YALÇIN TEKNİK
İNŞAAT MAKİNA MÜHENDİSLİK VE MİMARLIK A.Ş.

ISO 9001

EXECUTIVE SUMMARY

YALÇIN TEKNİK İNŞAAT MAKİNA MÜHENDİSLİK VE MİMARLIK A.Ş.

YALÇIN TEKNİK is an engineering, architectural, consultancy firm, founded in 1969, providing services on local and international platforms, from its 7 story head office located in Ankara.

Since its establishment, Yalçın Teknik has successfully completed 475 stand-alone projects, of which 224 have been conducted since 1990. Yalçın Teknik has vast experience and expertise in pipeline engineering, jet fuel storage and dispensing facilities, pump stations. pipelines, valve stations and filter stations, loading / unloading port facilities, off-shore terminals, airfield design projects, (including runway, taxiway, loops, aprons, lighting, main electrical supply and distribution, emergency power, air navigational systems (TACAN, ILS, GCE, IES, etc.) and instalments like control tower, hangars, workshops, administrative and social facilities), wharf, jetty, dams, piers, seaports, domestic water storage and dispensing facilities, waste water treatment plants, communication systems, microwave, HF, VHF, UHF radio equipment, industrial buildings, factories, environmental design and landscaping, regional and urban planning, housing projects, bridges, tunnels, highways, underground and above ground hardened or semi-hardened NBC, EMP, EMI, TEMPEST and cryptographic protected war headquarters, geodesic and photogrammetric mapping and evaluation, soil mechanics and tests, seismic and hydrological soil investigations and etc., with its own resources.

TYPES OF SERVICES

When implementing a project, Yalçın Teknik can deliver the following services separately or combined as per clients' requirements and project conducted according to NATO AC/4-D/2261 (Procedures for ICB), World Bank, IDB, EBRD, Asian Development Bank, FIDIC, The Society of American Military Engineers, etc. procedures.

- Pre-Investment Phase
  Determination of the needs and objectives of the projects, technical and economical feasibility studies, site survey and model selection, seismic, hydrological, geotechnical and geological studies, conceptual design, basic engineering, cost and budget estimation
- Preparation Phase
  System designs, detailed engineering, preparation of technical specifications, preparation of tender documents, detailed engineering drawings, evaluation of submitted tenders, preparation of contractual documents.
- Implementation Phase
  Coordination between the client / administration and contractor, supervise the works and control the contract requirements, control the cost overruns and over estimated works, quality control tests, work scheduling and implementation, payments to the contractor, operations and maintenance training, provisional and final acceptance tests

FIELDS OF EXPERIENCES

- **Pipeline Engineering, Petroleum, Oil and Lubricants (POL) Storage**

A/E and supervision services for all kind of Fuel and Water Supply Systems, Petroleum and Domestic Water Pipeline Facilities, Storage Facilities, Loading Facilities, Pump Stations, Pipelines, Valve Stations and Filter Stations, Loading / Unloading Port Facilities, Off-Shore Terminals. During the implementation phase, alternative path study on 1/100.000 scale map, marking the alternative paths on 1/25.000 scale maps, alternative hydraulic profile preperation, performing on-site inspections of alternative paths and performing necessary changes, determining the suitable alternative, perform map study for determined alternative, geological studies, 1/1.000 and 1/2.000 scale pipeline plan and profiles, hydraulic calculations and determining of pipe dia and wall thickness, determining the pump station locations, determining and preparation the detailed drawings for road, river and bridge crossings and deep crossings, preparation of

the cathodic protection project drawings, preparation of the civil, mechanical and electrical project drawings for pump stations, water and power supply studies and preparation of the project drawings are performed.

- **Industrial Facilities**

Within a modern understanding, besides the Planning, Projection and Implementation of the Industrial Facilities, our company is undertaking the coordination mission of all these units, considering that 50 to 120 firms or experts shall take part in these stages.

In the course of time the requirements for the development of an industrial facility, begins with the project idea, advances with feasibility studies, financial consulting, planning, international standards, public legal procedures, project implementation preparations, quality control during the implementation, and reaches the highest point with the building operation. Taking into consideration that the first condition to keep quality under control is the project organisation model, our company, has created an organisation model in the direction of "concurrent design and engineering" concept which is a modern understanding. This model secures the project quality in the aspects of:

- Function
- Technical and Official Standards
- Time
- Investment Cost
- Economic Operation

Our Company by applying the concurrent design and engineering concept has taken important steps in matters like error minimisation, high quality and high productivity. One of the most consequential characteristics of the concept is that while the functioning of the system as a cycle is being provided, at the same time the system is continuously improving and upgrading itself by self-interrogation. Yalçın Teknik is supporting the project design processes from an integrated data processing environment, for such a process-concept relationship to increase the work productivity and quality. Starting from system design and simulation, it is secured that, the data produced and processed during the configuration control, documentation, analysis, engineering data base administration, tests and even after the future production and sales are to be used and shared in the same data processing environment. Therefore, we are

continuously supporting and updating our present design infrastructure with the latest technology instruments.

Due to all these modern approaches our company has undersigned successfully many industrial facilities that are stated in our reference list.

- **Airfields**

Airfield design projects, including runway, taxiway, loops, aprons, lighting, main electrical supply and distribution, emergency power, air navigational systems etc. and instalments like control tower, hangars, workshops and administrative and social facilities. In addition to its past experience, Yalçın Teknik is keen to apply latest technology to its projects as in Afyon case first time in Turkey, all the concrete pavements were constructed (Total of 460.000 sqm. concrete pavement) using slip-form concrete technology that resulted in shorter construction time and higher pavement quality.

- **Communication, Electronics, Air Defence and Navigational Facilities**

- *Communication and Electronics Facilities;* Communication systems, transmitter / receiver stations, fiberoptic cabling, digital exchange boards, HF, VHF, UHF radio equipment, antennas and installations, security and fire fighting warning systems, tele-communication and telephone systems.
- *Air Defence and Navigational Facilities;* GCA platforms, TACAN building installation and equipments, air defence radar building facility (IES) and equipments, Instrument Landing System (ILS) design, microwave, special alarm warning and communication systems, switchboard cable and special antenna systems, signalisation, radar / transmitter stations consulting services.

- **Social Facilities**

Design of Holiday Villages, Housing Projects, Shopping Centers, Environmental Design and Landscaping, Regional and Urban Planning are performed with the latest technology softwares and any kind of structural material (i.e. Reinforced concrete, precast concrete, prestressed concrete, structural steel, space truss, etc.) are taking into consideration during design stage.

- **Infrastructure Facilities**

Commercial Power Supply, Water Storage and Distribution Systems, Sewage Systems, Water Treatment Facilities, Drainage and Irrigation Systems, Bridges, Tunnels, Highways, Piers, Seaports, Connecting and Perimeter Roads, Lighting Systems, Underground and Above Ground Hardened or Semi Hardened NBC, EMP, EMI, TEMPEST and Cryptographic Protected War Headquarters, Ammunition and Mine Storage, Weapon Maintenance and Calibration Workshops, Various Types of Missile and Rocket Storage, maintenance and Repair Facilities, Forward Storage Sites

- **Mapping and Soil Investigation Studies**

Geodesic and Photogrammetric Mapping and Evaluation, Soil Mechanics and Tests, Seismic and Hydrological Soil Investigations, Various Technical and Economical Feasibility Studies

STAFF

Yalcın Teknik technical staff consists of 20 civil engineers, 6 mechanical engineers, 6 electrical engineers, 6 architects and 6 draftsman, all experienced on their disciplines. Lately Yalcin Teknik has introduced **concurrent engineering** concept that, facilitates total project management in its design projects thus enabling better coordination between engineering disciplines and resulting in increased quality in projects conducted. All engineering departments as well as the drafting section uses latest engineering calculation, design and drawing software. In order to deliver its' clients more secure and faster project documents, Yalcin Teknik has invested on its own computer network system and document center and has the equipment of printing, copying and duplicating as well as binding equipment suitable for all types and sizes of paperwork.

KEY PERSONEL

İsmail BAKIŞKAN **:** Deputy General Director of Yalçın Teknik. Construct the largest single parking platform of Turkey as the Project Manager.

Sezai ÇOBANOĞLU **:** Chief of Airfields Department. Completed numerous airfield projects in Turkey

Argun TUNÇ **:** Chief of Transportation Department. Completed numerous transportation projects (i.e. highways, railroads, airfields, etc.) and related feasibility studies.

Mustafa Can MUTİŞ **:** Project Design Engineer of Airfields Department. Supervised numerous airfield projects from beginning stage at NATO / Brussels till final acceptance stage.

Reha ERTÜRK **:** Chief Mechanical Engineer. Designed the largest fuel hydrant system in Turkey at Afyon Airbase

Mehmet BOTAN **:** Chief Communications Engineer. Performed 25 years of service in Turkish Air Force and NATO Headquarters as Communications and Air Defence Expert.

Hasan BERKE **:** Chief Electrical Engineer. Completed numerous airfield lighting and communications projects in Turkey

SOFTWARE AND HARDWARE BEING USED

1. IN-HOUSE SOFTWARES

a.) VDB (Vendor Database)

- A database that contains vendor details, products supplied, QA data, performance history and project historical data
- All projects access the database for vendor lists and address details for enquires and purchase orders
- Bid and purchase order history and products supplied information is automatically transferred from projects to database

b.) BPS (Bid Preparation Software)

- Prepare and process the unit prices before the bidding
- Prepare and calculate the cost estimates
- Archive the unit prices and cost estimates after the bidding

c.) SRS (Specification Reference Software)

- Archive and provide user level access to the technical specifications
- Can be updated due to the changing conditions and needs.

d.) SAS (Drawing Sheet Archive Software)

- Archive and provide user level access to the drawing sheets
- All drawings in company's history is digitised and stored for future reference

e.) CMS (Currency Monitoring Software)

- Monitor all the main foreign currency rates since 1984
- Compare and use the rates in other compatible in-house softwares

f.) PROC (Procurement System)

- Requisition and Purchase Order tracking via planned, forecast and actual dates that dynamically cascade against user defined milestones.
- Continual monitoring of delivery float against Required on Site dates.
- Production of full inquiry and Purchase Order packages utilising a database link to a word processing package, using project defined templates.

- Tracking of enquires issued and bids received.
- Ability to electronically import vendor bid price and delivery data into a dynamic bid analysis facility that includes 'cherry-picking' and currency conversion. Production of a detailed Commercial Bid Analysis.
- Ability to utilise successful bidder data to compile Purchase Orders.
- Total integrity of the Purchase Order with the originating Requisition.
- Currency conversions to a project currency.
- Comprehensive expediting facilities which track items from PO through to receipt on site. The system allows for split deliveries of bulk materials to different fabrication or construction locations.
- Delivery float recalculated against Vendor Latest Promise dates input by Expeditor.
- Exception reports identify slippage against the contract delivery date and required on-site dates.
- Facilities to allow inspection to control the quality of the products fully in accordance with the approved quality plans throughout the manufacture.
- Traffic administration and shipping control for overseas shipments from packaging, through containerisation, transportation and delivery at site.
- Purchase Order commitment and cash flow analysis.

2. LICENCED SOFTWARES

a.) CAESAR II – Pipe Stress Analysis

CAESAR II is the Pipe Stress Analysis standard against which all others are measured and compared. The CAESAR II spreadsheet input technique revolutionized the way piping models are built, modified, and verified. CAESAR II was the first pipe stress program specifically designed for the PC environment. The interactive capabilities permit rapid evaluation of both input and output, thereby melding seamlessly into the "design - analyze" iteration cycle.

CAESAR II incorporates a wide range of capabilities, from numerous piping codes, to expansion joint, valve & flange, and structural databases, to structural and buried pipe modeling, to equipment and vessel nozzle evaluation, to spectrum and time history analysis.

The customization options of CAESAR II have been driven by user requests, code changes, and the need to benchmark older, existing systems and their initial design. Many of these customization options enable newer analysis techniques appearing in current literature.

b.) CADWorx (PIPE, ISOGEN, SANITARY, P&ID, TANK)

The design of CADWorx PIPE targeted ease of use, wide applicability, transfer links to pipe stress, and overcoming the limitations of other piping CAD packages. CADWorx PIPE provides the most efficient tool available today for generating piping drawings. CADWorx PIPE can provide orthographic, isometric, and 3D models.

CADWorx ISOGEN is a "Data Centric" solution for the automatic generation of piping isometrics and is the core technology upon which Alias Limited has founded a number of applications such as I-Sketch, I-Convert, SPOOLGEN and PLANTGEN. These applications tend to be focused towards specific functional tasks and are presented in a format that is intuitive and dedicated to the task in hand. This greatly reduces the time to learn and operate the system providing maximum productivity gains for any organization that generates isometric drawings.

CADWorx P&ID is a powerful, easy-to-use program for creating comprehensive Process & Instrumentation Diagrams (P&ID) for plant design. As an AutoCAD-based program, it uses the latest object technologies from Autodesk (ObjectARX). CADWorx P&ID provides fully automated drafting and editing techniques that save time and ensure consistency and accuracy within drawings.

CADWorx TANK is a comprehensive engineering software program that designs and analyzes oil storage tanks according to the latest API-650 and API-653 codes.

c.) NETCAD

NETCAD is a powerful software system, which can be used to automate, modify, manage, analyse and display geographic data. NETCAD has integrated software packages, which will allow:

- Network Modelling and Creating
- Surface Creation (3D Terrain Models), analysis and display
- Raster Map Georeferencing
- Co-ordinate Geometry and survey data management
- Spatial Data Management

d.) MXROAD

MXROAD is an application constructed of a number of modules to permit the efficient design of a road scheme from the input of the existing ground data through to the production of drawings and reports defining the scheme. Throughout the design, tools are available to permit analysis or visualisation of the design, so that you can check and confirm each step of the designing process.

e.) AutoCAD

AutoCAD 2000 is a general-purpose 3D CAD drafting system to produce high quality multi-discipline engineering drawings. It is a powerful drafting tool, which includes standard drafting features such as lines, arcs, symbols, hatching, dimensioning, etc. and has a number of in-built programming tools such as AutoLISP and Architectural Desktop Suite (Release 3.3). It enables customisation to suit every engineering discipline's requirement.

f.) SAP

SAP 2000 is a general static design system of both steel and reinforced concrete structures. The program provides the user with options to create, modify, analyse and design structural models, all from within the same user interface and an interactive environment in which user can study the stress conditions, make appropriate changes, such as member size revisions and update design without re-analysing the structure.

g.) Xsteel

Xsteel is a 3D modelling software package used for the detailed modelling of steel structures and full 3D-product model of the desired steel structure, including all the relevant information necessary for manufacturing and construction can be created. This product model not only includes the structure's geometry and dimensions, but also all information on profiles and cross sections, joint types, materials, etc.

h.) Probina

Probina Orion 2000 is an integrated software package used for the 3D analysis, design and reinforcement of the columns, beams, shear walls and floors and calculation of the foundations. The program is structured to support the Turkish design codes for the automated design and check of concrete members.

3. PROGRAMS PROVIDED BY VENDORS

a.) Instrument / Process Controls

- Fisher : Instrument and control valve sizing program
- InstruCalc : Instrument engineering and sizing calculations program

b.) Mechanical / Heat Transfer

- DiproMTH : Heat exchange calculation program
- HAP : HVAC systems design program

c.) Electrical

- Captor : Electrical relay and breaker co-ordination program
- ECODial 3 : Power systems distributions design program

- RadSan : Lightning protection systems design program
- Calculux : Lighting systems design
- Lamp83: Lighting systems design

d.) Structural

- RISA : Structural analysis and design program
- EaglePoint : Civil engineering and survey program

4. COPYING/PRINTING UNITS

a.) OCE 9600 DRAFT COPYING AND DUPLICATING CENTER

OCE 9600-C : Computer based black and white AO copying writ, 1-999 each copy number selection, 5 meters of printing velocity/moment, 25% - 400% magnifying and diminishing rate.
OCE 9600-S : Black and white AO scanner unit, 5 m. of printing velocity/moment, 25% - 400% magnifying and diminishing rate. Processing ability of the scanned draft in CAD environment.
OCE 9600-P : Computer based black and white AO plotter unit, image shifting, correcting the tone variations in draft, and converting mirror image feature, having the capacity of archiving 100.000 drafts.
OCE 9600-SP : Folding and package unit, features of folding and packaging in desired number of the printed drafts.

b.) HP 1050 C PLOTTER

A drummer which can print out supported photograph quality coloured prints up to every kind AO sized paper with Jetdirect card.

c.) NASHUATEC CS 506 COLDURED PHOTOCOPIER AND PRINTER

Jetdirect card supported printer and photocopier which can print-out photograph quality, A3 sized 6-each prints in a moment.

d.) NASHUATEC D445 BLACK AND WHITE PHOTOCOPIER AND PRINTER

Jetdirect card supported printer and photocopier, which can print-out A3 sized prints in a moment.

e.) OCE 3055 BLACK AND WHITE PHOTOCOPIER

A photocopier which is able to film automatically the back and front of A3 sized 55 pages and classifies (drilling, piercing, etc.) these prints.

f.) XEROX 5665 BLACK AND WHITE PHOTOCOPIER

A photocopier which is able to film automatically the back and front of A3 sized 52 pages and classify (drilling, piercing, etc.) these prints.

5. COMPUTER AND WEB UNITS

Hardware	Features/Model	Trade Mark	No
Computers			
Desktop Computers	PII, 64 MB RAM, 2 GB HDD, 15" Monitor	Digital	7
	PII, 128 MB RAM, 8 GB HDD, 15" Monitor	Digital	12
	PIII, 128 MB RAM, 20 GB HDD, 17" Monitor	Digital	10
	PIII, 512 MB RAM, 20 GB HDD, 19" Monitor	Digital	3
Laptop Computers	PIII, 128 MB RAM, 12 GB HDD	Compaq	4
Website Servers			
Main Surver	2xPIII,1,0 GB RAM, 2X60 GB HDD	Compaq	1
Back Up Surver	PIII, 128 MB RAM 2X60 GB + 6 GB HDD	Digital	1
Communication			
Router	ISDN 56 Kb	USR	4
10/100 MB Switch	48 Port	3Com	1
10/100 MB HUB	Superstack-II	3Com	5
Printer/Scanner			
Laser Printer	LaserJet 2100 & 6P, 12 Copy/minute	HP	8
Inkjet Printer-Coloured	1220C, 8 Copy/minute, A3	HP	2
	940C, 10 Copy/minute, A4	HP	2
Scanner	Scanjet ADF, 600x600 resolution	HP	1
	1200 TA, Dia scanner, 1200x1200 resolution	Mustek	2

SHORT DESCRIPTION OF SELECTED PROJECTS

1. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : Construction of ARS (Underground War HQ) Facility Diyarbakır, Turkey
CONTRACT SIGNATURE DATE : 1 April 1998
WORK COMPLETION DATE : 11 January 2002
KEY DETAILS :

- 42,500 sqm., 2,010 m. long and 30 m. deep underground reinforced concrete WHQ with EMP and NBC protection.
- Complete mechanical and electrical instrumentation.
- Complete interior design for 500 ea. staff.
- Complete fire protection system with FM200 and FE-36.

***** More details could not be given due to the national security restrictions

2. CLIENT : MOD, Turkey
FINAL CLIENT : Turkish Prime Ministry
PROJECT TITLE & LOCATION : Construction of Turkish Prime Ministry Underground Operations Center, Ankara, Turkey
CONTRACT SIGNATURE DATE : 1 April 1999
WORK COMPLETION DATE : 26 December 2001
KEY DETAILS :

- 9,435 sqm., 3 storey, underground, fully protected (Blast, EMP, NBC) operations center.
- The whole structure is covered with concrete envelope + rock fill.
- Complete mechanical and electrical instrumentation.
- Complete interior design for VIP.
- Complete interior design for 350 ea. staff.
- Complete fire protection system with FM200 and FE-36.

***** More details could not be given due to the national security restrictions

3. CLIENT : Ministry of Communications and Transport, General Office of DLH (Railways-Seaports-Airports), Turkey
FINAL CLIENT : Ministry of Communications and Transport
PROJECT TITLE & LOCATION : Elazığ Airport Development and Feasibility Study, Elazığ, Turkey
CONTRACT SIGNATURE DATE : 15 April 2002
WORK COMPLETION DATE : 15 December 2002
KEY DETAILS :

- Determining current situation and statistical data of existing underground and surface facilities, dimensions, capacity, legal situation (possession), barriers, runway, taxiway, apron, meteorological data (wind, rain, fog etc.), topographical position, soil class, regional ecological effects, security systems, electrical, electronic and mechanical systems, hardware and equipment.
- Preparation of the feasibility reports and future planning studies and collection of relationships with national and international air transformation net.
- For dimensioning underground and surface facilities of airport, calculating of capacity situation and determining the future profits and revenues, estimates must be done for plane, passenger and load positions. This estimates will be performed as short, mid and long term such that 5, 10 and 20 years. Passenger load, tonnage and number of flight estimates will be determined by considering the improvisation of the national air traffic. In addition to flight operations, estimates will be performed by year, season and day based time intervals.

- Various demand / capacity analysis will be performed according to the estimates of future flights and passengers. According to determined improvisation needs, basis plan with 1/2000 scale will be prepared and with this study, architecture and engineering improvement of airbase will be planned. Investment, administration and upkeep expenses will be detailed by year basis for using economical and financial analysis.

4. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : Afyon Tanker Aircraft Base, Turkey
CONTRACT SIGNATURE DATE : 5 May 1998
WORK COMPLETION DATE : 26 November 2000
PREAMBLE :

Before starting of this project, Afyon Airbase was a remote and deserted airfield to be used only at war time. However when the airbase was chosen as the base for tanker aircrafts, it had to be upgraded and re-constructed.

KEY DETAILS :

- Upgrading of existing 45 m. x 3.000 m. runway LCN50 up to LCN80 and extension of the runway up to 3.660 m. (Longest LCN80 runway in Turkey.)
- Rehabilitation and extension of the surface and subsurface drainage systems.
- Renovation and extension of the existing runway lighting systems.
- Upgrading of existing 45 m. x 3.000 m. parallel taxiway LCN50 up to LCN 80.
- Rehabilitation and extension of the surface and subsurface drainage systems of the parallel taxiways.
- Renovation and extension of the existing runway lighting systems of the parallel taxiways.
- Construction of 160.000 sqm. concrete pavement parking apron with LCN80 quality. (Single largest apron in Turkey.)
- Construction of surface and subsurface drainage system of the parking apron.
- Construction of the Jet Fuel Dispensing Hydrant System. The hydrant system, built beneath the parking apron, is designed to be delivered 480 cum/h jet fuel to air-to-air refueller tanker aircraft. Single largest hydrant system in Turkey.
- Construction of 2.232 sqm. Maintenance hangar with heating system, pressurised air system 50 Hz., 400 Hz. electrical power system and sliding door which is in 60 m. width, 15 m. height.
- Construction of 4 x 1.250 cum on-base and 1 x 1.250 cum. off-base fuel storage tanks
- Construction of manifold station with 6 x 120 cum/h filter/water separators.
- 16 ea. Jet Fuel Dispensing Hydrants.
- Construction of 120 m. DN150 interconnecting pipeline
- Construction of communication distribution system.
- Supervision of the whole project during construction stage.

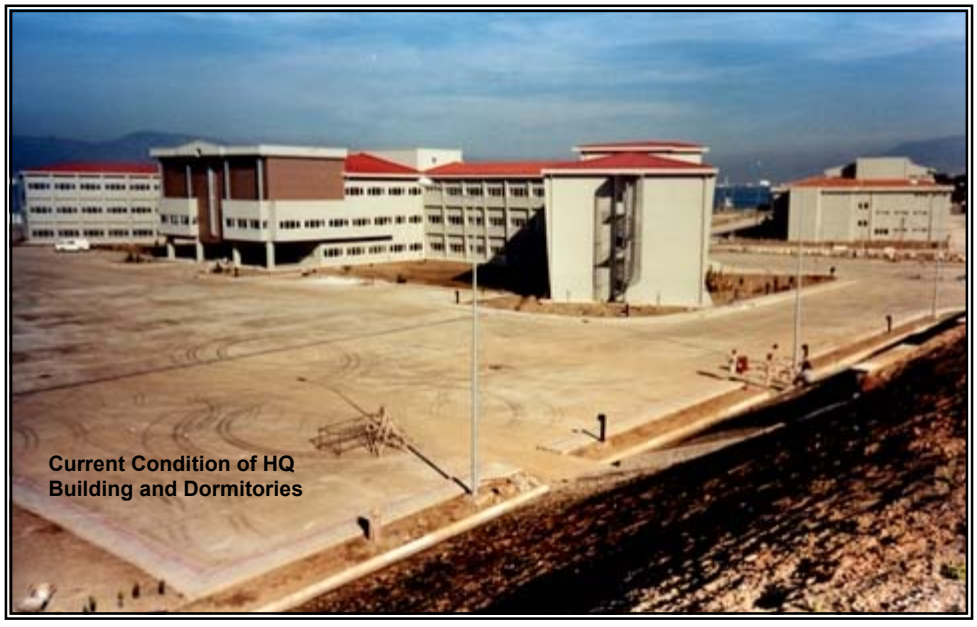
5. CLIENT : MOD, Turkey
FINAL CLIENT : Turkish NAVY
PROJECT TITLE & LOCATION :
CONTRACT SIGNATURE DATE : 15 April 2002
WORK COMPLETION DATE : 15 December 2002
KEY DETAILS :

A complete Headquarters in order to meet the increasing capacity of Southern Naval Forces. Includes HQ and Training Buildings, Fusion Center, Recreational Facilities, Dormitories and Auxiliary Facilities with complete mechanical, electrical and electronical installation. Total Construction area is ~125,000 sqm.

Services throughout design phase: Master planning, geological and environmental surveys, value engineering and design analysis, calculations, detailed engineering (geological, environmental, structural, mechanical, electrical, electronical and communication) specifications, cost estimates, and all applicable drawings and diagrams using metric units. Design was in accordance with applicable Turkish Building and Earthquake Codes, Turkish Naval codes and international laws and regulations, including DIN, NFPA, ASHREA design guides and standards.

Services throughout construction phase: on-site construction monitoring, adherence to project schedule, shop drawing review, organisation of inspections, contractor coordination, QA / QC, for significant client savings.

Due to the loose soil conditions and higher underground water level and area being highest risk EQ region (1st zone), soil fortification was performed by piling, rock fill and soil compacting.


Current Condition of HQ Building and Dormitories

1. HQ and Training Building

- Complete interior design was comprised of open office, close rooms (meeting and managerial) and secure rooms with access control of this administrative, educational and training facility. This building is 8,000 sqm and serves major naval command officers, administrative staff (communication, EDP, logistics, planning (operations, maintenance infrastructure), etc.) and naval students and trainees.
- Complete computer controlled HVAC system with fan coils and fire dampers with low maintenance, easy operation and energy saving design.
- Complete mid and low voltage electrical installation with necessary instruments, emergency lighting, lightning protection and grounding.
- Fire alarm, fire hoses, fire secure zones and fire escapes according to Turkish Navy fire codes and NFPA.
- CCTV, closed circuit cable tv, communication, LAN/WAN and Backbone systems infrastructure according to Turkish Army TEMPEST codes. (Classical and F/O cabling).
- 2 x 300 people capacity training/educational halls, 1 ea main hall with fuaye, 2x30 people capacity classrooms with video projector system and individual interconnecting data system infrastructure.

2. Fusion Center

- 1,600 sqm. semi buried, hardened, blast and EMP protected operations center which can survive for 14 days with 150 personnel on closed operation mode.
- The building is comprised of operation and briefing rooms, communication rooms, meteorology units, rest rooms, etc.
- CCTV, closed circuit cable tv, LAN/WAN, Backbone and satellite comm. systems infrastructure according to Turkish Army TEMPEST codes. (Classical and F/O cabling).
- Complete computer controlled HVAC system with fan coils and fire dampers with low maintenance, easy operation and energy saving design.

- Fire alarm, fire hoses, fire secure zones, fire escapes and FM200 system according to Turkish Navy fire codes and NFPA.
- Complete mid and low voltage electrical installation with necessary instruments, emergency lighting, lightning protection and grounding.

3. Quarter Building and Dormitories

- Total 5,690 sqm. construction area.

2 ea. centralised HVAC units with necessary instruments.

- 620 people capacity dormitories with rest areas and wet spaces.
- Complete mid and low voltage electrical installation with necessary instruments, emergency lighting, lightning protection and grounding.

4. Dining Halls

- Total 3,500 sqm construction area with a capacity of 800 people (1 ea. for 400 officers + 1 ea. for 400 privates)
- Complete design of 2 separate kitchens for officer and private halls with separate service lifts and LPG system.
- Cafeteria with a capacity of 50 people.
- 2 ea. centralised HVAC units with necessary instruments.
- Complete mid and low voltage electrical installation with necessary instruments, emergency lighting, lightning protection and grounding.
- 5ea., 3 type cold rooms ($+4^{o}C$, $0^{o}C$, $-18^{o}C$) for food storage.
- Has an oil/water separator at the outlet of the sewage line.

5. Force Protection

- Includes entrance gate, control building, guard towers, perimeter walls and all related alarm, announce, CCTV and electronic devices.
- 500 sqm. entrance building and gate (barriers, blockades and speed humps) with bullet proof windows, detector gates and personnel / visitor access card reader passages.
- Outside parking area for visitors.
- Perimeter walls are protected with cameras and 16 ea. guard towers.

6. Gas Station, Fire Brigade, Vehicle Maintenance Shops, Storage, Sheltered Parking Area

- 850 sqm. Fire Brigade Station with a capacity of 3 ea. closed parking area for fire trucks, maintenance shop, various storage rooms and various office and recreational spaces, central fire alarm monitor system.
- Gas Station has a capacity of 100 cum with 16 ea. outlets with foam type fire fighting system.
- Shelter protected 18 vehicle park platform and car wash area.
- The contaminated water passes through an oil/water separator prior to waste water treatment plant.

7. Laundry

- 300 sqm. building with a capacity of 250 people's clothing at the same time.
- Has a separate packet type waste water treatment unit for separating the detergents prior to the waste water treatment unit.

8. Canteen, Post Office, Bank

- 400 sqm. building with triple entrance for the canteen (general store and fast food facilty for 20 people), post office and the bank.

Complete interior design

- HVAC is solved with 3 separate units

9. Fire Hydrant System and Pump House

- 2,500 m., 10 atm. fire hydrant supply line (4", 6" ductile) with 50 hydrants by 2 ea. hydrant pumps. System can operate with sea water for water conservation.

10. Heat Center, Chillers and Galleries

- 4 x 1,250,000 kcal/h boilers for heating system (2 ea. for heating, 1 ea for hot water, 1 ea for spare) and 4 x 850 kW chillers for cooling system (3 ea + 1 ea for spare). In order to use hot and cold water in the HVAC systems of all the building in the HQs. The system is fully automated and remote controlled for energy saving purposes.
- All the piping from the center to the buildings was laid in 900 m. subsurface gallery for easy access, maintenance and repair reasons. The gallery is insulated with special self repairing insulation material due to high underground water level.

11. Power Supply, Distribution and Emergency Power Generation System

- Main Power Supply Line: 4,920 m. 10.5 kV underground cable feeder from local electric authority substation, including all associated switchgear.
- Substation and Emergency Power Generation: 2 ea. 6.3 MVA power transformers and all associated switchgear.
- Power Distribution: 1,350 m. medium voltage underground distribution ring cable and 4 ea 6.3/0.4 kV distribution transformers.

12. Communication and TAFFICS System

- 52/504 telephone exchange unit for distribution of the main TAFICS (Turkish Army Fiberoptic Communication System) line.
- On-base telephone distribution system
- On base LAN/WAN distribution system

13. Barracks

- 2 x 75 sqm Quarter Building, 2 x 670 sqm dormitory, 1 x 200 sqm warehouse were constructed during mobilisation stage in order to relocate the existing troops prior to demolish the existing buildings. These barrack were constructed in 15 days including utilities.

14. Pier and Shore Fortification

- 75 x 6 m. concrete pier (End piles are 20 m. deep, which 15 m. is underwater)
- 15,000 cum rock-fill for shore fortification.

15. Food Granary

- 500 sqm. building for dry food. Temperature and humidity is automatically controlled.

16. Water / Waste Water / Irrigation

- Domestic water dispensing system including 1,000 cum reinforced concrete water storage tank and pump house. (Water pressurisation pumps, domestic water treatment equipment, treated water pressurisation pumps and tanks, compressor equipment, active carbon filters, chlorine unit, automatic control unit)
- 2 ea. waste water treatment units. Treated water is used for irrigation for water conservation purposes.
- Irrigation is solved with automatic system including pump house, 11,000 m. piping, 500 ea. nozzles for water conservation purposes.

17. Landscaping

- 37,500 sqm. landscaping with lawn and various plants suitable for the climate.

18. Paved Areas (Internal Roads and Car Parking, Helipad)

1 ea. concrete helipad (1,217 sqm.), concrete internal roads (29,500 sqm.), open car parking platforms (2,800 sqm.) and ceremonial platforms (8,000 sqm.) with complete exterior lighting.

6. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : Dalaman and Bodrum/Milas Airfield Aircraft Shelters, Turkey
CONTRACT SIGNATURE DATE : 22 September 1998
WORK COMPLETION DATE : 04 February 2000
KEY DETAILS :

- Taxitracks between loop and aircraft shelters. (15.000 sqm.)
- Design of 3rd generation aircraft shelters with semi-hardened structure criteria.
- Design of foundation reinforcements by using 777 ea. cast-in-place type piles.
- 6,3 kVA electric supply and distribution system.
- Supervision of the whole project during construction stage.

7. CLIENT : MOD, Turkey
FINAL CLIENT : H.E.A.Ş.
PROJECT TITLE & LOCATION : Sabiha Gökçen Airfield Infrastructure Facilities, İstanbul, Turkey
CONTRACT SIGNATURE DATE : 29 December 1997
WORK COMPLETION DATE : 31 December 1999
KEY DETAILS :

- Design of 45 m. x 3.000 m. (135.000 sqm.) runway with LCN120 qualifications.
- Design of 400 m. x 158 m. (63.200 sqm.) parking apron with LCN120 qualifications.
- 3 ea. taxitrack between runway and parallel taxitracks.
- Surface and subsurface drainage systems of the runway and parallel taxitracks.
- Lighting systems of the runway and parallel taxitracks.
- Architectural, structural, mechanical and electrical surveys of the existing facilities have been completed. The requirements of the needed facilities have been analysed and the required architectural and engineering designs of minimum cost have been accomplished.

During the construction stage, the whole project is supervised.

8. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : İncirlik Airbase Re-construction of Paved Areas, Adana, Turkey
CONTRACT SIGNATURE DATE : 17 November 1997
WORK COMPLETION DATE : 10 January 1999
KEY DETAILS :

- Re-construction of runway as LCN80. (137.250 sqm.)
- Re-construction of surface and subsurface drainage system.
- Re-construction of parallel taxiways as LCN80. (68.580 sqm.)
- Re-construction of India taxitrack loop as LCN80. (15.208 sqm.)

- Restoration of lighting systems.
- Construction of control tower.
- Architectural, structural, mechanical and electrical surveys of the existing facilities have been completed. The requirements of the needed facilities have been analysed and the required architectural and engineering designs of minimum cost have been accomplished.

During the construction stage, the whole project is supervised.

9. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : Merzifon Airbase F-16 Facilities Restoration and Upgrade Works, Turkey
CONTRACT SIGNATURE DATE : 09 March 1995
WORK COMPLETION DATE : 10 October 1998
KEY DETAILS :

- Runway restoration. (Renovation of damaged slabs) (30.000 sqm.)
- Restoration of existing taxitrack. (40.000 sqm.)
- Construction of new taxitrack and connecting taxitrack. (6.000 sqm.)
- Restoration of existing park platforms.
- Construction of 2 each new parking aprons.
- Construction of new arm – disarm pad.
- Construction of maintenance apron for 3 aircraft.
- Restoration of existing perimeter road. (10 km.)
- Construction of new road for new facilities.
- Renovation of existing lighting system and installation of new lighting system for new paved areas.
- Construction of new Avionics workshop for aircraft electronics warfare and navigational systems fully compliant with high-tech military and civil criteria.
- Restoration and expansion of fire station.
- Restoration of semi-hardened wing operation facilities.
- Restoration of line maintenance facilities.
- Restoration of main hangars.
- Restoration of other airbase facilities.
- Restore and expansion of main power supply system including emergency power system.
- Restoration and expansion of water distribution system.
- Restoration and expansion of waste water system including sewage treatment plant.
- Restoration and re-construction of heating centers.
- Renovation of airfield communication system.
- In order to achieve above-mentioned projects, detailed geological, topographical and seismic surveys have been conducted.
- Architectural, structural, mechanical and electrical surveys of the existing facilities have been completed. The requirements of the needed facilities have been analysed and the required architectural and engineering designs of minimum cost have been accomplished.

During the construction stage, the whole project is supervised.

10. CLIENT : EMI Cons. Co. + KIRDAR Cons. Co.
FINAL CLIENT : EXXON MOBIL
PROJECT TITLE & LOCATION : Project Drawings for Nevşehir and Kayseri Airfield Fuel Terminals, TU
CONTRACT SIGNATURE DATE : 01 September 2002
KEY DETAILS :

Design and preperation of Project Drawings for Nevşehir and Kayseri Airfields JP-8 Fuel Terminals

- Design and preperation of project layout drawings, including civil, electrical and mechanical drawings acording to API Standarts, of 1 ea in Nevşehir Airfield, 2 ea in Kayseri Airfield, 80 cum JP-8 storage tanks.
- Design and project drawings of oil/water seperator, manifold station and truck loading points.
- Design and project drawings of drainage system, including drainage tanks and oil seperator tank.
- Design and project drawings of complete water+foam fire fighting system, including 50 cum water tank.
- Design and project drawings of domestic water and sewage system of office building.
- Grounding, ex-proof lighting and freeze protection of fire hydrant system with low voltage electrical system.
- Design and project drawings of all other necessary civil, electrical and mechanical site work.
- Preperation of process flow diagram.

11. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : Feasibility Study and A/E Services of Existing Civil Fuel Depots, TU
CONTRACT SIGNATURE DATE : 20 December 1999
KEY DETAILS :

For all civil depots;

- Eye-check of the existing conditions.
- Steel plate thickness control with ultrasonic equipment and compare with API standard in order to ensure the minimum thickness.
- Corrosion thickness control.
- Wind load control according to API 650.
- Seismic load control according to API 650.
- Sandblasting and epoxy coating after meeting the standards.
- Replacement of control and measurement instruments.
- Outside painting of the depots with anti-corrosive paint.
- Hydrostatic testing of existing piping and replacement of leaking parts.
- Emergency power supply, including determination of the conditions existing stand-by power generators and replacement of the insufficient ones.
- Control of existing fire fighting system and replacement of inadequate parts.
- Replacement of fuel drainage tanks.
- Control of existing fuel loading/unloading points and replacement of inadequate parts.
- Restoration of administrative and social facilities

12. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : A/E and Supervision Services for Batman Airfield Jet Fuel Storage Installation and Infrastructure Facilities, TU
CONTRACT SIGNATURE DATE : 5 February 1999
KEY DETAILS :

- Design a new 1 x 1.250 cum semi-buried concrete encased jet fuel storage tank in existing southwest POL area.
- Restoration and re-construction of existing manifold and oil/water separator building in existing southwest POL area.
- Design a new 1 x 1.250 cum semi-buried concrete encased jet fuel storage tank into the new northeast POL area.
- Design a new manifold and oil/water separator building into the new northeast POL area.
- Design automation system due to monitoring and control purposes for the mechanical instruments.
- 10 cum drainage tank.
- Truck loading points, 2 each.
- Power supply with a new 100 kVA transformer.
- Emergency power supply with a new 100 kVA diesel stand-by generator set.
- Restoration of 45 m. x 3.050 m. (137.250 sqm.) runway.
- Replacement of the emergency stand-by generator sets.
- Construction of surface and subsurface drainage system.
- Placement of transformer-reducer system cathodic protection.
- Preperation of process flow diagram.

13. CLIENT : MOD, Turkey
FINAL CLIENT : NATO
PROJECT TITLE & LOCATION : A/E and Supervision Services for Construction of Fuel Pipeline Between Elazığ and Diyarbakır, TU
CONTRACT SIGNATURE DATE : 30 June 1995
KEY DETAILS :

Pipeline

- Alternative path study on 1/100.000 scale map
- Marking the alternative paths on 1/25.000 scale maps
- Prepare the alternative hydraulic profiles
- Perform on-site inspections of alternative paths and perform necessary changes
- Determining the suitable alternative
- Perform map study for determined alternative
- Perform geological studies
- Prepare 1/1.000 and 1/2.000 scale pipeline plan and profiles
- Perform hydraulic calculations and determine for pipe dia and wall thickness
- Determine the pump station locations
- Determine and prepare the detailed drawings for road, river and bridge crossings and deep crossings
- Prepare the cathodic protection project drawings
- Prepare the civil, mechanical and electrical project drawings for pump stations,
- Perform water and power supply studies and project drawings
- Preperation of process flow diagram.
- Route preparation, trenching, sand bedding, trench filling.
- Built Pressure Reducing Station.
- Installation of 101,42 km. DN150, PE coated steel pipe with wall thickness of 6,35 mm.
- Installation of 4,88 km. DN150, PE coated steel pipe with wall thickness of 7,10 mm.
- Road crossing by horizontal drilling and by trenching. Main pipeline will be encased by another steel pipe including air ventilation. (1.000 m.)

- Deep lake crossing by using steel pipe and/or concrete encasement and gabion rock filling in order to prevent the pipe from damages. (3,88 km)
- Hydrostatic test.
- Cathodic protection.
- Construction of pipeline valve pits. (10 each)
- Construction of 550 m. retaining wall.

Elazığ Tank Farm and Ergani Pump Station

- Various site works including; trenching, concrete pipe channel, concrete pavement, pipes and fittings between the connections, low voltage distribution system, automatic control and monitoring system, interference detector and cathodic protection.
- Modification of existing high pressure pump station. (Replacement of 3+1 high-pressure pumps with 180 kW, 130 cum./h, 300 mWC pumps.)
- Modification of scraper station. (Provide additional inlets and outlets.)
- Construction of a new scraper station. (6" and have a flow rate of 125 cum/h.)
- Construction of a new 40 cum. underground, steel, reinforced concrete supported fuel tank. (Provide the necessary fuel for stand-by generators and diesel pump engines.)
- Construction of a valve pit. (6" pit for blocking the fuel before the wire fence and along the pipeline.)
- Construction of an emergency connection pit. (6" pit with necessary piping, fittings and valves.)
- Complete fire-fighting system with foam.
- Design automation system due to monitoring and control purposes for the mechanical instruments.

Diyarbakır Tank Farm

- Various site works including; trenching, concrete pipe channel, concrete pavement, pipes and fittings between the connections, low voltage distribution system, automatic control and monitoring system, interference detector and cathodic protection.
- Construction of a new scraper station. (6" and have a flow rate of 125 cum/h.)
- Construction of a valve pit. (6" pit for blocking the fuel before the wire fence and along the pipeline.)
- Construction of an emergency connection pit. (6" pit with necessary piping, fittings and valves.)
- Complete fire-fighting system with foam.
- Design automation system due to monitoring and control purposes for the mechanical instruments.

14. CLIENT : MKEK (TURMA)
FINAL CLIENT : Fişeksan A.Ş.
PROJECT NAME & LOCATION : MKEK Ammunition and Explosives Production Facilities and Assembly Factory
CONTRACT SIGNATURE DATE : 01 September 2001
WORK COMPLETION DATE : 15 November 2001
TOTAL AREA : Total 40,000 sqm, 13,431.47 sqm. closed area

Within the scope of this project and under the title of "MKEK Ammunition and Explosives Production Facilities and Assembly Factory"; connections roads, rain water and drainage main lines, domestic waste water, processing waste water lines, heating centers, heat exchangers, compressors, water discharge systems, steam-pressure reducing stations, pump groups, ventilation and fire fighting systems are provided. Additionally preparation- which requires specialisation of architectural, civil, mechanical and electrical final designs, technical specifications and tender documents of heat exchange centers, compressed air compressors ventilation installation, water discharge systems in which their control and commands shall be undertaken in computer environment, of fire pumps, water discharge systems, condensate storage pumps, steam main lines and carrier systems, condensate main lines and carrier systems, flood fire and fire hydrant main lines, fire water storage and fire pumps piping, control and command panels, potable water lines, heating installation, compressed air installation, fire cabling installation, main distribution of high-low current installation, perimeter lighting, environmental recreation, environmental security, substations and cabling, generator center and UPS connection, grounding installations, lightning protection installation, communications and telephone installations, fire alarm and warning systems and the following stated buildings are conducted.

15. CLIENT : MOD Turkey
FINAL CLIENT : Turkish Naval Forces Command
PROJECT NAME & LOCATION : İstanbul Naval Shipyard, Combat Systems Complex
CONTRACT SIGNATURE DATE : 28 November 2000
WORK COMPLETION DATE : 07 January 2001
TOTAL AREA : Total 40.000 sqm., 14.655 sqm. closed area.

INTRODUCTION

Preparation of civil, mechanical and electrical final designs, technical specifications and tender documents of:

- Combat Systems Group Directorate Building
- Workshop Building
- Underwater Sensors Shop

is conducted within the scope of this project and under the title of "Combat Systems Complex", which requires specialisation.

BASIC DATA

a. Combat Systems Group Directorate:

- Building consists of 10 workshops (Optical Shops, Rifle Control Workshop, Antenna Test Shop, Search Radar Workshop, Gyro Workshop, Electronic War Workshop, Card Repair Workshop, Communications Workshop, Module Test and Repair Workshop, Technical Library and Command Control Workshop) and service offices.
- A steel carcass system building which is with 4.344 sqm floor area and a total of 7.224 sqm net construction area.
- 9000 cum excavation, 900 cum concrete pavement, 885 cum sub-base concrete, 2275 cum reinforced concrete, 1100 tons of steel construction.
- Complete sanitary installations, compressed air installation, ventilation, heating and totally 525 kW capacity air-conditioning with 171 fan-coil devices.
- Workshop slabs are of dust-proof antistatic epoxy coating, fire doors and urgent and panic exit locks for these doors.
- Electromagnetic protected (EMP) floor, wall and ceiling coating and 3 sensitive air-conditioning device (9 kW cooling, 4 kW heating, $\pm$ 1^{o}C sensitive) in ECM/ESM test rooms.
- Cranes of 10 tons and 2x2.5 tons with 24m of span, 65m of travel length, 10 m of lift height, plus a crane of 2 tons with 8.5 m of span, 29.7 m of travel length, 3.5 m of lift height plus a crane of 2 tons with 4.6m of span, 4.6 m of travel length, 16m of lift height.
- Projection of a total 82 sqm clean room in ISO Class 10.000 standards (hygiene primary air station, cellular aspirator, airtight dampers, volume regulators, HEPA filters, and suction diffusers, automatic control of the system, joint ventilation ducts, mufflers, anti-static epoxy coated floor epoxy painted walls and suspended ceiling with a hidden supporting system and vibration control, interlock that provides pressure regulation.
- Various receptacle connection boxes and busbar trunking distribution systems were provided for different voltage and frequency levels, e.g. 220/380V, 50 Hz - 254/440V, 28V DC-120V DC. DC power was provided by 28V DC and 120V DC rectifiers. 400 Hz power was provided by using 115/220V-15/26V, step down transformers. LAN data circuits were provided in the building.

b. Weapon Workshop

- Working area of this workshop consists of top-stands, paint-rasp site, test-rooms (gun, weapon, torpedo, etc.), service offices and 2 computer laboratories.
- A steel carcass system building with 4.073 sqm floor area and a total of 5668 sqm net construction area
- 8400 cum excavation, 830 cum concrete pavement, 725 cum sub-base concrete, 1500 cum reinforced concrete, 700 tons of steel construction.
- Complete sanitary installation, compressed air installation, ventilation, heating installation projects.
- 2 Cranes, one 25 toned, other 7.5 toned, with 32m of span, 90.5 m of travel length, 15m of lift height.

• Various receptacle connection boxes and busbar trunking distribution systems were provided for different voltage and frequency levels, e.g. 220/380V, 50 Hz - 254/440V, 60 Hz-115/200V, 60 Hz-115/200V, 400 Hz and 28 VDC. DC power was provided by using 28V DC rectifiers. 60 Hz. power was provide by using 440/254V-200/115V step-down transformers. LAN data circuits were provided in the building.

c. Under Water Sensors Shop

• This building consists of pool area, workshop area and service offices.
• A steel carcass system building with a total of 1763 sqm net construction area.
• 3750 cum excavation, 1750 cum excavation of underwater level, 325 cum concrete pavement, 315 cum sub-base concrete, 830 cum reinforced concrete, 230 tons of steel construction.

• Complete sanitary installation, compressed air installation, ventilation and heating installation projects.
• Cranes of 10 tons with 18 m of span, 41m of travel length, 10 m of lift height, plus cranes of 20 tons and 25 tons with 9m of span, 10 m of travel length, 10 m of lift height.
• One Sonar and one Row pools are projected in the pool area. (Net sizes of the solar pool are, W: 8m, L:8m; H:10m, net sizes of the row pool are, W:3m, L:5m, H:5m; filtration system, circulation pumps, chlorine unit).
• Various receptacle connection boxes and busbar trunking distribution systems were provided for different voltage and frequency levels, e.g. 220/380V, 50 Hz-254/440V, 60 Hz-115/200V, 60 Hz-115/200V, 400 Hz. LAN data circuits were provided in the building.

d. Site Works

• 230.000 cum site levelling, 2400 cum concrete pavement, mechanical site works, site lighting works.

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NATO RESTRICTED

REPUBLIC OF TURKEY
MINISTRY OF NATIONAL DEFENCE
ANKARA

NATO ENF: 43001.1-1760-01/D.Pl.Koor.Ş.Md. 21 November 2001
SUBJECT: Recommendation Letter

To Whom It May Concern

YALÇIN TEKNİK Consulting Company has been providing consulting engineering services since 1972 for NATO and National Military Infrastructure projects to our department.

YALÇIN TEKNİK is well informed about NATO criterias and procedures and has produced satisfactory consulting engineering services.

1. The consultancy engineering responsibilities for NATO projects cover:

- Preparation of feasibility studies
- Preparation of type "B" Cost Estimate (TBCE), preparation of complete ARCHITECTURAL /STRUCTURAL/CIVIL/MECHANICAL/ELECTRICAL/ELECTRONICS designs, detail drawings, technical specifications and full tender documents.
- Full technical supervision during the implementation of the works.
- Participate in technical meetings with NATO technical staff when requested by MOD Turkey.
- Preparation of JFAI documents and participation in JFAI meetings.

2. YALÇIN TEKNİK 's consultancy experiences for NATO projects include:

- Airbases: Runways, taxiways, taxitracks, aprons and auxiliary facilities.
- Ammunition Facilities: Ammunition and missile shops, covered (igloos) and open storages.
- Fully hardened tunnel and cut and cover type war headquarters.
- Hardened communication centers including electronic systems.
- ASM communications systems.
- TACAN navigation equipment and facilities
- Fuel storages, POL pipe lines and pumping stations
- Airfield facilities including AWACS maintenance hangar, related aprons and taxiways
- NAVAL facilities including piers, breakwaters, quays, power stations, steam stations
- POL piers including large fuel storages and pipeline and pumping systems
- SPOD designs (Sea port of debarkation)
- Fully protected CARS facilities, including electronics systems
- Fully protected ARS facilities, including electronics systems
- NADGE radar system and their integrations
- NATO Radio Communications Antennas Field

I am pleased to introduce YALÇIN TEKNİK to your organization.

Hüseyin ÖZDEL
Brig.General
Chief of NATO Inf.Dept.

NATO RESTRICTED

CERTIFICATE

The TÜV CERT Certification Body of
TÜV NORD CERT GmbH & Co. KG
certifies in accordance with TÜV CERT
procedures that

YALÇIN TEKNİK
İNŞAAT MAKİNA MÜHENDİSLİK VE MİMARLIK A.Ş.
TR - 06700 G.O.P. / ANKARA

has established and applies a quality system for

ENGINEERING, DESIGN, CONSULTING,
SUPERVISION, FEASIBILITY, ENGINEERING STUDIES.

An audit was performed, Report No. 174459

Proof has been furnished that the requirements according to

TS EN ISO 9001 : 1994

are fulfilled.

The certificate is valid until **December 14, 2003**
Certificate Registration No. **78 100 3442**

Deutscher Akkreditierungs Rat
DAR
TGA-ZM-22-96-00

Hanover, May 27, 2002

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TÜV NORD CERT

TÜV CERT Certification Body of
TÜV NORD CERT GmbH & Co. KG

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certificate

BOTAŞ BORU HATLARI İLE PETROL TAŞIMA A.Ş
MÜHENDİSLİK / MÜŞAVİRLİK
YETERLİLİK BELGESİ

BOTAŞ BELGE NO	0157
BELGE TARİHİ	24.10.2002

BELGE SAHİBİNİN

FİRMANIN TİCARET ÜNVANI	YALÇIN TEKNİK İNŞ. MAK. MÜH. VE MİM. A.Ş.
TİCARET ODASI SİCİL NO	19167
FİRMA YETKİLİSİ	İsmail BAKIŞKAN
SORUMLU MAKİNA MÜHENDİSİ	Reha ERTÜRK
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Yukarıda Ticari Ünvanı ve Adı Soyadı yazılı **YALÇIN TEKNİK İNŞ. MAK. MÜH. VE MİM. A.Ş.** Firması Mühendislik / Müşavirlik Belgesi almaya hak kazanmıştır.

BOTAŞ DOĞALGAZ İŞLETMELERİ MÜDÜRLÜĞÜ

Erdinç ÖZEN
Doğal Gaz İşletmeler
Müdür Yrd.

Recep ARSLANTAY
Doğal Gaz İşletmeler
Müdürü

31.12.2003 TARİHİNE KADAR GEÇERLİDİR.

Botaş 01 01 2002 D.G.İ.B.M.