Industrial Building

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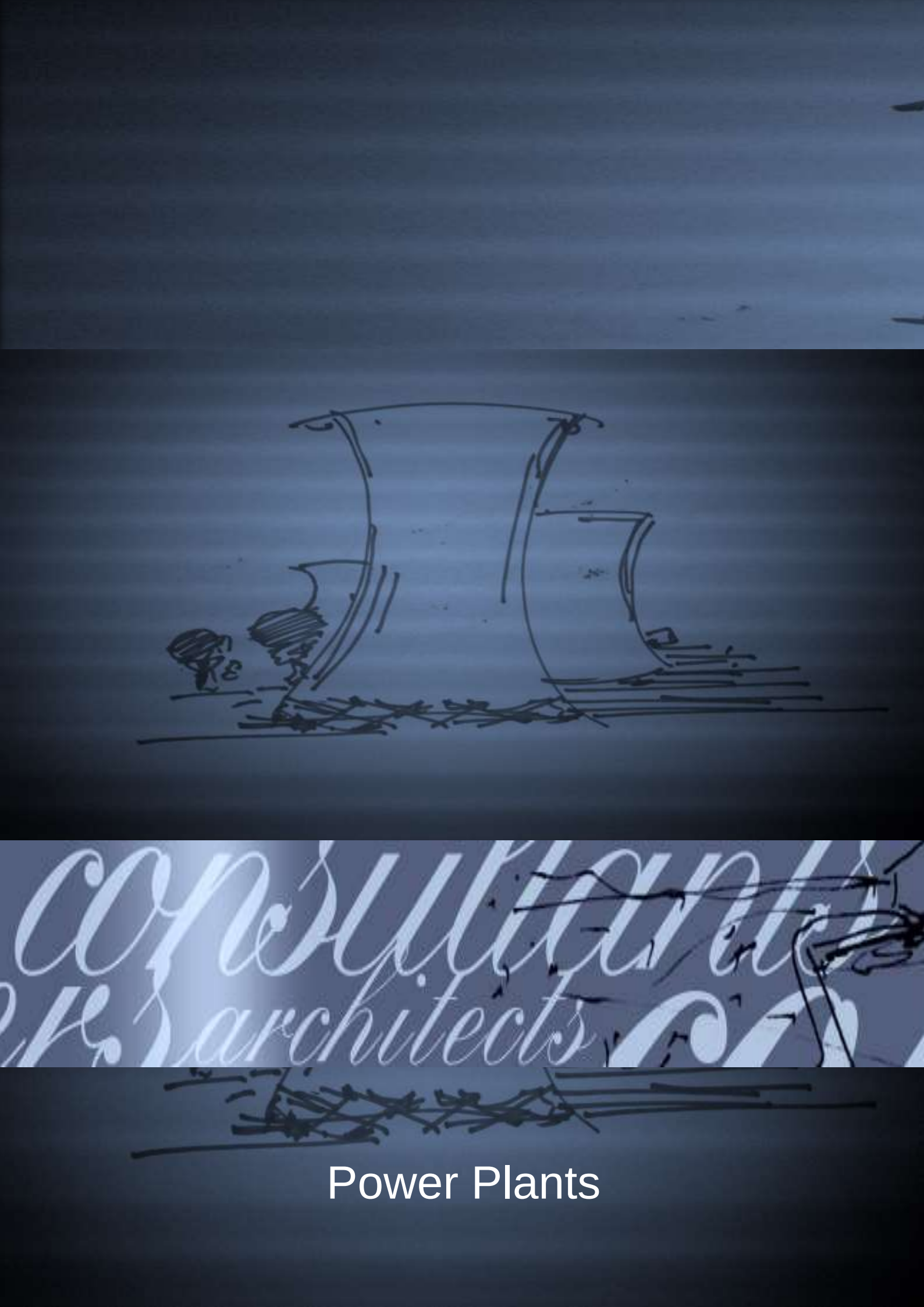
Engineering INC.



Power Plants

We work closely with our clients to provide sustainable industrial investments

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Power plants

Modern power plants running on fossil fuels transform primary energy sources, such as coal, oil, gas as well as industrial residues and municipal waste, into heat, steam or electrical energy.

BIR provides its demanding customers with services such as technical and economic pre-feasibility studies, tender design for power plants.

The facilities include:

- Power plants and combined heatting and power plants (gas, oil, coal, biomass and residues)
- Gas turbine facilities, combined gas and steam turbine plants
- Industrial power plants, combined heat and power plants, small plants

Ankara Natural Gas Combined Cycle Power Plant Ankara / Turkey / 2001Client : Va-Tech - Yüksel Construction Co. Consortium.

770 MWa Power plant with two gas and one steam turbines. Plant includes Machine Hall, Electrical Annex Building, Demineralisation Building, Cooling Tower, Cooling Tower Pump House, Heat Recovery Steam Generator, Fire Fighting Pump House, Piperacks and cable trenches. Construction period is 26 months (95% in the first 12 months)

Ankara Natural Gas Combined Cycle Power Plant/Turkey/2001 Client : Va-Tech - Yüksel Construction Co. Consortium.

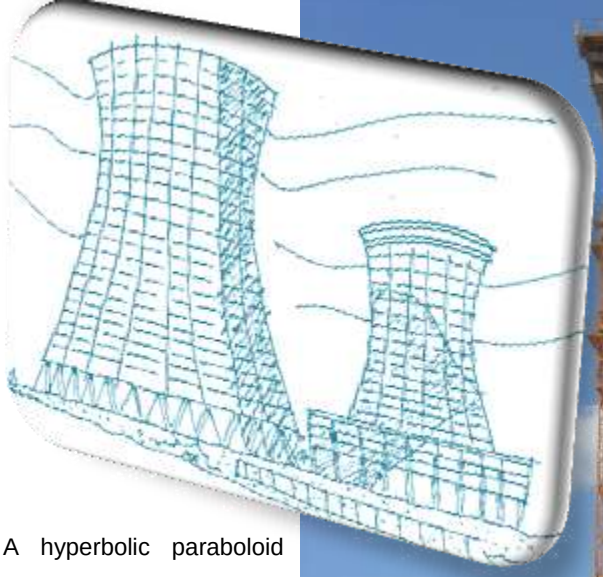
POWER PLANTS

127 MWa Power plant with two gas and one steam turbines. Gas Turbine area consists of a number of pedestals for different types of mechanical equipment. Steam Turbine is placed in a steel building of 250 ton in weight. The design work includes Electrical Annex Building, Demineralisation Building, Heat Recovery Steam Generator, Air Cooled Condensator, Gas Insulated Substation, Diesel and Water Tanks, Piperacks and cable trenches. Additionally, the road and the drainage design have been prepared.

Kemalpaşa Natural Gas Combined Cycle Power Plant/Turkey/2004 Client : Akenerji Co.

POWER PLANTS

Kemalpaşa Natural Gas Combined Cycle Power Plant / Turkey/2004 Client : Akenerji Elektrik Üretimi Otoprodüktör Grubu A.Ş.



A hyperbolic paraboloid shell structure supported by columns over a ring foundation constructed as natural draft cooling tower of the sulphure removal unit of the refinery. The height of the tower is 46.80m. The base diameters is 35.66 m, the throat diameters is 34.66 m. The thickness of the sell varies from 20 cm to 40 cm along the height of the tower.

Demin Water Building

Kırıkkale Refinery Sulphure Removal Unit Construction, Natural Cooling Tower/Turkey/2005
Client : TÜPRAŞ/Alarko Co.

Refinery

Kırıkkale Refinery Sulphure Removal Unit Construction, Tank Farms/Turkey/2005 Client : TÜPRAŞ

TPP (Turbo Power Plant)

Kırıkkale Refinery Sulphure Removal Unit Construction, /Turkey/2005 TPP Building Extention

Rafineri

Plants & Factories

Our strength comes from our engineers' experience >

Plant and Factory design planning includes planning works regarding extension and modernization of existing production facilities as well as complete new planning of manufacturing sites. We offer our services according to customer requirements beginning with project idea over feasibility studies, planning and supervision of plant construction up to commissioning. This includes the following focal points.

Phase 1: Definition of basic and boundary conditions.

Phase 2: Elaboration of new building/modernization variants, evaluation and development of preferred variant.

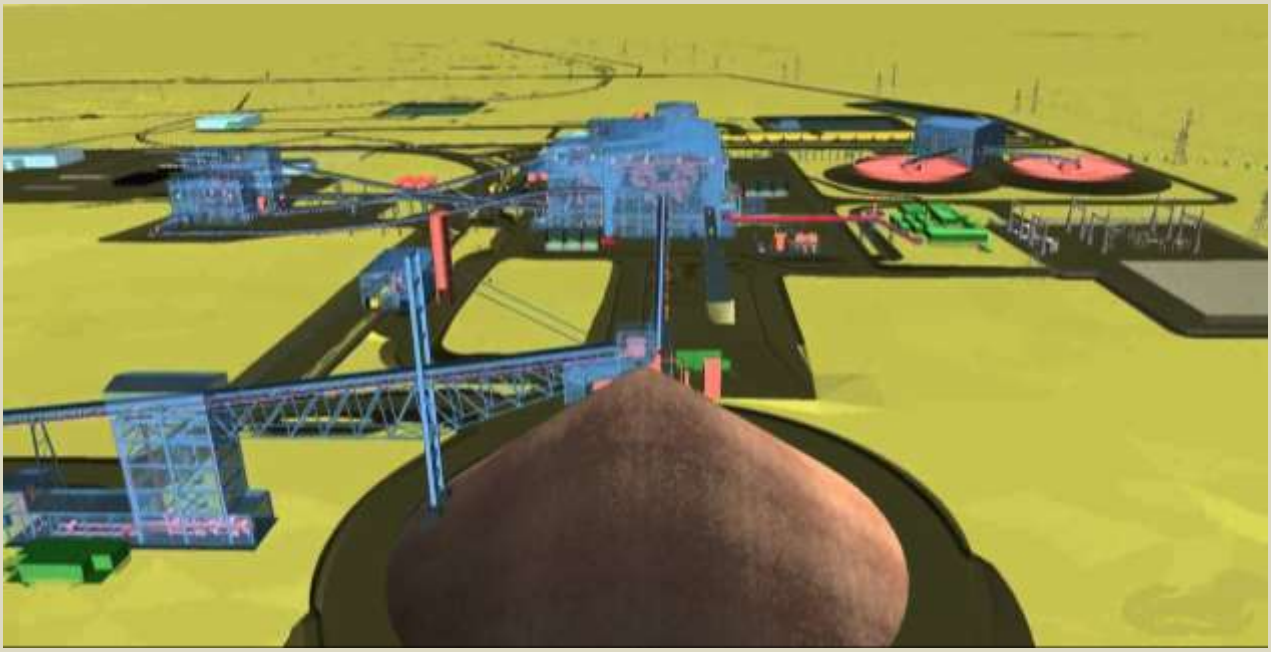
Phase 3:Development of new building-/modernization concept.

Phase 4:Three dimensional presentation

Phase 5: Permit planning

Phase 6: Invitation to tender, evaluation of quotations and proposals for awarding of contracts

Phase 7: Project management



BOZSHAKOL COPPER MINE PLANT, KAZAKHISTAN
Project period: 2012 –Ongoing
Invesment Cost: 1,800,000,000 USD
Project scope
The project has a capital cost in the region of $1.8 billion, and is being funded from an existing $2.7 billion financing facility provided by the China Development Bank and Samruk-Kazyna.
Bozshakol will have a production life of over 40 years, with average output of 75 kt of copper in concentrate per annum, although the production will average 100 kt for the first 14 years. Bozshakol is the largest single mine development in Kazakhstan by both volume and value and will employ around.
• 220 km north east of the capital Astana.
• A new rail spur to the site will be built from the existing Bozshakol railway station to provide transport for supplies together with a new road that will connect the site to the existing Astana – Pavlodar road.
• Power will be supplied from the 50% owned power plant at Ekibastuz GRES-1 located east of the project site.
• The water supply will be provided from the Satpayev Canal located approximately 25 km east of Bozshakol.
Scope of BIR: Plannning and Civil, structural, infrastructural, mechanical and electrical detail design of non-process buildings, maintainance workshops, warehouses, permanent camp and fuel facility and shop drawings of process buildings.
Bozshakol mineral resource

Tonnage (Mt)	Copper grade (%)	Gold grade (g/t)	Silver grade (g/t)	Molybdenumgrade(%)
1,173	0.35	0.14	0.88	0.004

Aktogay Copper Mine Plant, KAZAKHISTAN
Project period: 2012 –Ongoing
Project scope
The Aktogay deposit will support a large open-pit mine and concentrator project located in the Ayoguz region in the east of the Republic of Kazakhstan.
The deposit has an estimated reserve of approximately 5 million tons of copper with a forecast annual production of 25 000 tons of copper concentrate and a mine life of 40 years. The project has a capital cost of around $2 billion.
BIR will deliver detail engineering and consultancy services of architectural, civil, mechanical and electrical works of the Copper Plant for Non Process Buildings and Permanent Camp.

Project : Design and Construction of Eight wheat Silo Plants in Turkmenistan

Period: 2012-2015

Wheat Silo Plants are planned to be constructed at 8 different locations in Turkmenistan. 6 plants have a total capacity of 50,000t and 2 of them have 30,000t total capacity. Each plant will be constructed on 5Ha area. Plants with 50,000t storage capacity have railway connections. Process units are composed of Silo Units, Elevator Tower (100t/hr), Dryer Unit, Cleaning & Weighing Unit, Wet Wheat Silo Bins, Waste Silo Bins, Tip-up Platform, Conveyor systems, Truck & Train Loading – Unloading Units, Truck & Train Weighbridges and Screed Processing structure. Non-process structures are Admin, Laboratory, Truck Scale, Security, Depot Buildings, Perimeter Walls, Pump Station, Waste water Tanks, Fire Water & Potable Water tanks, Shelters and paved areas.

GYPSUM PLANT

Rigips Kırıkkale Gypsum Plant/Turkey/2007 Client : Saint Gobain

Kırıkkale Gypsum Plant has been designed to produce powder gypsum with a daily capacity of 450 ton/day. A gypsum board production facility proposed for future. The main production tower is about 36 m high structural steel building with approximately 600 tonnes of steel. The warehouse building is 4500 sqm prefabricated concrete building with railway access along the northern site. Plant has been designed with all civil and structural facilities including roads, railroad connection to main station, drainage, waste water treatment, landscape, water tank, garbage collection, rock crusher area, offices and weighbridges as well as the building systems electrical and mechanical works.

Plants

Coal Grinding Building

Buxton Lime Industries Ltd., Replacement Cement Plant/ Buxton-Mancheste / England/2002
Client : F.L.Smidth A/S & Monberg & Thorsen A/S

Cement

Preheater for Rotary Kiln/Turkey/22003 **Client :** Eskişehir Magnesit Co.

Derince Port Conveyors- Turkey

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