

COMPANY PROFILE





TABLE OF CONTENTS

Introduction	4
Vision	5
Services	6
General Design Process	8
Why Choose IRRI Consult ?	13
Software	14
Associations	15
Clients	16
scope of work	18
Projects	25
Contact us	48

Welcome

Website: www.irri-consult.com E-Mail: info@irri-consult.com

IRRI CONSULT 3



INTRODUCTION:

IRRI CONSULT, a member of Al Mekyal Al Saudi Group is a regional provider of engineering services and total value add solutions in Irrigation, hydrology, storm management, water management, survey, geotechnical, GIS, SCADA through highly competent technical team and professional partnerships. IRRI CONSULT is a professional irrigation design, consulting and water management unit in the group of Al Mekyal Al Saudi for Engineering Consultancy, IRRI Consult is specialise and committed to your project success. IRRI CONSULT is a full-service water management firm that combines design, construction, auditing and management expertise to create a more efficient world of water use. Our award-winning team specializes in green irrigation strategies and water management that conserve resources and lower customer costs. We are ready to bring our design, management, auditing and consulting expertise to your next project. Our work starting from the surveying and geotechnical works and source of water (e.g. TSE, tanks, tapping points) , wells , lakes , ...etc.) till the latest device and dripper in the network and managing through simple controller or most advanced SCADA control system , BMS and Smart City platform.

OUR VISION

IRRI Consult relentlessly pursues to be the preferred strategic partner providing design & consulting services in irrigation and water management across the Middle East by passionate & talented teams applying latest design & management software , knowledge and innovative technologies e.g. CAD ,GIS , BIM ,SCADA ,...etc.







SERVICES :

IRRI CONSULT As a professional consultancy experienced in all aspects of water management and providing all services related to irrigation and water management e.g.





SCADA for Irrigation & Water Management – Smart Cities

Surveying Services



Modeling





Geotechnical Services

Hydrology & Stormwater Management



Construction Administration



Auditing and System Evaluation

GENERAL DESIGN PROCESS:



Step 1: Initial consultation & needs assessment

In our initial consultation, you'll tell us what your needs are and provide details that may impact our design. We'll want to know what type of plants and water requirements the design will have to cater for, as well as further details like scheduling requirements, plant or row spacing, irrigation and/or fertigation method, automation and type of structure (if applicable). Based on our discussions, we will provide information on what the design will entail and the estimated cost to complete the design process.

Step 2: Topographical survey

We conduct a detailed topographical survey with our state-of-the-art and precise real-time kinematic (RTK) GPS equipment, aerial survey or our GIS database. We provide a professional aerial survey service with fully orthorectified mosaic imaging and topographic information. The high-resolution mosaic is suitable as a replacement in Google Earth as background (overlay) for planning by the client. The mosaic and topographic product is suitable for engineering and irrigation design, for example in CAD and GIS systems.





Step 3: Stakeholder involvement

We make the lay-out plans electronically available to all stakeholders (with the client's permission). Our designers then sit down with the client and stakeholders like landscape architect, golf architect, soil scientists, agronomists, consultants and greenhouse manufacturers to get their input and requirements whenever required.

Step 4: Water and energy budget

We work out a water budget and the energy requirements, taking all the input, details and requirements into account.

Step 5: Design and planning

We do the overhead planning, water storage ad pump station sizing, as well as the design of the Automatic control system and SCADA communication for smart cities (if applicable), transmission lines, mainlines, secondary, tertiary, filtration and fertigation systems.

IRRI CONSULT 11



Step 6: Plans, technical documents & drawings

The process ends with us supplying the client with plans, technical documents and drawings ,calculations , modeling , specifications and BOQ .



The above mentioned process is a general design process , however some steps might be not included in our package or some additional requirements can be added to the general design process and that will be based on the scope of work and official agreement.



WHY CHOOSE IRRI CONSULT ?

- Independent Irrigation & water Management Consultants.
- Awareness and Experience of each market standard in Middle East especially Saudi Arabia.
- Best Work Quality.
- Business Confidentiality.
- Reliability.
- Time Commitment.





SOFTWARE:

IRRI CONSULT using the Latest design Software to produce the design drawings and demonstrate hydraulic performance of the system e.g.

人 AUTODESK.







RainCAD

























American Society of Landscape Architects



<u>CLIENTS:</u>

The following are some of the prestigious clients we worked in their projects :







ارامکو السعودية Saudi Aramco



Jeddah Municipality









مدن









PROJECTS & Scope of Work





SCOPE OF WORK :

IRRI CONSULT has over 15 years of experience in Middle East countries especially Saudi Arabia , UAE and Egypt .

IRRI CONSULT provided irrigation and water management services for a lot of clients in the Middle East and Saudi Arabia with different scope of work e.g.

Irrigation Design & Specification:

An irrigation system is a significant investment. It is a major tool in protecting a valuable asset – parks, roads, sports turf, golf course, crops ,..etc. An irrigation system typically has a design life of 20



years, so it makes sense to get the foundations right for a system that is:

- EFFICIENT in its use of water and energy resources, saving thousands of dollars over the life of the system in reduced chemical, fertilizer, power & water costs
- PRACTICAL to use on a day-to-day basis
- EASY to install and maintain

- CAPABLE of supplying water evenly to all plants
- VALUE for money over the life of the system
- FUTURE-PROOFED as irrigation technology moves fast
- No two sites are the same so it is important to have irrigation designed for a specific application. A good design will take into consideration agronomic, water and environmental factors, along with hydraulic engineering and irrigation technology. Irrigation systems of all sizes are IRRI COSNULT speciality. We offer outstanding, cost effective irrigation design services for:
- Sports fields, racecourses & golf courses
- Landscape parks & gardens
- Horticulture / Agriculture
- Commercial & residential properties



How great design can save you money:

- By using the latest irrigation techniques and products.
- By matching your requirements and budget
- By specifying components which lower installation costs
- By reducing the water applied to provide optimum plant growth

Irrigation Auditing



A quality irrigation system is the key to effective water resource management, cost reduction and the health of turf, plants or crops. Once installed, however, it can be difficult to know if it is working as it should.

IRRI COSNULT audit services can provide reassurance or help you get the best out of your existing system,

or determine if an upgrade is warranted. As demands on all organisations increase, water users are increasingly requesting audits to:

- Determine if a system is efficient & effective
- Monitor water use
- Find ways to reduce power, chemical, labor & water costs
- Help optimise plant health
- Provide benchmarks for future system performance
- Prove to the water provider that the resource is being used efficiently
- Identify specific and on-going maintenance required to optimise the system
- Parkland's irrigation technicians use the latest technology for precision analysis. These include:
- Soil moisture with profile mapping & GPS
- Soil compaction with profile mapping & GPS
- pH with profile mapping & GPS
- Irrigation infiltration testing
- Efficiency distribution uniformity / schedule coefficient testing
- Irrigation scheduling
- Water quality testing

IRRI CONSULT irrigation audits are practical. The focus is on recommending cost-effective improvements to conserve water, improve coverage and to prevent problems from arising.

Control System Design, Programming & Maintenance



Irrigation control technology system has come a long way simple. since the mechanical wheel timers of the 1950s. Today's computer based central control systems, when

correctly specified, installed and maintained, can elevate system performance and:

- Conserve water resources
- Reduce costs (labor, water, power, seed, chemical & fertilizer)
- Monitor performance & send alerts in real-time

- Allow remote user monitoring & control
- Automate ancillary tasks such as pump operation, fertigation & filter back-flushing
- Accumulate data & provide management information

The best systems integrate the use of sensors (weather stations, flow meters, tank level probes & soil moisture sensors). These sophisticated tools can control water flows over just one reserve or across entire cities.

No matter what the application, Parkland has in-depth experience in configuring and maintaining control systems to ensure efficient water use, waste water disposal and reduced costs. No project is too difficult.

Hydrology Studies and Storm Water Management :

Waterisone of our most important natural resources. Without it, there would be no life on earth. The lifestyle we have



become accustomed to depends heavily upon having plenty of cheap, clean water available as well as an inexpensive, safe way to dispose of it after use.

The supply of water available for our use is limited by nature. Although there is plenty of water on earth, it is not always in the right place, at the right time and in the right quality. Adding to the problem is the increasing evidence that chemical wastes improperly discarded yesterday are showing up in our water supplies today.

Today, we face record consumption, uncertain supplies, and growing demands for protection from flooding and pollution. The health and economic effects of a shortage of clean water are matters of great concern. Hydrology has evolved as a science in response to the need to understand the complex water systems of the earth and help solve water problems.

At IRRI Consult as Water Management Co we understand that and we are trying to play a vital role in finding solutions to water problems and we offer a high level of experience in creating a design that addresses any stormwater runoff or water quality issues for any size project. Through continual education our team stays on top of local requirements as well as improved engineering technologies and practices to address stormwater management. Whether your project is a stand alone development with an underground system or a large subdivision with a traditional detention pond, we are capable of designing your site to accommodate stormwater requirements.

Surveying Services :

IRRI Consult By Al Mekyal Al Saudi is providing all required surveying services for the Saudi market e.g.

1- Topographic Survey :

A topographic survey is commonly performed on vacant land. Unlike other types of land surveys, the purpose of this survey is to map the contours, relief, roughness, shape, configuration, or three-dimensional characteristics of the surface of the terrain. This can include trees, streets, manholes, utility poles, and more. A topographic survey will also determine required setbacks, as well as information about surface and possibly underground utilities.

There are many types of topographical surveys we can do including (but in no way limited to!). Topographic Survey of Housing Society survey, Pipeline topographic survey, Building survey, Chemical plant survey, Residential Property surveys, Open or Desert Area Survey, Airport topographic survey, Hospital topographic survey, City and Village topographic survey, Golf course surveys, River surveys, Roads & Highways topographic survey, Railway survey, Sea Port topographic survey, etc.

The type of equipment for a topographic survey varies depending on the land and preferences of the surveyor.



Environmental conditions will be considered when selecting the appropriate tools in order to attain ultimate accuracy. In wider and more open spaces, the assessor will utilize a GPS signal as it is

less likely that large obstacles will interfere with the survey. In industrial areas, a GPS system is not suitable. Therefore, a robotic total station instrument will be used instead, which is used to measure horizontal and vertical angles as well as sloping distances. However, if an area is inaccessible or too dangerous to collect data, we use reflector-less technology.

We can carry out basic surveys, picking up only key features if required, but surveys usually include all detail including trees, shrubs, roads, paths, inspection chambers, drainage covers, and invert levels, etc. Once the data has been collected from either one of the survey techniques, it will be stored electronically. The data is then processed on a computer to produce the final drawing on Auto CAD.

2- Drone Survey:

Every few years, the geospatial industry undergoes a revolution. First, it was total stations, then came GPS, laser scanners and robotics. Now, professionals are adding another tool, surveying and mapping drones, which boast quick data collection times excellent positional accura



times, excellent positional accuracy and a safe operator experience.

Our drone surveys and mapping are 75%-80% quicker than terrestrial measurement while giving you high accuracy and resolution.

Faster

Drones can cover massive areas in a short period with zero downtime to operations.



Accurate

One km2 of drone data contains 44 million points of data, compared to just a few thousand or hundred points of data.

Safer

Survey your site from a safe distance, remove the need for a surveyor to put themselves in danger.

• All of the data provided is compatible with existing GIS software and our highly trained team know exactly how to support you in using this data effectively.

3-UNDERGROUND SURVEY / UTILITIES SURVEY BY GROUND-PENETRATING RADAR (G.P.R.))



The tracing and mapping of underground utilities provides a clear understanding of buried services and any potential hazards to the development. Our utility surveys locate all main services including electricity, sewers, gas and water mains, fibre optics, heating, lighting cables, communication networks and traffic signalling cables.

Early identification ensures projects can progress smoothly throughout the entire design and build phase. Our data minimizes the need for any follow-on excavations and is an excellent way to identify safe areas to carry out excavations, boreholes and piling.

Our specialist teams work across Saudi Arabia covering projects in all construction sectors.

Geotechnical Engineering & Services :



One of the most fundamental elements of every development project is the need to identify a site's subsurface characteristics and composition of the site's soil and rock. Geotechnical assessments are used to collect and analyze data to better understand subsurface conditions. Understanding a project's design, intended use, and how these subsurface materials interact, allows us to determine potential engineering constraints, identify safety hazards, and mitigate their impact on construction cost and schedule. These assessments ensure project success by providing this valuable information during the pre-planning stage of projects and by optimizing engineering solutions throughout construction.

Our geotechnical services include subsurface investigations, foundation design and analysis, laboratory testing,



and engineering studies and analysis. Through these services, we assist owners and contractors in identifying geohazards, and determining the safest, most resilient, and affordable earthwork and foundation solutions.

IRRI Consult By Al Mekyal Al Saudi , expertise and experience provides our clients confidence in knowing that they will receive accurate, detailed, and timely information from an engineering team familiar with the local terrain and regulations and a company with the ability to meet fast-tracked deadlines and the demand of major projects in water sector especially for infrastructure and irrigation tanks.

PROJECTS

The folllowing are some of main projects we worked on :













IRRI CONSULT 25

















Madinaty – TMG - Egypt PROJECT BRIEF

Madinaty is a natural extension of New Cairo. It is situated at Cairo 33 kilometers (kms) on the Cairo-Suez road. Its boundaries extend from 2kms before the entrance to Al Shorouk City for 10kms with a depth of 4.5kms. The city is approximately a 10 minute drive from Heliopolis and 20 minutes from downtown Cairo. It is also located near the second ring road (currently under construction).Madinaty is 270 square meters above sea level which gives it a moderate climate all year round.













DAHIYAT AL DAMMAM PROJECT BRIEF

The Project is to develop a High Quality and self sustaining Mixed use and Light Industrial Township by the Ministry of Housing in Dammam, Eastern Region.

Total area of development under this project is 8,000 Ha comprising of 4,000 Ha Mixed Use and 4,000 Ha Light Industry.

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

HOUSING PROJECTS IN EASTERN REGION

PROJECT BRIEF

The Project is to develop housing development schemes in Eastern Region of Saudi Arabia by Ministry of Housing.

Total area of development under this project is 3,500 Ha .

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

An Nuayriyah

• Warood

Wasee

• Sikak

Nakheel

Schemes are

- Al AHSA
- Hafr Al Batin
- Dahiyat Al Hajr
- Al Khafji
- Qaryat Al Ulya
- Buqayq











IRRI CONSULT 29

DAHIYAT AL ASFAR PROJECT BRIEF

The Project is to develop a High Quality and self sustaining Township to match with potential city growth and housing requirements in the region by Ministry of Housing in Al Ahsa.

Total area of development under this project is 19,800 Ha comprising 5,500 Ha Core Area and 14,500 Ha Lake Area.

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

HOUSING SCHEMES IN OVERALL KINDOM OF SAUDI ARABIA

PROJECT BRIEF

The Project is to develop housing development scheme for 26 sites in different areas of Saudi Arabia by Ministry of Housing.

Total area of development under this project is 1,500 Ha

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.













IRRI CONSULT 31

RAYADAAH HOUSING PROJECT – JEDDAH

PROJECT BRIEF

Project is to develop Mixed use Housing consisting of

Hotel

- Villas
- Apartments
- Hospital
- Offices
- Commercial

Total area of development under this project is 250 Ha

The scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

FAL INDUSTRIAL CITY - RIYADH **PROJECT BRIEF**

Project is to develop a high quality Private Industrial city with all amenities for following Land Uses.

- Medium Industries
- Light Industries
- Logistics and Warehouses
- Food and Beverages
- Residential
- Commercial

Total area of development under this project is 1,600 Ha.

Scope of Work includes Concept Design for overall development of 1,600 Ha and Detailed Design of Infrastructure for Phase 1 with development area of 750 Ha













MCI BUSINESS PARK -RIYADH

PROJECT BRIEF

Project is to develop a high end Business Parkby Saudi Industry Property Authority MODON which includes the following components.

- SASO Headquarter Mixed Use
- Business Hotel
- MCI Headquarter Retail
- Park

Total area of development under this project is 20 Ha

The scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

DIPLOMATIC QUARTER-RIYADH

PROJECT BRIEF

Project is to develop the Area D known as FIFA area within Diplomatic Quarters and integrate with the remaining Diplomatic activities by Arriyadh Development Authority (ADA)

Total area of development under this project is 200 Ha

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.















IRRI CONSULT 35

WATERFRONT REDEVELOPMENT MASTER PLAN – JEDDAH

PROJECT BRIEF

Project is redevelopment of North Corniche in Jeddah for a length of 12 km from Tahliyah Street by Jeddah Municipality with the following Development features.

- Promenades Plazas
- Beaches
- Festival Areas
- Play areas Amphitheatres
- Toilets & kiosks Marina

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

Scope of work also includes coordination with Authorities and obtaining approval.

INDUSTRIAL CITY BUSINESS PARKS IN RIYADH AND DAMMAM

PROJECT BRIEF

Project is to develop the Business Parks for Riyadh Industrial City 2 and Dammam Industrial City 2 by MODON with the following features.

- MODON Building
- Mixed Use
- Conference Canter
- Mosque
- Park

Total area of development under this project is 200 Ha

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.















IRRI CONSULT 37

DEVELOPMENT OF AJMAKAN - RIYADH

PROJECT BRIEF

Project is to develop mixed use development with the development area of 2,500,000 square meters by the Land Holding

- Villas
- Apartments
- Hotel Mall
- Wadi Retail & Commercial

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

QASSIM UNIVERSITY SPORTS FACILITIES

PROJECT BRIEF

The project located in the heart of the site plan of Qassim University at Al Qassim and consisting of three main phases:

- Football stadium, 15,000 spectators with built up area of 15,500 m²
- Students sports hall, built up area of 16,000 m²
- Staff sports hall, built up area of 9,600 m²

In addition to number of open air playing courts for 5 players football, handball, basketball and volleyball, also recreation areas for bachelors andfamilies.

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

Scope of work also includes coordination with Authorities and obtaining approval.











DEVELOPMENT OF KING ABDULLAH ROAD – RIYADH PROJECT BRIEF

Project is to redevelop the King Abdullah Road to inner-city free way as main transport Corridor with High Quality urban spaces for 22 km long Corridor. The Vision is to Establish High Quality Developments and Urban Design along the Spine, which is Metropolitan and Suitable in Character.

Scope of work includes Support for the Urban Planning and detailed design of Infrastructure with the provision of Light rail Transit System and prepare the tender documents for 22 km length of Corridor.

Scope work also includes coordination with agencies and obtain the Approvals

DEVELOPMENT OF SHAMS AR RIYADH PROJECT – RIYADH PROJECT BRIEF

Project is to develop mixed use development of area about 500 Ha in north of Riyadh by Dar Al Arkan which includes

- Villas
- Apartments
- Wadies
- Retail
- Commercial Malls
- Towers

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

Scope of work also includes coordination with Authorities and obtaining approval.







ALRAJHI UNIVERSITY EDUCATIONAL HOSPITAL 300 BEDS

PROJECT BRIEF

Educational Hospital 300 Beds The site for the proposed Hospital Project is indicated as being 83,170 m² (8.317 hectares) in area and is located along the eastern boundary of the proposed master plan.

The Hospital is to be an 'Educational' or 'Teaching' hospital which will provide a wide range of healthcare facilities and the necessary 'supporting' accommodation.

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

Scope of work also includes coordination with Authorities and obtaining approval.

KING ABDULLAH ECONOMIC CITY – RABEGH PROJECT BRIEF

The Project is the development of King Abdullah Economic City – KAEC a mega development project of Saudi Arabia with a total development area of 17,300 Ha located along the coast of the Red Sea, around 100 km north of Jeddah, the commercial hub of Saudi Arabia.

Scope of work includes for Phase 1 of about 4,500 Ha Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.













King Abdullah Medical City - Bahrain PROJECT BRIEF

The Project is the development of King Abdullah Economic City – KAEC a mega development project of Saudi Arabia with a total development area of 17,300 Ha located along the coast of the Red Sea, around 100 km north of Jeddah, the commercial hub of Saudi Arabia.

Scope of work includes for Phase 1 of about 4,500 Ha Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.



AL MAJMA'AH UNIVERSITY HOSPITAL 400 BEDS PROJECT BRIEF

Educational Hospital 400 Beds, with total built-up area of 100,000 m², located among of the proposed university masterplan The Hospital is to be an 'Educational' hospital which will provide a wide range of healthcare facilities and the necessary 'supporting' accommodation.

Scope of work includes Preliminary Studies, Detailed Design of Irrigation, Construction Supervision and Support during Construction.

Scope of work also includes coordination with Authorities and obtaining approval.













IRRI CONSULT 45

MiSK City PROJECT BRIEF

This will be the first non-profit city of its kind which will contribute to achieving the goals of Mohammed bin Salman Foundation in supporting innovation, entrepreneurship and qualifying future leaders by defining non-profit work in its internal operational concept and in terms of opportunities and youth training programs it will provide. In addition, the project will provide services that contribute to creating an attractive environment for all beneficiaries of the city's offerings." - HRH Crown Prince Mohammed Bin Salman Bin Abdulaziz

Location : Riyadh , Saudi Arabia

Area: 3,500,000 m2

RIYADH TOWNSHIP

PROJECT BRIEF

The Project is to develop a High Quality and self sustaining Mixed use by PIF - ROSHN Company in Riyadh, Central Region.

Total area of development under this project is 2,500 Ha

Scope of work includes Preliminary Studies, Schematic Design and Detailed Design of Irrigation, in addition coordination with Authorities and obtaining approval.

Construction Supervision and Support during Construction.















Green Riyadh Program PROJECT BRIEF

In 2018, the Royal Commission for Riyadh City (RCRC) developed the Green Riyadh strategy, which is now considered to be one of the world's most ambitious and comprehensive greening megaprojects.

The strategy has been developed in line with international standards for urban greening and draws on learnings from leading practitioners around the globe.

The Green Riyadh project is fundamentally linked to the Vision 2030 for the Kingdom of Saudi Arabia (KSA). These linkages include improving liveability for Riyadh and

supporting the health of citizens as well as driving economic diversification nationally.



Contact us:

Website: www.irri-consult.com

E-Mail: info@irri-consult.com

Phone: +966 59 732 5012

Address:

Saudi Arabia : 3610 , Riyadh 13243



R

IRRI CONSULT

Irrigation Consultants & Water Management

UAE : Office 905 , 9th floor DAMAC Heights , Dubai , United Arab Emirates

Egypt: 350 N 90th Street Cairo, Cairo Governorate, Egypt