

NESPAK IN *Other Parts of the World*

NESPAK carried out projects in many other parts of the world in addition to the nine countries mentioned in the earlier pages. A total of 52 projects costing US\$ 3.1 billion have been undertaken by NESPAK in almost 29 countries. The main countries where NESPAK provided consultancy services included Azerbaijan, Bahrain, Bangladesh, Benin, Bhutan, Cameroon, Chad, Dominica, Ethiopia, Federal Islamic Republic of the Comoros, Gabon, Gambia, Ghana, Guinea, Jordan, Libya, Malaysia, Kazakhstan, Kyrgyzstan, Nepal, Senegal, Sierra Leone, Somalia, Sudan, Syria, Tajikistan, Tanzania, Thailand and Turkey. In these countries, NESPAK rendered services in the fields of Water Resources, Energy, Transportation, Ports & Harbours, Architecture & Planning and Environmental & Public Health Engineering.

A hallmark of the projects acquired in the countries other than NESPAK's foreign regional offices is that most of these jobs were financed by the international donor agencies i.e., the Islamic Development Bank, the Asian Development Bank, the World Bank and the United Nations Development Programme.

Under the miscellaneous category, the first country where NESPAK provided consultancy services was Tanzania. The Company carried out project planning and feasibility study for the Morogoro Industrial Estate Project in Tanzania in 1974. Among this range of projects, the first breakthrough for NESPAK came in the shape of the Marsyangdi Hydroelectric Power Project in Nepal in 1986 for which the Company rendered construction supervision services.

NESPAK got its first hospital project in Sierra Leone namely the 200-Bed Freetown Hospital. The Company provided tender documentation, design review and construction supervision services for the project. The most recent countries where NESPAK has acquired landmark projects are the Kingdom of Jordan, Democratic Republic of Ethiopia and Gabon in Central Africa. The projects are related to water resources and dam development and energy sector.

Although NESPAK presence in some countries is not very enormous, yet the work done there is invaluable. Concerted efforts are being made to acquire business in more countries.

Portfolios of major projects undertaken in various countries are given in the following pages.



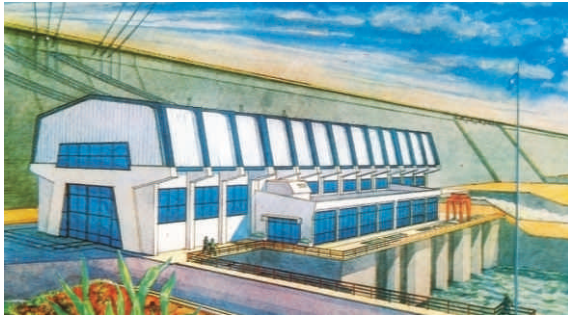
Baardheere Dam Project, Somalia

Project Status: Completed in 1991

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

Project Cost: US\$ 578 million

Client: Ministry of Planning & Juba Valley Development, Somalia



Financed by the World Bank, the Baardheere Dam was a multipurpose project aimed at flood control, irrigation and power generation.

Located at the Juba River in the Juba Valley in the southern part of Somalia, the 75m high gravity dam was planned to create a reservoir with a gross capacity of 3300 MCM. A 1050 m³/s spillway was planned to be constructed within the body of the dam. In addition to the power penstocks, a 700 m³/s irrigation outlet and a 70 m³/s bottom outlet were also the part of construction plan. Power was planned to be generated through four Kaplan turbines of 35MW each.

A NESPAK team provided technical assistance to the Client for the project implementation. The team's responsibilities included review and integration of the project studies, liaison with the World Bank, prequalification of contractors and the training of the local engineers.

Raising of Wala Dam, Jordan

Project Status: Ongoing

Scope of Services: Design Review, Construction Supervision

Project Cost: US\$ 35 million

Client: Ministry of Water & Irrigation, Jordan Valley Authority, Amman

NESPAK in association with the Consolidated Consultants Group Jordan is providing consultancy services for Raising of Wala Dam in the Kingdom of Jordan.



The Wala Dam, located 40 kilometres south of Amman, Jordan in Wadi Al-Wala close to King's Highway No. 35, is



one of the three dams built as part of the Southern Ghors Integrated Development Project. The purpose of dam is to store winter flows for aquifer recharge through a series of recharge wells to augment and increase reliable yield from Haidan springs located 13 kilometres downstream of the dam.

The original dam was constructed in the year of 1999 to 2003. The existing Wala Dam is a composite dam comprised of central spillway section made of roller compacted concrete (RCC) and two wing embankments on each side. In the original dam design, 15-metre option was kept for future raising.

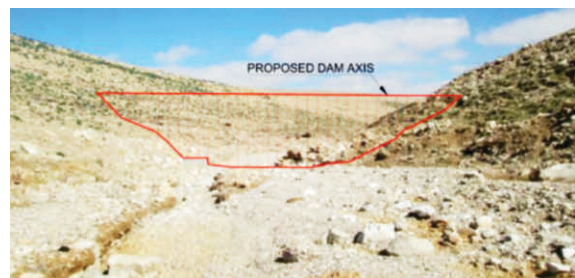
Wadi Middein Dam, Jordan

Project Status: Ongoing

Scope of Services: Updating of Feasibility Study, Detailed Design, Tender Documentation, Construction Supervision & Maintenance

Project Cost: US\$ 30 million

Client: Jordan Valley Authority, Amman



NESPAK is providing services for the project, "Updating of feasibility study, detailed design, preparation of tender documents and construction supervision & maintenance of Wadi Middein Dam" through the consultant, Consolidated Consultant for Engineering and Environment.

NESPAK has agreed to provide services as sub-consultant to Consolidated Consultant for Engineering and Environment. The updating of feasibility study and detail design part of the project has been executed and report has been submitted to the Client.

Marsyangdi Hydroelectric Power Project, Nepal

Project Status: Completed in 1989

Scope of Services: Construction Supervision

Project Cost: US\$ 360 million

Client: Marsyangdi Hydroelectric Development Board, Nepal



NESPAK provided consultancy services for this breakthrough project in Nepal, the Marsyangdi Hydroelectric Power Project. The project was meant to meet the forecasted demand for electricity in Nepal. This was a 69MW run-of-the-river hydroelectric power project located on the Marsyangdi River in Nepal. Major project components included diversion works & diversion weir, headrace & tailrace tunnels, powerhouse, transmission lines, substations and equipment.

Booue & Tsengue-Leledi Hydroelectric Projects, Gabon Central Africa

Project Status: Ongoing

Scope of Services: Detailed Design

Client: Economic Community of Central African States

NESPAK in a joint venture with ISL Ingénierie, France (Lead Partner), Office International de l'Eau, France, GIBB (Pvt.) Ltd, South Africa and OREADE-BRECHE SAS, France has been entrusted by the Economic Community of Central African States (ECCAS) to carry out design works for the Booue and Tsengue-Leledi Hydroelectric Projects located in Gabon, Central Africa. The services are being provided to the ECCAS on cost-plus-contract basis.

Major project works comprise topographical studies, hydrological studies, geological & geotechnical studies, environmental studies, economic & social aspects, risk management, economic & financial analysis of dam works and hydroelectric power plants.

Donga Dam & Hydropower Project, Benin

Project Status: Completed in 1996

Scope of Services: Feasibility Study

Client: SBEE, Ministry of Power & Water, TurkPak International (Pvt.) Limited

The purpose of this project was to produce hydroelectric energy to enhance agro-pastoral activities to meet the needs of the population.

NESPAK in a joint venture with TurkPak carried out various technical studies for the project.

A dam with homogenous earth-fill cross-section was proposed with the maximum height of 19 metres and length of 710 metres. A 43 metres wide labyrinth spillway was proposed to pass a discharge of 1 036 m³ /s. The power production was proposed to be 3.0 GWh per annum. The dam embankment and powerhouse building were designed against 10000 years flood. For the transmission of power, about 35/20kV medium tension line was planned to connect the Donga Hydropower Station with villages of Gadunga, Foyo, Barienou and Djougou.

Ganges Barrage Project, Bangladesh

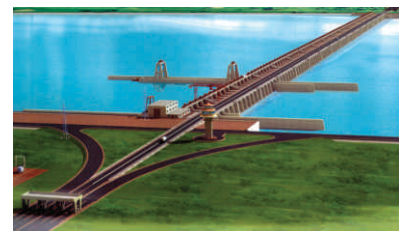
Project Status: Completed in 2014

Scope of Services: Feasibility Study, Detailed Design

Project Cost: US\$ 73 million

Client: Bangladesh Water Development Board

The sharing of Ganges River flow between India and Bangladesh due to the construction of Farrakha



Barrage – the upstream of the Indo-Bangla border – has adversely affected the socio-economic and agro-environment echo systems in Bangladesh.

The construction of a barrage in Bangladesh territory has been inevitable to counter the effects of water shortage in 171 district councils (upozilas), the world's largest mangrove forest of Sunderban and for local navigation. An assured water supply of Ganges River through the Ganges Barrage is vital for the development of several basins/sub-basins and maintaining the fragile ecosystem of the area. The water storage of barrage will ensure improvement of water resources, economic systems, navigation and multipurpose water supply projects. NESPAK scope of services includes project management, design of barrage and its appurtenant structures, geotechnical investigations/studies and power & mechanical designs/studies.

Gambella Irrigation & Drainage System, Ethiopia

Project Status: Completed in 2013

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

Project Cost: US\$ 572 million

Client: Saudi Star Agricultural Development PLC, Ethiopia



This was the maiden project acquired by NESPAK in the Federal Democratic Republic of Ethiopia. The project involved the development of a commercial rice farm on 10000 hectares of land in the private sector in Gambella Region. It comprised irrigation development, agricultural & market development and irrigation management. The project was been divided into three phases for the purpose of execution.



NESPAK scope of work for this project included topographic surveys, water availability & reservoir sedimentation studies, geotechnical investigations, agricultural & environmental studies and tender level engineering designs for the irrigation and drainage system.

The scope of work also comprised assistance to the Client in tender award to the contractors, construction drawings and technical support during the construction of the irrigation and drainage system.

Matam Rural Development Project, Senegal

Project Status: Completed in 2005

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

Project Cost: US\$ 11 million

Client: Ministry of Agriculture, SAED, Senegal

This project was aimed at providing irrigation facilities to farmers by pumping water from River Senegal. Seven small irrigation schemes were designed and constructed along the Senegal River under the project which was financed by the Islamic Development Bank. NESPAK as a lead firm provided services for the design of irrigation and drainage system, design of pumping stations for the irrigation schemes and preparation of Bill of Quantities. NESPAK also rendered construction supervision services during the implementation phase of the project.

Integrated Development Project for Chari-Logone Basins, Chad & Cameroon

Project Status: Completed in 2001

Scope of Services: Feasibility Study

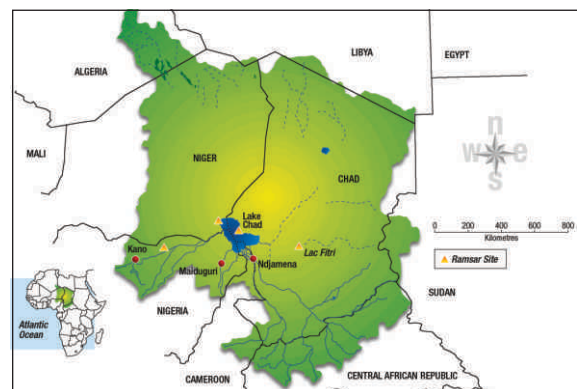
Project Cost: US\$ 8 million

Client: Lake Chad Basin Commission, Chad

NESPAK-TurkPak in association with Hyder Consulting, UK carried out this project which involved a feasibility study for the integrated rural development of the Chari-Logone Basins, covering an area of 550610 sq. km. The major parts of the two basins are located in the Republic of Chad and Northern Cameroon.

The project was aimed at developing 2500 hectares of land on irrigated agriculture and 4000 hectares on rain-fed agriculture. Development of livestock, fisheries and natural resources of the basin area was another purpose of the project. The area was divided into three agro-climatic regions within which certain zones were identified for irrigated and rain-fed agricultural development. Sites were selected for 60 irrigation schemes of 2550 hectares each and 40 rain-fed agriculture schemes of about 100 hectares each.

The scope of services included topographic surveys, geotechnical investigations, preliminary designs of irrigation schemes, EIA study and institutional arrangements & development plans for livestock & fisheries.



Niger Valley Water Resources Project, Benin

Project Status: Completed in 1987

Scope of Services: Project Planning, Detailed Design

Project Cost: US\$ 21 million

Client: Islamic Development Bank, Jeddah, OBAR Porto Noro, Republic of Benin

NESPAK rendered consultancy services for this project in two phases. The Phase-I comprised master planning of 30000 hectares of land along the right bank of Niger River for agricultural



development. The scope of work for the Phase-I included topographic & soil surveys, study of water resources potential & consumptive use, selection of cropping pattern, land capability classification and socioeconomic studies. It also included selection of a pilot project of about 2000 hectares of land.

During the Phase-II, a feasibility study for the pilot project area and detailed soil & topographic surveys were carried out for pumping station and irrigation & drainage system were designed. Detailed agro-economic analysis of the project was conducted to confirm its feasibility.

The contour plan for studies was developed by aerial photographs and benchmark survey was carried out for 40000 hectares of land along the Niger River. A soil classification survey was also carried out for 30000 hectares of land.



Marsyangdi Watershed Management Project, Nepal

Project Status: Completed in 1990

Scope of Services: Feasibility Study

Project Cost: US\$ 60 million

Client: Marsyangdi Hydroelectric Development Board, Nepal

The purpose of this study was to protect the useful life of Marsyangdi Hydroelectric Project from soil erosion, which



has been the most serious environmental hazard in Nepal.

NESPAK prepared a detailed catchment management plan of the Marsyangdi watershed study area. The preparation of the proposed plan was meant to boost the economy of the project area through the proposed watershed management measures for an area of 400000 hectares.

The report consisted of a short-term investment programme and a prospective development programme. The short-term investment programme covered a five-year period for project appraisal, whereas the long-term programme entailed the overall development strategy over a 20-year period. The five-year plan was to serve as a launching pad for the long-term plan.

Flood Mitigation Project, Azerbaijan

Project Status: Completed in 2003

Scope of Services: Feasibility Study

Project Cost: US\$ 29 million

Client: Asian Development Bank, Manila

The objective of this ADB-funded project was the immediate improvement in the flood-prone areas of Azerbaijan to provide security against the recurring flood damages.



The project comprised four major components i.e., structural & nonstructural measures, disaster preparedness & flood fighting and project management & monitoring. The structural measures included low-cost solution against flood with the average occurrence of once in 50 years.

The project also included Initial Environmental Examination (IEE) based on thorough examination of the bio-physical and socio-economic environment in Azerbaijan to identify potential environmental problems. The study required suggestions for flood mitigation and the outline of appropriate monitoring & evaluation programme.

Survey of Groundwater Resources, Benin

Project Status: Completed in 1992

Scope of Services: Project Planning

Project Cost: US\$ 20 million

Client: Directorate of Hydraulics, Ministry of Equipment & Transport, Popular Republic of Benin

The NESPAK-TurkPak joint venture carried out project in two phases. The four-month long phase-I comprised a detailed reconnaissance of the country, assessment of water resources development and preparation of a comprehensive programme for additional field surveys and investigations.

During the Phase-II, supervision of field surveys and investigations were carried out through contracting firms. Work included geophysical surveys, topographic survey, drilling of exploratory boreholes, installation of test tubewells & piezometers and performance of pump-out tests.

The water requirements were estimated for the next 25 years and long-term ground water potential was determined through two mathematical models.

Saline Water Intrusion Protection Project, Senegal

Project Status: Completed in 1998

Scope of Services: Feasibility Study

Project Cost: US\$ 6 million

Client: Ministry of Hydraulics, Republic of Senegal



Funded by the Islamic Development Bank, this project was awarded to the joint venture of NESPAK-TurkPak International (Pvt.) Ltd., Pakistan and Hydroconsult International, Senegal.

The objective of project was to stop tidal water from entering 15 valleys in the Casamance Region of the Republic of Senegal, removal of stormwater and improvement of water management practices within the valleys. The valleys used for rice cultivation suffered from the intrusion of saline tidal water.

The feasibility study proposed the structural works including the construction of earthen dykes, spillway structures, mechanical gates and the formation of the most feasible terraces to maintain different water depths.

Sewage Treatment Plant at Accra, Ghana

Project Status: Completed in 1998

Scope of Services: Design Review

Project Cost: US\$ 60 million

Client: Abdul Aziz Al-Saqabi Consulting Engineers, Kuwait

NESPAK in association with the International Marine and Dredging Consultant (IMDC) NV Belgium was hired to work on Korle Lagoon Ecological Restoration Project for the vetting of design of sewage treatment plant at Accra, Ghana.

The scope of services included design review preparation of design report and technical specifications for four sewage pumping stations and two interceptor structures.

NESPAK formulated an operational policy and user requirements keeping in view the local needs, customs, climate etc.

The master plan and concept design of major areas for the hospital with the latest diagnostic and treatment facilities were also envisaged for the project.

Dhaka-Chittagong Highway Project, Bangladesh

Project Status: Completed in 2009

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

Project Cost: US\$ 284 million

Client: Ministry of Communications, Roads & Highway Department, Government of Bangladesh

The Dhaka-Chittagong National Highway, the most important highway of Bangladesh, is considered to be the lifeline of commerce and carries port traffic to Dhaka and other parts of the country. The improvement of this strategic corridor was envisaged to provide economic and social benefits to the country's south-eastern region. The project involved the construction of a 2nd carriageway from the Daudkandi to the Chittagong Section. The total



road length is around 196 km with two major bridges across Meghna River (930m) and Meghna-Gumti River (1200m).



NESPAK scope of services included survey, design drawings, geotechnical investigations, bridge design, hydraulic & hydrology report, Environmental Impact Assessment (EIA) Report, pavement & geometric design, contract documentation, preparation of Bill of Quantities and engineer's cost estimate.

Almaty-Bystrovka Road, Kazakhstan

Project Status: Completed in 1996

Scope of Services: Project Planning

Project Cost: US\$ 310 million

Client: Islamic Development Bank, Jeddah Ministry of Transport & Communications, Republic of Kazakhstan



NESPAK, in a joint venture with TurkPak and the Institute Kazakhpromtransproekt carried out a feasibility study for the Almaty-Bystrovka Road in the Republic of Kazakhstan. The project was financed by the Islamic Development Bank.

The project road formed an important section of an international route

from Kazakhstan through China to Pakistan and overseas beyond Karachi. For this project study, the international route – Bystrovka Torugart-Kashgar-Gilgit – was examined in detail, especially the existing infrastructure and other facilities beyond Kazakhstan over to Kyrgyzstan, China and Pakistan. NESPAK prepared a feasibility study and specifications of this road section, depending upon projections for trade and economy of the whole region.

Djougou-Porga Road, Benin

Project Status: Completed in 1986

Scope of Services: Detailed Design, Tender Documentation

Project Cost: US\$ 27 million

Client: Ministry of Equipment & Transport, Popular Republic of Benin

The NESPAK-Turk-Pak joint venture was engaged to provide consultancy services for this 189 km long road project.

The road is situated in the Northern Atacora province of the Popular Republic of Benin between the cities of

Djougou and Porga. It provided a link to the port facilities at Cotonou to the hinterland, and also, with the landlocked countries of Burkina Faso, Niger and Mali to the north.



The working language in the Republic being French, the services of a Tunisian company, SCET, were solicited under a separate partnership agreement. The scope of services comprised feasibility study, topographic survey, detailed design of alignment and supervision of soil investigations & pavement design.

Electrical & Water Control Centres Project, Bahrain

Project Status: Completed in 2002

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

Project Cost: US\$ 42 million

Client: Ministry of Electricity & Water, Bahrain



The primary purpose of the project was the upgradation of the existing Local Distribution Centre (LDC) and Distribution Control Centre (DCC) as well as the construction of a Water Control Centre (WCC). NESPAK scope of work included the development of SCADA/ Energy Management System and Telecommunication/control facilities.

The Electricity Control System comprised a National Control Centre (NCC), a Distribution Control Centre and a Water Control Centre for the control of the bulk water system production and distribution network.

As many as 60 stations were monitored and controlled from different control centres. The NCC and DCC were provided with extensive facilities to carry out not only the control of the power system but also the operation of the unmanned substations.

Power advanced application software was implemented at the NCC level to optimise the system management.

Rural Electrification Project, Gambia

Project Status: Completed in 1989

Scope of Services: Feasibility Study, Project Planning

Project Cost: US\$ 47 million

Client: Government of Gambia

Financed by the Islamic Development Bank, this project was aimed at achieving the objectives of most efficient and least cost methods of generation and distribution of electrical energy, apart from rehabilitating the existing power supply system in the Republic of Gambia.



Electricity requirements were only met by small isolated diesel power stations and limited distribution systems in rural areas of Gambia. Due to difficulties in carrying out preventive maintenance programmes, the generation and distribution systems were in bad shape, resulting into unreliable power supply.

Through the rural electrification project spreading over an area of 10000 sq. km, as many as 52,000 Gambian consumers were provided with electricity connections. Almost 50 generating units were put in place in 46 towns and villages of Gambia under this project.



200-Bed Freetown Hospital, Sierra Leone

Project Status: Completed in 1993

Scope of Services: Detailed Design, Tender Documentation, Design Review

Project Cost: US\$ 30 million

Client: Ministry of Health & Social Services, Government of Sierra Leone

NESPAK in a joint venture won its first foreign hospital project contract when its technical and financial proposal was selected by the Islamic Development Bank and the

Government of Sierra Leone in an international competition.

The main objective of the project was to review the health policy and infrastructure in order to suggest improvements, develop a user requirements programme and design a 200-bed expandable hospital near Gui, 24 kilometres from Freetown.

Sheikh Jassim Jabor Bin Mohammad Al-Thani Hospital, Comoros

Project Status: Completed in 2011

Scope of Services: Detailed Design

Project Cost: US\$ 28 million

Client: Sheikh Jassim Jabor Bin Mohammad Al-Thani Charitable Foundation



NESPAK won this hospital project in an international design competition organised by the Sheikh Jassim Jabor Bin Mohammad Al-Thani Charitable Foundation. The 120-bed hospital is situated in the Anjouan Island which is one of the three islands of the Federal Islamic Republic of the Comoros, a developing country located in the Indian Ocean off the east coast of Africa. The objective of the project was to provide a state-of-the-art healthcare system for the people of Anjouan Island which lacked healthcare resources.

NESPAK prepared architectural and structural design and architectural drawings of a modern healthcare facility. The proposed hospital comprises a ground plus two-storey building with a basement on a total area of 2500 sqm. The structure includes an accident & emergency ward, pathology laboratories, out-patient department, administrative offices, patient accommodation, intensive care units & coronary care units and landscaping area.

New Hangar at Baku Airport, Azerbaijan

Project Status: Completed in 2003

Scope of Services: Feasibility Study, Project Planning, Detailed Design, Tender Documents

Project Cost: US\$ 39 million

Client: Azerbaijan Airlines, Islamic Development Bank



This project partially included two aircraft maintenance cells for wide body aircraft of the size of B747-400 along with specialised maintenance workshops, access taxiway, maintenance/parking apron and road works. The state-of-the-art hangar was equipped with multi-support hanging travelling cranes, compressed air system, heating, ventilation, air-conditioning, water supply, fire protection system, 400 Hz aircraft power supply generators and other essential utilities.

Pakistan Embassy Complex, Kathmandu, Nepal

Project Status: Completed in 2006

Scope of Services: Project Planning, Detailed Design Documentation, Construction Supervision

Project Cost: US\$ 2 million

Client: Ministry of Foreign Affairs, Government of Pakistan



Situated in Kathmandu, the capital of Nepal, the embassy is a complex of buildings spread over an area of 15900 sqm with a total built-up area of 3845 sqm.

The main purpose of this project was to build an embassy equipped with modern facilities meeting corporate needs.

The embassy complex comprises chancery complex and residential buildings. The main elements of the chancery complex are a chancery office containing administrative and visa offices, a multipurpose hall, meeting rooms and allied facilities. At entrance of the chancery office, there is a huge atrium leading towards corridors which again opens in a lobby.

The residential complex comprised the ambassador's residence and the officers & staff apartments. The ambassador's residence is a five-bed luxury house while a staff residence consists of a two-bedroom apartment.

The architectural design of the embassy complex conforms to the Islamic and Pakistani cultural and architectural heritage.

Chancery Building & Ambassador's Residence, Bahrain

Project Status: Completed in 2004

Scope of Services: Detailed Design

Project Cost: US\$ 1 million

Client: Ministry of Foreign Affairs, Government of Pakistan

NESPAK won this project through a design competition for the Pakistan Embassy building in the State of Bahrain. The embassy complex comprised chancery building and official residence for the ambassador of Pakistan. Located in Zinj, the total covered area of both the chancery office and the ambassador's residence was 22000 sqm.

The style of architecture of the embassy was a blend of traditional Islamic and contemporary modern building structure. The building was designed in a way that it should depict the splendour and serenity of Pakistani culture and traditions.

