





**Building a Better World
for Future Generations**



Introduction of Kayson

Founded in 1975 by Mr. Mohammadreza Ansari, Kayson is an international public-limited general contractor, providing premier management, engineering, procurement, construction, financing and investment services worldwide.

Kayson was among the first Iranian general contractors to receive quality management certificate, ISO 9001:2008.

Kayson has also played a pioneering role in introducing advanced project delivery systems such as DB & EPC to the Iranian construction industry.

Since its inception, Kayson has endeavored to maintain a reputation for excellence in performance by providing a high quality services, based on technical competence, efficiency, cost effectiveness and adherence to contract programs.

To complete its value chain, achieve quantitative and

qualitative growth, and diversify its activities, Kayson Holding has expanded its operations by establishing, partnering with, or acquiring stakes in leading companies across various sectors, including engineering, contracting, manufacturing, commerce, services, and investment.

Vision

To Create Value and Provide World- Class Construction Services through People and Organizational Development to Improve the Quality of Life

Mission

To Build a Better World for Present and Future Generations with Observing Values Focusing on Engineering and Construction Services, Investment and Supply Chain Capacity Development

Values

- Respecting People, Their Values & Rights
- Observing Professional Ethics and Adhering to all Obligations
- Observing Safety and Preserving Health and Environment
- Providing Desired Quality
- Cherishing Creativity, Initiative and Innovation Culture
- Promoting Continual Individual and Organizational Development
- Win-Win-Win Relationship

Services

- Project Development
- Project Management
- Engineering
- Procurement
- Construction
- Financing
- Investment
- Operation and Maintenance



Our Work

A meaningful life is dependent on inner serenity, self-honesty, and engaging with the world with genuine enthusiasm; And enthusiasm flourishes when is combined with creativity, and creativity finds its pure meaning when it offers a provision of services, takes a burden and solves a problem.

Man is valuable, but not because of the blessings and advantages he has in life, but because of the greatness of his dreams and desires for human welfare and wellbeing, as well as the extent to which he enthusiastically strives in this way.

Man is valuable, but not because of the blessings and advantages he has in life, but because of the greatness of his dreams and desires for human welfare and wellbeing, as well as the extent to which he enthusiastically strives in this way.

Reliable service comes with humility and continuous efforts to untangle difficult and complex knots and obstacles, and in the same way, the hardships of life are removed with a smile and kindness; Reliable service is a continuous proof of committed love for «life» and «development» along with commitment to country, which is pleasant to sow the seeds of life aiming to grow again; To flourish and create goodness and kindness from the life force for the people we love and for generations to come.

People's trust is our most valuable asset and our aim is to adhere to quality and honesty; And all this comes to the fore with the power of belief, planning and the work of «Man»; And thus, all the efforts and fatigue that we have endured in this way are treated to the joy of friendship, and we are happy to see the satisfied smiles of those who benefit from our creations...

Our path and ultimate goal are described as «development» and «excellence», full of zest and the taste of making and being made, to better take advantage of the opportunities we have in order to improve the quality of people's lives; Working with commitment and honesty, «To Build A Better World For Future Generations».



DIVISIONS

Water and Environment



Desalination and water and wastewater treatment facilities
Hybrid Cooling Towers
Dams
Water Transfer and Diversion Tunnels
Irrigation and Drainage Networks
Water and Wastewater Treatment Plants
Water Transmission Lines
Sewerage Collection and Transmission Lines (Pipejacking Method)

Oil, Gas and Industry



Refineries & Petrochemical Plants
Pumping & Compressor Stations
Power Generation Plants, Power
Transmission & Substations
Industrial Manufacturing Plants
Pipelines & Tank Farms
Gas Injection Projects
Upstream – Exploration and Production

Railway Transportation Systems



Railways
Urban Railways
Monorails

Housing and Buildings



Mass Housing
Residential Complexes
Townships
Infrastructure Facilities & Landscaping
Commercial & Office Building Complexes
Sports, Recreational, Cultural & Medical Facilities

Civil



Ports & Harbors
Airports
Roads, Elevated Highways & Tunnels
Bridges

Power and Power Plant



Power Plants
Power substations and Transmission Lines
Renewable Energy Plants

Subsidiaries

Contracting (engineering, procurement, construction)

-  Kayson Water and Environment Co.
-  Kayson Power and Power Plant Co.
-  Kayson Petro Industry Co.
-  Kayson Railway Development Co.
-  Kayson Construction Co.
-  Omran Kayson Co.
-  Kayson Urban Development Co.
-  Kayson International1- Co.
-  Darya Khak Pay Co.
-  Kayson Oil, Gas and Energy Co. (KOGC)

Manufacturing, Trading & Services

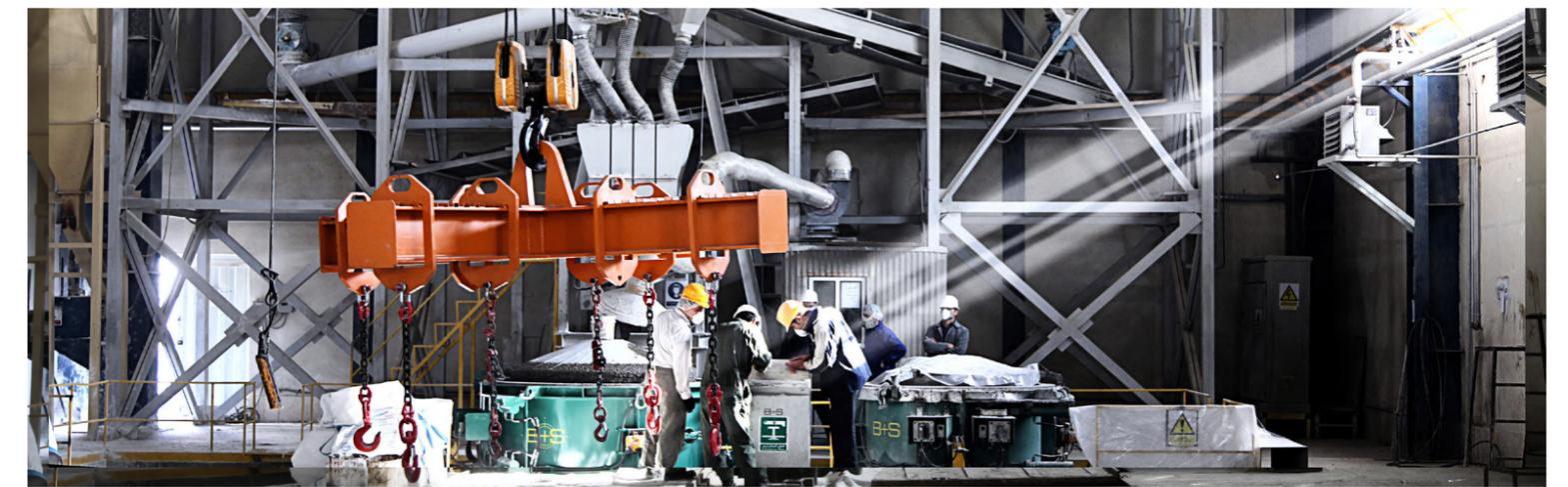
-  Kayson IT Co. (KITCO)
-  Middel East Omran Machine Co.
-  Kayson Tamin Kala Co.
-  Kayson Concrete Industries Co.
-  Kayson Nezam Gostar Co.
-  Peshang Novin LLC
-  Kayson Insurance Co.
-  Polymer Concrete Pipe LLC

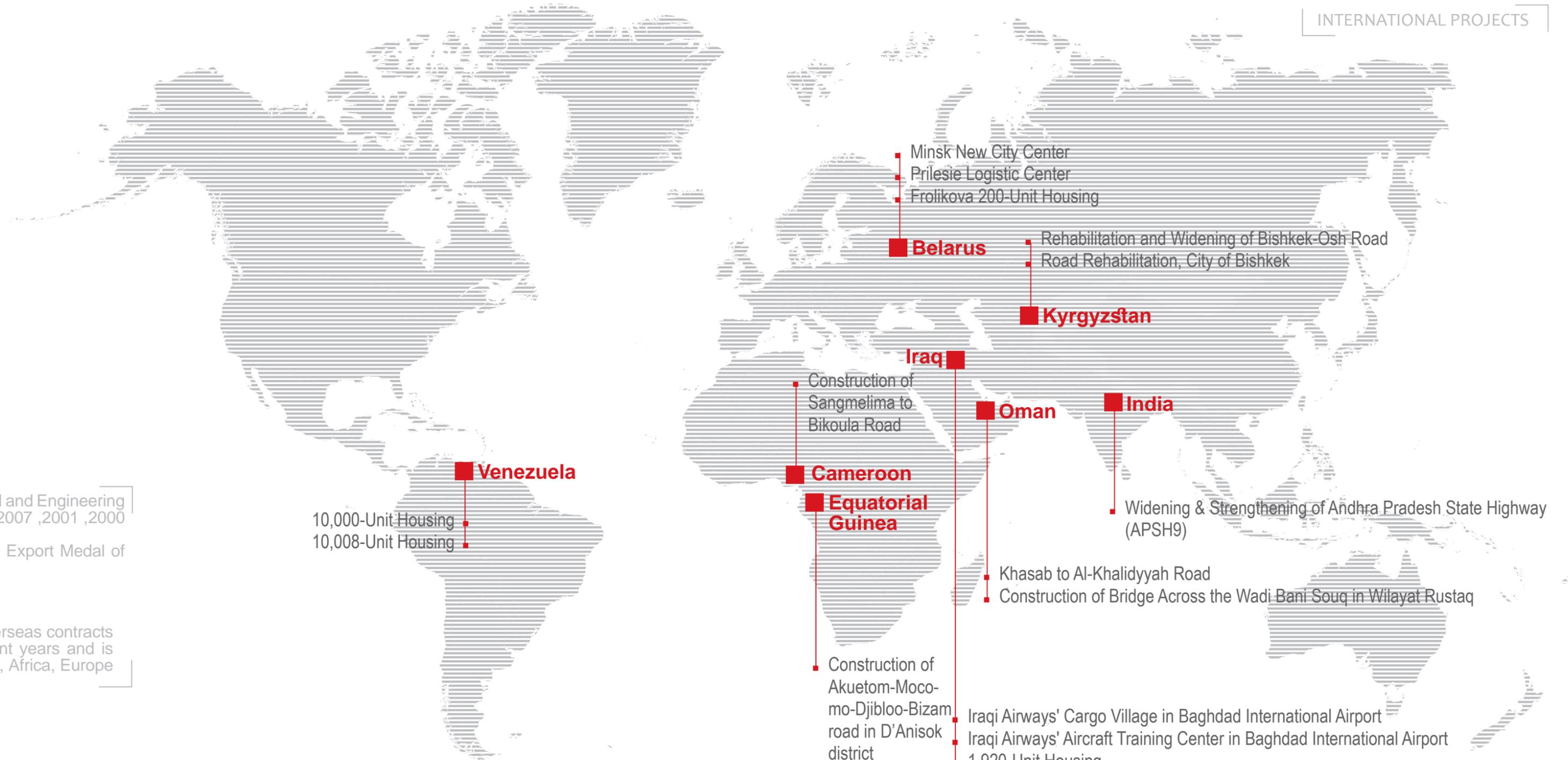
Development, investment and financing

-  Farasar Co.
-  Kayson Engineering Development Co.
-  Kayson Abfa Industry Co.
-  Sirjan Power Plant Development Co.
-  West Energy Development Co.
-  Kayson Innovators Co.
-  Kayson East Energy Co.
-  Belpars Foreign Company LLC
-  Kayson Belarus LLC
-  Prilesie Foreign Company LLC
-  Kayson Mana Energy Co.
-  Taban Energy Development Co.

Affiliated companies

-  Sana Gostar Sabz Group
-  Radis Industrial Group
-  Farasat Inc.
-  Iran Investment Co.
-  Kayson Construction Development Co.
-  Builds Up Co.





Exemplary Exporter of Technical and Engineering Services in ,2010 ,2009 ,2008 ,2007 ,2001 ,2000 2014 & 2013 ,2012 ,2011. KAYSON has Received Iranian Export Medal of Honor in 2015.

The volume of the Kayson's overseas contracts has increased manifold in recent years and is involved in **four continents** (Asia, Africa, Europe and the Americas).

Experience in **more than 10 countries** including Bolivarian Republic of Venezuela, Oman, Belarus, Kyrgyzstan, India, Equatorial Guinea, Iraq, Tajikistan, Qatar and Cameroon.

DOMESTIC PROJECTS



Aghajari

- Aghajari Gas Injection

Ahwaz

- East Ahwaz Wastewater Treatment Plant
- Ahwaz Urban Railway
- 1,505-Unit Ahwaz Teachers' Residential Complex
- Hamidieh-Qods Plain Irrigation & Drainage Network
- Shirin Shahr Township Civil Works & Infrastructural Installations
- Ahwaz Sewage by Pipejacking Method

Ahar

- Sattarkhan (Ahar) Clay Core Earth Dam & Related Facilities

Andisheh

- Office Building of Construction Engineers Organization

Anzali

- East Anzali Wastewater Treatment Plant

Arak

- 2,392-Unit Housing
- Golpouneh Pars 1.6 MW Solar Power Plant

Ardakan

- Construction of Chadormaloo Ferroallory Factory

Arvand

- Oil Well Drilling Operations in Arvand Field

Asalouyeh

- South Pars Gas Field Development, Phase 12 (EPC2)
- Industrial Buildings & Installation of Dena Petrochemical Equipment
- Asaluyeh Centralized Storage Tanks
- Sabalan Methanol
- 4th Aromatic Plant, Process Site
- Site Preparation for South Pars Gas Field Development, Phases 5 & 4 and 3 & 2
- Civil operations of the South Pars Gas Field Development, Phase 1 Refinery
- Earthworks for Arghavan Petrochemical

Bafgh

- Shed Foundation & Mega module Unit Equipment
- Mineral assembly foundation & steel iron industry

Bandar Abbas

- Bandar Abbas Water Desalination Plant
- Almahdi Aluminum Complex

Bushehr

- Civil and Underground Piping Works for Olefin Unit, Bushehr Petrochemical Co.
- Building Complex of Phase 2, Bushehr Nuclear Power Plant
- Turbine Building of Phase 2, Bushehr Nuclear Power Plant
- Export Pipelines for Northern & Southern Routes, Phase 2, Bushehr Petrochemical Complex
- Utility & Offsite Facilities, Site 1, Bushehr Petrochemical Complex

Chabahar

- Chabahar Bitumen Storage Complex
- Chabahar Water Desalination Plant
- Shahid Beheshti Port Oil Lines

Cheshmekhosh

- Crude Oil Production in Cheshmekhosh, Dalpari, and Paydar-e- Shargh Oil Fields

Doroud

- 400-Unit Cement Factory Workers Residential Complex

Farashband

- Gas Refinery Processing Unit Development Plan

Gachsaran

- 3D Seismic Data Acquisition in Gachsaran, Chelengar and Garanqan Fields

Gorgan

- Qarasu-Zarin-Gol Irrigation and Drainage Network

Hamedan

- Hamedan Sewerage via Pipejacking Method

Isfahan

- Shahin Shahr and Isfahan-Foolad Shahr Highways
- Dualization of Shabnam-Moshk and Arjang-Sasan Railways
- Power Transmission Lines of Isfahan Province
- Isfahan Research Structure
- Isfahan Mobarakeh Hot-Rolled Steel II
- Isfahan Northern Hybrid Refinery Cooling Building
- Shahid Haj-Mirzaei -206Unit Housing

Kermanshah

- Kermanshah -4,920Unit Housing

Khaf

- 50 MW Wind Power Plant
- Land Preparation of 41-Hectare Residential Township

Khosf

- 50 MW Khaf Solar Power Plant

Lahijan

- Foomanat (D1) Irrigation and Drainage Network

Maku

- 12 MW Solar Renewable Power Plants

Marvdasht

- Goyom-Marvdasht 27 Km,16" Gas Pipeline

Mashhad

- Jahan Mall Concrete Structure
- Al-Teymour Wastewater Treatment Plant
- Jomhuri Islami Pray Hall in the Razavi Holy Shrine

Naeen

- 2 MW Solar Power Plant

Neka

- Neka-Ray Crude-Oil Pipeline Pumping Stations & Related Installations

Nehbandan

- Section 11 of the Zahedan-Mashhad Railway
- 110 MW Solar Power Plant

Parand

- Parand New City 16,080-Unit Housing
- Parand -552Unit Residential Complex

Pardis

- 264-Unit Housing
- Boiler House & Electrical Substations at Khatam University

Parsian

- Earthworks for Site Preparation and Land Improvement of Pasargad Petrochemical

Poldasht

- Poldasht Irrigation & Drainage Network

Qom

- Qom Monorail
- Salafchegan Railway

Rafsanjan

- Rafsanjan Sports & Cultural Complex
- Isfahan-Rafsanjan 232 Km, 16" Oil Pipeline
- Bandar Abbas-Rafsanjan 104 Km, 26" Oil Pipeline

Sanandaj

- Expansion of Kordenstan Barez Tire Factory

Sangan

- Sangan Iron Ore Concentration Plan
- Sangan Dry Waste Stockpile
- East Kaveh Steel Concentrate Loading Station

Saveh

- Saveh Grey Cement Plant

Shahrood

- Aliabad Katoul-Shahrood 70 km, 16" Gas Pipeline

Shiraz

- Concrete Structure of Shar Sadra

Siah Bishe

- Siah Bishe Pumped Storage Project Upper & Lower Dams

Sirjan

- Golgohar Pelletizing Plant
- Golgohar Complex Rail Terminal for Stacking, Reclaiming and Loading
- Golgohar Water Storage Basin
- Pre-processing of Golgohar's 4th Concentrate Production Line
- Roads and Pathways in Golgohar Tourist Village Site
- Island Restaurant in Golgohar Tourist Park
- 20,000 m³ Storage Tank at Golgohar Complex

Tabriz

- Ray-Ideloo 364 Km, 16" Oil Pipeline

Tehran

- Tehran Chamber of Commerce Building
- Parking of Iran Chamber of Commerce Building
- Atlas Plaza Commercial Complex
- Honar Lake
- Iran Mall
- Tehran Sewerage Pipeline via Pipejacking Method
- Tehran Book Garden
- Sattarkhan Great Mall
- Planning System & Project Control of Tehran Metro
- Amir Kabir Commercial Complex
- Amir Kabir Underground Motorway
- Imam Khomeini International Airport
- Navab Residential Complex
- Yadegar Imam Flyover
- Central Fruit & Vegetable Market of Tehran (Phase 2)
- Afsarieh Interchange
- Sorkhe-Hessar & Valfajr Water Canals
- Drilling & Grouting Operations of Tehran Metro Tunnel
- Transfer Canals of Tehran's Subsurface Waters to Varamin and Rey Plain
- Structural Retrofitting of and Floor Addition to the Administrative Court of Justice Building
- Structural Framework of Behesht-e-Niatous Tower
- Central Bank of Islamic Republic of Iran Museum Garden

Torbat Heydariyeh

- Petroleum Tanks of Torbat Heydariyeh City

Quality Policy

In Concern with our Mission and to Achieve our Vision and Objectives, with Observing Values and Adhering to all Specifications and Requirements Agreed upon in Contracts, National and International Regulations and Standards, with all Staff Involvement, Kayson is committed to:

- Continual Monitoring and Improvement in Quality of Design and Construction of Projects
- Continual Improvement of Efficiency and Effectiveness of Processes based on Results of Audits, Evaluations and Performance Measurements and Organizational Improvement Management Feedbacks
- Ensuring Efficient Provision and Allocation of Resources to Execute Processes Effectively
- Empowering, Developing and Enhancing Knowledge of Employees and Increasing their Involvement in the Effective Development and Implementation of Management Systems and Knowledge and Experience Transference
- Understanding and Meeting Stakeholders' Requirements and Expectations based on Sustainable Development and Mutual Benefit



Health, Safety and Environment Policy

As a general contractor, Kayson is committed to safeguarding the health and safety of its staff and other stakeholders (such as a subcontractors, partners, neighbors, visitors, etc.) and protecting the environment.

- To achieve these goals, all levels of the organization and subcontractors shall adhere to the following commitments:
- Creating a safe and healthy workplace
- Minimizing the impact on the environment
- Minimizing disruption in the daily life of people and society
- Complying with legal requirements (local, national and international), and clients' HSE requirements
- Formulating, updating, and implementing suitable and creditable models for the Company's HSE management system
- Providing training for managers and supervisors and securing their active participation in the implementation of basic HSE principles
- Training and encouraging personnel at all levels of the organization and obliging them to abide by basic HSE principles
- Providing training for subcontractors and obliging them to comply with basic HSE principles
- Recording, investigating, researching near misses, accidents and hazards and their causes in order to eliminate them, and, if not possible, minimize the possibility of their recurrence
- Continually improving the performance of the company's HSE management system



Code of Business Ethics

Core values of KAYSON Inc. are based on serving the country and people, therefore we strive to realize our dedication to these goals and values in action, and in professional relations by adhering to the following principles:

- Creating value and national self-belief in line with promoting Kayson's brand.
- Collaborating toward excellence and increasing welfare in our surrounding community (employees and their families, projects stakeholders, society and people).
- Avoiding any act against public interest.
- Providing a healthy, peaceful and secure workplace for personnel while promoting healthy relationships with all stakeholders.
- Sustainable natural resources utilizing, protecting the environment, observing safety and occupational health in our activities.
- Observing relevant national and international laws and regulations.
- Maintaining fairness, justice, honesty and transparency in relations.
- Taking responsibility, guaranteeing fulfillment of job commitments, adhering to plans and schedules and improving quality and disciplines.
- Considering interests of stakeholders and general public in a free, healthy and competitive environment.
- Respecting intellectual properties of others.
- Providing equal opportunities based on competency; regardless of age, gender or race.
- Valuing teamwork and preferring organizational interests to individual's.
- Preserving and using tangible and intangible assets and resources of the company effectively.

The essence of all above which has to be observed is the win-win-win relationship; which means not only both parties of a business deal should consider each other's interests but also their agreement must preserve the interests of the country, people and other parties.



Kayson Water and Environment Company

Kayson Water and Environment Company was established in 2017. This formation followed structural and management changes within the Kayson Group, with the aim of creating a specialized holding company. This move was a natural progression, transforming Kayson Company's Water and Wastewater Group into an independent entity.

However, the history of Kayson's involvement in the water sector stretches back much further, to 1975, the year the company was founded. Kayson's inaugural executive project, the Fumanat Irrigation and Drainage Network, marked the company's entry into Iran's water industry. Subsequently, through projects such as the Hamidieh-Quds Plain Irrigation and Drainage Network, the Poldasht Diversion Dam and its Associated Irrigation and Drainage Network, and the Sattar Khan (Ahar) Earthen Dam, Kayson solidified its position as a major player in this field.

In 2005, the company significantly expanded its operational scope by undertaking the Hamedan Pipejacking project and introducing polymer concrete pipe production technology from Polymer Concrete Pipe Company (a Kayson subsidiary). Kayson also successfully completed the Upper and Lower Dams of the Siyah Bishe Pumped Storage Power Plant, notable as the nation's first concrete-faced rockfill dams. This achievement earned them a crystal statuette at the National Award for the Best Project in Iran.

To address the country's pressing needs and conserve water resources, the company took a pivotal step by broadening its service portfolio in water and wastewater. This expansion included the design and construction projects for wastewater treatment plants in the cities of Ahwaz, Mashhad, and Bandar Anzali.

Over the last decade, driven by the growing demand for new water resources, Kayson Water and Environment Company has played a crucial role in executing water desalination projects. The monumental Bandar Abbas water desalination project, followed by the Chabahar

project, established the company as the largest contractor in this sector nationwide.

Furthermore, projects like the Qarasu-Zarringol Irrigation and Drainage Network and the Hybrid Cooling Tower for the Isfahan North Refinery exemplify the company's commitment to optimizing water consumption and reducing waste of the nation's precious water resources.

Thanks to its accumulated experience, application of cutting-edge technical knowledge, and active participation in national infrastructure projects, Kayson Water and Environment Company has evolved into one of the most capable engineering and contracting firms in Iran's water sector.

Kayson Water and Environment Company specializes in the design, procurement, execution, supervision, installation, commissioning, and management of construction projects. Their operational models include Build-Own-Operate (BOO), Design and Build (DB), and contracts encompassing engineering, Procurement and Construction (EPC), as well as all related watershed management activities.

The company's primary focus areas encompass water and wastewater projects, specifically: construction of dams and hydroelectric power plants, piping projects and expansion of urban water and wastewater distribution networks, design and construction of various water and wastewater treatment plants along with transmission lines and pumping stations, irrigation and drainage networks and canal construction, design and construction of desalination units, construction of ports, breakwaters, piers, and other marine facilities, execution of wind and solar power plant projects, design and construction of waste incineration facilities, provision of hydromechanical and electrical equipment, commissioning of environmental purification facilities and equipment, and hydroelectric energy production and all construction and infrastructure matters related to the above domains.

CEO & Members of the Board of Directors



Amir Taheri Tehrani
CEO
Kayson Water and Environment Company



Seyyed Abdul Reza Hashemi
Chairman of the Board of Directors
Kayson Water and Environment Company



Alireza Alemzadeh
Vice Chairman of the Board of Directors
Kayson Water and Environment Company



Morteza Esfandiary Sedgh
Member of the Board of Directors
Kayson Water and Environment Company

Specific Capabilities of Kayson Water and Environment Company

Kayson Water and Environment Company's approach to executive management emphasizes maintaining effective communication with the client, consultant, and project team from inception to completion. This strategy aims to reduce costs and project timelines, enhance quality, and optimize decision-making processes.

The company's extensive experience in executing vital projects, such as dam construction, water and wastewater treatment plants, and seawater desalination using the EPC method, combined with the profound knowledge of its domestic expert workforce in modern water and wastewater technologies, represents a significant stride in localizing expertise and achieving sustainable development. Especially under conditions of climatic and water resource limitations, these strengths have positioned Kayson Water and Environment Company as a leading firm in its field.

The main services of Kayson Water and Environment Company in Engineering, Procurement, Construction (EPC) projects:

- Engineering and basic studies: This includes scheduling, cost estimation, liquidity analysis, value engineering, safety requirements, and environmental risk management (HSE).
- Equipment procurement and supply: This encompasses purchasing engineering, supplier evaluation, specialized equipment installation, and supply progress and quality control.
- Construction and civil operations: This involves execution of civil and construction work, continuous performance monitoring, and optimal control of operational costs.
- Commissioning, maintenance, and operations: This covers

preventive and corrective maintenance programs to ensure stable equipment performance.

- Process documentation and project knowledge management: This focuses on effective communication with stakeholders to maintain operational coordination.

Fields of Activity of Kayson Water and Environment Company

Kayson Water and Environment Company specializes in the design, execution, installation, commissioning, supervision and management of construction and infrastructure projects inside and outside the country; especially in the form of EPC, BOT, BOO, Turnkey contracts.

Main areas of activity:

- Design and execution of urban and industrial desalination plants
- Construction of hybrid cooling towers
- Construction of water and wastewater treatment plants along with transmission lines and pumping stations
- Execution of urban sewerage network by pipejacking method
- Construction of dams, hydroelectric power plants, and irrigation and drainage networks
- Construction of marine facilities including ports, piers, breakwaters and water transfer channels
- Execution of waste incineration projects, environmental purification and renewable energy facilities
- Supply of hydromechanical, electrical equipment and implementation of related infrastructure sections
- Export of technical, engineering and consulting services in water and wastewater projects



Siah Bishe Pumped Storage Project Upper & Lower Dams

Client: Iran Water and Power Resources Development Company

Partners: Beta, Soil Mechanics Engineering Services

Type of Contract: Design & Build (DB)

Location: Siah Bishe, Mazandaran Province, Iran

Status: Completed

Project Overview

Pumped-storage power plants have emerged as one of the most effective solutions for regulating electricity grid loads. The Siah Bishe Dam and Hydropower Plant project is located on the Chalus River, 125 kilometers north of Tehran, adjacent to the Chalus Road and 10 kilometers north of the Kandovan Tunnel (75 kilometers from the city of Chalus), in Mazandaran Province. The 1,000-megawatt Siah Bishe Dam and Hydropower Plant Complex is distinct from other projects currently under study or construction in the country due to its pump-storage operation and the type of dams used. This project is the country's first pump-storage facility and also the first concrete-faced rockfill dam (CFRD) in Iran.

The primary objective of this project is to supply electricity during peak demand periods and ensure reliable power for the national electricity grid during off-peak times. Additional objectives include reducing annual depreciation costs of thermal power plants by 19\$ million, creating a recreational and tourism destination for both domestic and international visitors, and generating employment in the region during both the construction and operational phases of the project.

The Siah Bishe project was awarded in 2003 through a tender process and structured under two Design and Build contracts. Contract A, which included the design and construction of two concrete-faced rockfill dams (CFRDs), primary water supply tunnels, and associated structures, was awarded to a joint venture led by Kayson Company,

with Beta and Soil Mechanical Engineering Services as partners. Additionally, in June 2010, a separate contract for supplementary works related to the Siah Bishe dams was awarded to the same joint venture.

The design of the CFRD dams and associated structures was carried out by a team composed of Iranian engineers in collaboration with the Swiss company Electrowatt. The Upper and Lower Dams of the Siah Bishe Pumped Storage Power Plant Project received the Crystal Prize in the National Award for the Best Iranian Project for the years 2012–2011.

scope of Work

Phase 2 involved the design and preparation of detailed drawings for the construction of two concrete-faced rockfill dams (CFRDs). The upper dam was constructed with a height of 82.5 meters, a crest length of 436 meters, and a reservoir capacity of 4.9 million cubic meters. The lower dam was built 102 meters high, 332 meters long at the crest, and had a reservoir capacity of 6.9 million cubic meters. Associated structures were also completed as part of this phase.

A key component of the contract included the construction of two connecting water supply tunnels between the dams. Each tunnel was approximately 2,000 meters long, with an excavation diameter of about 7 meters and a finished diameter of 5.7 meters, and featured a 40-centimeter-thick concrete lining.

Project statistics

| | |
|--|--------------------------|
| Excavation in non-rocky terrain | 2,100,000 m ³ |
| Excavation in rocky terrain Rockfill | 4,443,000 m ³ |
| Tunnel and gallery excavation | 4,900,000 m ³ |
| Shotcrete | 190,000 m ³ |
| rock bolt | 27,000 m ³ |
| Grinding pit | 260,000 m |
| Injection hole | 200,000 m |
| Reinforcement with plain or ribbed rebars type | 190,000 t |
| F1 type formwork | 200,000 m ² |
| Sliding formatting | 75,000 m ² |
| Concreting | 175,000 m ³ |
| Length of each tunnel | 2,000 m |



Bandar Abbas 200,000 m³ Water Desalination Plant

Client: Asia Water Development Engineering Company

MC: Parman Poish Company

Consultant: Pars Geometry Consultanats, Middle East Water and Environment

Type of Contract: PC (Procurement & Construction)

Location: Hormozgan Province, Bandar Abbas

Status: Completed

Project Overview

The project includes:

- Execution of water transmission line network to the tie-in points of all treatment plants from the water intake structure
- Installation of water intake electromechanical equipment and installation of the relevant pumps
- Construction of a 200,000 cubic meter desalination unit in the form of a PC plus 6 months of operation
- Execution of the infrastructure network of the treatment plants complex (RO Saqi Kowsar design) with a capacity of one million cubic meters per day
- Execution of the fence and site roads

scope of Work

Execution of a 200,000 cubic meter water treatment plant, water transmission line to the treatment plant, and execution of infrastructure facilities for the entire site of Saghi Kowsar project.

General Specifications

Bandar Abbas `200,000 cubic meters water desalination project is one of the modules of the 1,000,000 cubic meters per day desalination project of Asia Water Development Engineering Company, built to use the water produced in the industrial and mining sectors (copper and steel). The result of this project is the production of 200,000 cubic meters of purified water per day in the form of a 200,000 cubic meter desalination plant, which, due to the high TDS of the raw water (from the Persian Gulf), requires a complete pre-treatment along with reverse osmosis technology for water purification.

This project is located on the northern coast of the Persian Gulf, about 35 kilometers west of Bandar Abbas. The meteorological parameters of the project area are as follows:

In the project, except for the water intake and water supply facilities and equipment from the sea to the desalination units, wastewater disposal facilities and infrastructure facilities of the complex, which were executed by the Client, and electricity and raw water within the project area were delivered to the contractor, the rest of the items were entirely the responsibility of the contractor and the construction of a complete set of a 200,000 cubic meter per day desalination unit was the contractor's commitment.

Project Statistics

| | |
|--|------------------------|
| Excavation, digging and foundation | 330,000 m ³ |
| Reinforcement | 12,000 t |
| Concreting | 138,000 m ³ |
| Heavy steel work | 2,000 t |
| GRP Pipes | 27,000 m |
| Polyethylene pipes | 78,000 m |
| Carbon steel pipes | 444 t |
| Cables | 523,000 m |
| Trans | 10 number |
| Diesels | 3 number |
| Installation of inlet pumps of the treatment plant | 8 number |
| Installation of pumps in the desalination plant | 60 number |
| Installation of all blowers, mixers, compressors inside the desalination water | |
| Installation of all signs MV/LV inside the desalination plant and infrastructure | |
| Installation of all control cables and instrumentation equipment for desalination and infrastructure | |



Chabahar 200,000 m³ Water Desalination Plant

Client: Industries and Mines Water Supply Company

Consultant: Pars Consulting Engineering Company

Type of Contract: Engineering, Procurement, Construction (EPC)

Location: Chabahar, Sistan & Baluchestan Province, Iran

Status: In-hand

Project Overview

To meet the freshwater needs of the southeastern and eastern parts of the country, a plan for the exploitation and purification of seawater resources has been developed. The first phase of this national project involves transferring and purifying water from the Arabian Sea to provide a daily capacity of 200,000 cubic meters of freshwater in the eastern Chabahar region, using reverse osmosis (SWRO) technology. This method is considered as one of the most efficient and advanced for purifying saline water (5,000 ppm TDS) and converting it into freshwater.

It can effectively contribute to solving the problem of water scarcity in the country's arid regions and promote the development of advanced water-dependent industries.

Drawing on the expertise of national specialists and the experience of Kayson Environmental Water Company in the construction of a 200,000 cubic meter seawater desalination project in Iran, Kayson Environmental Water Company has completed all the basic and

additional engineering documents for the Chabahar project, in the form of an EPC contract. This achievement demonstrates the scientific and technical capabilities of the national forces in the field of modern water technologies. It is particularly notable in the reverse osmosis desalination sector and represents an important step towards localization and sustainable development, even under conditions of climatic and water resource constraints.

Scope of Work

Engineering services, supply of materials and equipment, execution operations, construction works, installation and commissioning, and one-year trial operation to execute and complete the reverse osmosis seawater desalination project, with a capacity of 200,000 cubic meters per day, located in the east of Chabahar, by the EPC method.

Project Statistics

| | |
|-------------------------------------|------------------------|
| Excavation, drilling and embankment | 220,446 m ³ |
| Reinforcement | 5,581 t |
| Concrete | 55,000 m ³ |
| Steel works | 2,500 t |
| GRP pipes | 6,500 m |
| PE-PVC- UPVC-CPVC pipes | 11,000 m |
| Metal pipes | 3,000 m |
| Cable | 380,000 m |
| Transformers | 12 sets |
| Diesel engines | 2 sets |



Description of the 200,000 cubic meter water desalination process

The design, procurement, and execution of the 200,000 cubic meter project includes four process stages:

Pretreatment Unit: In this part, algae and Total Suspended Solids (TSS) are removed, which includes a Dissolved Air Filtration (DAF) and a Dual Medium Filtration (DMF) along with a filter backwash and washing section.

Desalination Unit: This section houses the primary desalination unit, responsible for reducing the concentration of Total Dissolved Solids (TDS) in water, thereby removing salts and other dissolved minerals. The unit utilizes Seawater Reverse Osmosis (SWRO) technology, complemented by advanced PX-type energy recovery systems. The PX system efficiently recovers a substantial portion of the energy consumed by directly transferring pressure from the high-pressure brine stream to the incoming feed water. This technology optimizes system performance and significantly reduces operating costs, eliminating the need for complex converters or electrical energy reuse. The integrated application of reverse osmosis and PX in this project has not only led to a notable reduction in energy consumption but also a significant increase in the overall efficiency of the desalination process.

Post-treatment Unit: In this unit, the permeate water from reverse osmosis is further refined. Its quality, including TDS and pH, is brought up to fresh water standards, and its physicochemical parameters are adjusted to comply with WHO drinking water guidelines. The TDS and overall water quality are enhanced by adding mineral lime (lime milk) and injecting carbon dioxide into the water.

Treatment Plant: In order to comply with environmental requirements and reduce negative impacts on surrounding ecosystems, advanced treatment plants have been constructed in the southernmost part of the site. This treatment plant is designed to treat and manage wastewater and sludge from process units in a systematic manner and plays an effective role in preventing pollution of water and soil resources. The implementation of this part of the project is an important step towards sustainable development and in line with the macro policies of environmental protection.

The supply and installation of electromechanical and mechanical equipment such as pumps, blowers, compressors, mixers, as well as electrical panels, MV/LV power cables, control and precision instrument equipment, piping, construction and implementation of civil structures and landscaping are among the measures of this project. Also, the commissioning and operation of the facility for one year is also part of the service description and scope of work of this project.

Bandar Abbas 200,000 m³
Water Desalination Plant

Isfahan Northern Hybrid Refinery Cooling Tower

Client: Esfahan Oil Refinery Company
Project Management: Hormozgan Energy Industry Development Company (HIDCO)
Type of Contract: Engineering, Procurement, Construction (EPC)
Location: Isfahan Province - 5th kilometer of Tehran Road
Status: In-hand

Project Overview

Given the country's water crisis and the difficulties faced by the Isfahan Refinery in supplying raw water for consumption in existing wet cooling towers, the refinery decided to build a hybrid cooling tower to reduce water losses and evaporation. Given the history and expertise of Kayson Water and Environment, the design and construction of the hybrid cooling tower was entrusted to them. Considering the tower's capacity, the temperature of the returned hot water, the required temperature of the cooled water, and the refinery's target rate of evaporation reduction, the design of the hybrid cooling tower is unique in the world. In addition to meeting the temperature parameters and the rate of evaporation reduction, the tower's design also required optimal energy consumption and the limited space available for its construction. By launching this tower, the water evaporation rate will be reduced by 5 percent, equivalent to one million cubic meters per year, which will significantly contribute to the preservation of the region's precious groundwater resources.

Scope of Work

Design, procurement, supply of materials and equipment, installation, all tests, commissioning and provisional and final acceptance of a hybrid cooling tower by EPC method in the northern refinery of Isfahan Oil Refining Company.

Process Description

Unlike wet cooling towers, which cool solely by evaporation, in the hybrid tower, the hot water is first cooled to its maximum temperature using closed-loop air exchangers, without evaporation. If necessary, the water in the wet section of the tower is then cooled to the desired temperature. With a capacity of 14,000 cubic meters per hour, this tower cools the hot water from the refinery's processing units from a temperature of °34C to °23C, then returns it to the aforementioned units via the installed pumping station. To remove physical contaminants from the cooling water, an automatic sidewall filtration system was integrated into the process. Chemical solutions were also provided to adjust the pH, prevent sedimentation, and inhibit the growth of microorganisms, which inject the necessary quantities of chemicals into the water. In order to achieve maximum reduction of water evaporation and also optimize energy consumption, the electric motors of the tower fans and electric pumps are equipped with a VFD system.

Project Statistics

| | |
|----------------------------|--|
| Excavation | 24,000 m³ |
| Reinforcement | 1,200 t |
| Formwork | 32,185 m² |
| Main concreting | 10,400 m³ |
| Additional concreting | 4,025 m² |
| GRP pipes | 11,989 m |
| Metal pipes (carbon steel) | 13,500 m |
| Cooling tower capacity | 14,000 m³/hr |
| Hot water temperature | 34 C° |
| Cooling water temperature | 23 C° |
| Recovery water saving rate | One million cubic meters per year |
| Tower structure | Concrete |
| Feed water pumps | 3 electric pump units with a capacity of 2 MW each, equipped with a frequency inverter |
| Fans | 10 electric fan units equipped with a frequency converter |
| Transformers | 2 sets of 6 kV, 2 sets of 33 kV, |





Hamedan Sewerage via Pipejacking Method

Client: Hamadan Province Water and Wastewater Company
Financial provider: Islamic Development Bank (IDB)
Project management unit: Pars Allotment Management and Engineering Company
Consultant: Mahab Quds Consulting Engineering Co.
Partner: Mushrif of Kuwait
Type of contract: procurement and construction (PC)
Location: Hamedan
Status: Completed

Project Overview

The scope of the project included the procurement, transportation, installation, testing and commissioning of polymer concrete pipes using the pipe jacking method. The total length of the project route was 7,048 meters, of which 5,954 meters were piped in sizes of 1,200 and 1,400 mm using the pipe jacking method. Due to the extremely unfavorable geological conditions of the city of Hamedan, 812 meters of the route were executed as open trenches and the remaining 282 meters were executed using the hand shield method. Special polymer concrete pipes were used for the project, and in order to procure the pipes from domestic sources, a factory belonging to Kayson (Polymer Concrete Pipe) was built and operated in Iran. Due to the lack of experience and expertise in selecting appropriate machinery, pipe jacking has not previously been successful in Iran. But the Kayson/Mushrif JV was able to successfully complete the project with the support of the Client, consultant, and project management unit, as well as the patience and effective cooperation of the people and officials of Hamedan.

Pipejacking Method

Kayson received the highest award for project management in 2009 for the Hamedan Sewage Project. Pipe jacking method using micro tunneling devices is one of the direct pipe installation methods. In this method, the pipe route is dug with special drilling devices for this method and at the same time, the pipes are pushed in with the help of hydraulic jacks. In order to carry out operations such as positioning the jack, drilling device and control equipment and carrying out pipe laying operations, a pit called the Driving Shaft is constructed at the beginning of the route and in order to receive the equipment at the end of each line, a Receiving Shaft is constructed. The pipeline installation control system (Leveling and alignment) is carried out using precision instruments and lasers. Successful installation of pipes using this method requires detailed geological studies, proper design, selection of equipment and systems appropriate to the soil texture and groundwater level, use of advanced technology, and sufficient experience. Successful installation of pipes using this method requires detailed geological studies, proper design, selection of equipment and systems appropriate to the soil texture and groundwater level, use of advanced technology, and sufficient experience.

Project Statistics

| | |
|------------------------------------|-----------------------|
| Number of drift and receiving pits | 64 |
| Number of manholes | 64 |
| 1200 mm diameter pipe | 5,329 m |
| 1400 mm diameter pipe | 1,564 m |
| 1200-600 mm diameter Branch pipe | 155 m |
| Excavation | 30,000 m ³ |
| Concreting | 9,500 m ³ |
| Formwork | 12,000 m ² |
| Reinforcement | 628 t |



Al-Teymour (Mashhad) Wastewater Treatment Plant

Client: Mashhad Water and Wastewater Company
Financial provider: Islamic Development Bank (IDB)
Fourth agent: Karavar-kavoshpey JV development Co.
Consultant: Pars Ab Tadbir Consulting Engineering Company (P.A.T)
Partner: Mushrif of Kuwait
Type of contract: DBO (Design, Build & Operation)
Location: Khorasan Province, Mashhad
Status: Completed

Project Overview

Mashhad Al-Teymour Wastewater Treatment Plant project is a Design, Build, and Operate (DBO) contract, which includes the design, purchase of required equipment, construction, transportation, and installation, and one year of operation and maintenance of the project after receiving the Final Acceptance Certificate.

This project was completed in several stages:

- Phase One: Design, Purchase, and Implementation of the Project over 36 months
- Phase Two: Training, Pre-commissioning, and Testing
- Phase Three for 12 months: Operation and Maintenance

With the operation of Mashhad City Wastewater Treatment Plant (Al-Teymour), a wastewater treatment capacity of 80,000 cubic meters per day (which can be increased to 167,000 cubic meters per day) has been built in Al-Teymour Mashhad region. In the first phase, a model was built in the form of a project; in such a way that the wastewater treatment capacity of a population of about 472,000 people was

provided. The full exploitation of this project will meet the needs of about one million people in Mashhad within the project horizon. Wastewater treatment in this project is carried out using the MLE (Modified Ludzack-Ettinger) method, and its main units include waste and particle filters, primary sedimentation tanks, aeration tanks, secondary sedimentation tanks, sludge units, and control and monitoring and administrative buildings, warehouses, repair shops, and security.

This treatment plant has been defined to increase the following criteria:

- Achieving national health standards
- Using the output of the project as a source for irrigating 4445 hectares of agricultural land

Scope of Work

- Project design in the fields of process, architecture, civil, mechanical, electrical and instrumentation
- Purchase and installation of specialized project equipment
- Carry out civil and construction operations
- One year of operation

Project Statistics

| | |
|------------------------------|------------------------|
| Earth work | 220,000 m ³ |
| Concreting | 27,000 m ³ |
| Formwork | 45,000 m ² |
| Reinforcement | 2,800 t |
| Office & Ancillary Buildings | 1,100 m ² |

East Ahwaz Wastewater Treatment Plant

Client: Ahwaz Water and Wastewater Company
Financed by: World Bank
Type of Contract: DBO (Design, Build, Operate)
Partner: Mushrif of Kuwait
Location: Khuzestan Province, Ahwaz city
Status: Completed

Project Overview

Ahwaz, the center of Khuzestan Province, is located 850 kilometers from Tehran, and is divided into two parts, eastern and western, by the only navigable river in the country. Karun River provides drinking water for Ahwaz, as well as water for the agricultural and industrial needs of the region. Within five kilometers of the city, the Maleh River runs north-south, eventually flowing into the Shadagan marshland after about 80 kilometers. The entry of human waste into this river has prompted Ahwaz water and sewage officials to provide the necessary facilities to prevent the entry of waste into it, treat the waste, and then discharge the treated water into this river. The East Ahwaz Sewage Treatment Plant Project is designed to treat the eastern part of this city, which has a population of about 522,000 people and produces about 112,000 cubic meters of sewage per day. This treatment plant was built with advanced Sequencing Batch Reactor technology.

Wastewater treatment steps

Preliminary Treatment Unit: Includes Screening and Grit & Grease Removal Basin equipment, which captures large particles (wood, plastic, stone, etc.) and small particles (grease grains and sand) in order to prevent damage to the treatment plant equipment.

Biological Treatment: This treatment is carried out inside the SBR tank structure.

Final Treatment: In this stage the water is disinfected before leaving the treatment plant. Disinfection is carried out in the eastern part of Ahwaz wastewater treatment plant by means of a UV device.

Sludge Unit: Includes a sludge storage tank, a submersible pump station, a condensation and filtering area, and a sludge drying area (in order to use the stabilized sludge for agricultural purposes). It is worth mentioning that the construction of a municipal wastewater treatment plant with SBR technology with these dimensions has been carried out for the first time in Iran.

Project Statistics

| | |
|--------------------------|------------------------|
| Embankment | 420,328 m ³ |
| Concrete operation | 40,000 m ³ |
| Formwork | 40,000 m ² |
| Reinforcement | 3,000 t |
| Metal work | 1,200 t |
| Ancillary buildings area | 2,500 m ² |





East Anzali Wastewater Treatment Plant

Client: Gilan Province Water and Wastewater Company

Consultant: IRANAB Consulting Engineers

Partners: Mushrif of Kuwait

Type of contract: DBO (Design, Build, Operation)

Location: Gilan Province, km 5 of Anzali road to Rasht

Project Overview

East Bandar Anzali Wastewater Treatment Plant is being built with the aim of preventing pollution of the Anzali Wetland, rivers and the Caspian Sea.

This treatment plant, which has a capacity of 12,000 cubic meters per day, can treat the domestic wastewater of 57,000 people in the city, which can be increased to 120,000 people.

Anzali Wastewater Treatment Plant process is activated sludge and the type of biological system is A2O. The main units of this treatment plant include a degreasing and fat removal unit (2 units), a circular primary sedimentation unit (2 units), a sewage pumping station, a biological unit (2 units), a circular sedimentation unit (2 units), a coagulation unit (2 units), a gravity sand filtration unit (4 units) and finally disinfection by UV radiation. The advantage of this treatment plant over other treatment plants being designed and built in the country is the construction of coagulation and gravity sand filtration units (as supplementary treatment) and an odor removal and control system.

Treatment Plant Process

Usually, the first unit in a wastewater treatment plant is the sludge collection unit. In the Anzali wastewater treatment plant, this unit is seen in the pumping system located adjacent to the treatment plant site. After the pumping station, the wastewater enters two granulation system units along with air, and after the grains are removed, the flow enters two primary sedimentation pond units. Suspended solids are removed up to about %50 in these units, and after the wastewater loses its coarse suspended particles, it enters two aeration units. The main operation, which is the biological treatment of wastewater, takes place in these units. Then the wastewater enters two secondary sedimentation pond units. Final clarification takes place in these units. At the end of the clarification process, a gravity sand filter unit is designed as a supplementary treatment. In this unit, all suspended solids remaining in the flow are removed and fed into two UV disinfection system units, then exited the treatment plant and entered the Anzali Wetland, which is one of the most valuable and important wetlands in the world and has international environmental value.

Project Statistics

| | |
|------------------------------------|------------------------|
| Concreting | 9,100 m ³ |
| Formatting | 21,000 m ² |
| Reinforcement | 725 t |
| Heavy and light steel works | 155 t |
| Excavation and mud removal | 70,000 m ³ |
| embankment | 150,000 m ³ |
| Subgrade Strengthening with Rubble | 8,190 m ³ |
| Stone Ancillary Buildings Area | 500 m ² |

Construction of Tehran (Shariati-Khaje Abdullah) by Pipejacking Method

Client: Tehran Wastewater Company

Consultant: Mahab Ghodss Consulting Engineers Co.

Type of Contract: C (Construction)

Location: Tehran, between Shariati and Khaje Abdullah Ansari streets

Status: Completed

Project Overview

Tehran Sewerage Pipeline Project started from Shariati Street, Mirdamad Intersection to the south and after passing through Golanbey Street, Ketabi Square and Mojtabaei Street, it ended at the intersection of Shahid Araghi Street on Khawaja Abdullah Ansari Street. The total length of the project according to the contract is 3,982 meters and the total number of manholes is 34, which was implemented using the pipe laying method using micro tunneling devices. The material of the pipelines is polymer concrete with diameters of 1,600 and 1,800 millimeters. To provide the required pipes, Kayson Company has set up a production line in its satellite factories. During the operations, the Client of the project also notified Kayson Company of the execution of 530 meters of -1,400 millimeter lines located on Mirdamad Street as additional work.

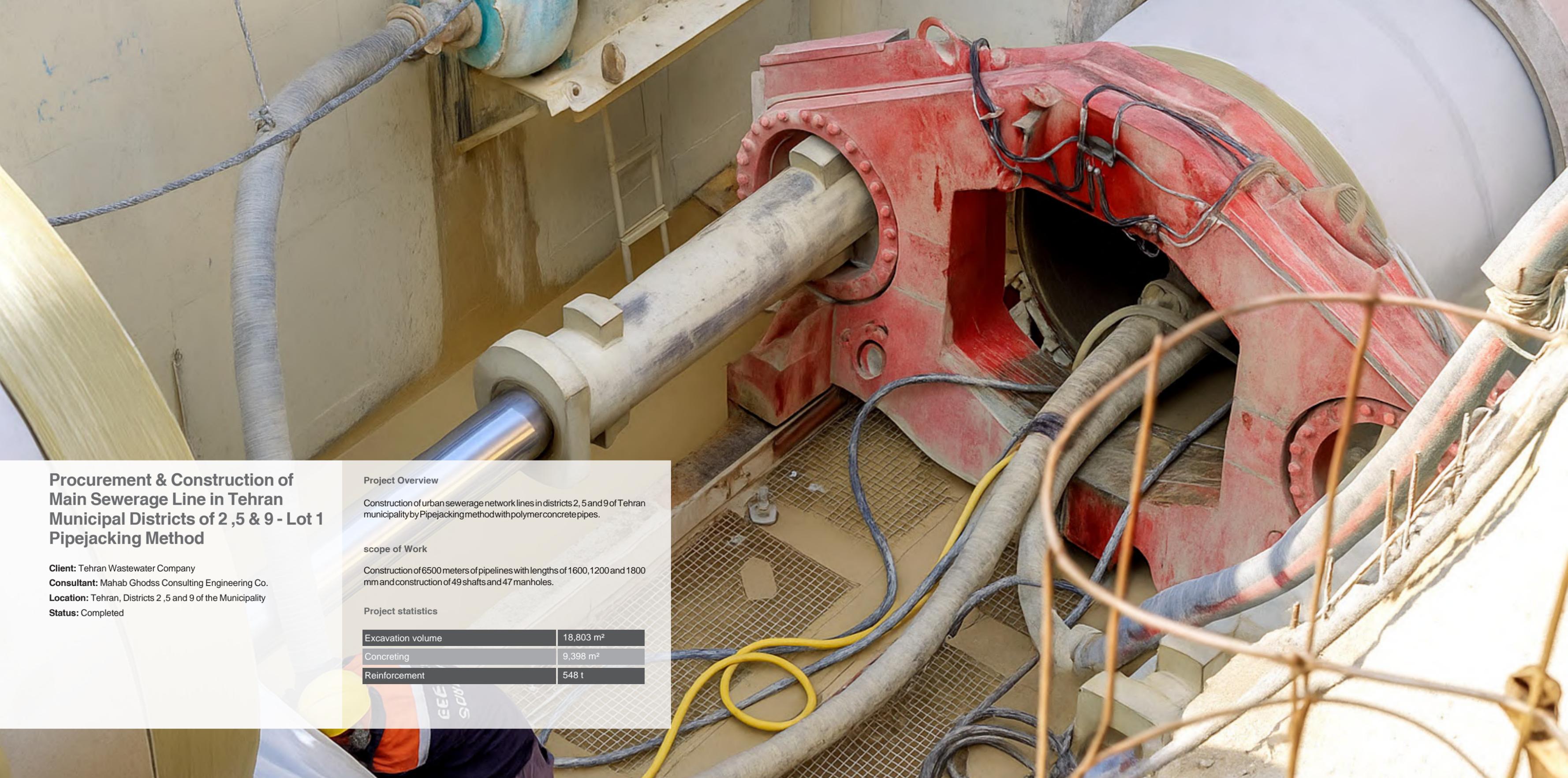
Scope of Work

- Obtaining and reviewing aerial survey maps, drawings of urban facilities and existing studies on the length of pipeline construction
- Conducting various geological tests related to excavation techniques
- Obtaining the relevant permits from the sewerage company, municipalities of regions 3 and 4, and the traffic department
- Design and construction of Reception and Drive Shafts
- Installation of equipment in and around Reception and Drive Shafts
- Construction of Manholes

Project Statistics

| | |
|-------------------------------|-----------------------|
| Earthworks | 12,220 m ³ |
| Concreting | 5,000 m ³ |
| Formwork | 6,000 m ² |
| Reinforcement | 320 t |
| 1800 mm polymer concrete pipe | 1,256 m |
| 1600mm polymer concrete | 2,170 m |
| 1400mm polymer concrete | 566 m |





Procurement & Construction of Main Sewerage Line in Tehran Municipal Districts of 2 ,5 & 9 - Lot 1 Pipejacking Method

Client: Tehran Wastewater Company
Consultant: Mahab Ghodss Consulting Engineering Co.
Location: Tehran, Districts 2 ,5 and 9 of the Municipality
Status: Completed

Project Overview

Construction of urban sewerage network lines in districts 2, 5 and 9 of Tehran municipality by Pipejacking method with polymer concrete pipes.

scope of Work

Construction of 6500 meters of pipelines with lengths of 1600, 1200 and 1800 mm and construction of 49 shafts and 47 manholes.

Project statistics

| | |
|-------------------|-----------------------|
| Excavation volume | 18,803 m ² |
| Concreting | 9,398 m ² |
| Reinforcement | 548 t |

Construction of Ahvaz Sewage by Pipejacking Method

Client: Ahvaz Water and Wastewater Company

Consultant: Ray Ab Consulting Engineers

Location: Khuzestan Province, Ahvaz city

Project Overview

The Ahvaz pipeline project is implemented in two routes and two sizes:

- Eastern Coastal Boulevard route: starts from the cable bridge and ends after passing under the fourth bridge and the white bridge (historical monument) near Pars Ahvaz Hotel.
- West Coastal Boulevard route: It starts from Shahid Chamran University and ends after crossing the fourth bridge near Sefid Bridge.

Both executive routes in this project are implemented at the level of the Karun river bed. According to the contract, the total length of the route is 4000 meters and the total number of shafts is 25; that the shafts are executed by sinking method and piping by microtunneling method.

The pipes are made of polymer concrete and in sizes of 1200 and 1400 mm, manufactured by Lule Beton Polymer Company.

Scope of Work

- Construction of concrete shafts by sinking method
- Obtaining municipal and traffic permits
- Establishment and installation of equipment inside transmission shafts

Project Statistics

| | |
|-------------------------|-----------------------|
| Concreting operations | 8,100 m ³ |
| Reinforcement operation | 607,500 Kg |
| tube 1200 mm | 2,500 m |
| tube 1400 mm | 1,500 m |
| operations Earth | 19,115 m ³ |



Sattarkhan (Ahar) Clay Core Earth Dam & Related Facilities

Client: East Azerbaijan Regional Water Authority

Consultant: Bandab

Type of contract: C (Construction)

Location: Ahar, East Azerbaijan province, Iran

Status: Completed

Project Overview

Over the past decade, our country has made substantial investments in the development of water infrastructure and the optimal utilization of limited water resources. This has consequently generated extensive and growing opportunities for companies possessing the necessary capabilities to deliver high-quality services in this sector. Aligned with its strategic decision to diversify its activities and engage more actively in crucial projects, Kayson is endeavoring to play a more significant role in the development of the country's water infrastructure. This is achieved by leveraging its technical-engineering, managerial, human, and other resources.

Sattarkhan Earthen Dam, constructed by Kayson Company on the Ahar River in East Azerbaijan Province, aims to achieve three primary objectives:

1. Controlling the river's frequent flooding
2. Supplying drinking water to the region's residents
3. Providing agricultural water for 12,000 hectares of farmland land

Sattarkhan Reservoir Dam, boasting a volume of 131 million cubic meters, is an earthen dam featuring an impermeable clay core. It stands 75 meters above the bedrock and has a crest 350 meters long. The dam's catchment area spans approximately 950 square kilometers. To facilitate river diversion during its construction, a tunnel with a diameter of 5.5 meters, a length of 438 meters, and a longitudinal slope of 0.8 to 1 percent was built on the dam's right side. Upon the dam's completion, this diversion tunnel will be repurposed as a water intake and for lower discharge. The capacity of the lower discharge tunnel is impressive, capable of emptying the reservoir in just 24 days with the aid of the water intake. Furthermore, the dam's water intake system is designed to supply 7.8 cubic meters per second of water for agricultural use and one cubic meter per second for urban consumption.

Project Statistics

| | |
|-----------------|--------------------------|
| stone quarrying | 625,000 m ³ |
| Earth work | 4,000,000 m ³ |
| Concreting | 60,000 m ³ |
| Formwork | 41,000 m ² |

The Sattar Khan Dam was inaugurated one year ahead of schedule on 1998 during a ceremony by the then President.



Poldasht Irrigation & Drainage Network

Client: West Azerbaijan Regional Water Authority
Consultant: Mohab Ghodss
Type of contract: C (Construction)
Location: Poldasht, Iran
Status: Completed

Project Overview

Poldasht Irrigation Project is located in West Azerbaijan Province, approximately 25 kilometers from Poldasht city. Its operational area was bordered by Marand transit road to the west, Poldasht-Maku road to the north, and Poldasht city and Aras River to the south and east. The project involved execution of modern irrigation and drainage systems across five development units, covering 12,000 hectares of agricultural land. Unit number one, spanning approximately 3,700 hectares, was assigned to Kayson Company. A key feature of the project was the construction of a diversion dam, which served as a central site. Additionally, 16 main and secondary canal branches and drainage systems were built, along with all associated structures, within a triangular area whose sides averaged about 20 kilometers in length.

The main objectives of Poldasht project were:

- Discharging wastewater and draining land by gravity into the river
- Constructing concrete-lined canals to enhance irrigation efficiency
- Ensuring economical and reliable water distribution through the execution of a proper water distribution system

Scope of Work

- Construction of a diversion dam 36 meters long and three meters high from the riverbed to regulate and transfer water to the main channel of the irrigation and drainage network on the Zanzibar River.
- This diversion dam includes, among other things, the construction of overflow and catchment opening, sediment discharge channel, calm pond, bearing walls.
- Construction of the main network, including axis one and two channels and drains, etc.
- Construction of drainage channels.





Al-Nasseriya Water Treatment Plant and Transmission Lines

Client: Ministry of Municipalities and Public Works -Water Directorate

Consultant: Poya Tadbir Aria Engineering Company / Axiom Engineering Company

Type of Contract: Turnkey; Engineering, Procurement, Construction (EPC)

Location: Al-Dhi Qar Province, Iraq

Project Overview

Al-Nasseriya water treatment plant and water transmission lines project is located in Dhiqar province, 450 kilometers southeast of Baghdad and 211 kilometers from Basra city.

The water treatment plant of Al-Nasseriya will have a capacity equal to 10,000 cubic meters per hour (equal to 220,000 cubic meters per day), which will be fed from Al-Gharaf river near Al-Nasseriya city. The population covered by this refinery is 1,470,000 people. The treated water of this treatment plant is transported by 118 km long transmission lines to the cities and districts of Al- Nasseriya, Shatra, Sukh al-Sheyukh, and a pumping station is also installed along the route to increase the water pressure.

- Capacity of Al-Nasseriya water treatment plant, Iraq: 10,000 cubic meters per hour (equivalent to 220,000 cubic meters per day)
- The length of transmission lines (diameter 600 to 1400 mm): 118 km

Scope of Work

- Project design in the fields of process, architecture, civil, mechanical, electrical and precision instruments
- Purchase and installation of specialized project equipment
- Carrying out civil and construction operations
- One-year operation and maintenance

Project Statistics

| | |
|---|------------------------|
| Length of transmission line | 118 km |
| Logistics and administrative buildings area | 1,950 m ² |
| Earth work (pipelines and treatment plants) | 794,000 m ³ |
| Concreting | 55,000 m ³ |
| Formwork | 146,000 m ² |
| Reinforcement | 5,000 t |

Al-Kifil Water Treatment Plant and Transmission Lines

Client: Ministry of Municipalities and Public Works/ Water Directorate
Consultant: Pouya Tadbir Arya Engineering Company / Axiom Engineering Company
Type of Contract: Turnkey, EPC (Engineering, Procurement & Construction)
Location: Babylon Province, Iraq

Project Overview

The Al-Kifil Water Treatment Plant and Transmission Lines Project is located in Babylon Province, 150 kilometers south of Baghdad and 50 kilometers from the city of Najaf. The Kifil Water Treatment Plant has a capacity of 4,000 cubic meters per hour (equivalent to 88,000 cubic meters per day) and a covered population of about 560,000 people and is fed by the Euphrates River. The purified water from this treatment plant is transported to the cities and districts of Kifil, Bani Muslim, Marqed Nabi through 56 kilometers of transmission lines, which are located at the beginning of the primary pumping station due to the distance between the water intake and the treatment plant.

Scope of Work

- Project design in the fields of process, architecture, civil, mechanical, electrical, etc.
- Instrumentation
- Purchase and installation of specialized project equipment
- Civil and construction operations
- One-year operation and maintenance

Project Statistics

| | |
|---|------------------------|
| Length of transmission line | 56 km |
| Concreting | 25,000 m ³ |
| Reinforcement | 2,000 t |
| Formwork | 15,000 m ² |
| Logistics and administrative buildings area | 1,880 m ² |
| Earth work (pipelines and treatment plant) | 193,000 m ³ |



Sustainable Human Development

Sustainable human development is an attitude that relies on the deep human emotion and values of the people of Iran and the earth, and it moves profit-oriented processes to human-oriented ones.

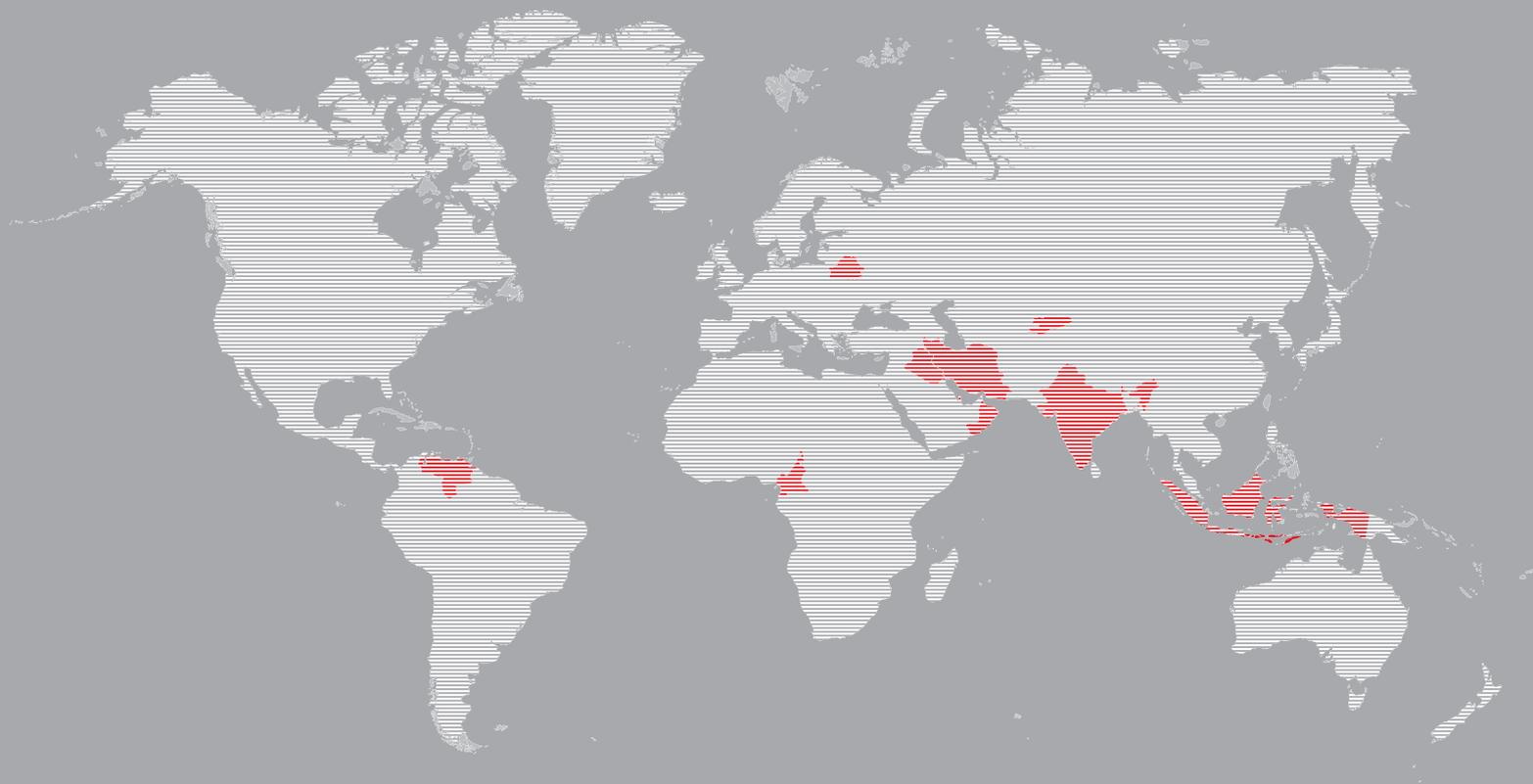
Sustainable human development is a task lost in the dark dust of income and economy; A duty that has been expressed in the historical morals and emotions of the Iranian people; People who love each other and in it, a person relies on the affection of the group and avoids sinking into loneliness. Sustainable human development, which started in 2018 in Kayson, aimed to fulfill this lost task, and until today, with the cooperation and sincerity of project managers and employees, and in an atmosphere filled with the fragrance of friendship, important steps have been taken in this way. By creating working groups in the fields of building cultural-sports complexes, donating blood and stem cells,

sports and health, travel and tourism, and environmental sustainability, he has implemented numerous projects inside and outside the country, the statistics of the total activities in the project and headquarters and sub-groups of caisson reach more than two thousand items.

Attention to sustainable human development, a sense of responsibility and duty towards those who work for you and towards the people where you work, is of particular importance. It is very important to create suitable living conditions and pleasant working environment for the employees and to empower the local people and to train and employ them during the project. Also, the quality of the equipment of the workshop, from offices to dormitories, shows real respect for people.

Building a Better World for Future Generations





No 6, Farhang Square, 2 Pivand Street, Saadat Abad, Tehran

Postal code: 1997747911 Phone: +98 (21) 28164000

www.kwe.kayson.group