EBY
Engineering | Design | Consultancy

Every discipline of your building, coordinated by one team

From concept drawings to shop drawings and site supervision. Each service can be ordered on its own or as part of a full package.

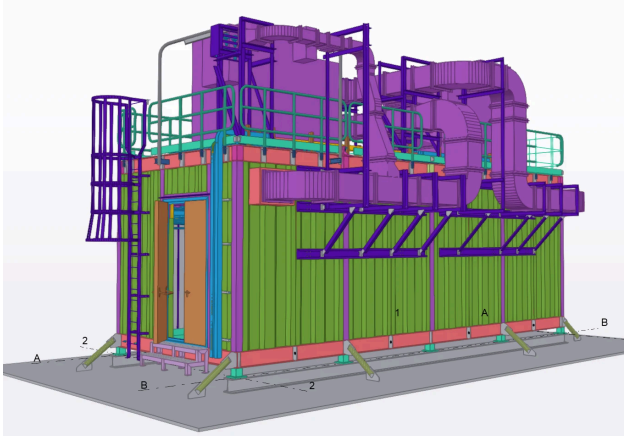
SPECIALISED IN

- Industrial buildings
- Steel structures
- Prefabricated buildings
- Modular structures
- Conventional buildings
- E-houses and data centres

WHAT WE DELIVER

Concept design, architectural design, structural design, electrical and mechanical design, fire protection and HVAC systems, 3D design of all disciplines and BIM coordination, material submittals, project management, shop drawings, documentation and consultancy.

3D model



As built



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Who we are

EBY is a team of civil, electrical and mechanical engineers, technicians and architects. We have spent years delivering design, engineering and consultancy for large corporate firms and projects. Now we work directly with you, remotely, as one point of contact.

Why work with us

One point of contact

No need to find and coordinate separate consultants. We manage the interfaces between disciplines for you.

Corporate project experience

Our members come from large engineering firms and international projects, used to their standards and review cycles.

Flexible scope

Hand us the full design package, or just one piece: a calculation, a drawing check, a coordination model.

What we do

Architectural design

We take your concept design and develop it into a complete, coordinated set of construction drawings, ready for permit, tender, procurement and site.

BIM design and coordination

We build one coordinated BIM model of your building or module, combining architecture, structure, equipment and every service route. Through clash detection and MEP coordination, conflicts are solved on screen instead of on site.

Documentation preparation

We prepare the project-specific engineering documents that needed to fabricate, transport, lift and install modules, equipment and steelwork safely, to your client's and contractor's requirements.

Electrical and automation engineering

Electrical design for buildings, technical rooms and modular units, from switchboards and single-line diagrams to lighting, earthing and the automation of HVAC and fire protection systems.

Project management and consultancy

Design management and technical support from concept to handover.

Structural analysis and calculations

Structural analysis and calculations for steel, light-gauge, modular and reinforced concrete structures, from global models to detailed finite element checks, prepared to international codes and ready for third-party review.

Fabrication and erection drawings

Shop drawings your fabricator can work from directly, and independent checking of drawings prepared by others.

Mechanical, HVAC and infrastructure design

Heating, cooling, ventilation, plumbing and drainage systems designed around the building's use, together with the site infrastructure that connects the building to the public networks.

Fire detection and suppression systems

Design of fire detection and clean agent fire suppression systems for technical rooms, e-houses, data centres, control rooms and industrial facilities.

Sectors we have worked in

Data centres | Energy and power distribution | Modular and prefabricated buildings | Industrial facilities | Commercial buildings

01 Architectural design

We take your concept design and develop it into a complete, coordinated set of construction drawings, ready for permit, tender, procurement and site.

Construction drawings from concept
Detailed architectural application drawings developed from the concept design: plans, details, wet areas, stairs and ramps.

Sections and elevations
Building sections and elevations with levels, openings, cladding layouts and material notes.

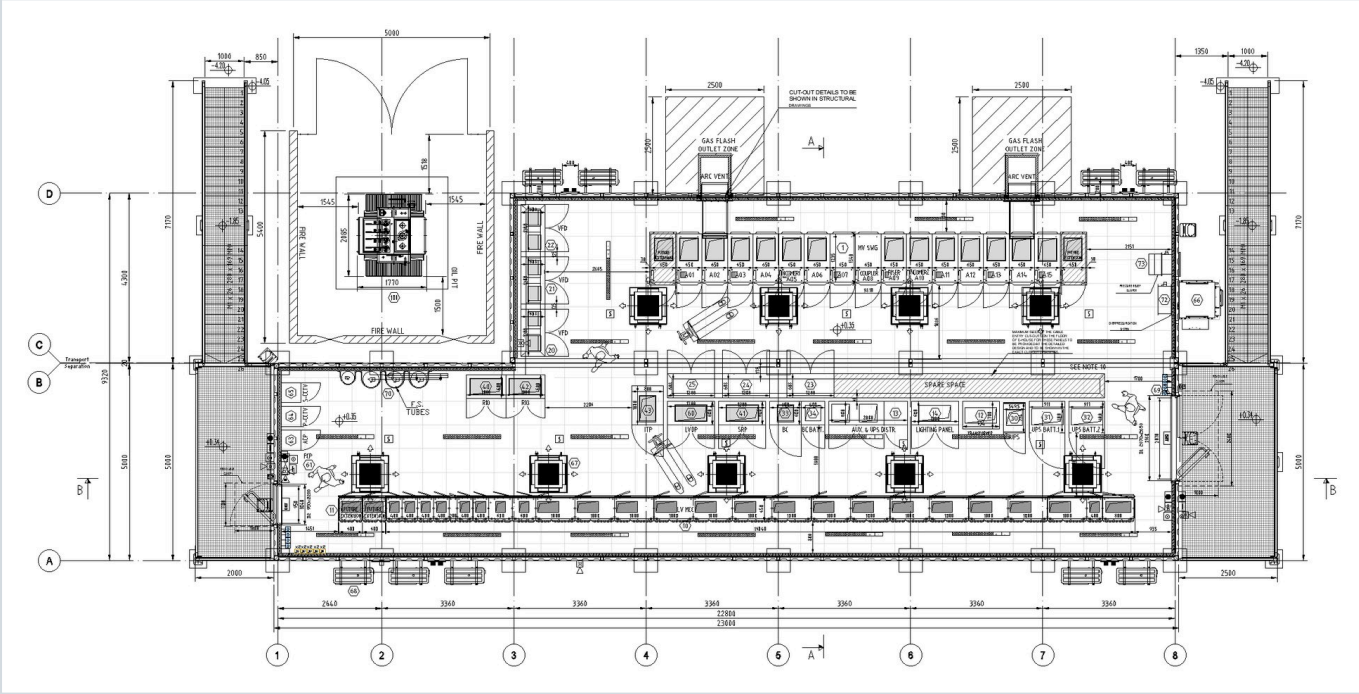
Pre-clash checks and MEP coordination
Early clash checks on the architectural plans against structure and building services, with coordinated ceiling voids and service routes.

Material presentation files
Submittal files for commercial products: specifications, samples, colours and data sheets, organised for client approval.

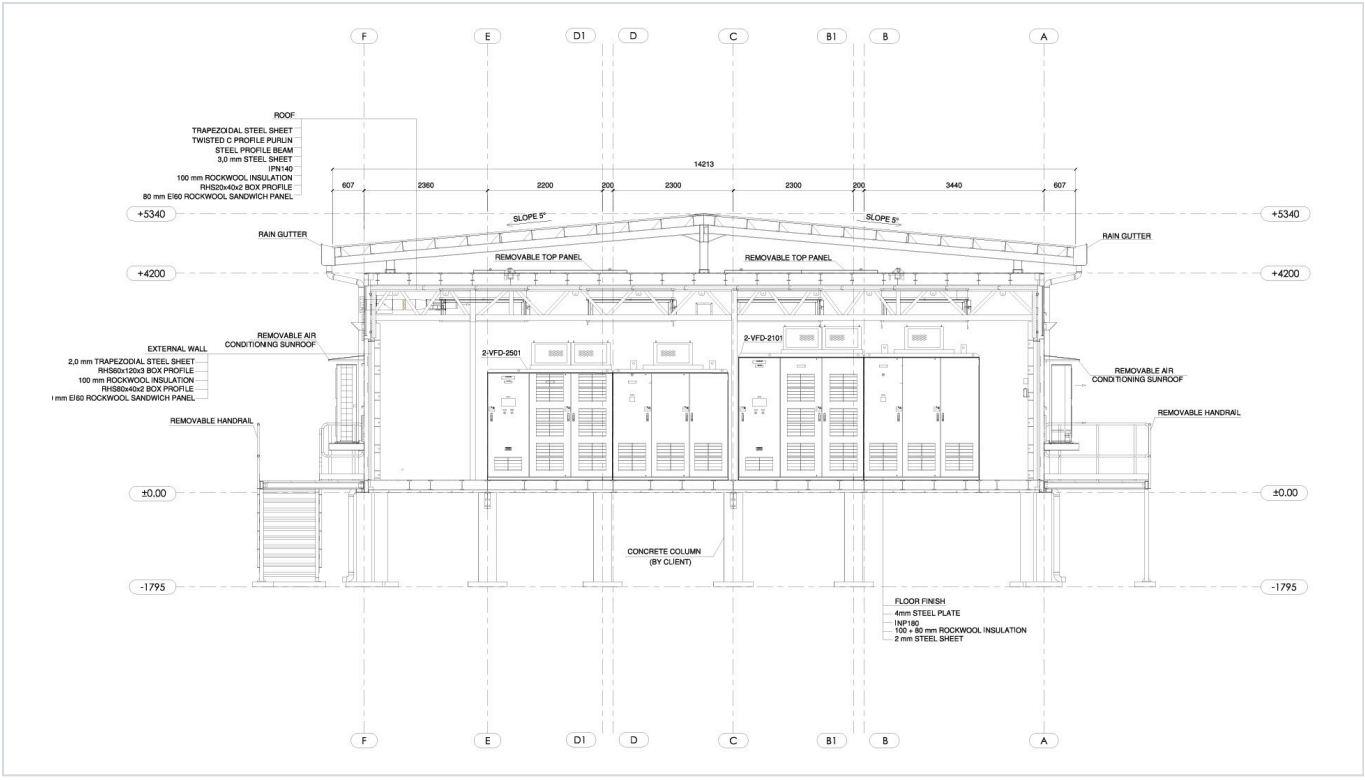
Layer standards and quantities
Clean layer definitions across the drawing set and quantity take-offs extracted directly from them.

Door and window schedules
Door and window drawings and procurement drawings with sizes, frames, glazing, hardware and quantities.

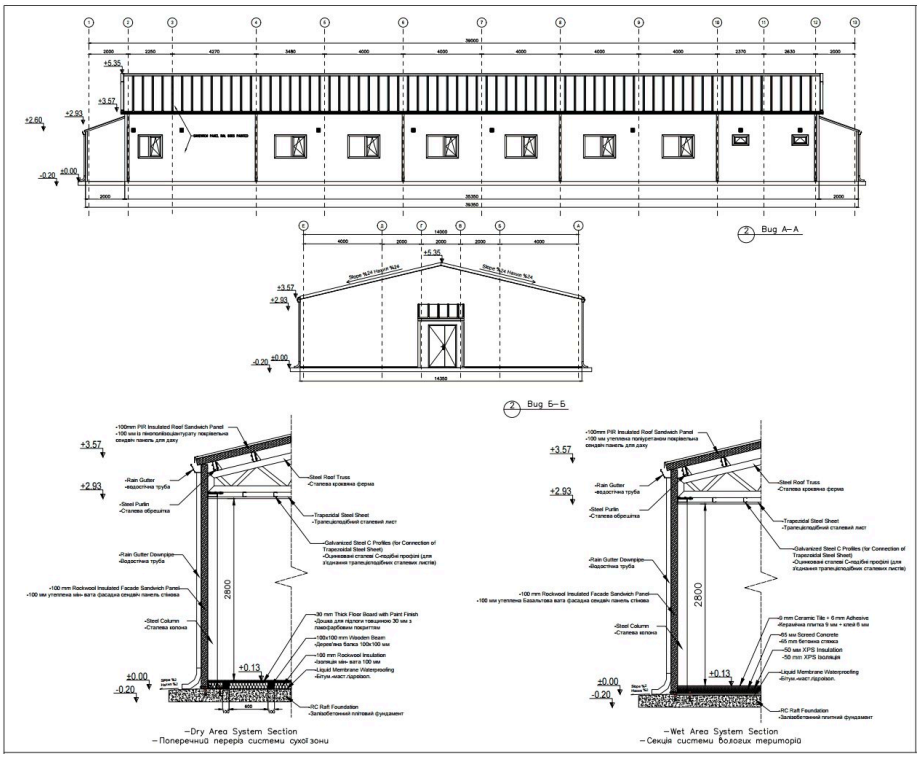
Deliverables: Plans, sections, elevations, details, schedules, submittals, quantity take-offs



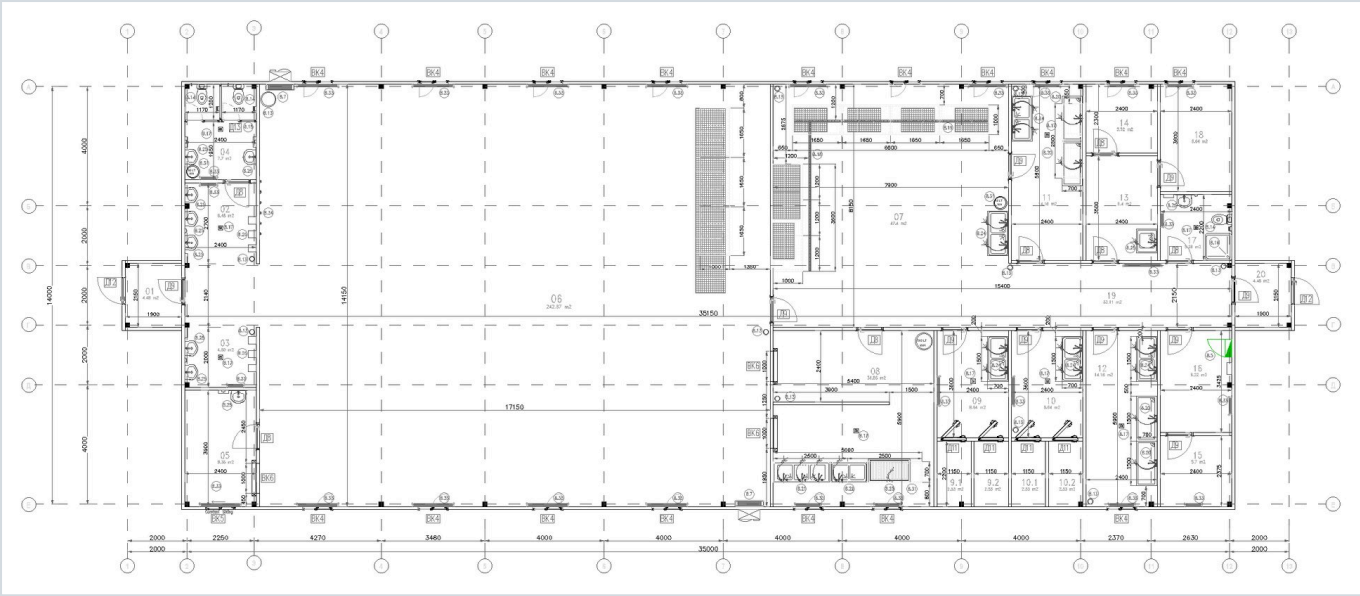
E-house layout: MV and LV switchgear, VFDs, transformer bay, cassette units and escape routes.



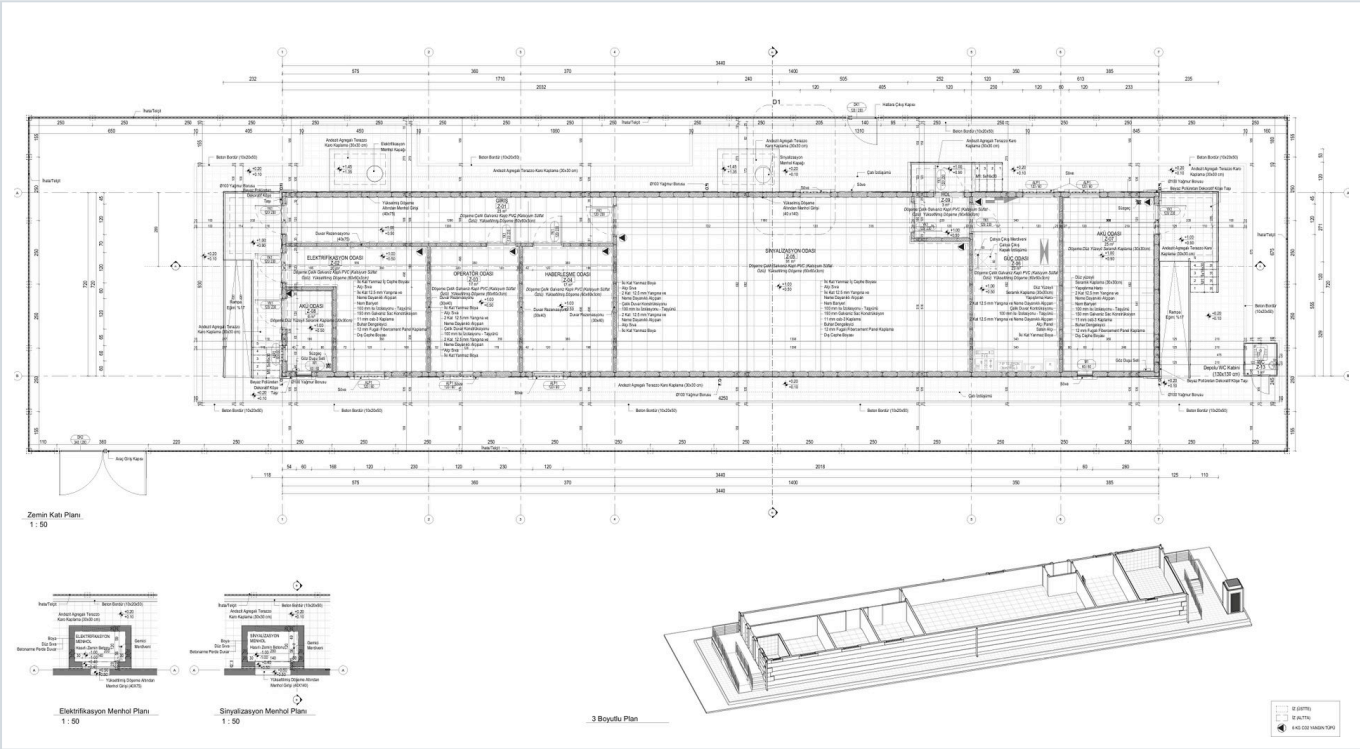
Section through an electrical building: roof and wall build-ups, VFD panels and raised platform.



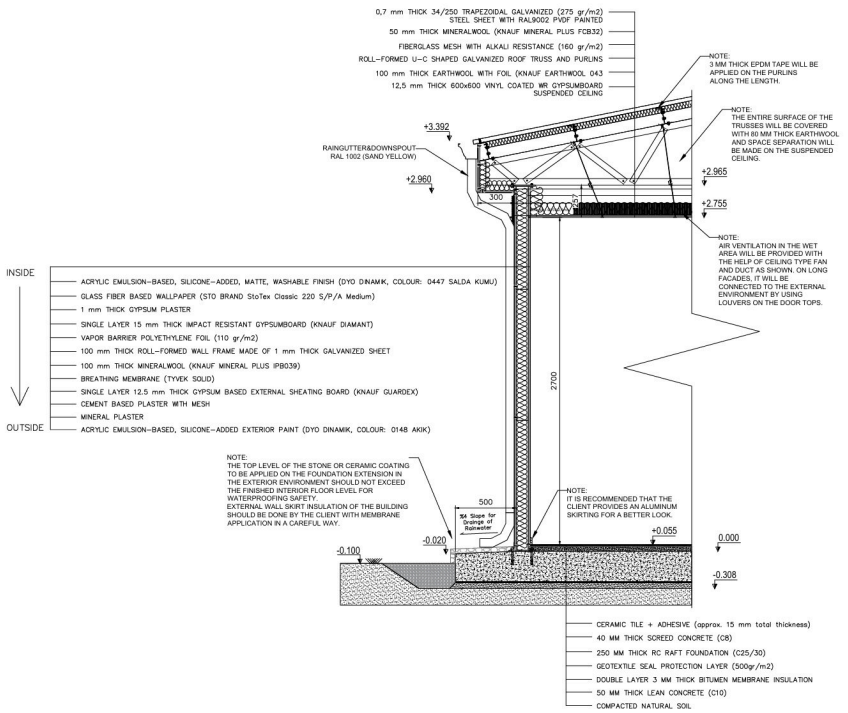
Single-storey building, 39 x 14 m: elevations and typical wall sections for dry and wet areas, with the full layer specification.



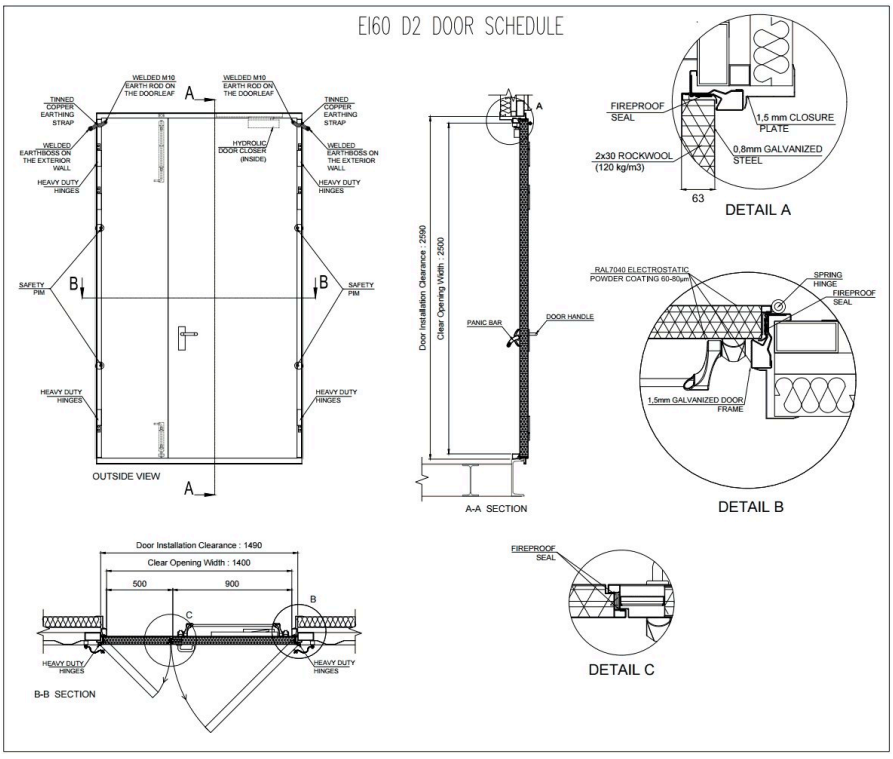
Facility floor plan with room numbering, sanitary layouts and door and window types.



Construction plan at 1:50 with finishes, levels, manholes and a 3D view of the building.



Typical wall section: eaves and rain gutter, light-gauge wall and raft foundation, with the full layer specification.



EI60 fire-rated double door: elevation, sections and frame details for procurement.

02 Structural analysis and calculations

Structural analysis and calculations for steel, light-gauge, modular and reinforced concrete structures, from global models to detailed finite element checks, prepared to international codes and ready for third-party review.

Heavy steel industrial structures
Portal frames, crane buildings, pipe racks, platforms and long-span trusses.

Modular structures
E-house and module chassis, with lifting, transport, stacking and operation load cases.

Advanced and nonlinear analysis
Geometric and material nonlinearity, buckling, P-delta, modal and response spectrum analysis.

Connection design
Bolted and welded connections, moment end plates, base plates and anchor bolts.

Modification assessments
Structural checks for site cuts, openings and strengthening, with formal technical letters.

Light-gauge steel and prefabricated buildings
Cold-formed steel frames, roof trusses, panelised and prefabricated building systems.

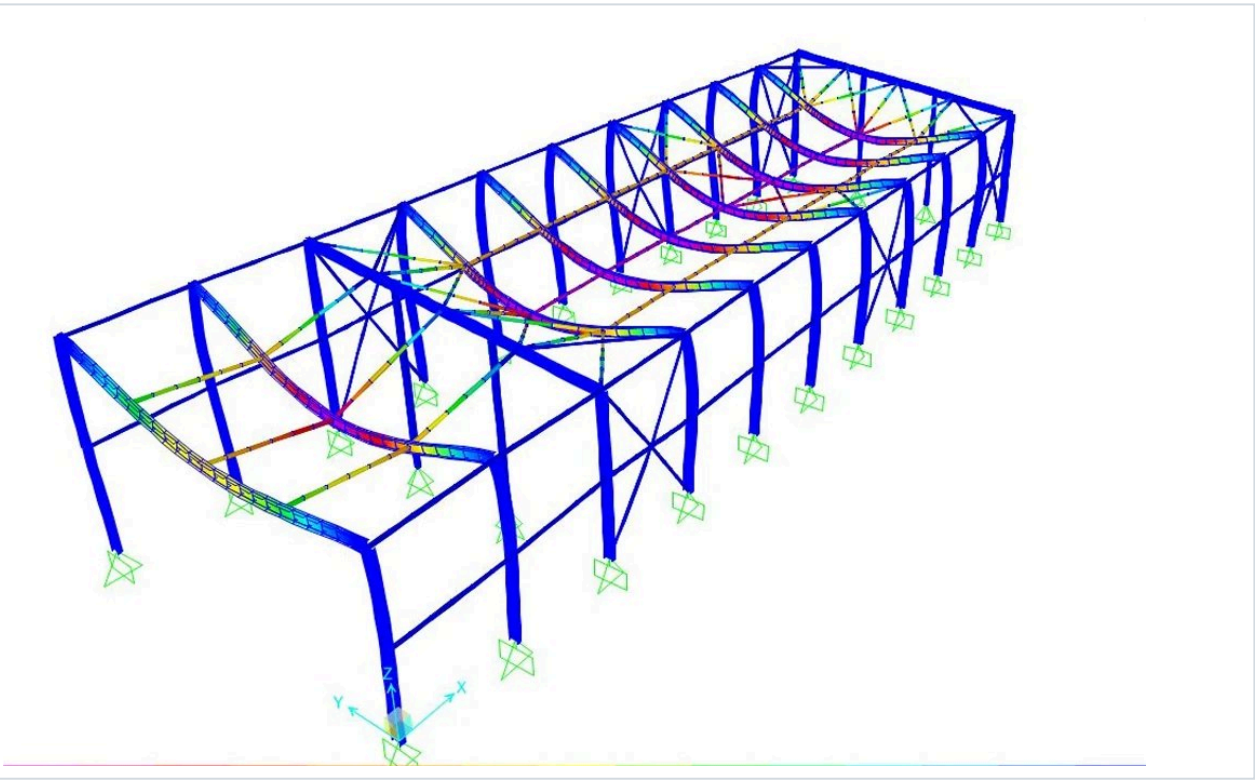
Reinforced concrete structures
Frames, foundations, pedestals and anchorage zones.

Finite element analysis
Plate and solid FE models of connections, lifting lugs, base plates and local details.

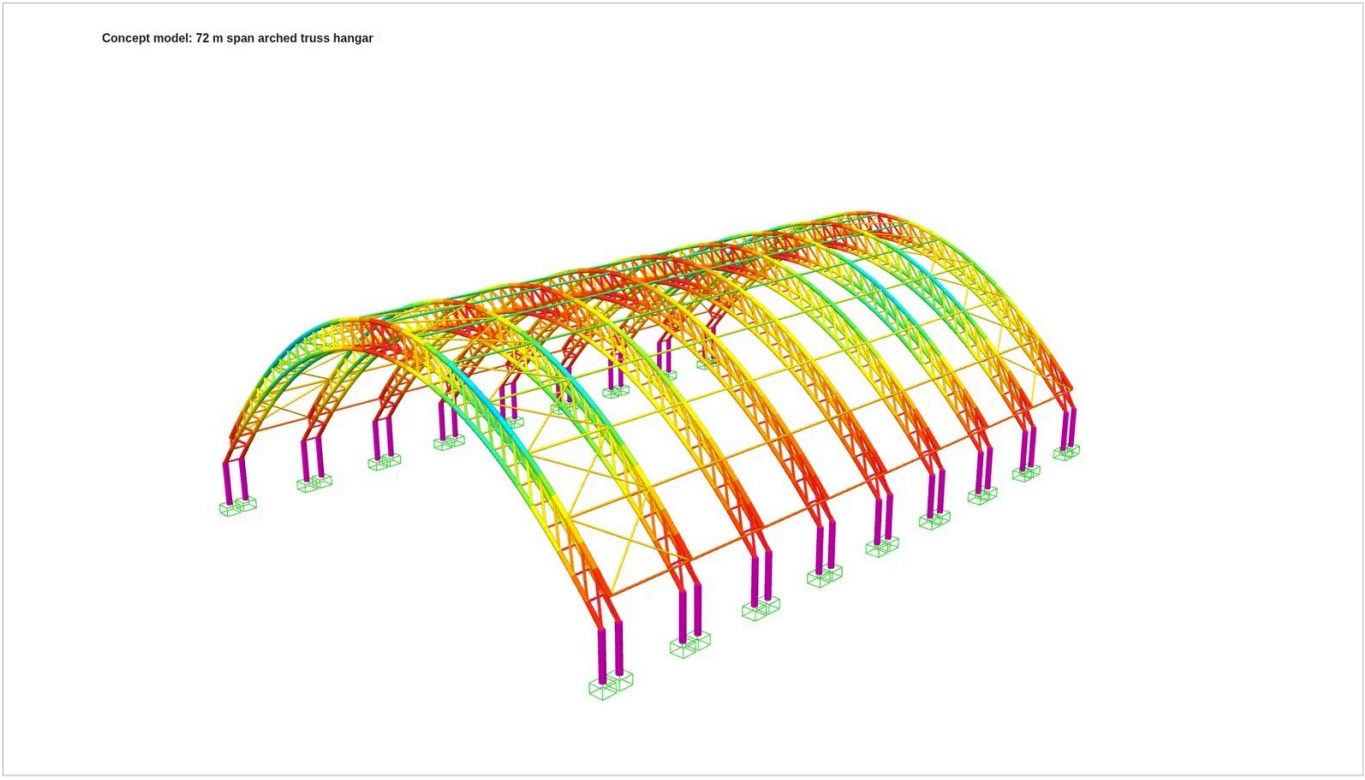
International code compliance
ASCE 7, AISC 360, ACI 318 and the Eurocodes, with local codes applied on request.

Calculation reports and automation
Clear, traceable reports, supported by Python and Excel tools for repetitive checks.

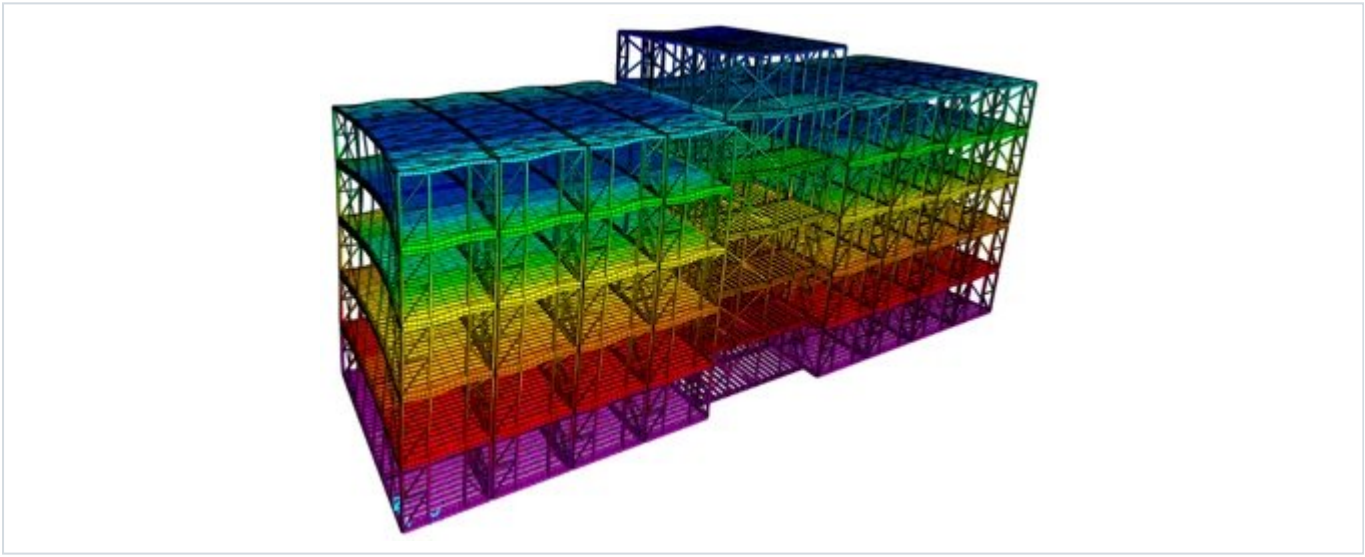
Deliverables: Calculation reports, analysis models, FE reports, design drawings, technical letters



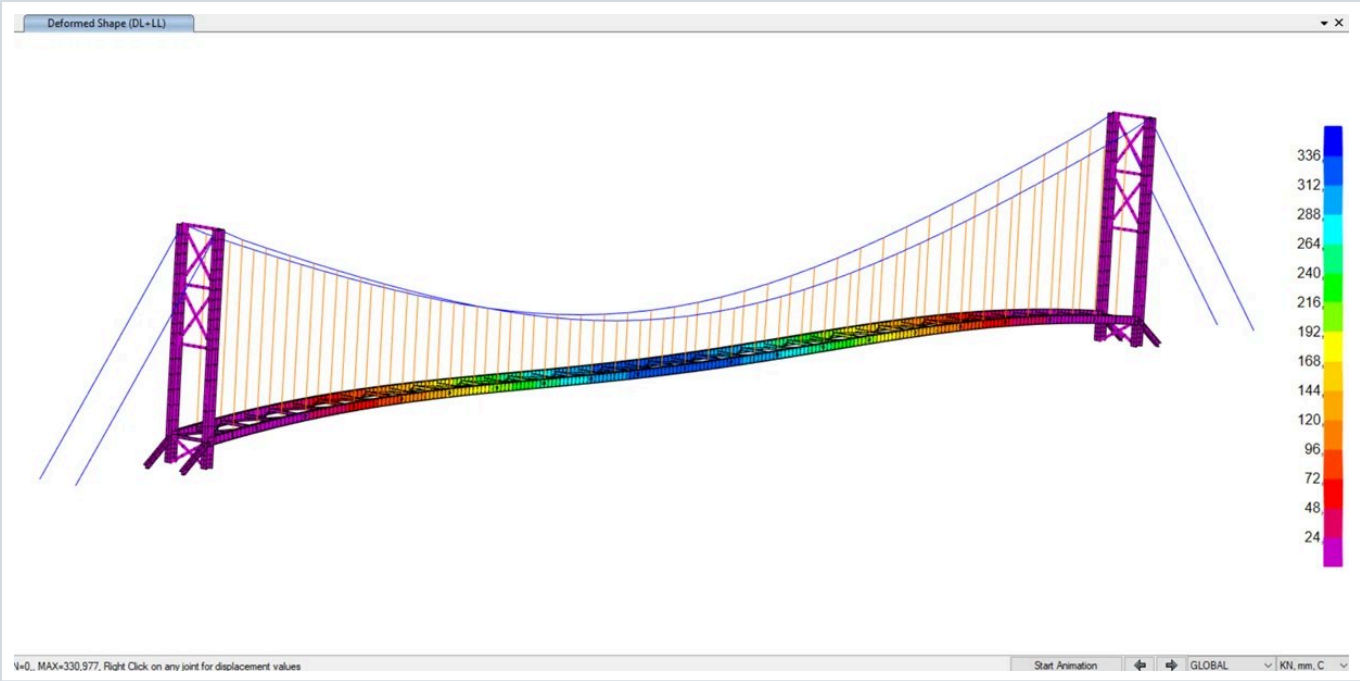
Industrial portal frame building: deformed shape under combined loading.



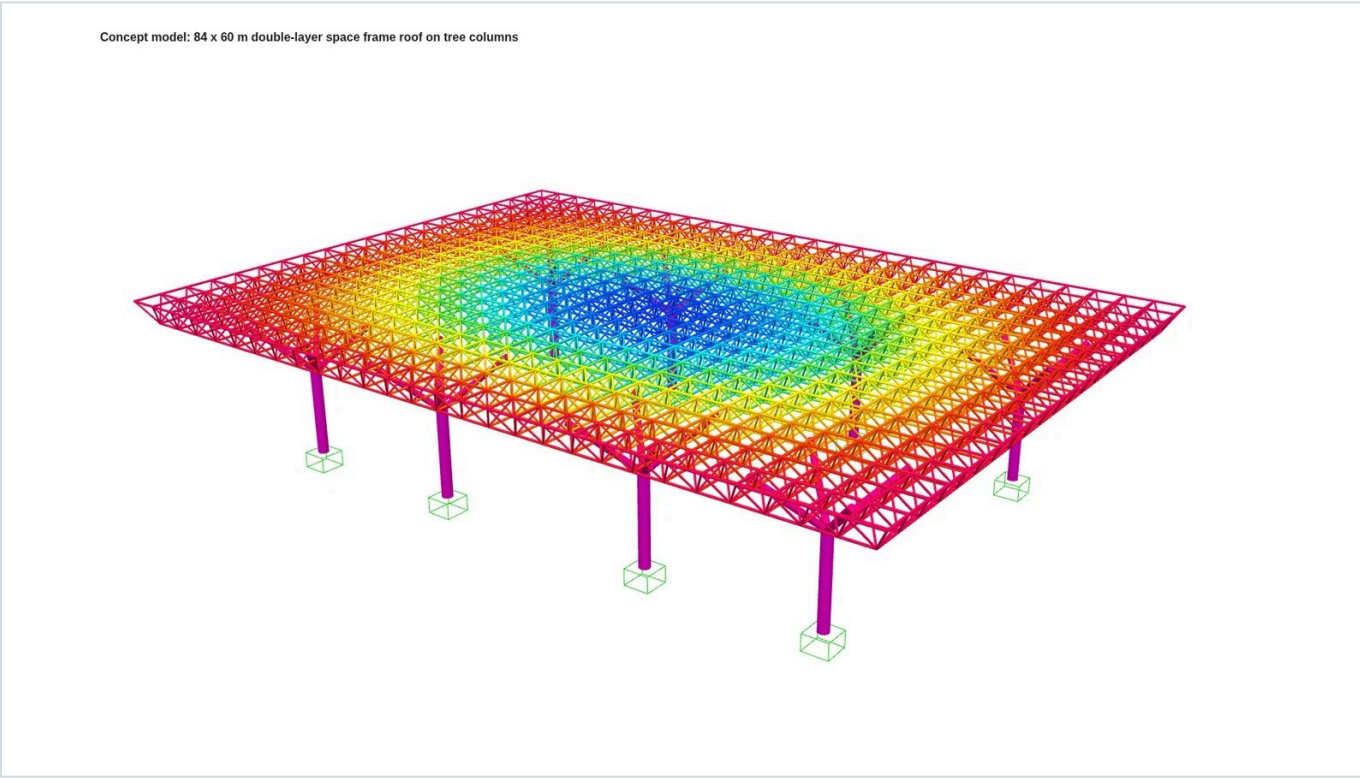
Concept model: 72 m span arched truss hangar.



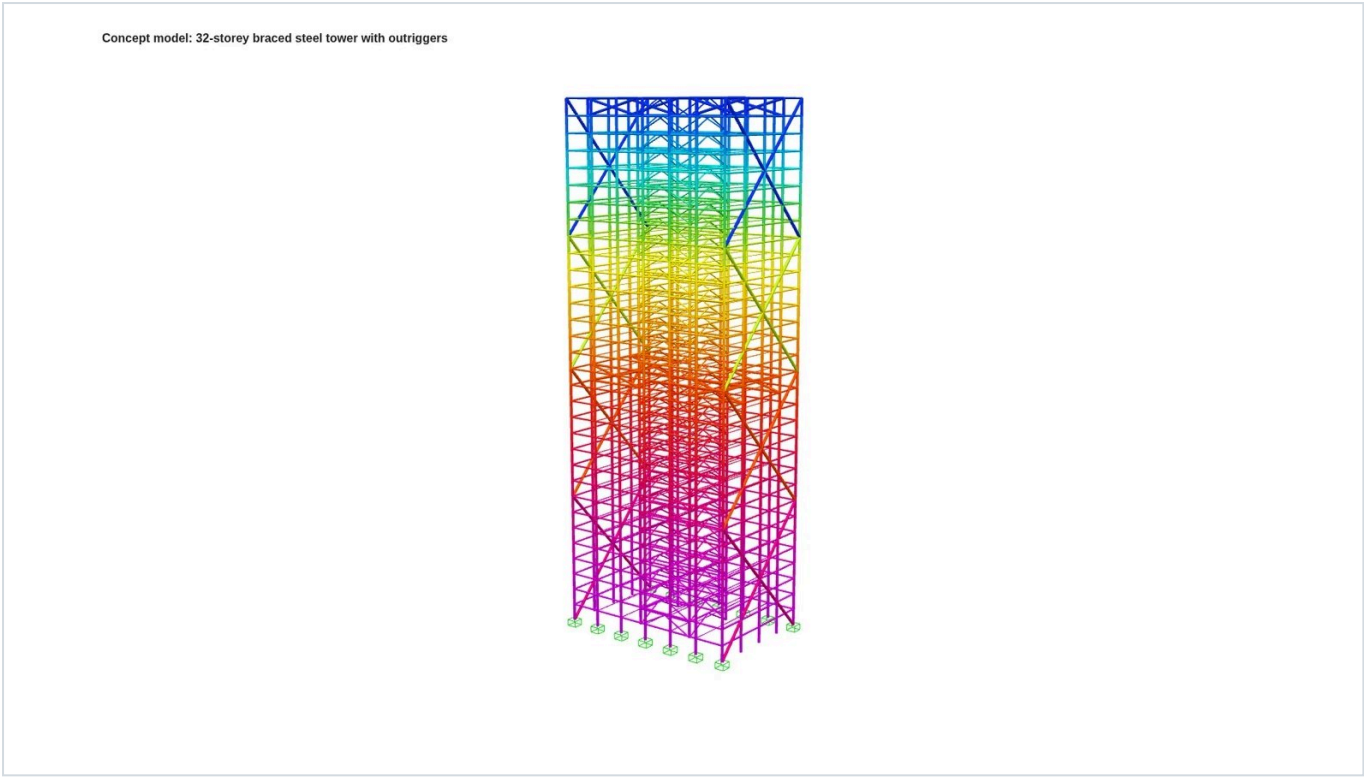
Multi-storey modular steel building: global analysis and displacements.



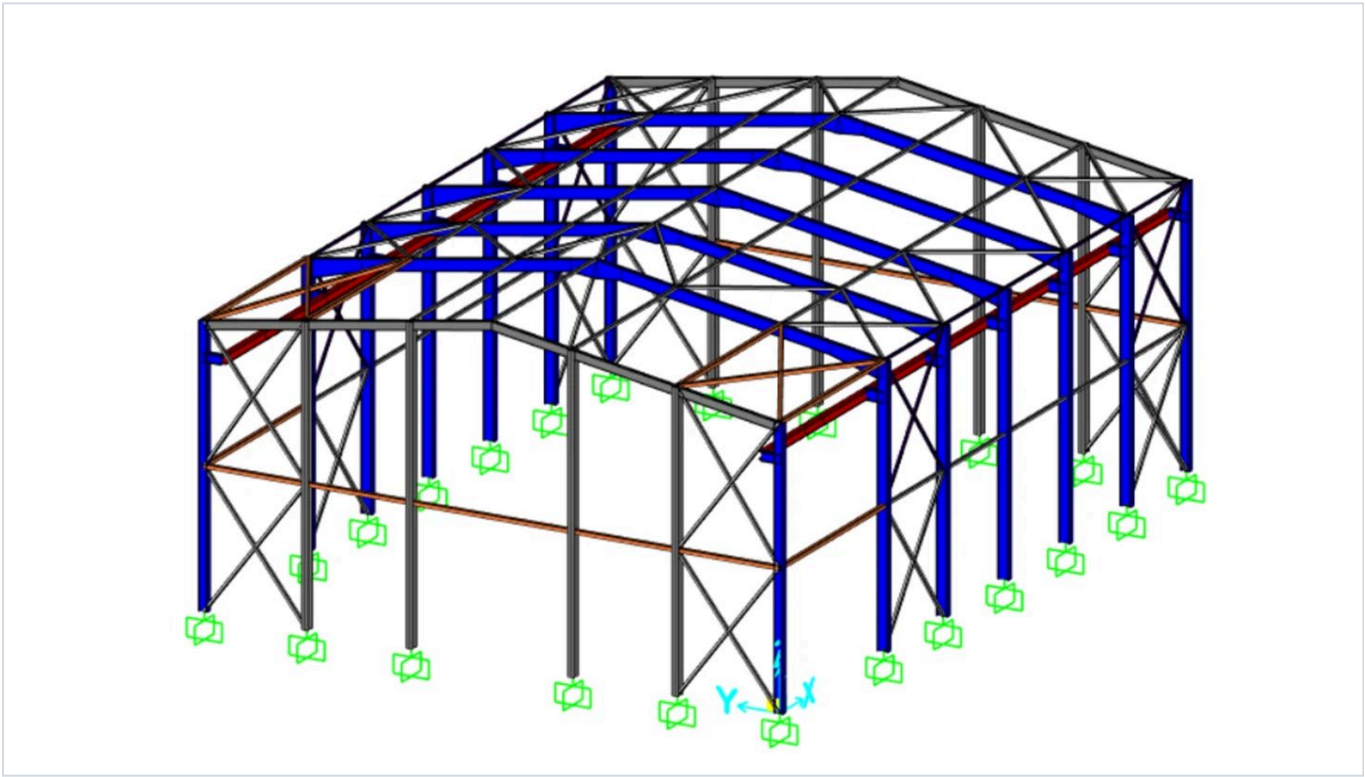
Suspension bridge: deformed shape under dead and live load (SAP2000).



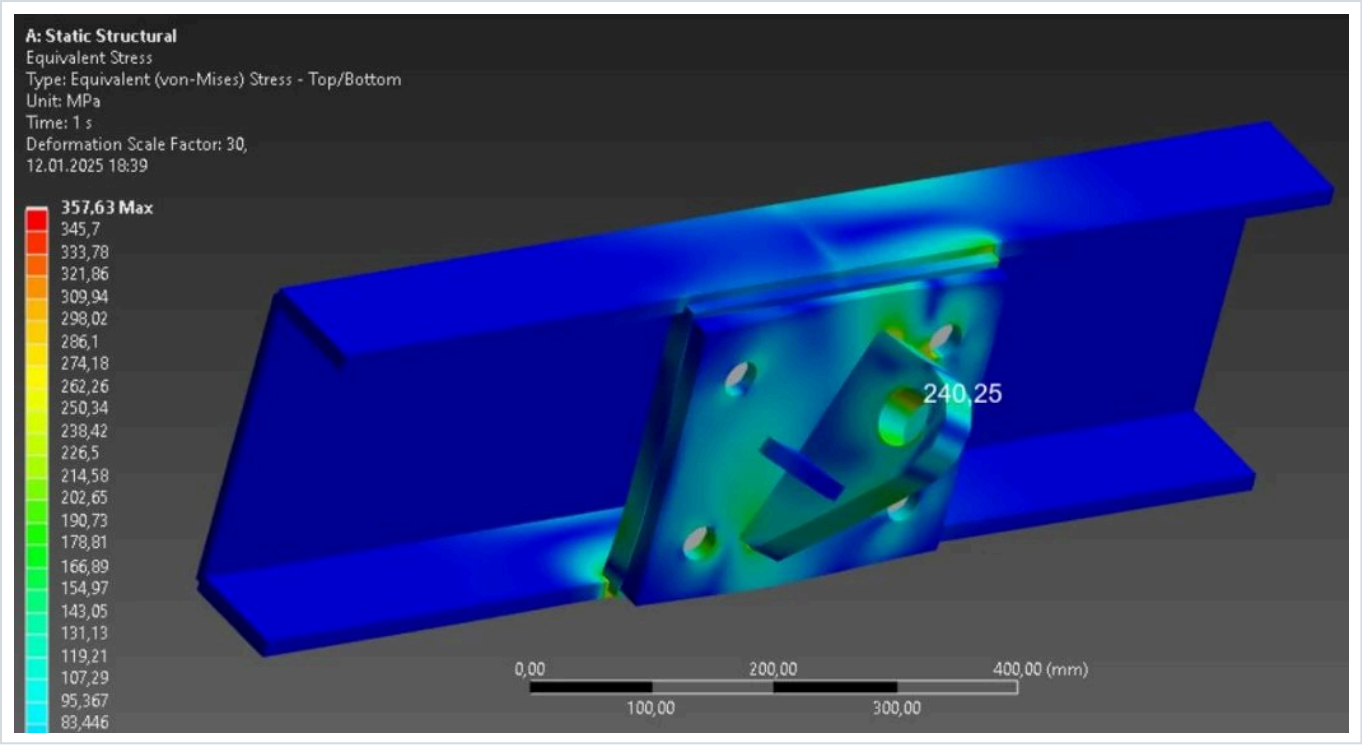
Concept model: 84 x 60 m double-layer space frame roof on tree columns.



Concept model: 32-storey braced steel tower with outrigger trusses.

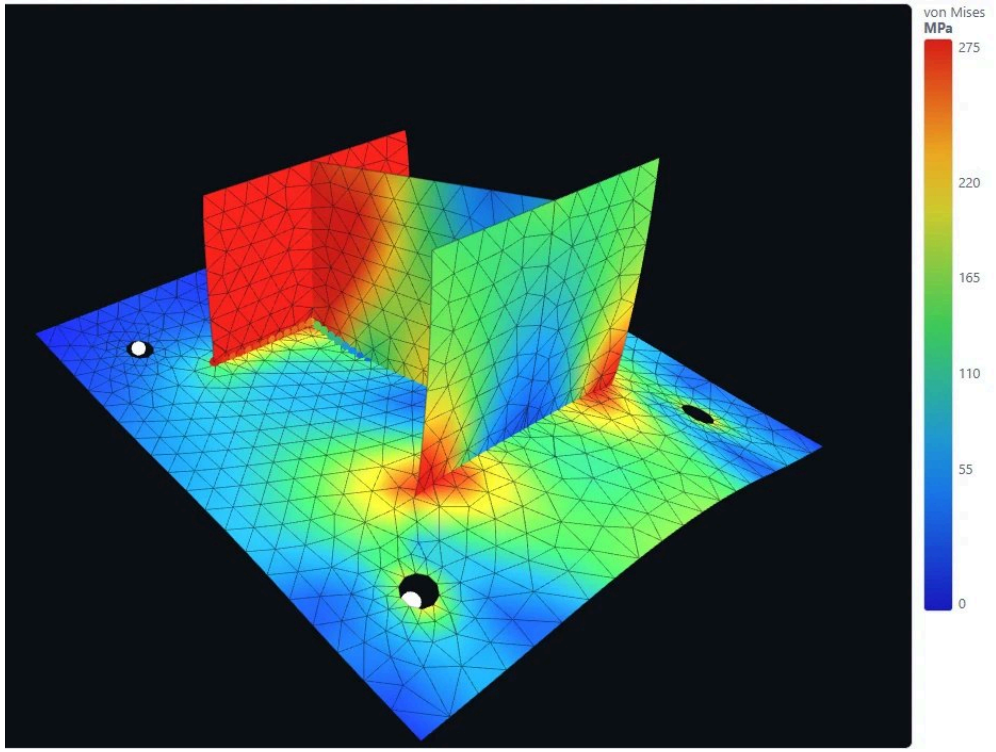


Industrial building with crane runway girders and roof and wall bracing: analysis model.

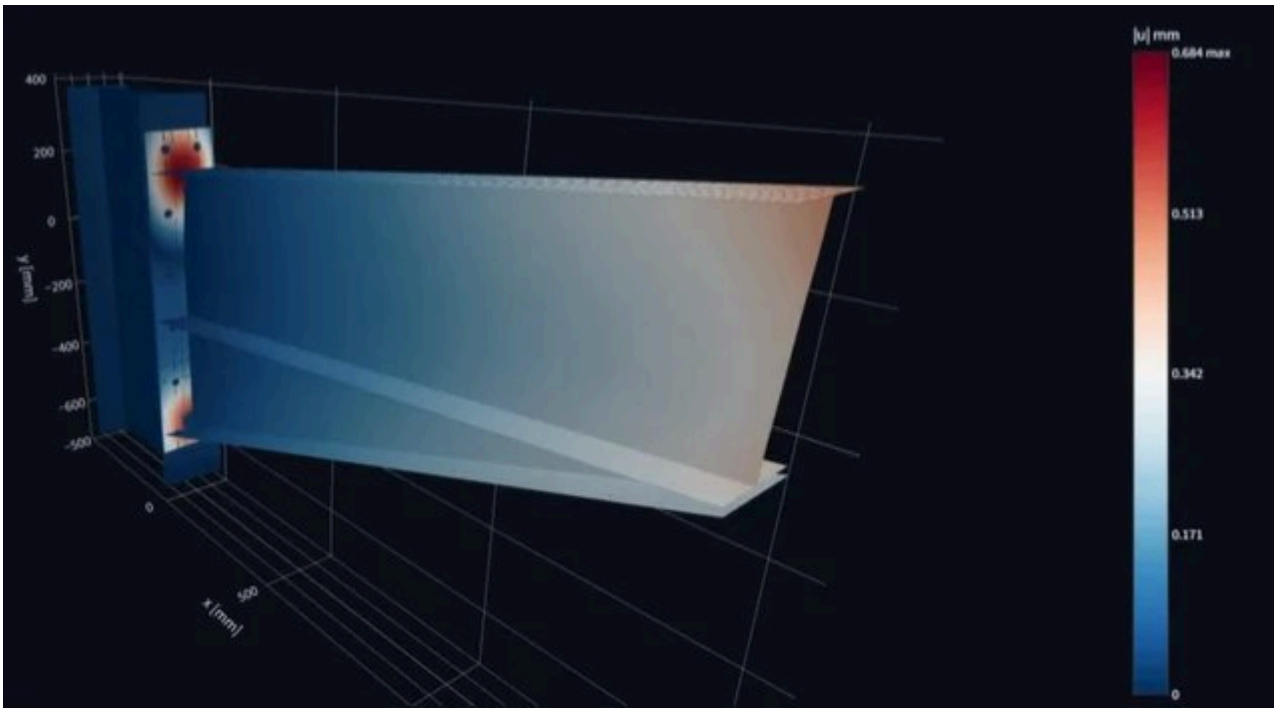


Lifting lug and padeye plate on a beam: von Mises stresses (ANSYS).


Conveyor gallery on braced trestles with a drive frame, tied into an existing structure.



Stiffened base plate: FE mesh and von Mises stresses, scale fixed at yield strength.



Beam-to-column end plate connection: deformations from a CBFEM model.

03 BIM design and coordination

We build one coordinated BIM model of your building or module, combining architecture, structure, equipment and every service route. Through clash detection and MEP coordination, conflicts are solved on screen instead of on site.

Detailed 3D modelling
Structure, cladding, doors, platforms, stairs and equipment modelled to fabrication level of detail.

Clash detection and resolution
Hard and clearance clash tests, grouped reports, assigned owners and tracking to closure.

Technical rooms and e-houses
Switchgear, transformers, UPS, racks, cable trays and HVAC coordinated inside compact modules.

Combined services drawings
Coordinated layouts and sections issued to every trade from the same model.

Model to site
Models used for installation sequences, site checks and as-built updates.

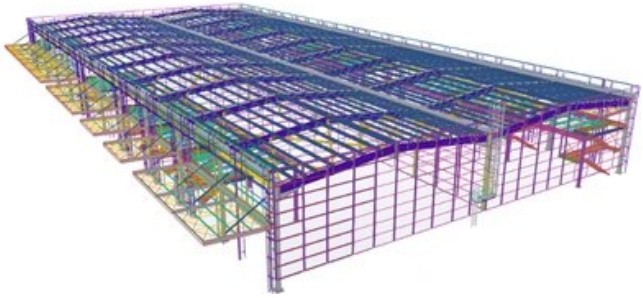
Federated coordination models
Architecture, structure, HVAC, electrical, plumbing and fire protection models combined into one.

MEP coordination
HVAC, electrical, plumbing and fire protection routes coordinated with the structure and architecture, with agreed clearances and maintenance zones.

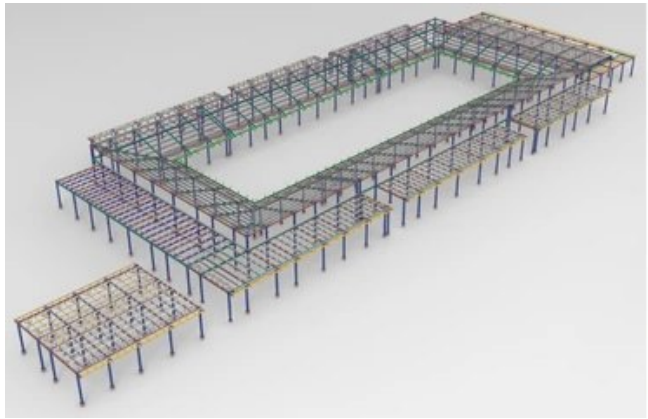
Ceiling voids and service routes
Duct, tray and pipe routes, supports and access zones fixed in the model before installation.

Model-based quantities
Quantities, equipment lists and material schedules extracted directly from the model.

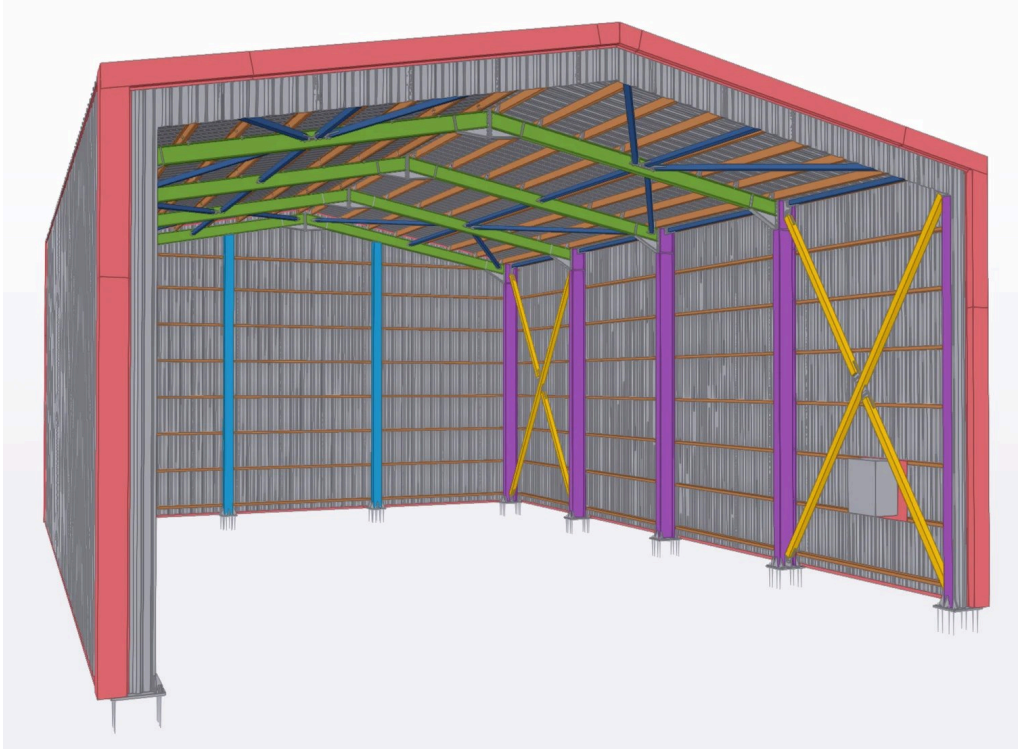
Deliverables: Coordinated 3D models, clash reports, combined services drawings, quantity schedules



Large steel production hall with curved roof trusses, crane bays and side platforms.



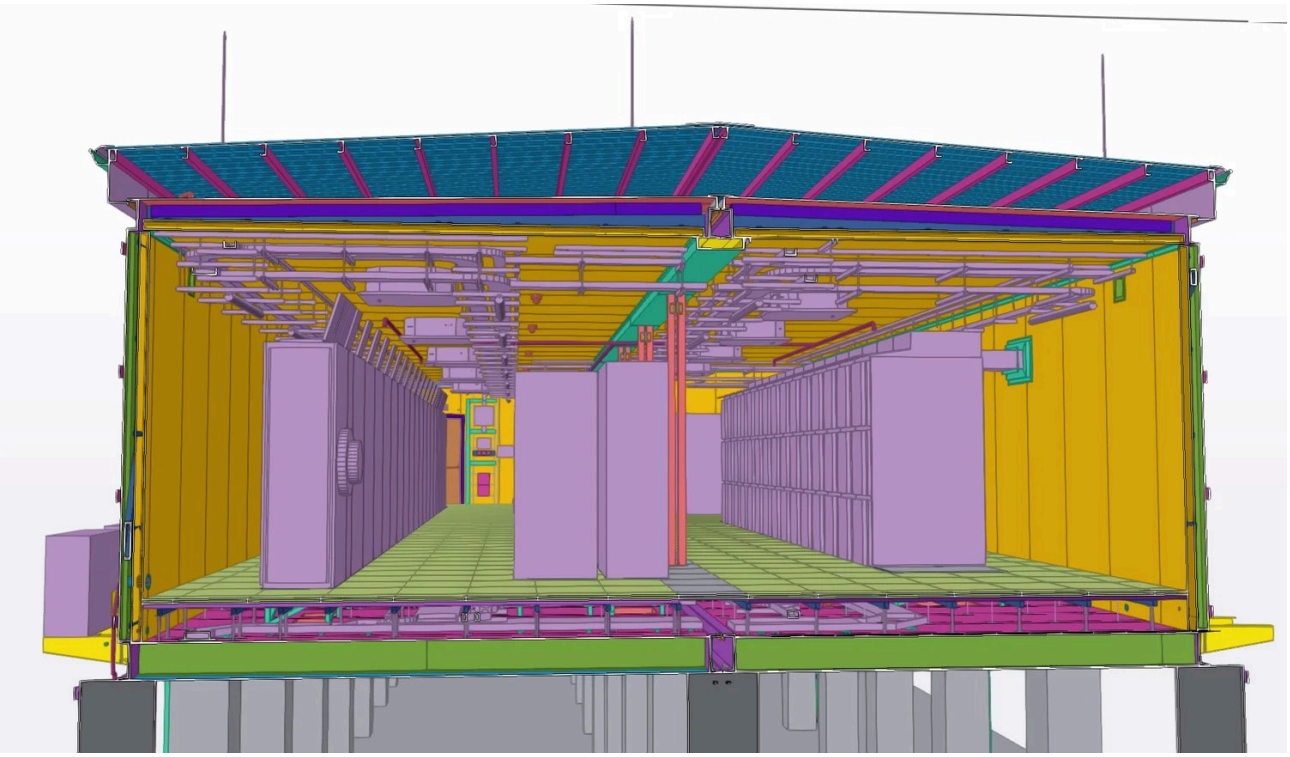
Steel frame complex around a central courtyard, with multi-level platforms.



Steel portal frame building: frames, bracing, purlins, side rails and cladding in one model.

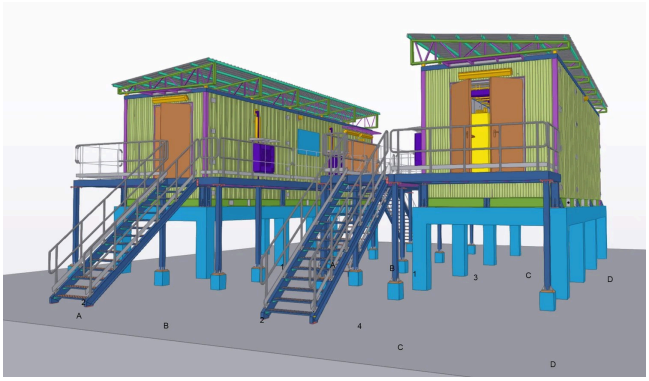


Single-storey steel building with sandwich panel cladding, wall bracing and windows: complete 3D model.



Data centre module section: server racks, overhead trays and containment, raised floor and roof structure.

3D model

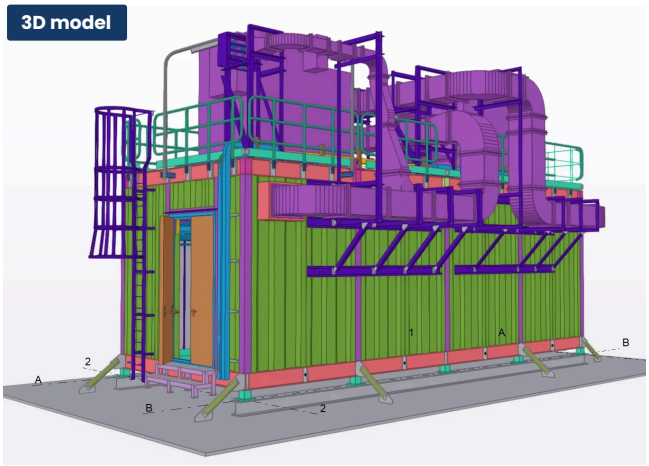


As built



Raised e-houses with access platforms and stairs: coordinated 3D model next to the delivered buildings.

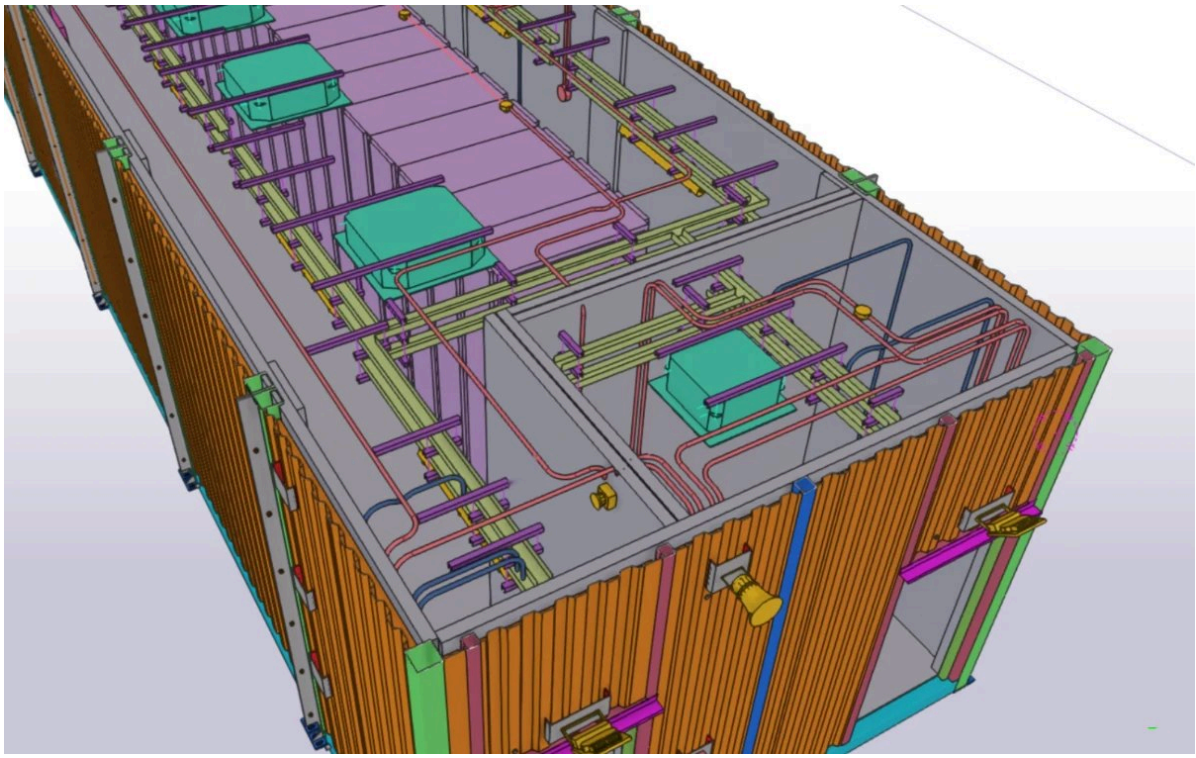
3D model



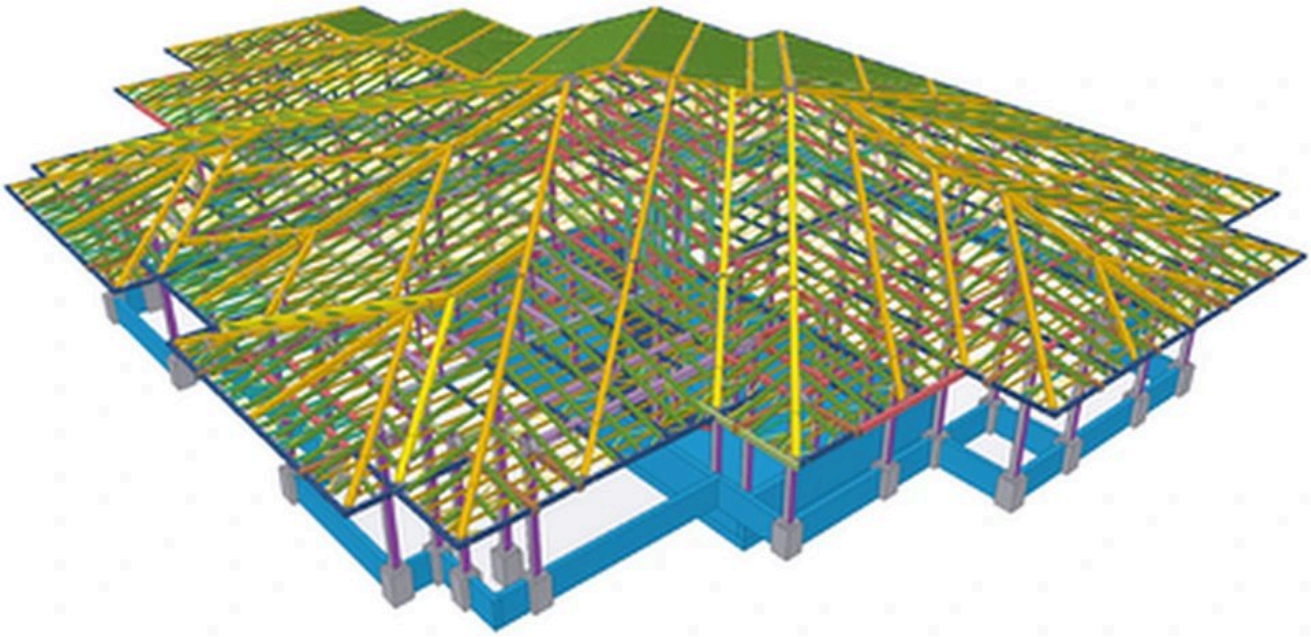
As built



Plant room module with rooftop HVAC ducts, access platform and caged ladder: 3D model and the finished unit.



Module roof void: ducts, cable trays, refrigerant pipes and supports coordinated between partition walls.



Light-gauge steel house with complex hip roof framing on concrete piers.

04 Fabrication and erection drawings

Shop drawings your fabricator can work from directly, and independent checking of drawings prepared by others.

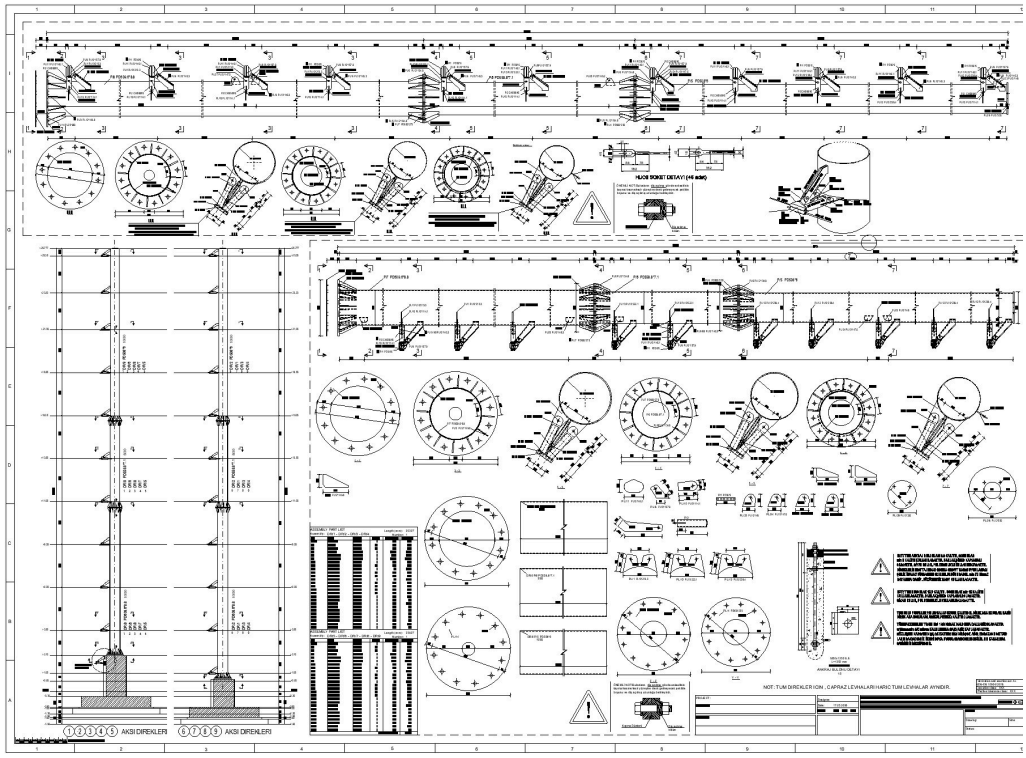
Assembly and part drawings
Steel assembly, single part and plate drawings from the 3D model.

Erection drawings
Erection plans, elevations, bolt lists and marking.

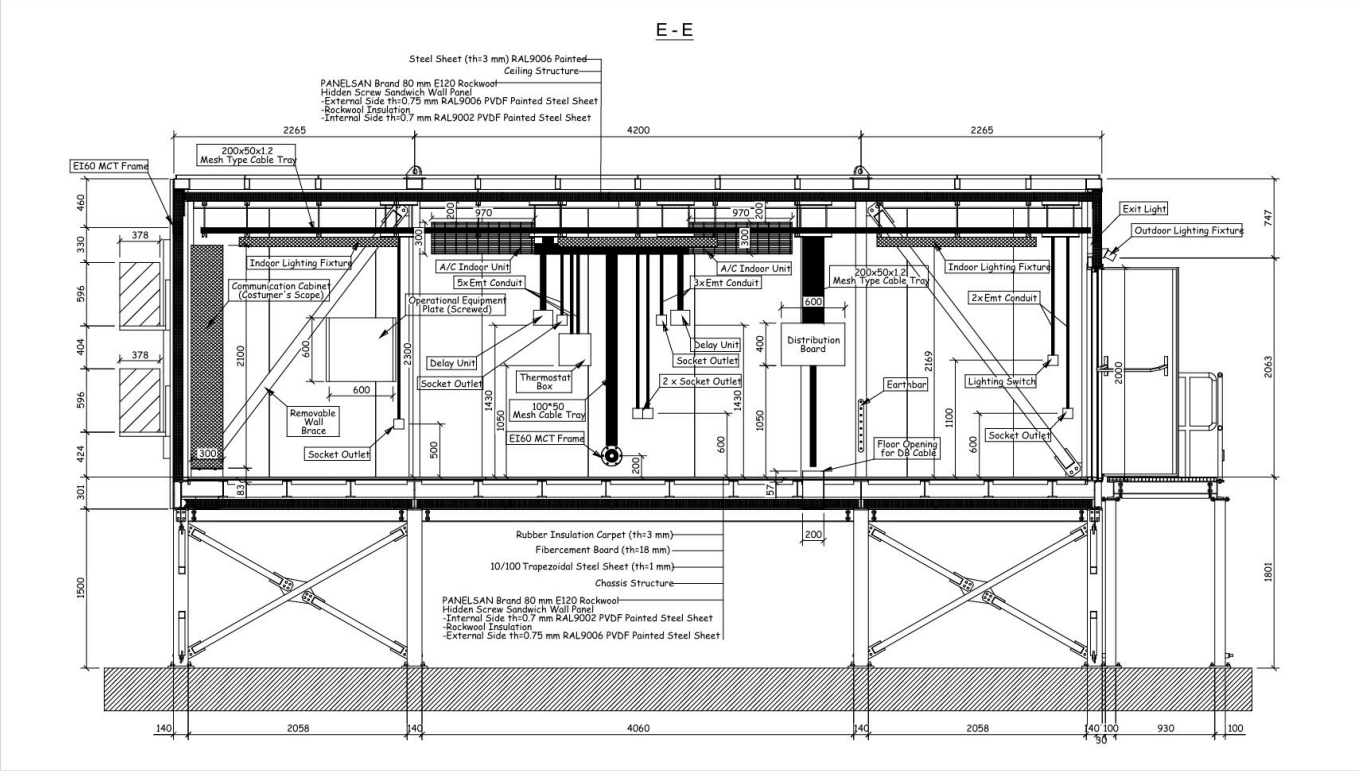
Drawing checks
Fabrication, erection and weld drawings checked against the design, returned with itemised comments.

Fabrication exports
Material lists and NC/DXF files for production.

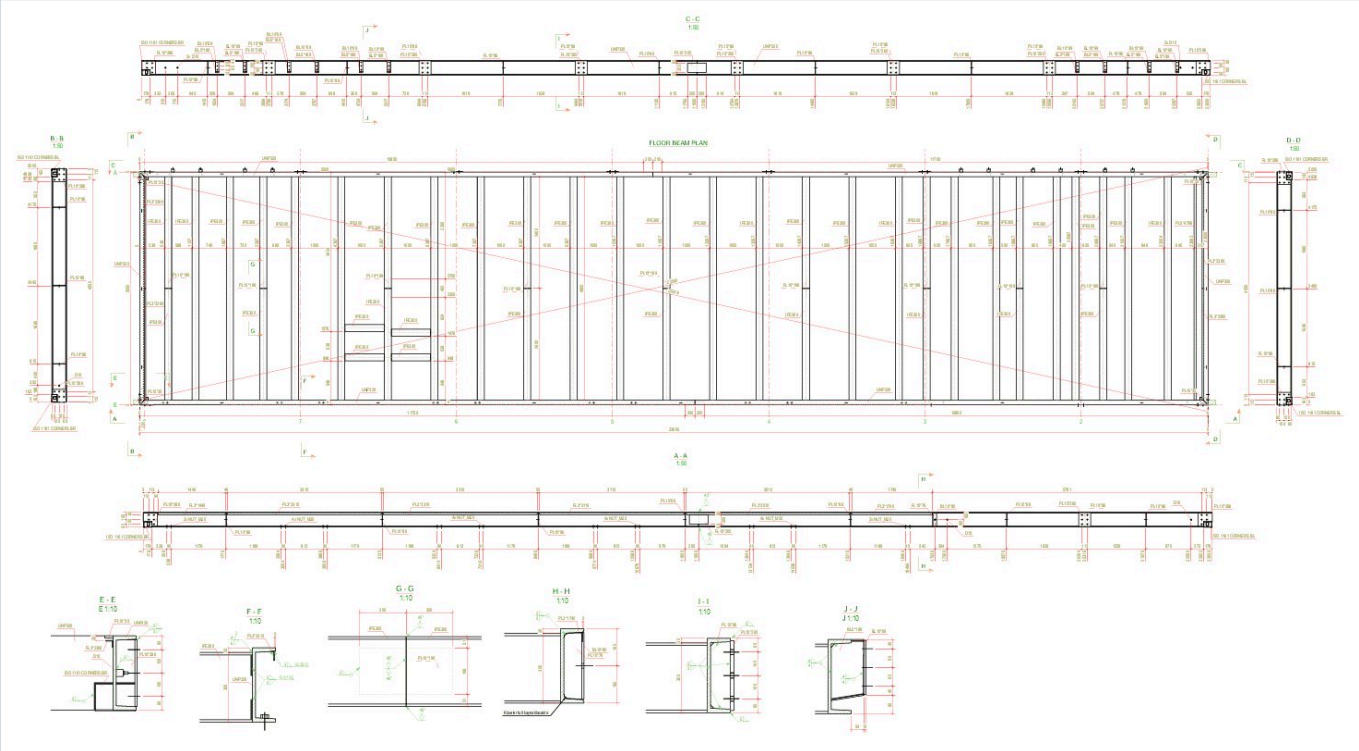
Deliverables: Assembly, part and erection drawings, bolt lists, review comments



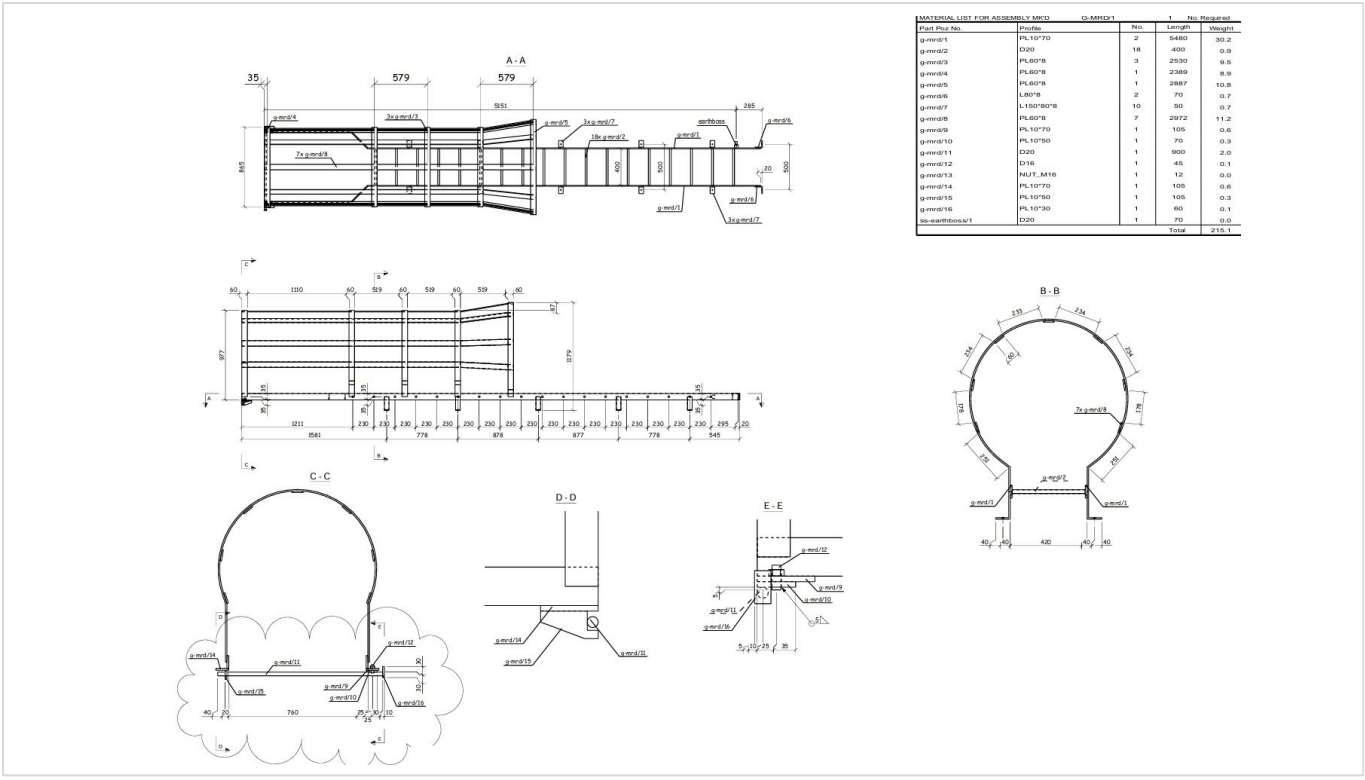
Fabrication drawing of tapered tubular masts: assemblies, flange and gusset details, sections and assembly part lists.



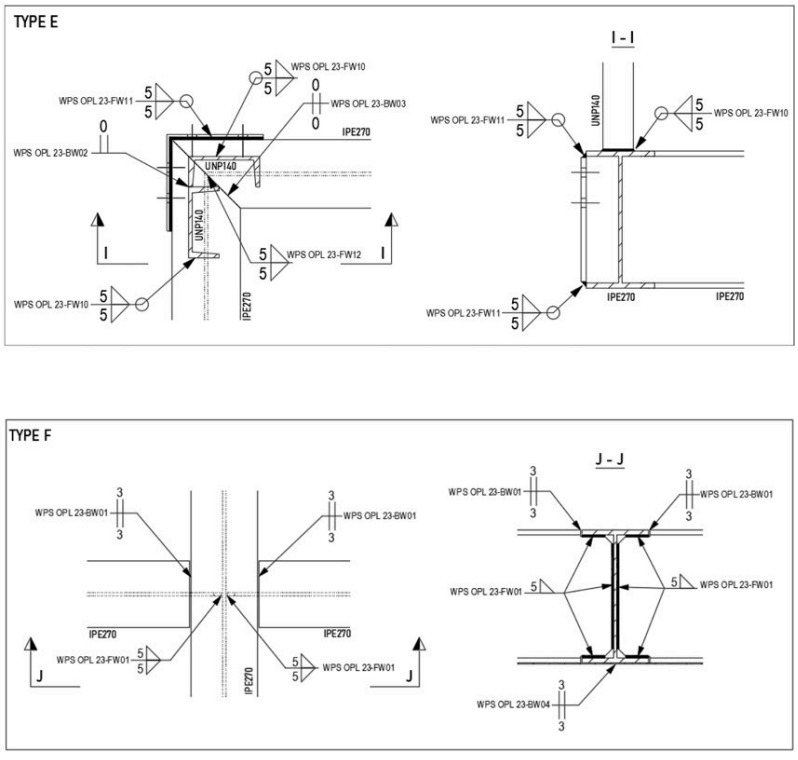
E-house cross-section with cladding build-ups, cable trays, lighting, sockets, A/C units and the braced support frame.



Module floor beam plan with ISO corner castings, sections and connection details.



Caged access ladder assembly: elevations, sections, details and material list.



Welding details: joint types and weld symbols referenced to the welding procedure specifications (WPS).

05 Documentation preparation

We prepare the project-specific engineering documents that needed to fabricate, transport, lift and install modules, equipment and steelwork safely, to your client's and contractor's requirements.

Method statements
Step-by-step work methods for fabrication, transport, lifting and installation, with resources and hold points (MS / RAMS).

Lifting plans and rigging studies
Crane selection and positioning, load charts, rigging arrangements, spreader beams and lifting point checks.

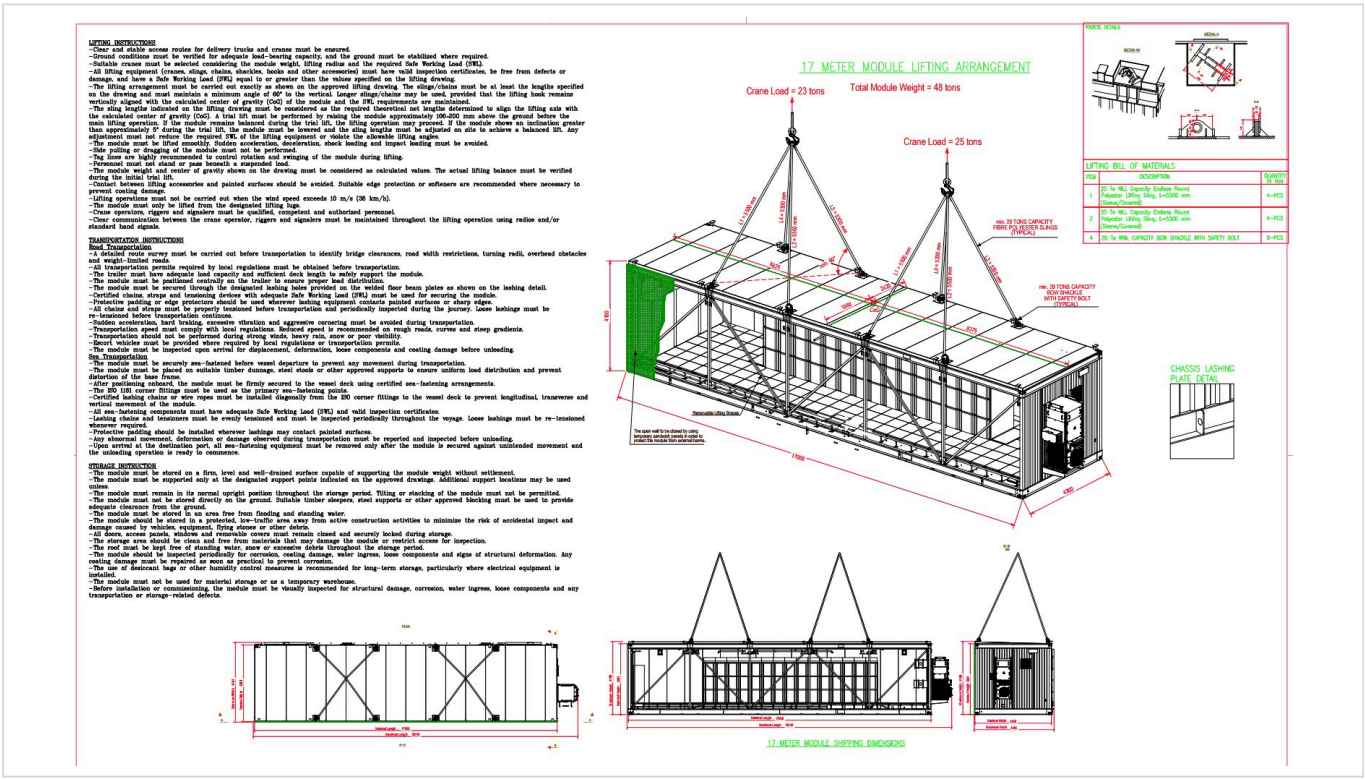
Erection sequences and temporary works
Erection order, temporary bracing and stability checks for every stage of the build.

Transport and handling
Trailer loading, tie-down and sea-fastening arrangements, and handling instructions for modules and equipment.

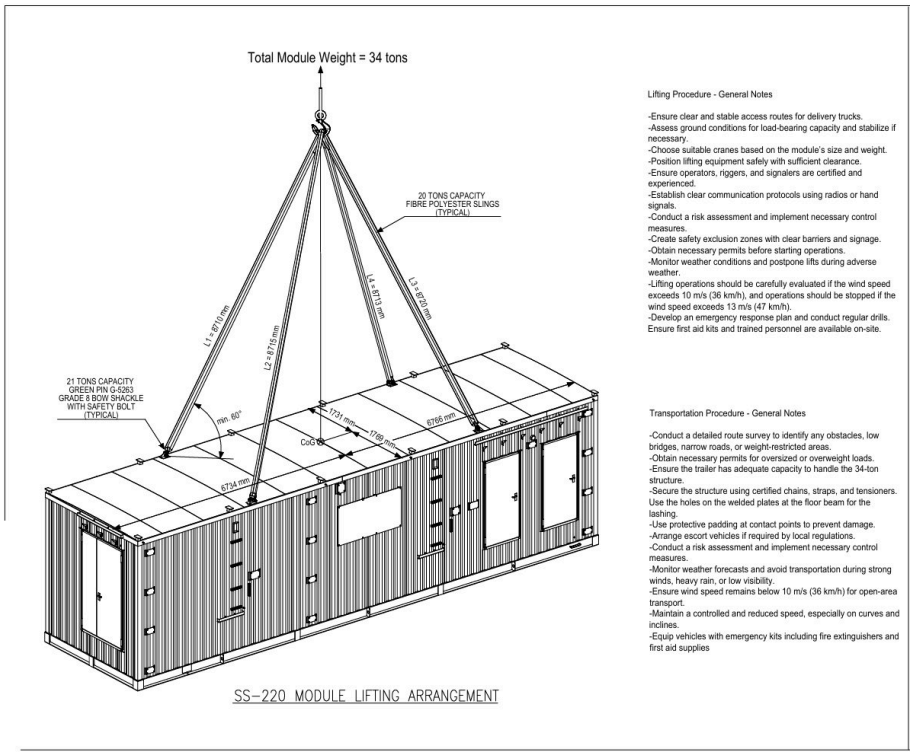
Inspection and test plans
ITPs and quality control checklists for fabrication, painting, assembly and site installation.

Installation and handover documents
Installation manuals, as-built documentation and handover dossiers for client approval.

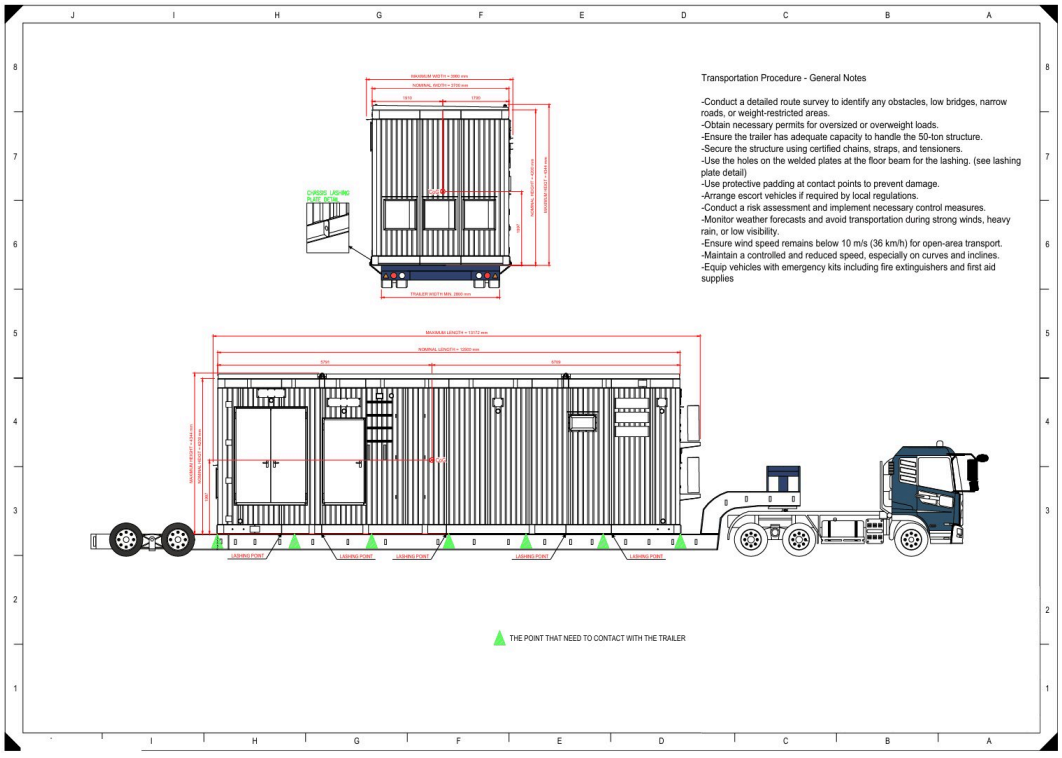
Deliverables: Method statements, lifting plans, rigging drawings, erection sequences, transport procedures, ITPs, manuals



Tandem lift of a 17 m, 48 t module: crane loads, sling lengths and angles, padeye details, lifting bill of materials, shipping dimensions, and lifting, transport and storage instructions.



Lifting arrangement for a 34 t module: four-leg sling set, sling lengths, shackle ratings, centre of gravity and general lifting and transport notes.



Transport and handling instructions: module on a low-bed trailer with dimensions, centre of gravity, lashing points and contact points.

06 Mechanical, HVAC and infrastructure design

Heating, cooling, ventilation, plumbing and drainage systems designed around the building's use, together with the site infrastructure that connects the building to the public networks.

Ventilation
Air handling units with heat recovery, duct sizing and routing, diffuser layouts, fire and volume dampers.

Kitchen and special extract
Kitchen hoods, grease ducts and fans, toilet and technical room extract.

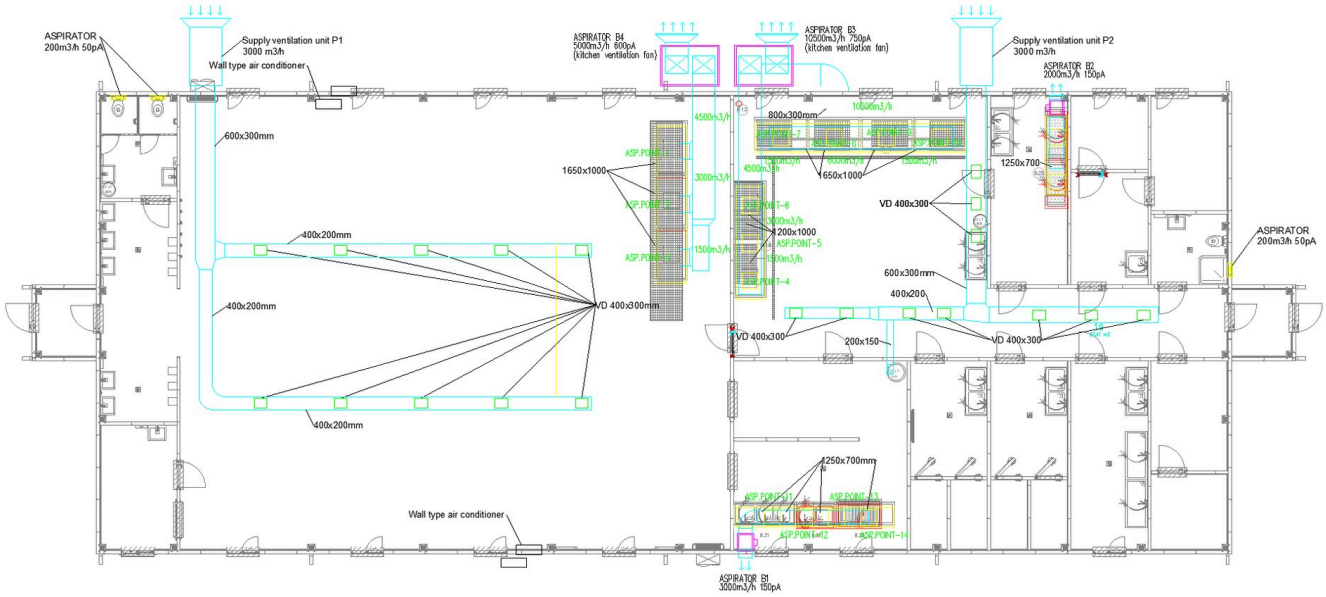
Wastewater and drainage
Soil, waste and vent systems, condensate drainage and inspection chambers.

Heating and cooling
Heating and cooling load calculations, equipment selection, chilled and hot water systems.

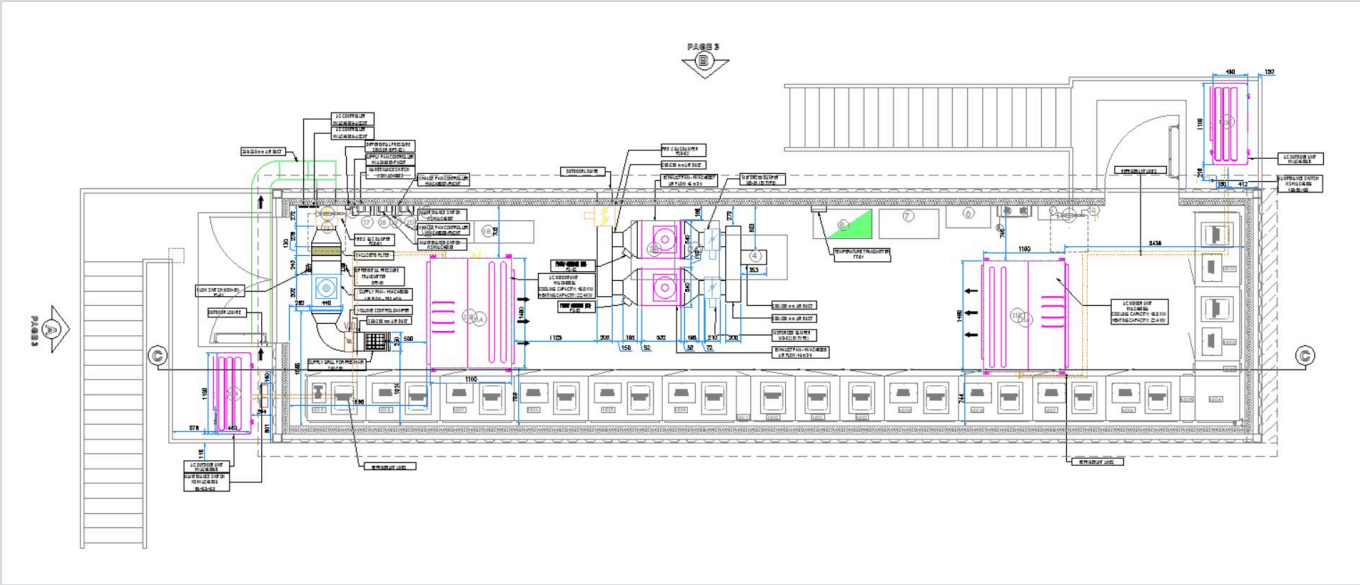
Hot and cold water installations
Domestic hot and cold water networks, pipe sizing, water heaters and sanitary fixture connections.

Site infrastructure
Sewer, stormwater and water supply networks with manholes, levels, longitudinal profiles and connections.

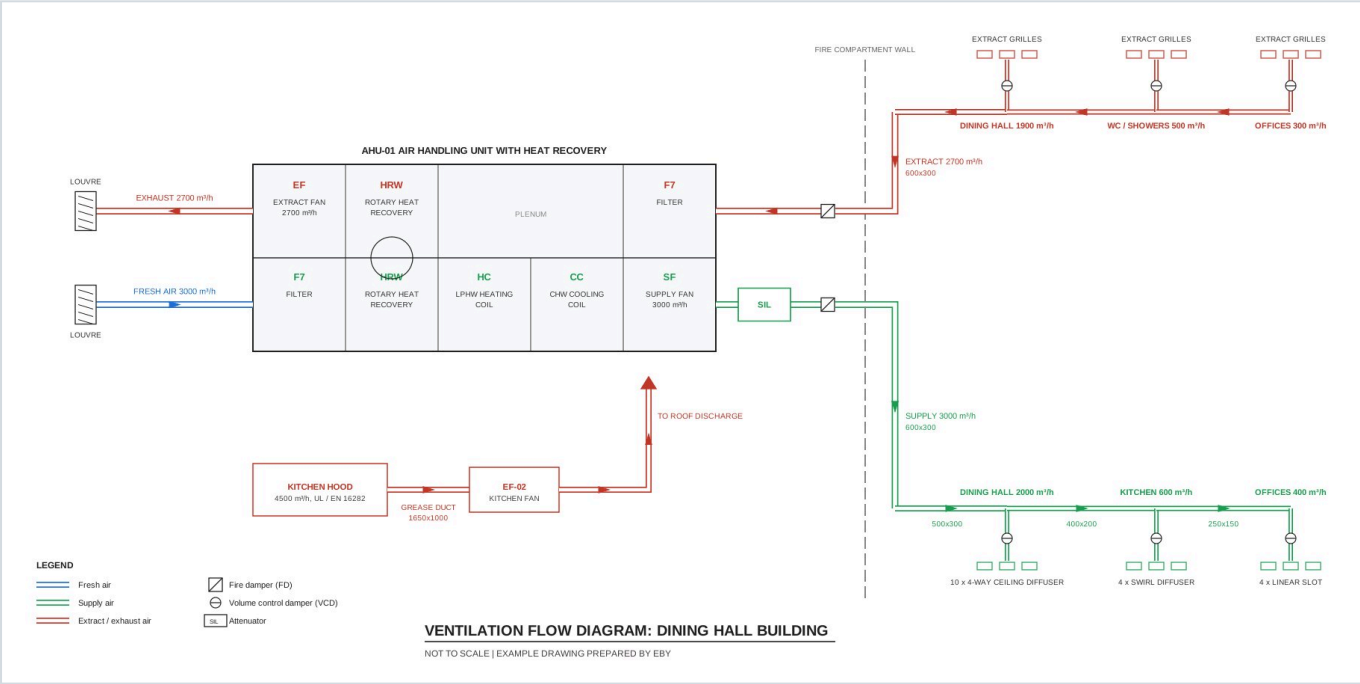
Deliverables: Load calculations, HVAC and plumbing layouts, flow diagrams, sections, site infrastructure plans and profiles, equipment schedules



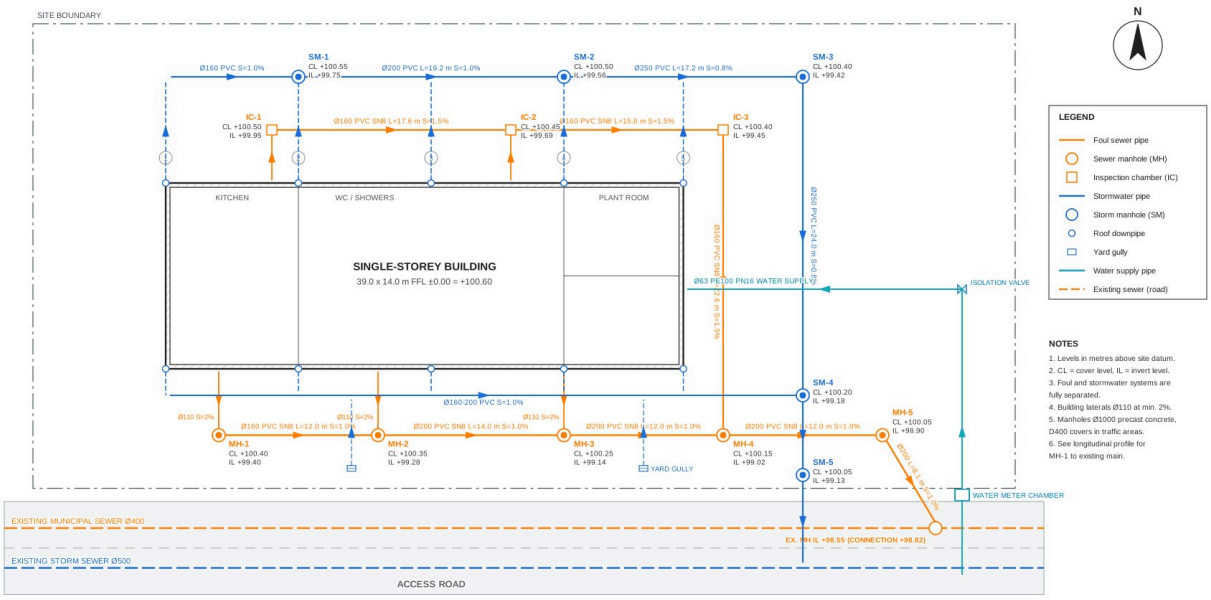
Dining hall ventilation plan: supply units, kitchen extract fans and hoods, duct sizes, air volumes and diffuser layout.



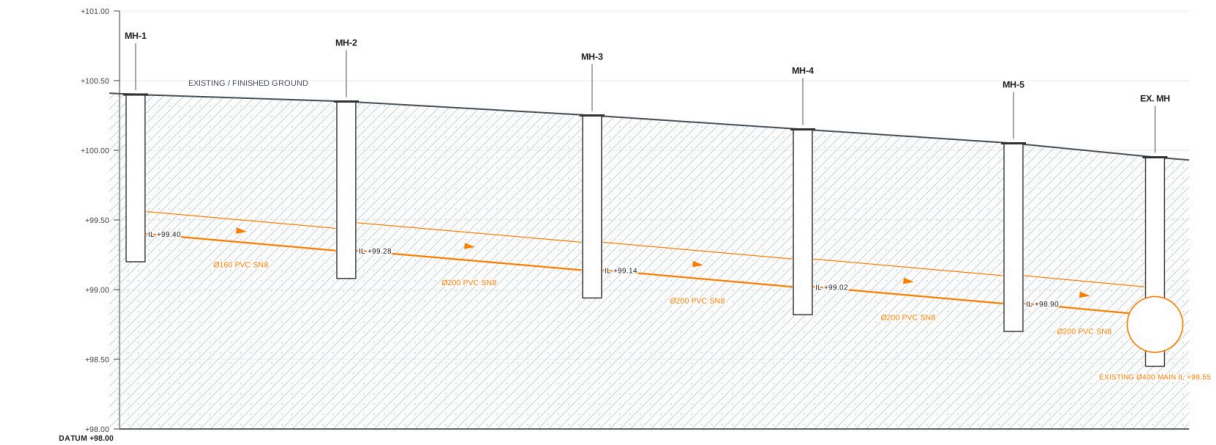
Technical room HVAC layout: indoor and ceiling cassette units, supply and exhaust fans with controllers, motorised and fire dampers, outdoor units and refrigerant lines.



Ventilation flow diagram: AHU with heat recovery, supply and extract air volumes, duct sizes, fire dampers and kitchen extract. Example drawing prepared by our team.



Site sewer, stormwater and water supply plan: manholes with cover and invert levels, pipe sizes and slopes, connections to the public networks. Example drawing prepared by our team.



CHAINAGE (m)	0.00	12.00	26.00	38.00	50.00	58.06
GROUND LEVEL (m)	100.40	100.35	100.25	100.15	100.05	99.95
INVERT LEVEL (m)	99.40	99.28	99.14	99.02	98.90	98.82
DEPTH TO INVERT (m)	1.00	1.07	1.11	1.13	1.15	1.13
PIPE		Ø160 PVC	Ø200 PVC	Ø200 PVC	Ø200 PVC	Ø200 PVC
LENGTH / SLOPE		12.00 m / 1.0%	14.00 m / 1.0%	12.00 m / 1.0%	12.00 m / 1.0%	8.06 m / 1.0%

SEWER LONGITUDINAL PROFILE: MH-1 TO EXISTING MAIN

H 1:250 / V 1:50 | EXAMPLE DRAWING PREPARED BY EBY

NOTES

1. Horizontal scale 1:250, vertical 1:50.
2. Pipes on 150 mm granular bedding.
3. Min. cover 0.80 m to pipe crown.
4. Levels in metres above site datum.
5. Connection to existing main by approved saddle or drop.

Sewer longitudinal profile from the first manhole to the existing main, with ground and invert levels, depths, pipe sizes and slopes. Example drawing prepared by our team.

07 Electrical and automation engineering

Electrical design for buildings, technical rooms and modular units, from switchboards and single-line diagrams to lighting, earthing and the automation of HVAC and fire protection systems.

Electrical design projects
Power and lighting projects for buildings, technical rooms, e-houses and modular units.

Single-line and three-line diagrams
Single-line and three-line diagrams for power distribution and switchboards.

Lighting calculations
Normal and emergency lighting calculations and luminaire layouts.

HVAC and fire automation
Automation engineering for HVAC and fire protection systems: control logic, interfaces and control panels.

Switchboard design
LV switchboard and distribution board design, layouts and equipment selection.

Earthing and lightning protection
Earthing system design and lightning protection to the applicable standards.

Material selection
Cable, protective device and equipment selection with technical specifications.

Engineering and consultancy
Design review, technical support and consultancy throughout the project.

Deliverables: Electrical layouts, single-line and three-line diagrams, switchboard drawings, lighting and cable calculations, material lists

08 Fire detection and suppression systems

Design of fire detection and clean agent fire suppression systems for technical rooms, e-houses, data centres, control rooms and industrial facilities.

FM-200 suppression systems
Agent quantity calculations, cylinder selection, pipe networks and nozzle layouts.

Fire detection and alarm
Detector, manual call point, sounder and beacon layouts, fire alarm panels and zoning.

Flow calculations and room integrity
Pipe network flow calculations, discharge times and enclosure integrity requirements.

Novec 1230 suppression systems
Clean agent system design for electrical rooms, data centres and control rooms.

Release and control
Manual release and abort stations, warning signs and interfaces with HVAC shutdown and dampers.

Deliverables: Detection and suppression layouts, agent quantity and flow calculations, riser and cause-and-effect diagrams, material lists

09 Project management and consultancy

Design management and technical support from concept to handover.

Design management
Programme, deliverables and coordination between disciplines.

Site support
Owner's engineer and site supervision support.

Technical review
Independent review of designs and submittals.

Deliverables: Review reports, schedules, site reports

The team

Professionals across civil, mechanical and electrical engineering, architecture and technical drafting, who have worked together for years on large-scale projects of corporate firms.

Project Manager
Civil Engineer

Design management, client coordination and the interfaces between all disciplines.

Structural Design Engineers
Civil Engineers

Steel, modular and concrete structures, structural analysis, connection design and calculation reports.

HVAC Design Specialist
Mechanical Engineer

Heating, cooling and ventilation design, load calculations and air distribution.

Fire Detection and Suppression Engineer
Mechanical Engineer

Fire detection and alarm systems, FM-200 and Novec 1230 clean agent suppression.

Mechanical Installations Engineer
Mechanical Engineer

Hot and cold water, wastewater and drainage installations and site infrastructure.

Electrical and Automation Engineers
Electrical and Electronics Engineers

Power and lighting design, switchboards, earthing and lightning protection, HVAC and fire automation.

Architect
Architect

Architectural details, construction drawings, sections and material specifications.

Technical Drafter
Civil Engineering Technician

Preparation of technical, construction and fabrication drawings.

How we work

Clear scope, fixed deadlines, traceable revisions.

1 **Send us your documents**
Drawings, models, specifications or just a brief. We are happy to sign an NDA first.

2 **Scope and proposal**
Within 2 working days you receive a scope, schedule and fixed-price proposal.

3 **Design and coordination**
One project coordinator manages all disciplines. You get interim submissions and a single list of open questions.

4 **Delivery and revisions**
Drawings, reports and models are delivered in your formats. Revisions within scope are included.

Confidentiality
Your documents are used only for your project. NDAs signed on request.

Codes and standards
Eurocode, AISC, SBC (Saudi Building Code), NFPA, IEC, ASHRAE and local codes on request.

Time zones
Based in Türkiye (GMT+3), overlapping working hours with Europe and the Gulf.

Engineering | Design | Consultancy

Let's talk about your project

Tell us briefly about your project. We reply within one working day.

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