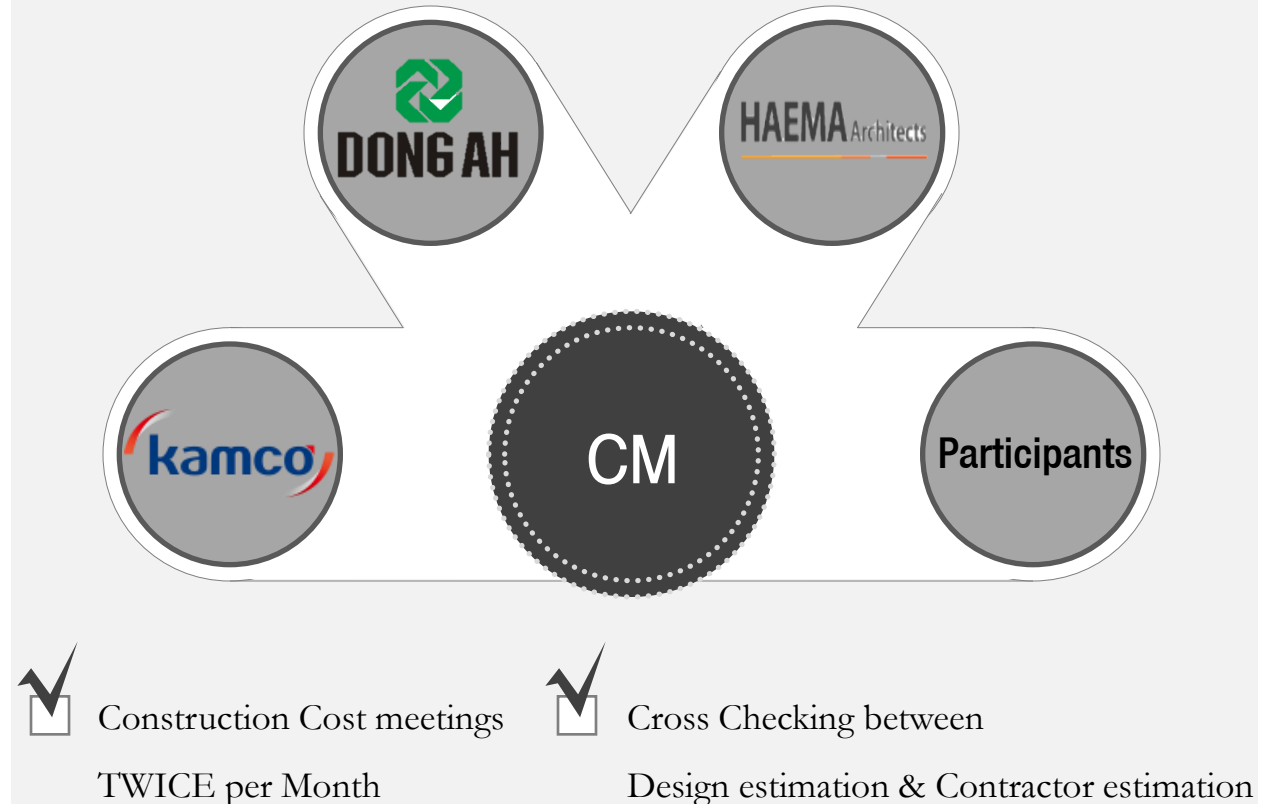
II. Main Tasks

Project Participants' Disputation Risks

Increasing Construction Costs



Forming Construction Cost Consultation Group



➔ **Maximizing the Owner's Interests
by being Discipline Coordinator**

Seoul Public Construction Budget Standard

A bar chart titled 'Seoul Public Construction Budget Standard' comparing three construction types. The vertical axis is labeled '[₩1k/m²]' and has tick marks at 0, 1,000, and 2,000. The horizontal axis lists the categories: 'Mixed Commercial & Offices', 'Public Offices', and 'Narakiyung Yeoksam A&B Building'. The bars have values of 2,356, 2,267, and 2,164 respectively. A bracket above the first two bars indicates an average of ₩2,311k. Greater-than symbols (>) are placed between the bars to show a decreasing trend.

Category	Budget Standard (₩1k/m²)
Mixed Commercial & Offices	2,356
Public Offices	2,267
Narakiyung Yeoksam A&B Building	2,164

Avg. ₩2,311k

₩1k/m²

2,356

2,267

2,164

Mixed Commercial & Offices

Public Offices

Narakiyung Yeoksam A&B Building

※ Ref.:Seoul City Engineering Examiner Officer

₩ 2,164,000 per m²

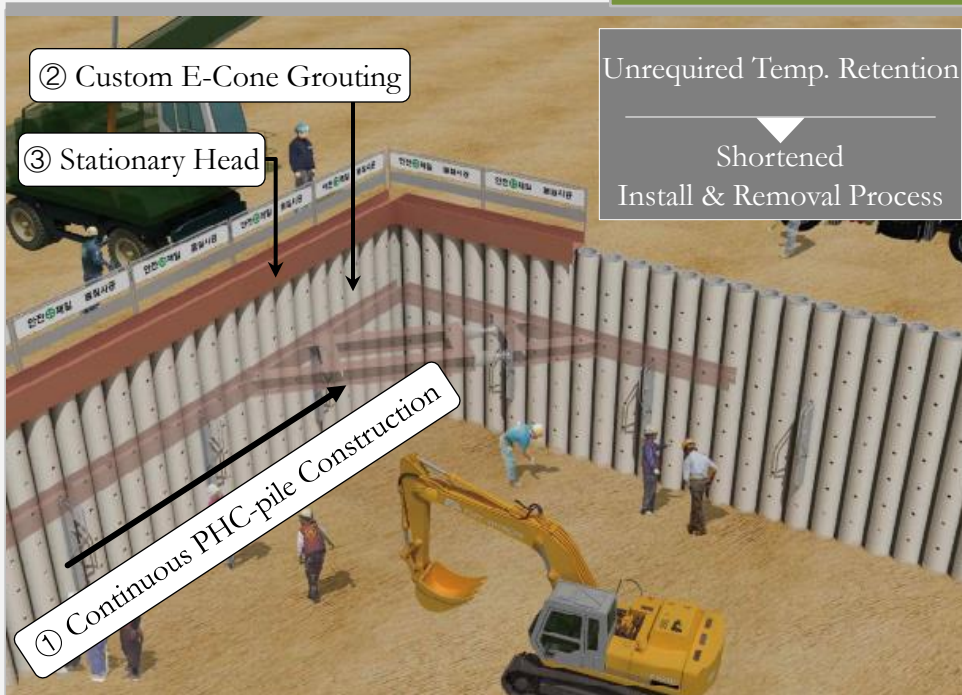
Decommissioning Budget ~~W~~600M short

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400 mill won Cost Saving by Adopting New Construction Technology

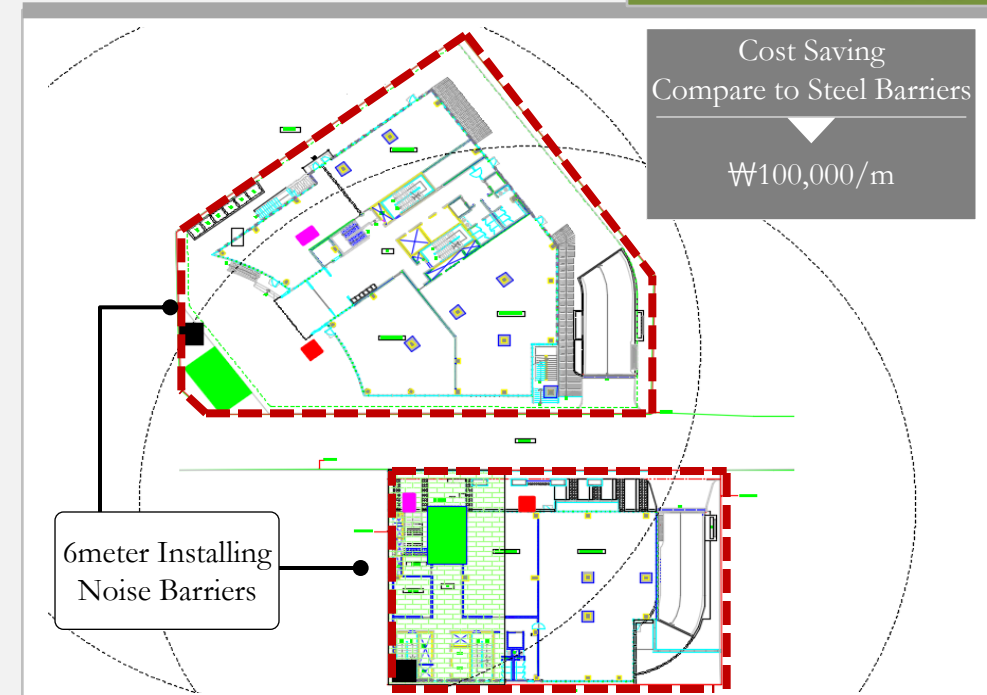
E-Cone Wall Pile
Jumbo Special Pattern
(JSP) Method

↓ **210** mil.
KRW



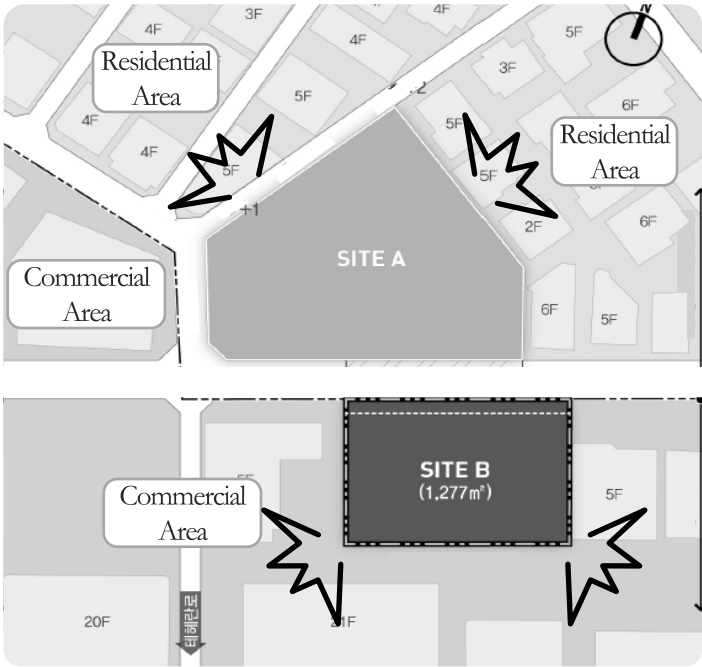
Sustainable Noise Barriers
(Recycled Plastic Panel: RPP)

↓ **190** mil.
KRW



Complaint Risk Concern on Rock Blasting

Neighboring Residential & Commercial Area



Changed Rock Blasting Method

	Designed Method	CM Proposal
	Controlled Blasting Method	Hydraulic Splitting Method
Equipment	Emulsion Explosive	Power Core Drill(PCD)
Vibration		
Noise		
Dust		

➔ ZERO Complaint from Neighboring Residents & Workers

Adopting Safety Management Inspection System to Workers

Weekly Analyzing Risk Factor

Select Risky Works
/ Analyzing Work Plans

Daily Daily Safety Meeting

Share all Info. regarding
Risky Works & Safety Actions

Regularly Inspection

Timely Inspection/Mobile Based
Corrective Action & Improvement
Data Gathering



Customized Safety Management Manual

“Assisting Site Inspection”



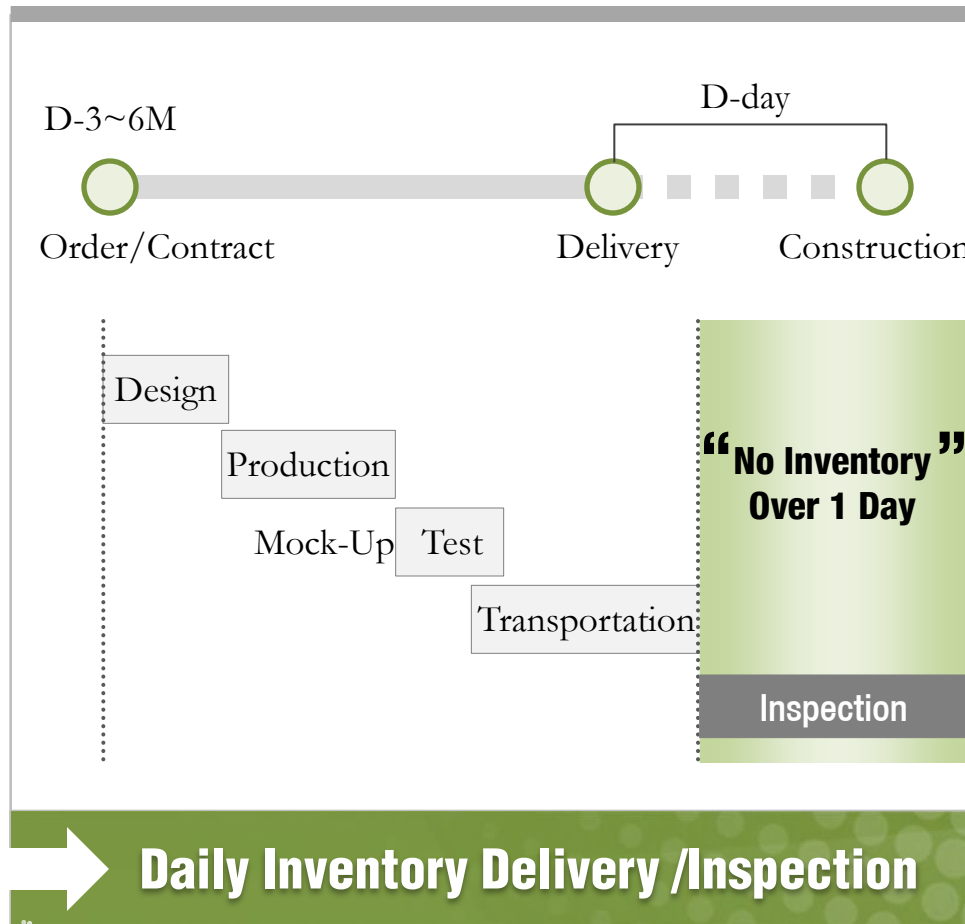
	Check Lists	Results
Neighboring Facilities	Trespassing Plan	Restricted after Workhour
Transportation Safety	Information Detour Plan for Pedestrians & Cars	Average
Temporary Works	Fall Prevention Plan	Average
Excavating Works	Neighboring Structural Safety Plan	Install Temporary Retention first
Safety Education	Regular Safety Education Plan	Implemented

➔ Rank #1 CM firm in Public Construction Safety Management

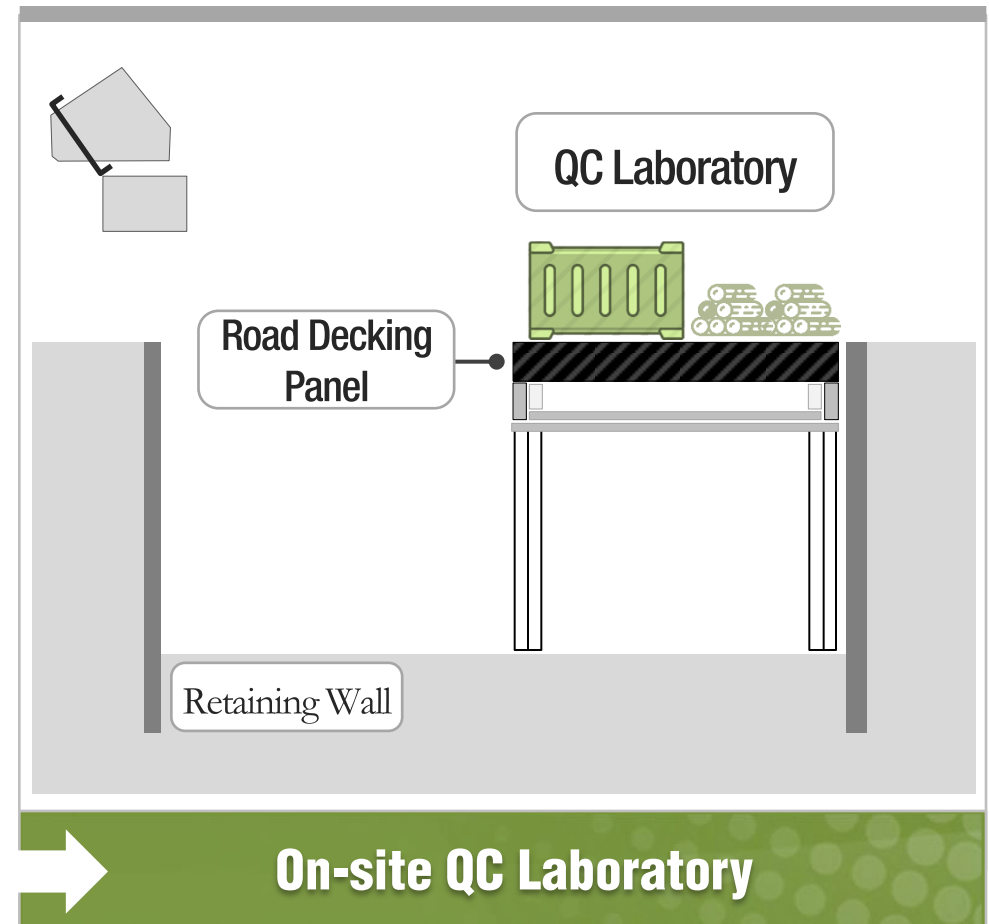
III. Value Management

3.1 Lack of Inventory Space (Small Construction Site) III. Value MGT

Just-In-Time(JIT) Inventory System

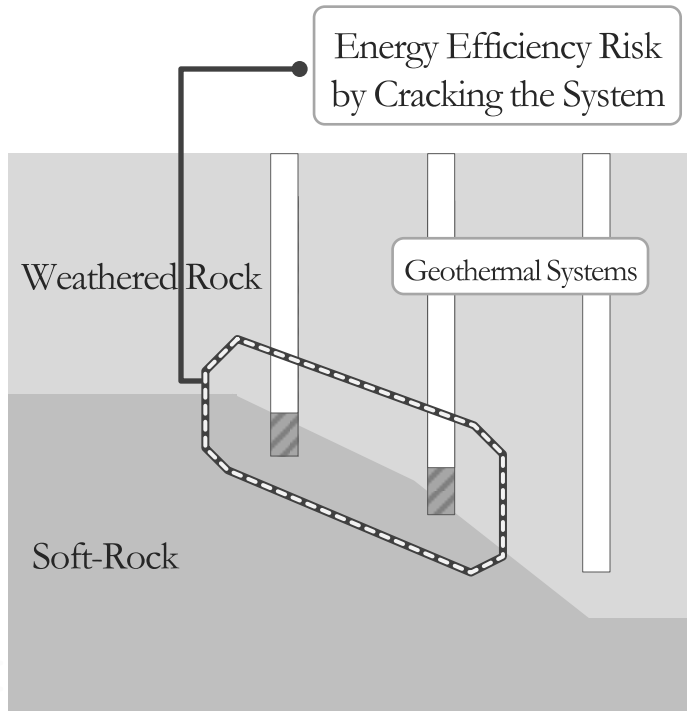


Install Road Decking Panel above Excavation site



Collapse of Borehole Risk in Soft-Rock Layer

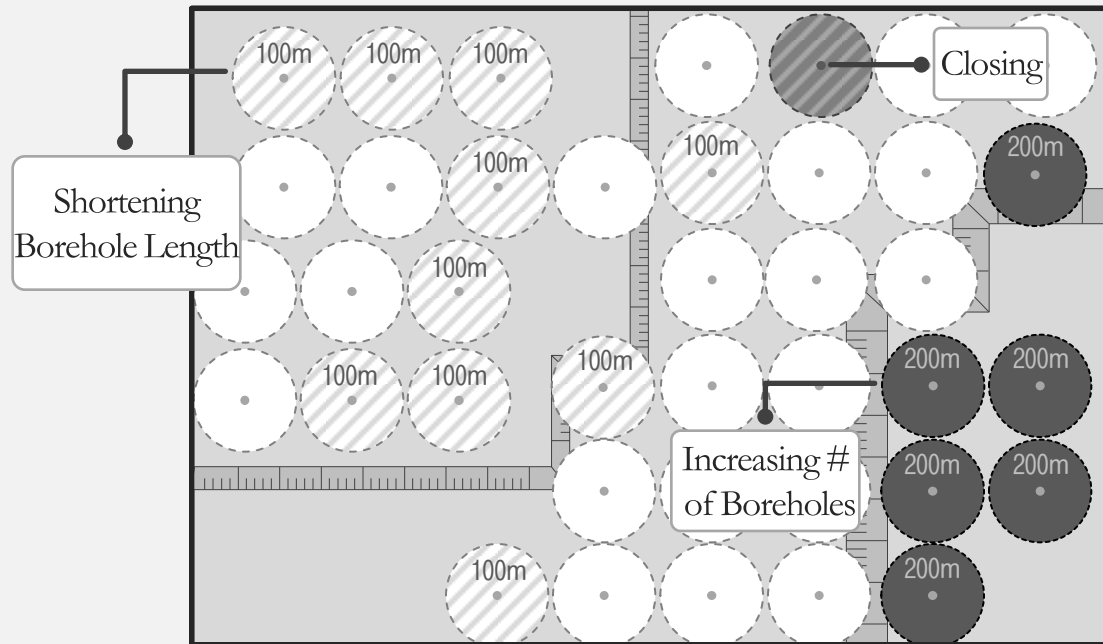
12 Boreholes
among 33 boreholes



Changing Geothermal System Design

33 boreholes at 200m depth
Geothermal system

28 boreholes at 200m depth
10 boreholes at 100m depth



Securing Geothermal System Quality

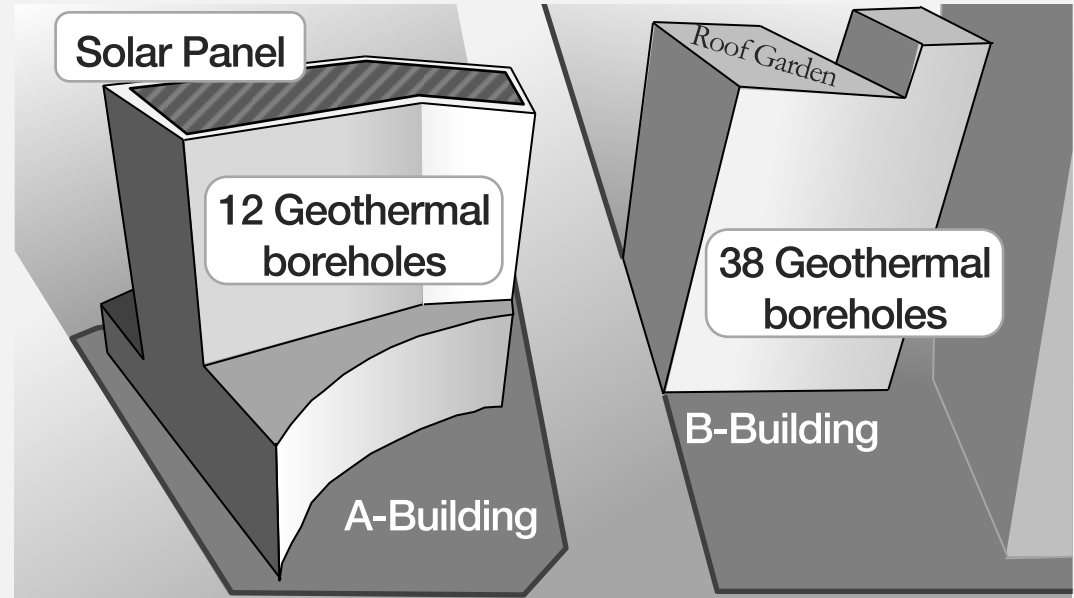
3.3 Solar Efficiency Control (Neighbor' 21fl Bld. nxt B) III. Value MGT

Foreseeable Energy Loss

due to Inefficient Sustainable
Energy System Design



Solar Panels only on the A-Building



	Solar Capacity	Energy Production	Geothermal Capacity	Energy Production
A-Building	34.02KW	191,265kwh/m ² ·yr	130.17KW	186,331kwh/m ² ·yr
B-Building	-	-	465.76KW	666,733kwh/m ² ·yr



Increasing Sustainable Energy Efficiency

IV. Project Management Attention

Facade Design (Design Oriented)

Quality and Accuracy Risk due to the Contractor's inability to finish the Façade works



**Select
Good Contractor**

Public Procurement Material Ordering Management

Increasing Construction Costs & Material Changes due to the price gaps between the Selection period of Public Procurement Materials and Ordering period



**Improving Bidding
Process concerning
Construction
Cost & Period**

20% Construction Period shortage

2mth short on Construction period comparing to similar cases
52hr per week Work Limit Law & No Sunday Work Law



**Realization on
Construction Period**

The Only 1 Construction Management company operates
Quality Control Laboratory in Korea

Total Engineering
Service



Work Net
Information Sharing