

COMPANY PROFILE



BARSU

COMPANY DETAILS

Organisational Details of BAR-SU		
I.	Name of the Organization	BAR-SU PROJE MÜHENDİSLİK MÜŞAVİRLİK TİCARET A.Ş. (BAR-SU DESIGN ENGINEERING CONSULTANCY TRADE INC.)
II.	Details of the Organization	<ul style="list-style-type: none">• Address of the Registered Office: Çetin Emeç Bulvarı, 1314. Cadde, No:10/9 Çankaya, ANKARA/TURKEY• Telephone : +90 312 472 78 10• Facsimile : +90 312 472 78 11• Website : www.barsu.com.tr• Email: barsu@barsu.com.tr
III.	Information about Organization	<ul style="list-style-type: none">• Year of Establishment: 1996• Status of the Organization: Incorporated Company
IV.	Name and designation of the person authorized	<ul style="list-style-type: none">• Name : Mehmet Harun Askeroğlu• Designation : Board Member• E-mail : mhaskeroglu@barsu.com.tr• Contact Number: +90 312 472 78 10 - 143
V.	Number of Personnel	42
<p>BAR-SU has become particularly expert in the design, engineering and management of hydraulic related projects involving storage, irrigation and energy system developments, water distribution enterprises and related facilities. These facilities include: Feasibility Studies, Planning and Final Design of Dams and HEPPs (Hydro-Electric Power Plants), Large and Small Scale Irrigation and Drainage Systems, Water Supply and Distribution Systems, Diversion and Storage of Small and Large Off-Stream Dams, TBM's, Conduits, Very Large Pumping Stations, 2D Flood Modelling and Risk Assessments.</p> <p>Our consultant services are composed of a number of technical and resource management areas in which we have unique skills. Through our technically innovative as well as broad expertise, we help our clients to reach their technical, economic and environmental goals.</p> <p>BAR-SU is built on loyalty to our clients, to and from our employees, and to and from our suppliers. As a result, our clients have faith in us, our employees provide good service, and we receive unparalleled support from our employees.</p> <p>BAR-SU's computer center equipped with high capacity hardware facilities and own powerful and international accepted software's, capable of solving all related engineering problems, such as computational techniques and simulating physical processes.</p>		

BAR-SU is an engineering and consulting company with expertise specialty in civil, geotechnical, and structural analysis and design. As a company that specializes in designing and managing large hydraulic engineering works, BAR-SU has become one of the leading firms of Turkey called upon for hydraulics related issues. Our expertise covers a broad spectrum of services, from conceptual planning and feasibility studies, to the preparation of final designs and construction drawings for dams and water resources, water supply and power generation design projects.

BAR-SU is distinguished as one of the most reputable companies in the Turkish market. BAR-SU's staff consists of registered professional engineers trained in hydraulic, geotechnical and structural engineering, environmental management as well as of experts in project management, cost estimating specialists and administrative personnel participated main water related large projects of Turkish Republic and mainly retired from miscellaneous departments of the General Directorate of State Hydraulic Works of Turkey (DSİ).

DAM ENGINEERING:

Our experts have experience with all relevant types of dams, such as:

- * Concrete gravity dams
- * Earth and rockfill dams
- * Concrete faced rockfill dams (CFRD)
- * Roller compacted concrete (RCC) dams

We are skilled in optimising reservoir storage schemes both technically and economically for specific purposes. Our vast experience allows us to define the most applicable hydraulic system with associated structures and to develop an optimal concept in regards to underground structures such as tunnels, shafts, powerhouse caverns, and access structures.

The high quality of our services based on experience and special attention towards operational needs during the design phases has often been recognised by our clients. This allows for sustainable projects which meet the technical, operational and economical expectations. This provides our clients added value and sustainable solutions for their investments. Our reservoir studies include:

- Upstream-downstream observed data collection
 - Upstream-downstream water usages at the present time and planned in the near future.
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 - Optimization according to water-supply and sediment calculations. Water potential analysis,
 - Flood discharges, flood routings, flood-water levels and optimization to the dam types accordingly.
 - Installed capacity and firm-second energy generation calculations.
 - Hydromechanical and electromechanical equipment
 - Economical and financial analysis according to the local market prices and local unit prices, local available materials that suits the site conditions.
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- Material flow analysis.
- Access roads.

IRRIGATION AND DRAINAGE:

We provide leading consultancy services aimed at improving irrigation, drainage and water resources management. Our teams have been involved in many of the major irrigation developments over the past 25 years, encompassing all forms of irrigation and rural development. BAR-SU fulfilled design of over **600,000 ha. (six hundred thousand hectares or 1.5 million acres)** of main irrigation and drainage networks in Turkey. Site surveys cover water requirement and crop pattern according to Penman-Monteith, classification of soil types, determining the surface water and groundwater capacity of the area.

The ranges of services given in this discipline are as follows:

- Diversion weirs and structures, headworks and/or river diversion outlets design, pump stations, TBM's, intake structures.
- Conveyance intake canals, tunnels, flumes and water transmission pipelines design
- Detail design of main and lateral irrigation network and related structures, regulated or non-regulated open channels
- Design of pressurized irrigation systems such as sprinkler, drip, and bubbler irrigation
- Network simulations, design of auxiliary structures (siphon, galleries, hydrant, air-relief valves, AVIS and AVIO type control structures, energy dissipators etc.)
- Design of farms in consistent with land cadaster maps and ownerships
- On-farm development works in agricultural areas
- Rehabilitation and renovation of irrigation schemes
- Stakeholders participation in water use and irrigation planning
- Subsurface drainage design and soil leaching
- Runoff collecting system design of flood plains and surface drainage

RIVER ENGINEERING AND HYDRAULIC STRUCTURES:

Rivers are complex systems which require careful interdisciplinary assessments and experience for the design and implementation of hydraulic structures, such as weirs or hydroelectric power plants.

- Weirs and intake structures
 - Data collection in terms of hydrological, geological, ecological
 - River engineering, hydrology, Hydro-Electric potential
 - Erosion and slope protection
 - Spillways
 - Bottom outlets
 - Water conveyance systems
 - Fish pass systems
 - 2D hydraulic modelling
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Presenting economically sound concepts and meeting high ecological standards are every day commitment for BAR-SU. We place special focus on:

- Hydrological and geological data assessments
- Economical design flow analysis
- Hydraulic structure engineering
- Hydraulic analysis
- Proven river diversion concepts
- Elaborated construction phases
- Flood risk management
- Ecological improvement

Choosing BAR-SU as the preferred engineering consultancy means choosing the best solution to meet your specific needs.

GEOTECHNICAL ASSESSMENTS:

We provide these services:

- Fieldworks
- Topography and general geological settings
- Expected subsurface conditions
- Slope stability, groundwater and drainage
- Foundation requirements
- Excavation conditions
- Internal Erosion
- Geological mapping
- Geotechnical investigation (rock Strength and weathering)
- Re-use of site materials for engineered Fill
- Landslide surveys
- Permeability of the reservoir
- Geophysics
- Karst geology
- Rock mechanics

SITE SEISMICITY INVESTIGATIONS :

Our services includes the items below:

- Data collection from site, agencies and project owners
 - Fieldworks and aerial photograph
 - Interferometry
 - Seismic hazard maps (according to deterministic and probabilistic methods)
 - Seismic risk evaluation studies
 - Site compatible spectral accelerations
 - Synthetic time-history values
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ENGINEERING SOFTWARE'S:

BAR-SU provides the following services with the expert team members in the areas of the CAD and engineering software:

- AutoCAD automation applications with AutoCAD.Net
- AutoCAD custom object design with ObjectARX / ObjectDBX
- SAP2000 plugins with SAP2000 API
- Windows based engineering application and add-in design
- Custom and AutoCAD independent CAD application development with dwg, dxf support

Some of our software's comprises the following items:

- 2D/3D dynamic analysis
- Spillway flood routing
- Spillway discharge channels
- Conduit, tunnel and culvert reinforcement calculations
- Tunnel hydraulics
- Financial reports and consequences of the designs
- Linear and non-linear optimization of pressurized irrigation networks

Some of the international software licenses that BAR-SU holds are:

- MIDAS GTS NX
- DIANA
- Phase
- Slope-W
- Seep-W
- Sigma-W
- Quake-W
- Sap-2000
- AutoCad / NetCad / Civil-3D
- Cadam
- ARC-GIS

CONSULTANCY SERVICES :

Our consultancy services covers the items below:

- Project management
 - Project supervision
 - Construction supervision
 - Temporary and final acceptances
 - Report of application for credit
 - Technical consulting
 - Technical due diligence reports
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BARSU DESIGN ENGINEERING CONSULTANCY TRADE INC.

TECHNICAL ORGANIZATIONAL CHART (Engineer list with regard to sub-disciplines)

