



Ali Sigma
Design Group

Ali Sigma

COMPANY PROFILE

info@alisigma.com
www.alisigma.com



Ali Sigma
Design Group

About

Ali Sigma is a multidisciplinary engineering office specializing in delivering high-quality structural, architectural, and MEP design solutions for projects of all sizes.

With a team of experienced engineers and designers, we provide reliable, efficient, and value-engineered services that meet international standards and today's construction demands.



Ali Sigma
Design Group

Our Vision

To deliver high-quality, accurate, and cost-effective engineering solutions that support our clients' success.

We aim to provide integrated structural, architectural, and MEP designs with a focus on safety, efficiency, innovation, and real-world constructability — ensuring every project is delivered on time, with clear communication, and exceptional technical value.



Our Mission

To become a leading engineering office recognized regionally and internationally for excellence in structural design, technical expertise, and reliable service.

We aspire to build long-term partnerships, expand our global presence, and continually advance our capabilities through innovation, professional development, and world-class engineering standards



Ali Sigma
Design Group

Services



Structural Design & Shop drawings
(Steel & Concrete Structures)



Mechanical Design & Shop
drawings



Electrical Design & Shop drawings



architecture design & shop
drawings



Design & Engineering Value and
cost optimization

Our Achievement



Successfully Completed 500+ Projects

Delivered more than five hundred projects across various sectors and disciplines.

Handled projects ranging from small-scale developments to complex multi-story structures.

Ensured compliance with international standards and local regulations.

Maintained strong quality control procedures throughout all project stages.

Achieved consistent performance in meeting deadlines and technical requirements.



Prepared 1,000+ Engineering Cost Estimations

Prepared over one thousand detailed and accurate project cost estimations.

Supported clients in budgeting, feasibility studies, and tender preparation.

Optimized material quantities and construction costs through value engineering.

Improved bid competitiveness through precise quantity take-offs and pricing strategies.

Contributed to significant cost savings without compromising project quality.



Trusted by 15+ Consultant Offices & Construction Companies

Provided engineering support and professional services to over fifteen consultant offices and construction firms.

Established long-term collaborations based on quality, accuracy, and reliability.

Supported contractors with practical, cost-efficient design solutions.

Assisted consultants in optimizing structural performance and project feasibility.

Maintained consistent client satisfaction through timely and responsive project delivery.



International Project Experience - 10+ Countries

Successfully delivered engineering and project management services across more than ten countries worldwide.

Developed strong expertise in adapting to diverse building codes, regulations, and market requirements.

Managed multicultural project environments with high coordination efficiency.

Demonstrated flexibility in handling projects across different economic and technical landscapes.

Built a trusted international network of clients and strategic

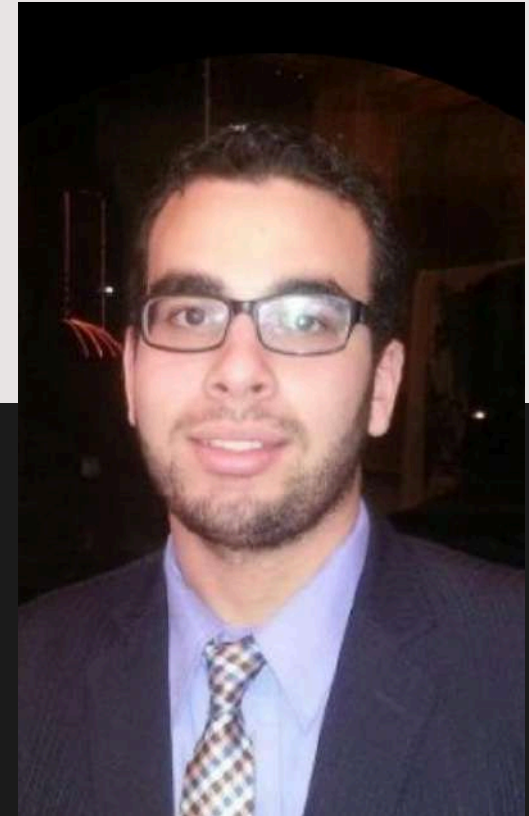
Meet The Team



Ali Elsayed
CEO & Founder
ali@alisigma.com



Shahwy moussa
MEP & Construction
Team Leader
shahwy@alisigma.com



Dr- eng Omar Meligy
Structural Team Leader
Omar@alisigma.com

Countries We Served

Egypt



Saudi Arabia



Qatar



Lebanin



Kuwait



United
Arab
Emirates



Palestine



Romaina



U.S.A



Ivory
coast





Our Clients



KHARAFI & SONS
Kuwait & SAudi
Ariabia



**al mabani , Saudi
arabia**



Basia , Saudi arabia



SAK, Kuwait



Trust Steel , Egypt



MMR , Saudi Arabia



IIPG, Kuwait



ASB Saudi Arabia



Orascom , Egypt



OPLEX, Saudi Arabia



SSG - Egypt



Smart House , Qatar



End-to-End Engineering for Major Projects



Delivering comprehensive, multidisciplinary engineering solutions for large-scale developments from concept to completion.

Our integrated approach combines Structural, MEP, and Architectural expertise under one coordinated framework.

We ensure seamless collaboration, optimized performance, and full compliance with international standards.

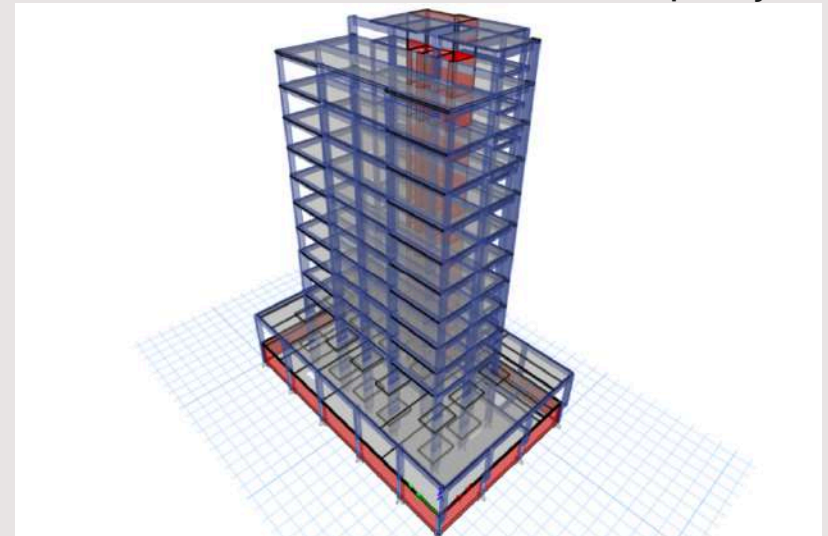
Through advanced analysis, value engineering, and precise execution, we enhance efficiency and cost-effectiveness.

Our commitment to quality, innovation, and timely delivery drives the success of every major project we undertake.

Cure Tower

Location: Al Jabriya, Kuwait

Client / Main Contractor: SAK Company

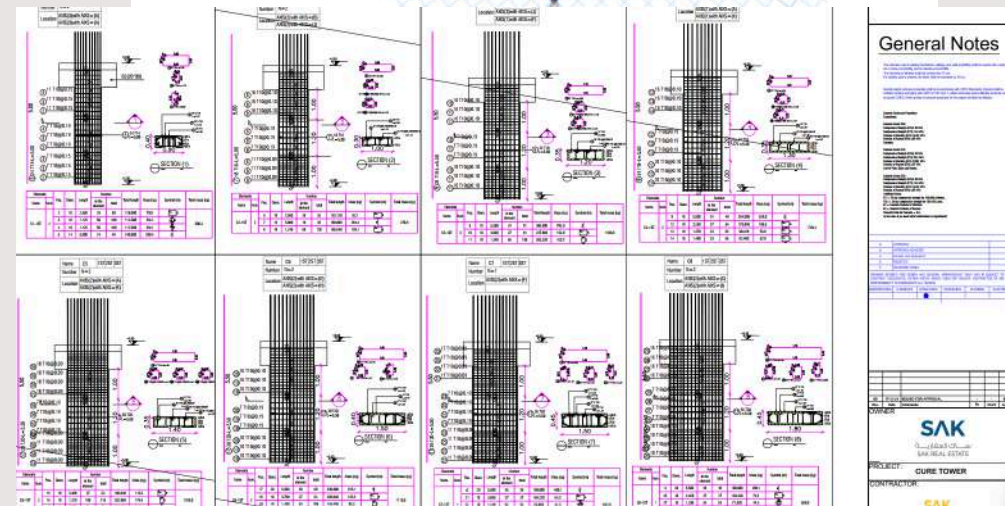


Design & Engineering Optimization - 13-Floor Tower

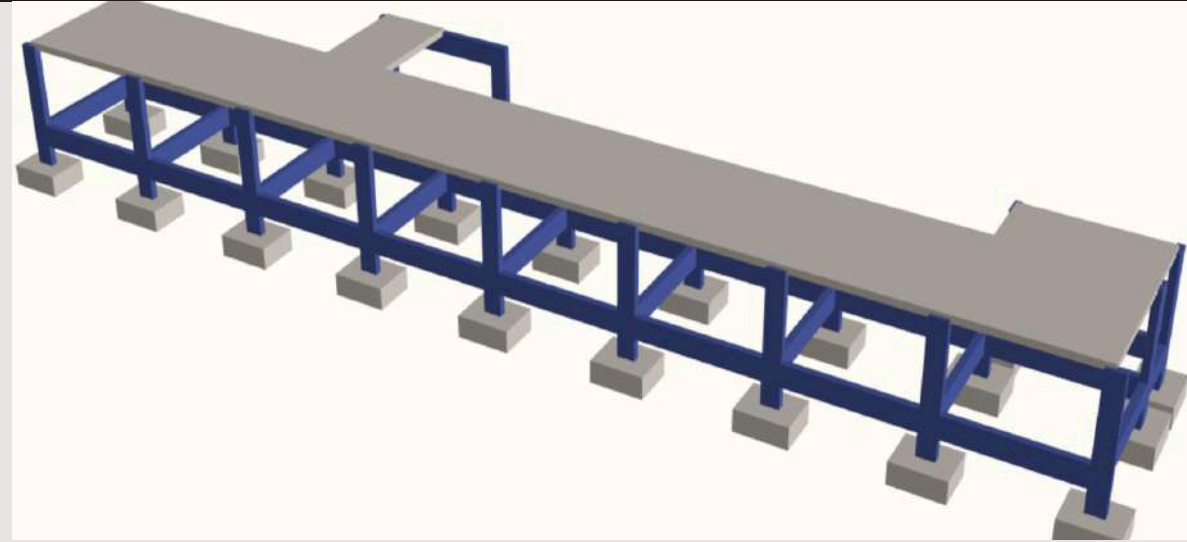
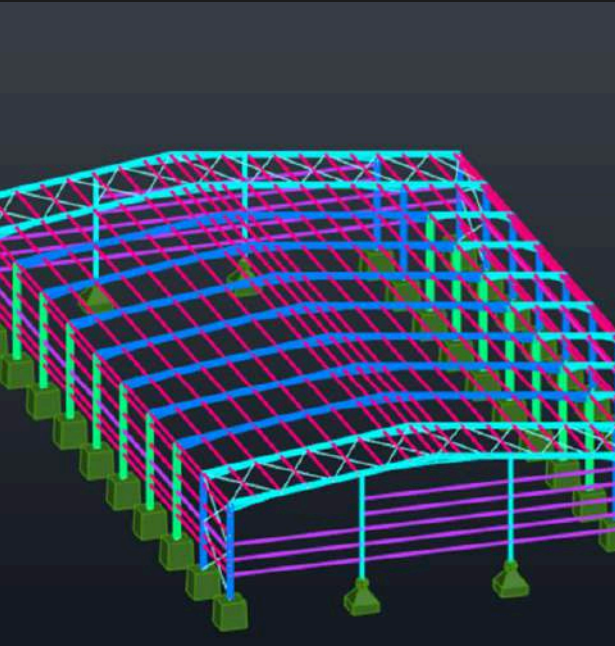
Delivered value-driven design and engineering solutions, achieving over 50% cost reduction.

Optimized resources and constructability while maintaining structural integrity and compliance.

Enhanced overall project efficiency through innovative and strategic engineering approaches.



Natural Reserve Development – Royal Authority, Saudi Arabia



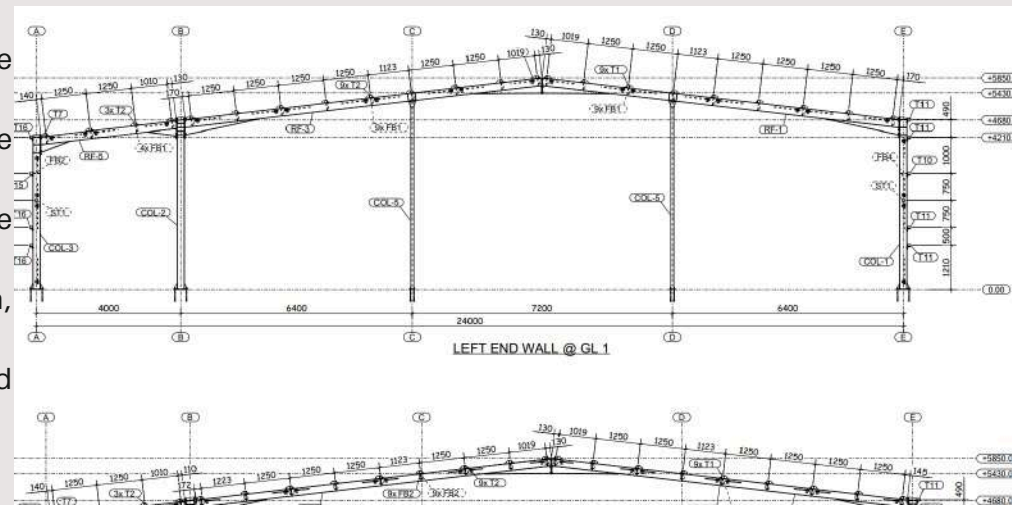
A natural reserve project developed for the Royal Authority in the Kingdom of Saudi Arabia, comprising three main buildings.

The project was designed to integrate harmoniously with the surrounding environment while preserving the ecological balance.

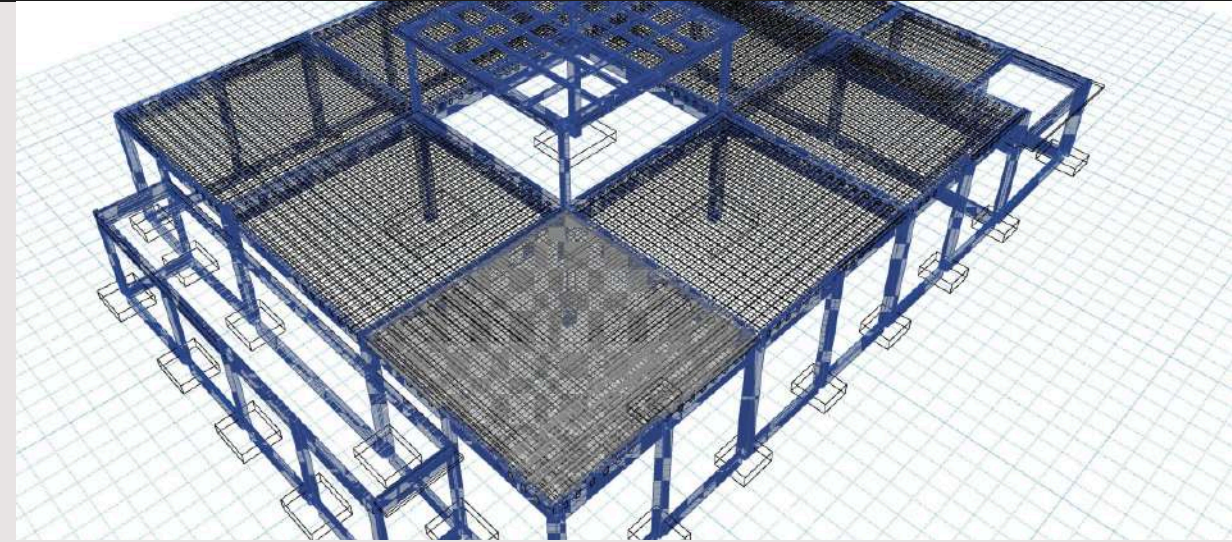
Comprehensive engineering solutions were implemented to ensure sustainability and long-term operational efficiency.

The development reflects a commitment to environmental protection, functionality, and architectural excellence.

All works were executed in alignment with regulatory standards and the strategic vision of the Royal Authority.



Mosque & Two Private Villas – Boulevard Riyadh, Saudi Arabia



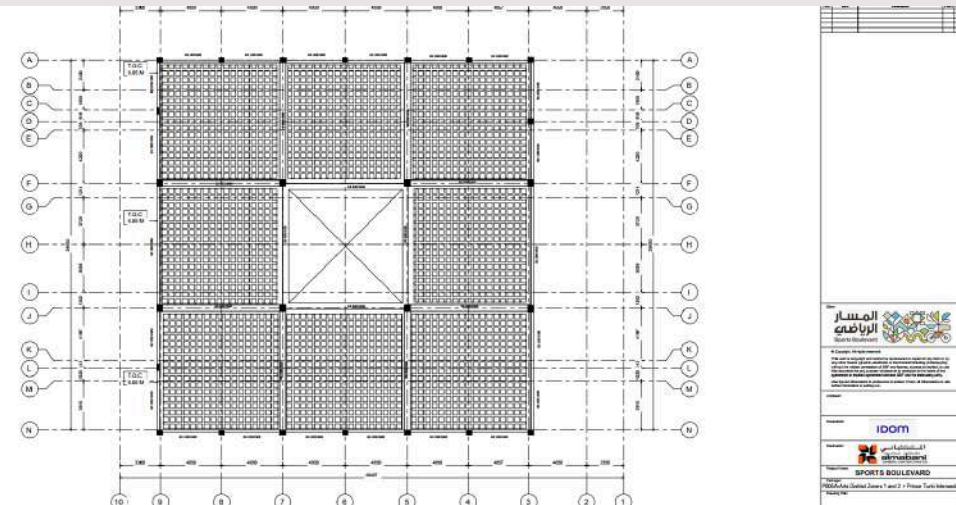
Delivered complete design and shop drawings for Structural, Architectural, Mechanical, and Electrical works.

Ensured full coordination between all disciplines to achieve accuracy and seamless execution.

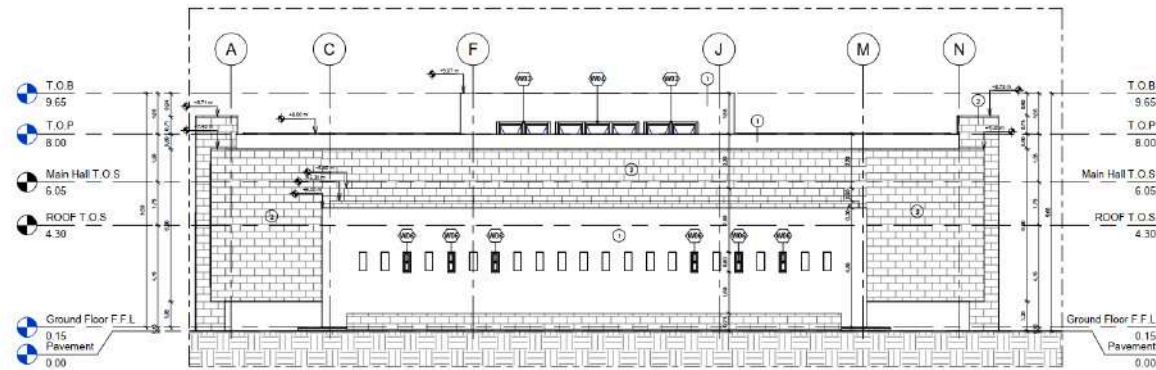
Prepared detailed technical drawings in compliance with project specifications and standards.

Executed repair and demolition plans with precise engineering assessment and safety considerations.

Provided integrated solutions to support construction efficiency and on-site implementation.



Mosque & Two Private Villas – Boulevard Riyadh, Saudi Arabia



UE WEST ELEVATION

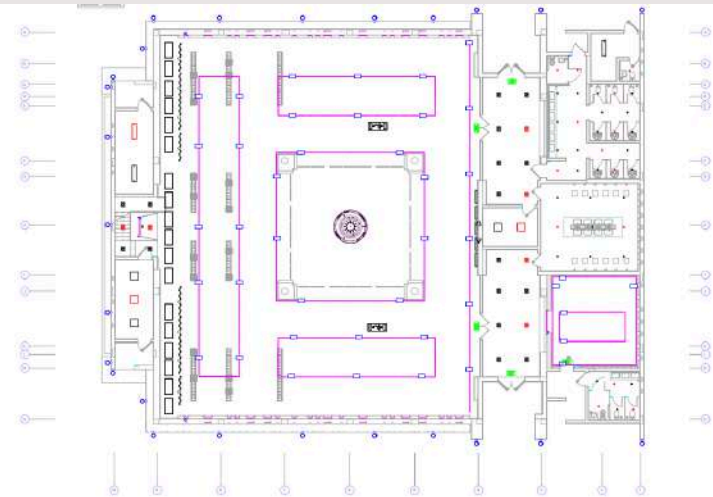
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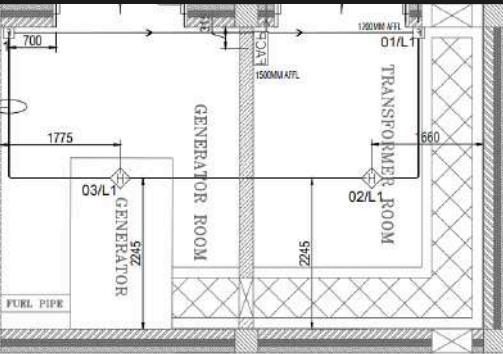
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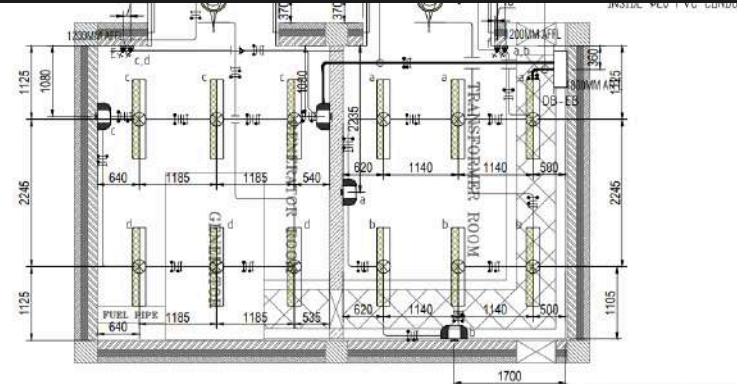
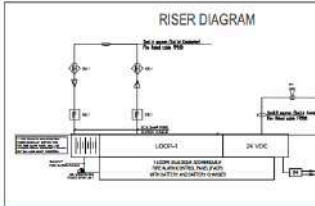
Provided integrated solutions to support construction efficiency and on-site implementation.



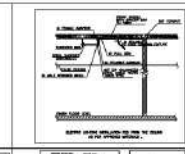
El-Moroj Pump Station



01 GROUND FLOOR PLAN



01 GROUND FLOOR PLAN



NO.	REVISION
1	ISSUED FOR PERMIT
2	ISSUED FOR CONSTRUCTION
3	ISSUED FOR AS-BUILT

PROJECT: EL-MOROJ PUMP STATION
 CLIENT: MOHAMED ABDEL MOHAMED
 DESIGNER: ALI SIGMA DESIGN GROUP
 DATE: 2023/05/15

Delivered full design and shop drawings for Structural, Architectural, Mechanical, and Electrical works.

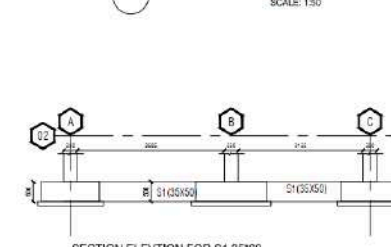
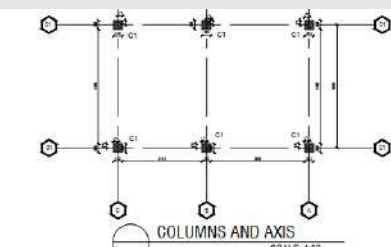
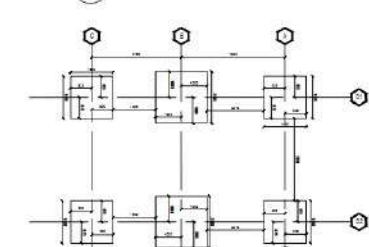
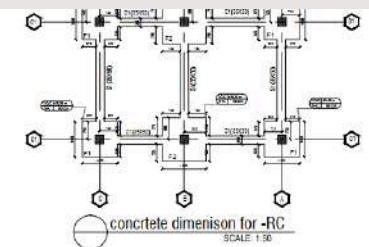
Ensured accurate multidisciplinary coordination to meet operational and performance requirements.

Prepared detailed execution drawings in compliance with technical standards and project specifications.

Developed repair and demolition plans based on thorough engineering evaluation.

Provided integrated engineering solutions to enhance constructability, safety, and long-term reliability.

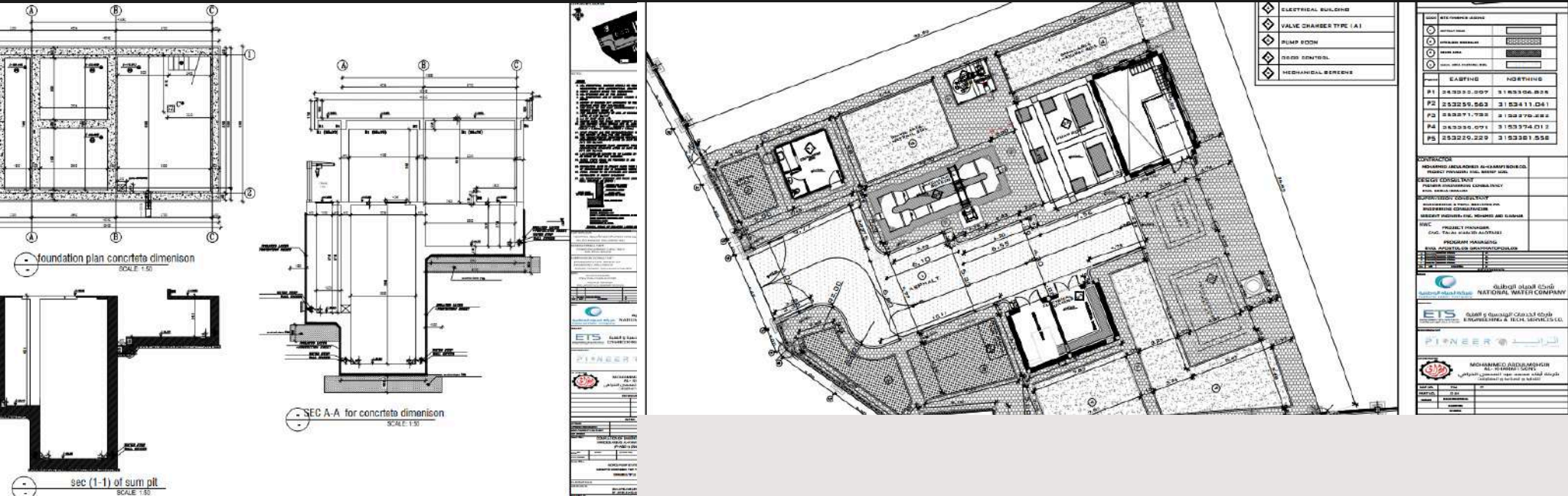
If you'd like, I can also create a stronger technical version highlighting pumping capacity, infrastructure scope, or utilities integration.



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PROJECT: EL-MOROJ PUMP STATION
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El-Moroj Pump Station



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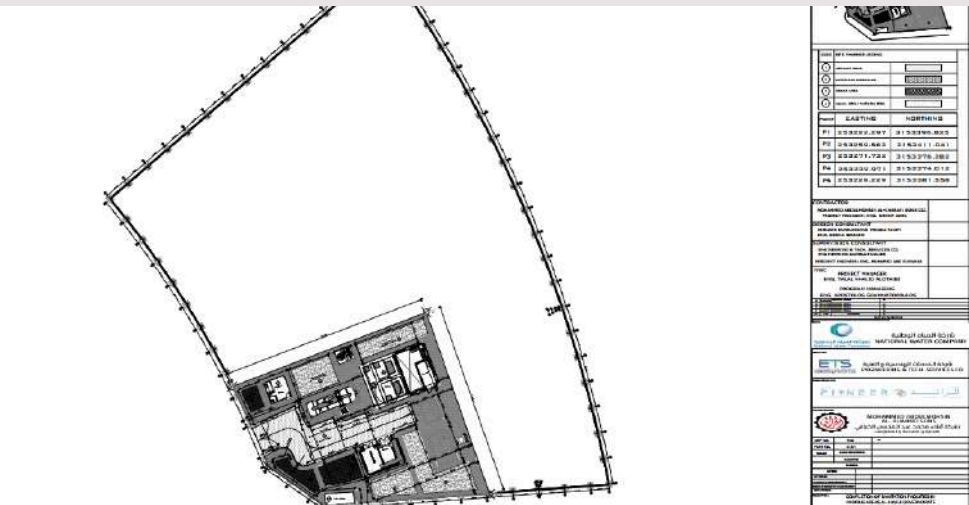
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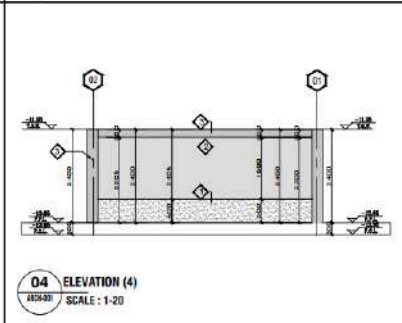
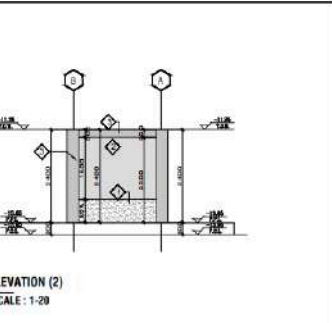
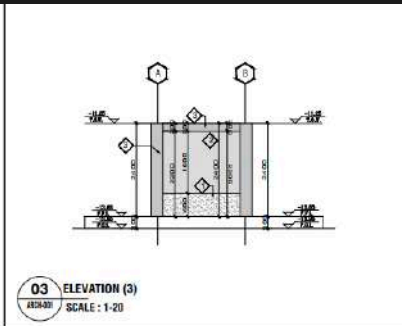
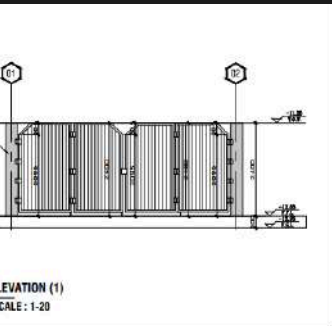
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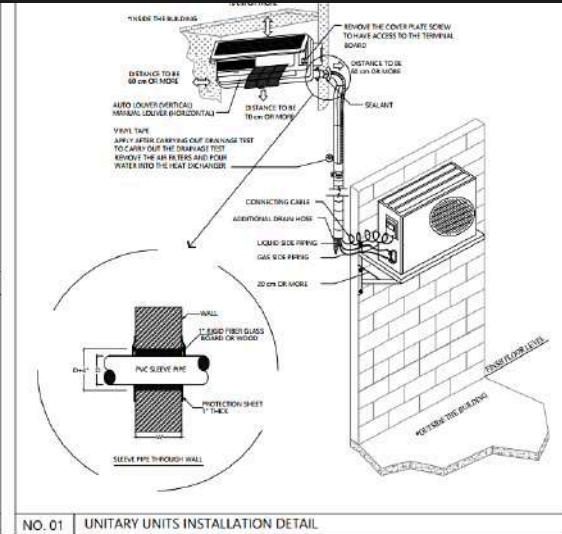
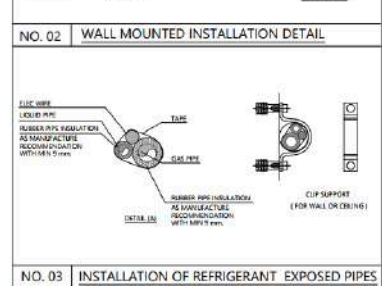
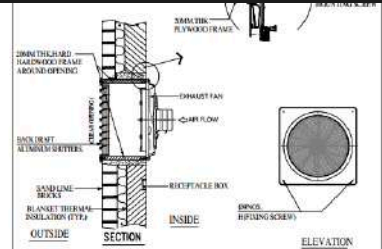
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El-Moroj Pump Station



NO.	DESCRIPTION
1	UNITARY CONDENSING COIL
2	DRAIN TRAY
3	DRAIN PAN
4	DRAIN PAN
5	DRAIN PAN
6	DRAIN PAN
7	DRAIN PAN
8	DRAIN PAN
9	DRAIN PAN
10	DRAIN PAN
11	DRAIN PAN
12	DRAIN PAN
13	DRAIN PAN
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15	DRAIN PAN
16	DRAIN PAN
17	DRAIN PAN
18	DRAIN PAN
19	DRAIN PAN
20	DRAIN PAN



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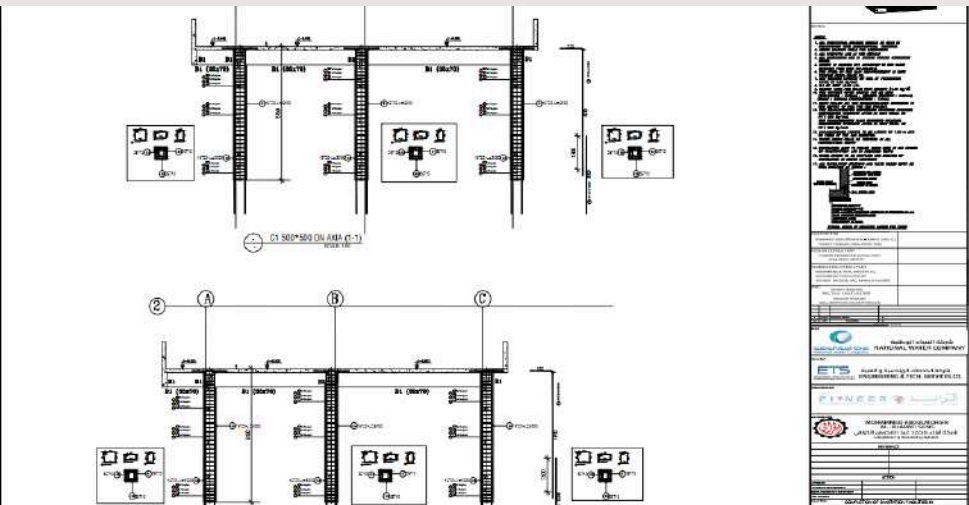
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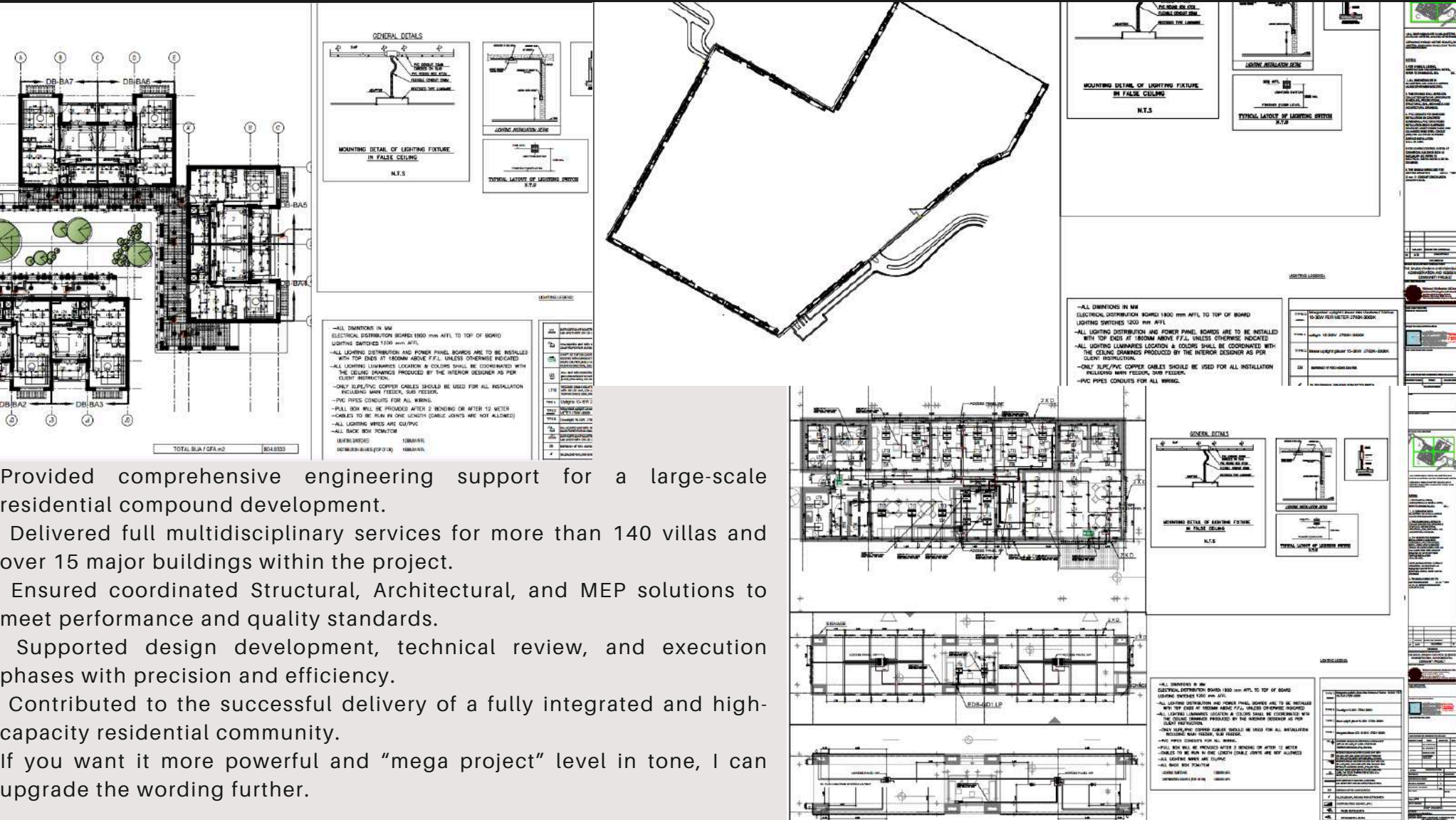
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Al Khafji Residential Compound



Provided comprehensive engineering support for a large-scale residential compound development.

Delivered full multidisciplinary services for more than 140 villas and over 15 major buildings within the project.

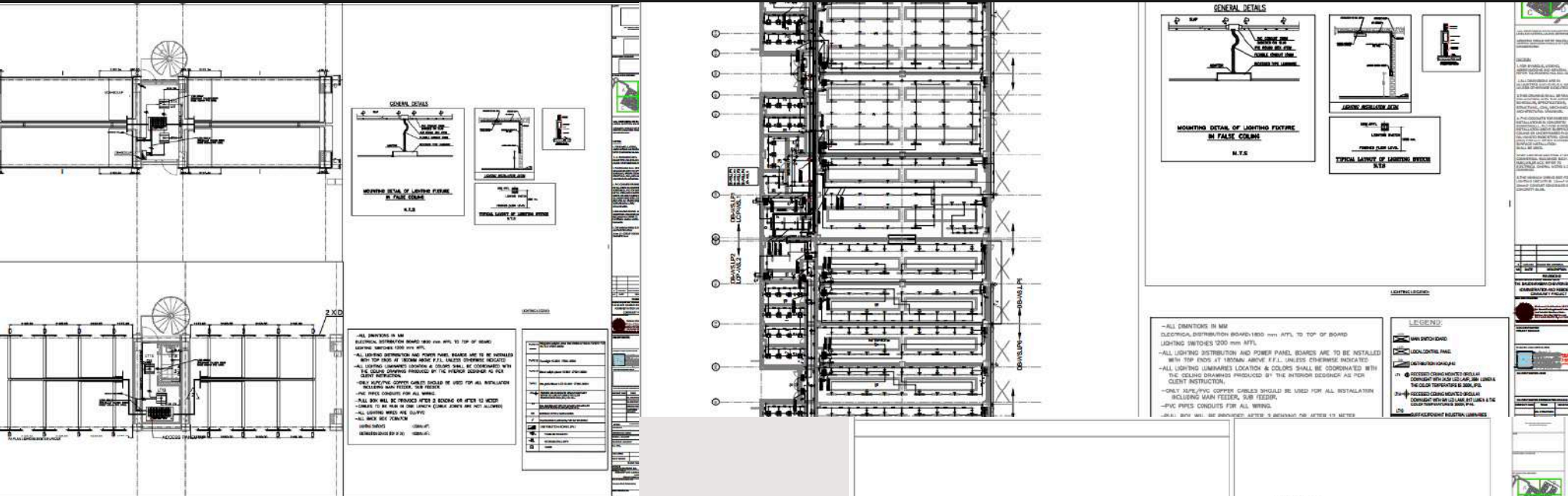
Ensured coordinated Structural, Architectural, and MEP solutions to meet performance and quality standards.

Supported design development, technical review, and execution phases with precision and efficiency.

Contributed to the successful delivery of a fully integrated and high-capacity residential community.

If you want it more powerful and "mega project" level in tone, I can upgrade the wording further.

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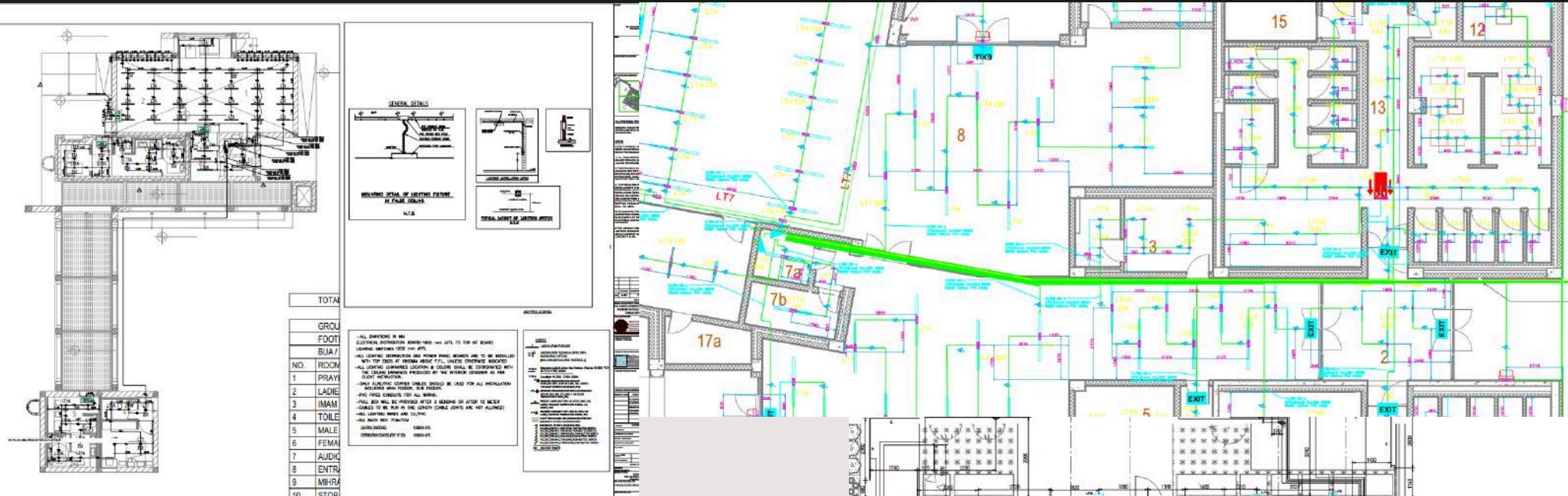
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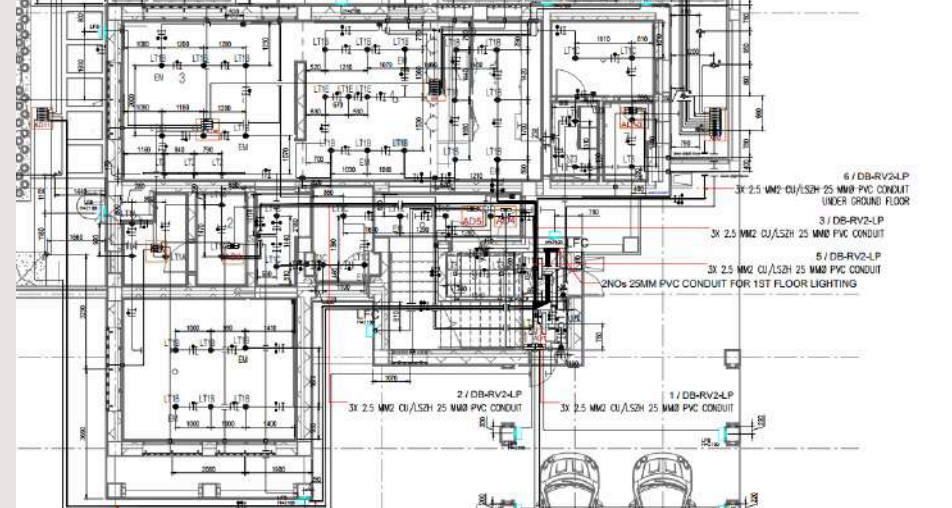
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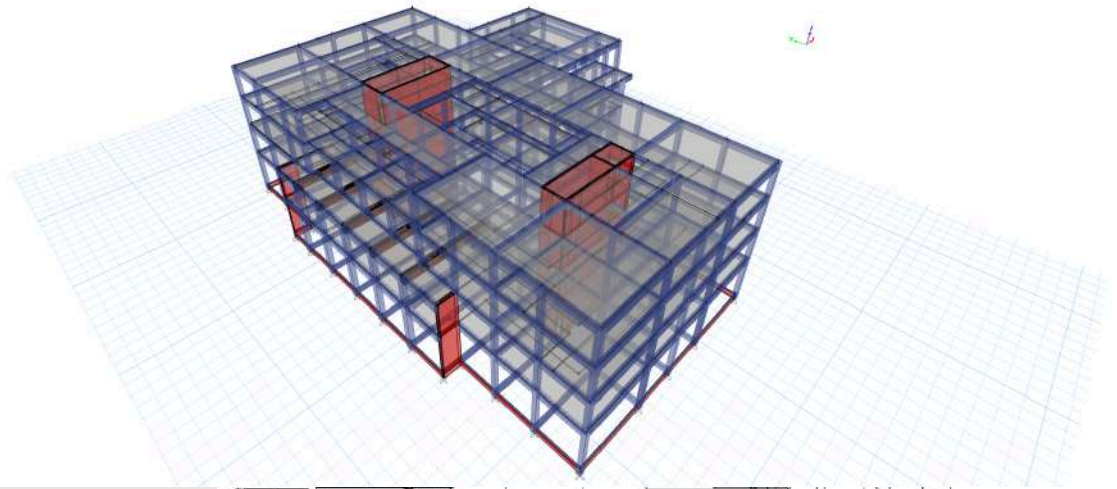
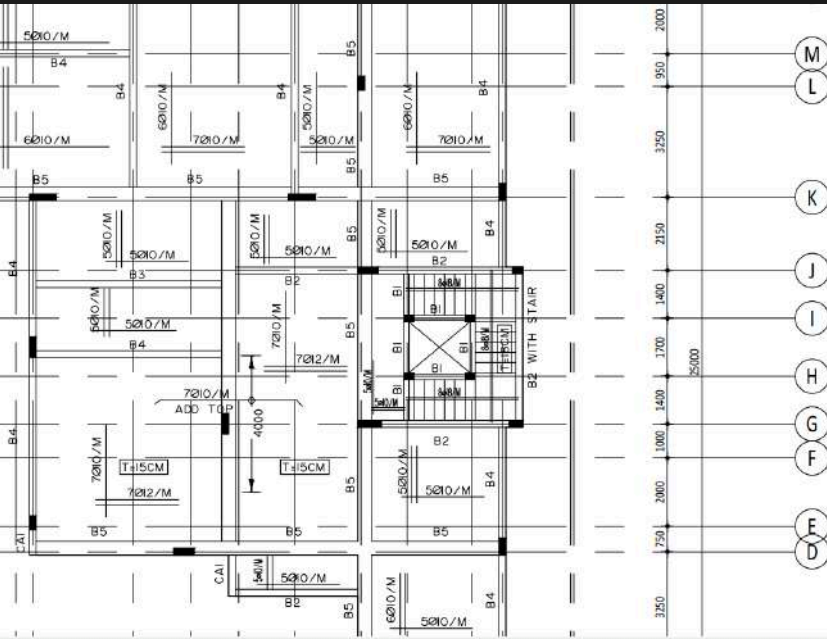
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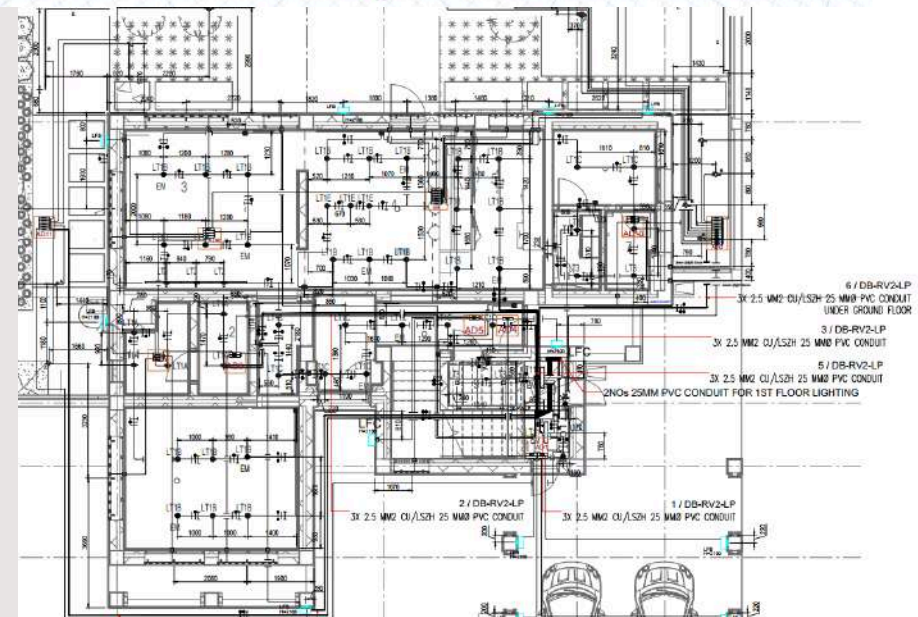
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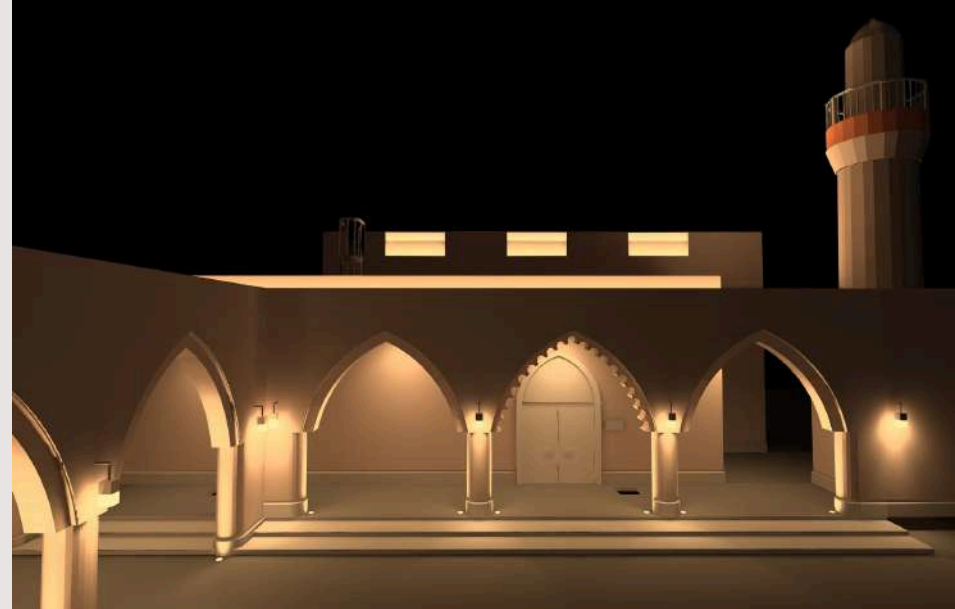
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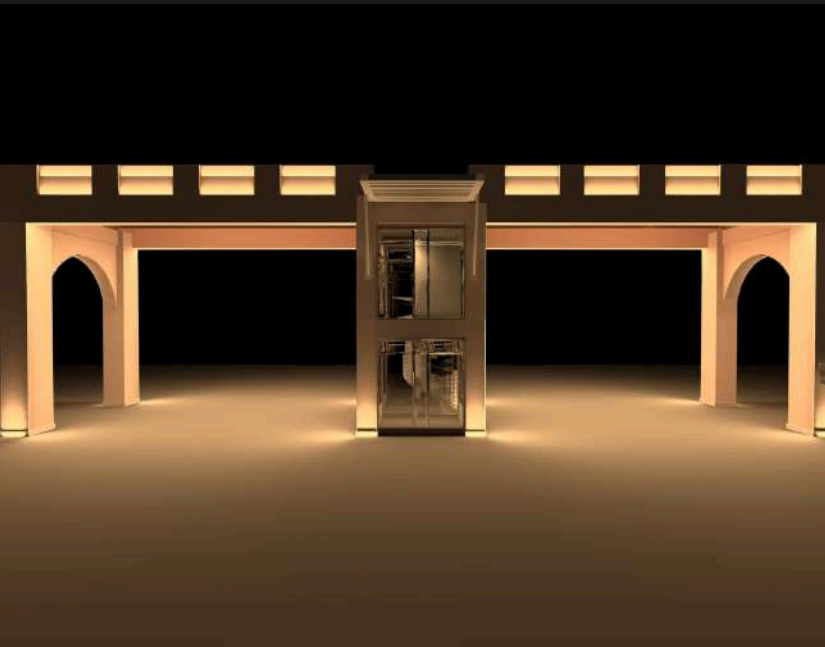
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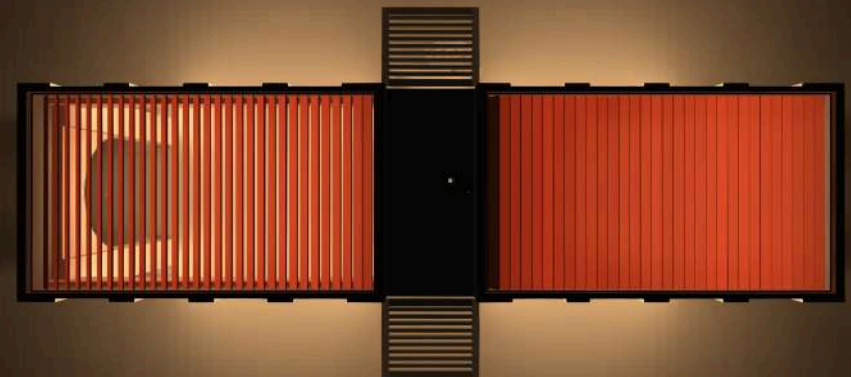
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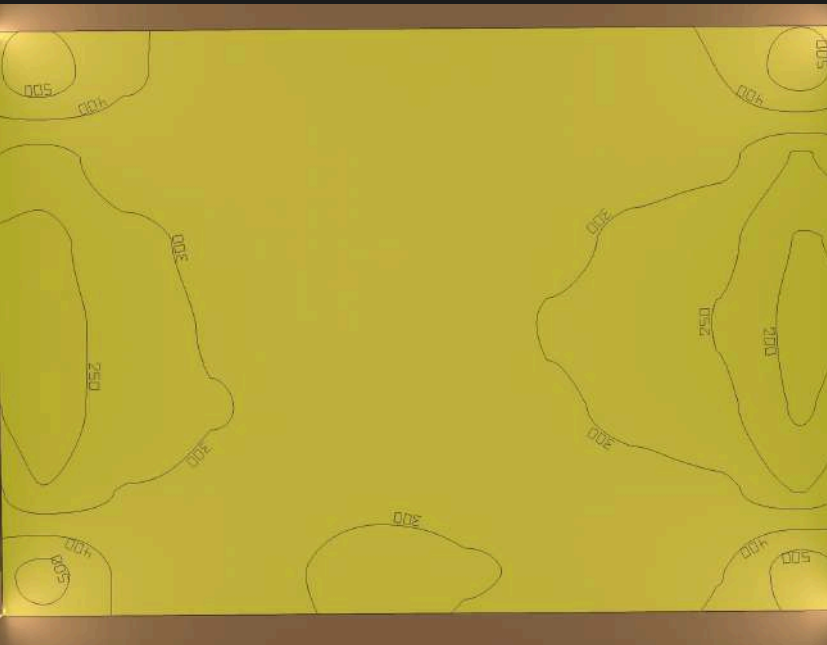
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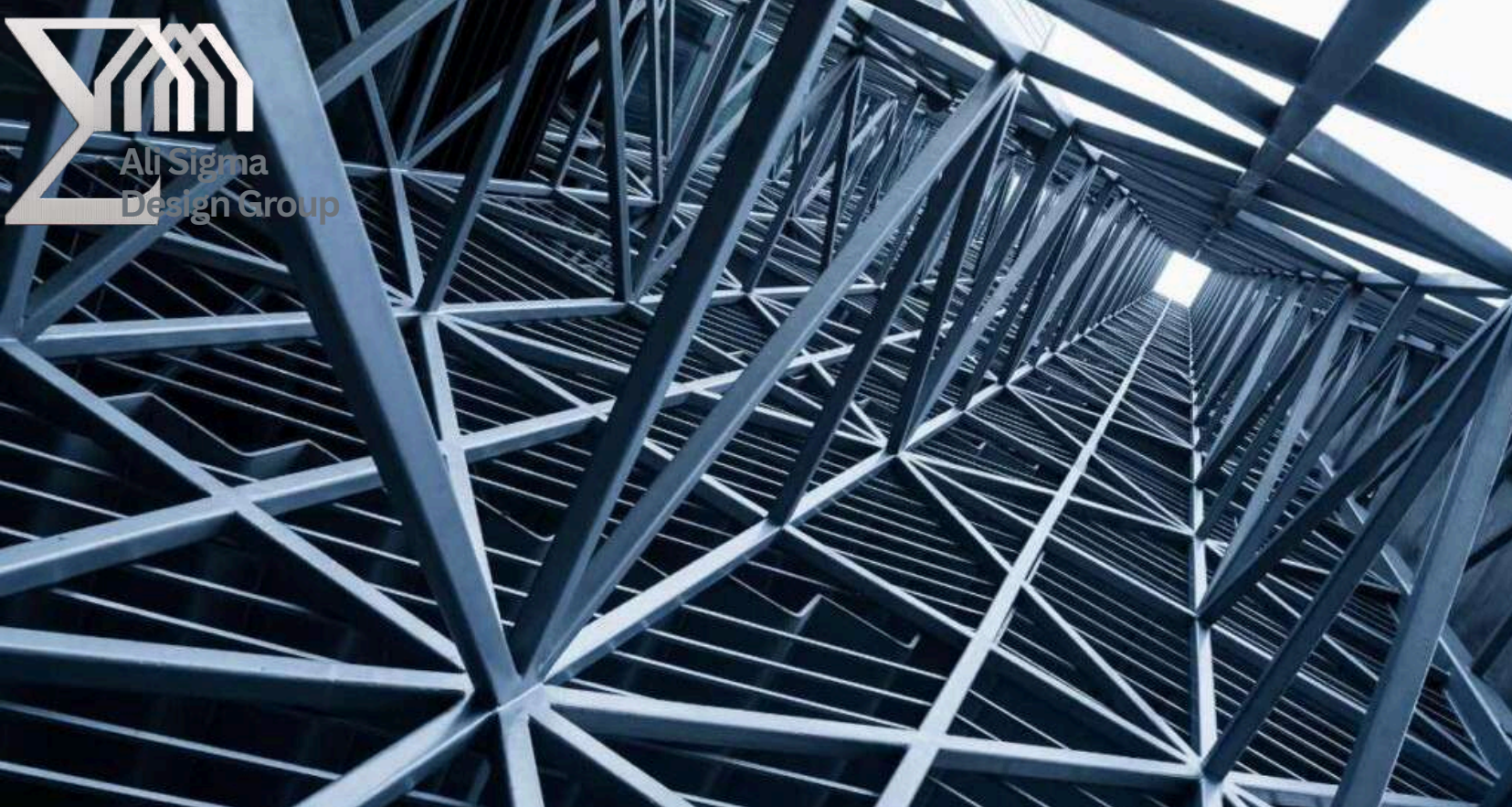
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This section highlights our expertise in the design, analysis, and detailing of steel structure projects across various sectors.

We deliver efficient, cost-effective structural solutions tailored to meet performance and safety standards.

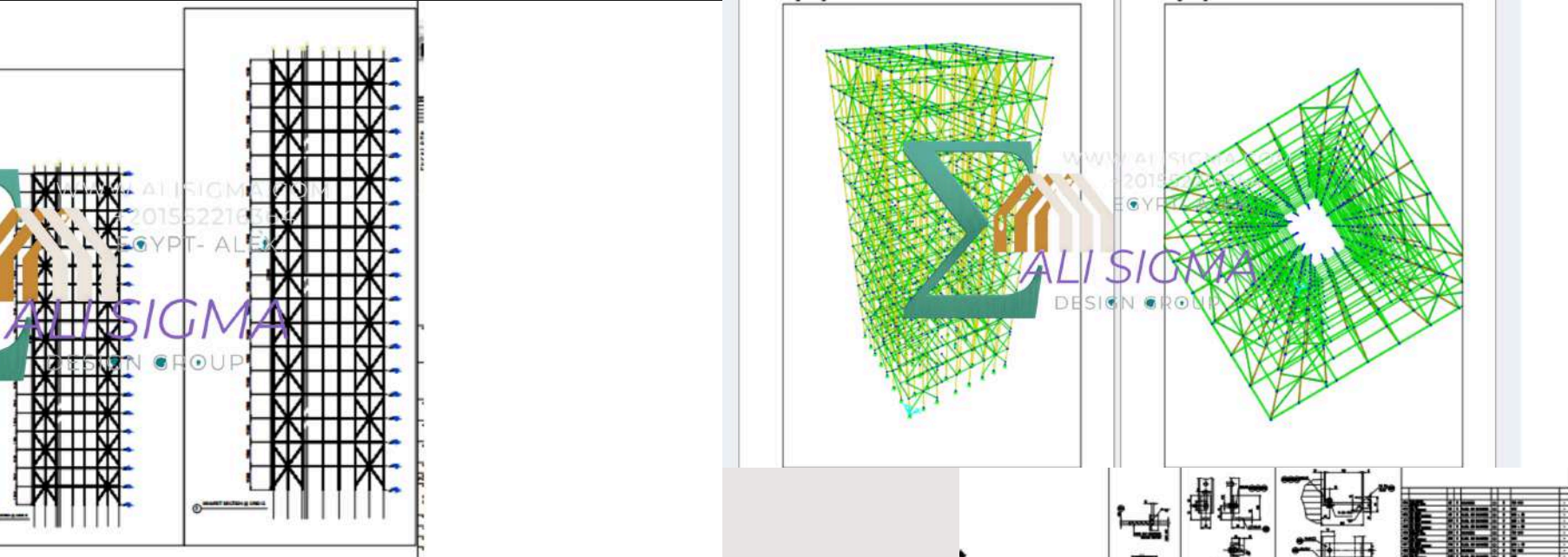
Our services include structural design, connection detailing, shop drawings, and value engineering optimization.

We ensure compliance with international codes while maintaining constructability and material efficiency.

From industrial facilities to commercial and residential developments, our steel solutions are engineered for durability, precision, and long-term performance.

Steel Structures

30m-High Scaffolding System – Minaret Demolition & Repair Support



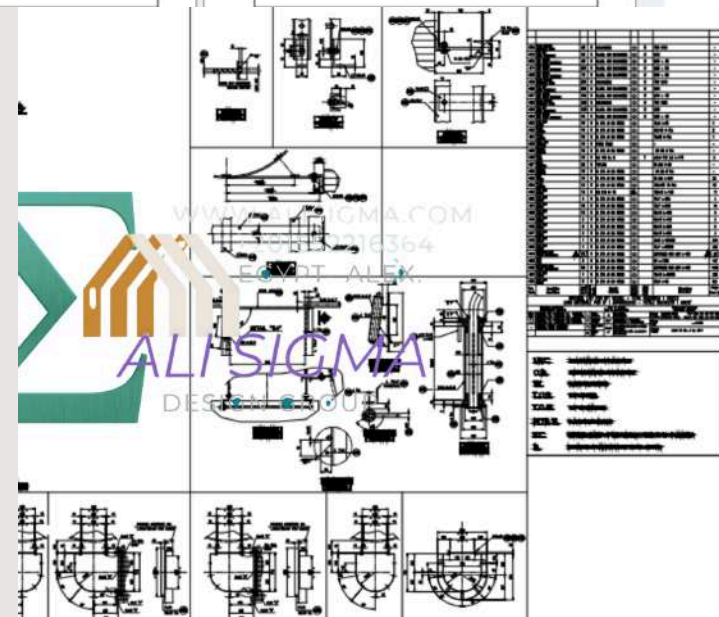
Designed and implemented a 30-meter-high scaffolding system to safely support demolition and repair works of the minaret.

Engineered the structure to ensure stability, load resistance, and worker safety at elevated heights.

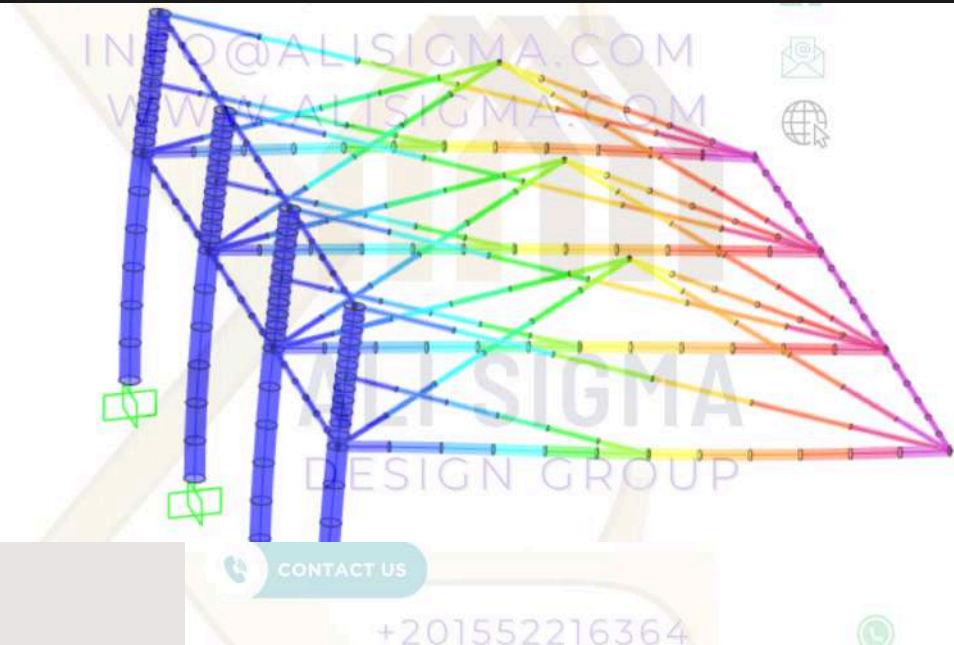
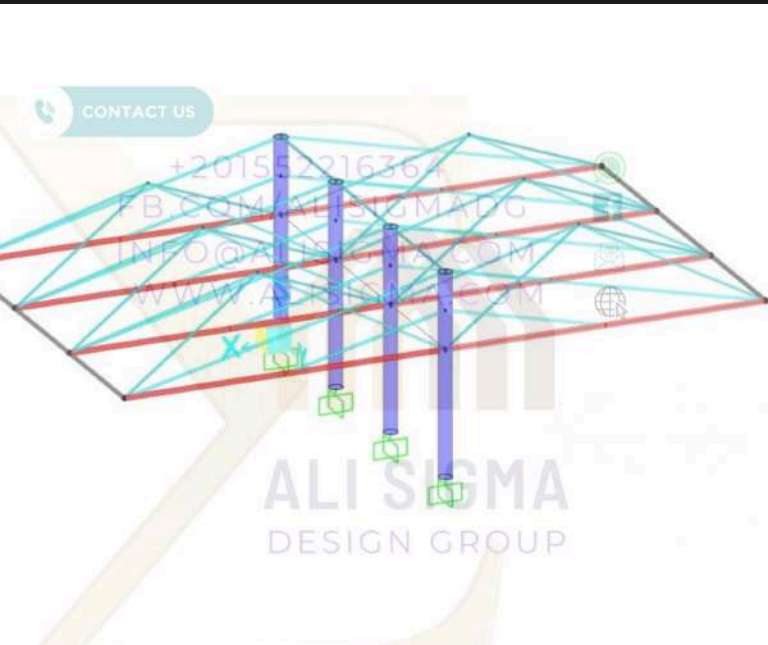
Performed detailed structural analysis to withstand wind loads and site-specific conditions.

Provided secure access platforms to facilitate precision repair and restoration activities.

Executed the system in full compliance with safety standards and project requirements.



Parking Car Shades – Kuwait



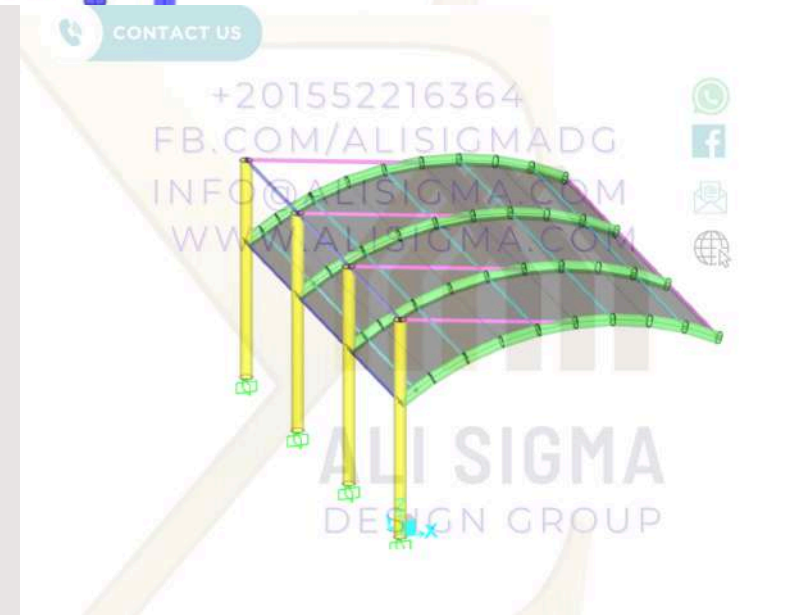
Delivered design and shop drawings for more than 150 car shade structures within a major parking facility in Kuwait.

Provided optimized steel structural solutions ensuring durability, stability, and wind load resistance.

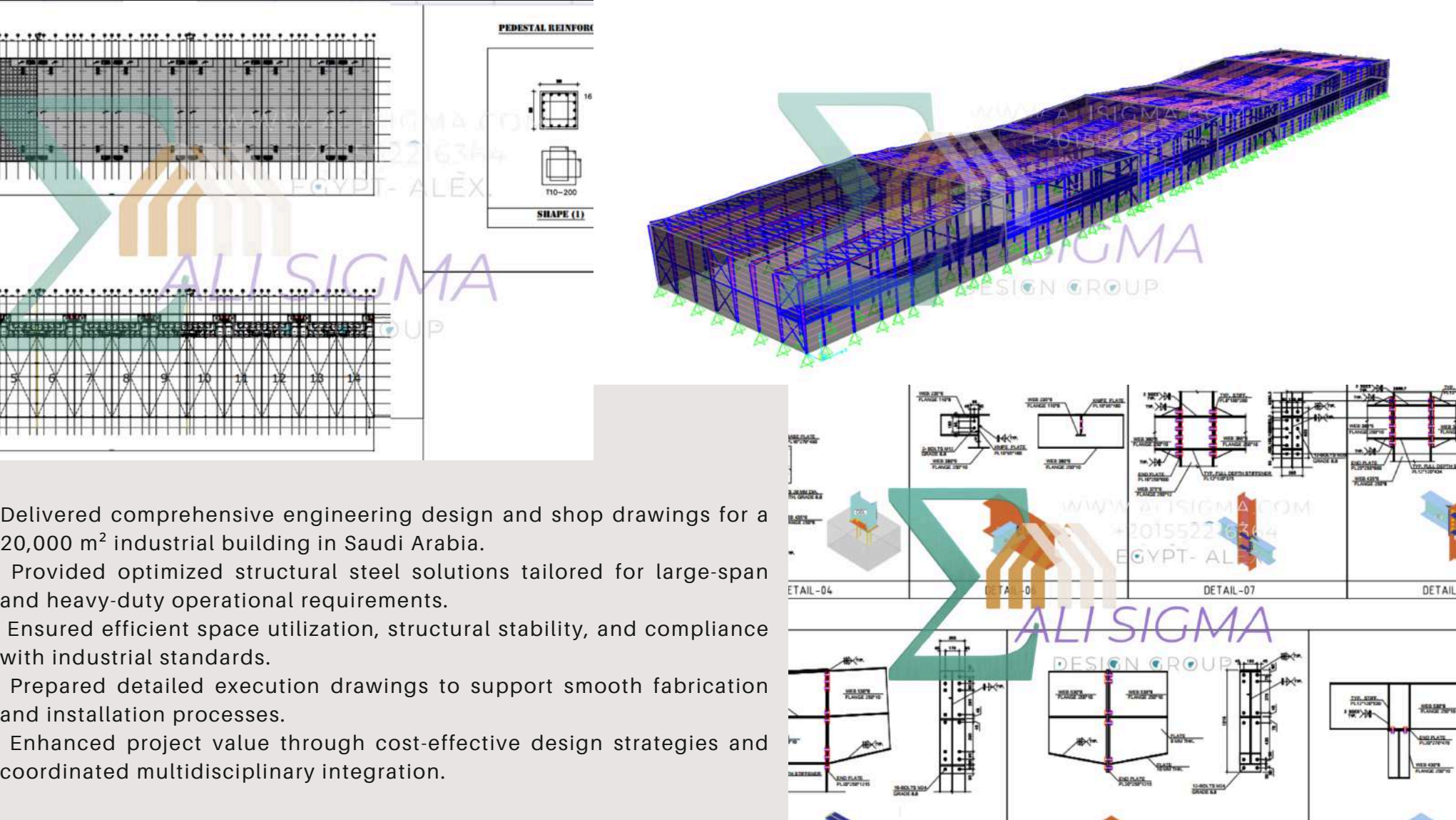
Prepared detailed fabrication and installation drawings to support accurate on-site execution.

Ensured full compliance with local codes and environmental conditions.

Enhanced functionality and user comfort through efficient and cost-effective structural design.



Industrial Facility – 20,000 m² – Saudi Arabia



Delivered comprehensive engineering design and shop drawings for a 20,000 m² industrial building in Saudi Arabia.

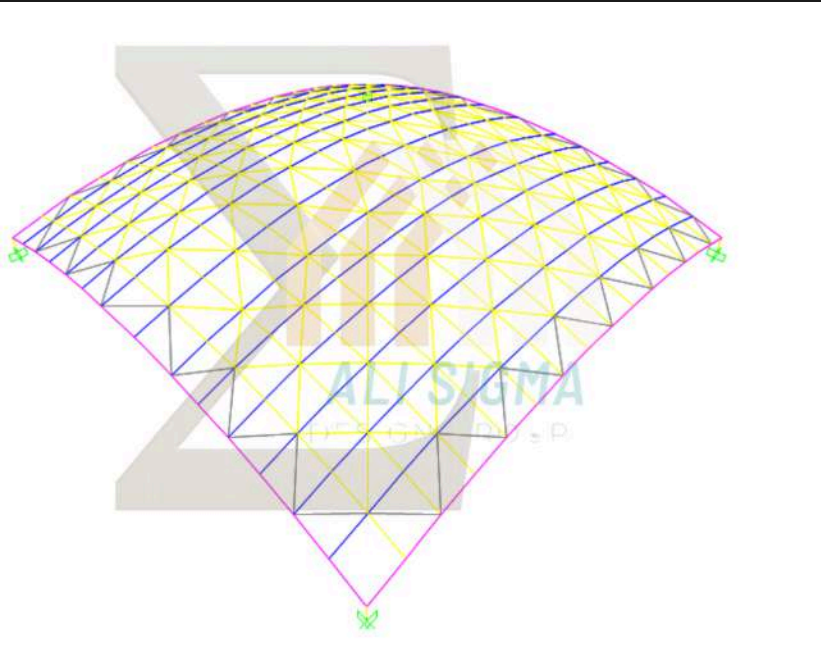
Provided optimized structural steel solutions tailored for large-span and heavy-duty operational requirements.

Ensured efficient space utilization, structural stability, and compliance with industrial standards.

Prepared detailed execution drawings to support smooth fabrication and installation processes.

Enhanced project value through cost-effective design strategies and coordinated multidisciplinary integration.

30m Diameter Dome Structure – Kuwait



Designed a 30-meter diameter dome structure with advanced structural analysis and optimized load distribution.

Developed a stable and efficient steel framing system to ensure strength, durability, and architectural appeal.

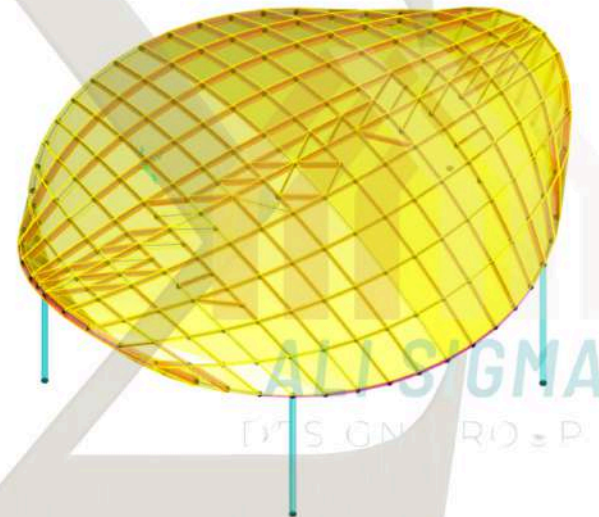
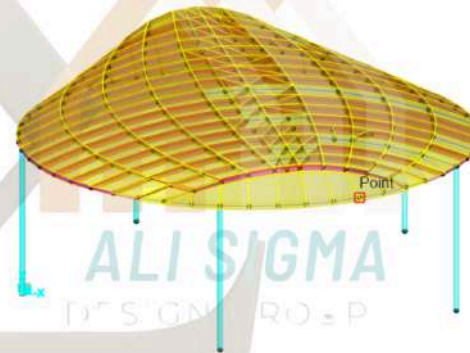
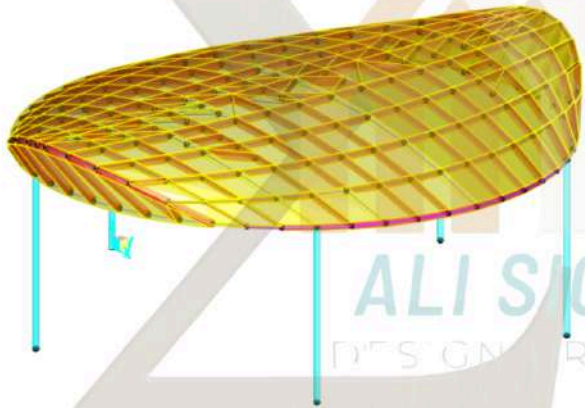
Performed detailed calculations to withstand wind and environmental loads specific to Kuwait.

Prepared comprehensive shop drawings to support precise fabrication and installation.

Delivered an innovative structural solution combining aesthetics, performance, and cost efficiency.



Parametric Seashell-Shaped Shade Structure



Delivered an innovative parametric design for a shade structure inspired by a seashell form.

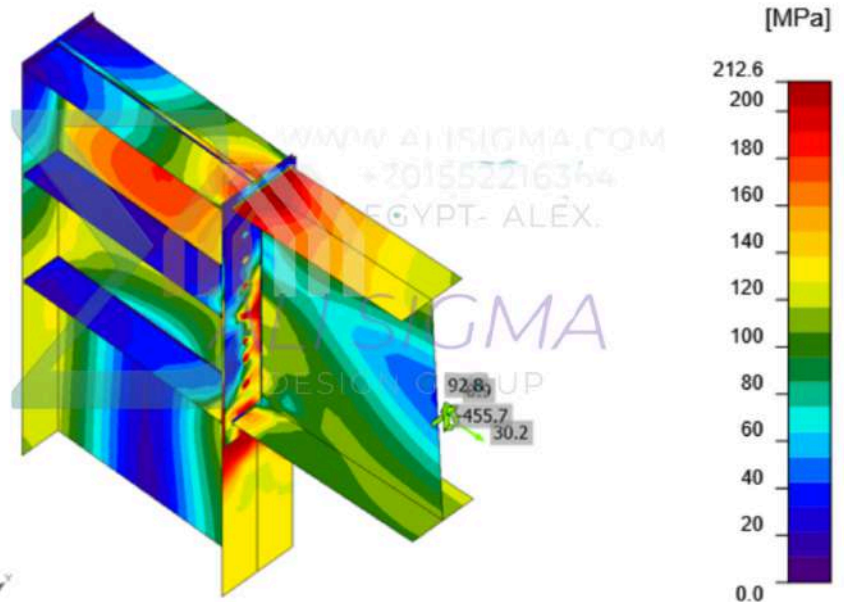
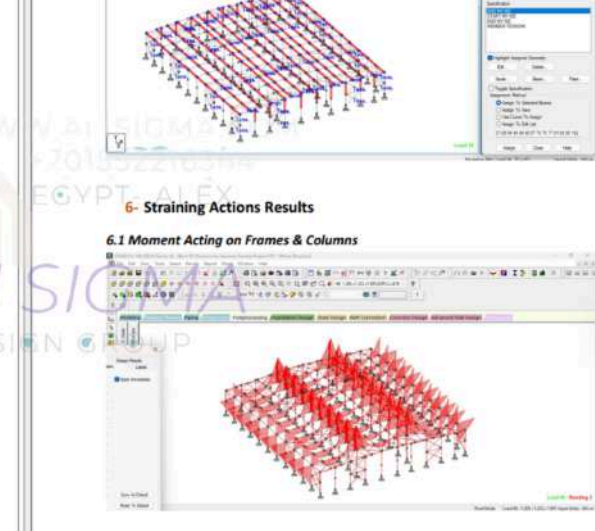
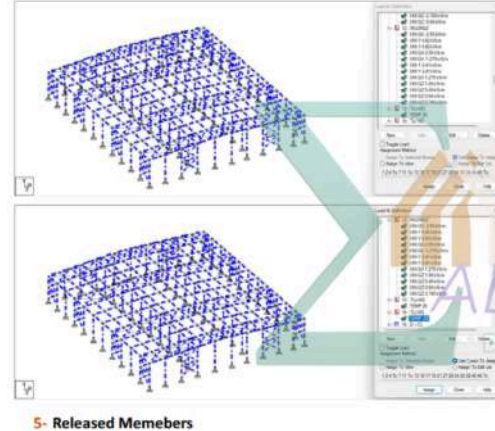
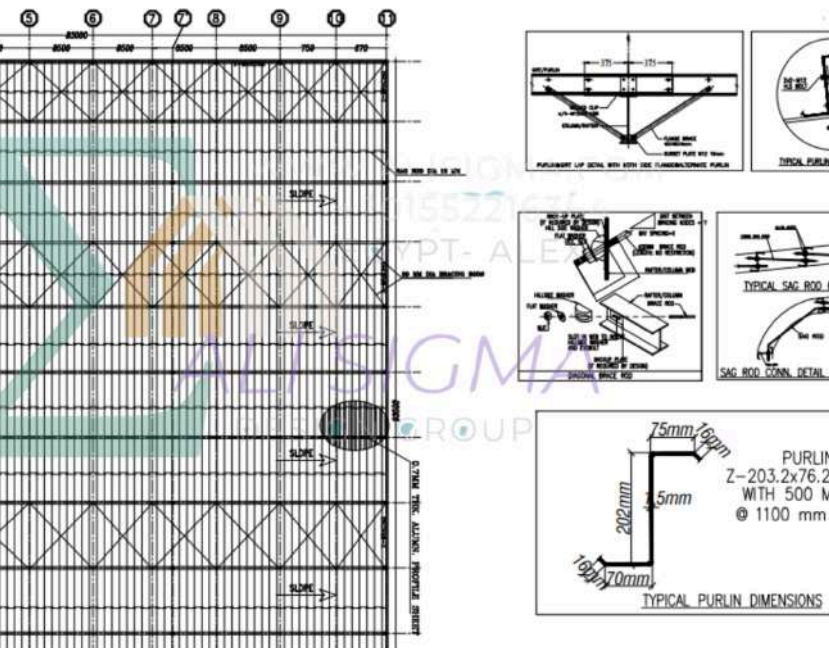
Utilized advanced computational modeling to achieve a precise, fluid architectural geometry.

Engineered structural solutions to ensure stability, load resistance, and constructability.

Prepared detailed shop drawings to guide accurate fabrication and seamless on-site installation.

Combined aesthetic elegance with functional performance, creating a visually striking and durable structure.

Design & Engineering Optimization – Industrial Building, UAE



Delivered comprehensive redesign and value engineering for an industrial building in the UAE.

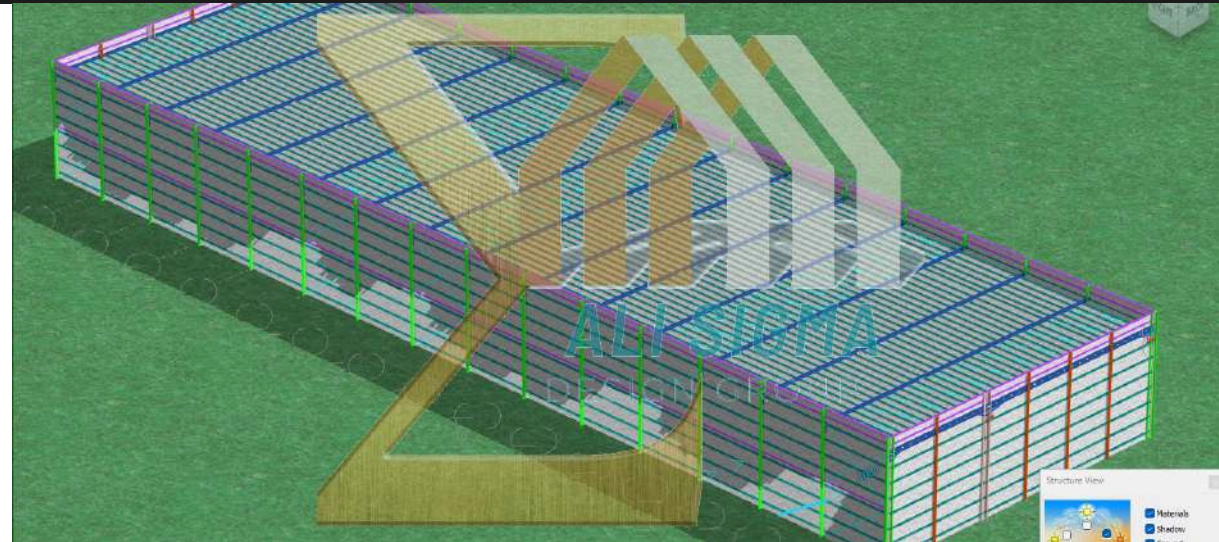
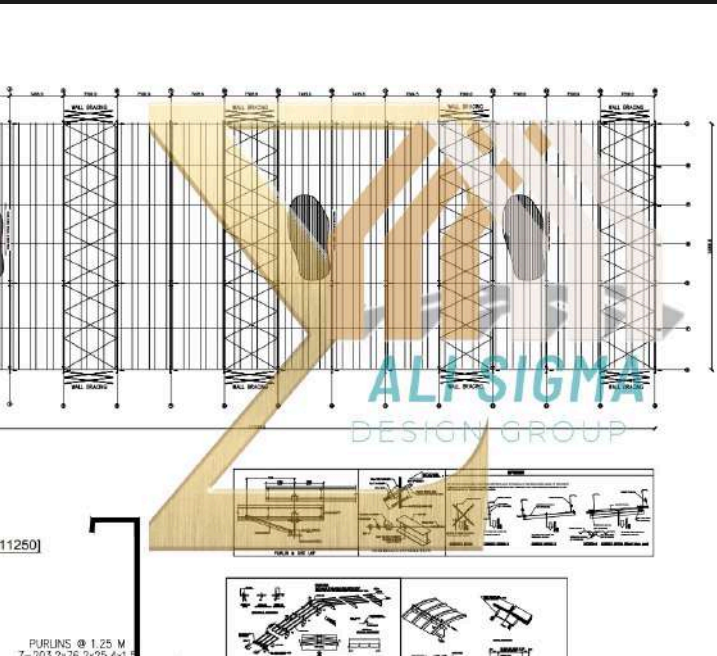
Optimized structural, architectural, and MEP systems to improve efficiency and constructability.

Achieved significant cost savings while maintaining compliance with international standards.

Enhanced project performance through innovative engineering solutions and resource optimization.

Ensured practical, durable, and cost-effective solutions aligned with client objectives.

Yacht Storage Facility – 32m Height – Saudi Arabia



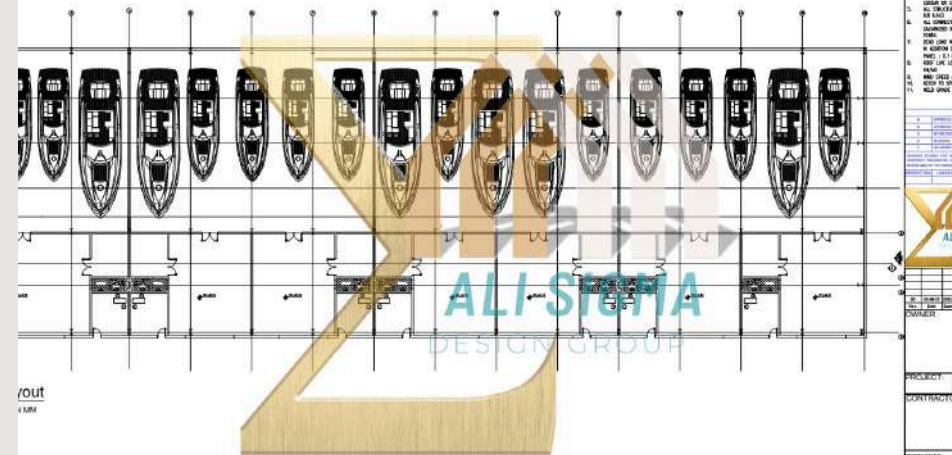
Designed and delivered a 32-meter-high yacht storage facility, providing safe and efficient vertical storage solutions.

Engineered structural systems to support heavy loads while ensuring stability and durability.

Prepared detailed shop drawings for precise fabrication and on-site assembly.

Integrated architectural, structural, and mechanical solutions for optimal functionality.

Executed the project in full compliance with safety standards and client requirements.



Automotive Factory – Ministry of Transport, Qatar



Delivered comprehensive engineering design for a car manufacturing facility for the Ministry of Transport in Qatar.

Designed and coordinated structural, architectural, and MEP systems to support over 15 overhead cranes.

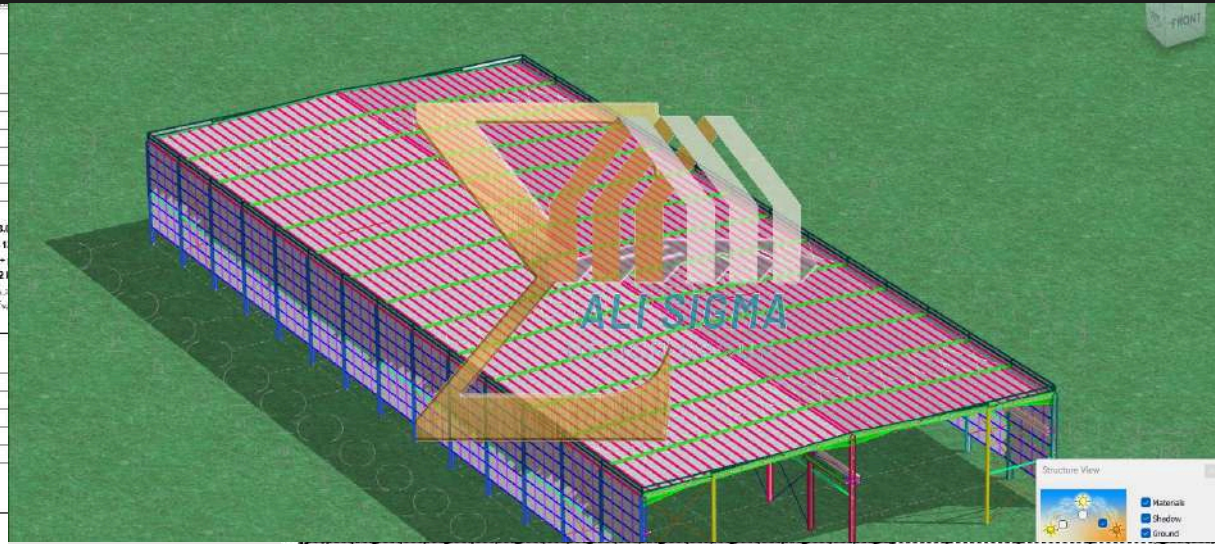
Ensured large-span and heavy-load structural performance for operational efficiency and safety.

Prepared detailed shop drawings to guide precise fabrication and installation.

Optimized the facility layout and engineering solutions for maximum functionality and compliance with international standards.



Automotive Factory – Ministry of Transport, Qatar



Delivered comprehensive engineering design for a car manufacturing facility for the Ministry of Transport in Qatar.

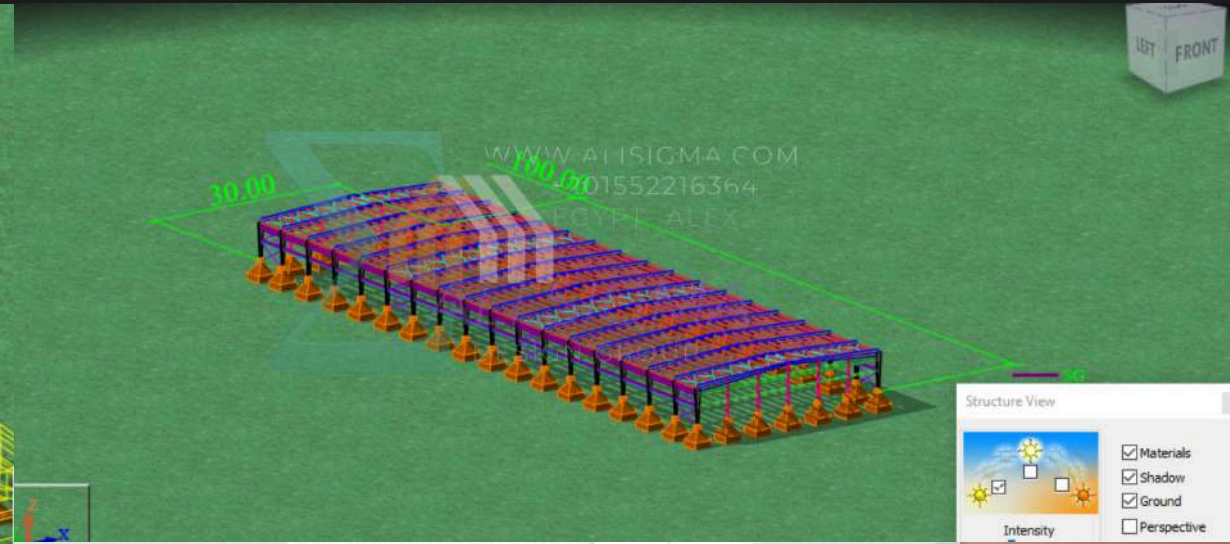
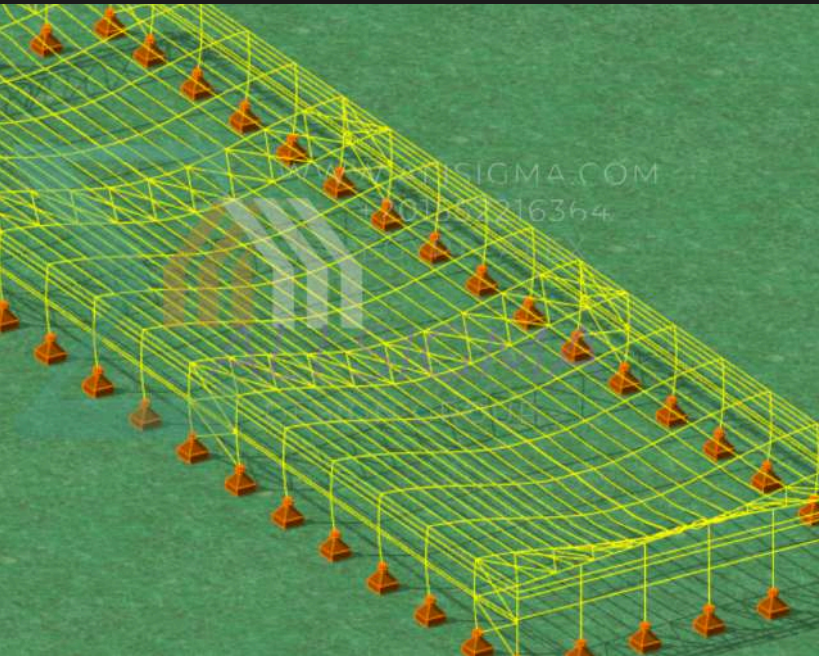
Designed and coordinated structural, architectural, and MEP systems to support over 15 overhead cranes.

Ensured large-span and heavy-load structural performance for operational efficiency and safety.

Prepared detailed shop drawings to guide precise fabrication and installation.

Optimized the facility layout and engineering solutions for maximum functionality and compliance with international standards.

Storage Warehouse – Qatar



Delivered complete engineering design and shop drawings for a large-scale storage warehouse in Qatar.

Provided optimized structural solutions for heavy-duty storage, ensuring safety, stability, and durability.

Coordinated Structural, Architectural, and MEP systems for efficient workflow and operational performance.

Prepared detailed execution drawings to support accurate fabrication and on-site assembly.

Enhanced project value through cost-effective design strategies and compliance with international standards.

Section | Part | Element

Part Name	Stiffened	Kx	Ky	Kz
Length (mm)	Angle (deg)	1.0000	1.0000	1.0000
15	-45			
50	0			
150	90			
50	0			
15	-45			

Section: Section 1.cfss
Material Type: A653 55 Grade 55, Fy=379.21 MPa
Cbx 1.8776 Cby 1.8172 ex
Cmx 1.0000 Cmy 1.0000 ey
Braced Flange: Top kφ 0 kN
Red. Factor, R: 0 Lm 0.0000 m

Loads: P Mx Vy My
(kN) (kN-m) (kN) (kN-m)

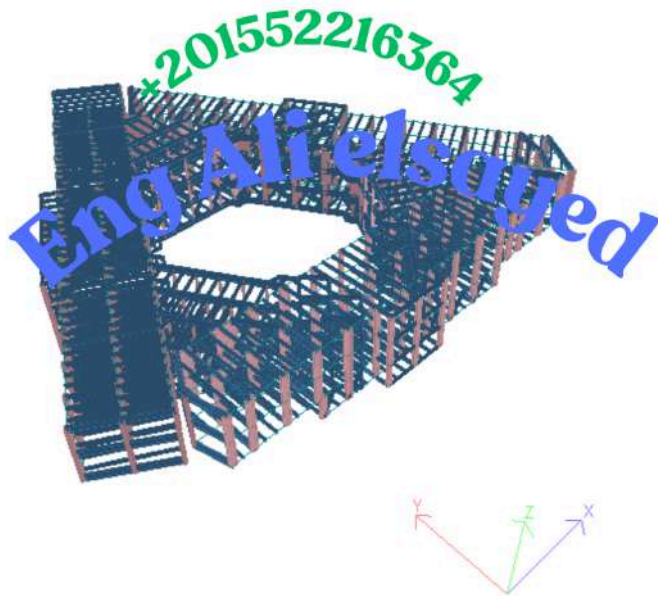
Total	0.000	-2.7493	-2.760	-0.0126
Applied	0.000	-2.7493	-2.760	-0.0126
Strength	39.522	3.2959	14.509	0.7580

Interaction Equations

Eq. H1.2-1	(P, Mx, My)	$0.000 + 0.834 + 0.017 = 0.851$
Eq. H2-1	(Mx, Vy)	$\text{Sqrt}(0.566 + 0.036) = 0.776$
Eq. H2-1	(My, Vx)	$\text{Sqrt}(0.000 + 0.000) = 0.017$

Select OK to create

Triple Linked Bridges – 3 Floors – Egypt



Delivered comprehensive engineering design for three interconnected bridges with three floors in Egypt.

Provided structural, architectural, and MEP solutions to ensure stability, durability, and seamless connectivity.

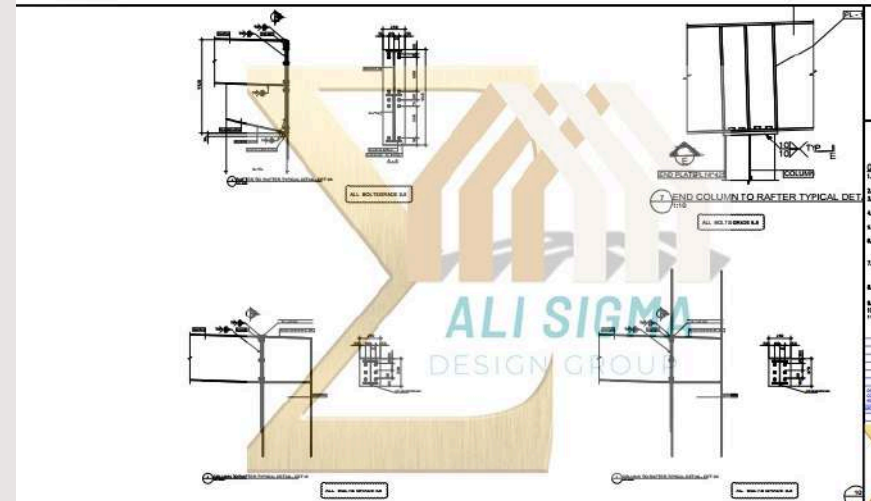
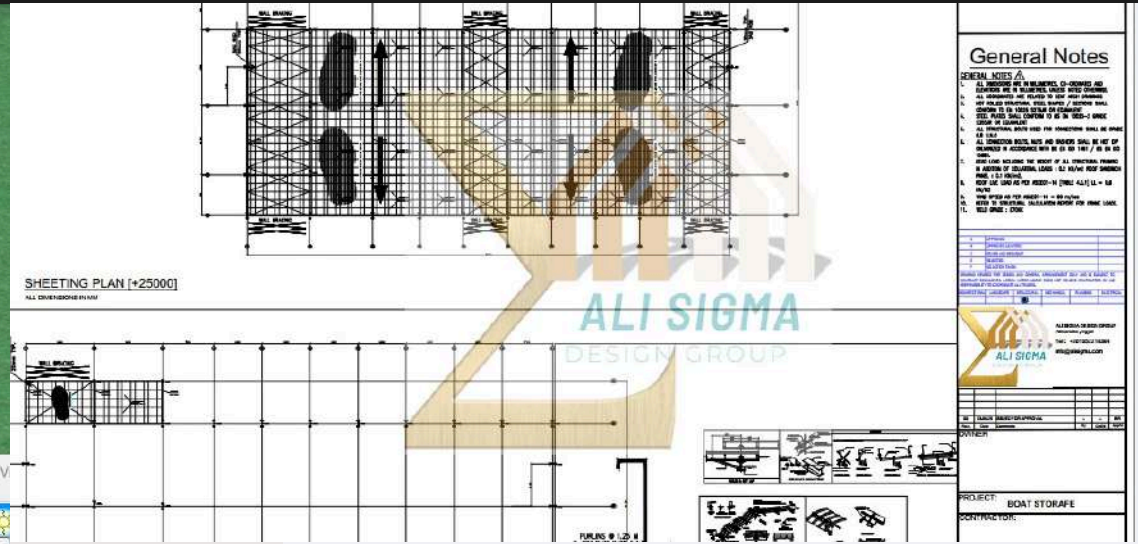
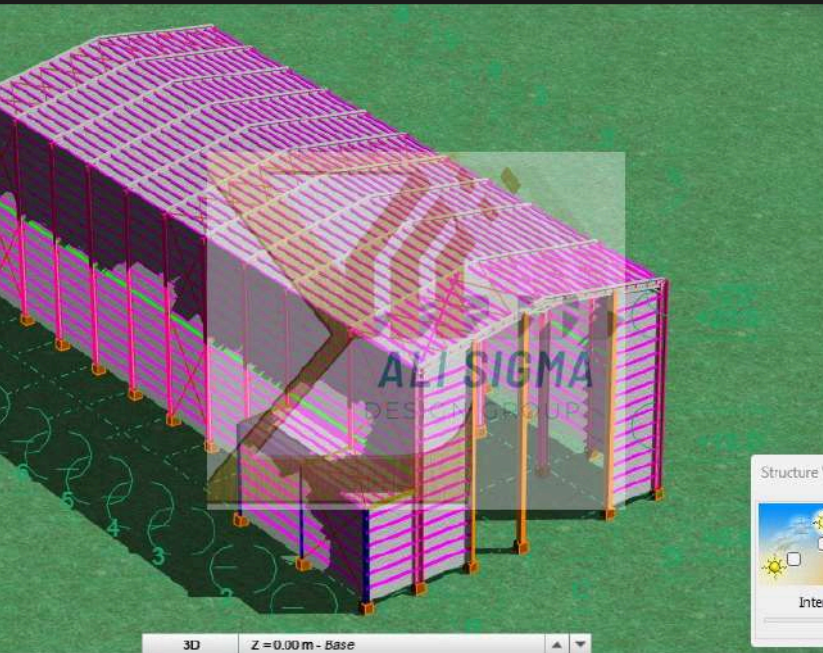
Prepared detailed shop drawings to support accurate fabrication and on-site assembly.

Optimized design for load distribution, safety, and compliance with local and international standards.

Enhanced project efficiency and constructability through integrated engineering and value optimization



Warehouse Facility – 10,000 m² – Saudi Arabia



Delivered full engineering design and shop drawings for a 10,000 m² warehouse facility in Saudi Arabia.

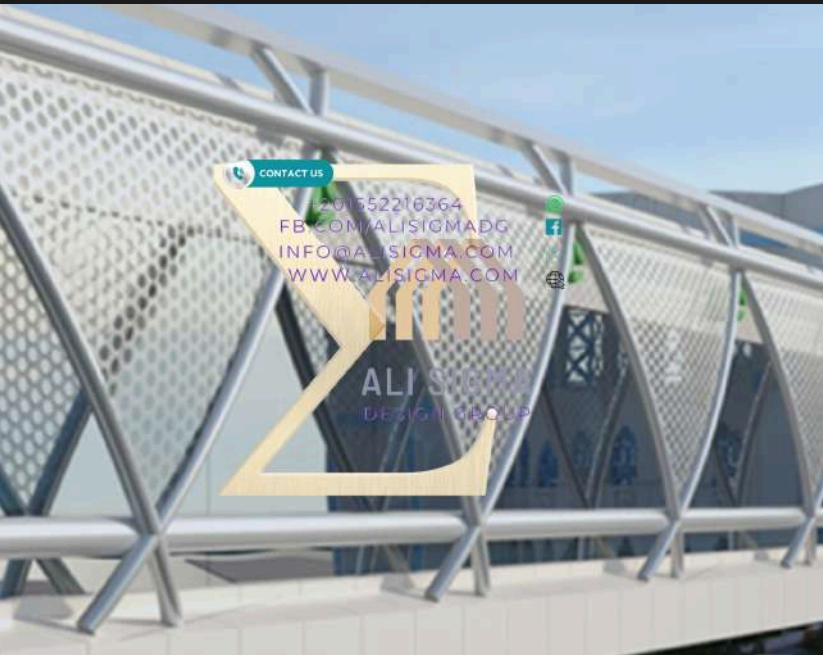
Provided optimized structural solutions to ensure durability, stability, and operational efficiency.

Coordinated Structural, Architectural, and MEP systems for seamless construction and workflow.

Prepared detailed execution drawings to guide accurate fabrication and on-site installation.

Enhanced project value through cost-effective engineering solutions and compliance with international standards.

Hammad Medical City – Linked Bridge – Qatar



Provided detailed cost estimation and engineering value optimization for the linked bridge at Hammad Medical City, Qatar.

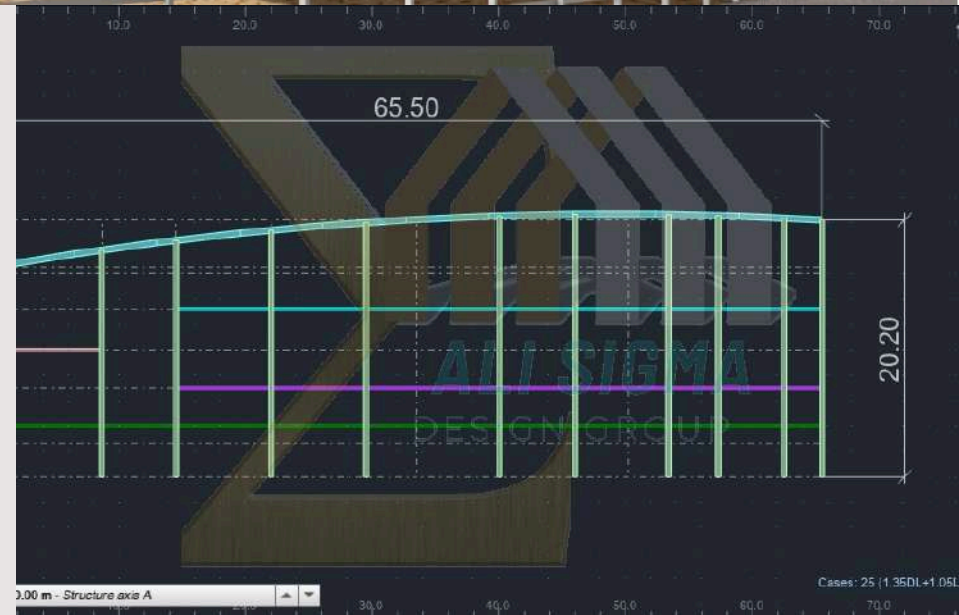
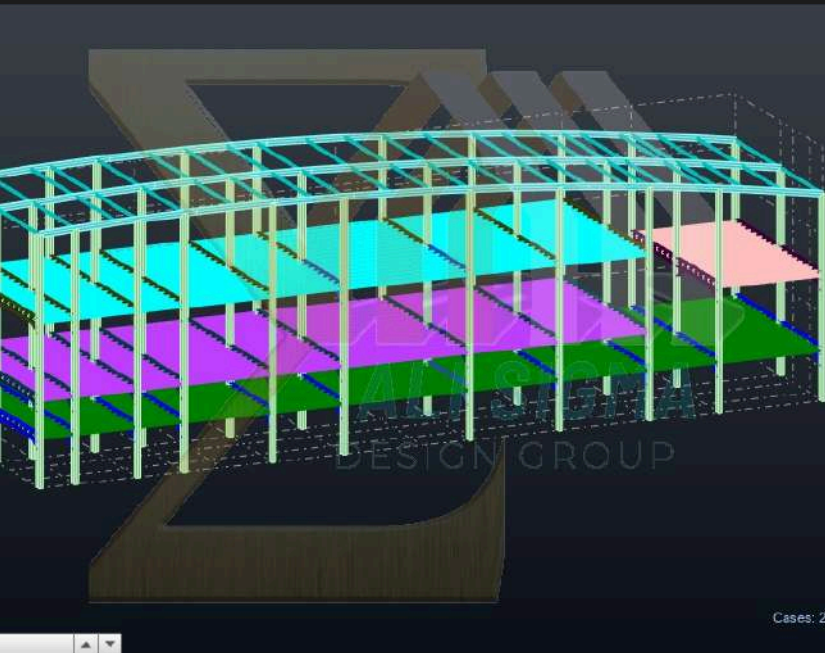
Analyzed structural, architectural, and MEP components to identify efficiency and cost-saving opportunities.

Delivered solutions that enhanced constructability while ensuring compliance with international standards.

Optimized materials and design approaches to achieve significant project value improvements.

Supported informed decision-making through precise estimation and multidisciplinary engineering expertise.

Horse Stadium – Estimation & Engineering Value – Qatar



Provided detailed cost estimation and engineering value optimization for a horse stadium project in Qatar.

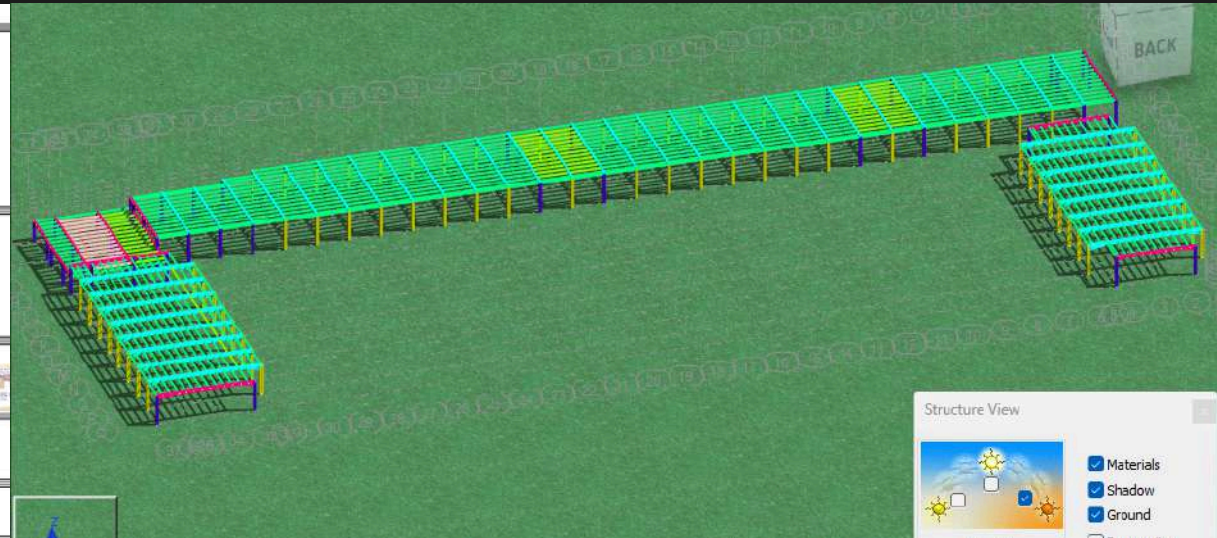
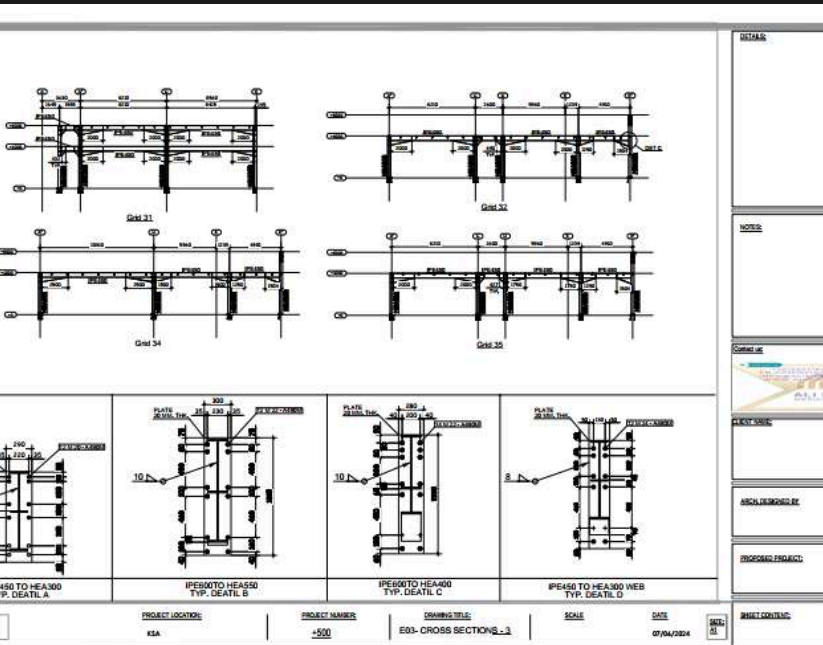
Analyzed structural, architectural, and MEP systems to enhance efficiency and reduce overall project costs.

Implemented design improvements to optimize materials, constructability, and operational performance.

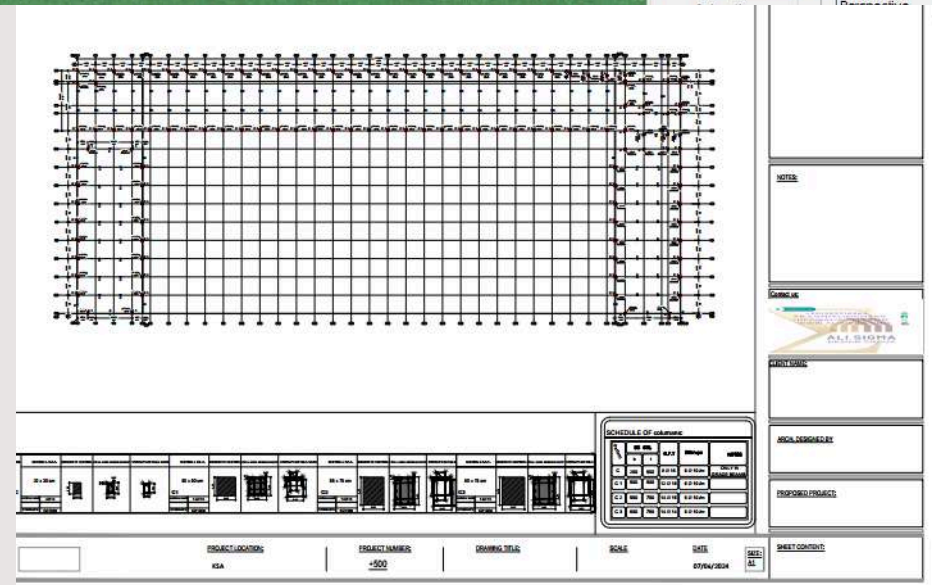
Ensured compliance with international standards while maintaining functional and aesthetic quality.

Delivered precise engineering solutions to maximize project value and support informed client decisions.

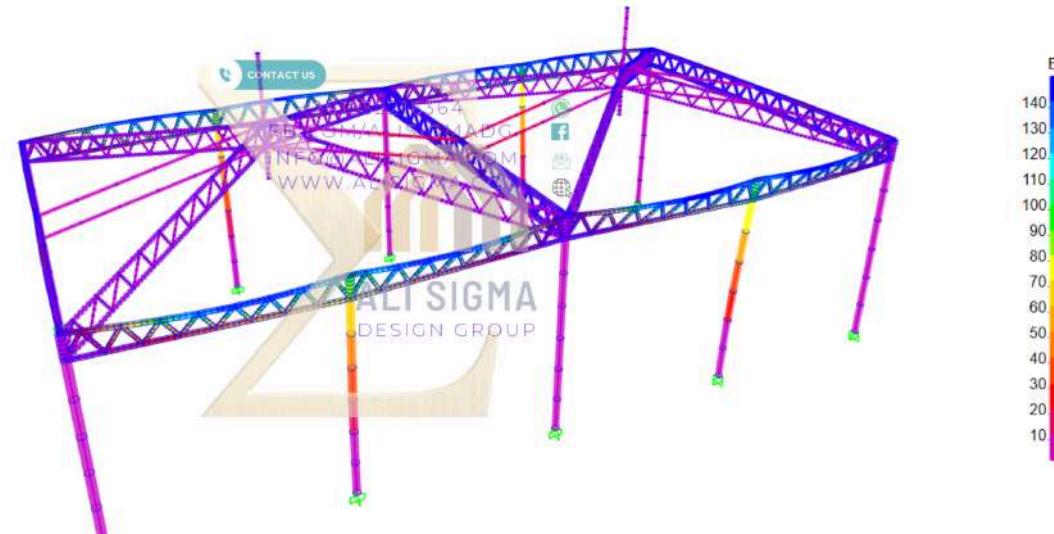
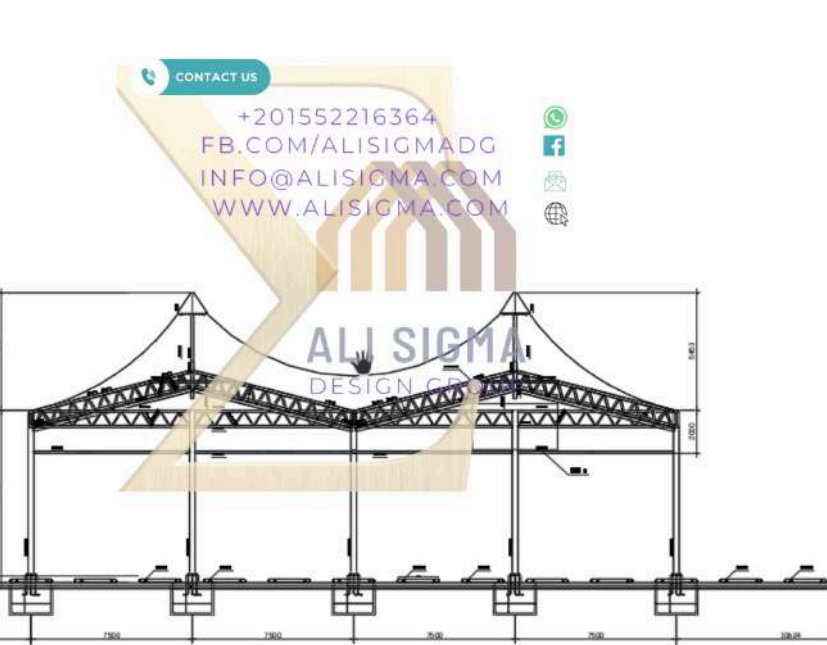
Commercial Mall Development - 120+ Shops - Saudi Arabia



- Delivered full engineering design and shop drawings for a commercial mall comprising over 120 retail units in Saudi Arabia.
- Provided coordinated Structural, Architectural, and MEP solutions to ensure functionality, safety, and constructability.
- Prepared detailed execution drawings to support precise fabrication and on-site implementation.
- Optimized design for efficient space utilization, operational flow, and long-term performance.
- Enhanced project value through cost-effective engineering strategies and compliance with international standards.



Truss Shade Structure – Saudi Arabia



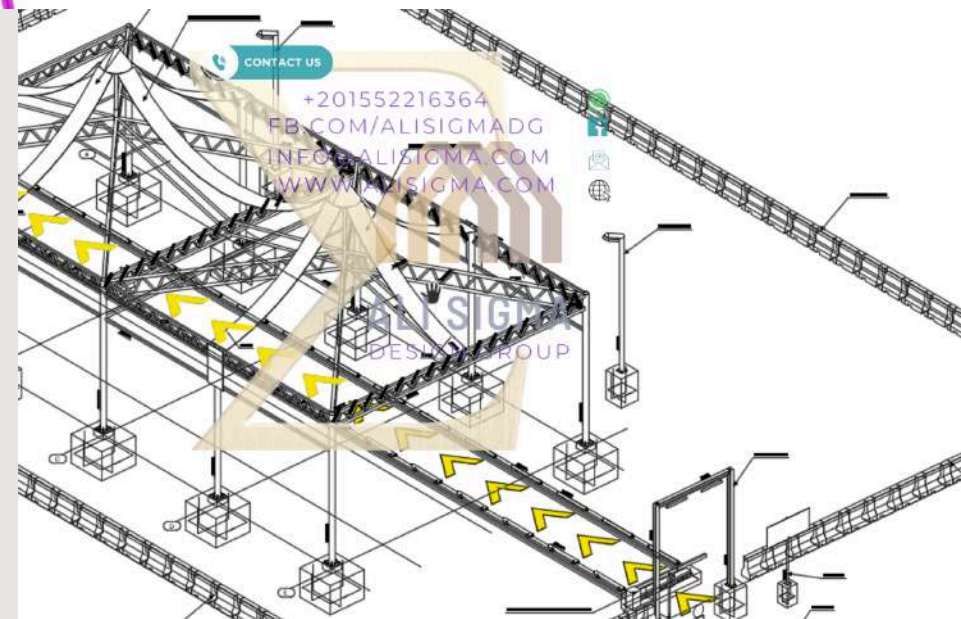
Designed and delivered a durable truss shade structure in Saudi Arabia, combining strength and aesthetic appeal.

Engineered the truss system to ensure stability, load resistance, and long-term performance.

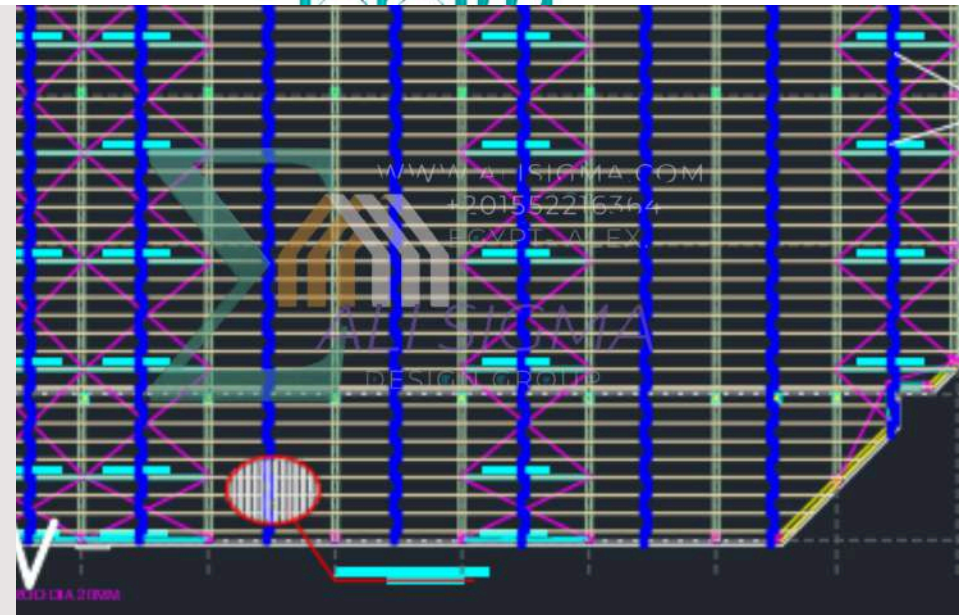
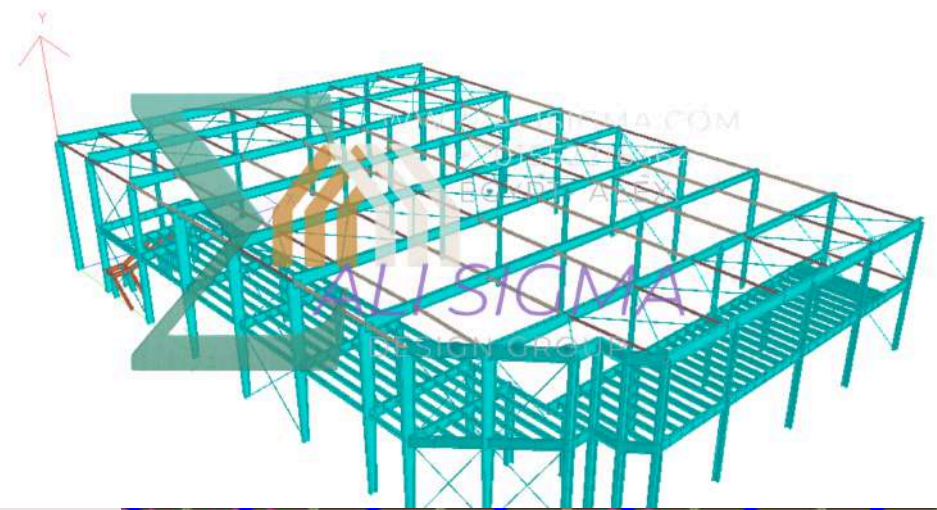
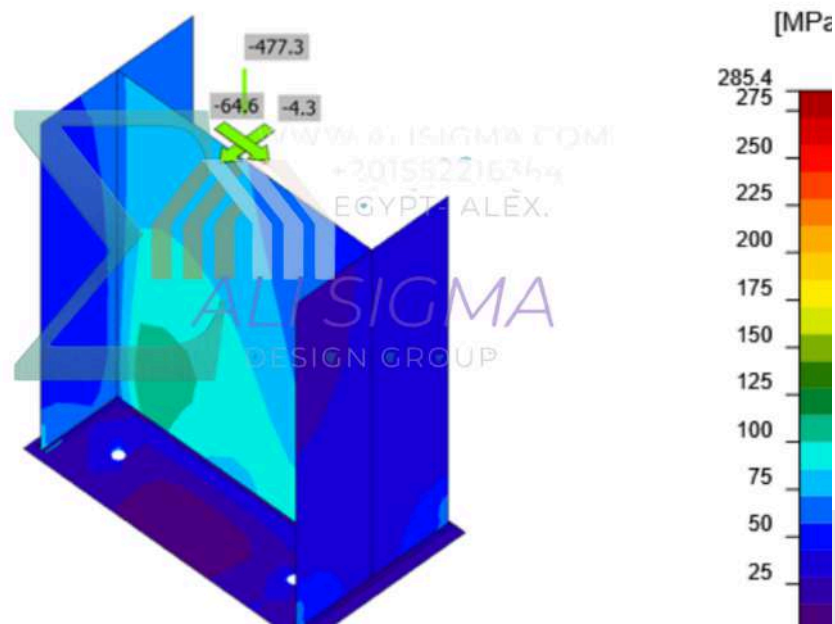
Prepared detailed shop drawings for accurate fabrication and seamless on-site installation.

Optimized materials and connections to achieve cost-effective and efficient construction.

Provided a functional and visually appealing solution suitable for outdoor coverage and protection.



Design & Engineering Optimization – Industrial Building, UAE



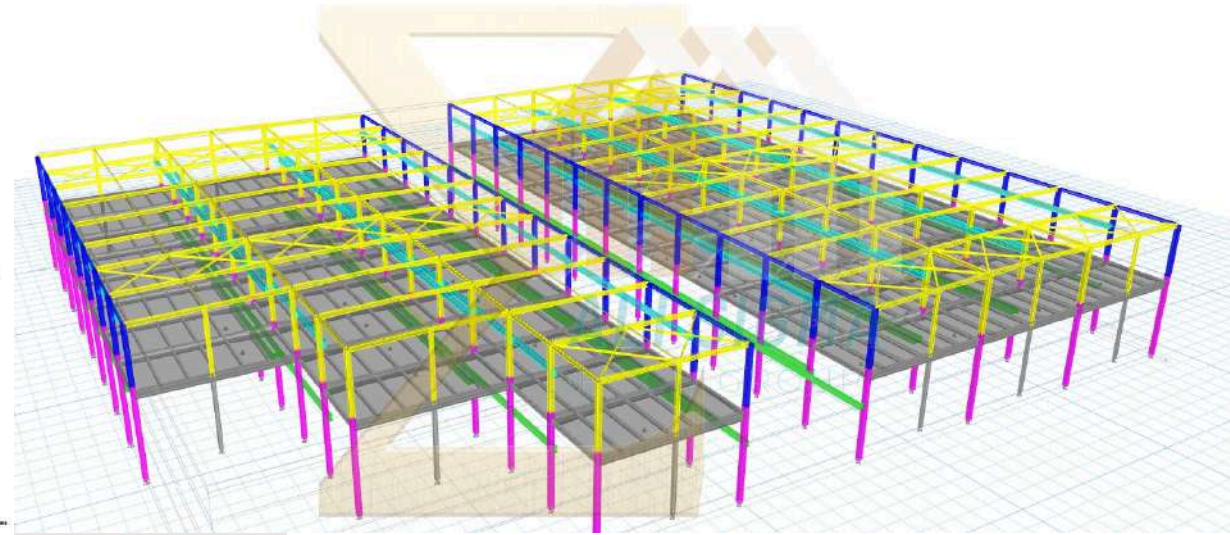
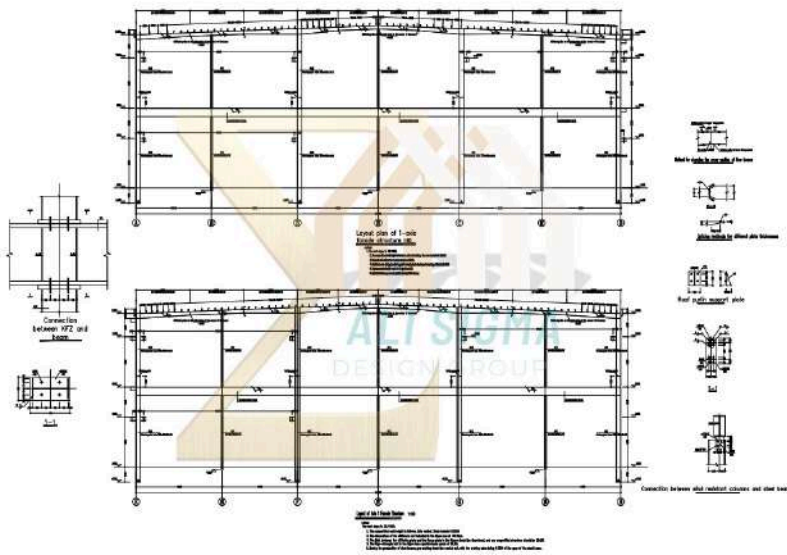
Delivered comprehensive redesign and engineering value optimization for an industrial building in the UAE.

Implemented strategic modifications to improve efficiency, constructability, and overall performance.

Achieved a cost reduction exceeding 30% while maintaining structural integrity and compliance with standards.

Enhanced project value through innovative solutions and resource optimization.

Ensured practical, durable, and cost-effective engineering solutions aligned with client objectives.



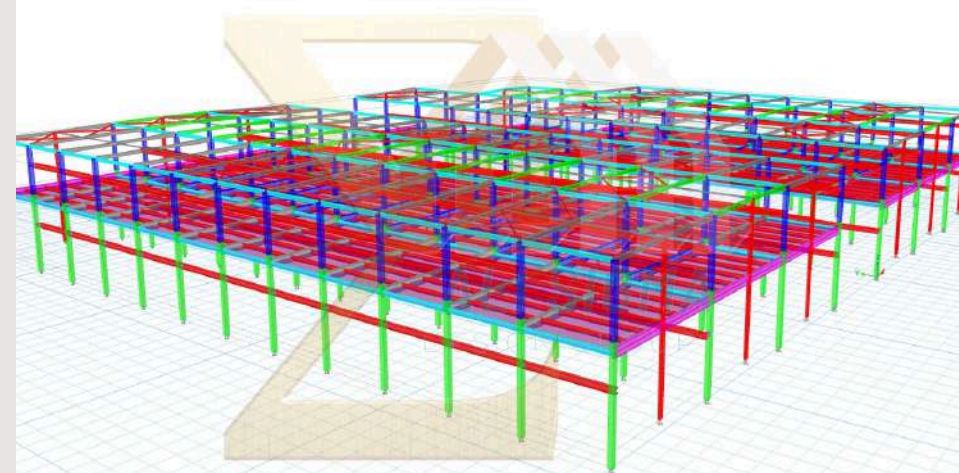
Delivered full multidisciplinary design for an industrial factory in the UAE, accommodating over 18 overhead cranes.

Provided coordinated Structural, Architectural, and MEP solutions to support heavy loads and large-span operations.

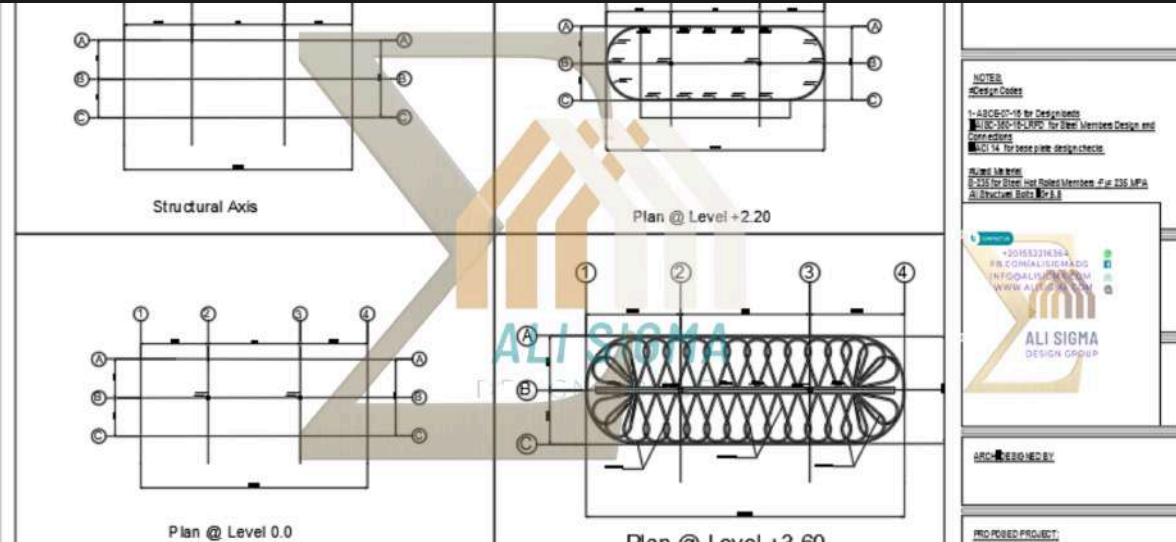
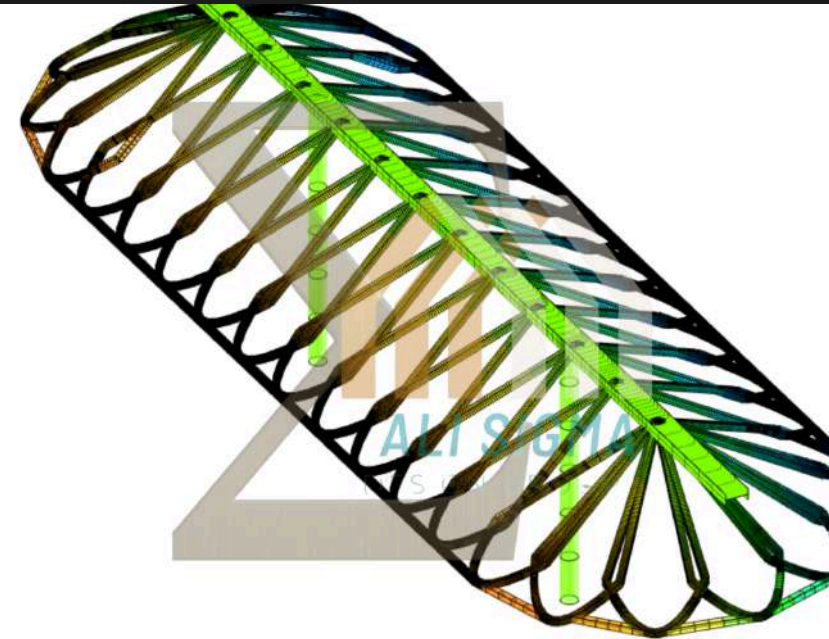
Prepared detailed shop drawings to ensure precise fabrication and seamless on-site installation.

Optimized structural systems for safety, durability, and operational efficiency.

Ensured compliance with international standards while enhancing constructability and project value.



Parametric Rose-Shaped Shade – Kuwait



CALCULATION REPORT

PROJECT : EQBB-24-G-66-k-UMBRELLA

Delivered an innovative parametric design for a shade structure inspired by the form of a rose.

Utilized advanced computational modeling to achieve precise, elegant, and fluid architectural geometry.

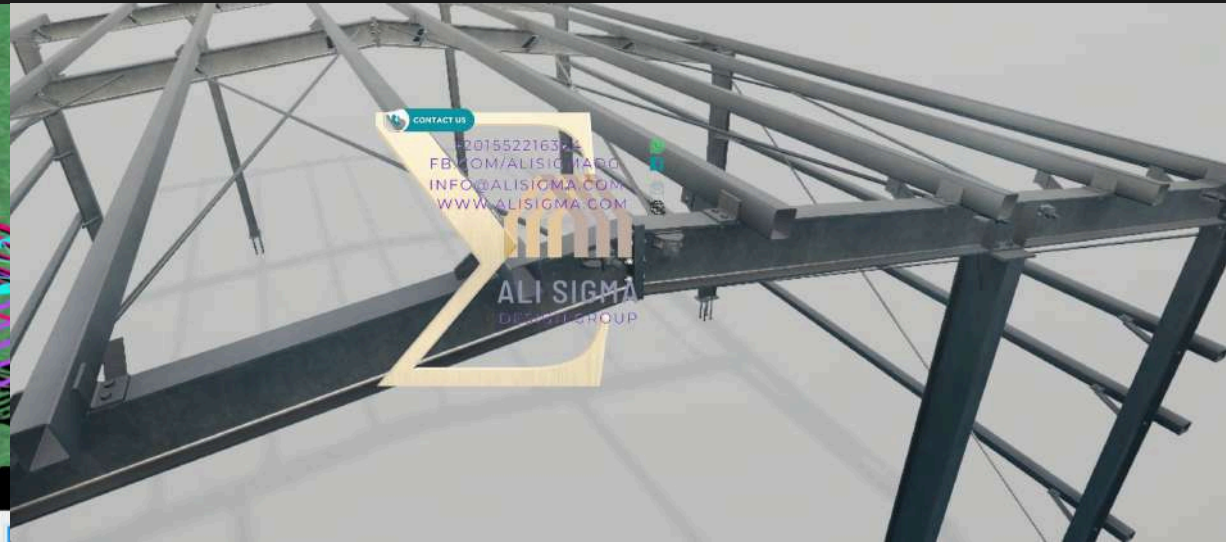
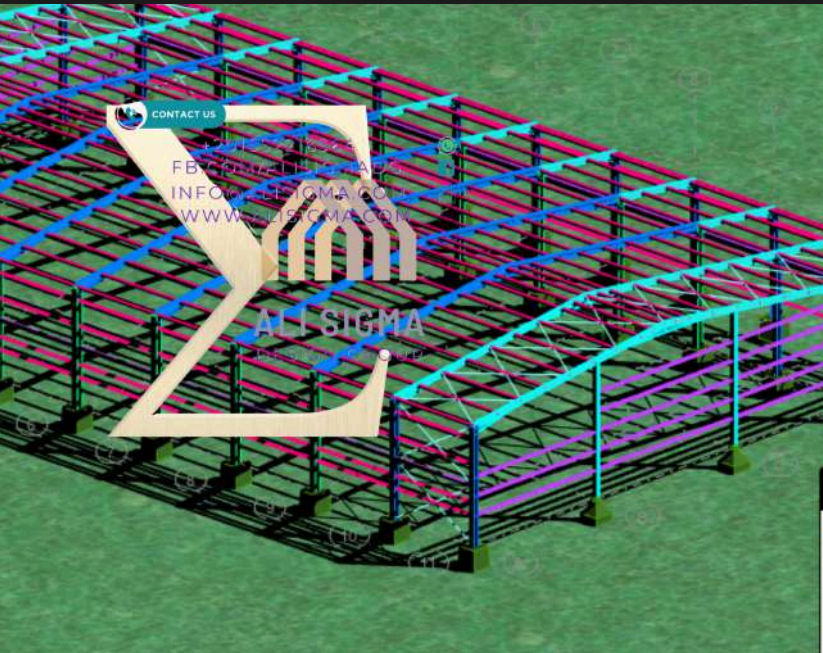
Engineered the structural system to ensure stability, safety, and constructability.

Prepared detailed shop drawings for accurate fabrication and seamless on-site installation.

Combined aesthetic appeal with functional performance, creating a visually striking and durable structure.



Warehouse Facility – Saudi Arabia



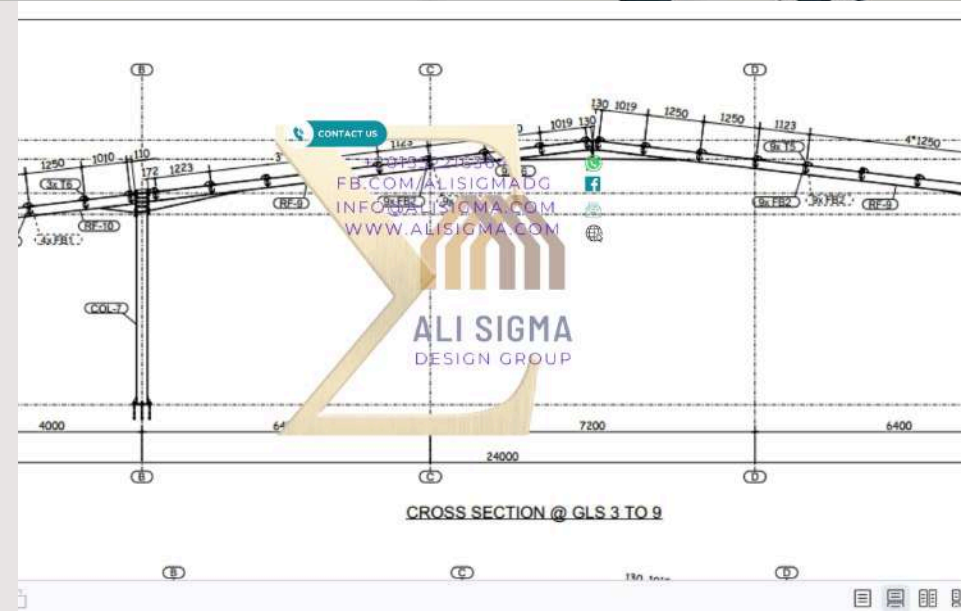
Delivered full engineering design and shop drawings for a large-scale warehouse facility in Saudi Arabia.

Provided optimized structural solutions to ensure durability, stability, and operational efficiency.

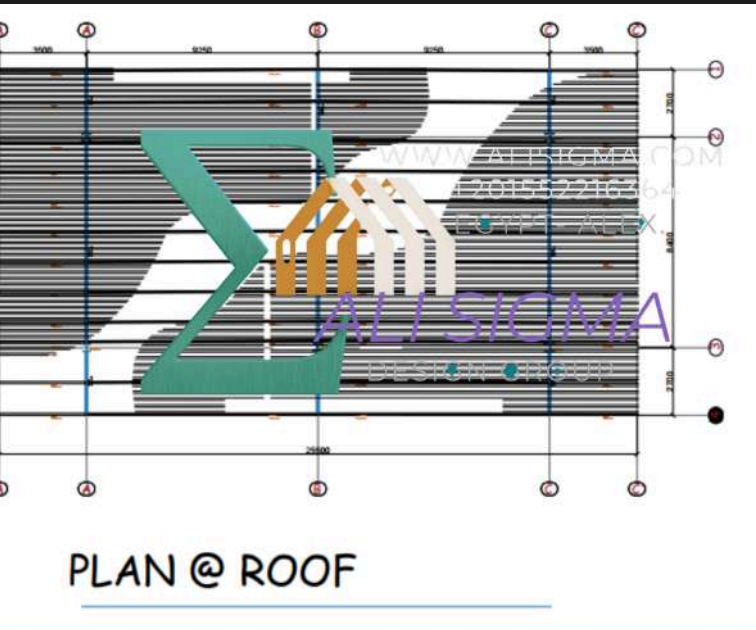
Coordinated Structural, Architectural, and MEP systems for seamless construction and workflow.

Prepared detailed execution drawings to support accurate fabrication and on-site installation.

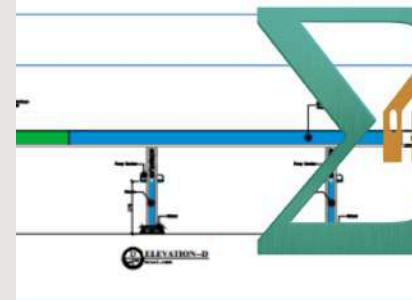
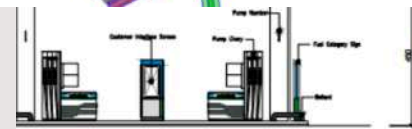
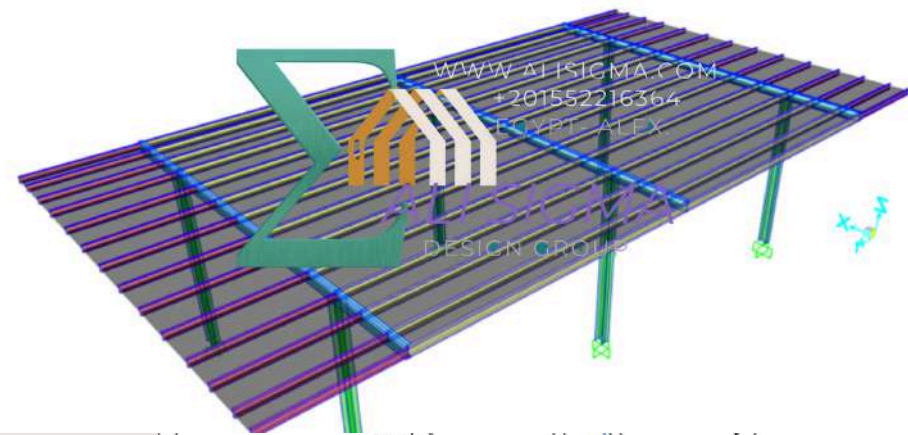
Enhanced project value through cost-effective engineering strategies and compliance with international standards.



Gas Station Development – Saudi Arabia



3.1 3D model



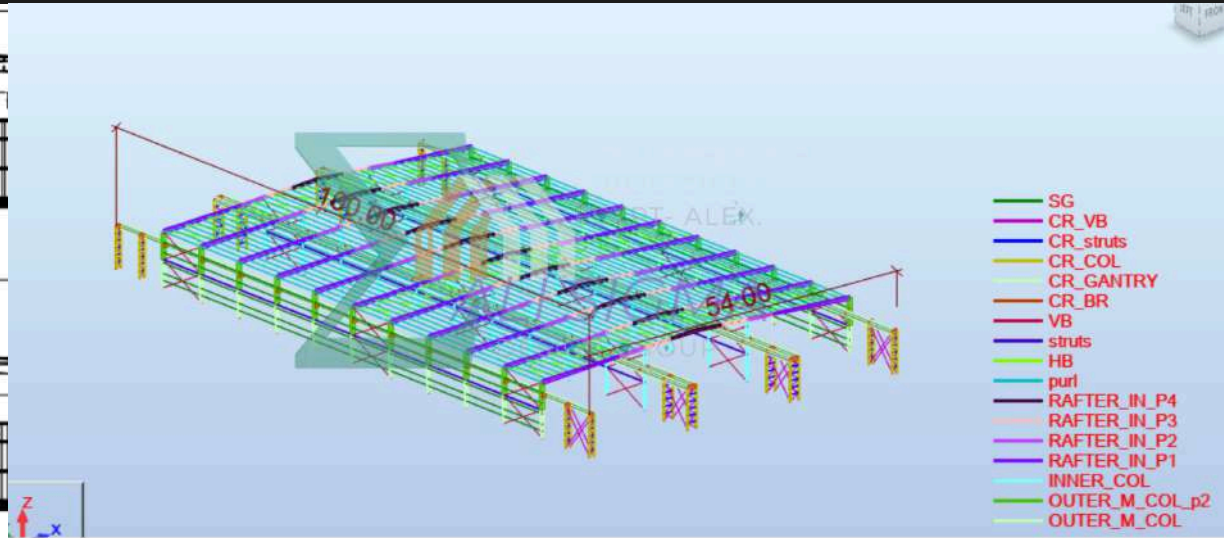
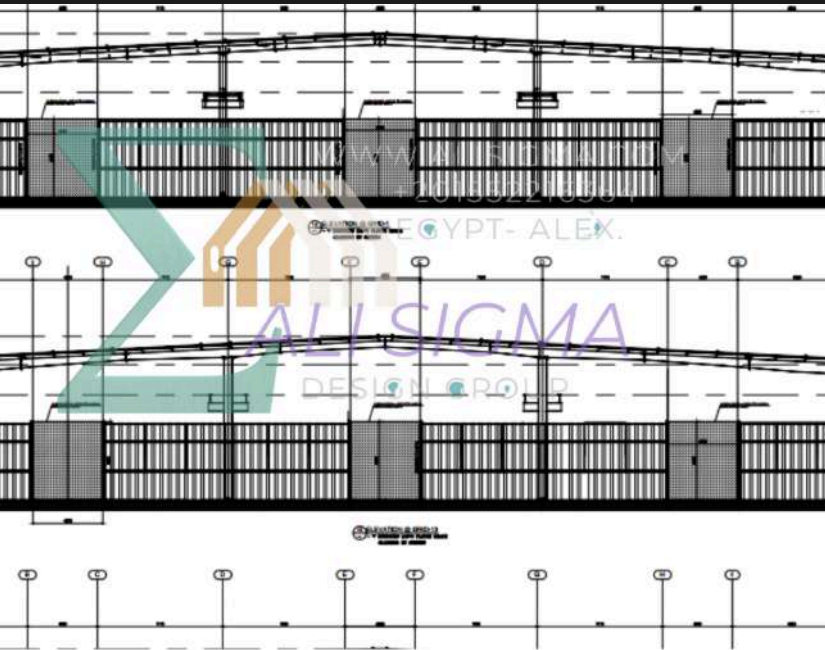
Delivered comprehensive engineering design and shop drawings for a gas station facility in Saudi Arabia.

Provided coordinated Structural, Architectural, and MEP solutions to ensure safety, functionality, and regulatory compliance.

Prepared detailed execution drawings to support precise fabrication and efficient on-site construction.

Optimized design for durability, operational efficiency, and cost-effectiveness.

Ensured high-quality delivery while adhering to international and local standards.



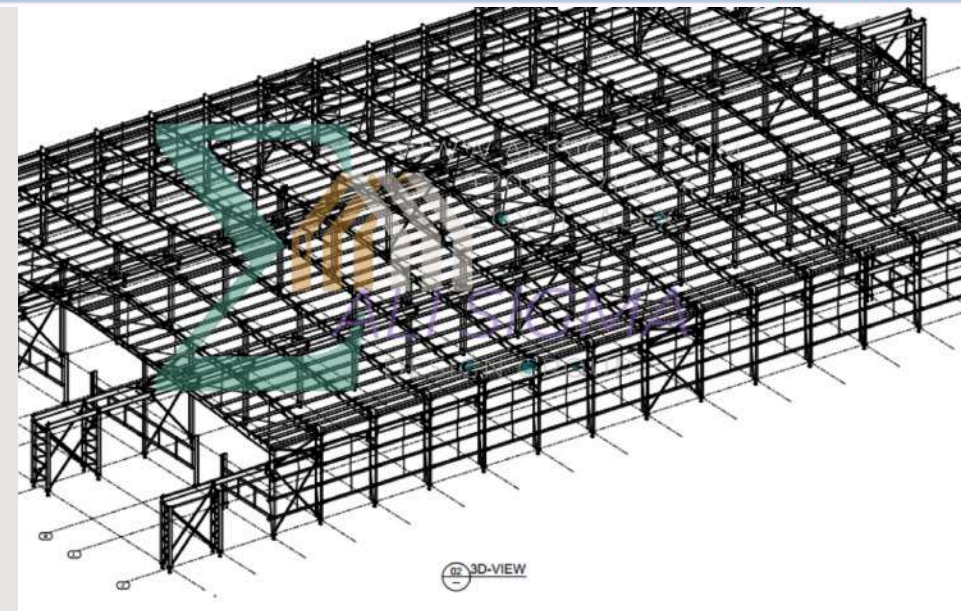
Delivered full multidisciplinary engineering design and shop drawings for an industrial factory in Qatar.

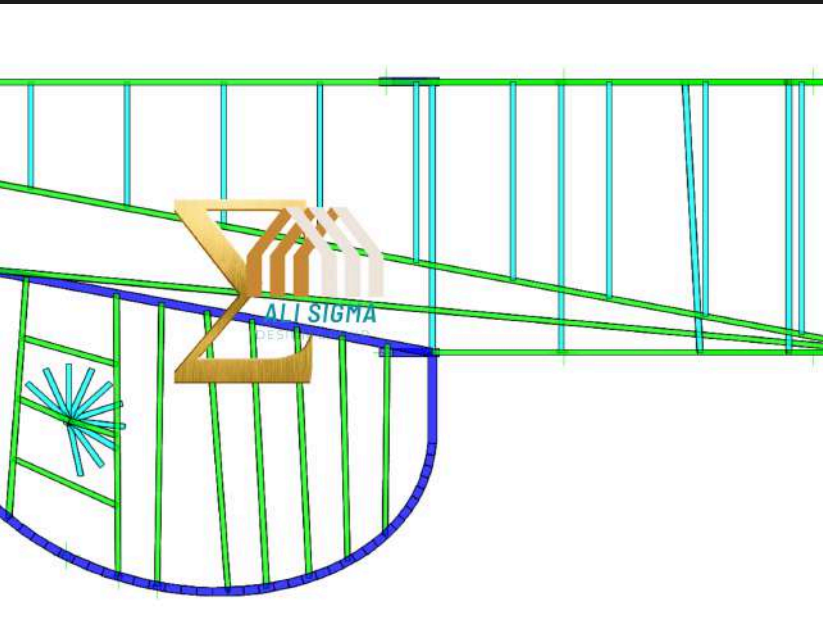
Provided optimized Structural, Architectural, and MEP solutions to support large-span operations and heavy-duty loads.

Prepared detailed execution drawings to ensure precise fabrication and seamless on-site installation.

Implemented cost-effective and efficient engineering strategies to enhance constructability and operational performance.

Ensured compliance with international standards while maintaining safety, durability, and long-term functionality.

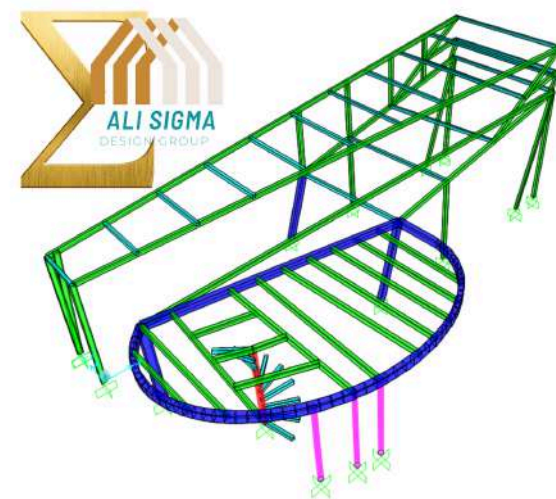




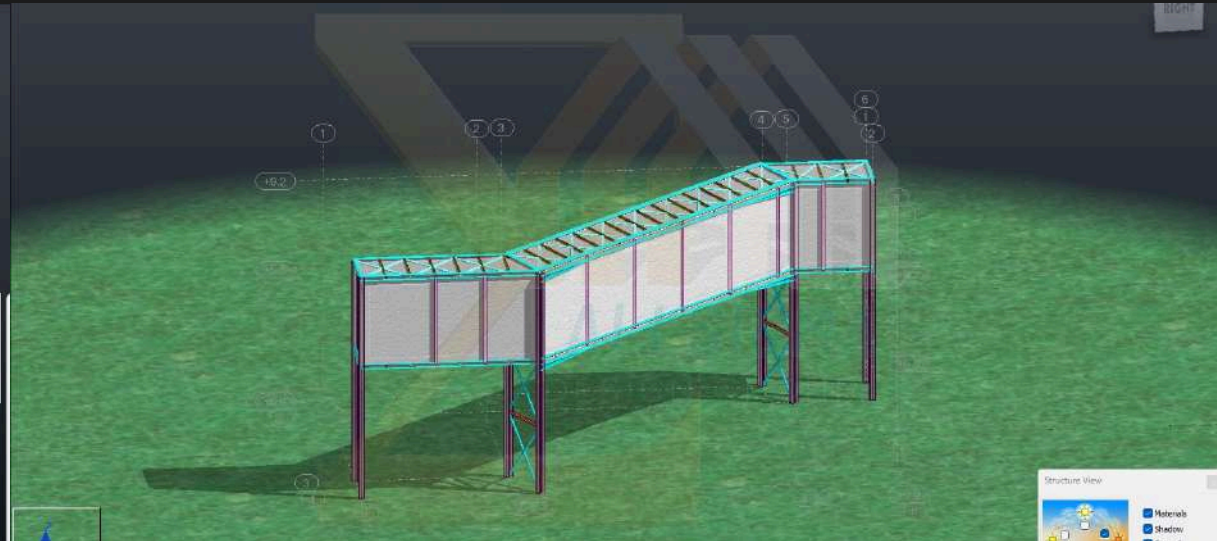
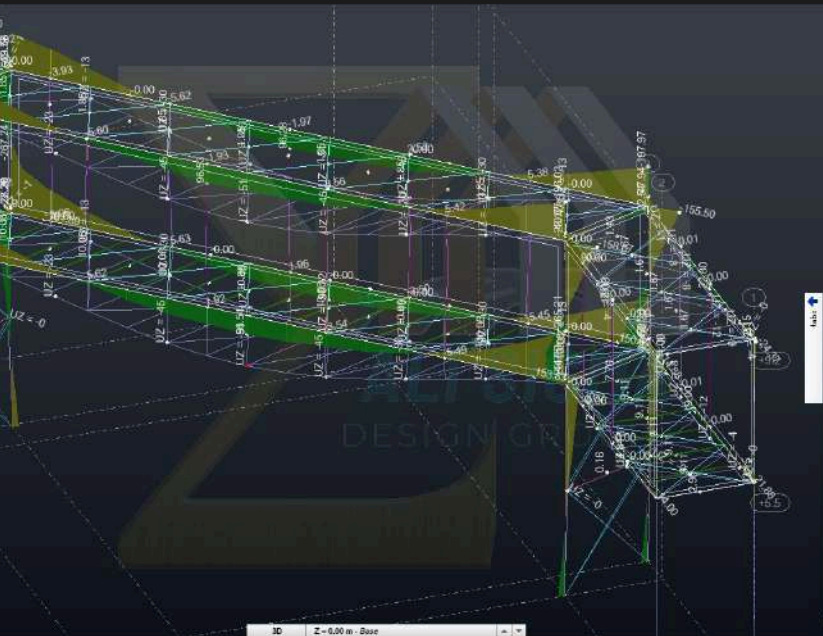
Delivered engineering design and shop drawings for the Defence Tech Expo facilities.

Provided coordinated Structural, Architectural, and MEP solutions to support exhibition requirements.

Ensured safe, durable, and efficient construction while meeting project standards and timelines.



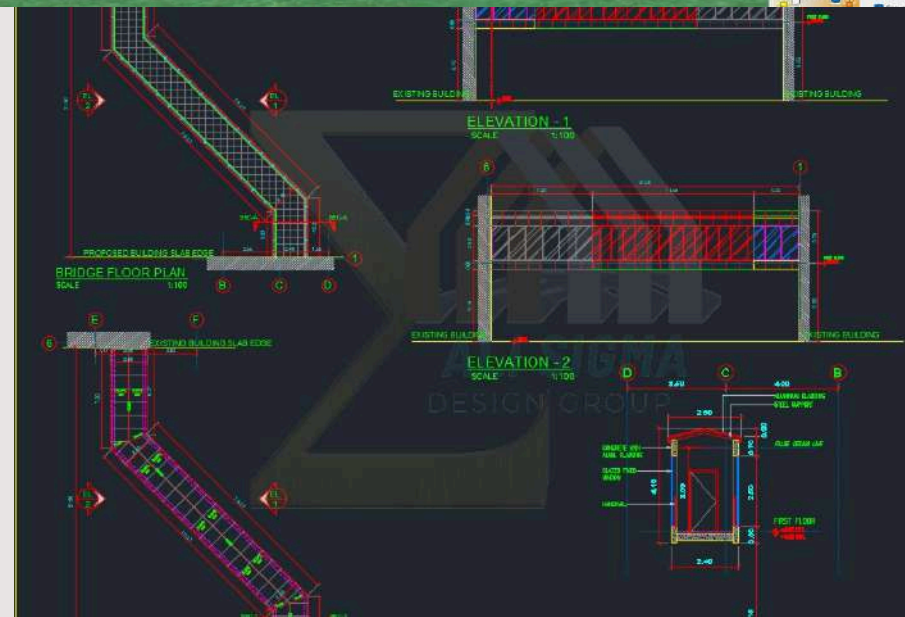
18m Linked Bridge – Qatar

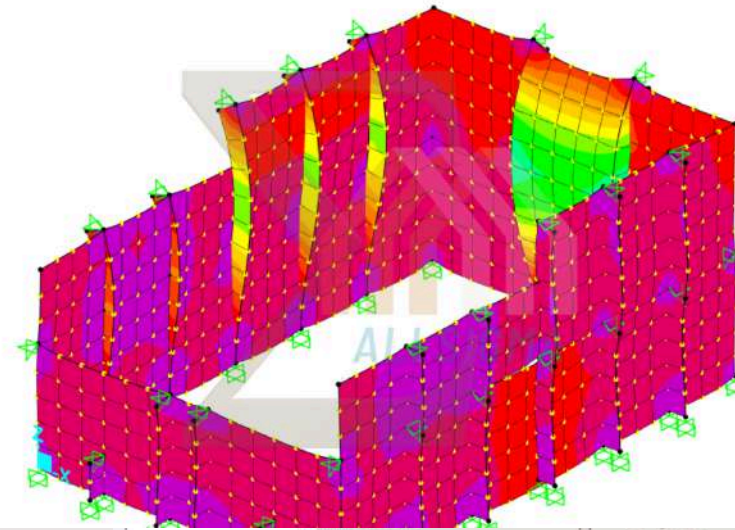
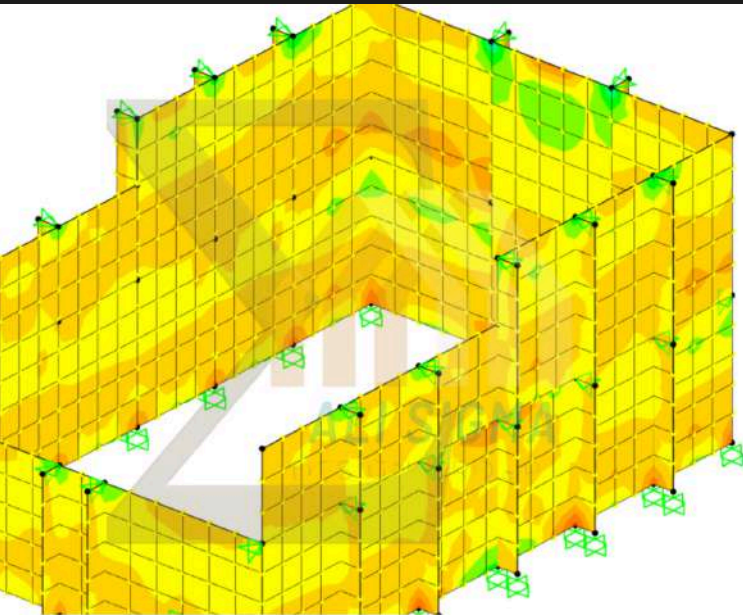


Delivered full engineering design and shop drawings for an 18-meter linked bridge in Qatar.

Provided coordinated Structural, Architectural, and MEP solutions to ensure stability, durability, and safety.

Prepared detailed execution drawings to support precise fabrication and seamless on-site installation





Delivered full engineering design and shop drawings for a squash court facility in Egypt.

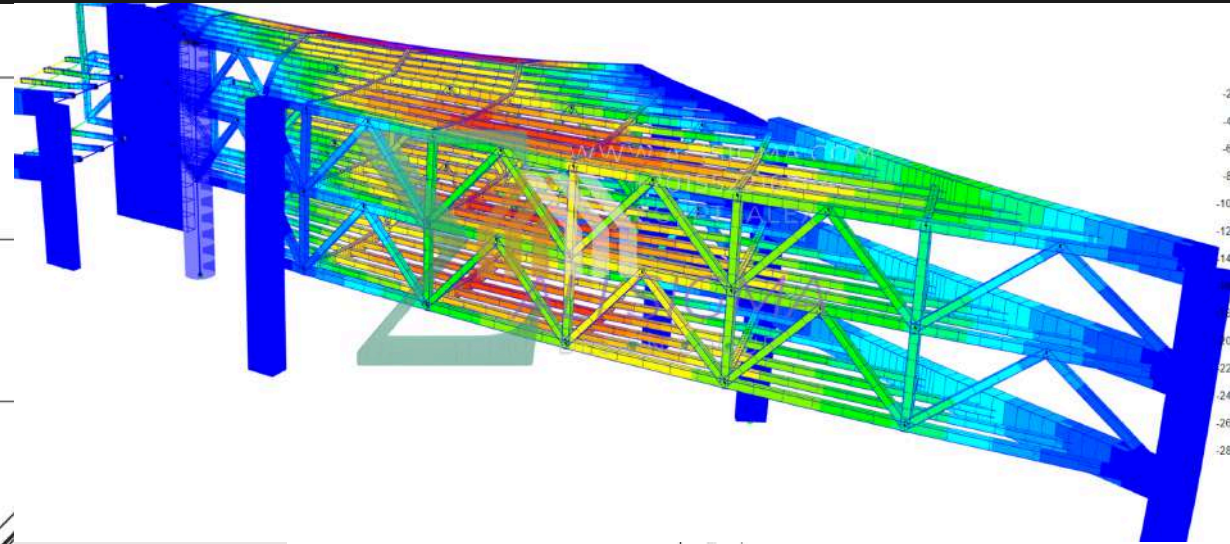
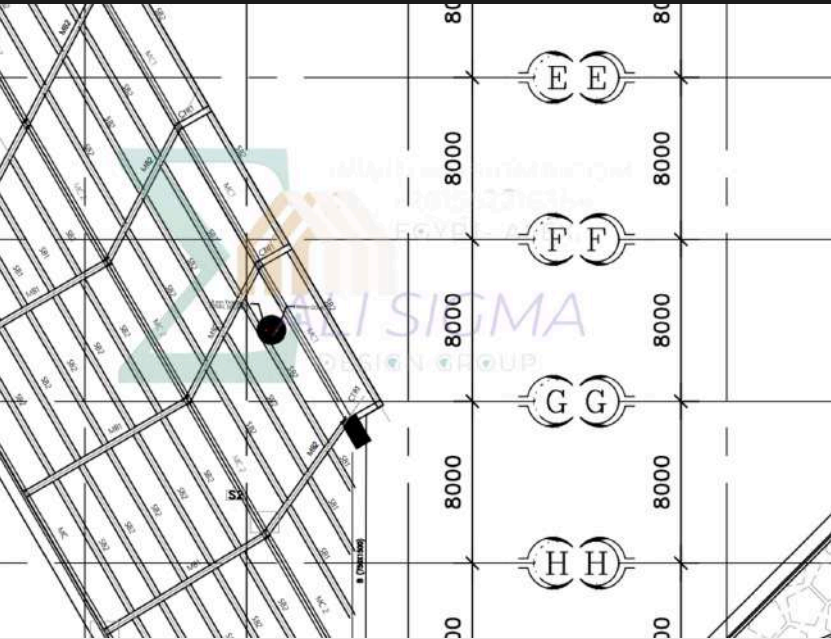
Provided Structural, Architectural, and MEP solutions to ensure functionality, safety, and durability.

Prepared detailed execution drawings to support precise construction and seamless on-site installation.



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Quran & Dawa'a Educational Building – Qatar



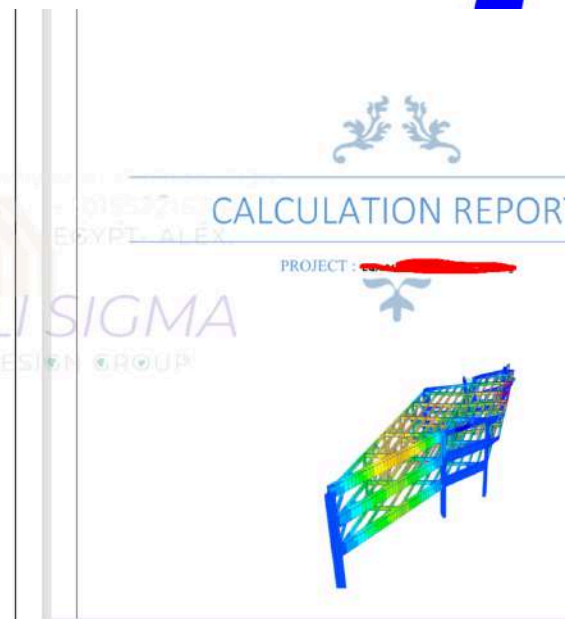
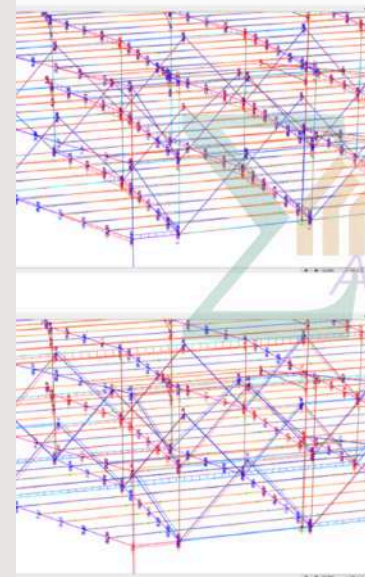
Delivered comprehensive engineering design and shop drawings for the Quran and Dawa'a educational building in Qatar.

Provided coordinated Structural, Architectural, and MEP solutions to ensure safety, functionality, and durability.

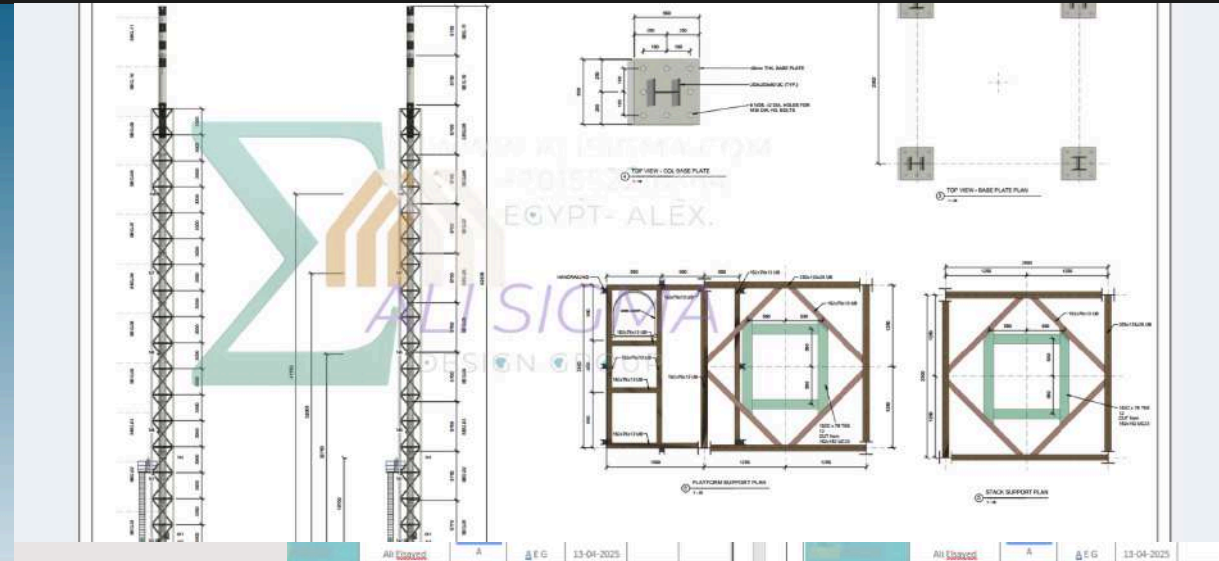
Prepared detailed execution drawings to support accurate fabrication and efficient on-site construction.

Optimized design for operational performance, accessibility, and compliance with international standards.

Enhanced project value through cost-effective engineering strategies and integrated multidisciplinary solutions.



Armco Flare – 64m Height



Designed and delivered engineering solutions for a 64-meter-high Armco flare structure.

Engineered the structural system for stability, wind resistance, and operational safety at elevated height.

Prepared detailed shop drawings to ensure precise fabrication and seamless on-site installation.

Optimized materials and connections for durability, efficiency, and cost-effectiveness.

Ensured compliance with industrial standards and client requirements for long-term performance.

7.4 Laminate thickness

The thickness of an individual lamina layer t_i shall be determined using Formula (1), represented graphically in Annex B.

$$t_i = \left(\frac{1}{\rho_g} \cdot \frac{(100 - m_g)}{m_g \cdot \rho_g} \right) 10^3 \quad (1)$$

where:

- t_i is the thickness of lamina layer i [mm], of mass 1 kg/m²
- m_g is the % glass content by mass in layer i [kg/m²]
- ρ_g is the density of the cured resin [kg/m³]
- ρ_g is the density of the glass [kg/m³]

$m_g = 43\%$
 $\rho_g = 1080 \text{ kg/m}^3$
 $\rho_g = 2550 \text{ kg/m}^3$
 $t_{\text{inner}} = \frac{1}{2550} + \frac{100 - 43}{43 \cdot 1080} \cdot 1000 = 1.7 \text{ mm}$

per as EN-13121-3 Consideration, minimum thickness for chemical attacks for vertical vessels > 5 mm

Minimum: 2 layers of 10mm (20mm) + 1 inner layer with 1.7mm thickness

3 Outer layer

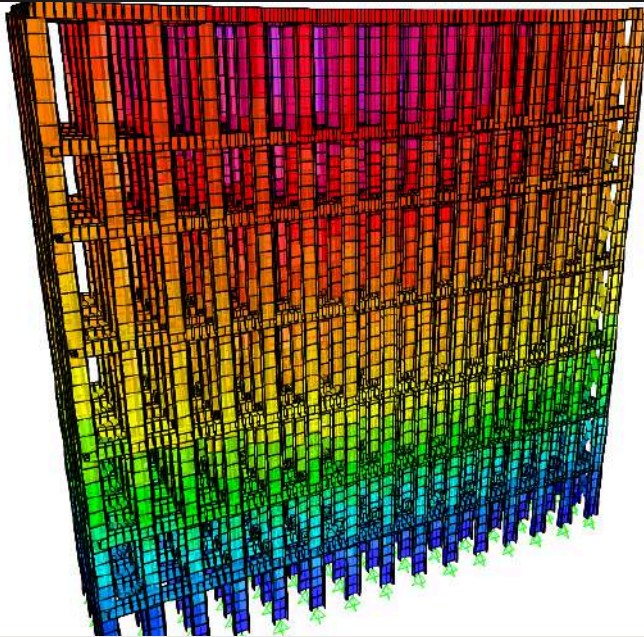
Material: 1 of CSM + UV-resistant resin.
 thickness: 1.5 mm.
 function: Weather/impact protection.

5.3 Structural layer

	Probabilistic design approach		
	Advanced design	Basic design	Basic design
Determination of mechanical properties for assessment in F.6.2	Use defined material properties for assessment in F.6.2 The material properties shall be verified on each manufactured batch according to 17.3.3	Use defined material properties for assessment in F.6.2 The material properties shall be verified on each manufactured batch according to 17.3.3	Use defined material properties for assessment in F.6.2 The material properties shall be verified on each manufactured batch according to 17.3.3
Established material test data:	Material data only acceptable with support from a limited production test programme for an authorized engineering solution.	Material data acceptable if similar because design has been produced within 12 months of the last test.	Material data acceptable if similar because design has been produced within 18 months of the last test.
Partial influence factor relating to the grade of the test verification of material properties:	$A_1 = 1.0$ For mechanical properties $A_1 = 1.0$ when using historical data and existing data in accordance with F.6.2	$A_1 = 1.3$ (medium case) $A_1 = 1.3$ (simple case)	$A_1 = 1.5$
Partial design factor relating to the ultimate resistance of the structure:	$A_2 = 0.9$ (EN 13121-3:2005)	$A_2 = 0.9$ (EN 13121-3:2005)	$A_2 = 0.9$ (EN 13121-3:2005)
Partial influence factor relating to the design temperature of the vessel and water level:	$A_3 = 1.0$	$A_3 = 1.0$	$A_3 = 1.0$
Partial influence factor relating to the design temperature of the structure:	$A_4 = 1.0$	$A_4 = 1.0$	$A_4 = 1.0$
Partial influence factor relating to the design temperature of the vessel and water level:	$A_5 = 1.0$	$A_5 = 1.0$	$A_5 = 1.0$
Partial influence factor relating to the design temperature of the structure:	$A_6 = 1.0$	$A_6 = 1.0$	$A_6 = 1.0$
Material design factor relating to the design temperature of the structure:	$A_7 = 1.0$	$A_7 = 1.0$	$A_7 = 1.0$
Material design factor relating to the design temperature of the structure:	$A_8 = 1.0$	$A_8 = 1.0$	$A_8 = 1.0$
Material design factor relating to the design temperature of the structure:	$A_9 = 1.0$	$A_9 = 1.0$	$A_9 = 1.0$
Material design factor relating to the design temperature of the structure:	$A_{10} = 1.0$	$A_{10} = 1.0$	$A_{10} = 1.0$
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Material design factor relating to the design temperature of the structure:	$A_{12} = 1.0$	$A_{12} = 1.0$	$A_{12} = 1.0$
Material design factor relating to the design temperature of the structure:	$A_{13} = 1.0$	$A_{13} = 1.0$	$A_{13} = 1.0$
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Material design factor relating to the design temperature of the structure:	$A_{15} = 1.0$	$A_{15} = 1.0$	$A_{15} = 1.0$
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Material design factor relating to the design temperature of the structure:	$A_{100} = 1.0$	$A_{100} = 1.0$	$A_{100} = 1.0$

→ A1 = 2
 → A2 = 1.5

Factory Storage Area – Romania



document

Pages Results

- 7.1.2 Torsion Properties
- 2 Beams
- 7.2.1 Profile Properties
- 7.2.2 Torsional Properties
- 3 Truss Members
- 7.3.1 Profile Properties
- 7.3.2 Torsional Properties
- Annual Design Check [Column- beam] Case of...
- 1 Design Column no : 880
- Design Check for beam no : 970
- Annual Design Check [truss members]
- 1.1 Case of maximum Compression Force
- 10.1.1 Section Resistance Check
- 10.1.2 Buckling Resistance Check [Flexural Bu...
- 10.1.3 Buckling Resistance Check [Torsional B...
- Design of Base plates
- Classes of the Structure in Seismic Effect
- 2.1 Mass of Own Wight
- 2.2 Mass of SDL
- 2.3 Mass of Live Loads

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DESIGN GROUP

Structural Report - R00

11 Design of Base plates

TABLE: Element forces - Frames		Frame	Mat. No.	OutLineCase	CaseType	SteelType	P	VZ	V3
Test	in	Test	Test	Test	Test	Test	KN	KN	KN
681	0	1.350L+1.5LL+EV15	Combine	atios			68.4	0.08	-0.318
682	0	1.350L+1.5LL+EV15	Combine	atios			68.4	-0.08	-0.318
683	0	1.350L+EV15	Combine	atios			67.0	0.00279	-
684	0	1.350L+EV15	Combine	atios			67.0	0.00279	-
685	0	1.350L+1.05LL+EV1	Combine	atios			62.2	-	-0.543
686	0	1.350L+1.05LL+EV1	Combine	atios			62.2	-	-0.543
687	0	1.350L+1.5LL+EV15	Combine	atios			63.9	-	-0.037
688	0	1.350L+1.5LL+EV15	Combine	atios			63.9	-	-0.037
675	0	1.350L+1.5LL+EQ1	Combine	atios	Max		53.7	3.248	-0.068
676	0	1.350L+1.5LL+EQ1	Combine	atios	Max		53.7	3.062	-0.068
675	0	1.350L+EQ1PM1	Combine	atios	Max		52.5	3.185	-0.302

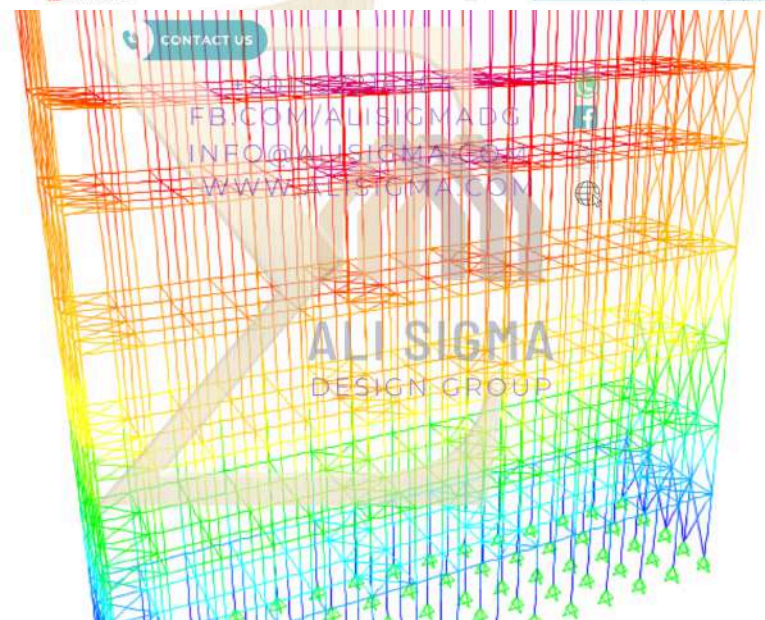
Delivered full engineering design and shop drawings for a factory storage facility in Romania.

Provided coordinated Structural, Architectural, and MEP solutions to ensure durability, stability, and operational efficiency.

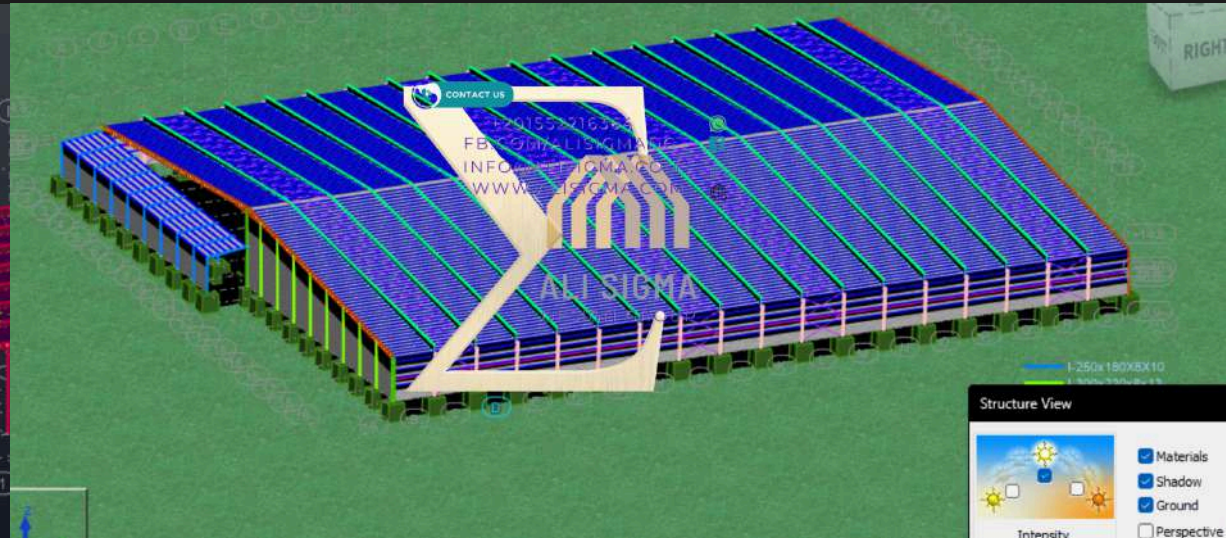
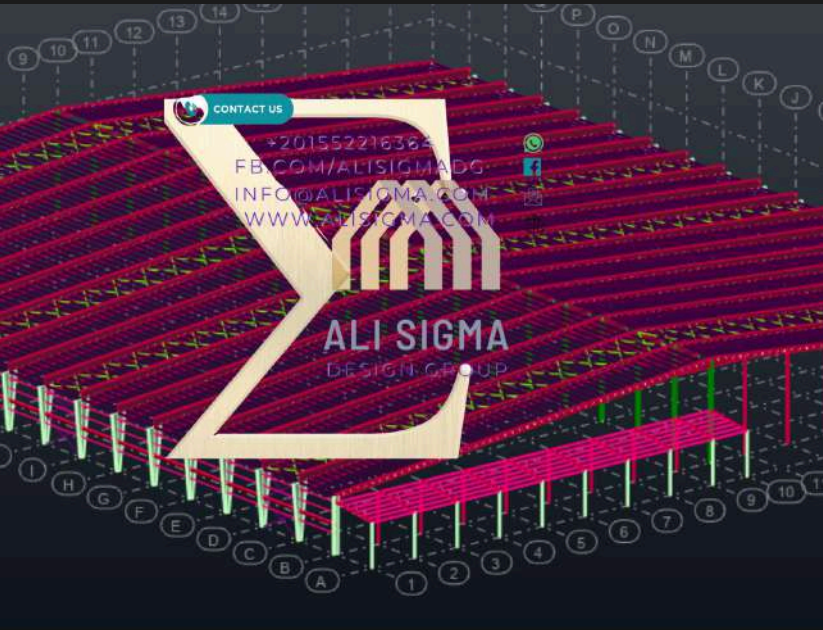
Prepared detailed execution drawings to support precise fabrication and on-site installation.

Optimized design for material efficiency, safety, and seamless workflow.

Ensured compliance with international standards while enhancing constructability and long-term performance.



Industrial Factory – 20,000 m² – Qatar



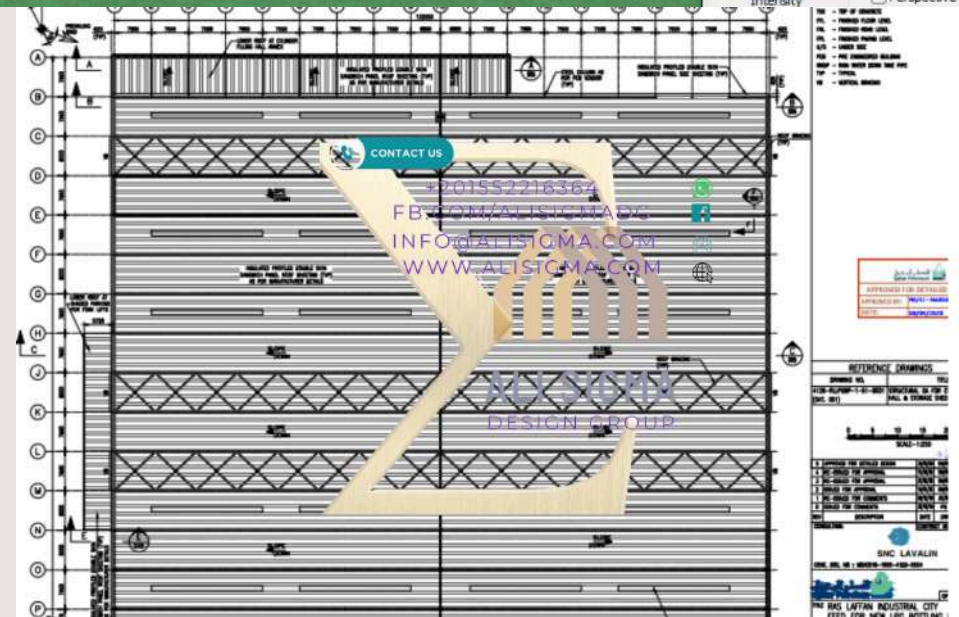
Delivered comprehensive engineering design and shop drawings for a 20,000 m² industrial factory in Qatar.

Provided coordinated Structural, Architectural, and MEP solutions to support large-span operations and heavy-duty loads.

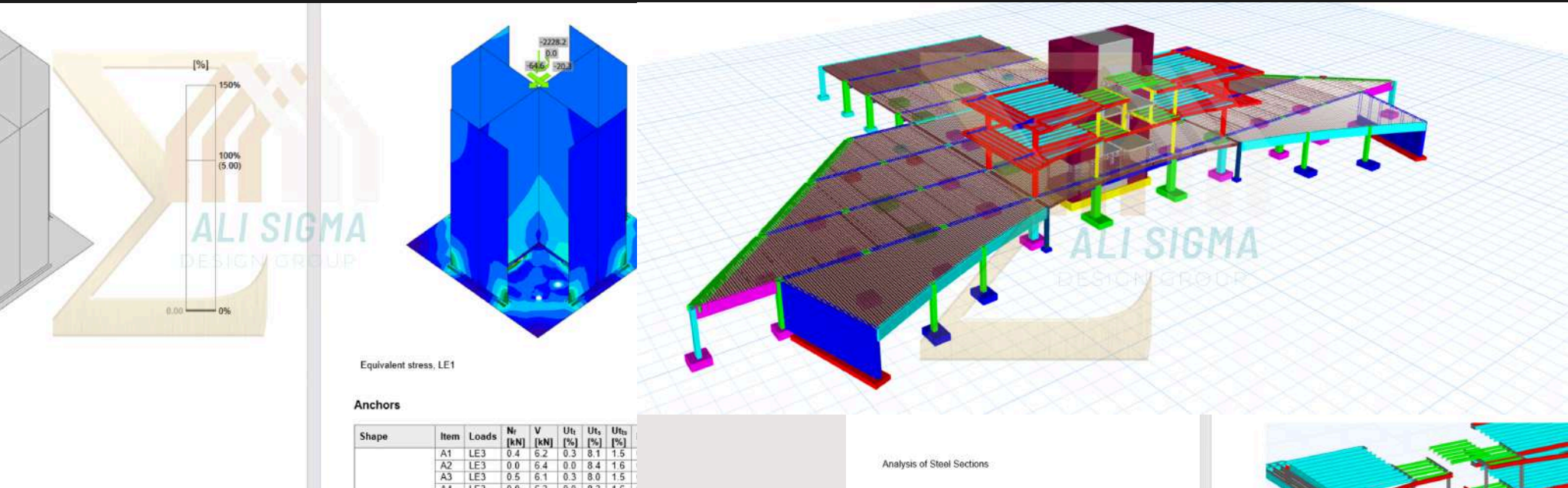
Prepared detailed execution drawings to ensure accurate fabrication and seamless on-site installation.

Optimized structural and operational performance while maintaining cost-effectiveness and safety.

Ensured compliance with international standards and long-term durability for industrial operations.



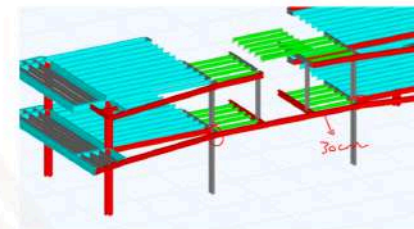
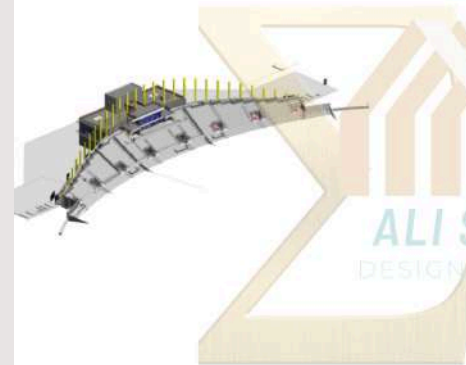
Imam Saud Stadium Extension – Saudi Arabia



Anchors

Shape	Item	Loads	N [kN]	V [kN]	Ut [%]	Us [%]	Uts [%]
	A1	LE3	0.4	6.2	0.3	8.1	1.5
	A2	LE3	0.0	6.4	0.0	8.4	1.6
	A3	LE3	0.5	6.1	0.3	8.0	1.5

Analysis of Steel Sections



3.2 Supports

All Columns Base Are pinned Supports

Collaborated on the design and engineering of the Imam Saud Stadium extension in Saudi Arabia.

Provided multidisciplinary support across Structural, Architectural, and MEP systems to enhance stadium capacity and functionality.

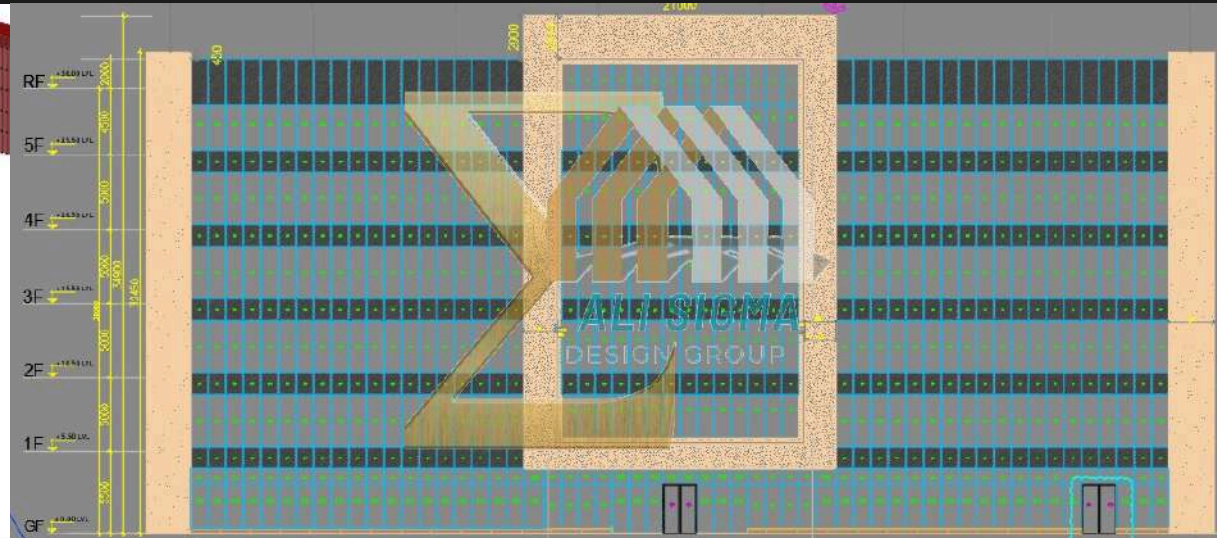
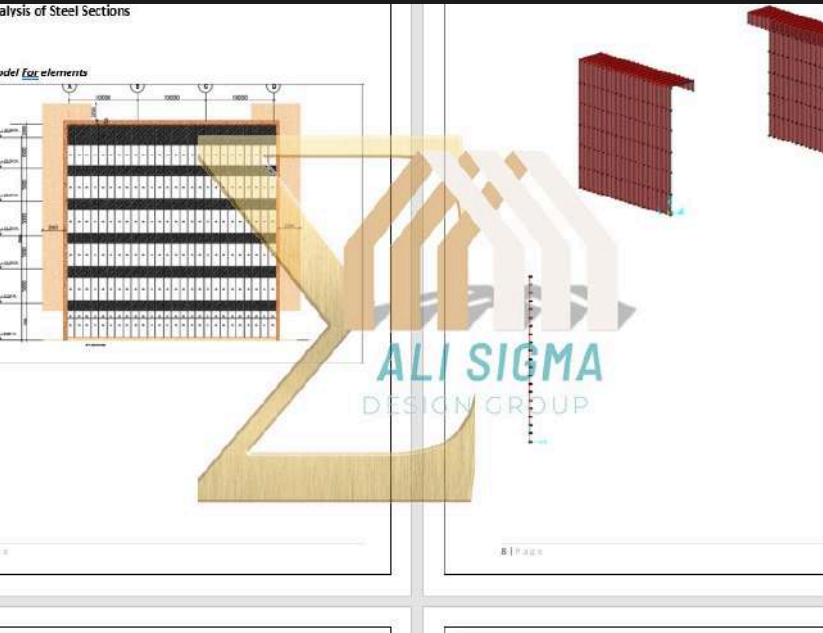
Prepared detailed shop drawings to ensure precise fabrication and smooth on-site execution.

Optimized design for safety, spectator comfort, and operational efficiency.

Ensured compliance with international standards while delivering a cost-effective, high-performance solution.

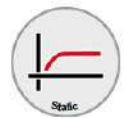
30m-High Cladding Support System – Saudi Arabia

Analysis of Steel Sections



black: Value of design actions (including partial safety factor for the load)

blue: Sustained Loads has to be respected according ACI.



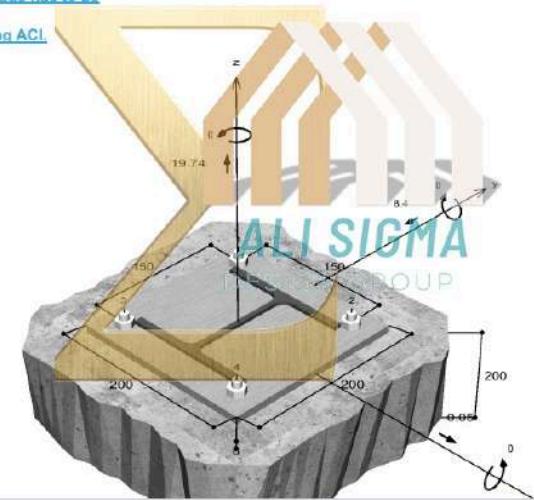
Designed and delivered a 30-meter-high cladding support system in Saudi Arabia.

Engineered the structure to ensure stability, load resistance, and long-term durability.

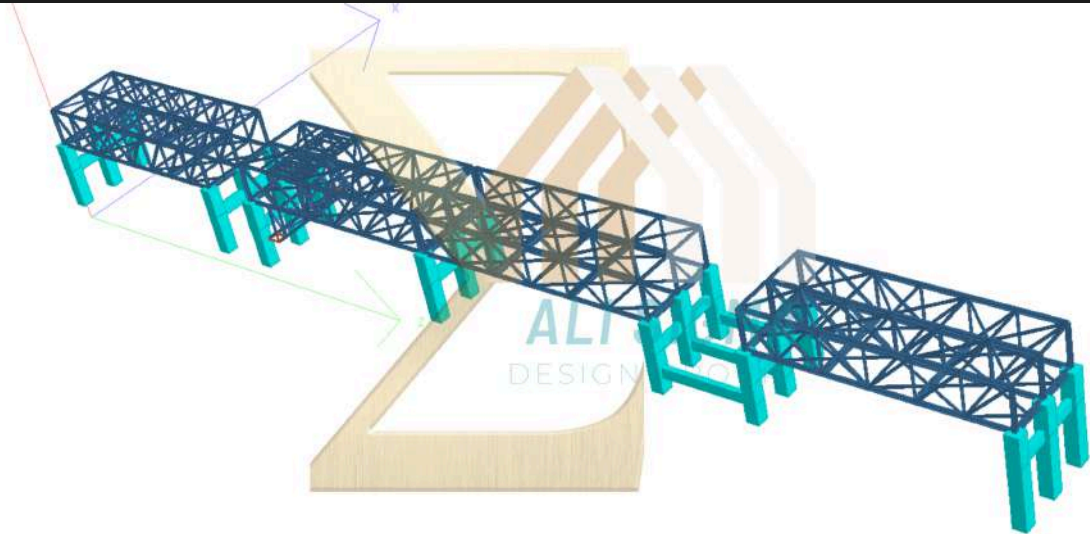
Prepared detailed shop drawings to guide accurate fabrication and seamless on-site installation.

Optimized materials and connections for efficiency, safety, and cost-effectiveness.

Ensured compliance with international standards and client specifications for high-rise façade systems.



Pipe Rack – Qatar Energy Company, Qatar



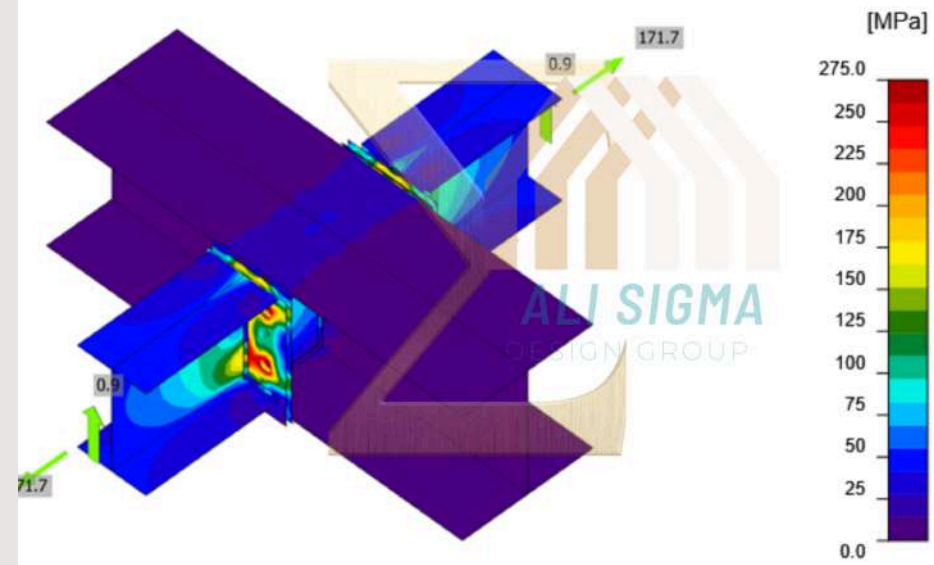
Delivered full engineering design and shop drawings for a pipe rack facility at Qatar Energy Company.

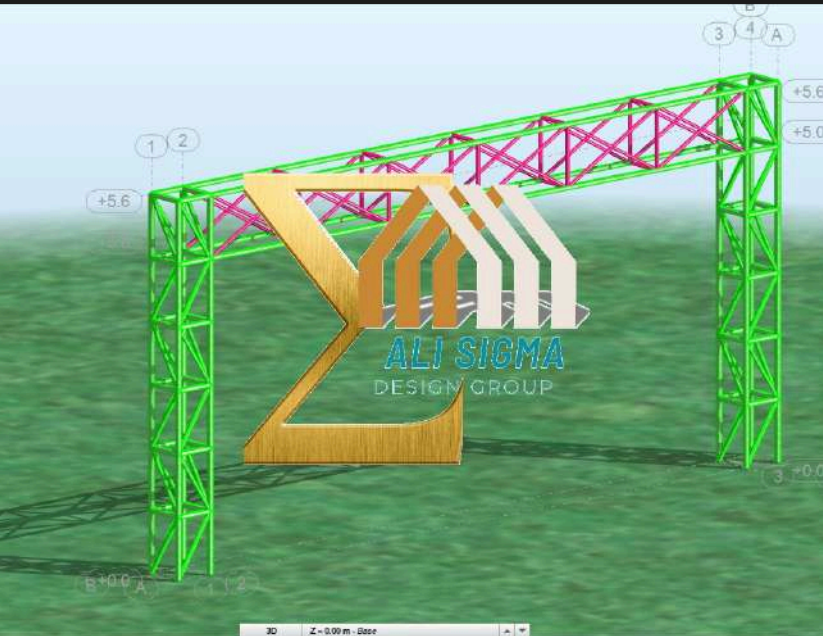
Provided coordinated Structural, Architectural, and MEP solutions to support heavy loads and complex piping systems.

Prepared detailed execution drawings to ensure precise fabrication and seamless on-site installation.

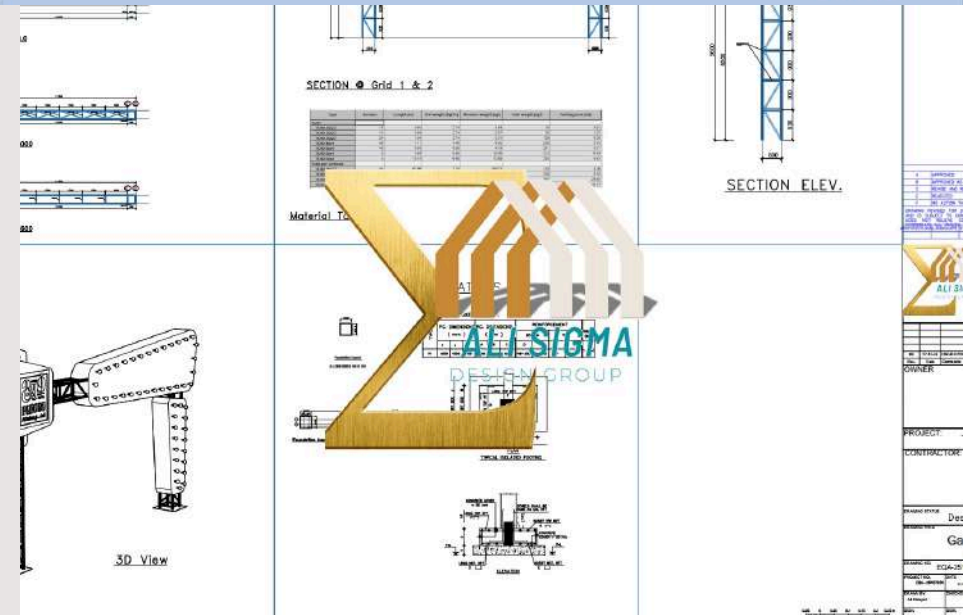
Optimized structural design for stability, safety, and efficient constructability.

Ensured compliance with industrial standards and client specifications for long-term operational performance.

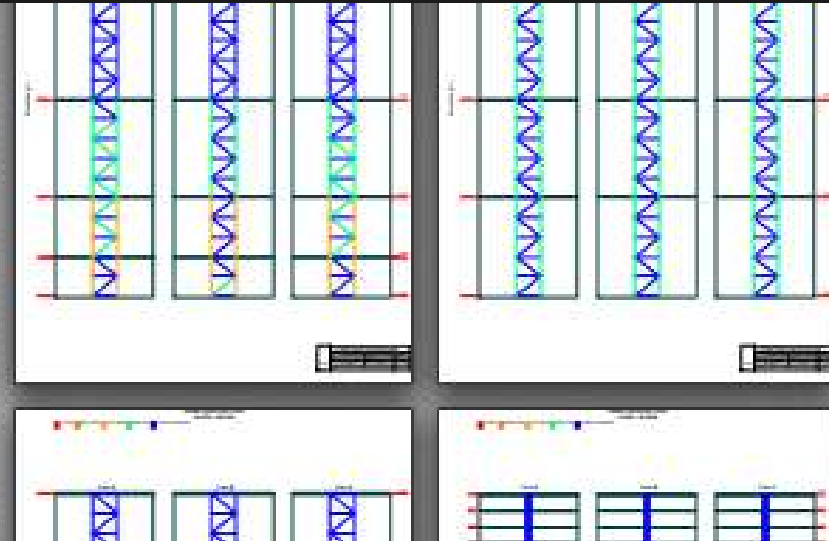
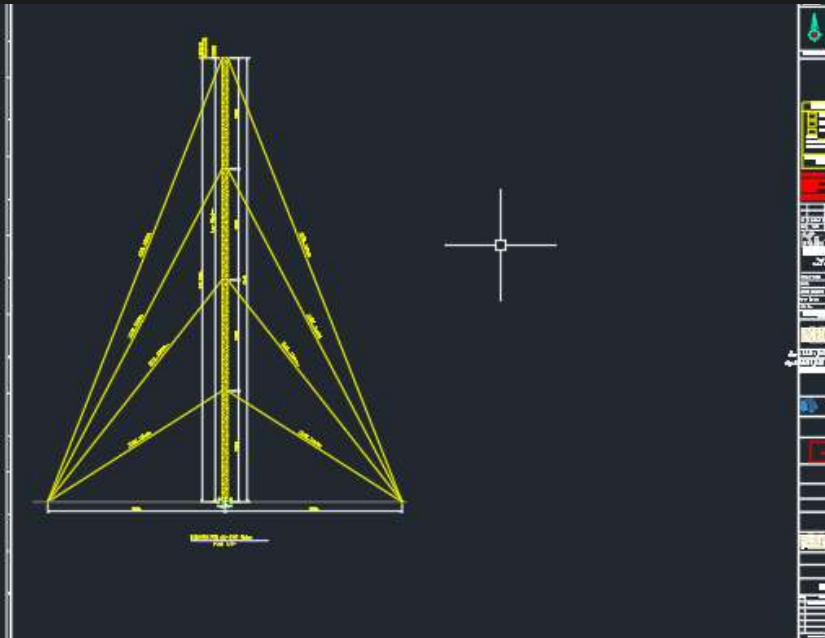




Designed and delivered robust truss gate structures in Kuwait.
 Engineered for stability, durability, and resistance to environmental loads.
 Prepared detailed shop drawings to ensure accurate fabrication and seamless on-site installation.
 Optimized structural connections and materials for cost-effective and efficient construction.
 Combined functionality with aesthetic design to create visually striking entrance solutions.



Telecommunication Tower – 60m Height



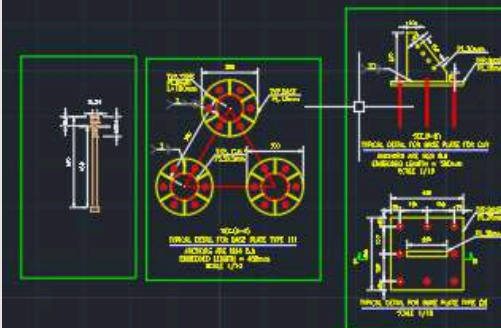
Designed and delivered a 60-meter-high telecommunication tower, ensuring structural stability and resilience.

Engineered the tower to withstand wind loads, environmental conditions, and operational requirements.

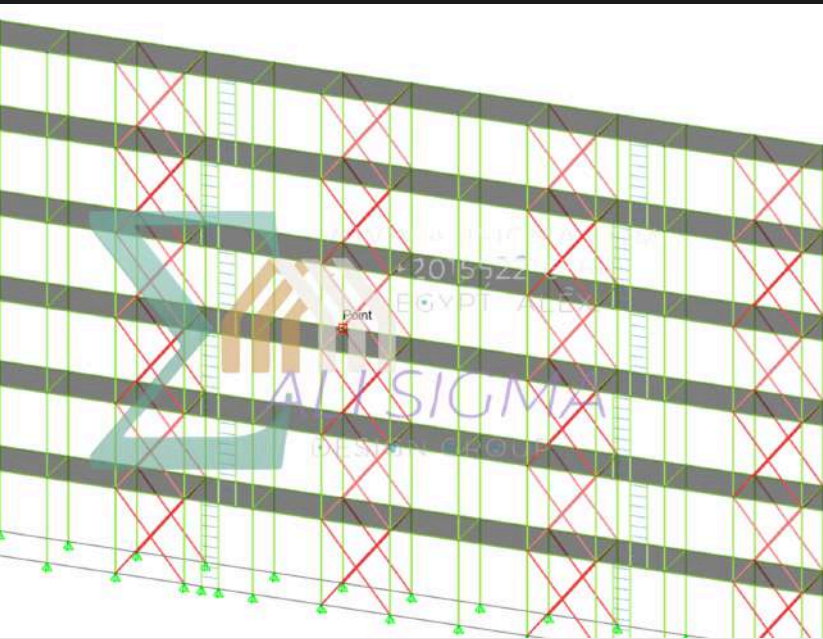
Prepared detailed shop drawings for precise fabrication and seamless on-site installation.

Optimized materials and structural connections for durability, safety, and cost-effectiveness.

Ensured full compliance with international standards and client specifications for long-term performance.



50m-Wide Scaffolding Structure – Saudi Arabia



Designed and implemented a 50-meter-wide scaffolding structure to support repair works in Saudi Arabia.

Engineered for stability, load-bearing capacity, and worker safety during elevated operations.

Prepared detailed shop drawings to ensure precise fabrication and seamless on-site assembly.

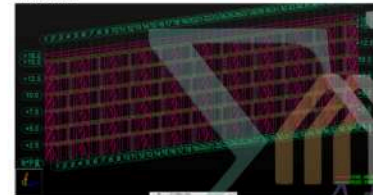
Optimized structural elements for durability, efficiency, and compliance with safety standards.

Enabled safe and efficient access for repair activities while maintaining project timelines and quality.

Project		Revision	
ESD-20-D-061		ESD-20-D-061	
Calculation Report			
Calc No	APPENDIX	Rev No	Date
All Staged	A	A.E.G.	22-09-2023
Author		Rev. DS	

3- Analysis of Steel Sections

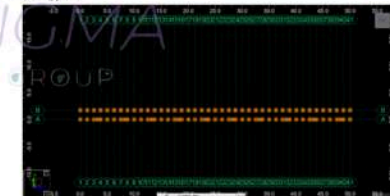
3.1 3D model



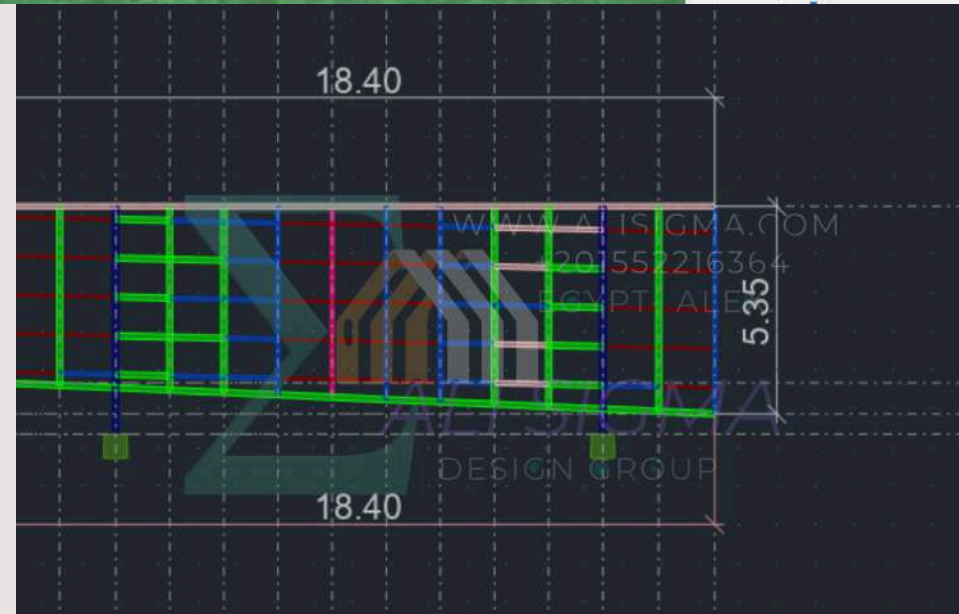
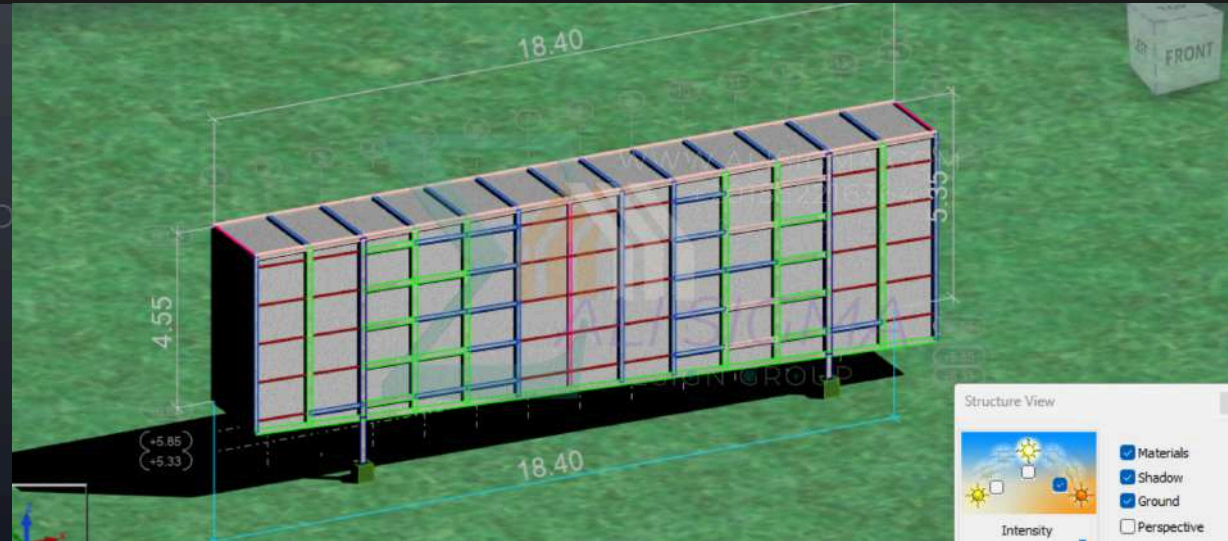
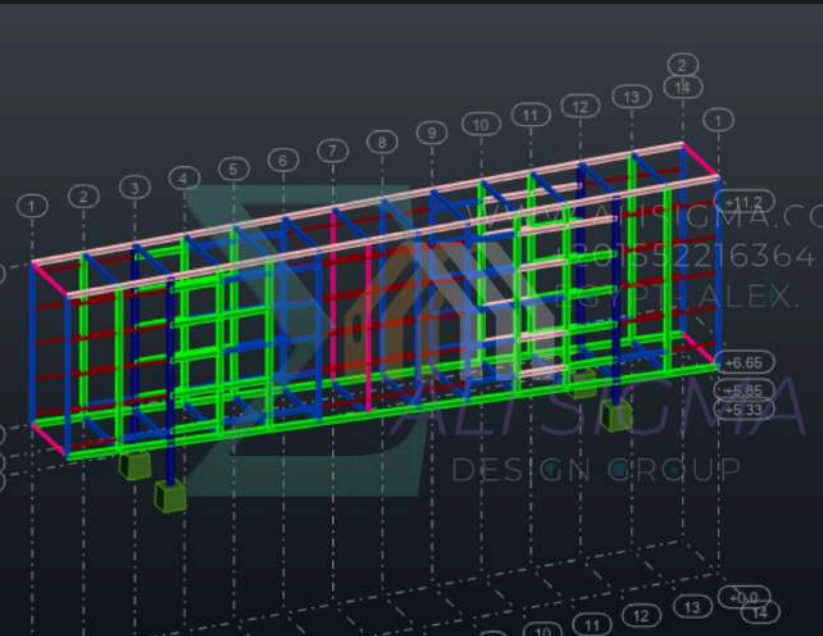
Project		Revision	
ESD-20-D-061		ESD-20-D-061	
Calculation Report			
Calc No	APPENDIX	Rev No	Date
All Staged	A	A.E.G.	22-09-2023
Author		Rev. DS	



3.2 Supports



18m Linked Bridge – Qatar



Designed and implemented a 50-meter-wide scaffolding structure to support repair works in Saudi Arabia.

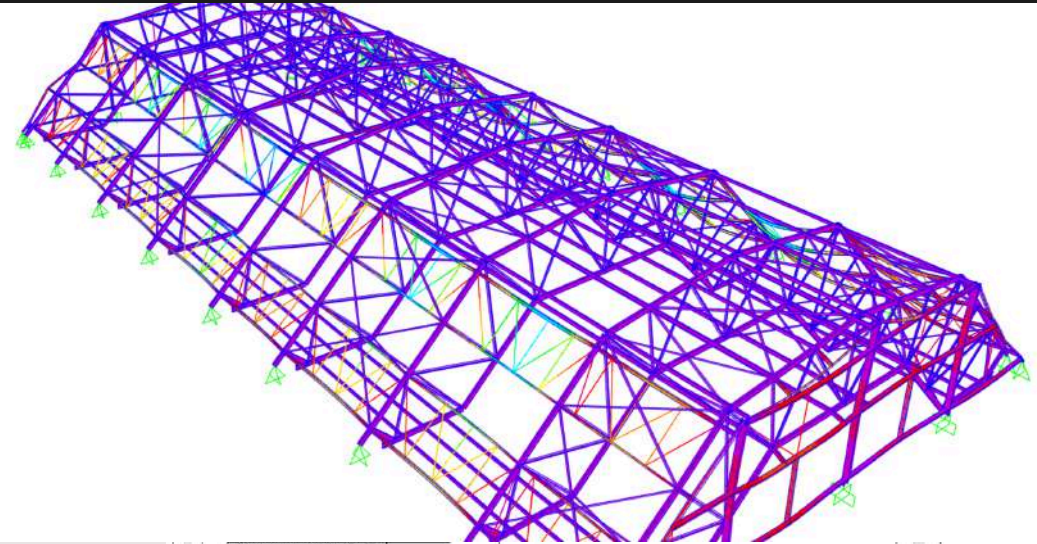
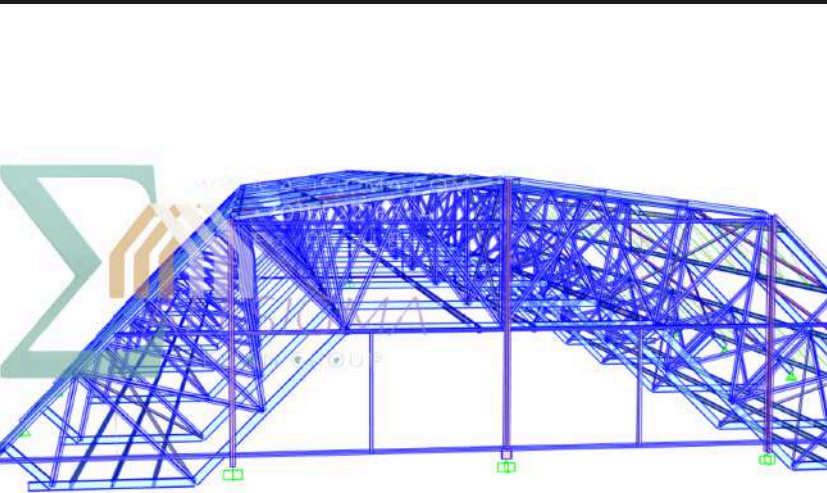
Engineered for stability, load-bearing capacity, and worker safety during elevated operations.

Prepared detailed shop drawings to ensure precise fabrication and seamless on-site assembly.

Optimized structural elements for durability, efficiency, and compliance with safety standards.

Enabled safe and efficient access for repair activities while maintaining project timelines and quality.

Skylight Repair & Redesign – Saudi Arabia



Delivered comprehensive repair and redesign solutions for skylight structures in Saudi Arabia.

Engineered structural improvements to ensure durability, safety, and enhanced load-bearing performance.

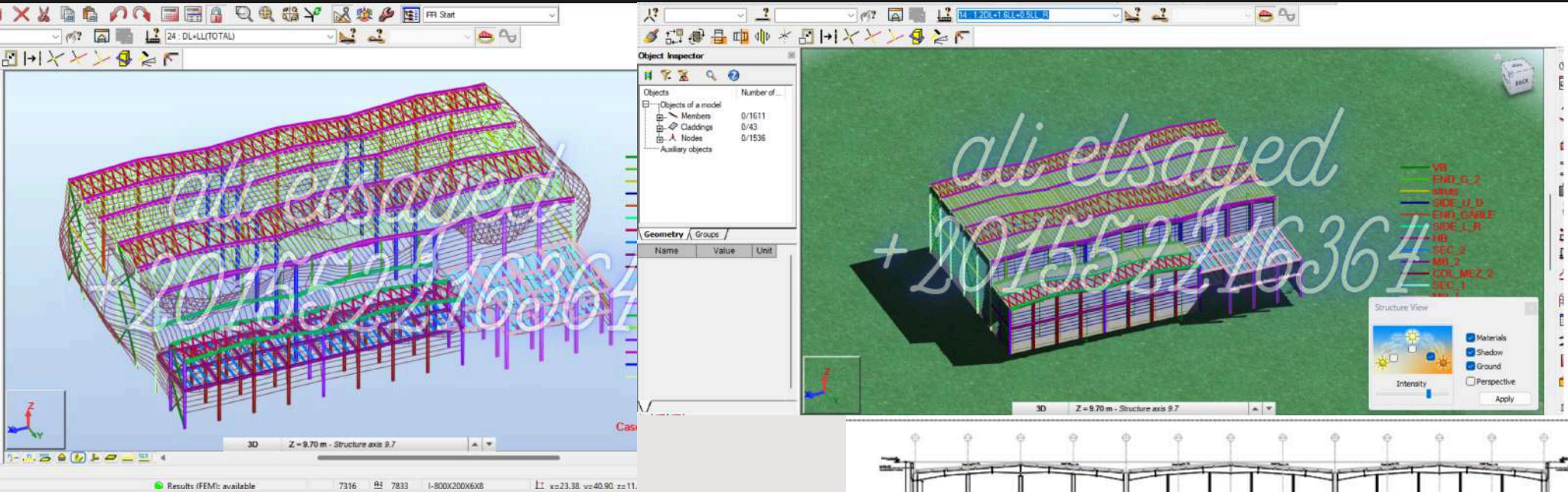
Prepared detailed shop drawings to guide precise fabrication and on-site installation.

Optimized materials and connections for cost-effective, long-lasting solutions.

Ensured compliance with local regulations and international standards while improving functionality and aesthetics.



Skylight Repair & Redesign – Saudi Arabia



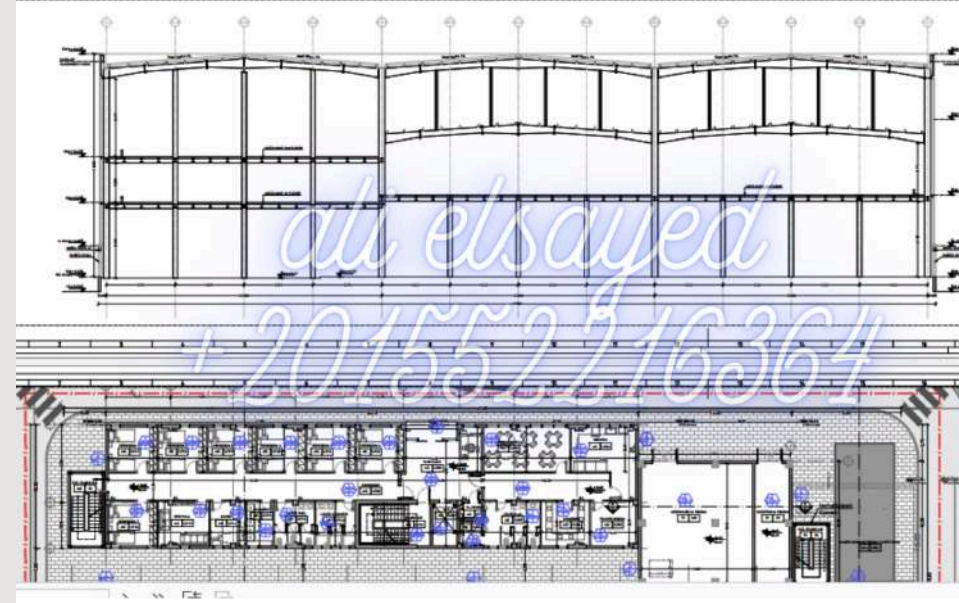
Delivered comprehensive repair and redesign solutions for skylight structures in Saudi Arabia.

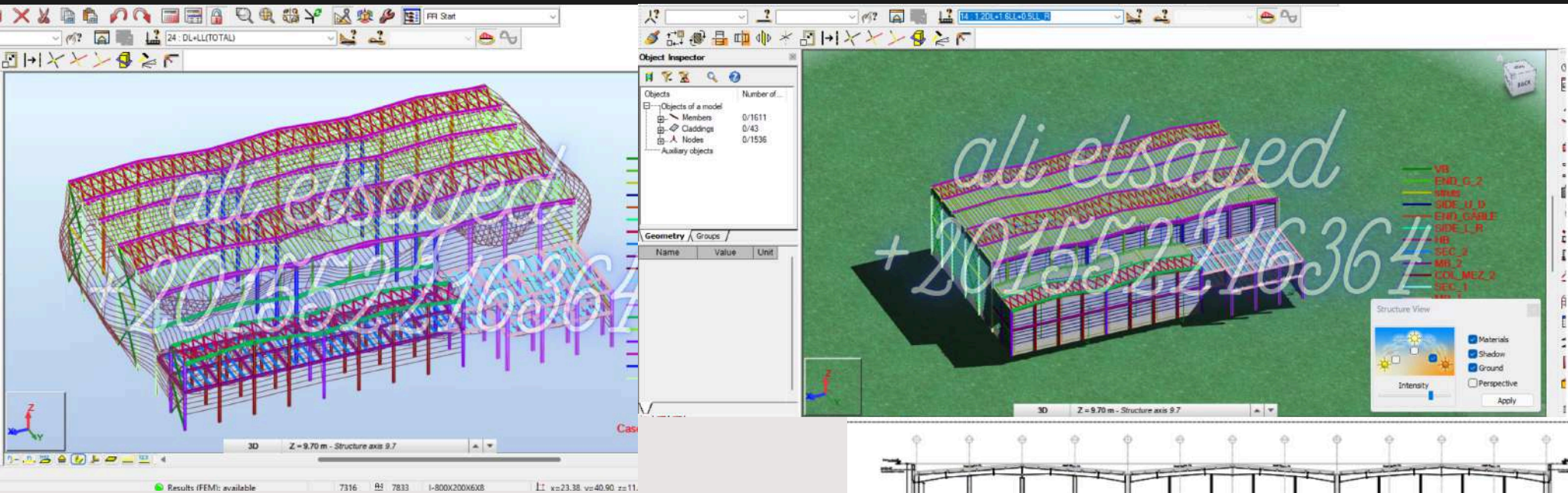
Engineered structural improvements to ensure durability, safety, and enhanced load-bearing performance.

Prepared detailed shop drawings to guide precise fabrication and on-site installation.

Optimized materials and connections for cost-effective, long-lasting solutions.

Ensured compliance with local regulations and international standards while improving functionality and aesthetics.





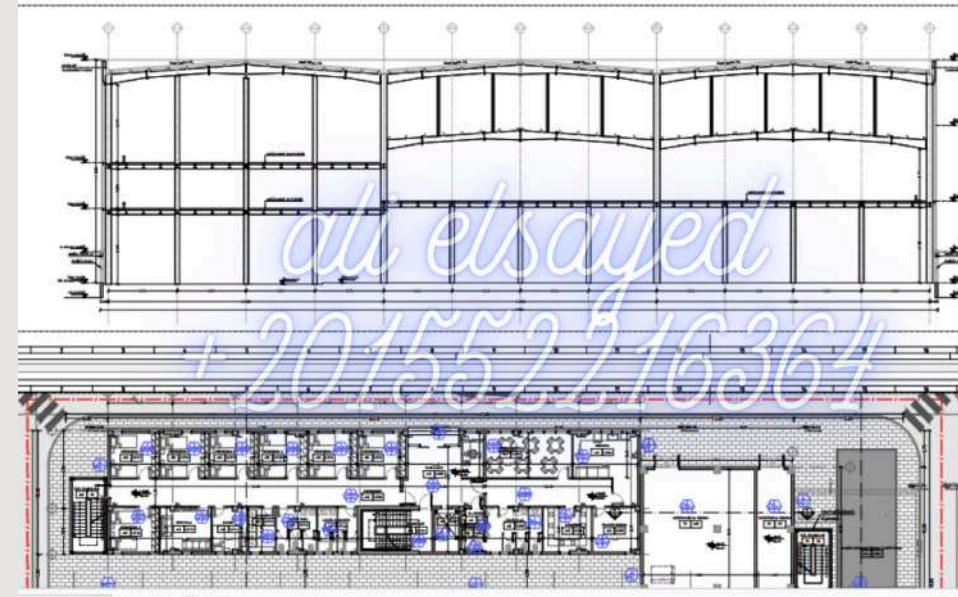
Delivered full multidisciplinary engineering design and shop drawings for a food factory in Qatar.

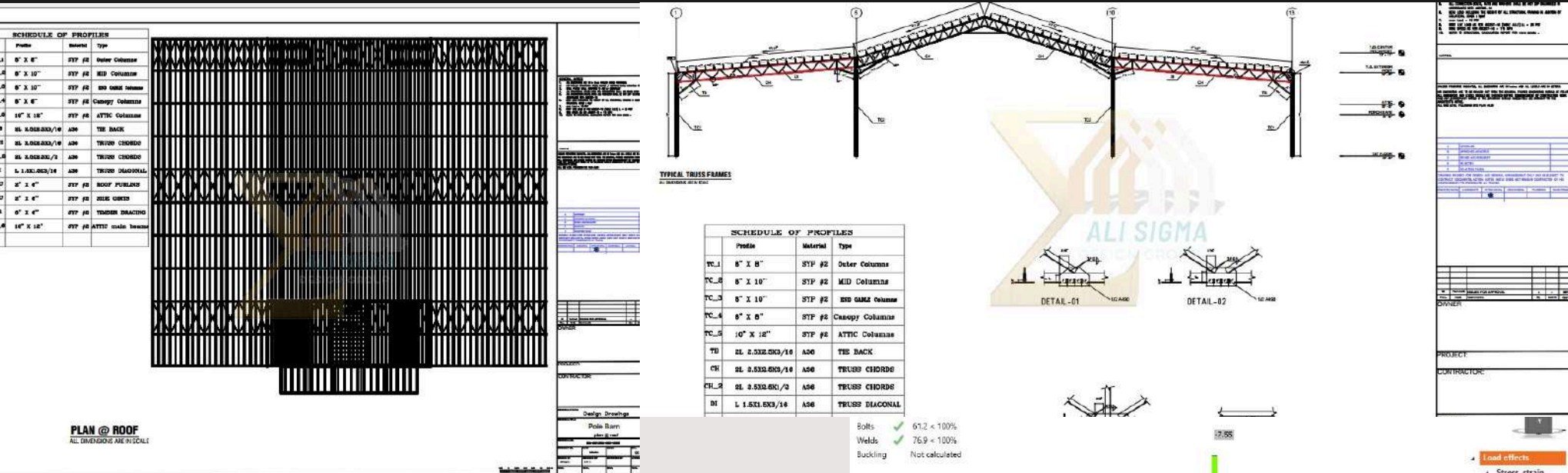
Provided coordinated Structural, Architectural, and MEP solutions to support production operations and heavy-duty loads.

Prepared detailed execution drawings to ensure precise fabrication and seamless on-site installation.

Optimized design for operational efficiency, safety, and compliance with food industry standards.

Ensured long-term durability, constructability, and adherence to international regulations.





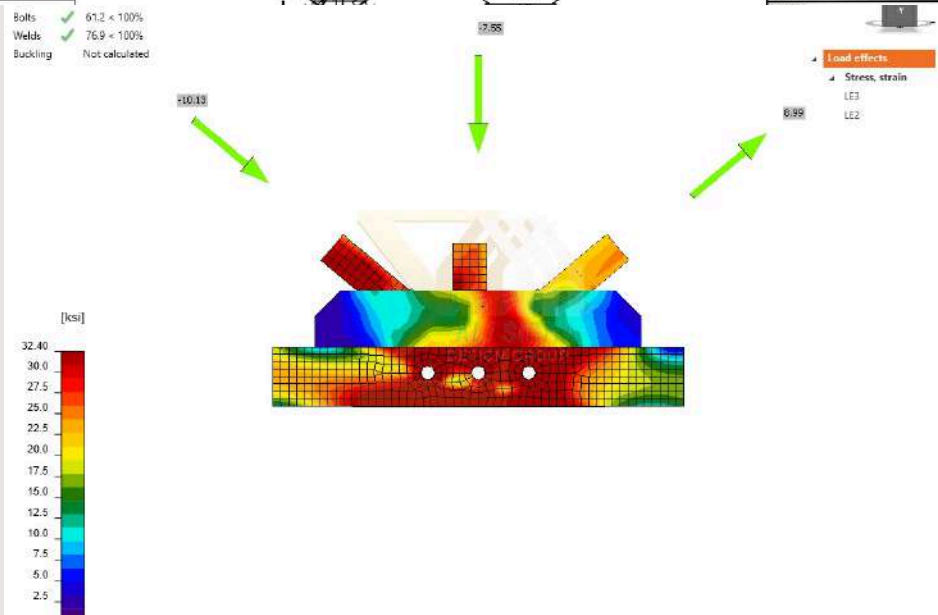
Delivered full engineering design and shop drawings for a hybrid timber and steel building in the USA.

Provided coordinated Structural, Architectural, and MEP solutions to ensure strength, durability, and constructability.

Prepared detailed execution drawings to guide accurate fabrication and seamless on-site installation.

Optimized material use and connections for cost-efficiency and long-term performance.

Ensured compliance with local building codes and international standards for hybrid construction.





We specialize in the design, analysis, and execution of reinforced concrete (RC) buildings for residential, commercial, and industrial projects.

Our services cover full Structural, Architectural, and MEP coordination, ensuring safe, durable, and code-compliant structures.

We provide detailed shop drawings, construction support, and value engineering to optimize cost and efficiency.

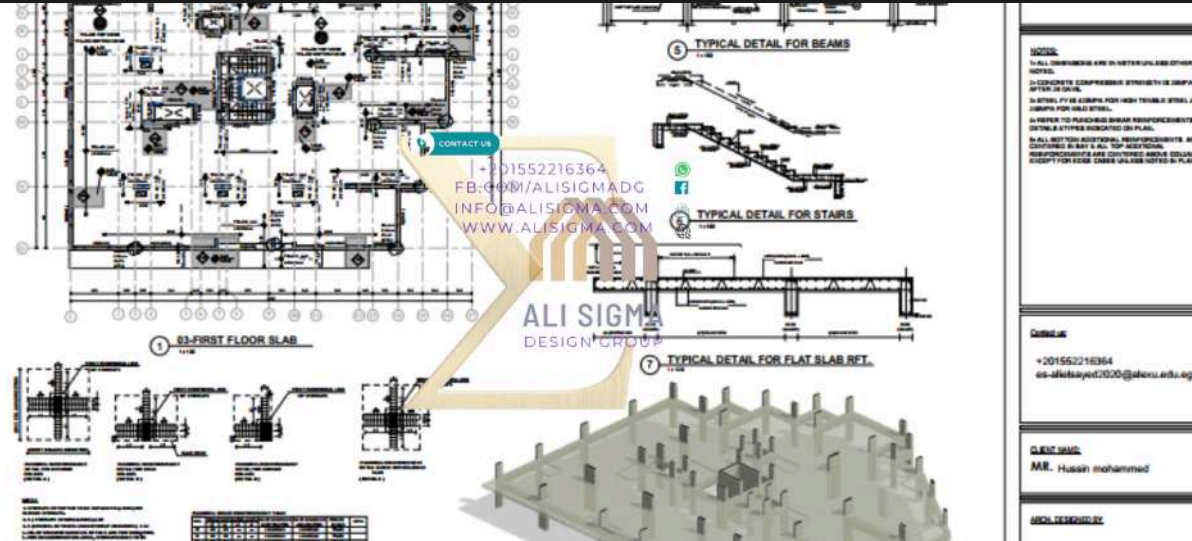
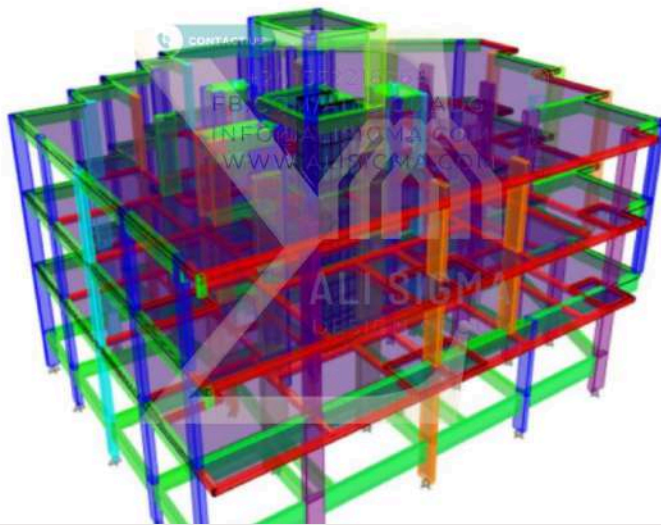
Our approach focuses on structural integrity, constructability, and long-term performance.

From mid-rise towers to large-scale complexes, we deliver RC buildings with precision, innovation, and reliability.

Concrete Structures

3-Floor RC Building – Saudi Arabia

Design of Residential Building



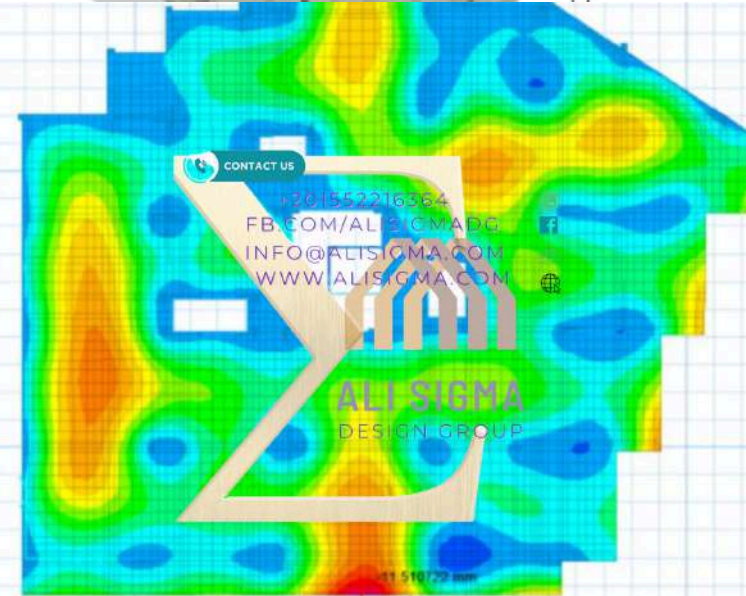
Delivered full engineering design and shop drawings for a 3-floor reinforced concrete building in Saudi Arabia.

Provided coordinated Structural, Architectural, and MEP solutions to ensure safety, durability, and functionality.

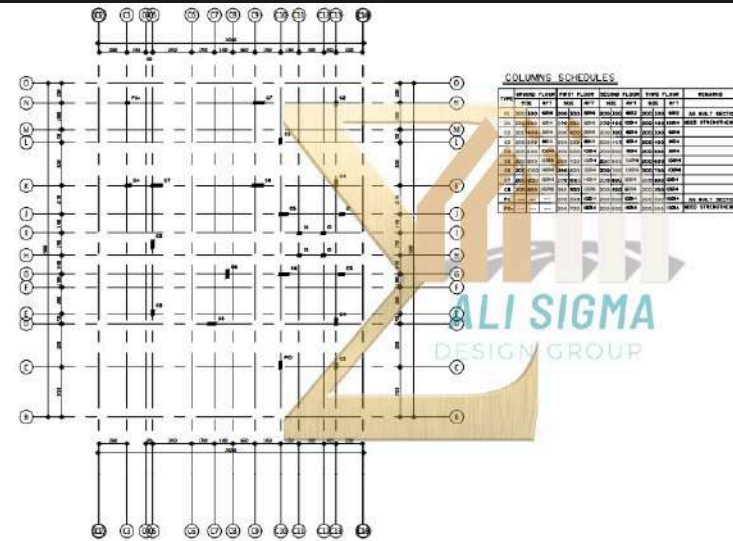
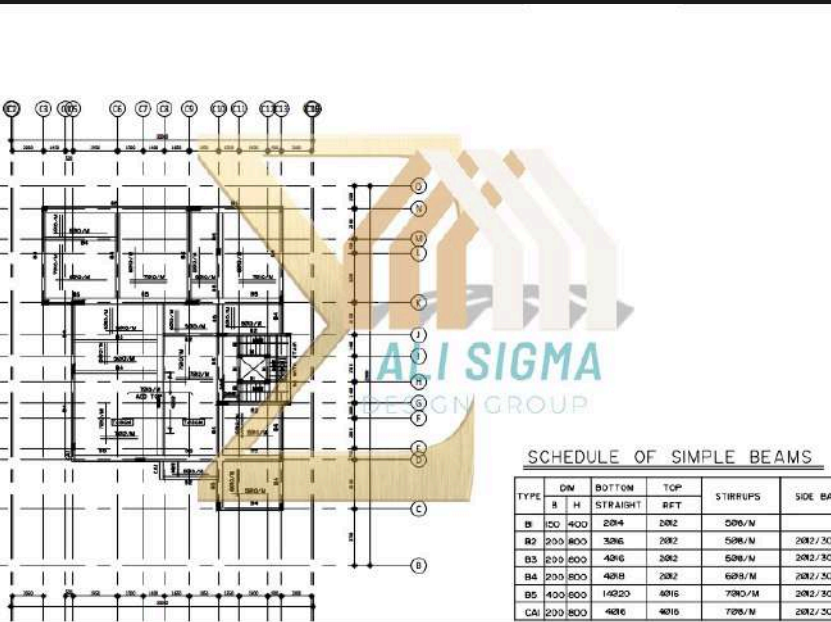
Prepared detailed execution drawings to support precise fabrication and seamless on-site construction.

Optimized structural systems for cost-effectiveness, constructability, and long-term performance.

Ensured compliance with local regulations and international standards while enhancing project value.



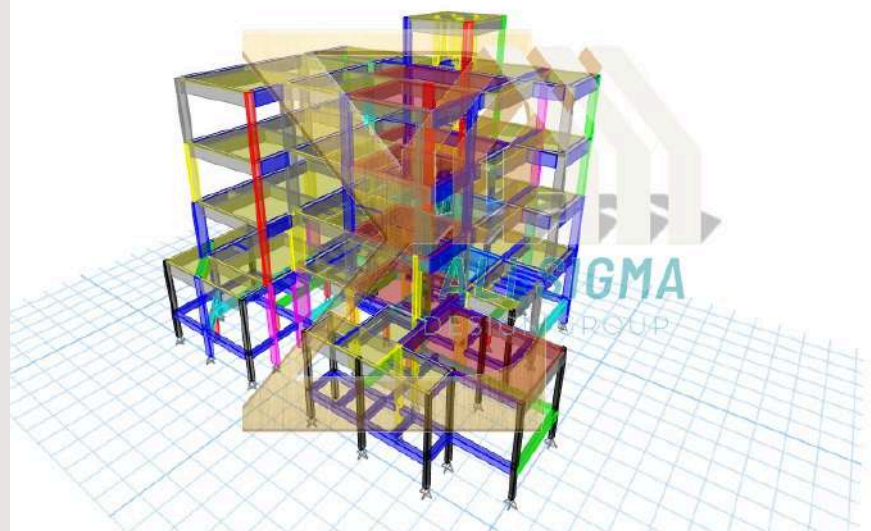
4-Floor RC Building – Repair & Redesign – Saudi Arabia



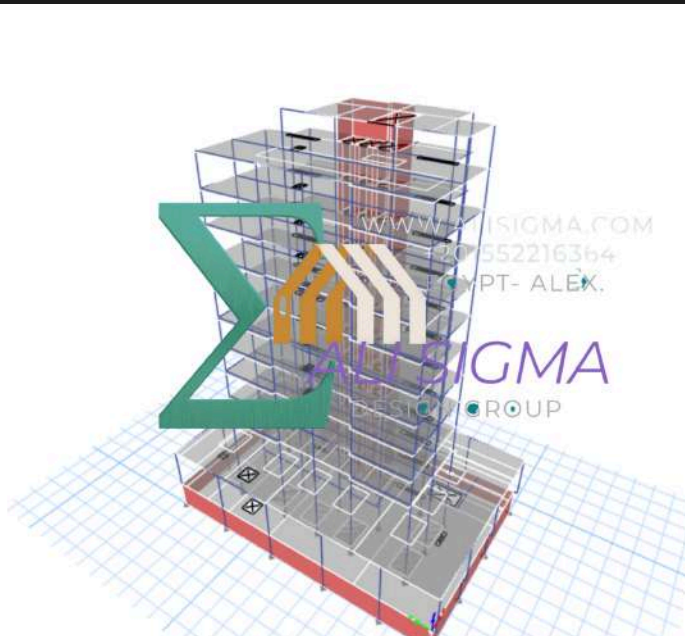
General Notes

1. All dimensions are in meters unless otherwise specified.
2. All reinforcement is in accordance with BS 8862.
3. All reinforcement is to be installed in accordance with the drawings.
4. All reinforcement is to be installed in accordance with the specifications.
5. All reinforcement is to be installed in accordance with the standards.
6. All reinforcement is to be installed in accordance with the codes.
7. All reinforcement is to be installed in accordance with the rules.
8. All reinforcement is to be installed in accordance with the regulations.
9. All reinforcement is to be installed in accordance with the laws.
10. All reinforcement is to be installed in accordance with the decrees.
11. All reinforcement is to be installed in accordance with the orders.
12. All reinforcement is to be installed in accordance with the resolutions.
13. All reinforcement is to be installed in accordance with the decisions.
14. All reinforcement is to be installed in accordance with the judgments.
15. All reinforcement is to be installed in accordance with the verdicts.
16. All reinforcement is to be installed in accordance with the awards.
17. All reinforcement is to be installed in accordance with the sentences.
18. All reinforcement is to be installed in accordance with the judgments.
19. All reinforcement is to be installed in accordance with the verdicts.
20. All reinforcement is to be installed in accordance with the awards.

- Delivered comprehensive repair and redesign solutions for a 4-floor reinforced concrete building.
- Engineered structural improvements to enhance safety, durability, and compliance with current standards.
- Prepared detailed shop drawings to guide precise on-site execution and seamless construction.
- Optimized materials and structural systems for cost-effective and efficient refurbishment.
- Ensured long-term performance while maintaining functionality and project value.



13-Floor Building – Redesign & Shop Drawings – Kuwait



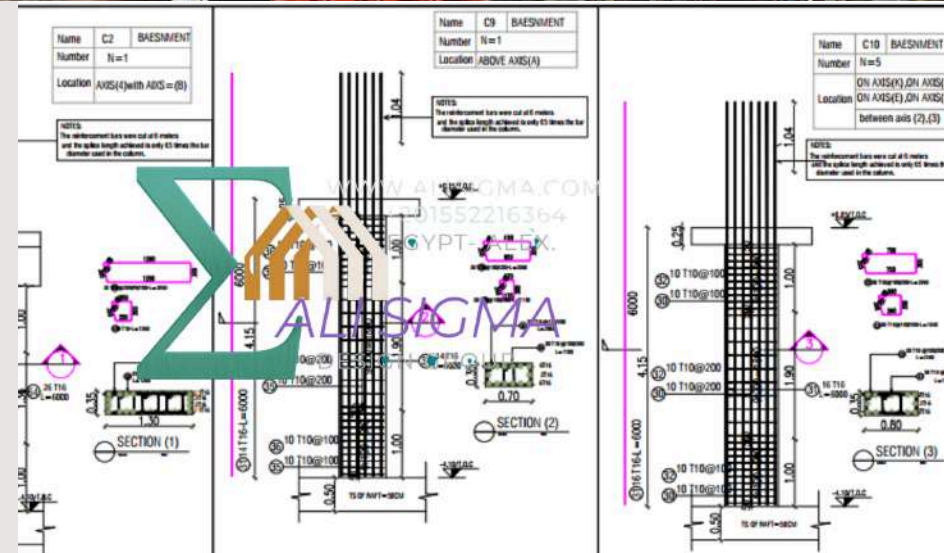
Delivered comprehensive redesign and detailed shop drawings for a 13-floor building in Kuwait.

Optimized structural, architectural, and MEP systems to improve efficiency, constructability, and performance.

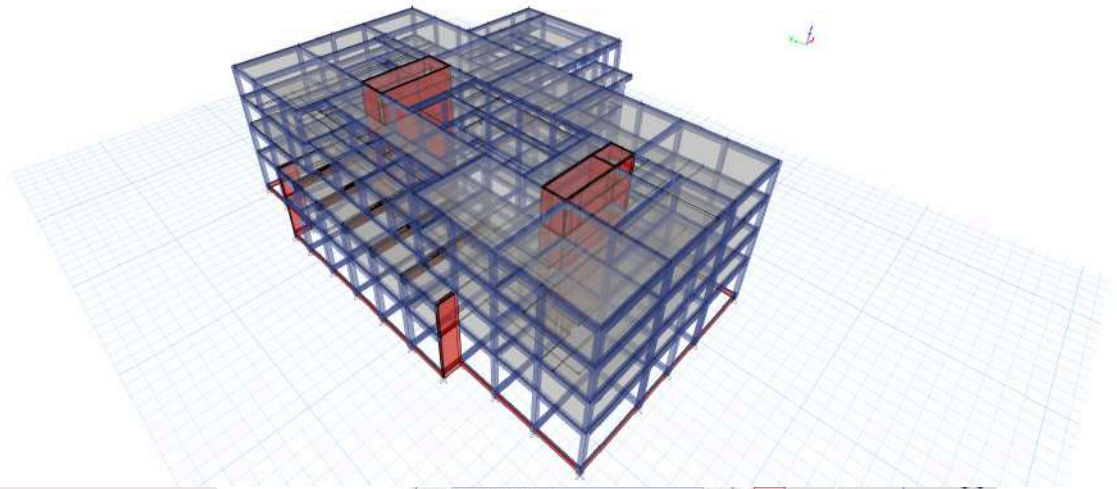
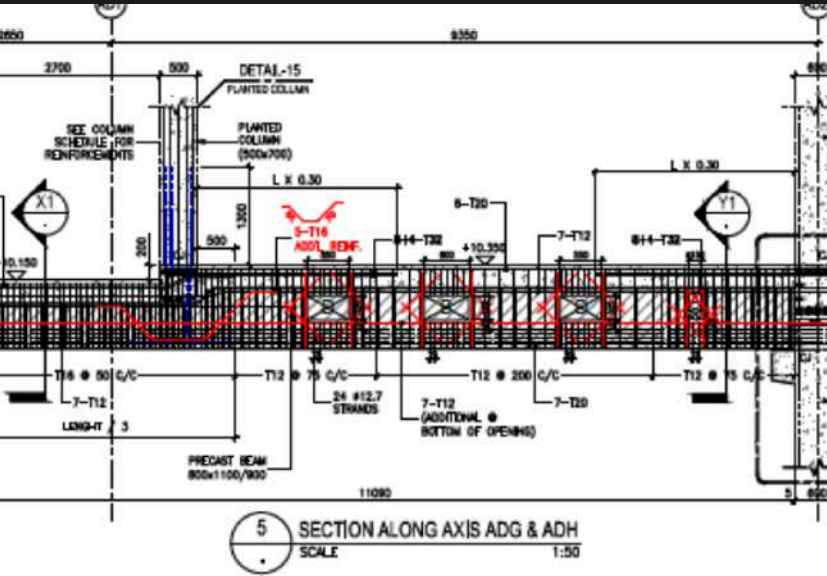
Prepared precise execution drawings to guide accurate fabrication and seamless on-site installation.

Implemented engineering solutions to enhance safety, durability, and compliance with international standards.

Achieved a cost-effective and high-quality outcome while maintaining project functionality and value.



Administration Building – Saudi Arabia



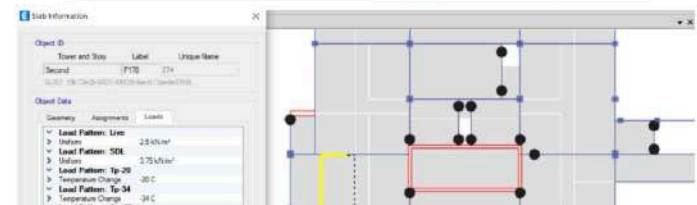
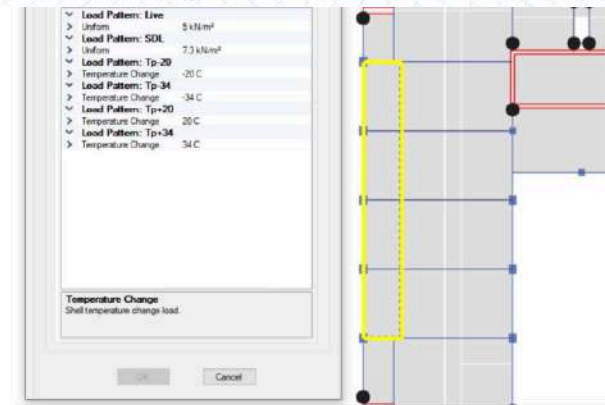
Delivered full engineering design and shop drawings for an administration building in Saudi Arabia.

Provided coordinated Structural, Architectural, and MEP solutions to ensure safety, functionality, and durability.

Prepared detailed execution drawings to support precise fabrication and seamless on-site construction.

Optimized structural and architectural systems for cost-effectiveness and long-term performance.

Ensured compliance with local regulations and international standards while enhancing project value.





We provide end-to-end construction services, delivering projects with precision, efficiency, and high-quality standards.

Our expertise spans civil, structural, MEP, and finishing works, ensuring seamless execution from site preparation to handover.

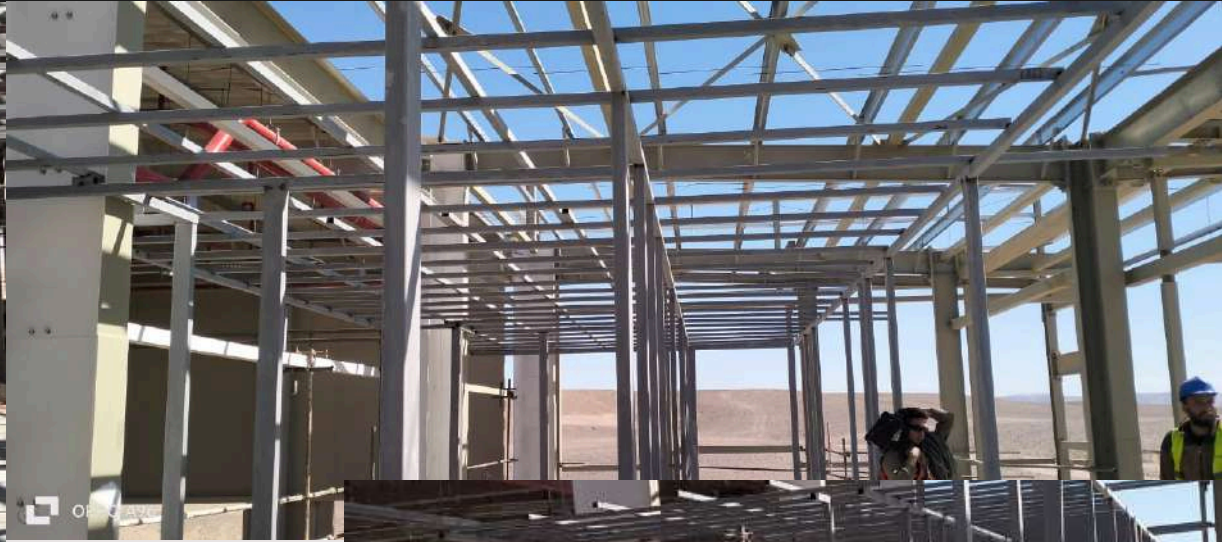
We manage resources, schedule, and safety to deliver projects on time and within budget.

Our team applies advanced construction techniques and best practices to achieve durability, functionality, and aesthetic excellence.

From residential and commercial buildings to industrial facilities and infrastructure, we turn engineering designs into reality with reliability and excellence.

Construction Works

Medical ware house - Qina, Egypt



Delivered full construction services for a medical warehouse facility, including platforms, walls, and administrative offices in Egypt.

Executed structural, architectural, and MEP works to ensure functionality, safety, and durability.

Implemented detailed site management, precise installation, and high-quality finishing standards.

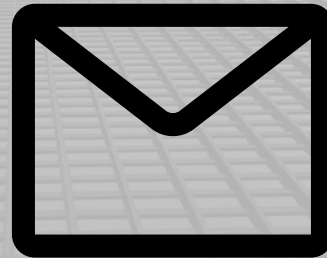
Optimized workflow and space utilization to support warehouse operations and office functionality.

Ensured compliance with local regulations and international standards while maintaining timely project delivery.

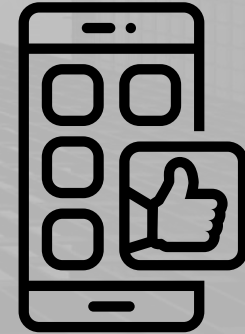
Catch Us



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Thank You

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