

NESPAK IN

United Arab Emirates

NESPAK entered in United Arab Emirates (UAE) in 1975 by acquiring a military cantonment mega project titled New Township Al-Wathba in Abu Dhabi, the capital of the Emirates. NESPAK was registered as an independent consultancy firm after it set up its Regional Office in Abu Dhabi in August 1992.

NESPAK Regional Office was registered with various UAE ministries, municipalities and oil companies i.e., Abu Dhabi Company for Onshore Operations (ADCO), Abu Dhabi National Oil Company (ADNOC), Abu Dhabi Gas Liquefaction Company Limited (ADGAS) and Abu Dhabi Oil Refining Company – TAKREER.

The first project undertaken by NESPAK's UAE Regional Office was the Construction Management of Delma Island Building Abu Dhabi in 1994 awarded by the Emirates Telecommunications Corporation (ETISALAT).

A total of 27 projects worth US\$ 559 million related to the buildings, sewage, roads and military facilities were completed by NESPAK in the United Arab Emirates.

The UAE Regional Office also has the distinction of rendering design and construction supervision services for a border fencing project between the United Arab Emirates and the Sultanate of Oman.

Portfolios of major projects carried out in the UAE are given in the following pages.



Load Despatch Centres Project

Project Status: Completed in 1996

Scope of Services: Detailed Design, Construction Supervision

Project Cost: US\$ 56 million

Client: Water & Electricity Department, Government of Abu Dhabi

This was the sole power-related project undertaken by NESPAK in the UAE. Électricité de France (EDF) was NESPAK's partner in this joint venture. The purpose of the Load Centres Project was to ensure integrated operation of the power system, optimum despatch of the electricity, and monitoring & control of system parameters to maintain the power system at all times in Abu Dhabi and Al-Ain areas.

The project included three power monitoring & control centres i.e., the Al-Ain Regional Control Centre, Abu Dhabi Regional Control Centre, National Control Centre, Abu Dhabi and a water control centre in Abu Dhabi. The National Control Centre, Abu Dhabi was tasked with monitoring and controlling a total of 100 power plants. The telecommunication network was made of PLC (Power Line Carrier), pilot cable, and optic fibre cable. It was to support the data transmission network and the telephone & telex system.

The National Control Centre and the Regional Control Centres were provided with extensive control facilities to carry out not only the control of the power system but also the detailed operation of the unmanned substations.

Switchgear Factory Project

Project Status: Completed in 2006

Scope of Services: Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 4 million

Client: Danaway, Abu Dhabi

This project was originally designed as a switchgear factory but at the time of construction it was redesigned as a glass factory according to the Client's requirement. NESPAK designed and supervised a furnace and glass coating/polishing chambers, fulfilling the industrial requirements of the new factory.

Pre-engineered steel structure was used for the glass factory having a total covered area of 8780 sqm. Complete Building Management System including HVAC, firefighting & fire alarm system, surveillance system, CCTV and generators was implemented at the new building.

Warehouse Project, Al-Mussafah

Project Status: Completed in 2005

Scope of Services: Detailed Design, Construction Supervision

Project Cost: US\$ 0.5920 million

Client: Muhammad Abdul Aziz Al-Nowais, Abu Dhabi

The Warehouse Project was meant for housing electrical equipment and the storage of the office record. NESPAK supervised contractor's work which included the construction of a warehouse, sheds and administration building offices located in the Al-Mussafah Industrial Area in Abu Dhabi. Pre-engineered steel structure and prefabricated roofing were used for the construction of the controlled warehouse on a covered area of 690 sqm. Complete Building Management System including firefighting & fire-alarm system, a surveillance system and CCTV was also installed at the warehouse.

ETISALAT's Buildings in Abu Dhabi

Project Status: Completed in 2002

Scope of Services: Project Planning, Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 17 million

Client: Emirates Telecommunications Corporation (ETISALAT), Abu Dhabi

This project comprised the construction of eight buildings of the Emirates Telecommunications Corporation (ETISALAT) in different parts of the Abu Dhabi Emirate. The project was carried out in phases. In the first phase, NESPAK won an architectural design competition for the design of two prototype public office buildings of ETISALAT located at Hatta and Shahama.



Later on the basis of good performance, the general consultancy agreement for the construction of six more buildings was awarded to NESPAK. These buildings were located in the areas of Samha, Al-Hayer, Al-Yahar, Al-Wagan, Ghalilah and Digdiga.

All the eight buildings were primarily customer services centres, having automated payment service facility. Other facilities included display counters, cash counters, sales counters, waiting/ reception and office areas. The interior design of the buildings comprised furniture design, colour schemes and furnishings. The exterior finish was proposed to be in granite cladding and double glass curtain walls.



Five Khalifa Committee Buildings, Al-Mussafah

Project Status: Completed in 1998

Scope of Services: Project Planning, Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 4 million

Client: Department of Social Services & Commercial Buildings (Khalifa Committee), Abu Dhabi



NESPAK provided consultancy services for the construction of five residential-cum-commercial buildings in Abu Dhabi. The first multi-storey building out of these five was completed in a record time of 13 months under NESPAK's supervision .

These buildings were situated in the Al-Mussafah Township, a newly developed residential sector of Abu Dhabi. The buildings comprised commercial spaces at ground and residential units at the upper floors. The design of these apartment buildings provided all the comforts of modern living. The facade of the buildings reflected inspiration from the traditional forms and motifs of the Islamic architecture. Reinforced Concrete Cement (RCC) frame structure was used for all the five buildings while the lobbies were furnished with granite. Complete Building Management System including the HVAC system, firefighting & fire alarm system, surveillance system, CCTV and generators was installed at all the five buildings.

Pakistan Community Welfare School, Al-Mussafah

Project Status: Completed in 2005

Scope of Services: Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 4 million

Client: Education Committee Welfare School, Al-Mussafah, Abu Dhabi

The purpose of this project was to construct a community building for providing adequate educational facilities for the children of Pakistani expatriates living in the UAE. NESPAK was engaged to render design and construction supervision services for the two-storey school building comprising Primary, Boys and Girls' Sections. Spread over a total built-up area of 6190 sqm, this educational



building consisted of an auditorium, a multi-purpose hall, the staff accommodation and the Administration Section. The school building also included a library, cafeteria, playgrounds & open spaces, staff rooms, green rooms for boys and girls, stores and other associated structures.

Public Office, Stores & Staff Offices at Madinat Zayed

Project Status: Completed in 2005

Scope of Services: Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 2 million

Client: ETISALAT, Abu Dhabi



NESPAK was entrusted with providing design and construction supervision services for the public office, stores and staff offices of ETISALAT at Madinat Zayed in the Western Region, 195 kilometres off Abu Dhabi. Spread over an area of 670 sqm, the public building and staff offices were in-situ concrete structures, whereas the workshop and stores were pre-engineered structures. The building was installed with complete Building Management System consisting of firefighting, fire-alarm system, surveillance system, CCTV and generators.

Delma Island Building, Abu Dhabi

Project Status: Completed in 1995

Scope of Services: Construction Supervision

Project Cost: US\$ 2 million

Client: ETISALAT, Abu Dhabi

In this first project awarded by ETISALAT, NESPAK was entrusted with providing supervision services for the construction of a public office and staff accommodation building at the Delma Island, Abu Dhabi. Delma Island is located about 280 km off shore Abu Dhabi; therefore transportation of all construction materials and equipment had to be managed through barges.

The project constituted a single storey facility, particularly for the public & administrative offices and staff residences within one compound. The building was constructed in RCC frame structure with complete Building Management System including firefighting, fire alarm, surveillance, CCTV and generators.

During the construction, measures were adopted for strict quality assurance of materials specifically to ensure that they might not be contaminated by salts, which is usually caused by sea showers during transportation and the salt-laden air. Keeping this aspect in view, epoxy coated rebars, galvanised iron binding wires, salt-free backfill material and self adhesive membrane were used for tanking substructure. This project was completed in a record period of 10 months.

Rehabilitation of Sheikh Zayed Pakistan Cultural Centre

Project Status: Completed in 2006

Scope of Services: Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 0.5331 million

Client: Pakistan Embassy, UAE



NESPAK was hired for structural investigation and renovation of the Sheikh Zayed Pakistan Cultural Centre in Abu Dhabi, UAE. The Centre was constructed in the early 80s. It remained closed for eight years and was not maintained, which caused severe damage to its structure.

NESPAK carried out structural stability tests and conducted surveys for architectural, electrical and mechanical installations of the building. The Centre was protected by devising a permanent dewatering system and measures were adopted to save basement and walls from seawater seepage. Auditorium, offices and sports facilities were also refurbished.

New Township Al-Wathba, Abu Dhabi

Project Status: Completed in 1978

Scope of Services: Project Planning, Detailed design, Tender Documents

Project Cost: US\$ 385 million

Client: General Headquarters, Abu Dhabi Defence Forces

This was the first landmark project awarded to NESPAK in the United Arab Emirates. The purpose of this mega project was to develop a military township near the Al-Wathba village on the Abu Dhabi-Al-Ain Road 50 kilometres east of Dubai. The project site had a direct access to the highway, having all-weather road connections with the rest of the UAE.

NESPAK carried out architectural and structural design of administrative, office, residential and training institution buildings for the 400 sq km township area, fulfilling all the defence requirements.

A soil investigation programme was launched to determine design parameters for the foundation of structures as most part of the project area was covered with uneven sand dunes. The project included temporary camps for 4-6 military units and a permanent camp for 15-20 regimental units. The community facilities comprised a commissary, sports buildings, hospitals, schools and farms.

NESPAK also provided services for all the military-related facilities including 17 officer/soldier barracks, Military Police Unit, Squadron Headquarters, Combined Military Hospital, Field Intelligence Unit, various stores, mess & dining halls, armament & training yards, warehouses & godown and heliports & airfield. Parking areas, power & water supply, water & sewage disposal system, road network and telecommunication system were other main works for the project.

Conversion of Civil Defence Building into Training Centre

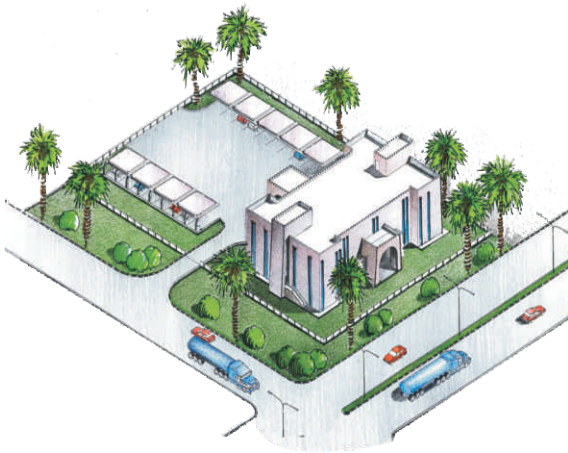
Project Status: Completed in 2005

Scope of Services: Detailed Design, Tender Documents

Project Cost: US \$ 0.63 million

Client: Abu Dhabi Oil Refining Company — TAKREER, UAE

NESPAK provided consultancy services for the first time for TAKREER on this project which was won through



international bidding. The project was aimed at converting the existing Civil Defence Building into a professional management training centre for the engineers of the Ruwais Oil Refining Company – the biggest oil refinery in the UAE. The project was located in the Ruwais Industrial Area, 249 kilometres from Abu Dhabi towards the Saudi Arabian border. Complete architectural and structural design was implemented for changing the internal layout of the Civil Defence Building. However, the façade of the external building was not changed and conserved due to its architectural value. The new building comprised classrooms, lecture halls, laboratory and a training workshop for the staff of the Ruwais Oil Refinery. Complete Building Management System including HVAC system, firefighting & fire alarm system, surveillance system, CCTV and generators was installed at the building.

Pakistan High School, Sharjah

Project Status: Completed in 1979
Scope of Services: Detailed Design
Project Cost: US\$ 1 million
Client: Pakistani Community in UAE

This centrally air-conditioned two-storey school building was designed by NESPAK for 800 students of various grades.

RCC frame structure was used for the building having a covered area of 9000 sqm on a plot of land measuring 1.5 hectares. In addition to classrooms, a multipurpose hall, cafeteria and book shop were also constructed for this academic building.

The Library-Information and Resource Centre was located in the senior classroom area adjacent to the Administration Wing.

Covered walkways were provided all around not only to minimise the crossing between play and work areas but also to reduce sun glare in the classrooms. Provision of playgrounds and open spaces were made for sports and extracurricular activities.

Fencing of Al-Hili—Shiab Al-Gaf Area, Al-Ain City

Project Status: Completed in 2002
Scope of Services: Detailed Design, Tender Documents, Construction Supervision
Project Cost: US\$ 16 million
Client: Al-Ain Municipality, UAE

The Fencing from Al-Hili to Shiab Al-Gaf Area was the maiden project of strategic importance awarded to NESPAK in the UAE.

The purpose of this security project was to help stop illegal intruders from entering the UAE's Al-Ain area from Oman's border town, Buraimi. NESPAK designed and supervised fencing on the 90 km long border out of a total of 380 km long Al-Ain-Al-Wagan area facing the Omanese border. The components of the project included the laying of barbed wire, 2.8-metre high galvanised pre-fabricated steel fencing system and a jeepable patrolling track at the porous UAE-Oman border. Design of special foundation against the sheet flow in the catchment area of Jabal-e-Hafeet in Al-Ain, construction of checkpoints, illumination system and installation of CCTV were other important components of this project.

Sajja-Khawaneej Highway Project

Project Status: Completed in 1998
Scope of Services: Detailed Design, Construction Supervision
Project Cost: US\$ 15 million
Client: Ministry of Public Works & Housing, UAE

This 15 km long inter-Emirates dual carriageway serves as a link for the Sharjah-Dhaid Road and Dubai-Awer Road. The purpose of this road project was to reduce the



travelling distance for the Dubai-bound traffic and alleviate congestions within the Sharjah City by linking Khawaneej (Dubai) with Sajja (Sharjah). The road was designed as a four-lane dual carriageway with a 10-metre wide central reserve. It was a limited access highway and a fence was fixed on its both sides along the right-of-way limits. The road passes through the medium-to-low height sand dunes and peculiar design considerations were taken in view of desert areas. Special measures were adopted to avoid sand deposits at the highway.

The highway involved a number of underpass structures such as canal crossings and gas pipeline crossings. Camel crossing facility was also provided at suitable intervals.

Internal Roads & Parking Areas for Sheikh's Palaces

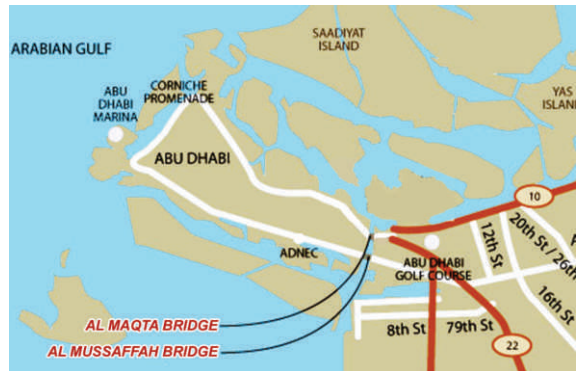
Project Status: Completed in 1998

Scope of Services: Construction Supervision

Project Cost: US\$ 4 million

Client: Al-Ain Municipality, UAE

This project involved the construction of 21 internal roads of 18 km length each and parking areas in Sheikh's Palaces in the Al-Ain area of the UAE. The terrain of the project area was the desert with shifting sand dunes at certain locations. The section of asphaltic roads consisted of 15 cm sub-grade, 15 cm granular sub-base, 6 cm bituminous base course and 4 cm thick bituminous wearing course.



NESPAK was engaged for providing engineering consultancy services for the beautification of the beach between Al-Maqta and Mussafah bridges in Abu Dhabi. The project envisaged the removal of the soft clay layer along the shoreline down to a depth of 1.2 metres and width of 50 metres up to a certain safe distance landwards and backfilling it with sand of specified grading. The backfilling was placed and dressed to form a beach with a safe slope.

Al-Maqta & Al-Mussafah Bridges Beach Beautification Project

Project Status: Completed in 2002

Scope of Services: Detailed Design, Tender Documents, Construction Supervision

Project Cost: US\$ 3 million

Client: National Consulting Office for Engineering & Management, Abu Dhabi



Sewerage Network Treatment Plant for two Housing Schemes

Project Status: Completed in 1999

Scope of Services: Detailed design, Tender Documents

Project Cost: US\$ 18 million

Client: Diwi Consult, Public Works Department, Government of Abu Dhabi

NESPAK was engaged for rendering consultancy services for sewerage systems including the sewerage treatment plants, based on Extended Aeration Activated Sludge process.

The project comprised the design of a sewage collection system, pumping stations and treatment plants for a housing settlement of 300 houses each at Remah and Bukarayah in Al-Ain in the Eastern Region of the Abu Dhabi Emirate.



The Remah Housing Scheme Sewerage Network comprised a Collection System of 200 mm dia VC pipe, a Transmission Main of 300 mm dia GRP , and a Treatment Plant of 0.66 MGD Extended Aeration Activated Sludge Plant.

The Bukarayah Scheme Sewerage Network had a Collection System of 200 mm dia VC pipe, a Transmission Main of 200 mm dia GRP and a Treatment Plant of 0.22 MGD Extended Aeration Activated Sludge Plant.

Dams & Development of Water Resources in 17 Wadis

Project Status: Completed in 1996

Scope of Services: Feasibility Study, Project Planning

Project Cost: US\$ 12 million

Client: Ministry of Agriculture & Fisheries, UAE

NESPAK was hired for carrying out master planning for the construction of dams and development of water resources to enhance groundwater recharge in 17 wadis



in the northern, central and eastern agricultural regions of the UAE to harness the maximum possible runoff.

Draft study report included the description of the existing conditions and study results on aspects related to hydrology, agriculture, soils, geology, groundwater and related engineering based on field surveys and investigations, data analysis, planning approach and the development plans of the 17 wadis. Thirty four structures were proposed to augment recharge in the wadis including gabion weirs, concrete dams and embankments. The height of the structure ranged from 3 metres to 15 metres.

Groundwater recharge under the existing and envisaged future conditions was estimated by carrying out the water balance studies keeping in view the controlling hydraulic parameters. Most of the structures were proposed to be located in gravelly beds.

Dams & Development of Water Resources in 5 Wadis

Project Status: Completed in 1997

Scope of Services: Project Planning

Project Cost: US\$ 5 million

Client: Ministry of Agriculture & Fisheries, UAE

NESPAK was engaged for carrying out studies for the construction of dams and development of water resources to enhance groundwater recharge in the additional five wadis of the central and eastern agricultural regions of the UAE to utilise the maximum possible overflow. Draft study report included the description of existing conditions and studies of various aspects related to hydrology, agriculture, soils, geology, groundwater engineering together with field surveys and investigations for five wadis. Various structures were proposed to augment recharge in the wadis, including gabion weirs, concrete dams and embankments. The height of those structures ranged from 3 to 7 metres.

