



# **BIM AEC SOLUTIONS**

**STRUCTURAL DESIGN | BIM MANAGEMENT**



**INTEGRATED ENGINEERING & BIM CONSULTANCY**

**Expert Solutions for Smarter Construction**

**EST. 2025**



## ABOUT US

**BIM AEC Solutions** is a premier, multidisciplinary engineering consultancy specializing in high-rise structural design and advanced Building Information Modeling (BIM) Management. We bridge the gap between complex engineering principles and cutting-edge digital technologies to deliver highly coordinated, efficient, and optimized project outcomes.

With deep expertise in navigating the stringent demands of tall buildings and complex developments, our team provides seamless, end-to-end services—from sophisticated conceptual analysis to meticulous detailed documentation and construction-phase support. By strictly adhering to international design standards and leveraging advanced BIM workflows, we mitigate design conflicts, streamline stakeholder collaboration, and maximize cost-efficiency.

At BIM AEC Solutions, we are dedicated to engineering safe, sustainable, and innovative structures that redefine the built environment.



**AEC Solutions**



## OUR VISIONS

To become a leading multidisciplinary engineering and BIM consultancy in the region, recognized for delivering innovative, efficient, and high-quality design solutions for complex construction projects.

## OUR GOALS

- Establish a strong reputation in structural and multidisciplinary design consultancy.
- Expand services across local and international markets
- Deliver high-rise and complex projects with optimized and cost-effective solutions.
- Strengthen BIM implementation as a core design and coordination tool.
- Build long-term partnerships with developers, consultants, and contractors.

## OUR GOALS

Imagine today and Build a better future tomorrow.!

# Our Services



## Design Consultancy

BIM A.E.C has been providing engineering service since 2016. We have experience in high rise building design across Russia, Singapore, and Cambodia in various discipline such as architecture, structure, MEP, and BIM.



## Design Review

BIM A.E.C has license of design certificate from the ministry of land management urban planning and construction, the license of professional engineer from board of engineer of Cambodia, and ASEAN chartered professional engineer (ACPE) from the ASEAN Mutual Recognition Arrangement (MRA).



## Assessment and Inspection

The building and construction authority required all building in Cambodia to be inspected periodically by qualified structural engineers.



## Building Information Modeling

BIM A.E.C offers price pre-constructions for the creation and management of the intelligent models leading to design, construction, and operation of various facilities.



## Costing and Planning

BIM A.E.C offers the cost estimation with the project budget planning. More than just quantity surveyor, we also prepare the project timeline and deliverable schedule for the construction.



## Construction Supervision

During the construction, we play role as independent engineer with qualification license to review the method of statement, technical supervision, and endorsement on embedment designed.



# BIM AEC Solutions Professional Teams



**MENGLIM PHOY**

Founder | Managing Director

10+ international experience in Structural Engineer (Russia, Singapore, Cambodia)  
Pro. Eng. (SE), ASEAN Eng, ACPE (SE)  
Structural Engineer (High-rise Building)  
BIM Specialist (VDC, 4D & 5D)



**Mr. VICTOR KULISHOV**

Project Manager

Municipal Deputy of the region in the Russian Federation

Founder of Enterprise in the field of Construction | LandCambodia



**Mr. KONSTANTIN DOBINDA**

BIM Manager

17+ experience in international development in digital construction (Russia, Finland, Sweden)

1. ARCHITECTS
2. STRUCTURAL ENGINEERS
3. MECHANICAL ENGINEERS
4. ELECTRICAL ENGINEERS
5. PLUMBING ENGINEERS
6. GEO TECHNICAL ENGINEERS
7. QS & PLANNING ENGINEERS
8. DRAFTING ENGINEERS
9. BIM ENGINEERS



**PHOY Menglim**  
**Founder | Managing  
Director**  
**10+ international  
experience in  
Structural Engineer  
(Russia, Singapore,  
Cambodia)**  
**Pro. Eng. (SE), ASEAN  
Eng, ACPE (SE)**

### **Professional Profile**

With over 10 years of international experience in structural engineering, Building Information Modeling (BIM), and project management, He has successfully led the design and coordination of complex high-rise residential, commercial, and mixed-use developments across Singapore, Cambodia, and Russia. My professional expertise spans structural analysis and design, BIM strategy and implementation, multidisciplinary project coordination, and the management of engineering teams throughout all project phases.

As a licensed Professional Engineer in Cambodia and an ASEAN Chatter Professional Engineer, He brings a strong combination of technical excellence and leadership capability to every project. He has extensive experience overseeing structural design development, ensuring compliance with international standards and local regulations, managing project delivery, and facilitating collaboration among architects, engineers, contractors, and stakeholders to achieve efficient and sustainable outcomes. Throughout his career, He has played a key role in driving BIM adoption and digital transformation initiatives within engineering organizations. By implementing BIM standards, optimizing workflows, and integrating multidisciplinary design processes, He has enhanced project efficiency, improved design coordination, reduced project risks, and increased overall delivery quality.

He earned a degree in Civil Engineering, specializing in the Construction of Unique Buildings and Structural Design, from Saint Petersburg Polytechnic University, Russia. This academic foundation, combined with extensive international project experience, has enabled me to develop a comprehensive understanding of structural systems, modern construction technologies, and engineering management practices.

His professional objective is to deliver innovative, safe, and cost-effective structural solutions while fostering collaborative project environments and advancing the integration of digital engineering technologies within the construction industry. Through strong leadership, technical expertise, and a commitment to excellence, He continues to contribute to the successful realization of complex and landmark developments across the region.



**VICKTOR Kulishov**  
*Project Manager |  
Municipal Deputy of  
the region in the  
Russian Federation*

### Professional Profile

Victor Kulishov is an established entrepreneur and civic leader with a proven track record in the construction, design, and real estate development sectors. Since 2013, he has founded and scaled enterprises dedicated to delivering high-quality infrastructure and development projects. Complementing his corporate expertise, Victor is actively involved in regional governance and business community leadership, bringing a holistic approach to regional growth, economic integrity, and sustainable development.

### Core Expertise & Highlights

- **Construction & Design Entrepreneurship:** Serving as a founder of multiple enterprises within the construction and design sectors for over a decade (since 2013).
- **Project Delivery:** Successfully created and implemented 9 major real estate construction projects across Russia.
- **Civic Leadership:** Serving as a Municipal Deputy of the region within the Russian Federation, contributing to local governance and community development.
- **Community Leadership:** Managing the regional business community "Integrity," fostering collaboration, ethical business practices, and professional networking.

### Key Accomplishments

- **13+ Years of Enterprise Leadership:** Continuous leadership and business development in the competitive construction and engineering design landscape.
- **Real Estate Portfolio:** Successfully oversaw the end-to-end lifecycle—from concept to implementation—of 9 distinct real estate developments.
- **Public-Private Synergy:** Effectively balancing corporate real estate development with public service responsibilities to drive regional progress.



**KONSTANTIN  
Dobinda**

*BIM Manager |  
17+ experience in  
international  
development in digital  
construction (Russia,  
Finland, Sweden)*

## Professional Profile

Konstantin Dobinda is a highly accomplished Project Manager specializing in international real estate development. With nearly two decades of global experience, he excels in overseeing the comprehensive lifecycle of large-scale construction projects—from initial development planning and production management to financial economics. His cross-border expertise spans multiple European and Eurasian markets, making him a versatile leader in delivering high-volume residential and commercial assets.

## Core Expertise & Highlights

- **International Project Management:** 17 years of hands-on experience driving projects forward within international development and construction companies.
- **Cross-Border Operations:** Proven track record operating across diverse regulatory and construction environments, specifically in Russia, Finland, and Sweden.
- **End-to-End Project Lifecycle:** Deep technical focus on development planning, production logistics, and the underlying economics of real estate construction.
- **Massive Scale Delivery:** Extensively experienced in managing high-density, large-scale residential portfolios.

## Key Accomplishments

- **Major Project Implementations:** Successfully participated in the execution and delivery of 6 major construction projects internationally.
- **Residential Portfolio Scale:** Spearheaded 4 major residential real estate projects comprising a total building area of more than 250,000 m<sup>2</sup>.



## Our Certificate of Licenses





## Our Certificate of Licenses





## Core Software

### 3D FEM



CSI  
ETABS



ADAPT-Builder  
Version 2019



CSI  
SAP2000

### RESEARCH



### ELEMENT CHECKED



CSI COLUMN



Bentley  
RAMP Concept



Powered by  
**SAPFIRE**  
**SAFE**

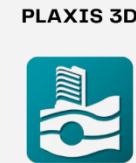


Calculate yesterday's estimates

### GEO-FEM SOFTWARE



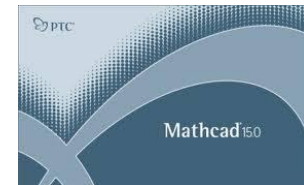
PLAXIS 2D



PLAXIS 3D



Microsoft®  
Excel



### BIM MANAGEMENT SOFTWARE



**AUTODESK**  
Revit



Navisworks



AutoCAD

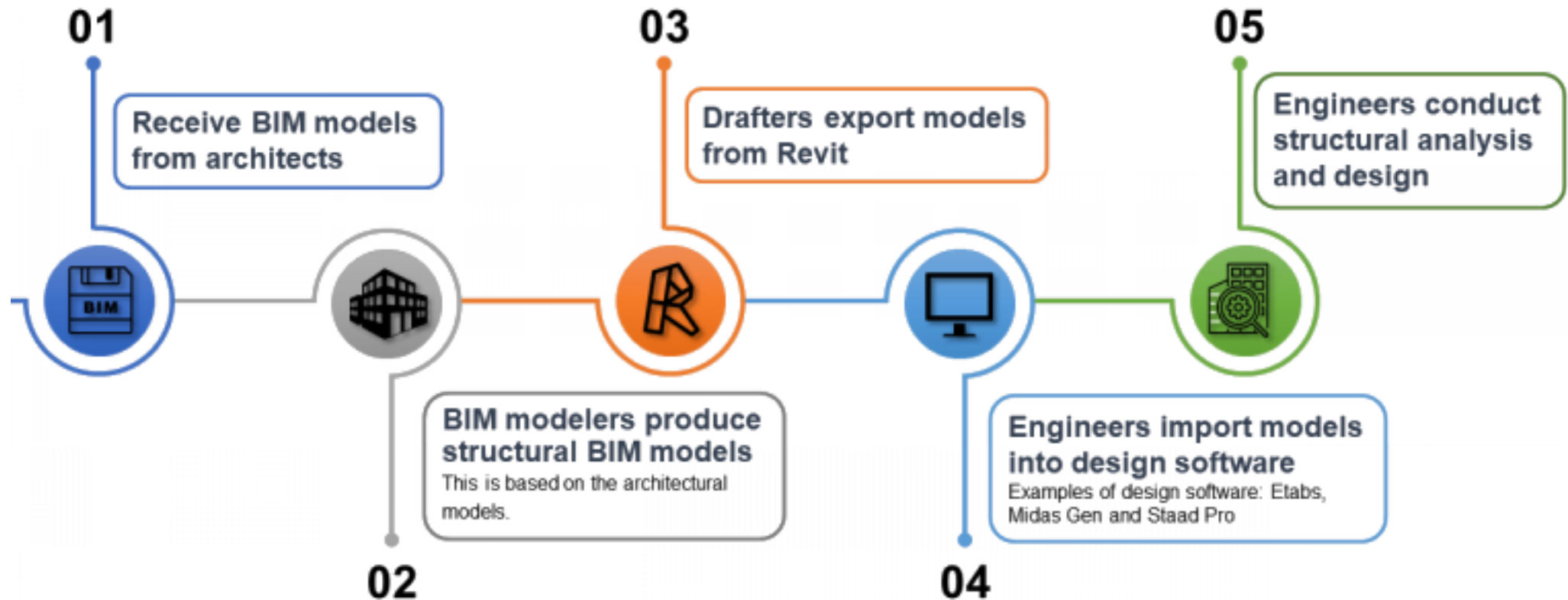


VISICON



CLOUD-BASED CONSTRUCTION SOFTWARE

# The BIM process at BIM AEC Solutions





AEC SOLUTIONS  
DESIGN SERVICES

STRUCTURAL ENGINEER | PE, SE  
BIM SPECIALIST | VDC, 4D & 5D

## Our Partners



UTRACON  
POST TENSION  
SPECIALIST



ARCHITECTURE,  
GREENERY, GLASS  
FAÇADE, DESIGN



ECAS CONSULTANT  
PTE LTD



CMP CONSULTANTS  
PTE LTD



MULTIPLY  
ARCHITECTS LLP



SAFETY SPECIALIST



WIND TUNNEL TESTING



Cambodian Sino  
ACCREDITED  
CHECKER  
ACCREDITED CHECKER  
& LABORATORY



GLOBAL WATER  
CONSULTANTS SDN BHD



DESIGN & CONSTRUCTION

## Our Clients



P.S Hospitality Group



Innovative  
Construction  
Solutions



LAND CAMBODIA

### LOTUS LAND 598 | PHNOM PENH, CAMBOIA (2020)



#### Project Overview

**LOTUS LAND 598** is a premier mixed-use residential development master-planned as a sustainable, high-density green living zone located in the heart of Phnom Penh, Cambodia. Developed by Lotus Property, the multi-tower development comprises 8 residential towers ranging from 15 to 28-storey, integrated with extensive podium-level green spaces and rooftop sky amenities.

#### Project Specifications & Scope

- ❖ Developer: Lotus Property
- ❖ Location: Phnom Penh, Cambodia
- ❖ Development Type: High-Rise Residential / Green Urban Living Space
- ❖ Building Configuration: 8 Towers Total
  - Towers A & B: 15- Storey
  - Towers C & D: 25- Storey
  - Towers E & F: 25- Storey
  - Towers G & H: 28- Storey
- ❖ Project Status: Completed through Design Tender Stage

#### Key Technical & Engineering Highlights

- Structural & Architectural Design Integration: Designed structurally to support multi-level podium transfer systems and heavy rooftop sky-gardens/swimming pools on the taller 28-storey towers.
- Wind & Lateral Load Optimization: Optimized structural framing and lateral force-resisting systems (LFRS) to account for differential heights and wind/seismic interactions across the 8-tower cluster.
- Deliverables: Successfully produced comprehensive tender-stage structural engineering analysis, structural layout drawings, loading criteria, and preliminary bill of quantities (BOQ) for procurement.

**Project Status:** Completed Design Tender Stage

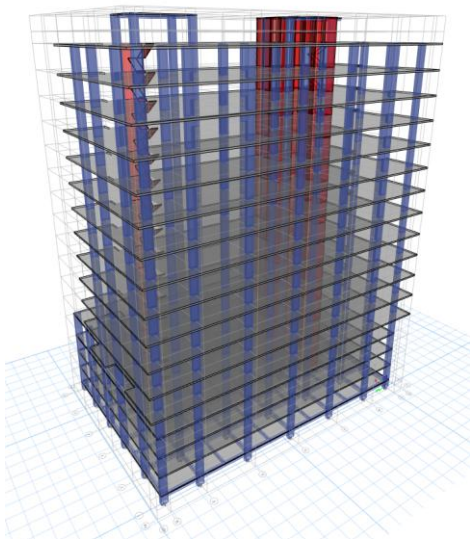


Fig. 1: ETABS Model

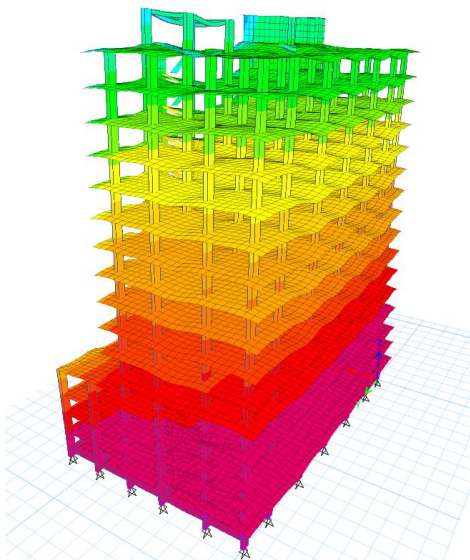


Fig. 3: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Project & Architectural Overview

- **Building Configuration:** 15-storey high – rise structure featuring a dedicated terrace roof level.
- **Vertical Space Allocation**
  - ✓ **Podium:** 5 – Storey dedicated to multi-level parking.
  - ✓ **Superstructure:** 10 - storey designed for high-density residential units.
  - ✓ **Roof Level:** Sky bar and commercial terrace area requiring heavy live-load consideration.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete ordinary shear wall-frame dual system, combining core walls and frames to resist wind and seismic lateral loads. Post-tensioned slab (PT) to resist the gravity loads.
- **Gravity Load-Resisting System:** Post-Tensioned (PT) concrete floor slab system designed for long-span efficiency and reduced floor-to-floor heights.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:**
  - ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
  - ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)
- **Analysis & Design Tools:** CSI ETABS, CSI SAFE, ADAPT-Builder, and custom design spreadsheets.
- **BIM & Interoperability:** Autodesk Revit and AutoCAD integrated into a seamless BIM-to-FEM workflow for analytical modeling and structural detailing.

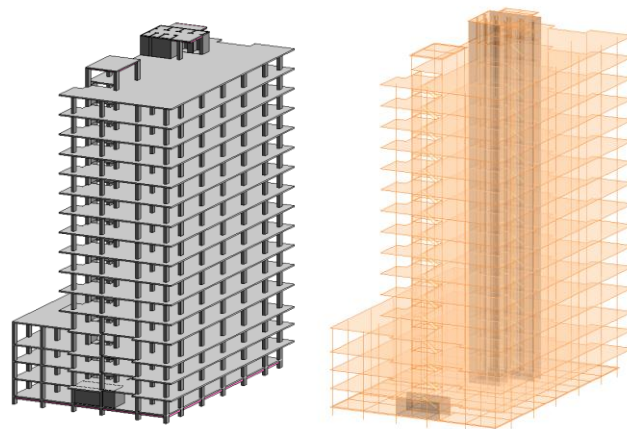


Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS

#### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using ADAPT-Builder and CSI SAFE for efficient prestressing layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

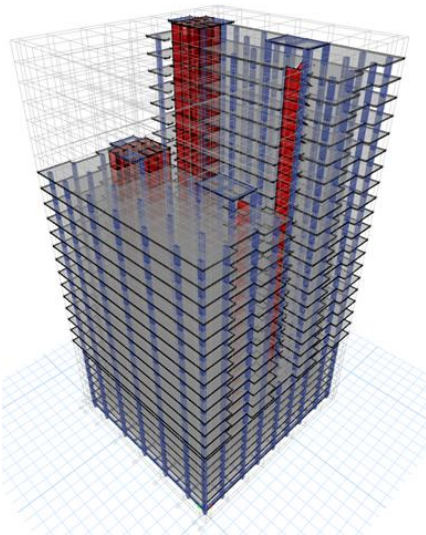


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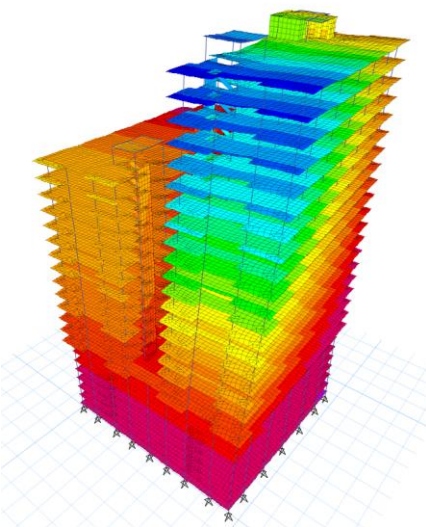


Fig. 3: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Project & Architectural Overview

➤ **Building Configuration:** 25-storey high – rise structure featuring a dedicated terrace roof level.

#### ➤ Vertical Space Allocation

- ✓ **Podium:** 7 – Storey dedicated to multi-level parking.
- ✓ **Superstructure:** 18 - storey designed for high-density residential units.
- ✓ **Roof Level:** Sky bar and commercial terrace area requiring heavy live-load consideration.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete ordinary shear wall-frame dual system, combining core walls and frames to resist wind and seismic lateral loads. Post-tensioned slab (PT) to resist the gravity loads.
- **Gravity Load-Resisting System:** Post-Tensioned (PT) concrete floor slab system designed for long-span efficiency and reduced floor-to-floor heights.

#### ❖ Engineering Codes & Analysis Software

#### ➤ Governing Design Codes:

- ✓ **ACI 318-14** (Building Code Requirements for Structural Concrete)
- ✓ **ASCE 7-10** (Minimum Design Loads for Buildings and Other Structures)

➤ **Analysis & Design Tools:** CSI ETABS, CSI SAFE, ADAPT-Builder, and custom design spreadsheets.

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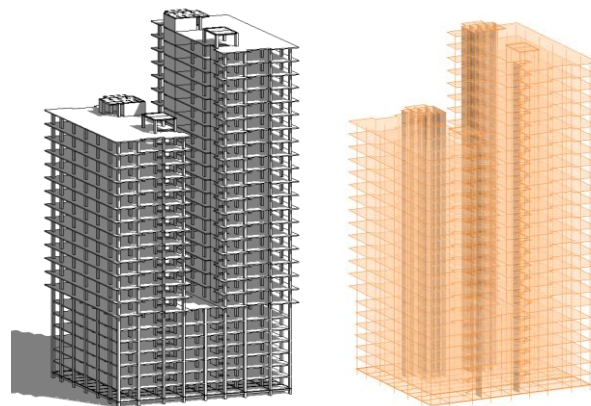


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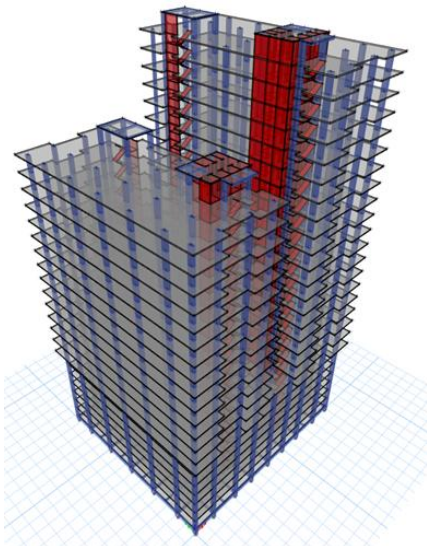


Fig. 1: ETABS Model

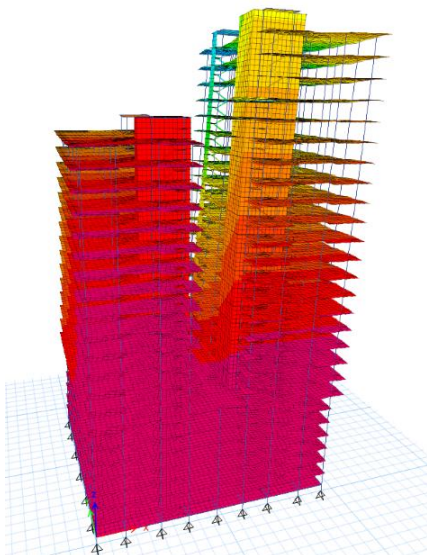


Fig. 3: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Project & Architectural Overview

- **Building Configuration:** 25-storey high – rise structure featuring a dedicated terrace roof level.
- **Vertical Space Allocation**
  - ✓ **Podium:** 7 – Storey dedicated to multi-level parking.
  - ✓ **Superstructure:** 18 - storey designed for high-density residential units.
  - ✓ **Roof Level:** Sky bar and commercial terrace area requiring heavy live-load consideration.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete ordinary shear wall-frame dual system, combining core walls and frames to resist wind and seismic lateral loads. Post-tensioned slab (PT) to resist the gravity loads.
- **Gravity Load-Resisting System:** Post-Tensioned (PT) concrete floor slab system designed for long-span efficiency and reduced floor-to-floor heights.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:**
  - ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
  - ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)
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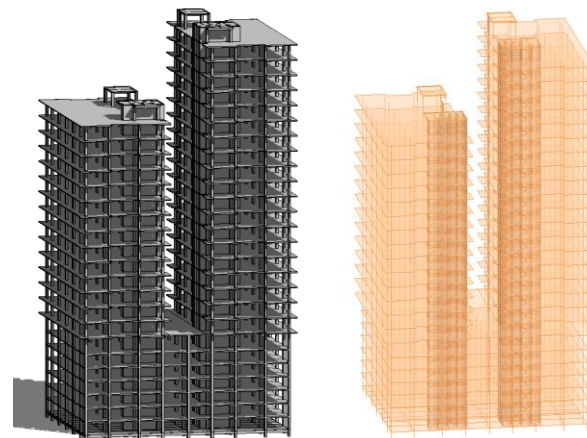


Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS

#### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using ADAPT-Builder and CSI SAFE for efficient prestressing layouts.
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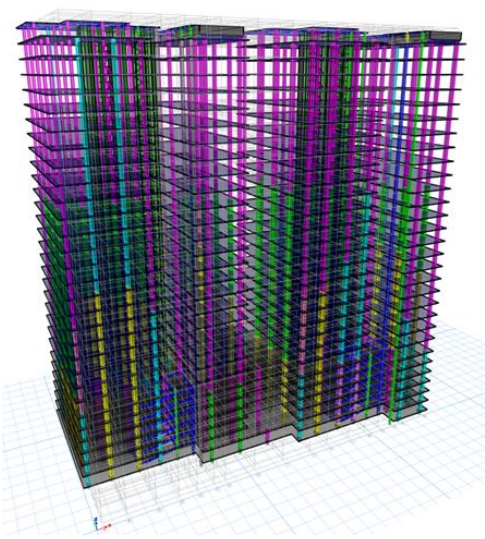


*Fig. 1: ETABS Model*

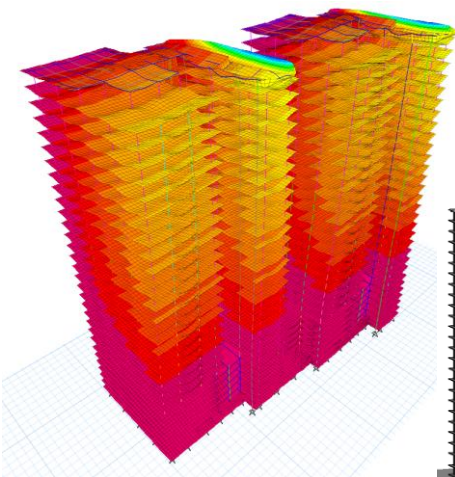


*Fig. 3: Drift Deformed Shape Model in ETABS*

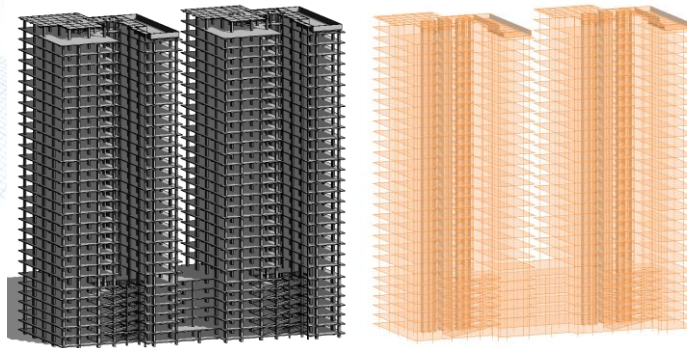


*Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS*

### Project Details

#### ❖ Project & Architectural Overview

- **Building Configuration:** 28-storey high – rise structure featuring a dedicated terrace roof level.
- **Vertical Space Allocation**
  - ✓ **Podium:** 7 – Storey dedicated to multi-level parking.
  - ✓ **Superstructure:** 21 - storey designed for high-density residential units.
  - ✓ **Roof Level:** Sky bar and commercial terrace area requiring heavy live-load consideration.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete ordinary shear wall-frame dual system, combining core walls and frames to resist wind and seismic lateral loads. Post-tensioned slab (PT) to resist the gravity loads.
- **Gravity Load-Resisting System:** Post-Tensioned (PT) concrete floor slab system designed for long-span efficiency and reduced floor-to-floor heights.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:**
  - ✓ **ACI 318-14** (Building Code Requirements for Structural Concrete)
  - ✓ **ASCE 7-10** (Minimum Design Loads for Buildings and Other Structures)
- **Analysis & Design Tools:** CSI ETABS, CSI SAFE, ADAPT-Builder, and custom design spreadsheets.
- **BIM & Interoperability:** Autodesk Revit and AutoCAD integrated into a seamless BIM-to-FEM workflow for analytical modeling and structural detailing.

### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using ADAPT-Builder and CSI SAFE for efficient prestressing layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

## CONDOMINIUM | CAMBODIA (2020) | COMPLETED DESIGN TENDER STAGE



Fig. 1: ETABS Model

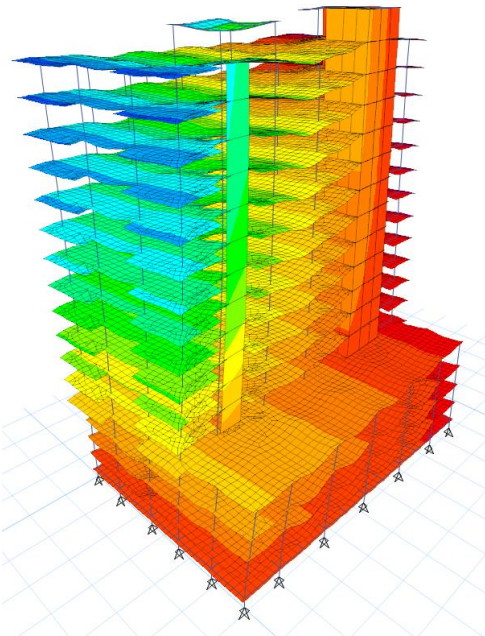


Fig. 3: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Project & Architectural Overview

A feasibility and structural design proposal commissioned by a private client for budget planning and tender evaluation. The development features a 15-storey multi-use high-rise concept, incorporating:

- **Podium:** 5 – storey dedicated to parking space.
- **Residential Tower:** 10 - storey of modern residential living space with a landscaped green roof.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Ordinary core frame system combining RC columns and shear walls to efficiently resist lateral wind and seismic loads.
- **Gravity Load-Resisting System:** Post-Tensioned (PT) concrete floor slab system designed for long-span efficiency and reduced floor-to-floor heights.

#### ❖ Engineering Codes & Analysis Software

##### ➤ Governing Design Codes:

- ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
- ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)

##### ➤ Analysis & Design Tools: CSi ETABS, CSi SAFE, ADAPT-Builder, and custom design spreadsheets.

##### ➤ BIM & Interoperability: Autodesk Revit and AutoCAD integrated into a seamless BIM-to-FEM workflow for analytical modeling and structural detailing.

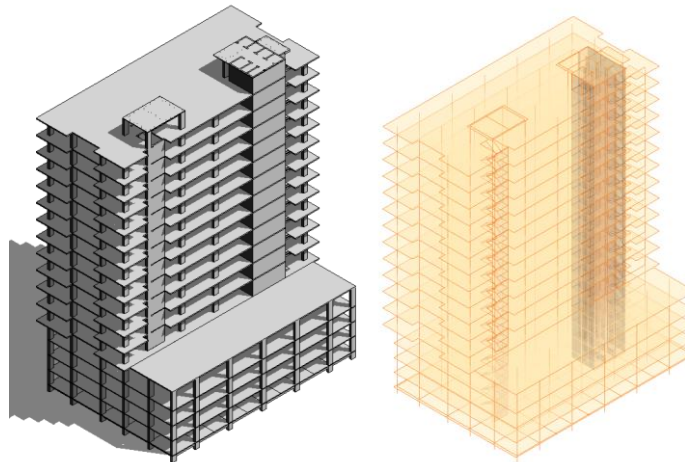


Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS

#### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using ADAPT-Builder and CSi SAFE for efficient prestressing layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

## HOTEL & CASINO | CAMBODIA (2020) | COMPLETED DESIGN TENDER STAGE



Fig. 1: ETABS Model

### Project Details

#### ❖ Project & Architectural Overview

A mixed-use hospitality and gaming development featuring a 13-storey main structure and a single subterranean basement level:

- **Basement:** Dedicated MEP plant rooms and utility infrastructure.
- **Tower Section:** 2 - storey allocated for casino operations, alongside 1 storey of retail space and dining amenities. Residential living/hotel guest accommodation.
- **Rooftop:** Sky bar and open-air terrace roof.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation utilizing bored piles to handle high vertical and overturning loads.
- **Lateral Force-Resisting System (LFRS):** Ordinary core frame system combining RC columns and shear walls to efficiently resist lateral wind and seismic loads.
- **Gravity Load-Resisting System:** Reinforced concrete (RC) beam and slab framing system.

#### ❖ Engineering Codes & Analysis Software

##### ➤ Governing Design Codes:

- ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
- ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)

##### ➤ Analysis & Design Tools:

CSi ETABS, CSi SAFE, ADAPT-Builder, and custom design spreadsheets.

##### ➤ BIM & Interoperability:

Autodesk Revit and AutoCAD integrated into a seamless BIM-to-FEM workflow for analytical modeling and structural detailing.

#### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **RC Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using CSi SAFE for efficient reinforcement layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

## BUSINESS TOWER | CAMBODIA (2021) | COMPLETED DESIGN TENDER STAGE



Fig. 1: ETABS Model

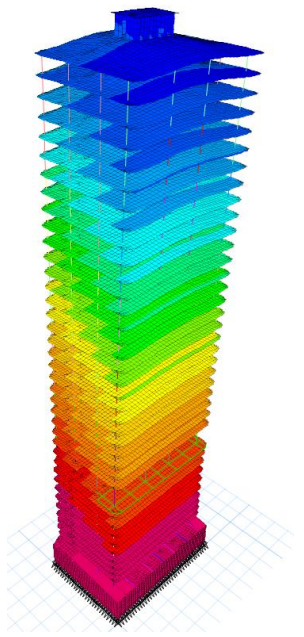


Fig. 3: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Project & Architectural Overview

A high-density, 36-storey multi-use commercial and residential tower featuring 2 subterranean basement levels:

- **Substructure:** 2 – basement floors dedicated to underground parking space.
- **Podium:** 2 – storey allocated for retail space, 6 – storey configured for sky parking.
- **Commercial Office Zone:** 4 - storey dedicated to prime office space.
- **Amenities Deck:** Level 10 and 10 Mezzanine housing a sky swimming pool and fitness center.
- **Residential Tower:** 24 – storey of residential apartments.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles to accommodate significant gravity loads and lateral overturning moments.
- **Lateral Force-Resisting System (LFRS):** Ordinary core frame system combining RC columns and shear walls to efficiently resist lateral wind and seismic loads.
- **Gravity Load-Resisting System:** Post-tensioned (PT) concrete slabs optimized for structural spans, deflection control, and maximized clear headroom across varying occupancy spaces.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:**
  - ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
  - ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)
- **Analysis & Design Tools:** CSI ETABS, CSI SAFE, ADAPT-Builder, and custom design spreadsheets.
- **BIM & Interoperability:** Autodesk Revit and AutoCAD, featuring direct BIM-to-FEM workflow for analytical integration for structural modeling and detailed analysis.

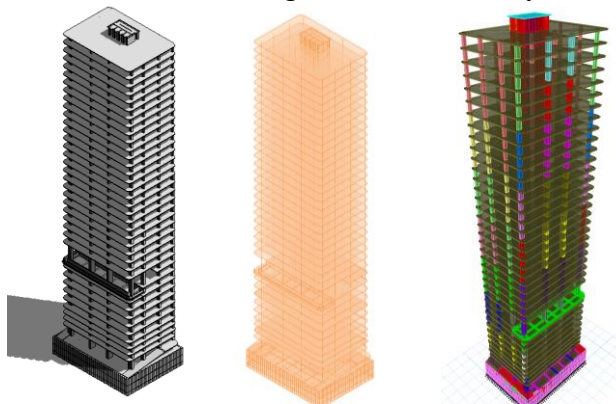


Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS

#### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using ADAPT-Builder and CSI SAFE for efficient prestressing layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

## APARTMENT | CAMBODIA (2021) | COMPLETED DESIGN TENDER STAGE



Fig. 1: ETABS Model

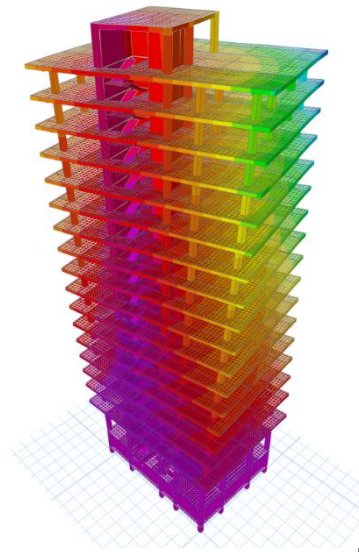


Fig. 3: Drift Deformed Shape Model in ETABS

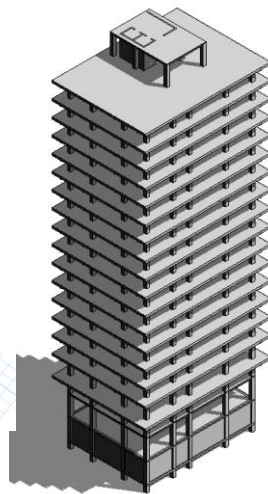
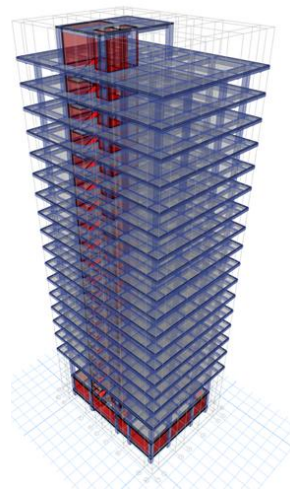
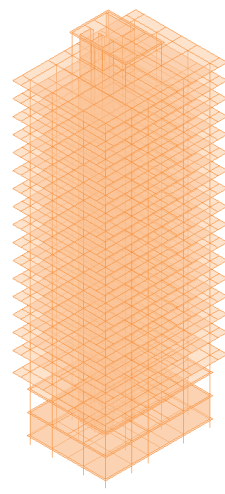


Fig. 2: Physical and Analytical Models in Revit, Interoperability between Revit and ETABS



### Project Details

#### ❖ Project & Architectural Overview

A 17-storey mixed-use residential development featuring commercial space and rooftop amenities:

- **Ground Floor:** 1 – storey allocated for retail operations.
- **Upper Level:** 16 – storey accommodating residential units alongside integrated retail and dining/restaurant spaces.
- **Rooftop:** Open-air sky bar and terrace roof.

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep foundation system utilizing bored piles.
- **Lateral Force-Resisting System (LFRS):** Ordinary core frame system combining RC columns and shear walls to efficiently resist lateral wind and seismic loads.
- **Gravity Load-Resisting System:** Reinforced concrete (RC) conventional beam and slab system.

#### ❖ Engineering Codes & Analysis Software

##### ➤ Governing Design Codes:

- ✓ ACI 318-14 (Building Code Requirements for Structural Concrete)
- ✓ ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures)

##### ➤ Analysis & Design Tools: CSi ETABS, CSi SAFE, and custom design spreadsheets.

##### ➤ BIM & Interoperability: Autodesk Revit and AutoCAD integrated into a seamless BIM-to-FEM workflow for analytical modeling and structural detailing.

### Key Technical Contributions & Engineering Scope

- ❑ **3D Finite Element Modeling:** Built and analyzed full-scale 3D structural models in ETABS to evaluate building sway, inter-storey drift ratios, and dynamic response under lateral wind/seismic loadings.
- ❑ **Post-Tensioned Slab Analysis:** Evaluated slab bending moments, stress distributions, and serviceability limits using and CSi SAFE for efficient reinforcement layouts.
- ❑ **BIM-FEM Workflow Integration:** Executed bi-directional interoperability between Autodesk Revit (physical/analytical models) and ETABS to streamline design iterations, clash detection, and structural documentation.

## URBAN VILLAGE PHASE 2 | CAMBODIA (2021) | COMPLETED CONSTRUCTION



*Fig. 1: Architectural Model*

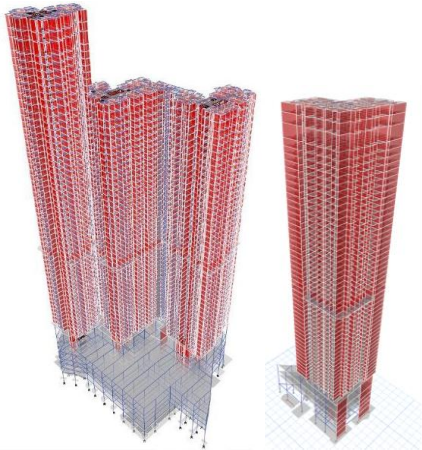


*Fig. 2: ETABS Model*

### Project Details

#### ❖ Project & Architectural Overview

Urban Village Phase 2 is an iconic high-rise residential development located along Hun Sen Blvd, Phnom Penh. Reaching a maximum height of 200 meters, the project features four towers built atop a shared 5-story podium. The design incorporates sky bridges connecting Tower E to Towers F, G, and H, integrated refuge floors with wind openings, and rooftop green spaces.

#### ❖ Building Configuration

- **Towers E, F, & G:** 56 - Storey (Residential)
- **Tower H:** 60 - Storey (Residential)
- **Podium:** 5 - Storey (Parking & Rooftop Greenery)

#### ❖ Structural Systems & Engineering Criteria

- **Foundation System:** Deep bored pile foundation tailored for heavy structural loading.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete core wall and frame system designed to efficiently resist lateral wind and seismic loads.
- **Gravity Load Resisting System:** Cast-in-place reinforced concrete beam and slab floor system.
- **Structural Transfer System:** Heavy reinforced concrete transfer plates at the podium interface to support tower column layouts above.

#### ❖ Design Criteria & Technical Tools

- **Governing Design Codes:** BS Standards, Uniform Building Code (UBC), National Building Code (NBC).
- **Structural Analysis & Design:** CSI ETABS (3D Structural & Drift Analysis), CSI SAFE (Slab/Foundation Design), In-house Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

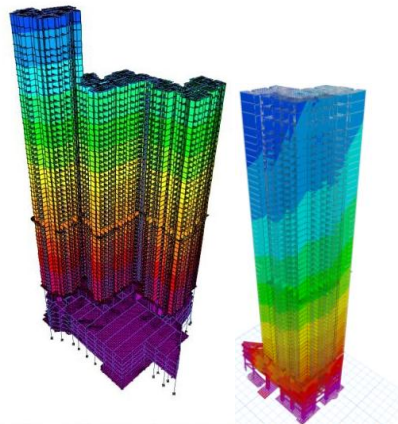


*Fig. 3: Drift Deformed Shape Model in ETABS*

## MIXED-USE HIGH-RISE TOWER | CAMBODIA (2022) | COMPLETED DESIGN TENDER STAGE



*Fig. 1: Architectural Model*

### Project Details

#### ❖ Project & Architectural Overview

A 30-story high-rise building comprising multi-functional spaces designed for optimal spatial efficiency.

#### ❖ Building Configuration

- **Ground Floor:** Retail / Commercial Space
- **Levels 1–5:** Multi-level Parking Podium
- **Level 6 & Mezzanine:** Amenities (Swimming Pool & Gymnasium)
- **Levels 7–29:** Residential Living Units
- **Roof Level:** Sky Bar & Outdoor Terrace

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** RC Core Wall and Shear Wall frame system to effectively resist wind and seismic lateral forces.
- **Gravity Load Resisting System:** Conventional Reinforced Concrete (RC) beam-and-slab framing scheme for efficient load path distribution.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSI ETABS, CSI SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks



Fig. 1: Architectural Model

### Project Details

#### ❖ Project & Architectural Overview

A 13-story development with 1 basement level designed for mixed commercial and residential occupancy.

#### ❖ Building Configuration

- **Basement Level:** Underground Parking
- **Levels 1–5:** Multi-Purpose Commercial Spaces
- **Levels 6–12:** Residential Living Units
- **Roof Level:** Sky Bar & Outdoor Terrace

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** RC Core Wall and Shear Wall frame system to effectively resist wind and seismic lateral forces.
- **Gravity Load Resisting System:** Post-tensioned (PT) concrete floor slabs optimized for deflections, stresses, and extended spans.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSI ETABS, CSI SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

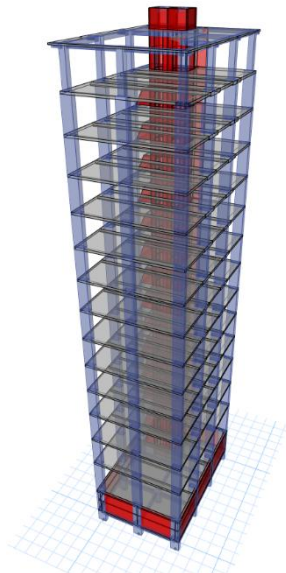


Fig. 2: ETABS Model

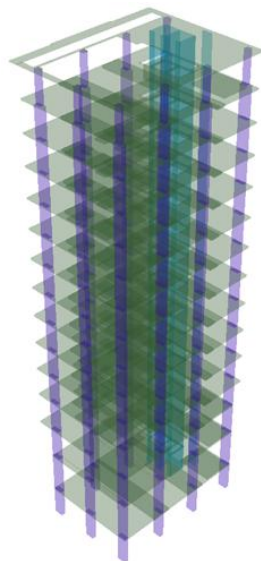


Fig. 3: Adapt Builder Model

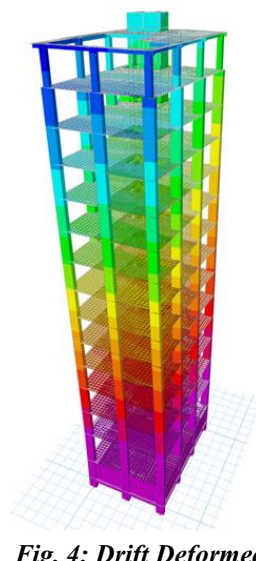


Fig. 4: Drift Deformed Shape Model in ETABS

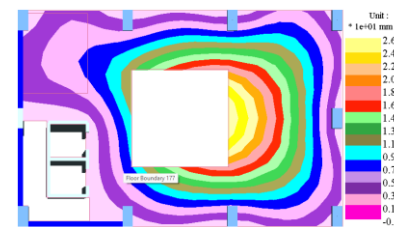


Fig. 6: Slab Deflection u Diagram

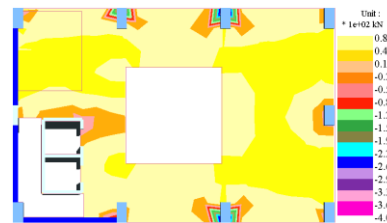


Fig. 5: Slab moment Contour Diagram

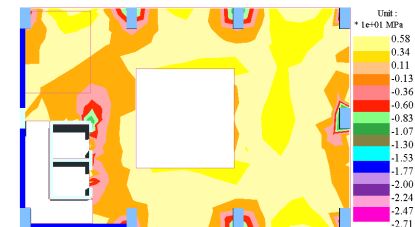


Fig. 8: Slab Stress (Bot) Contour Diagram

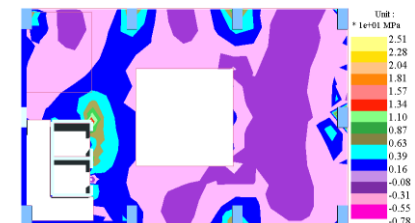


Fig. 7: Slab Stress (Top) Contour Diagram



Fig. 1: Architectural Model

### Project Details

#### ❖ Project & Architectural Overview

A 15-story hospitality development featuring tailored architectural framing and optimized structural layouts to accommodate hotel operations and guest amenities.

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** Reinforced concrete core wall and frame system to safely absorb wind and seismic lateral loads.
- **Gravity Load Resisting System:** Conventional reinforced concrete (RC) beam-and-slab structural scheme designed for robust load distribution.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSI ETABS, CSI SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

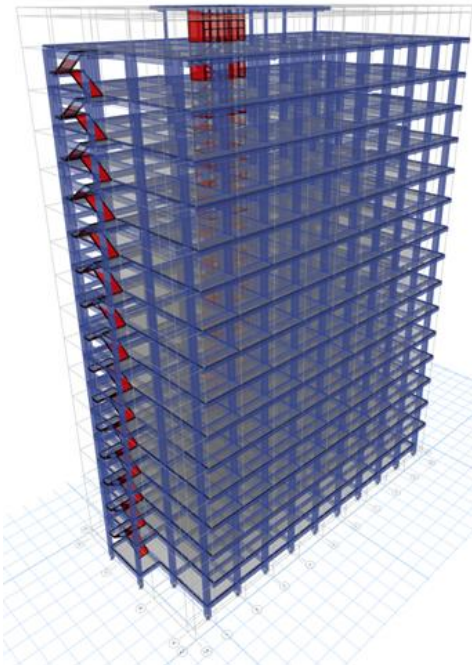


Fig. 2: ETABS Model

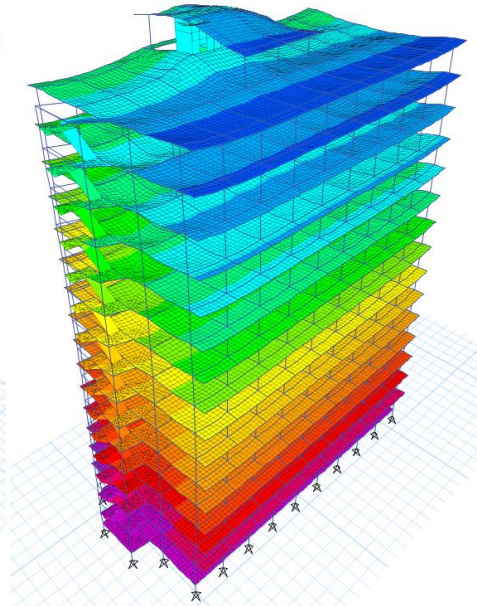


Fig. 3: Drift Deformed Shape Model in ETABS

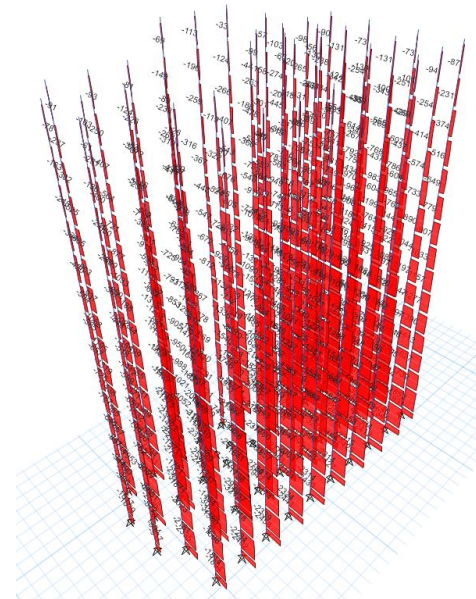


Fig. 4: Columns Axial Forces Diagram

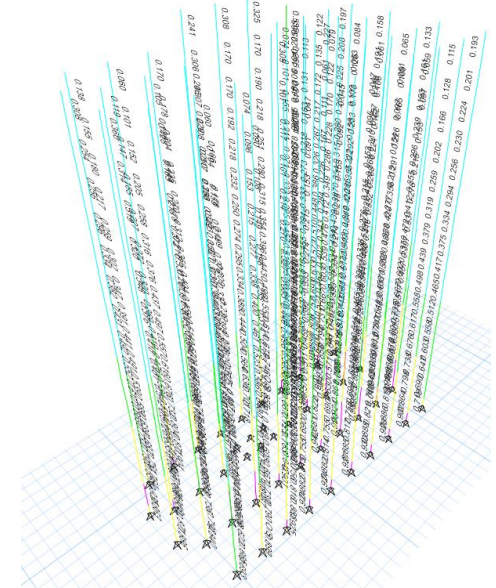


Fig. 5: Columns P-M-M Interaction Ratio

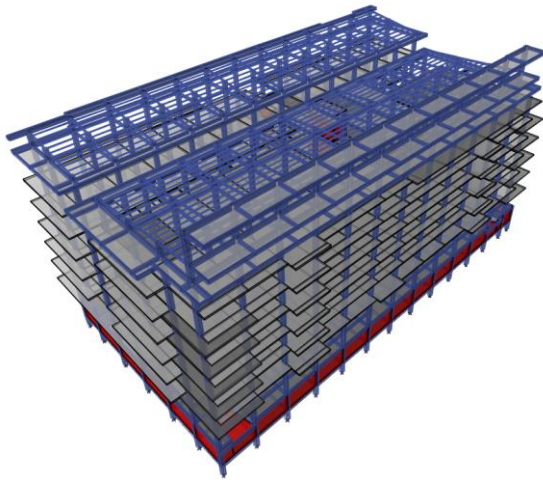


Fig. 1: ETABS Model

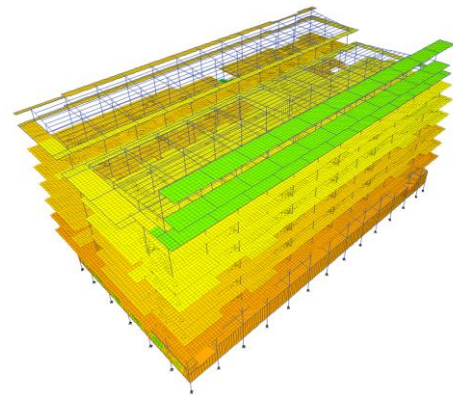


Fig. 2: Drift Deformed Shape Model in ETABS

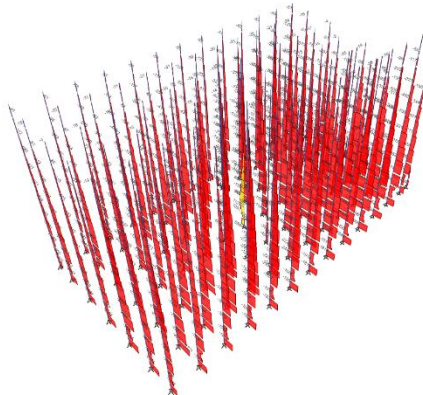


Fig. 3: Column Axial Forces Diagram

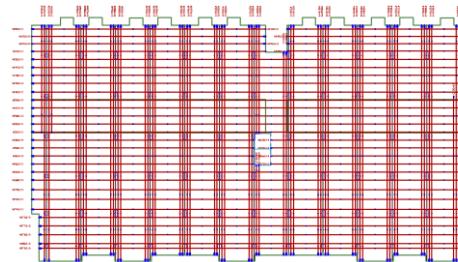


Fig. 3: Tendon Model in Adapt Builder

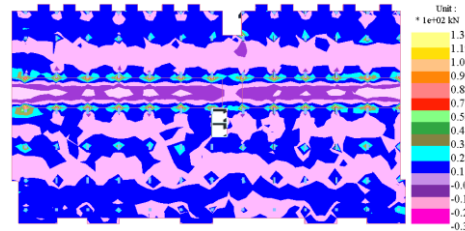


Fig. 3: Slan Model Contour Diagram

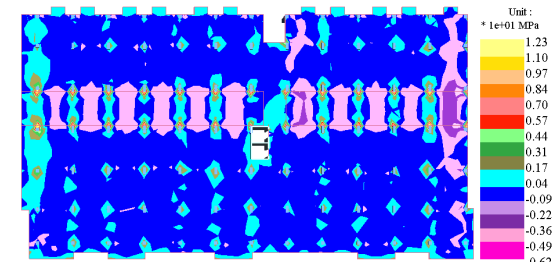


Fig. 3: Slab Stress (Top) Contour Diagram

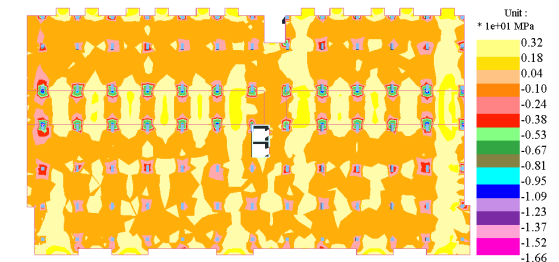


Fig. 3: Slab Stress (Bot) Contour Diagram

### Project Details

#### ❖ Project & Architectural Overview

A 6-story residential apartment development with 1 basement designed for optimal structural efficiency and functional spatial distribution.

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** RC Core Wall and Shear Wall frame system to effectively resist wind and seismic lateral forces.
- **Gravity Load Resisting System:** Hybrid system incorporating reinforced concrete beams and post-tensioned (PT) floor slabs for deflection and stress control across wide spans.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSi ETABS, CSi SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

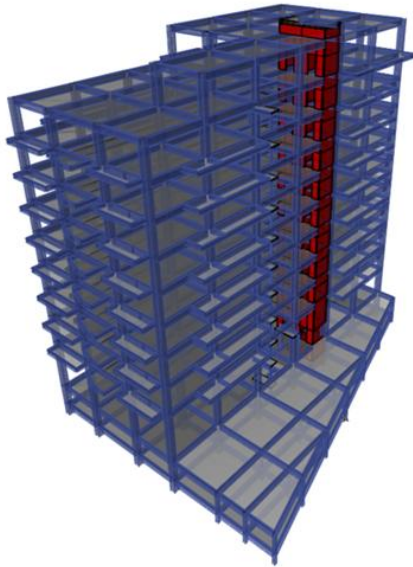


**Fig. 1: ETABS Model**

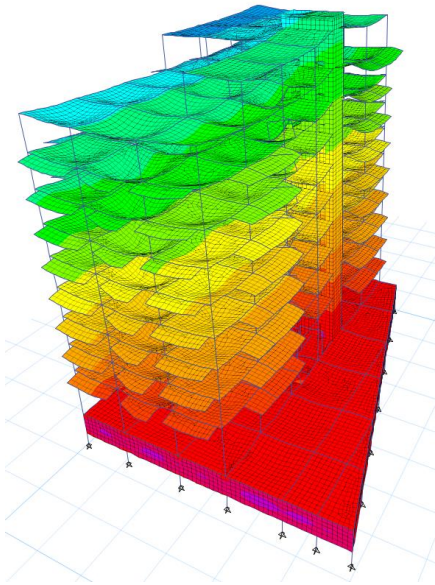


**Fig. 2: Drift Deformed Shape Model in ETABS**

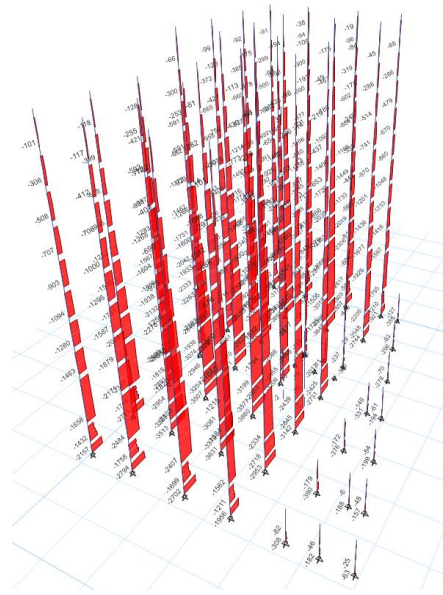


**Fig. 3: Column Axial Force Diagram**



**Fig. 5: Slab Moments Contour Diagram**

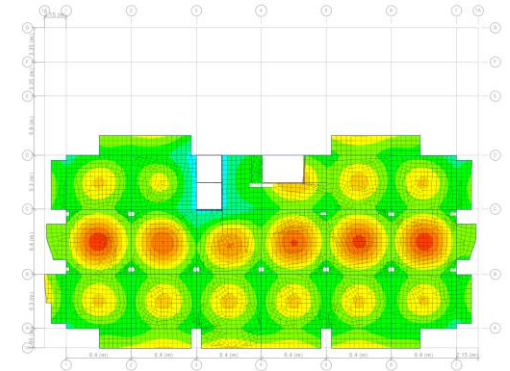


**Fig. 6: Slab Deflection Contour Diagram**

### Project Details

#### ❖ Project & Architectural Overview

A 9-story residential apartment development with 1 basement designed to optimize structural efficiency and accommodate irregular site constraints.

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** RC Core Wall and Shear Wall frame system to effectively resist wind and seismic lateral forces.
- **Gravity Load Resisting System:** Conventional reinforced concrete (RC) beam-and-slab structural scheme providing direct and robust load paths.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSI ETABS, CSI SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

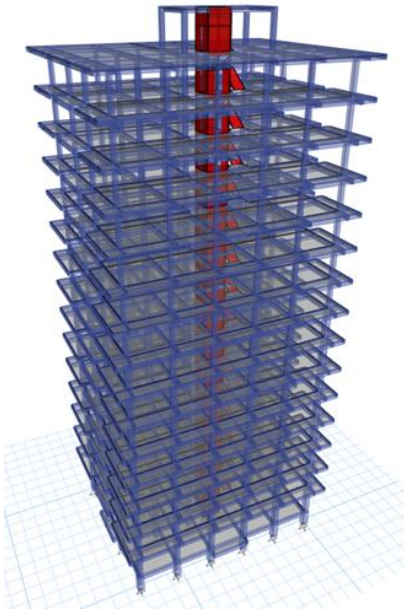


**Fig. 1: ETABS Model**

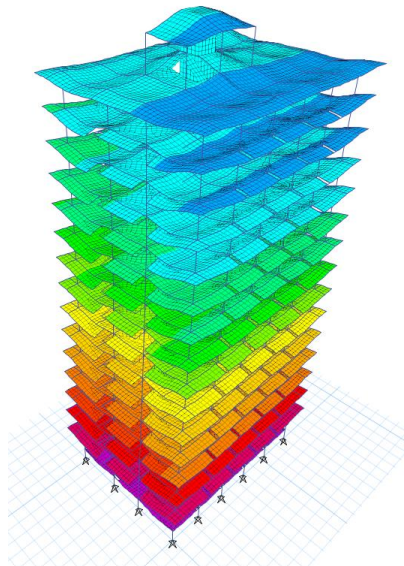


**Fig. 2: Drift Deformed Shape Model in ETABS**

### Project Details

#### ❖ Project & Architectural Overview

A 12-story residential condominium development with 1 basement designed for optimal structural efficiency, safety, and modern living space layout.

#### ❖ Structural Engineering System

- **Foundation System:** Deep foundation utilizing high-capacity bored piles.
- **Lateral Force-Resisting System (LFRS):** RC Core Wall and Shear Wall frame system to effectively resist wind and seismic lateral forces.
- **Gravity Load Resisting System:** Conventional reinforced concrete (RC) beam-and-slab structural scheme providing direct and robust load paths.

#### ❖ Engineering Codes & Analysis Software

- **Governing Design Codes:** ACI 318-14, ASCE 7-10.
- **Structural Analysis & Design:** CSI ETABS, CSI SAFE, Excel Calculation Spreadsheets.
- **BIM & Drafting Tools:** Autodesk Revit, AutoCAD, and Autodesk Navisworks

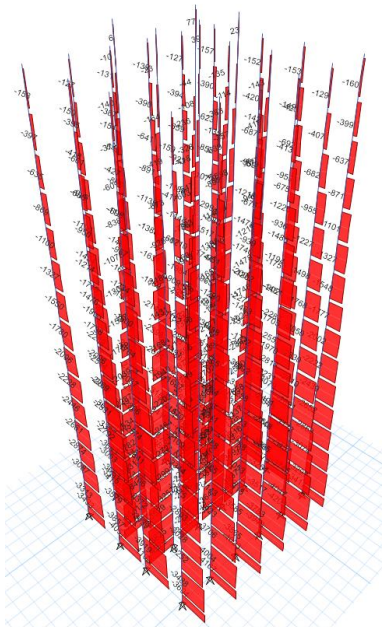


**Fig. 3: Column Axial Force Diagram**

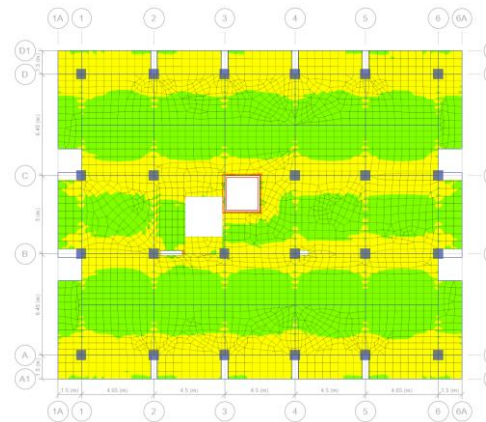


**Fig. 5: Slab Moments Contour Diagram**

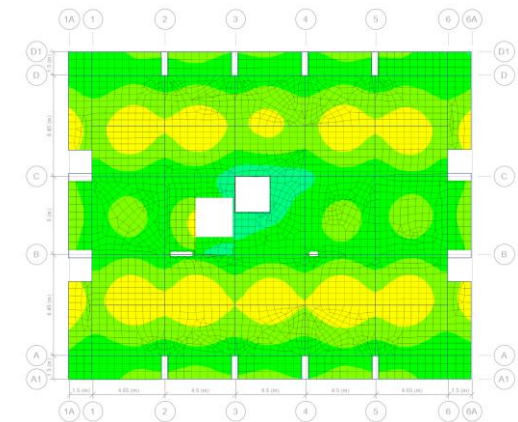


**Fig. 6: Slab Deflection Contour Diagram**

## NATIONAL BANK OF CAMBODIA | CAMBODIA (2024) | COMPLETED CONSTRUCTION



*Fig. 1: Architectural Model*

### Project Details

The new National Bank of Cambodia Headquarters is a landmark administrative building that redefining the skyline of Phnom Penh. This project replaces the central bank's former facility, creating a modern, high-capacity, and secure hub for the nation's financial system while serving as an architectural testament to Cambodia's rich cultural history.

#### Architectural Concept

The architectural design of the new NBC headquarters is deeply rooted in ancient Khmer structure, specifically drawing inspiration from:

**Prasat Phnom (Mountain Temple structure):** The building's overall form is designed to mirror the layered, ascending logic of ancient Khmer temples.

**Koh Ker Temple:** The structure is particularly influenced by the pyramid-like strength of the Koh Ker style, celebrating Cambodia's cultural abundance.

#### ❖ Key Responsibilities & Engineering Contributions

**Professional Engineer (PE) Endorsement:** Served as the authorizing Professional Engineer, providing final review, design validation, and formal PE sign-off on structural plans to ensure strict compliance with local building codes, international structural standards, and severe life-safety requirements.

**PT Slab System Review & Optimization:** Executed comprehensive technical reviews of the post-tensioned floor framing systems across 27 elevated levels. Optimized tendon profiles, strand counts, and slab thicknesses to balance long-span deflections, punching shear capacity, and floor-to-floor height constraints.

**Constructability & Transfer Analysis:** Conducted rigorous stress analyses to evaluate secondary forces, hyperstatic moments, and elastic shortening effects associated with large PT pours—ensuring seamless load transfer to the primary core and column networks.

**Quality Assurance & Pre-Stress Protocol:** Established quality control benchmarks for high-strength post-tensioning materials, jack calibration, tendon elongation tolerances, and concrete compressive strength thresholds prior to strand stressing.

## BUKIT TIMAH INTEGRATED DEVELOPMENT (BTID) | SINGAPORE (2024) | UNDER CONSTRUCTION



*Fig. 1: Architectural Model*

### Project Details

#### ❖ Basic information:

Bukit Timah Integrated Development (BTID) is an integrated development consists of civic & community, education institution and 2 basements carpark and 5-storey integrated development. BTID located next to existing Beauty World MRT Exit C bounded by Jalan Jurong Kechil, Upper Bukit Timah Road, and Pei Wah Avenue.

#### ❖ Structural System

- Foundation: Deep foundation using bored piles, Raft on piles foundation and SBP wall as retaining wall for basement
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.
- PT transfer beam to support upper columns storey

#### ❖ Engineering Codes & Analysis Software

- Design code: EUROODE, Singapore National Annex
- Structural design aids: CSI ETABS, CSI SAFE, RAPT, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

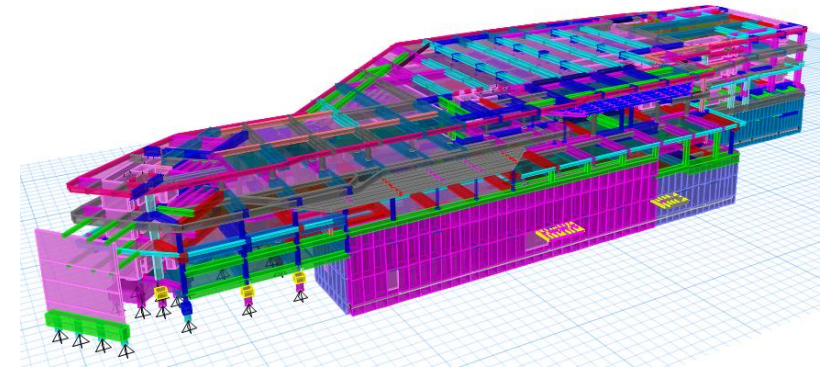


*Fig. 2: ETABS Model*

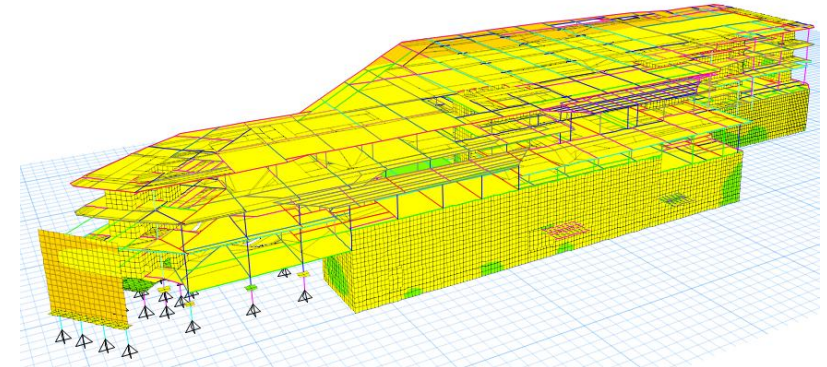


*Fig. 3: Drift Deformed Shape Model in ETABS*

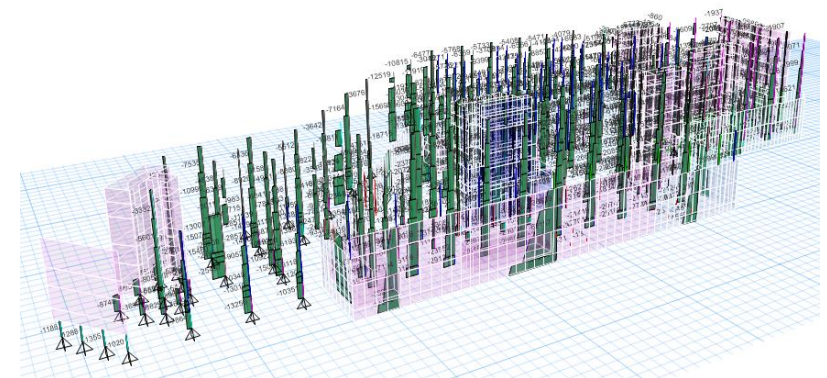


*Fig. 4: Column and Wall Piers Axial Force Diagram*

## HDB WOODLANDS BLK 903B | SINGAPORE (2024) | UNDER CONSTRUCTION



**Fig. 1: Architectural Model**

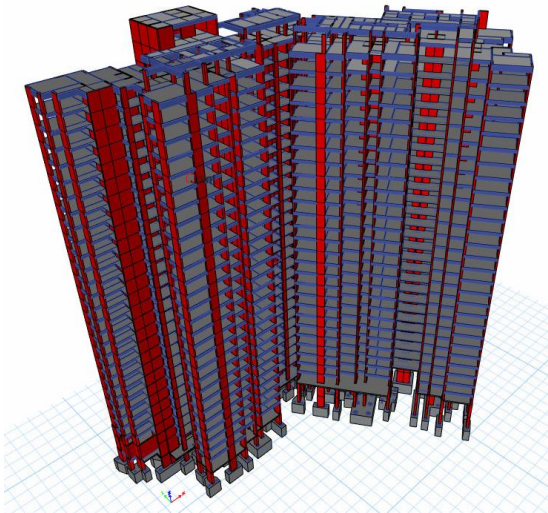


**Fig. 3: ETABS Model**

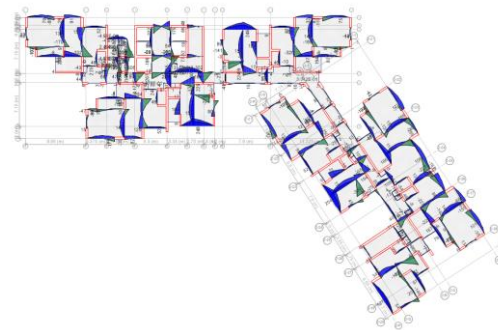


**Fig. 3: Beam Bending Moment Diagram**

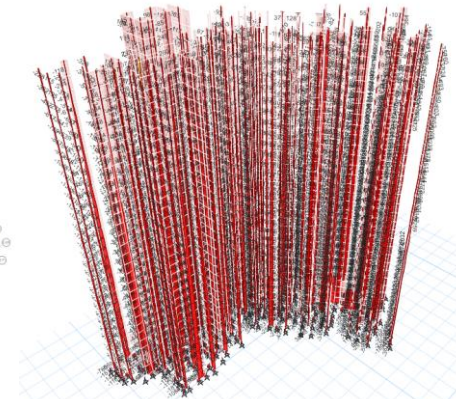


**Fig. 3: Wall Piers Axial Force Diagram**

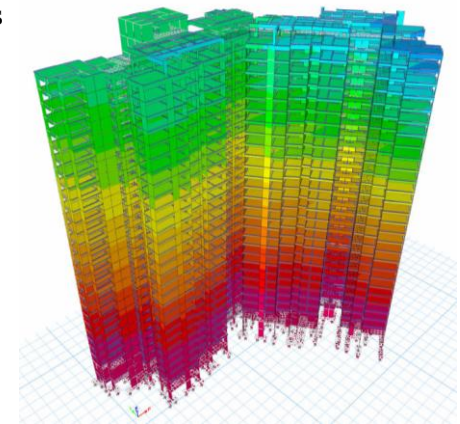


**Fig. 2: Drift Deformed Shape Model in ETABS**

### Project Details

#### ❖ Basic information:

Proposed new erection of public housing development comprising 1 block of 33-storey, 1 block of 28-storey, 1 block of 29-storey residential building (Total 848 units), 1 block of 7-storey multi-storey car park with roof garden, social communal facilities, ESS and 2 Precinct pavilions on lots 06209N PT and 06449N PT MK 13 at North Woodlands drive (Woodland planning area).

#### ❖ Structural System

- Foundation: Deep foundation using bored piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: EUROODE, Singapore National Annex
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

## HDB WOODLANDS MULTI CAR PARK | SINGAPORE (2024) | UNDER CONSTRUCTION

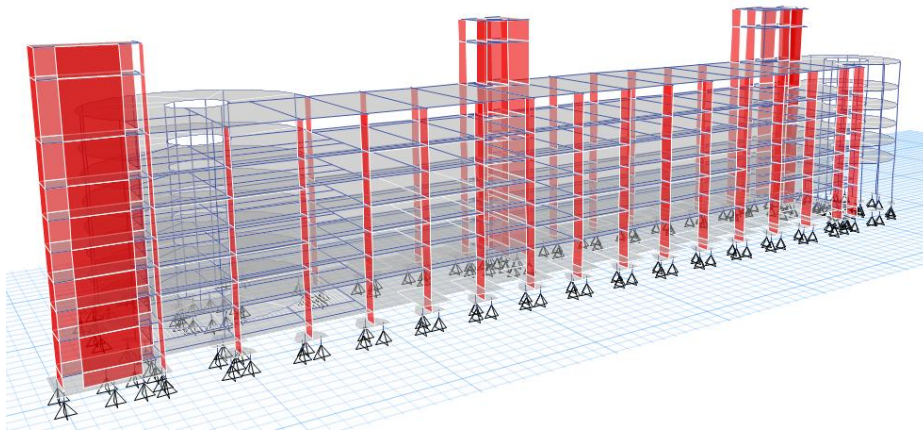


Fig. 1: ETABS Model

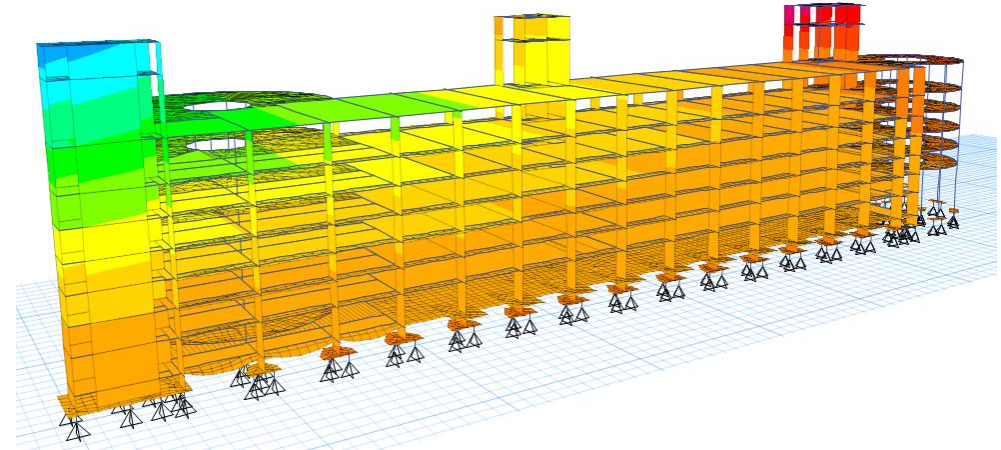


Fig. 2: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Basic information:

Proposed new erection of public housing development comprising 1 block of 33-storey, 1 block of 28-storey, 1 block of 29-storey residential building (Total 848 units), 1 block of 7-storey multi-storey car park with roof garden, social communal facilities, ESS and 2 Precinct pavilions on lots 06209N PT and 06449N PT MK 13 at North Woodlands drive (Woodland planning area).

Project location: Singapore

The project status: Under construction

#### ❖ Structural System

- Foundation: Deep foundation using bored piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: EUROODE, Singapore National Annex
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

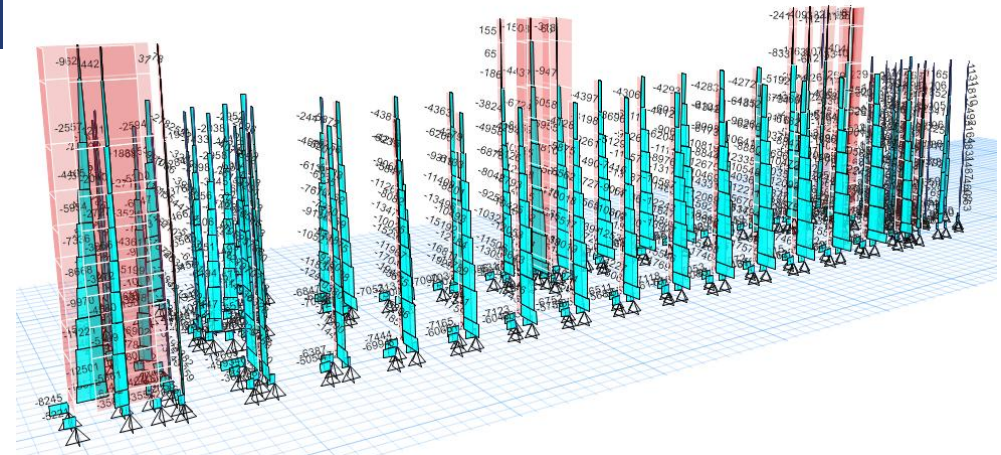


Fig. 3: Column and Wall Piers Axial Force Diagram

## HDB PUNGGOL WEST | SINGAPORE (2024) | UNDER CONSTRUCTION

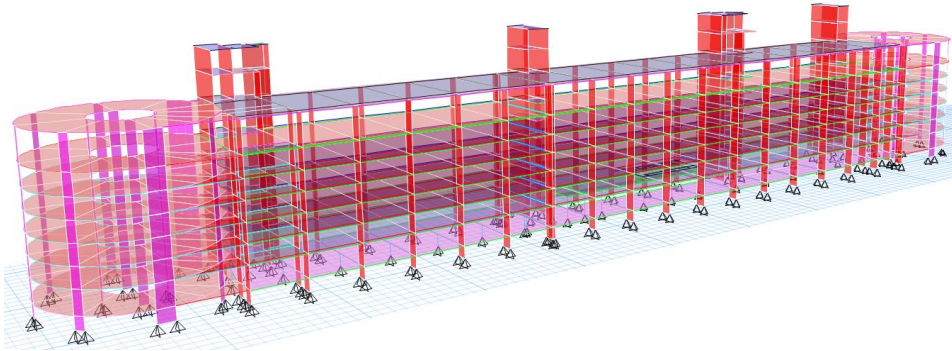


Fig. 1: ETABS Model

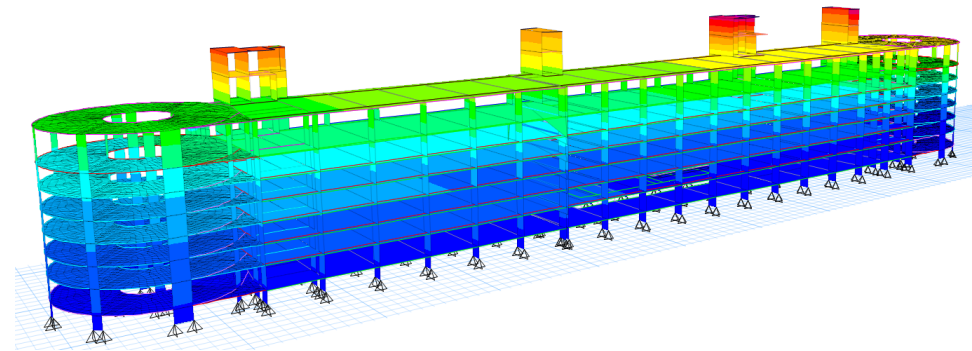


Fig. 2: Drift Deformed Shape Model in ETABS

### Project Details

#### ❖ Basic information:

Punggol west C41 – Proposed public housing development comprising 1 block of 10/19 storey, 1 block of 13/19 storey, 1 block of 16/19 storey, 2 blocks of 17-storey & 2 blocks of 18-storey of residential buildings ( Total 1026 units), 1 block of 3-storey child car center, 1 block of 7-storey multi storey car park with roof garden, ESS, Precinct pavilion, communal facilities & common garden at sumang lane.

Project location: Singapore

The project status: Under construction

#### ❖ Structural System

- Foundation: Deep foundation using bored piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: EUROODE, Singapore National Annex
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

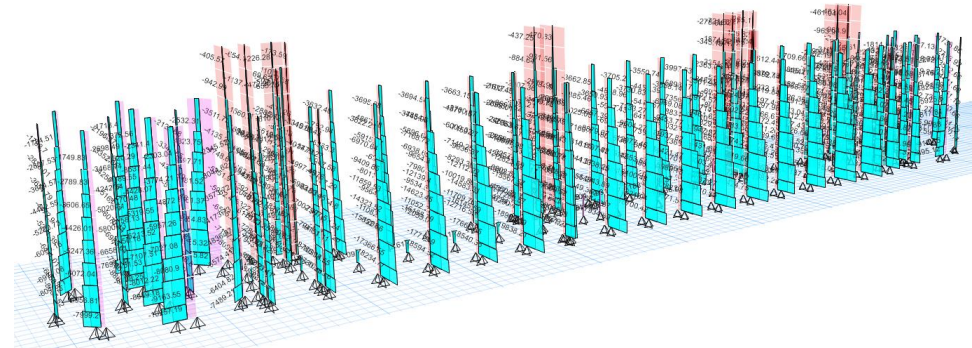


Fig. 3: Column and Wall Piers Axial Force Diagram

## TTP PARKING TOWER | CAMBODIA (2025) | UNDER CONSTRUCTION



*Fig. 1: Architectural Model*

### Project Details

#### ❖ Basic information:

TTP Parking tower has been proposed by the private owner. The project consists of 18-storey with 1 basement floor, located in Phnom Penh city. TTP parking tower is the automat parking building and mix used space. There is 12 stories automat parking at the back side, and the retail with office space at the front of the building.

The project status: Under construction

#### ❖ Structural System

- Foundation: Deep foundation using bored piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: ACI 318-14, ASCE 7-10
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

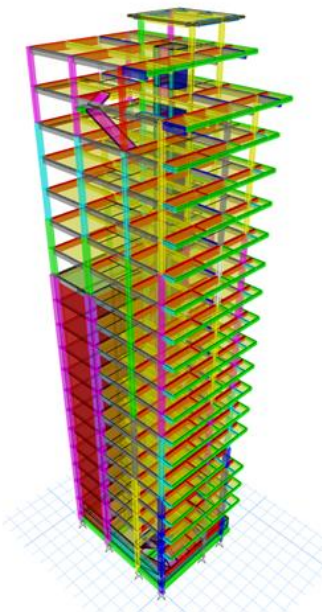


*Fig. 3: ETABS Model*

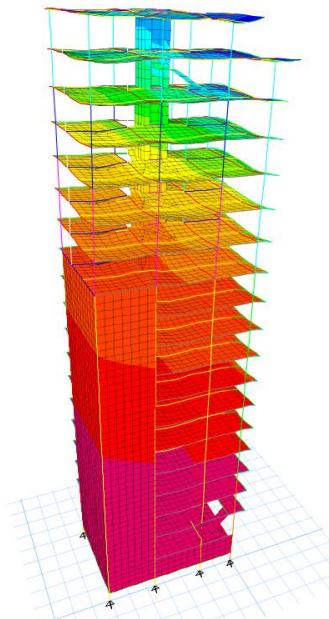


*Fig. 2: Drift Deformed Shape Model in ETABS*

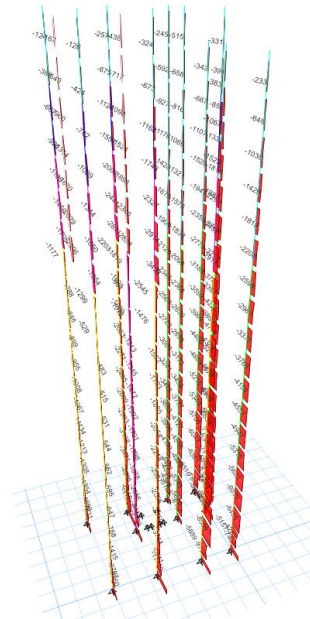


*Fig. 3: Column Axial Force Diagram*

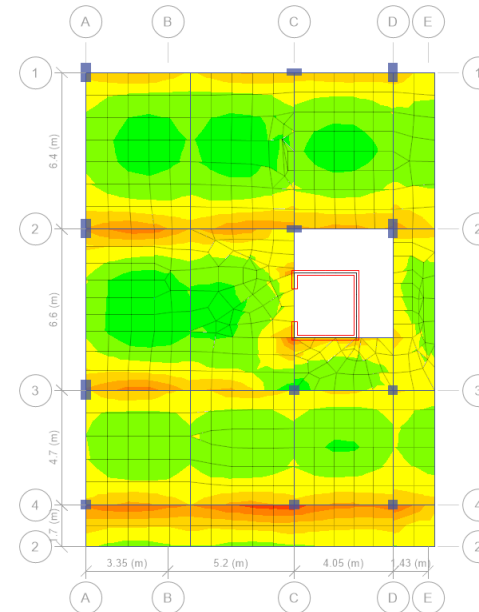


*Fig. 4: Slab Moment Contour Diagram*

## MG SOYA | CAMBODIA (2025) | COMPLETED CONSTRUCTION



**Fig. 1: Architectural Model**

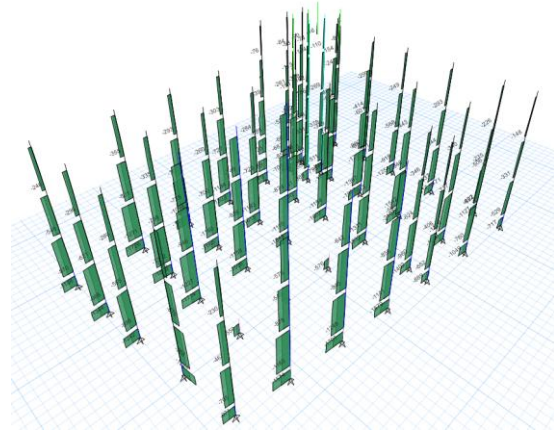


**Fig. 4: Column Axial Force Diagram**

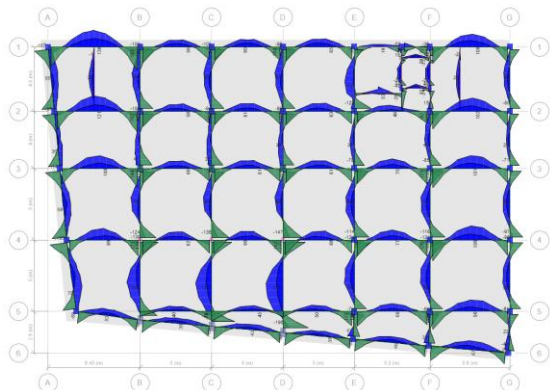


**Fig. 5: Beam Bending Moment Diagram**

### Project Details

#### ❖ Basic information:

MG SOYA is modern kitchen equipment store, located in Phnom Penh city. The project consists of 3-storey and terrace roof.

The project status: Completed construction

#### ❖ Structural System

- Foundation: Deep foundation using bored piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: EUROCODE, Singapore national annex
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

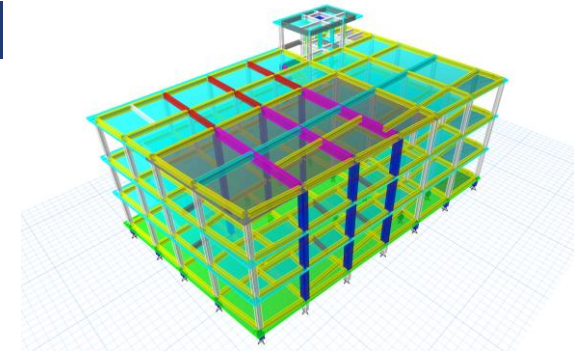


**Fig. 2: ETABS Model**

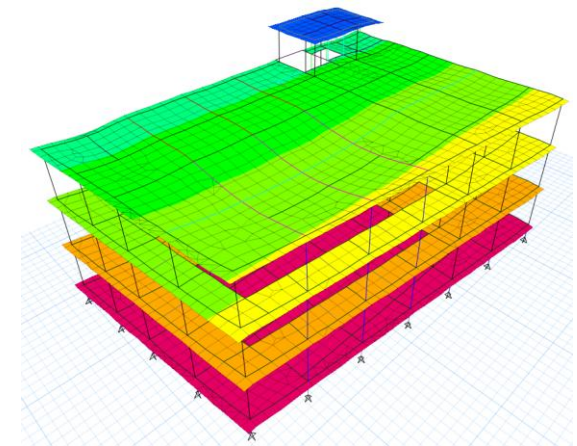


**Fig. 3: Drift Deformed Shape Model in ETABS**

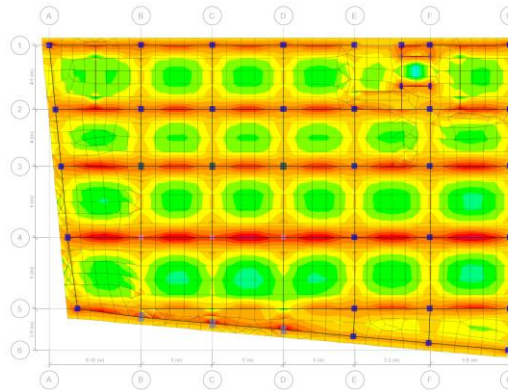


**Fig. 5: Slab Moment Contour Diagram**

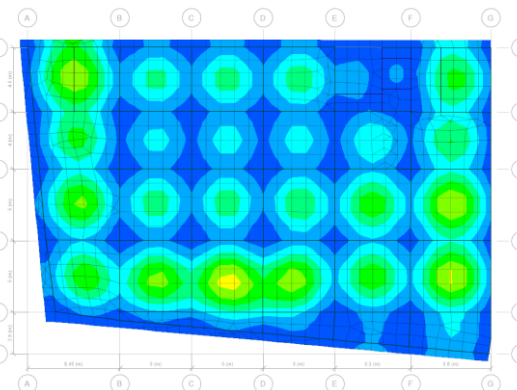


**Fig. 5: Slab Deflection Contour Diagram**

## NOREA RESIDENT | CAMBODIA (2025) | COMPLETED DESIGN TENDER STAGE



*Fig. 1: Architectural Model*

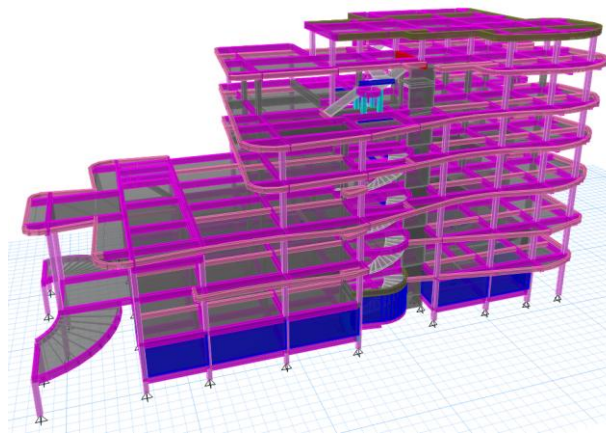


*Fig. 2: ETABS Model*

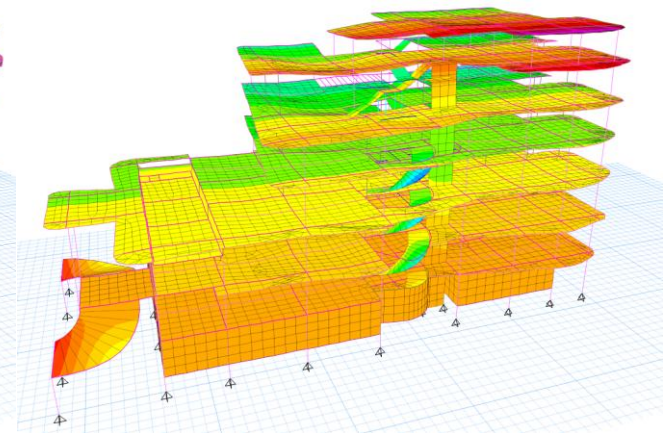


*Fig. 3: Drift Deformed Shape Model in ETABS*

### Project Details

#### ❖ Basic information:

Norea resident is luxury private villa, located on Norea island in Phnom Penh city. The project consists of 5-storey with 1 basement floor and roof garden; There is swimming pool at the second floor open to the sky and pent house at roof top.

The project status: Completed design tender stage

#### ❖ Structural System

- Foundation: Deep foundation using spun piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: ACI 318-14, ASCE 7-10
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

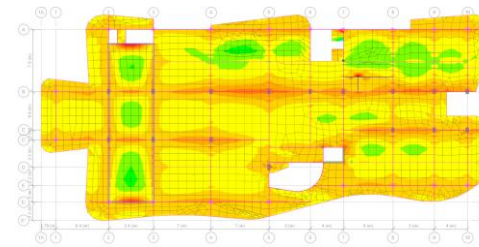


*Fig. 4: Slab Moment Contour Diagram*

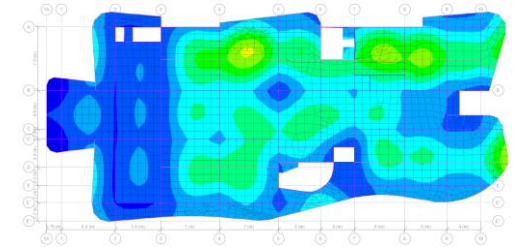


*Fig. 5: Slab Deflection Contour Diagram*

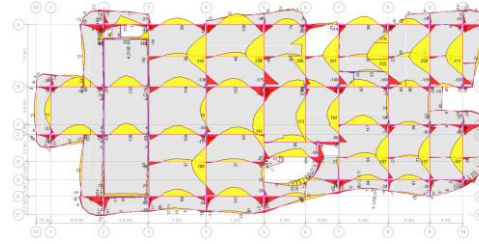


*Fig. 6: Beam Bending Moment Diagram*

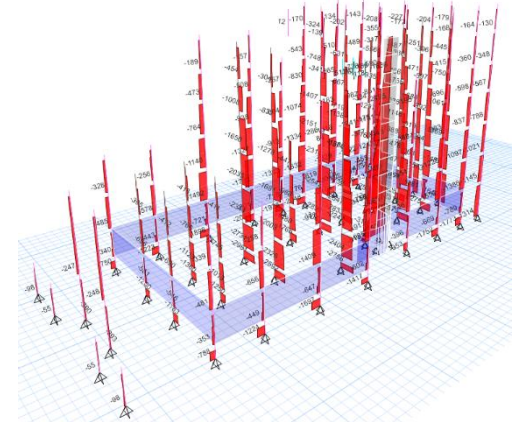


*Fig. 7: Columns & Wall Piers Axial Force Diagram*

## DORMITORY 11-STOREY | CAMBODIA (2025) | UNDER CONSTRUCTION



*Fig. 1: Architectural Model*

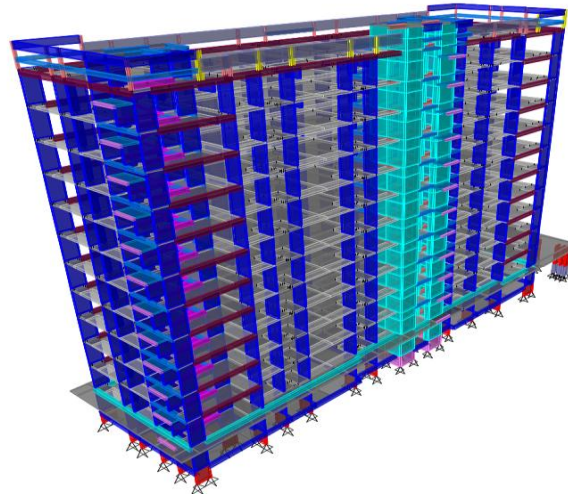


*Fig. 2: ETABS Model*

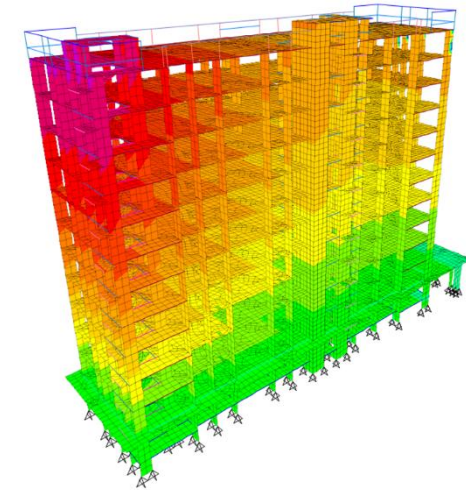


*Fig. 3: Drift Deformed Shape Model in ETABS*

### Project Details

#### ❖ Basic information:

New Dormitory Development project is an integrated development consist of civic & community, residential, and one floor carpark. Total floor area is about 14104 sqm. There is one story car parking, 11-storey integrated residential development, and one-story terrace roof.

The project status: Completed design tender stage

#### ❖ Structural System

- Foundation: Deep foundation using spun piles.
- Substructure and superstructure: Ordinary core frame system using columns and walls to resist the lateral loads.
- Reinforced concrete beam and slab to resist the gravity loads.

#### ❖ Engineering Codes & Analysis Software

- Design code: ACI 318-14, ASCE 7-10
- Structural design aids: CSI ETABS, CSI SAFE, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

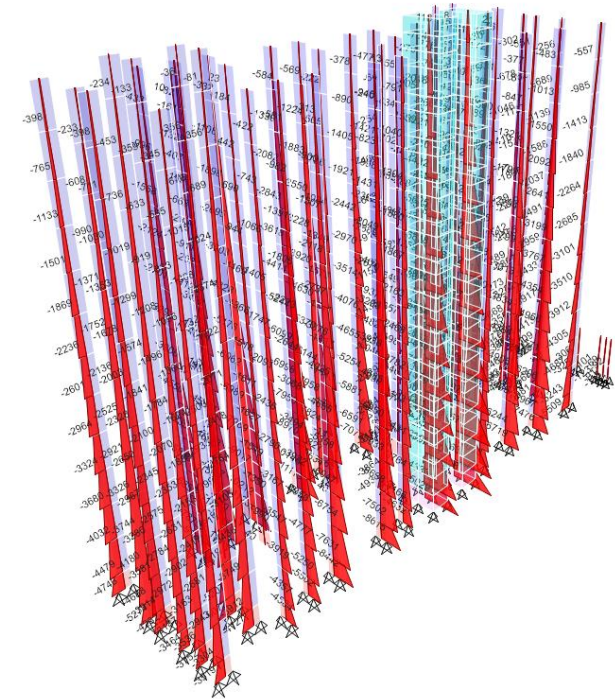


*Fig. 4: Columns & Wall Piers Axial Force Diagram*

## GATO TOWER 67-STOREY | CAMBODIA (2026) | UNDER CONSTRUCTION

### Project Details

#### ❖ Basic information:

This project consists of 67-storey with 3 basement floors, located in Phnom Penh city. The project is mix-used tower as community, residential, office and penthouse.

#### ❖ Structural System

- **Foundation System:** Deep bored pile foundation tailored for heavy structural loading.
- **Lateral Force Resisting System (LFRS):** Reinforced concrete core wall and frame system designed to efficiently resist lateral wind and seismic loads.
- **Gravity Load Resisting System:** Cast-in-place reinforced concrete beam and slab floor system.
- **Structural Transfer System:** Heavy reinforced concrete transfer plates at the podium interface to support tower column layouts above.

#### ❖ Engineering Codes & Analysis Software

- Design code: European Standard
- Structural design aids: CSI ETABS, CSI SAFE, Adapt Builder, and Spreadsheets
- BIM design software: Autodesk Revit, AutoCAD

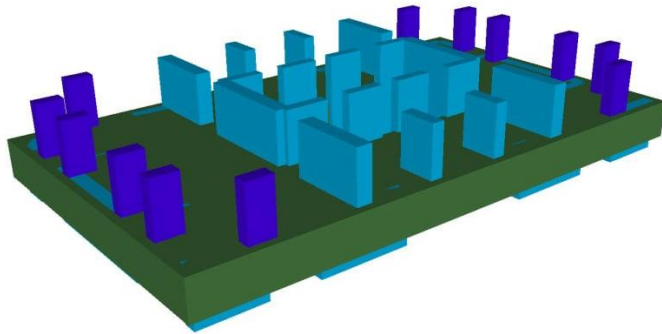


*Fig. 3: Transfer Plate Model in Adapt Builder*

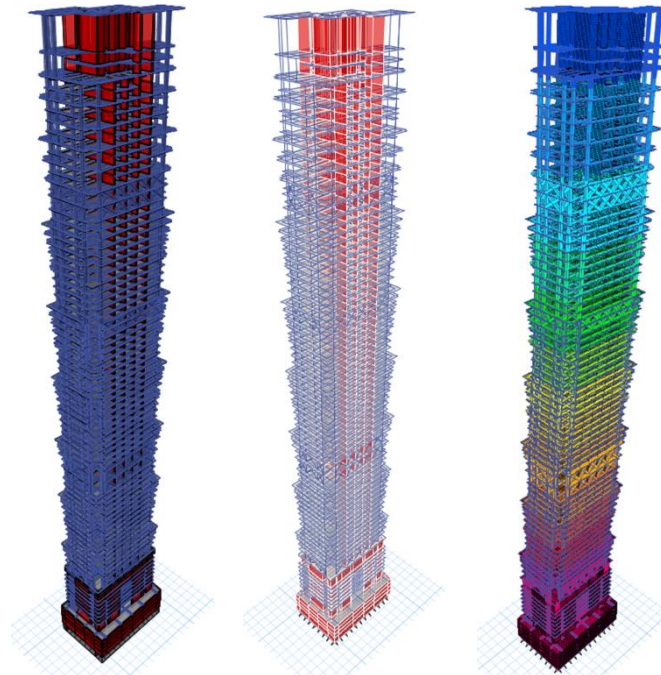


*Fig. 2: Physical and Analysis Models in ETABS*



*Fig. 1: Architectural Model*