COMPANY PROFILE

Wiecon is an internationally active consulting company with technology driven expertise.

The design of bridge structures represents a mixture of sensitively integrated designs, advanced technologies and past experiences.

Here are just a few of our projects representing our expertise in Heavy Lifting Design.

Key Projects for Heavy Lifting Design.
Please refer our webpage for further references.

- Izmit Bay Crossing, South Approach Viaduct, Turkey.
- Golden Horn Metro Crossing Project, Turkey.
- Linkou Power Plant Renewal Project, Taiwan.
- Korабенъя Fairway Cable Stay Bridge, Russia.
- Petrovsky Fairway Cable Stay Bridge, Russia.

Wiecon has been involved in many projects covering all types of bridges and services and is proud to present our outstanding capabilities and achievements in bridge engineering.

Wiecon has its main office in Taipei, Taiwan with branch offices located in Hong Kong & Indonesia.
Core Services. All Services Provided By Wiecon.

Bridge Design Services

- Feasibility Studies & Expert Advice
- Suitability of Construction Techniques
- Preliminary Design of Bridges & Viaducts
- Detailed Design of Bridges & Viaducts
- Value Engineering
- Drainage Design
- Outfitting Design & Coordination
- Interface Design & Coordination
- Supervision Services

Equipment Design Services

- Movable Scaffold System Equipment
- Precast Segmental Erection Girders
- Precast Segmental Moulds
- Self Climbing Formwork
- Balanced Cantilever Equipment
- Heavy Lifting Equipment
- Quality Assurance & Commissioning

Construction Engineering Services

- Programming & Scheduling
- Quantity Surveying
- Claims Management
- Construction Stage Calculations
- Major Temporary Works Design
- Planning of Erection Methods
- Shop Drawings

Bridge Maintenance, Monitoring & Simulation Services

- Health, Safety & Structural Monitoring
- Damage & Health Assessment
- Risk Inspection & Assessment
- Repair Proposals & Studies
- Strengthening of Bridges
- Proposals & Design Supervision
- Structural Component Simulation
- Cost Optimization
- Rolling Stock Analysis
- Simulation of Special Structures
- Simulation of Forces of Nature
Heavy Lifting Design

Bridge Design Services

Core Services. All Services Provided By Wiecon.

Major Temporary Works Design Services
- Temporary Works Steelwork Design
- Preliminary Design
- Detail Design
- Quality Assurance and Commissioning

Project Management Services
- Construction Management
- Site Supervision
- Installation & Commissioning
- Project Management
- Cost & Schedule Control
- Development Planning & Studies
- Environmental Management
- Quality Management

Bridge Design Methods
- Cable Stayed Bridge Design
- Extradosed Bridge Design
- Precast Segmental Girder Design
- Suspension Bridge Design
- Incremental Launching Methods
- Full Span Launching Methods
- Movable Scaffolding Bridge Design
- High Speed Rail Bridges
- Balanced Cantilever Bridge Design
- Advance Shoring Construction Method
- Arch Bridge Design
- Casting Yard Design

Checking Engineering Services
- Validate Design Concept & Criteria
- Compliance with Project Requirements, Relevant Standards, Specifications, & Statutory Requirements
- Applicable & Accuracy of Computer Program Models
- Calculation Checks For Superstructure & Substructure
- Practicality & Constructability Checks, Value Engineering Checks
Heavy Lifting Design

Bridge Design Services

Services Provided to Consultants

Bridge Designs
- Feasibility Studies & Expert Advice
- Suitability of Construction Technique
- Suitability of Bridge Structure
- Preliminary Design of Bridges and Viaducts
- Detail Design of Bridges and Viaducts
- Value Engineering
- Outfitting Design & Coordination
- Interface Design & Coordination

Simulation
- Structural Component Simulation to Optimize Costs
- Rolling Stock Analysis for High Speed Rail Structures
- State of the Art Simulation of Special Structures
- Simulation of Forces of Nature

Other Services
- Drainage Design
- Wind Engineering
- Soil & Structures Interaction
- Scour Protection
- Traffic Forecast & Studies
- Earthquake Engineering
- Bridge Dynamics
- Structural Health Monitoring
- Condition Assessment
- Project Management
Heavy Lifting Design
Bridge Design Services

Services Provided to Contractors.

**Construction Engineering**
- Programming & Scheduling
- Quantity Survey & Claims Management
- Construction Stage Calculations
- Major Temporary Works Design
- Planning of Erection Method
- Fabrication Drawings
- Shop Drawings

**Equipment Design**
- Movable Scaffolding System Equipment
- Precast Segmental Erection Girders
- Precast Segment Yard Planning & Layout
- Precast Segment Mould
- Self Climbing Formwork
- Balanced Cantilever Equipment
- Heavy Lifting Equipment

**Other Services**
- Project Proposals
- Value Engineering
- Quality Assurance & Commissioning
- Equipment Fabrication Supervision
- Site Supervision Services
Services Provided to Owners.

Bridge Designs
- Feasibility Studies & Expert Advice
- Suitability of Construction Technique
- Suitability of Bridge Structures
- Preliminary Design of Bridges and Viaducts
- Detail Design of Bridges and Viaducts
- Value Engineering
- Outfitting Design & Coordination
- Interface Design & Coordination

Construction (Project) Management
- Construction Management & Site Supervision
- Installation & Commissioning
- Project Cost Estimation
- Cost & Schedule Control
- Development Planning & Services
- Environmental Management & Engineering
- Quality Management

Other Services
- Independent Checking Engineering
- Bridge Health Safety & Structural monitoring
- Damage & Health Assessment
- Risk Inspection & Assessment
- Repair Proposal & Studies
- Strengthening of Bridges
Izmit Bay Crossing, South Approach Viaduct, Izmit, Turkish republic

Heavy Deck Span Lifting & Incrementally Launched Steel Freeway Bridge Deck

Client:
Nurol Insaat ve Ticaret A.S. Turkish Republic, MegaYapi Construction & Trading Company, Turkish Republic.

Project:
Izmit Bay Crossing, South Approach Viaduct, Izmit, Turkish republic.

Services:

Maximum Lifting Capacity:
2400 Tons (Per span. Total of two spans lifted)

Background:
The South Approach Viaduct (SAV) provides the access to the main suspension bridge, which crosses the Izmit Bay between Dil Iskelesi and Hersek in the Turkish Republic. The South Approach Viaduct is 1376.4 meters long (1.38km) and it has a maximum span of 136 meters. The tallest pier is approximately 50m in height. The deck consists of a double steel box girder with a width of 35.93m. The deck includes 6 lanes of traffic (3 lanes in each direction), 2 sidewalks and 2 emergency lanes.
Golden Horn Metro Crossing Project, Istanbul, Turkish Republic

Istanbul Metro MRT Four Rail Bridge Crossing over the Golden Horn Inlet

Client: 
Astaldi Gulermak Joint Venture, Turkish Republic

Project: 
Istanbul Metro, Golden Horn Crossing Project.

Services: 
Lifting Equipment Detail Design, Major Temporary Works Design. 
Swing Bridge Deck Segments Heavy Lifting. 
Construction Engineering & Maintenance Gantry Detail Design.

South Concrete Approach Viaduct: 
17+25+25+42+32+27.9 meter spans. (168.9m total).

Steel Swing Bridge: 
50+70 meter spans. (120m total).

Steel Cable Stay Bridge: 
90+180+90 meter spans (360m total).

North Concrete Approach Viaduct: 
27+36+36+36+36+45+28.5+23.5 meter spans (268m total).

Maximum Lifting Capacity: 
250 Tons (Swing Bridge Deck Segments)

Background: 
Golden Horn Metro Crossing Project, Istanbul, Turkish Republic. Swing Bridge Lifting Equipment Design. 
The swing bridge forms part of the Golden Horn Metro Crossing across the Halic, Istanbul.

The bridge was constructed in segments using the unbalanced cantilever method with an induced counterweight applied during the final stages. 

The swing bridge has a span arrangement of 50m+70m giving a total length of 120m.

The maximum weight of a segment lifted is approximately 220 tones including the two footbridges that are attached to each side of the deck.
Heavy Lifting Design

Bridge Design Services

Heavy Lifting Equipment Design Key Projects

Linkou Power Plant Renewal Project, Taiwan Power Company, Linkou, New Taipei County, Taiwan.

Client:
Kung Shin Construction, Taiwan.

Project:
Linkou Power Plant Renewal Project, Taiwan Power Company, Linkou, New Taipei County, Taiwan.

Services:
Steel Roof Lifting Equipment Design & Climbing Formwork System Design.

Maximum Lifting Capacity:
600 Tons per Silo Roof.

Background:
Linkou Power Plant Renewal Project, Taiwan Power Company, Linkou, New Taipei County, Taiwan.

The project consist of 10 new coal storage silos that are to be constructed as part of Taipower’s continuing upgrades to its power plants.

Each silo has an inside diameter of 46m.

The external concrete wall of the silos vary from 1.6m thick at the base to 0.6m at the top. The roof consists of an inclined steel truss system lifted into position as one unit. The total height of each silo is 72m from ground level to top of roof level.
The Korabelny Fairway Cable Stay Bridge.  
Western High Speed Diameter Project, St Petersburg, Russian Federation.

Client:  
ICA Construction & MegaYapi

Project:  
The Korabelny Cable Stay Bridge

Services:  
Construction Engineering.  
Deck Erection Equipment Heavy Lifting Design.  
Specialist Consultant & Site Supervision.

Maximum Lifting Capacity:  
205 Tons

Background:  
The WHSP project is a new multilane motorway that runs from the south to the north and connects the St. Petersburg ring road with the seaport area, Kurortny district, Vasilievsky Island and the Scandinavian motorway. The total length of the new motorway is 47km.

Korabelny Cable Stay Bridge.  
Spans: 150m+320m+150m = 620m Total Length.  
Pylon height: 125m. Outer Concrete Pylons.  
Deck Width: 39m x 2.7m depth. Steel Composite Deck.  
Bridge Under Clearance: 40m.

Construction of the two pylons completed
The Petrovsky Fairway Cable Stay Bridge.
Western High Speed Diameter Project, St Petersburg, Russian Federation.

Client:
ICA Construction & MegaYapi

Project:
The Petrovsky Cable Stay Bridge

Services:
Construction Engineering.
Deck Erection Equipment Heavy Lifting Design.
Specialist Consultant & Site Supervision.

Maximum Lifting Capacity:
130 Tons

Background:
The WHSP project is a new multilane motorway that runs from the south to the north and connects the St. Petersburg ring road with the seaport area, Kurortny district, Vasilievsky Island and the Scandinavian motorway. The total length of the new motorway is 47km.

Petrovsky Cable Stay bridge.
Spans: 110m+240m+110m = 460m Total Length.
Pylon height: 124m. Central Concrete Pylons.
Deck Width: 48m x 2m depth. Steel Composite Deck.
Bridge Under Clearance: 25m.

Construction of the two pylons and side span piers already completed.

Deck Segment Lifting & Erection