



DESIMONE

NV5 Delivering Solutions
Improving Lives



AMAN

AMAN HOTEL & RESIDENCES
BASEMENT APPLICATION

3425 COLLINS AVE.
MIAMI BEACH, FLORIDA

HISTORIC PRESERVATION BOARD
MAY 11th, 2021

VERSAILLES HOTEL

CONSTRUCTION SIQUENCING

OKO & 3425 Collins Developers have assembled an experienced team of engineers to study and develop a construction sequence to ensure the integrity of the Versailles Hotel structure during construction of the basement & the building's slab replacement, the team consists of:

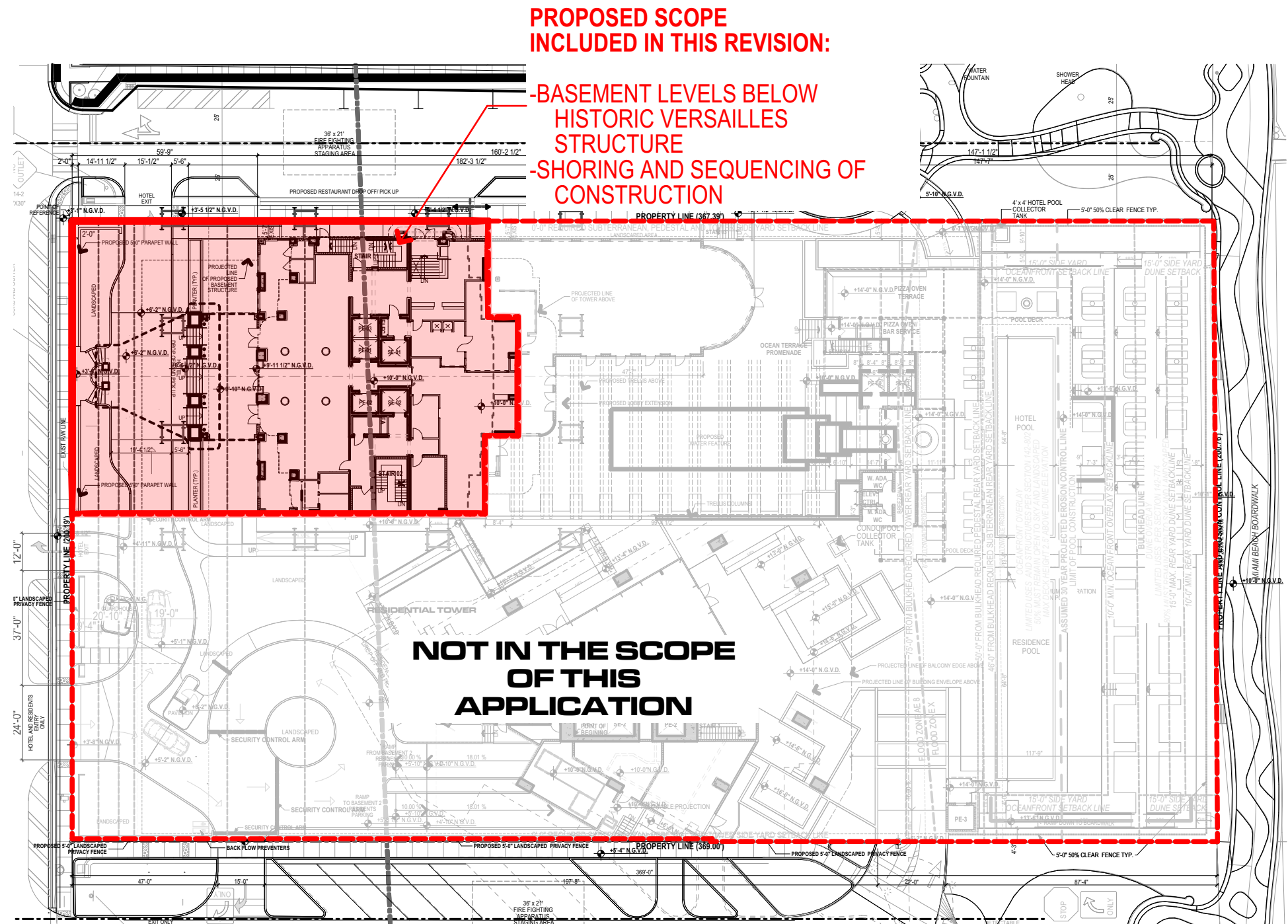
DeSimone Structural Engineers – Structural
NV5 – Soils Engineer
Youssef Hachem, Ph.D – Shoring Engineer
Keller – Soil & Pile Contractor
Civic / Ant Yapi – General Contractor



The team has surveyed & conducted testing of the existing structure and surrounding grounds to help formulate the sequencing.

SCOPE OF BASEMENT APPLICATION

Condition I(C)(1)(d) of the consolidated order requires a licensed engineer to provide additional information regarding the excavation and construction of the three-level basement as well as information regarding the contractor's experience in successfully completing projects of similar magnitude, to be reviewed by the Board.



Keller North America

Role and Similar Experience

Andres M. Baquerizo

Foundation and Basement Contractor

- 2019 Roebling Award – ASCE National Level
- Vice President for Keller North America Florida BU
- Leader for Keller Global CFA team
- 1200+ Foundation projects
- 100+ excavations/basements
- 80+ Tremies/Soil mix Basements

Experience

- Aston Martin
- Estates at Acqualina
- Monad
- 601 Washington
- Raleigh Hotel
- Oceana Bal Harbour
- Auberge Condominiums
- Residences by Armani
- Turnberry Ocean
- Optima Plaza
- River Landing
- Ocean Wave
- Via Mizner (II, III)
- 830 Brickell



Oceana Bal Harbour



830 Brickell

Keller North America

Role and Similar Experience

Quality assurance

With 40 years of experience, working across the globe, Keller has seen and completed more jet grouting projects than any other contractor in the world. Our robust design, testing procedures and experience provide us confidence in knowing when the technique can be used and also most importantly what the limits of application are.

Keller's proprietary data acquisition (DAQ) system enables us to continuously monitor and record specific jet grout parameters at the rig. The DAQ interface provides real-time information to the drill rig operator, while the column construction data is uploaded wirelessly to a server soon after completion to be used for report generation. These reports can then be reviewed in near real-time by project management and submitted to the client.



DESIMONE CONSULTING ENGINEERS

Role and Similar Experience

Luis Ramirez, PE, SECB

Structural engineer

DeSimone Consulting Engineers has been the structural engineer for a number of concrete restoration projects on Miami Beach as well projects with multiple levels of basements adjacent to the ocean.



Experience

- The Surf Club
- Saxony Hotel
- Faena Arts Center
- Faena House
- Ritz Carlton South Beach
- One Hotel and Homes
- The Raleigh Expansion
- Wyndham Gardens
- Four Seasons Fort Lauderdale
- 830 Brickell
- UNA
- Oceana Bal Harbour
- Oceana Key Biscayne
- Turnberry Ocean Club
- Manadrin Oriental at Via Mizner



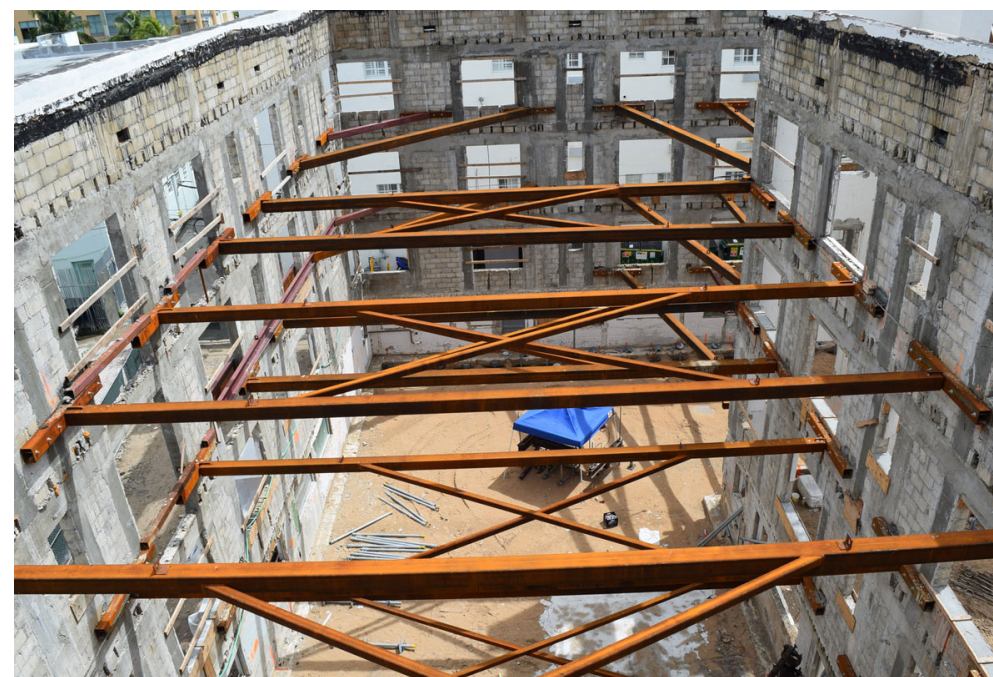
YHCE

Role and Similar Experience

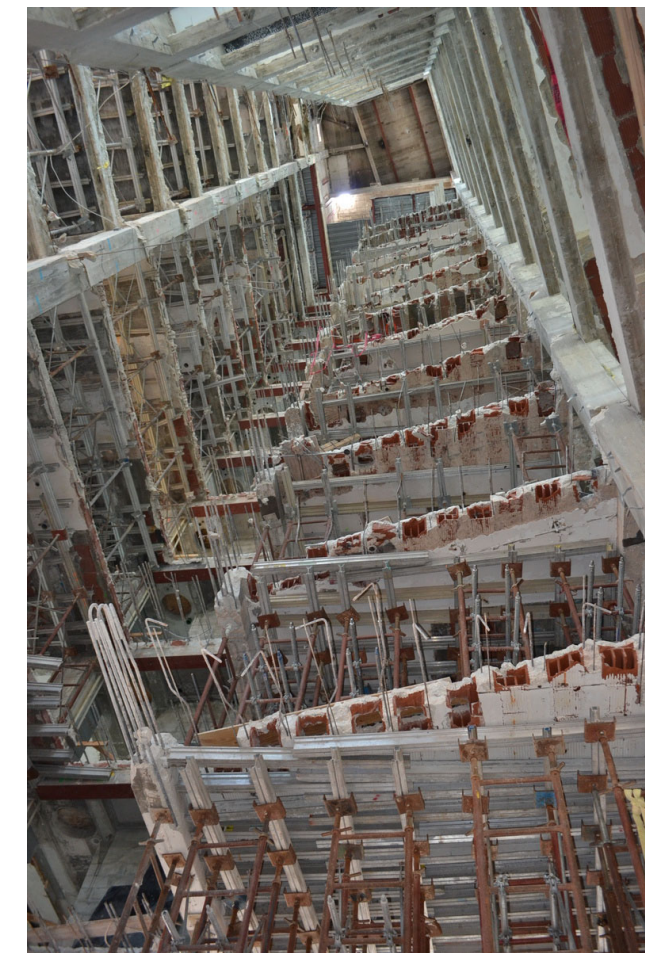
Youssef Hachem, Ph.D

Shoring engineer

YHCE has extensive experience and knowledge when it comes to shoring and bracing buildings, we have worked in many projects throughout Miami Beach. The shoring and bracing process used has been needed to achieve the historical restoration of the buildings.



Carlton Hotel



Saxony



Collins Park

Experience

- Collins Park
- Carlton Hotel
- Saxony Hotel
- Ansonia Hotel
- Plymouth Hotel
- Kaskades
- Golden Sands
- Santa Barbara Hotel
- Moxy Hotel

NV5, Inc.

Role and Similar Experience

Garfield Wray, P.E., D.GE.

Soils/Geotechnical Engineer

NV5 has provided geotechnical engineering for numerous high-rise projects that include basements and deep excavations in South Florida.



Experience

- Surf Club (historic structure)
- Brickell City Centre
- Oceana Bal Harbor
- Residence by Armani
- Ocean Wave
- One Ocean
- Jade Signature
- 830 Brickell



Ant Yapi - Civic Role and Similar Experience

William J. Real General Contractor

- Ant Yapi Construction is an international contractor with offices in Europe, Asia and the USA. Civic is a USA, local General contractor with offices in Miami, Florida and New York.

Experience

- Aman Hotel and Residences, NY
- Missoni Baia Tower
- 830 Brickell
- Una Residences (deepest basement in Dade County)
- Ritz Carlton, San Juan PR
- LINK at Douglas Towers 1 & 2
- OB Brickell
- Vernon Blvd Apartments

AMAN HOTEL & RESIDENCES, NY



MISSONI BAI TOWER



PROJECT HIGHLIGHTS:

- 60 Story Tower - 1,100,000 GSF.
- 249 Luxury Condominium Units.
- Deep Mat Foundation 18' Below Biscayne Bay Water Table.
- Basement Bridge and BOH Connecting to Parkin Garage.



UNA RESIDENCES TOWER



PROJECT HIGHLIGHTS:

- 47 Story Tower - 750,000 GSF.
- 135 Luxury Condominium Units.
- Soil Mix, Deep Mat Foundation 46' Deep.
- Deepest Basement in Dade County.



830 BRICKELL OFFICE TOWER



PROJECT HIGHLIGHTS:

- 59 Story Tower - 1,039,000 GSF.
- Most Technologically Advanced & ECHO Friendly Off Tower Built in Miami.
- Second Tallest Office Tower in Brickell at 750 Feet.
- 24' Two Story Basement below the water table.





VERSAILLES HOTEL

STEP BY STEP DIAGRAMMS FOR BASEMENT CONSTRUCTION & SLAB REPLACEMENT SEQUENCING

VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 01

Confirm previously permitted 2016 concrete restoration repairs of columns, beams, and cupola structure that are schedule to remain have been completed. Any area found not complete to be completed. Complete any additional concrete repair needed due to exposure of the building over the past 5 years.

STEP 02

Applicant will install vibration monitoring devices around the perimeter of the building – This system will send alerts to the onsite team and the EOR (simultaneously) if vibrations levels approach levels which may affect the existing structure. The General Contractor and the related subcontractor will be able to review, analyze and advise if the work should be stopped and/or modified based on such readings.

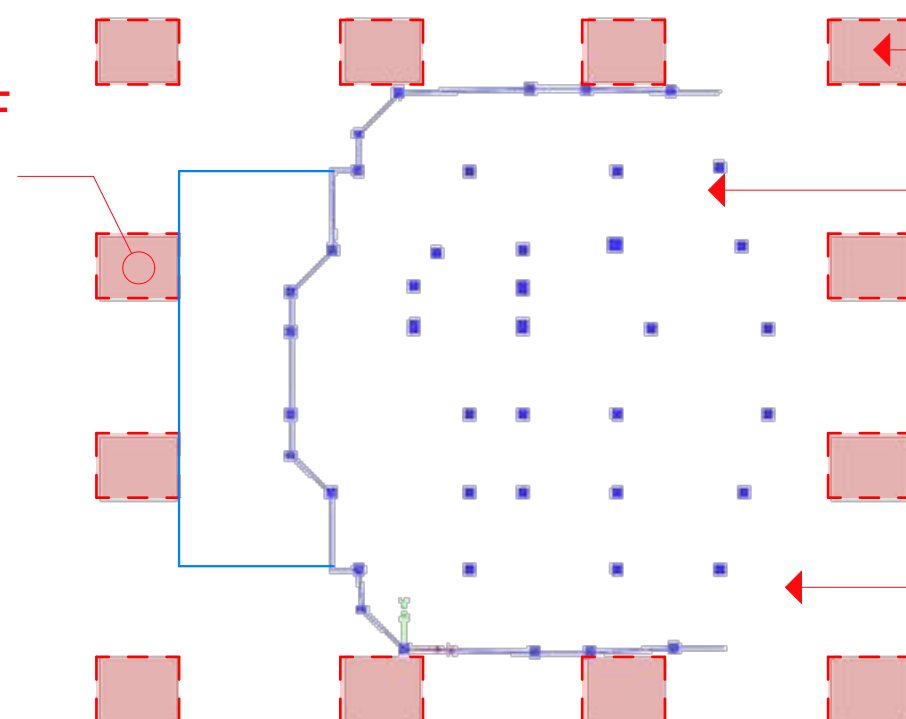
VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 03

Improve the soil via a combination of jet grout and deep soil mixing around the perimeter of the building- these procedures have low impact on the existing structure and will be performed by Keller North America

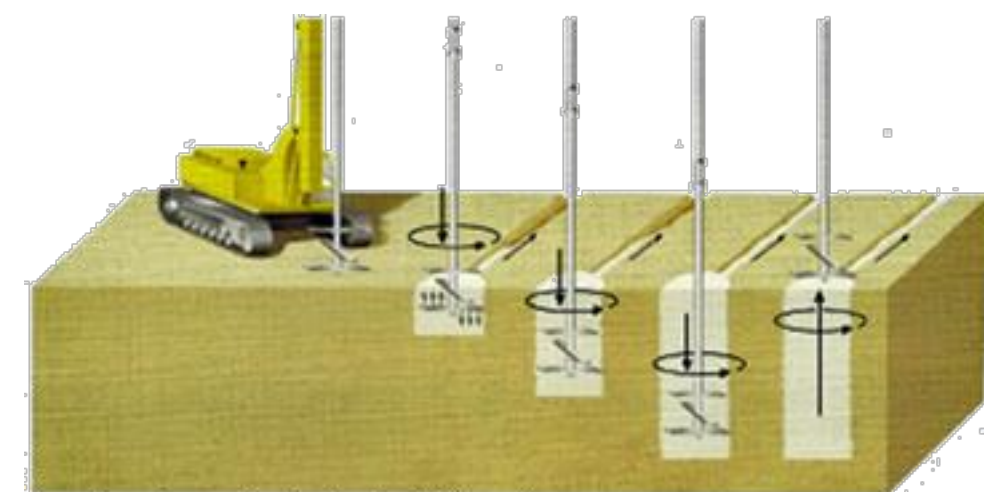
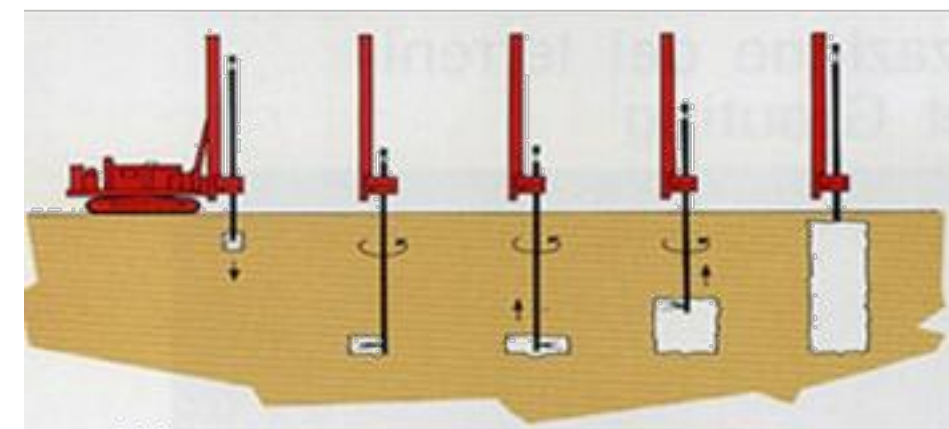
SHORING TOWERS
ARE PLACED WEST OF
EXISTING PORCH
ENTRANCE



SHORING TOWER

JET GROUTING AT
TIGHT AREAS

DEEP SOIL MIXING AT
THE OPEN AREAS,
AROUND THE
PERIMETER OF THE
BUILDING

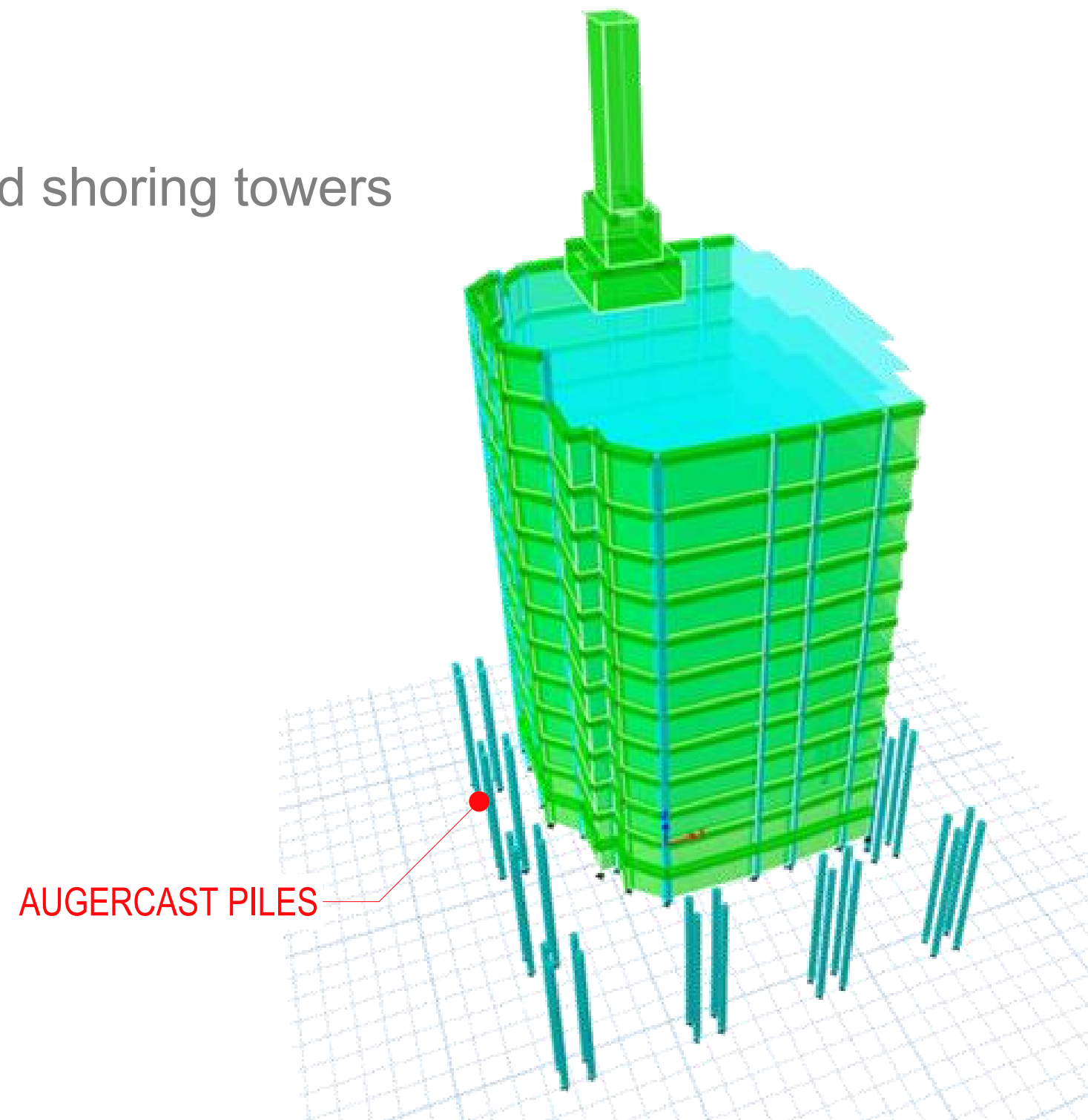
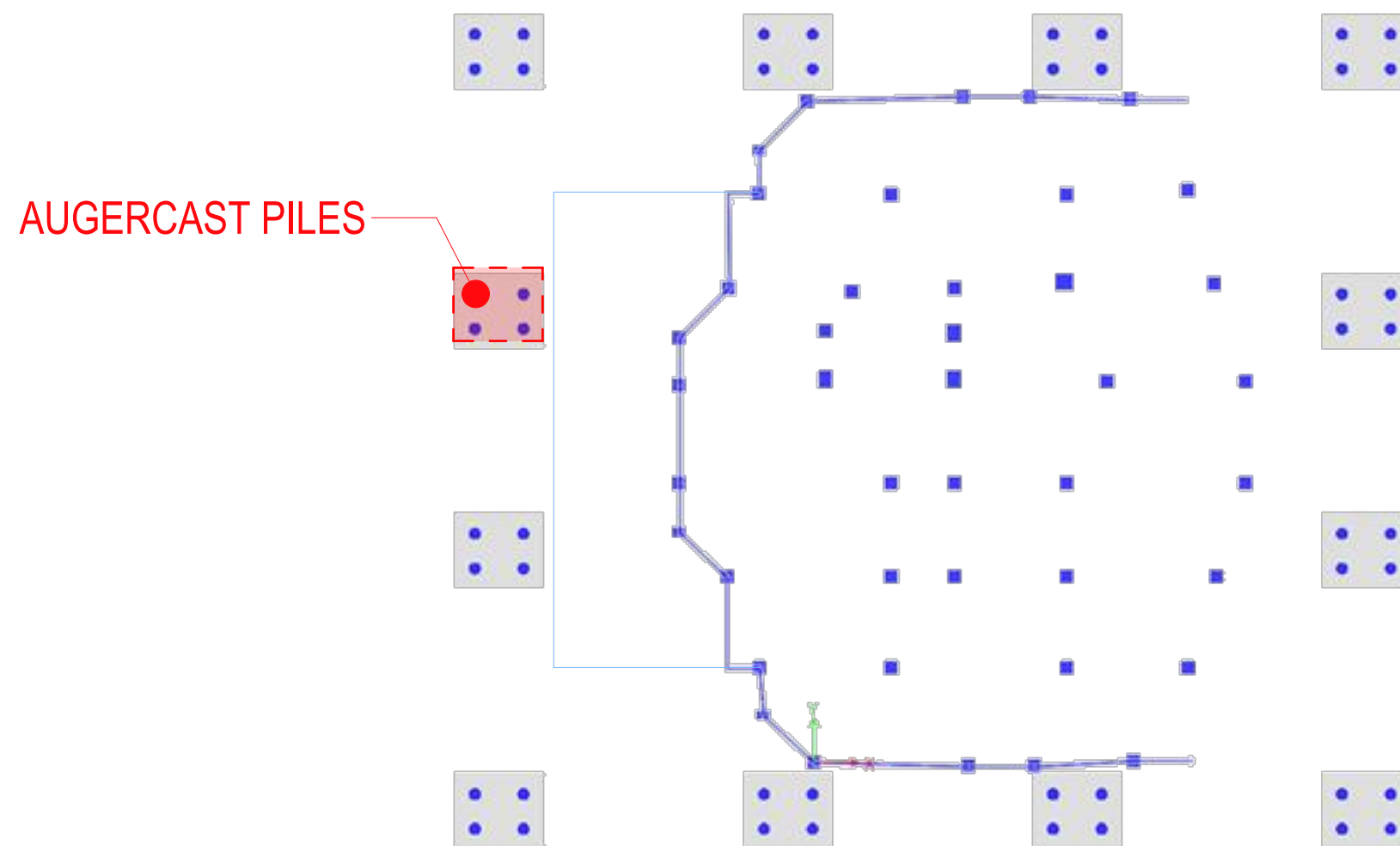


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 04

Install Augercast concrete piles to support proposed shoring towers (12 locations at perimeter of existing structure)

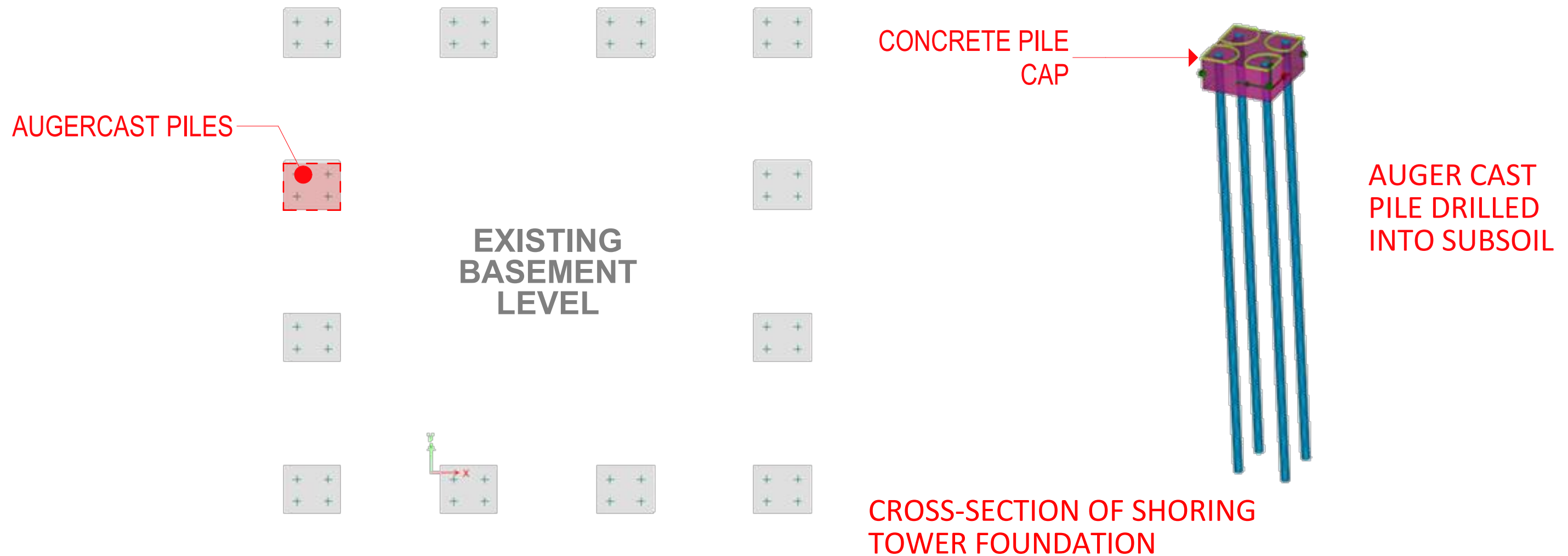


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 05

Construct concrete pile caps which support the shoring towers.



VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 06

- Erect shoring towers
- Install shoring platforms under the 4th floor, 6th floor, 8th floor & 10th floor.
REFER TO STEP 7 FOR PLACEMENT
- Shoring platforms span between shoring towers & will be connected to existing perimeter columns

NEW STEEL COLUMNS CONNECTED TO THE TRUSS PLATFORM ABOVE AND ANCHORED TO THE EXISTING COLUMNS UNDER 4TH FLOOR TO SUPPORT THE EXISTING COLUMNS

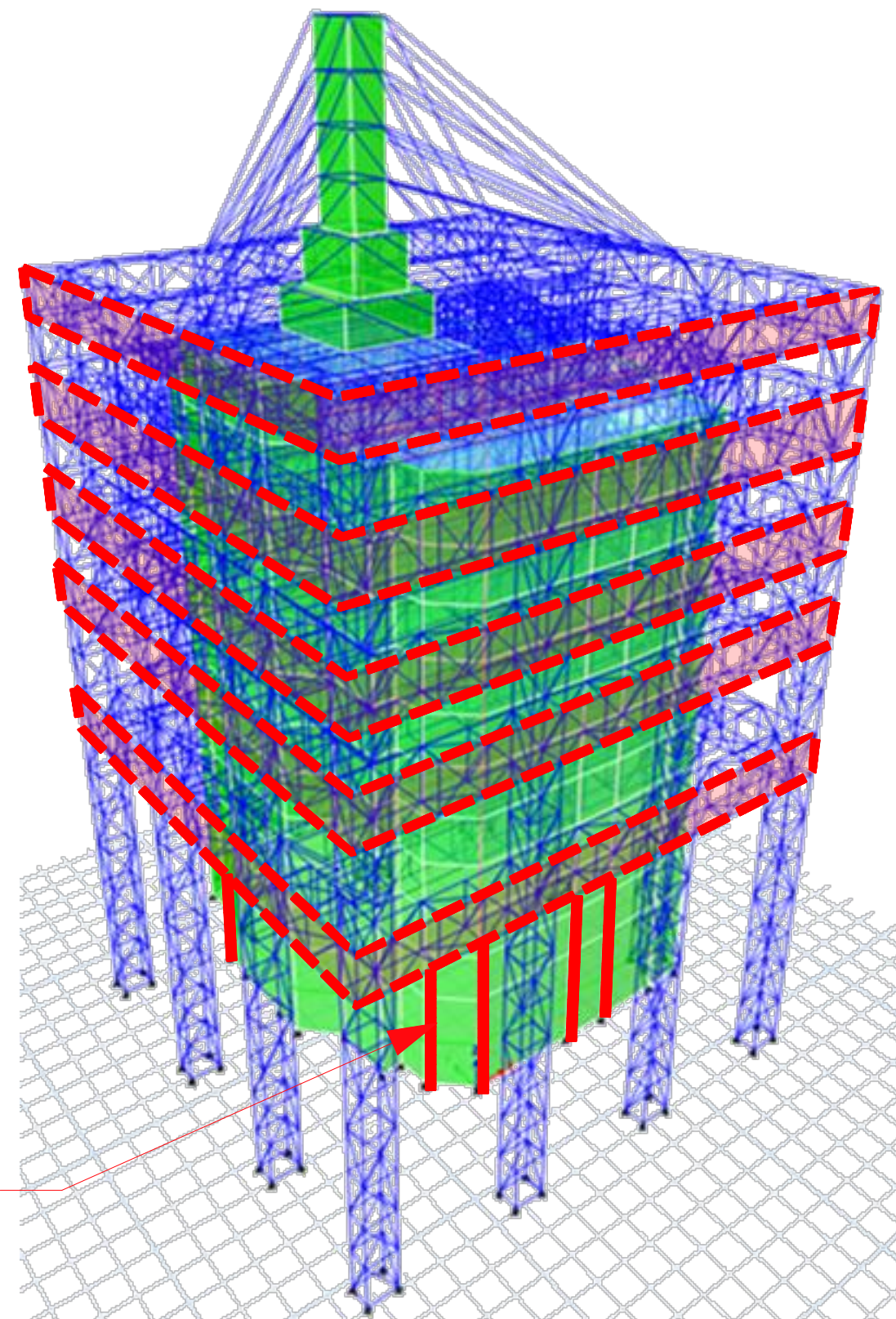
CUPULA BASE

10TH FLOOR

8TH FLOOR

6TH FLOOR

4TH FLOOR

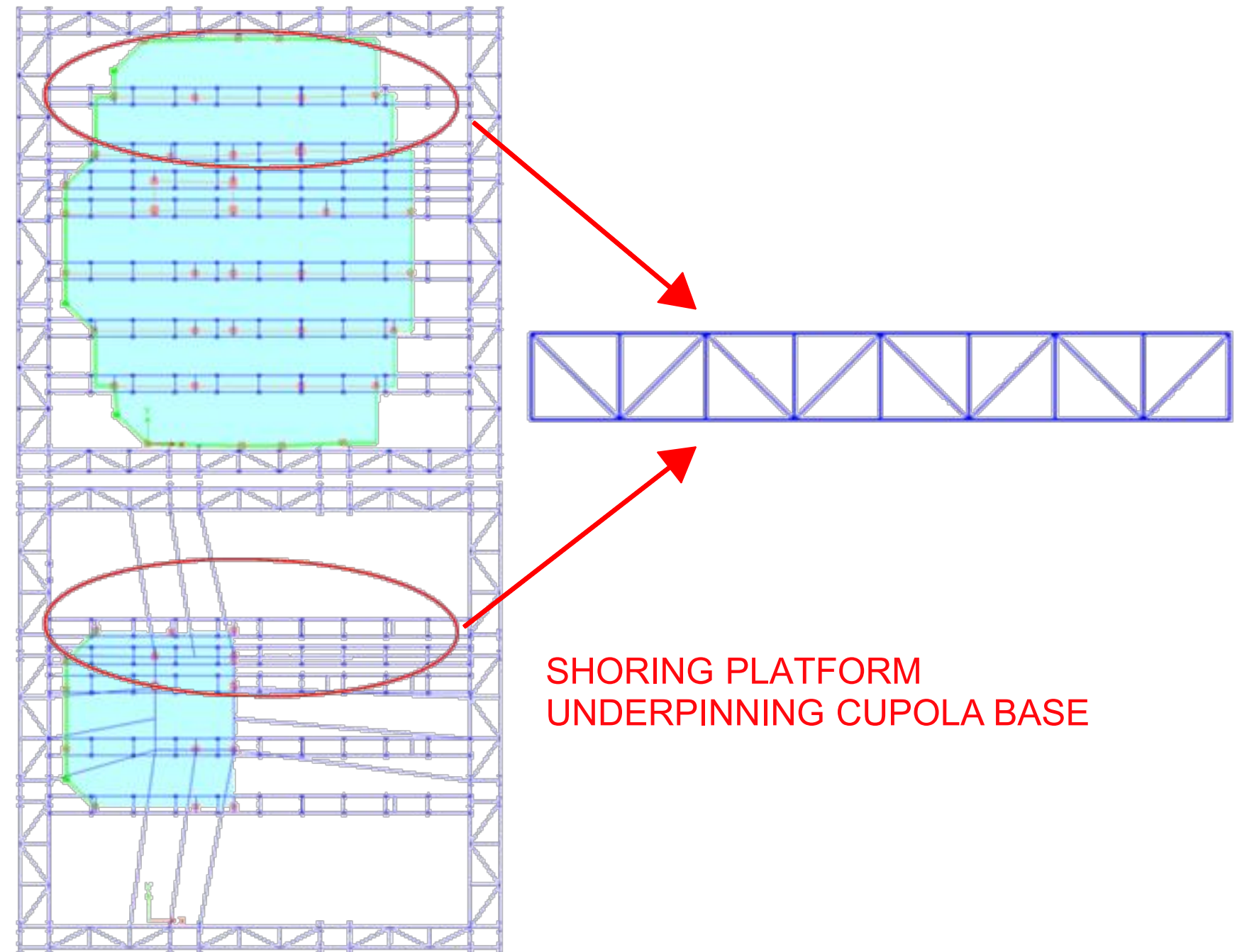


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 07

Install shoring platform underpinning the 6th floor, 8th floor, 10th floors.

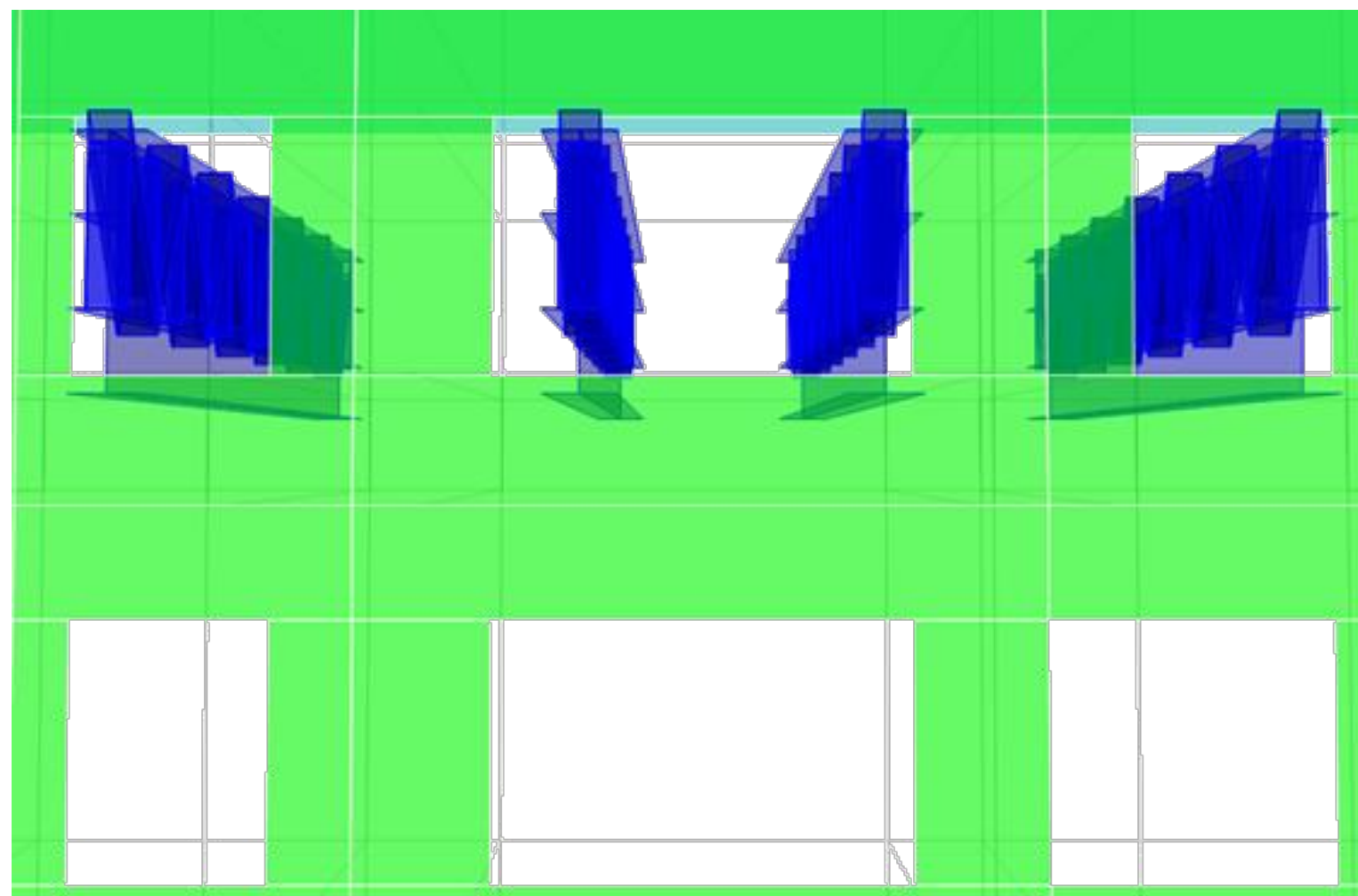


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 07A

Install shoring platform underpinning the 6th floor, 8th floor, 10th floor.



The shoring beams will run through the existing window openings of the south, north and west walls.

BUILDING OPENING (WEST ELEVATION)

VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 07B

Install shoring platform underpinning the 4th floor.

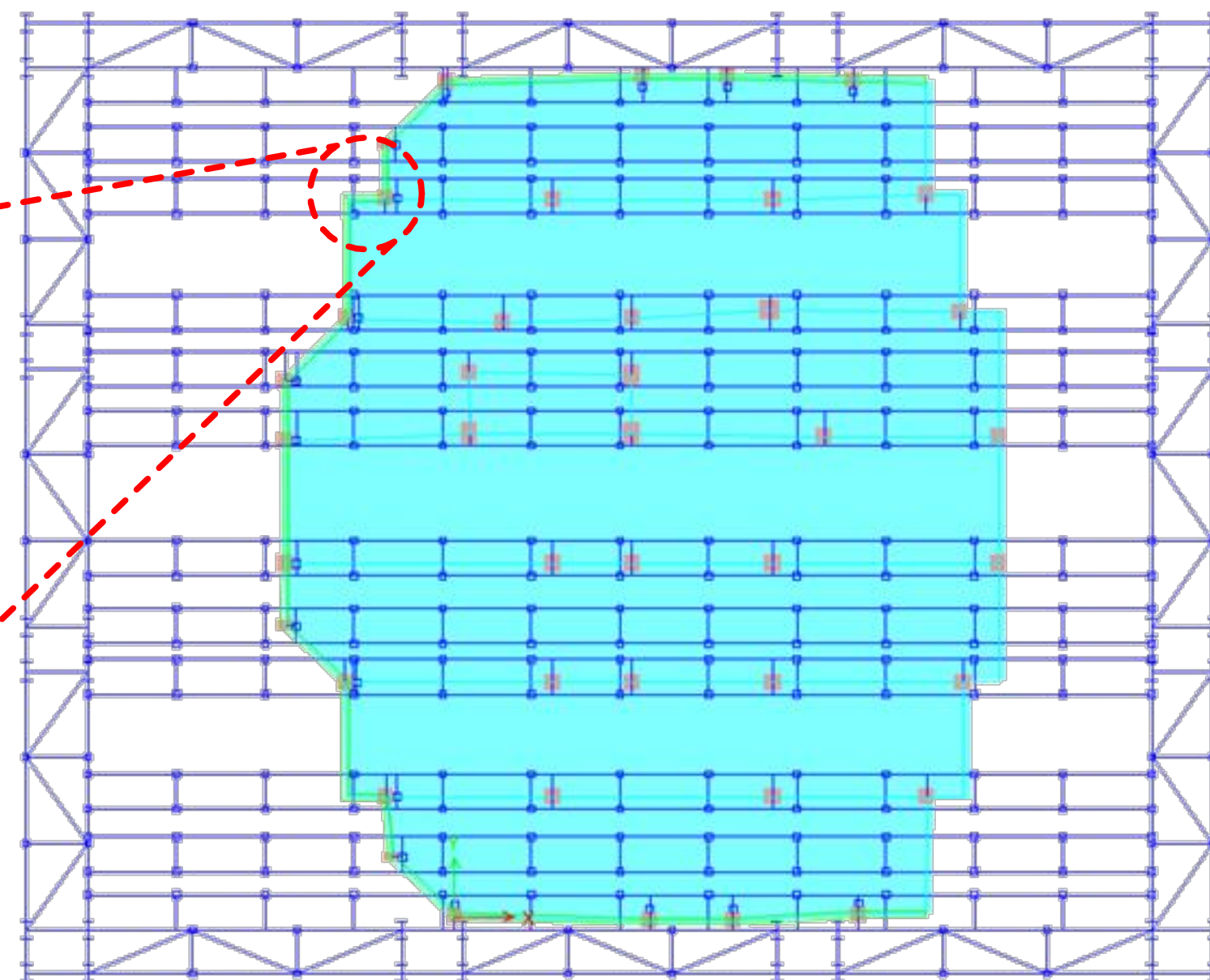
ADDITIONAL TRUSSES TO SUPPORT THE EXTERIOR COLUMN

NEW STEEL COLUMN CONNECTED TO THE TRUSS PLATFORM ABOVE AND ANCHORED TO THE EXISTING COLUMNS UNDER 4TH FLOOR TO SUPPORT THE EXISTING COLUMNS

EXISTING COLUMNS
TO REMAIN

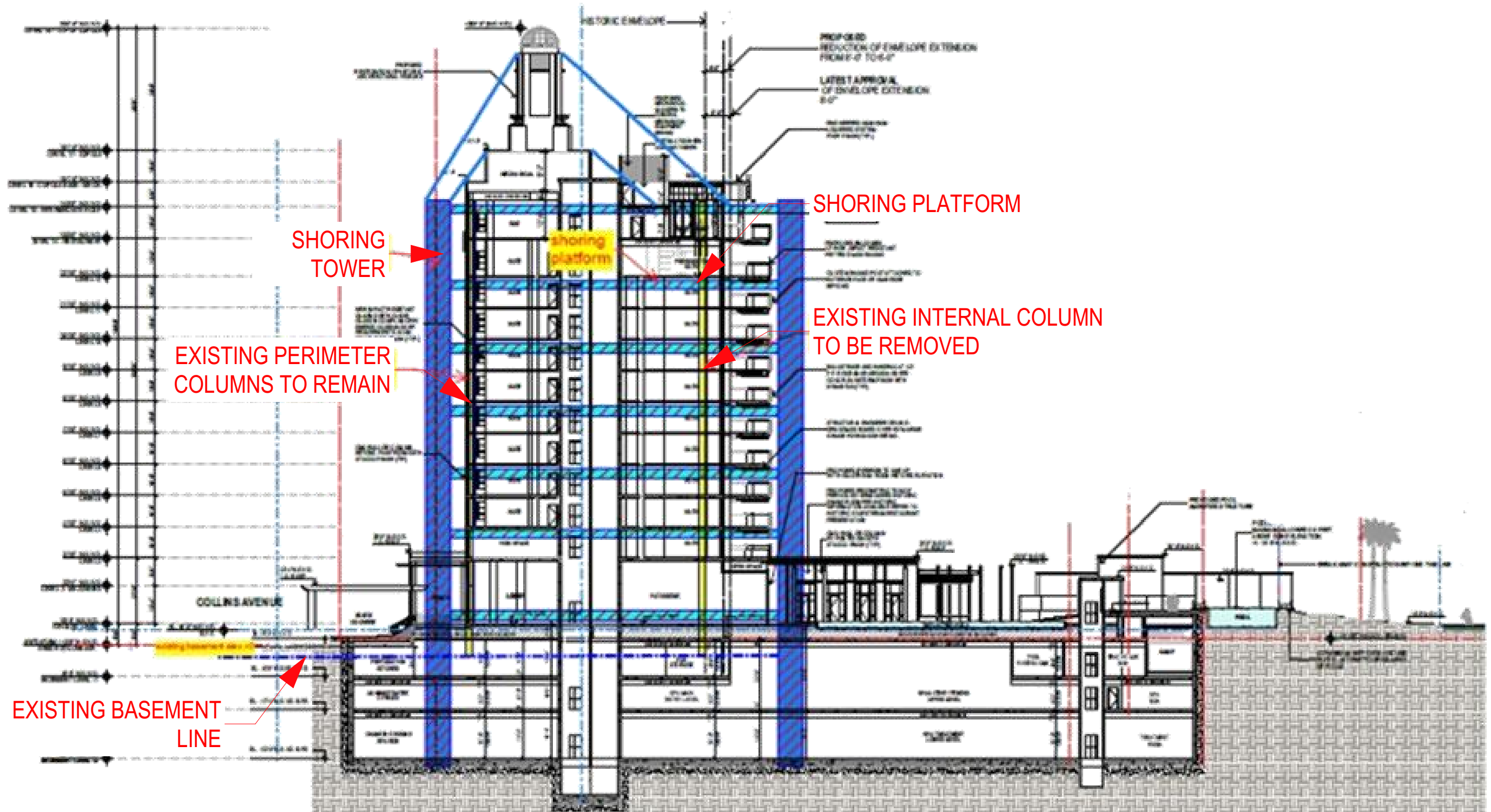
TRUSS SYSTEM

ENLARGED
DETAIL



VERSAILLES HOTEL

CONSTRUCTION SEQUENCING



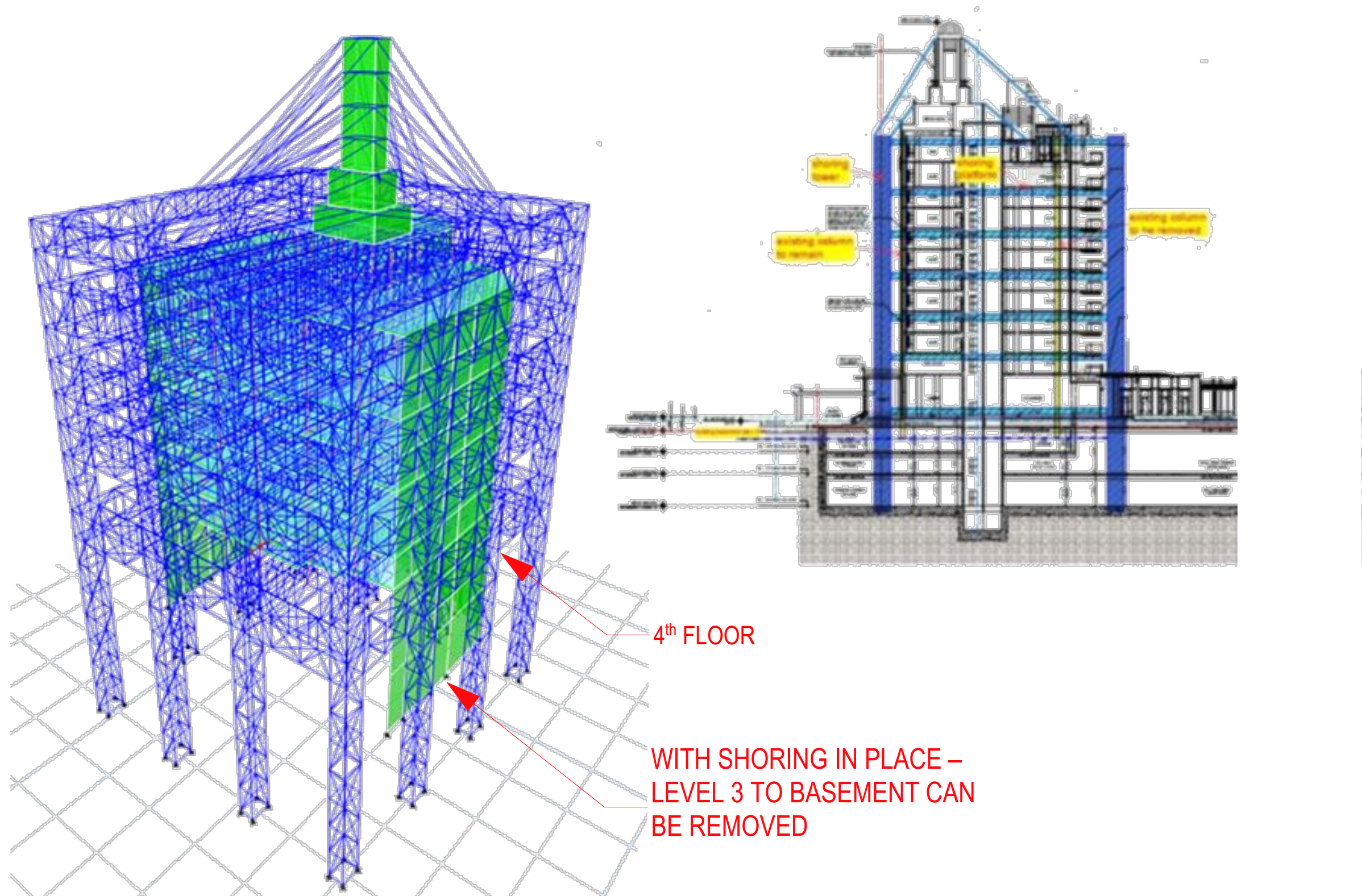
WEST/EAST CROSS SECTION – SHORING TOWERS & PLATFORMS IN PLACE

VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 08

Remove the floor plates & east façade from level 3 down to basement level.

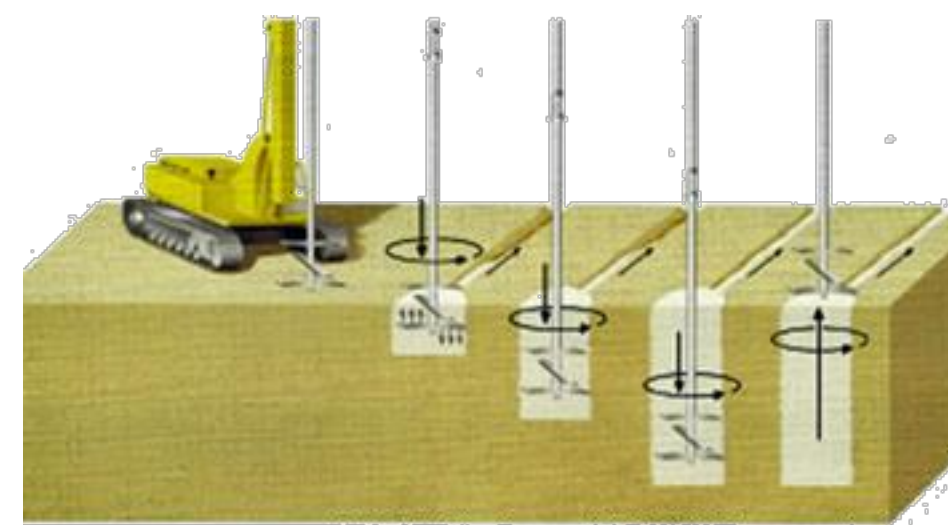
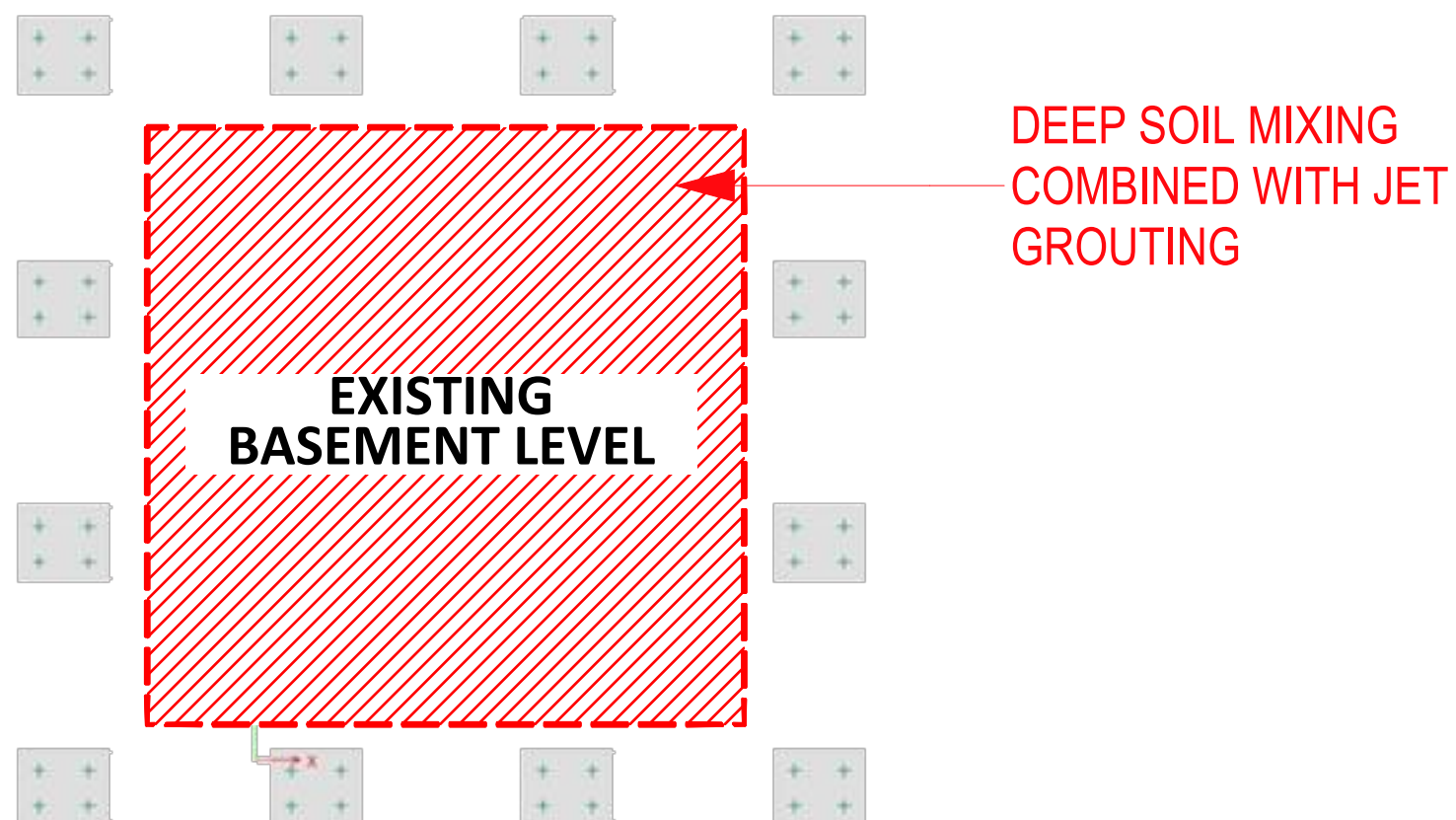


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

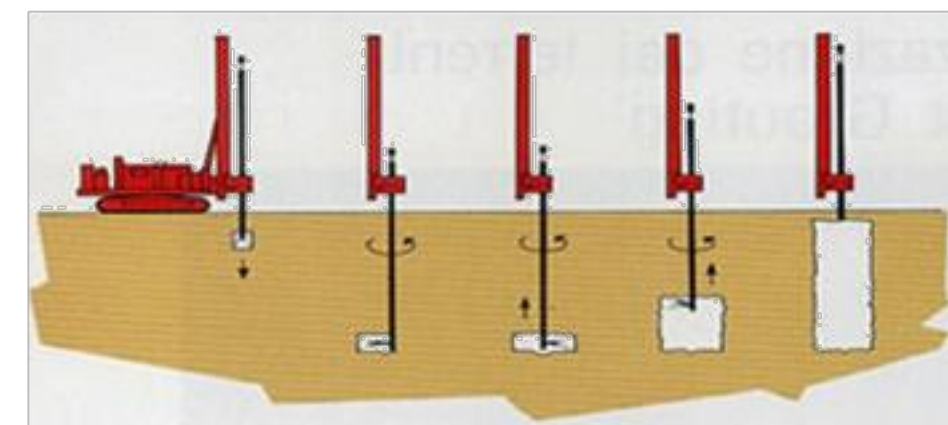
STEP 09

Improve the soil inside the building via jet grout or deep soil mixing



STEP 10

Secure the areas of the shoring towers for excavation

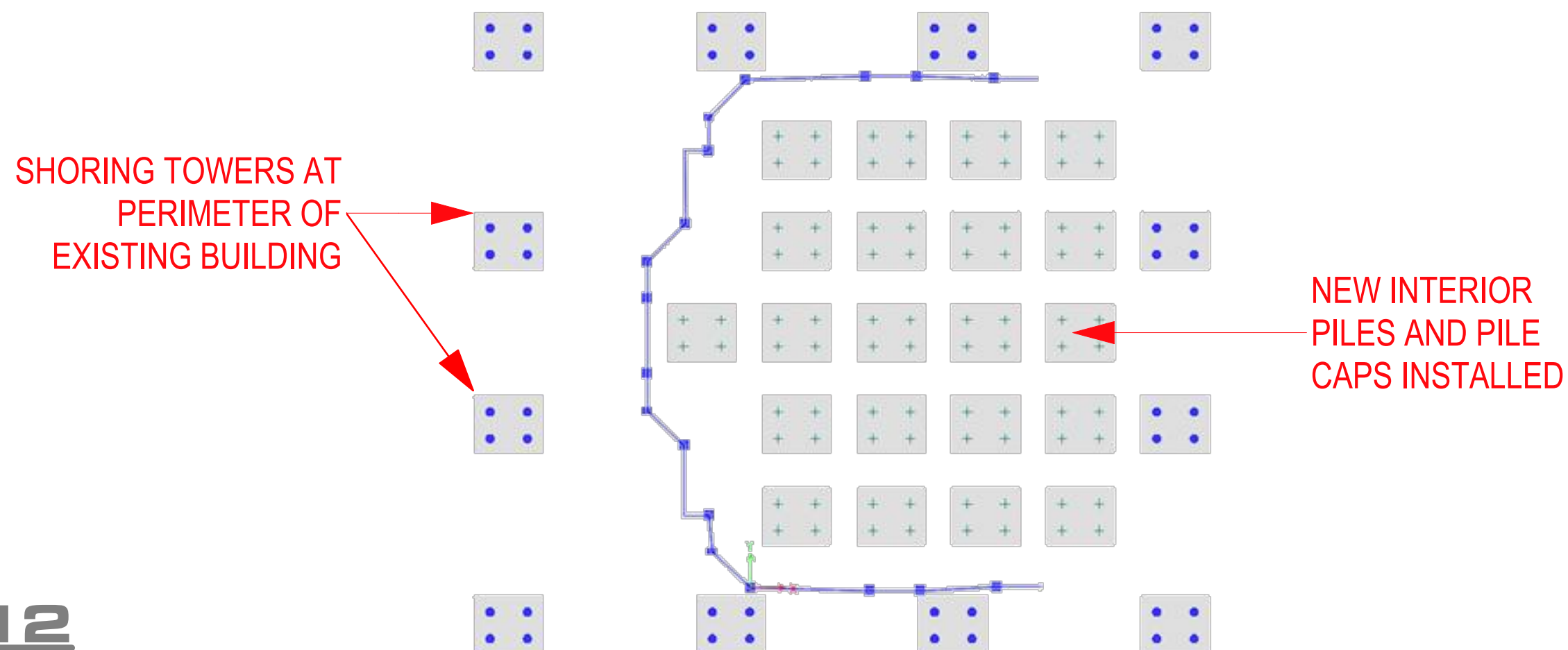


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 11

Install auger cast piles inside the building for the basement & the hotel's new vertical structure



STEP 12

Excavate existing basement below the bottom slab elevation of the proposed future basement

VERSAILLES HOTEL

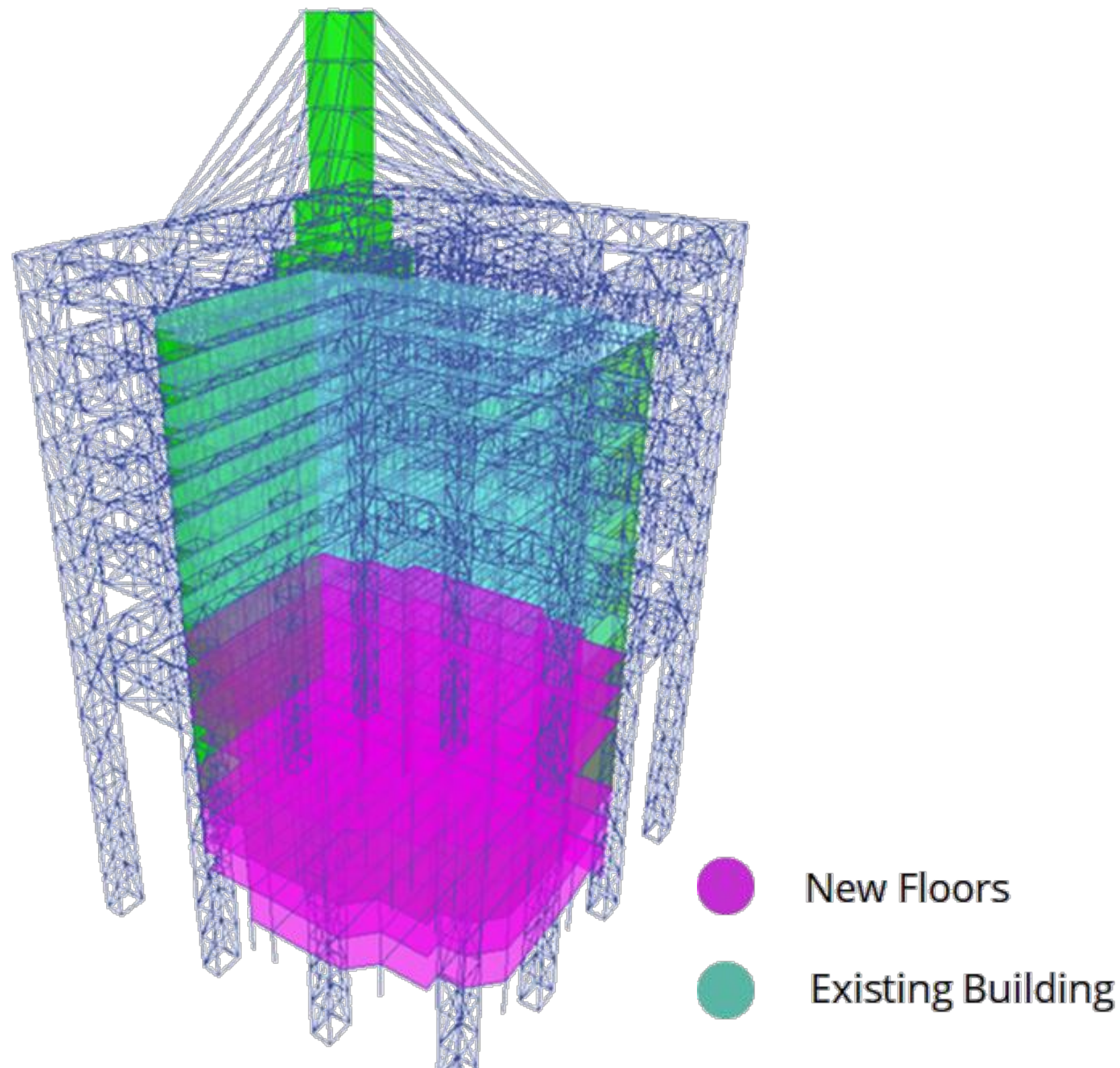
CONSTRUCTION SEQUENCING

STEP 14

When all columns are completed,
finish the construction of the basement

STEP 15

Start re-construction the building
floor by floor up to 2nd floor

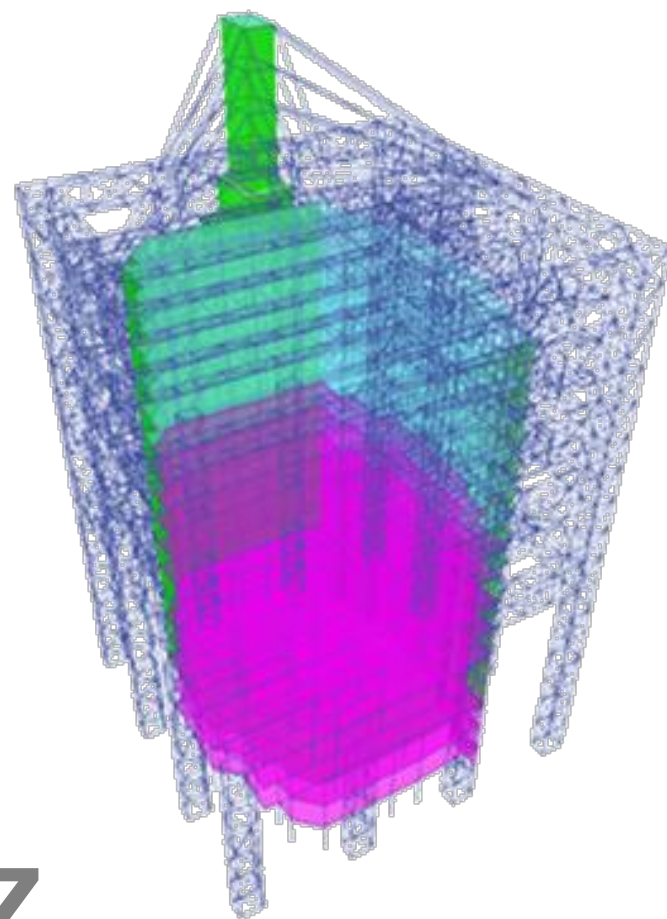


VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 16

Remove 4th and 5th floors and east façade

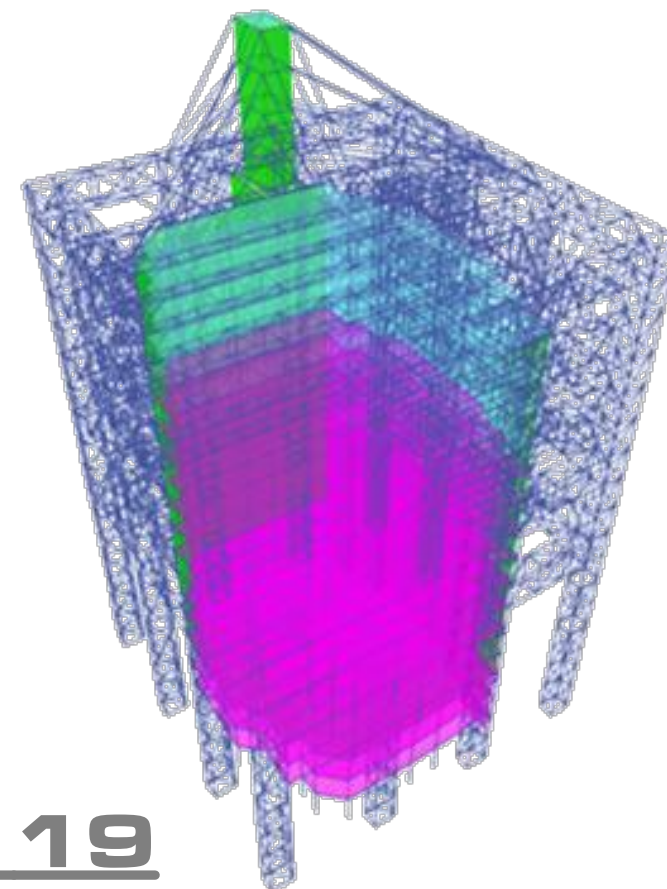


STEP 17

Construct new 3rd & 4th floors

STEP 18

Remove 6th and 7th floors and east façade



STEP 19

Construct new 5th & 6th floors

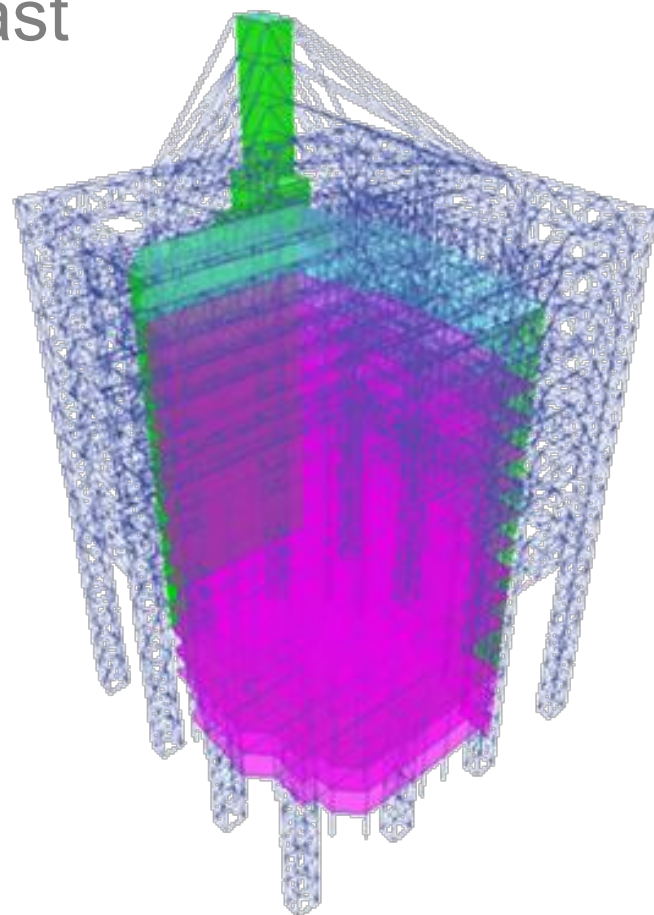
- New Floors
- Existing Building

VERSAILLES HOTEL

CONSTRUCTION SEQUENCING

STEP 20

Remove 8th and 9th floors and east facade

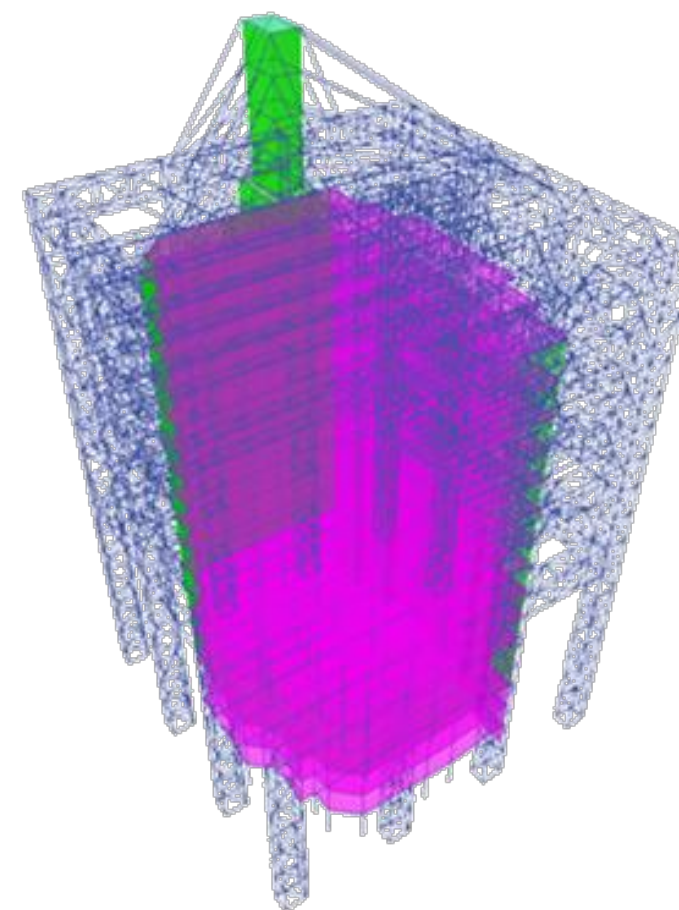


STEP 21

Construct new 7th & 8th floors

STEP 22

Demolish 10th and 11th floors and east facade



STEP 23

Construct new 9th, 10th, 11th, 12th floors & roof

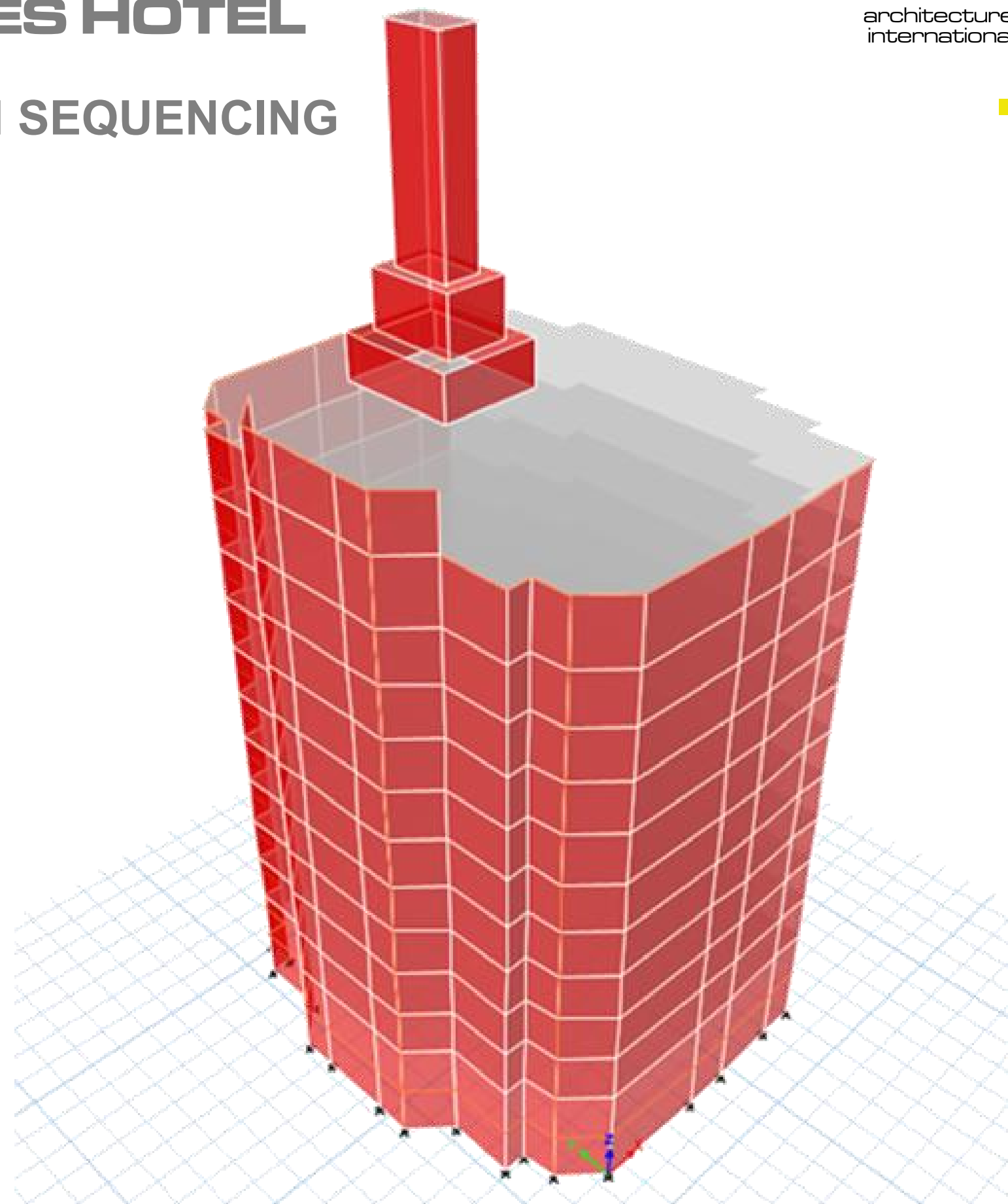
- New Floors
- Existing Building

VERSAILLES HOTEL

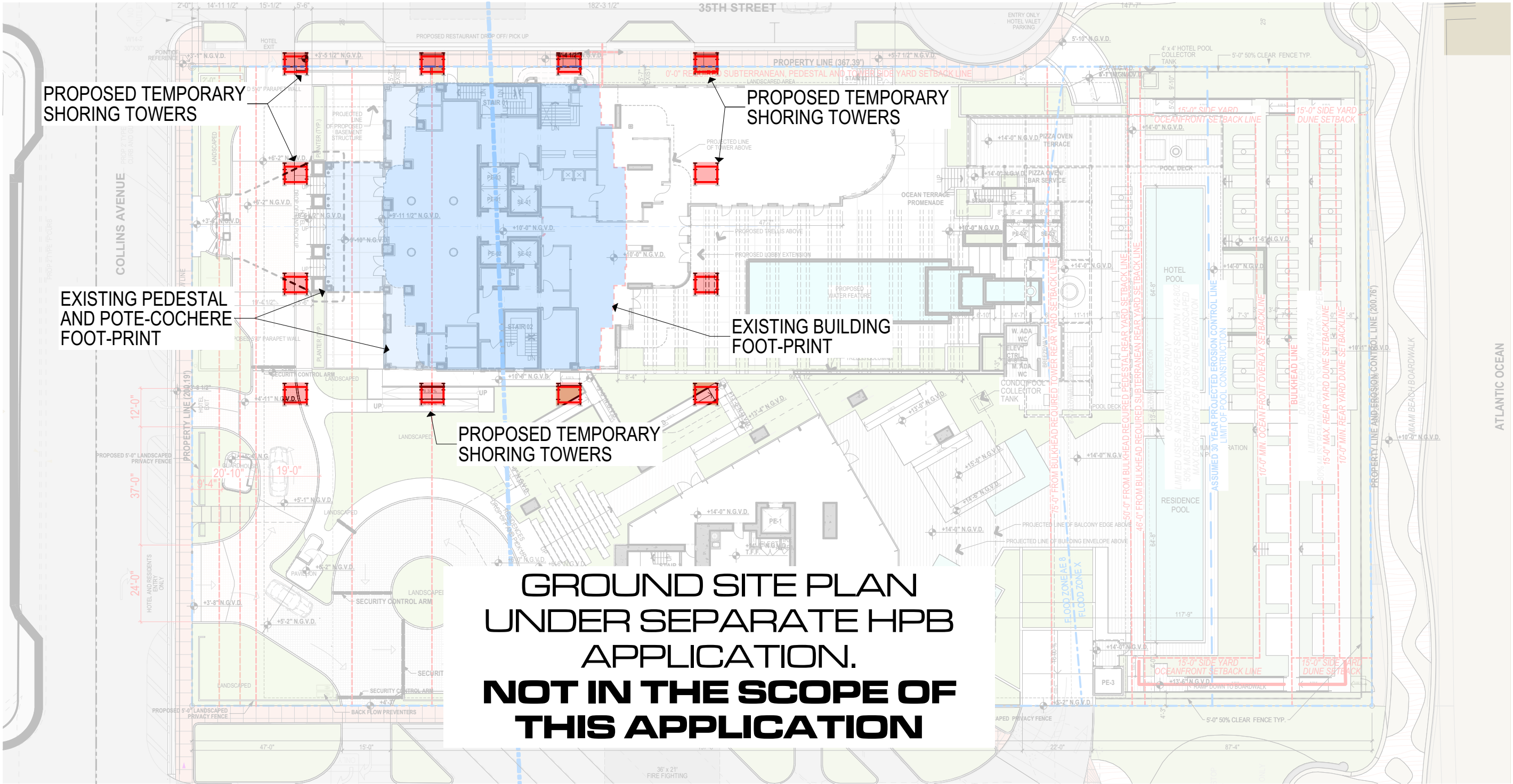
CONSTRUCTION SEQUENCING

STEP 24

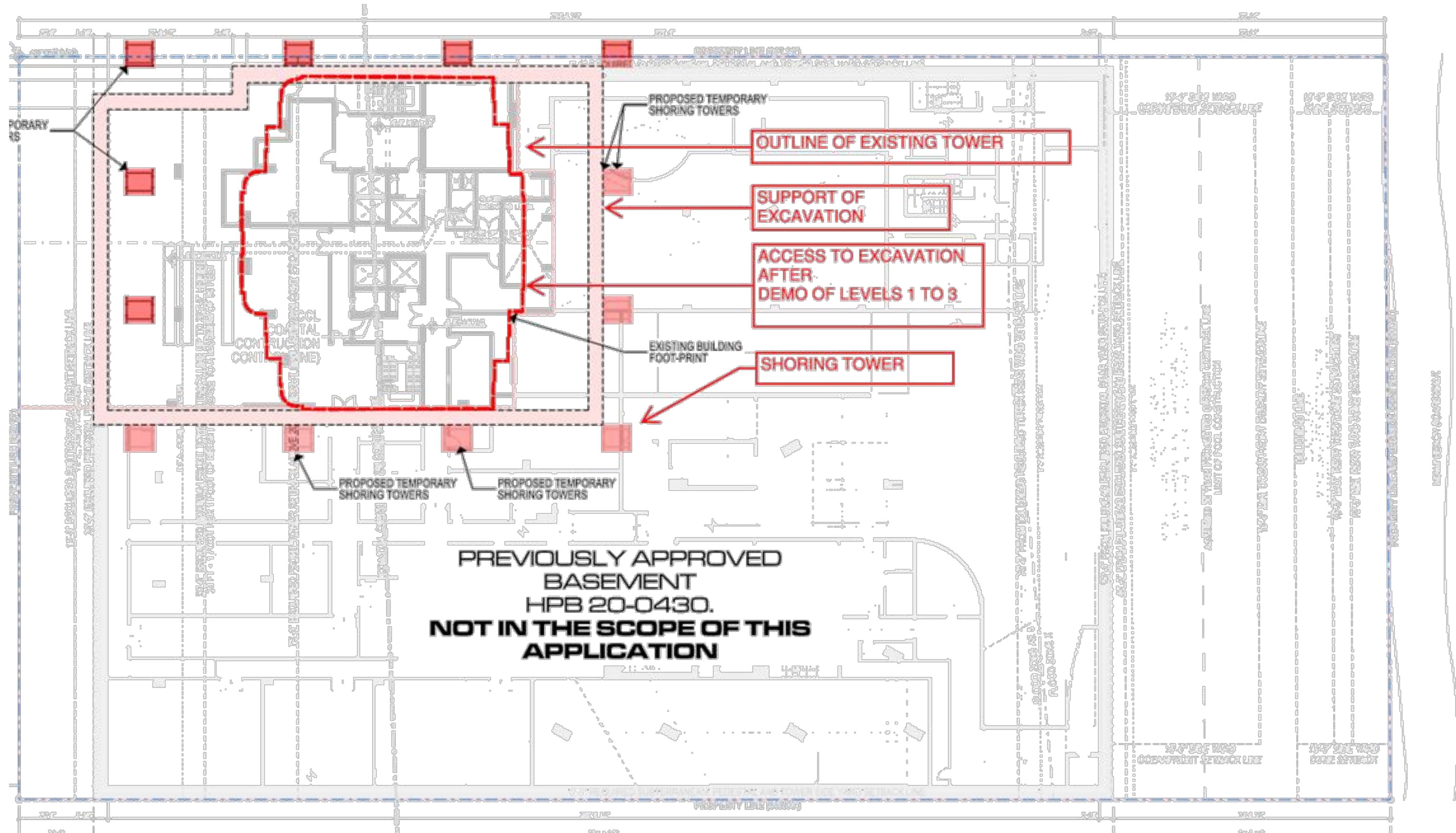
With all new floor slabs & vertical construction complete, the shoring is removed exposing a rebuilt structure design to Comply with current wind speeds as required by the Florida Building Code



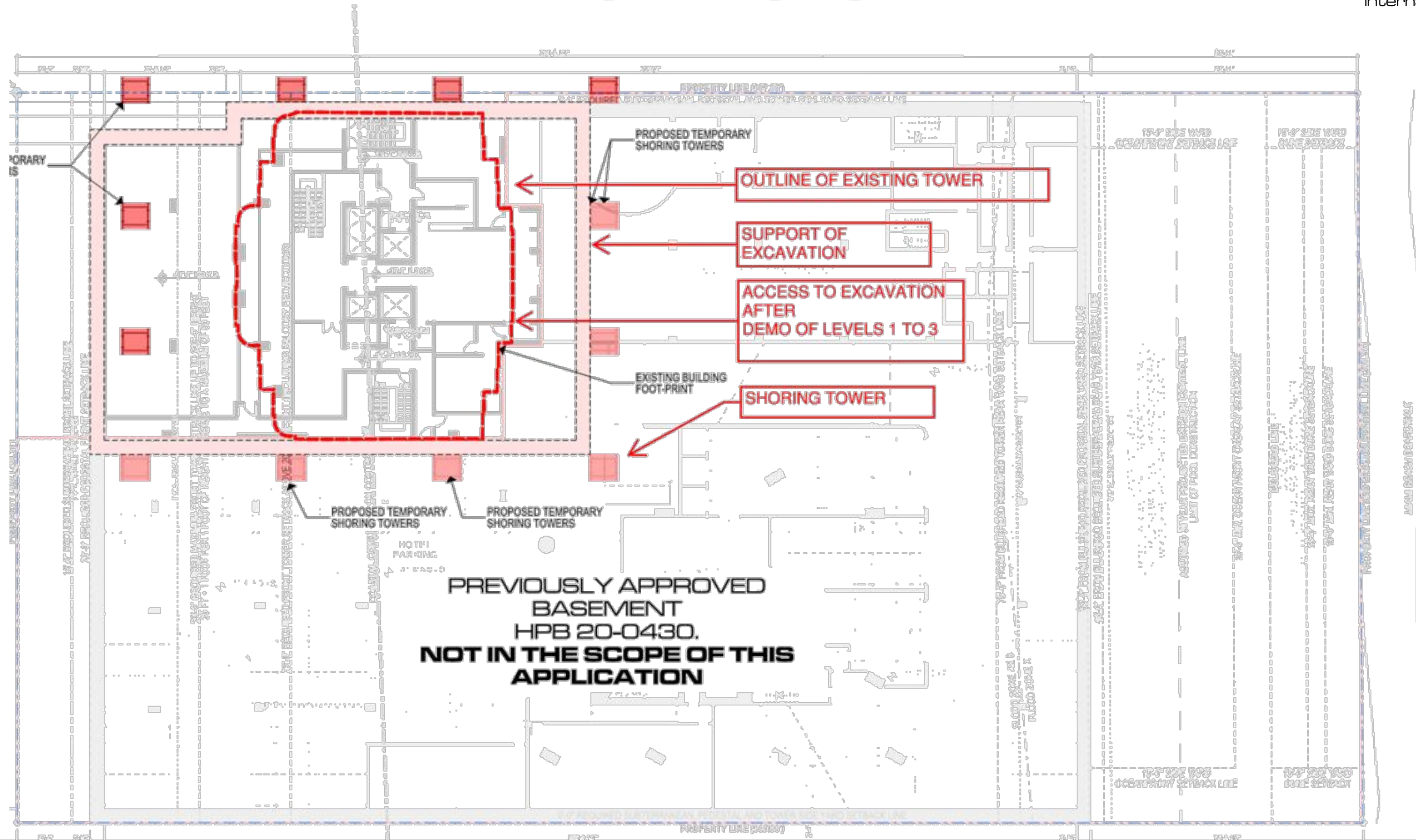
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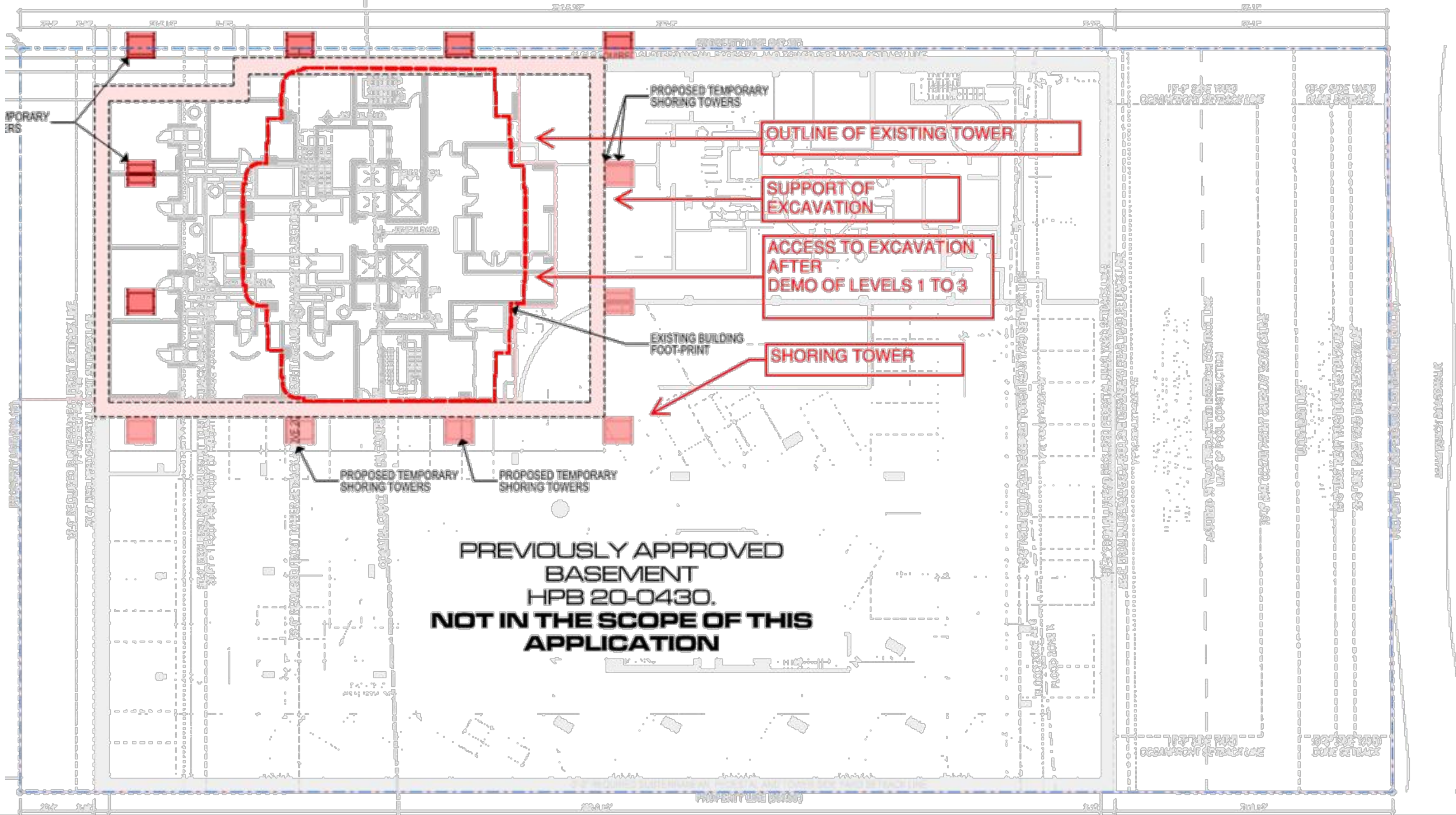
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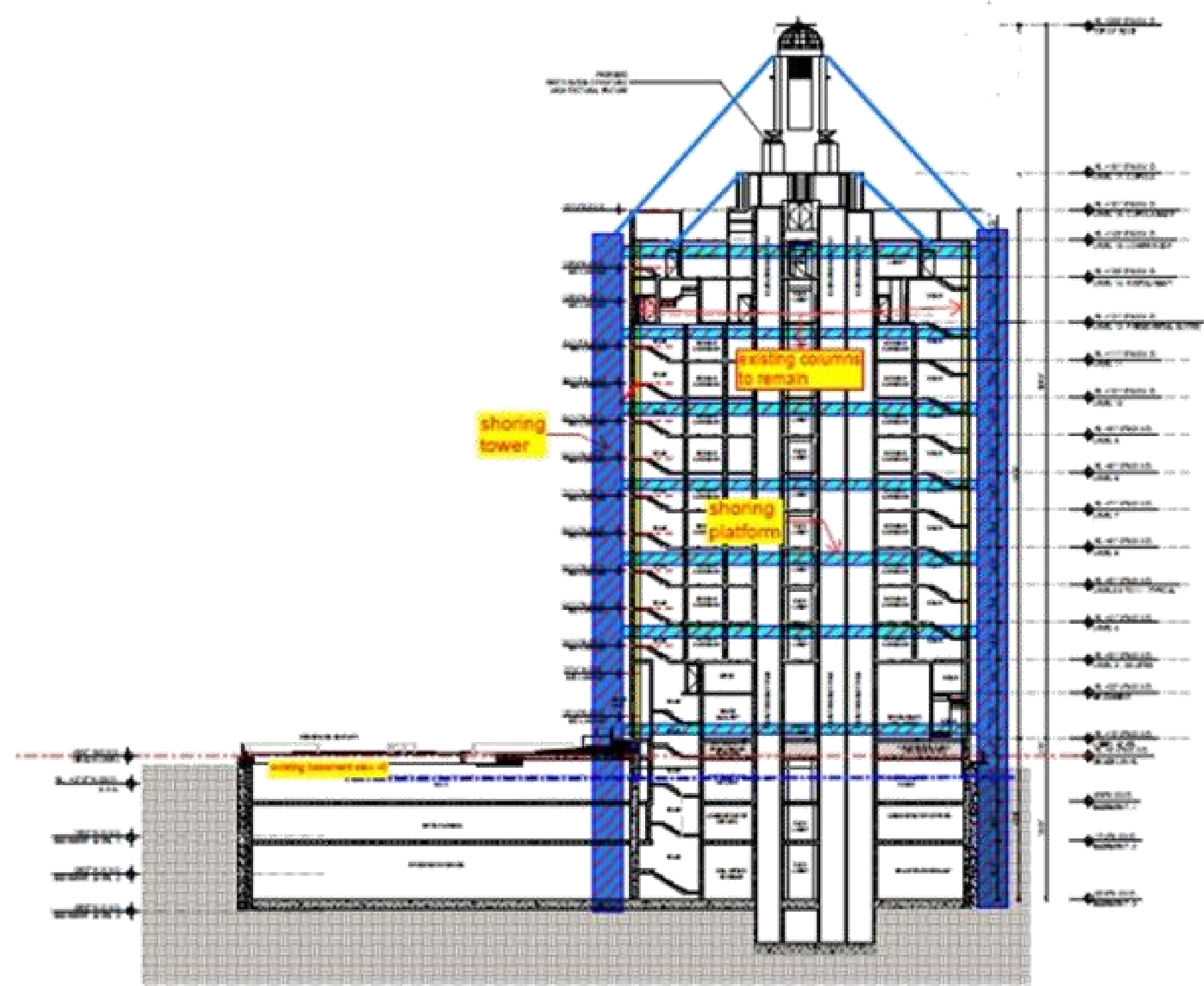
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VERSAILLES HOTEL



VERSAILLES HOTEL



South-North Cross-Section looking West

VERSAILLES HOTEL

Contractor Report by Keller North America

- To accomplish this new Miami Beach feat, several successful techniques (proven in previous South Florida projects) provided by Keller North America (prior HJ Foundation and Hayward Baker) are proposed.
- The project will commence by removing the existing sheet piling installed for the previous 1 level basement. Subsequently the East and South Facades of the existing building, which are to remain and preserved, will be underpinned via jet grouting (See description attached) to minimize its settlement. A Metal structure bracing will be built and installed to secure the remaining facades against vertical and lateral loads, such as wind, during construction and while it gets attached to the new structure.
- Following, a complete property perimeter sheet pile and/or secant pile wall will be installed, including partitions and existing building support as required for the excavation, tremie pour and dewatering to allow for safe, water controlled, permanent waterproofing installation and basement construction.

THANK YOU

AMAN
AMAN HOTEL & RESIDENCES



VERSAILLES HOTEL

EXISTING CONDITIONS



VERSAILLES HOTEL

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EXISTING CONDITIONS



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