COMPANY PROFILE

GCS

GLOBAL CONSTRUCTION SOLUTIONS

We Are The Future

WWW.GCSOLUTIONSLTD.CO.UK

Content List

WE ARE THE FUTURE

The future is approaching us at an accelerating pace, with technology and innovations shaping the way we think, act, and interact with the world around us. Technological development andtt civil engineering have sustained a close relationship in their ability to continue fresh approaches to cities. But the future of civil engineering will utilise technological integration rather than its use in construction alone.

CONSIDERATION

Our enviable reputation comes from always producing credible application solutions that take care of any challenging details on many varied distinctive projects. Working with the best consultancies in the market, our infrastructure solutions cater to the most unique requirements and meticulous needs of our clients.

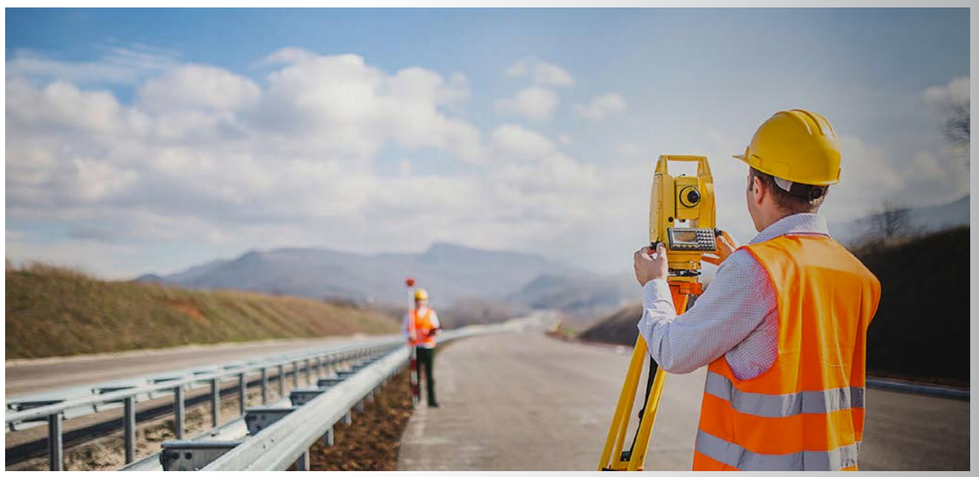
GLOBAL CONSTRUCTION SOLUTIONS

With over a decade 10 years in the industry, our devotion is to bring out the very best with the next generation of productivity gains and client experience innovation through our deep knowledge of the changing global industry and technology. In GCS, we are committed to attracting, developing, and keeping a diverse workforce that reflects the nature of our global business & our success which has been achieved through creativity, commitment and the ability to generate enthusiasm.

1 AT A GLANCE

Global Construction Solutions is a British Infrastructure Consulting company registered in England and Wales, specialist in providing Innovative Infrastructure Solutions Starting from early feasibility studies to high-tech engineering solutions as: Infrastructure engineering designs, Underground Utility survey, Drone survey, for construction, 12d Model Software, Project management.

We are among only a few companies in the world that aim to provide comprehensive infrastructure services. We are working with other consultants to develop their approach to performing infrastructure services or working with government bodies to enhance their capabilities to check and approve drawings, schedules, and project progress. We work with many of the world's most renowned clients always striving to take engineering excellence to ever high levels as we find better ways to tackle challenges, whether that's keeping projects cool in the desert sun, minimizing the environmental impact, or lowering carbon emissions.



ABOUT US

2 High - Tech Survey

Our engineers work in all areas of the built environment, Infrastructure, master planning, and a wide range of specialist disciplines, providing high-quality and innovative solutions that help minimize the impact on the planet. We offer our customers world-class skills and services backed by our class, environment, and safety systems and robust approach to managing risk.

From business case preparation, high-tech surveys, and advice on critical issues to design, implementation, and ongoing support, we provide every service and skill needed to deliver innovative, inclusive, and sustainable solutions for our customers. And our planning, advisory, technical, management, and economics activities also embrace development's social and institutional dimensions. We can provide genuinely integrated total services.

3 Company Statement

Guided by relentless focus on our imperatives, we will constantly strive to implement the critical technologies required to achieve our vision. We provide work environments where our employees can meet their potential and thrive in an atmosphere of excellence. It is our GOAL to sustain our vision and mission by constantly seeking renewal via continuous education and learning, and the application of new technologies and best business practices.

We are committed to:

- Working as a team to be the industry standard in service to clients.
- Maintaining a superior level of integrity in interactions with business partners and associates.
- Appreciating our achieved success and conducting our business as model corporate citizens.
- To be a reliable and long-term oriented partner for our clients, partners, employees and colleagues.

Why We Start

Our Mission

Our mission is to provide unique full Infrastructure Solutions from concept to operation and to have a physical presence in all major cities around the world.

- Operate within current local legal requirements and consider potential local and international legislation, where they apply, in developing working practices.
- Communicate this Quality policy to all employees and those who work for or on behalf of GCS.
- Use annual budgeting and performance review processes to set quality targets and objectives.
- Share best practices and efficiency improvements between divisions; driving a culture of quality.
- Continually improve our quality performance and monitor key internal measures and customer feedback by taking into account the context of the business and operational management processes
- Increase the focus on risk-based processes through the management system.
- Maintain accreditation with ISO9001 and other relevant standards.
- Encourage key external providers of products & services to meet the requirements of this quality policy and applicable professional standards.
- Work with interested parties and stakeholders to implement this policy in line with the context of the business..

About Our Business

Our Value's

To operate with transparency by communicating internally and externally with unwavering candor, honesty and respect.

About Our Business

Our Vision's

To promote economic growth globally through infrastructure and construction development, and to provide solutions by embracing latest technology.

Integrity | Survey | Quality | Innovation | Professional

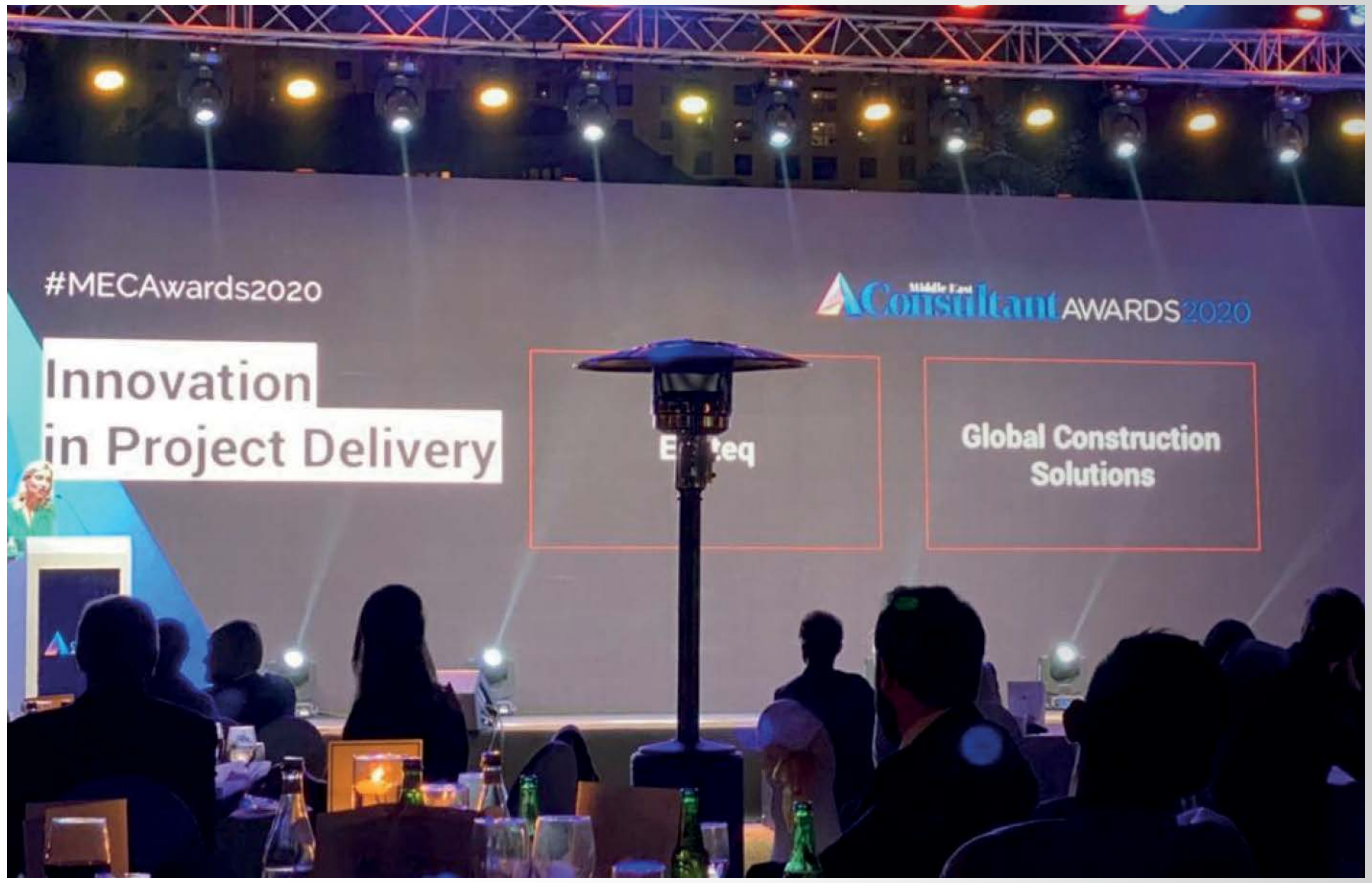
Worldwide Presence

We're +181 employees, working across +69 Solutions, with +185 projects in 19 countries and ZERO COVID19 Case.

- **United Kingdom (HQ)**
- **Australia**
- **United States of America**
- **Canada**
- **United Arab Emirates**
- **Kingdom of Jordan**
- **Sultanate of Oman**
- **Iraq**
- **Qatar**
- **Kingdom of Bahrain**
- **Kingdom of Saudi Arabia**
- **New Zealand**

MAPPING A BETTER WORLD

Our teams bring global expertise to their local communities, partnering with clients to solve the world's most complex challenges and build legacies for generations to come.



AWARDS 2020: INNOVATION IN PROJECT DELIVERY

AWARDS 2020: BIM PROJECT OF THE YEAR

THE BRIEFING

Digitisation

Mapping the Future

MIDDLE EAST

Big Project ME learns how Saudi Aramco is working with survey specialist GCS to blueprint critical refinery upgrades

Saudi Aramco is one of the largest and most profitable company in the world – its revenues in 2018 topped $356 billion. It is also the most valuable business ever created, with its worth in 2019 estimated to be more than $1.39 trillion. Having developed the world's largest single hydrocarbon network, the Master Gas System, Saudi Aramco owns the world's largest onshore and offshore oil fields - the Ghawar and Safaniya fields.

Since 1945, one of the lynchpins in its output has been the Ras Tanura refinery, the oldest refinery on the Persian Gulf coast, located south of the modern industrial port city of Jubail. Undeniably part of the region's industrial culture, the refinery has seen many changes and modernisation initiatives - leading to its present scale, which features a crude distillation capacity of 550,000 barrels per day.

Major facilities at the refinery complex include a 325,000bpd crude distillation unit, a 225,000bpd gas condensate distillation unit and a 50,000bpd hydrocracker. It also has a 270,000bpd catalytic reforming plant, along with an NGL industrial unit.

Modernisation projects include major upgrades in 1984 and 1999 - when a diglycol amine (DGA) regeneration plant and sour water stripper were added - and an extensive Clean Fuels and Aromatics project begun in 2013.

Currently, significant plant development and expansion is underway, not only set to improve scale and operational efficiency, but meaning that Ras Tanura is on the way to becoming a showcase of Saudi Aramco's environmental commitments. It will not only align with the Kingdom's stringent new emissions requirements but will in effect become a global flagship of 'clean' refinery operation.

MEETING NEW REQUIREMENTS

Ras Tanura currently operates three Sulfur Recovery Units (SRUs), which convert toxic hydrogen sulfide (H_2S) recovered from the refinery process into the less harmful elemental sulfur - via the Claus Process - and emitting any unconverted H_2S, COS, CS_2 as sulfur dioxide (SO_2). SO_2 is classified as a major air pollutant with significant impacts on human health and the environment.

In June 2014, Saudi Arabia's General Authority for Meteorology & Environmental Protection (GAMEP) revised the in-Kingdom emissions limit for SO_2 to 400 mg/Nm3. Currently, the air emissions from each SRU represent a sulfur recovery efficiency of 95-97%. But now, in order to comply with the new GAMEP regulations, the sulfur recovery efficiency at each SRU will have to be increased to approximately 99.95%.

Modernisation plans Significant plant development and expansion is underway at the Ras Tanura refinery as part of its modernisation plans.

Untangling the web GCS has been employed to help locate the web of underground utilities at the Ras Tanura refinery.

2013 *Start of the Clean Fuels and Aromatics project*

October 2020 | **MEConstructionNews.com**

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To achieve this more stringent requirement, each SRU will be upgraded by the installation of appropriate tail gas treating equipment, along with Sulfur Degassing facilities. The new stripping towers will remove dissolved H_2S from sulphur to levels below 10 ppmw to ensure safe handling, minimise odours and comply with the PME regulations. The project will also install/reconfigure some of the new equipment to improve the reliability of the SRUs.

CREATING THE RIGHT FOUNDATIONS: THE ROLE OF GLOBAL CONSTRUCTION SOLUTIONS

With technical changes come the need for physical expansion of the plant's footprint. Yet given that Ras Tanura is the oldest refinery on the Persian Gulf coast, the logistical challenges of expansion are increased dramatically by the fact that there are likely to be dense and complex networks of utilities running underground, built up over decades.

No one centralised plan or model exists - effectively blocking wholescale infrastructure development until a rigorous underground survey can take place. Moreover, as per its standing as a classic brownfield site, the soil is heavily saturated with salt content, along with the physical remnants of diverse resurfacing initiatives taking place over the last 70 years.

Enter Global Construction Solutions (GCS), appointed by Saudi Aramco to work alongside international design consultant Jacobs as the sole provider of expert mapping services. With a significant portfolio of work - on a global scale - across key applications such as Pipeline Underground Surveys, Advance Topographical Surveys, Structural Assessment and Marine Surveys, GCS' diverse experience is ideal for locating the web of underground utilities with maximum efficiency.

GCS are currently employing an advanced Underground Utility Survey, which will ultimately allow Saudi Aramco to fully update their database of underground utilities, meaning that there is an accurate 'roadmap' in place for future pipeline or structural contracting in the area.

"Using state-of-the-art technology, GCS's in-house utilities division can trace, identify, and map underground utilities and service routes including gas, telecommunications, electricity, water and drainage"

HOW THE UNDERGROUND UTILITY SURVEY WORKS - AND WHY IT IS MORE ADVANCED THAN GPR

Using state-of-the-art technology, GCS's in-house utilities division can trace, identify, and map underground utilities and service routes including gas, water, telecommunications, electricity, and drainage. This technology is from survey specialist 12D Model; it employs an advanced range of techniques beyond the capabilities typically offered by traditional GPR (Ground Penetrating Radar), supplementing these with a blend of functionalities such as sonic, CCTV and electrical locators. For example, GCS regularly uses cable locators to locate dead or live cables and can send robotic CCTV cameras into a pipeline to get HD videos (thereby locating any cracks or excessive corrosion).

All of which gives exceptional accuracy, to a depth of 10 metres (and beyond), and gives the ability to detect -

- Any type of services (e.g.: HV cables, LV cables, fibre optics, drainage & sewer pipes, Water conduits, gas pipes, live & dead cables)
- Liquid & electrical leaks
- Layers, condition and thickness

Moreover, accuracy is ± 3 mm horizontally and ± 30mm vertically, and the system can work with Outputs across BIM, DWG, DGN, KML and SHP formats.

The overall objective of the scanning is to have a complete model of the existing plant (048) and the Common units (JB7) at Ras Tanura refinery. Once this is made available in Smart Plant 3D, the laser scan model will comprehensively enable Saudi Aramco to identify the existing facilities affected during the replacement of the equipment/piping systems, and so on.

It's worth noting here that BIM is also a key part of the scope of work, enabling rigorous ground-up 3D modelling and utilising up to 250 million scan reference points.

Working to these standards aligns with Saudi Aramco's strict adherence to a broad catalogue of ISO regulations - and has enabled GCS to retain and carry out a demanding project for which a variety of local and international businesses had failed to meet the operational requirements.

MEConstructionNews.com | October 2020

SECTOR

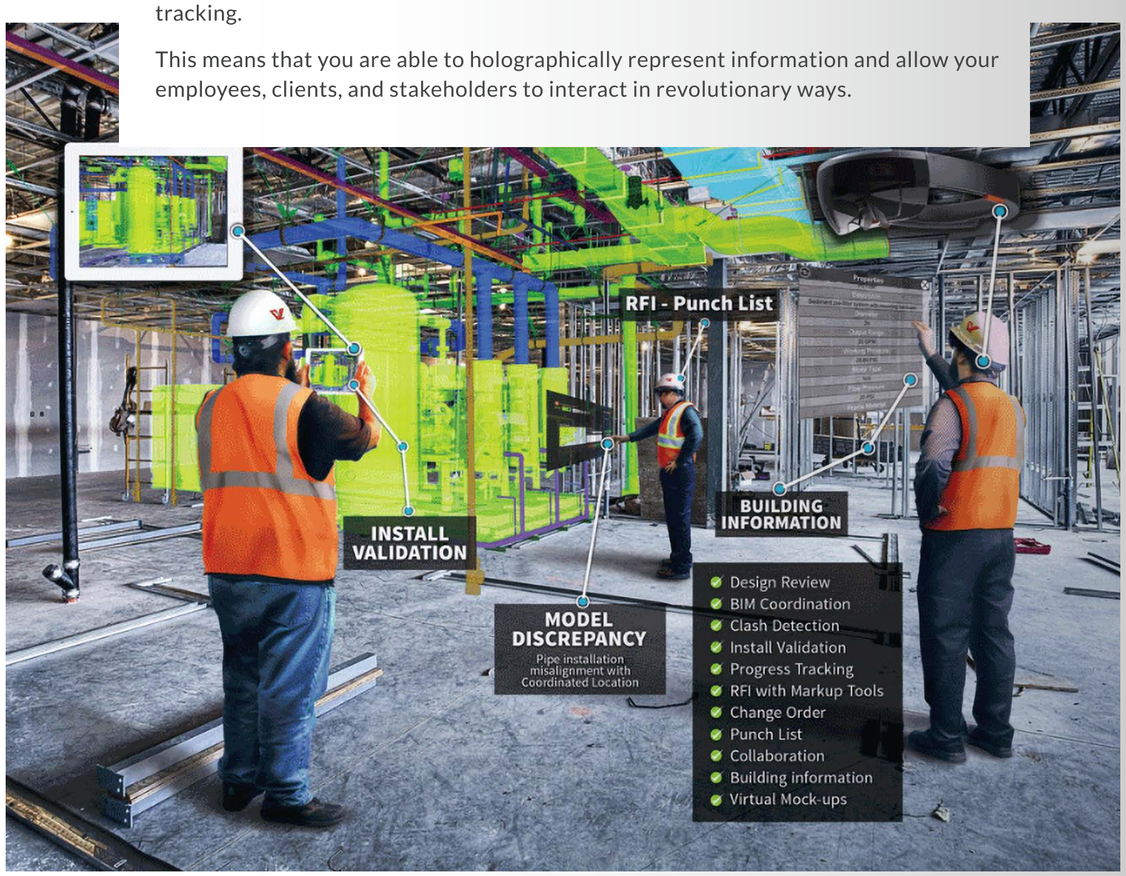
INDUSTRY 4.0 :
DIGITIZATION AND HOLOGRAM TECHNOLOGY IN CONSTRUCTION

In the construction industry, you are building the client's vision - what is more important than being able to visualize information when everything you have is on paper (or 2D digitally)?

Hololens is a mixed reality device - recognizing the environment around itself and overlaying information.

You are basically creating your own reality and shaping it through gestures and gaze tracking.

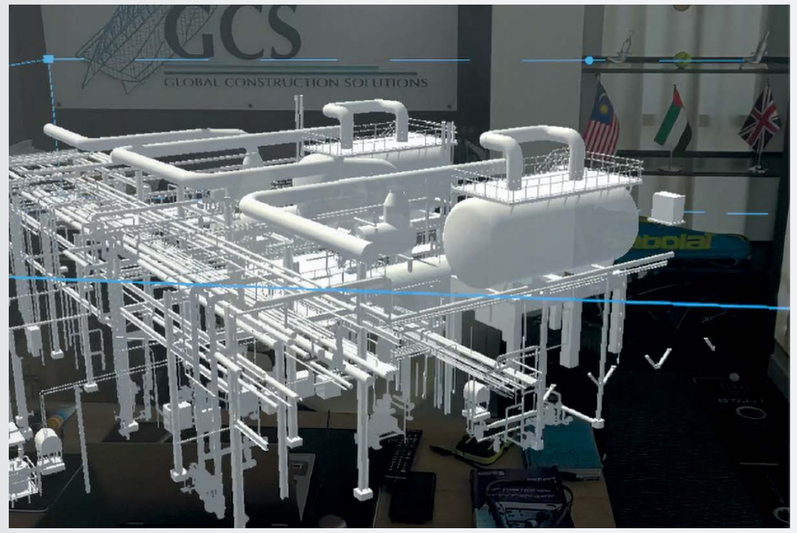
This means that you are able to holographically represent information and allow your employees, clients, and stakeholders to interact in revolutionary ways.



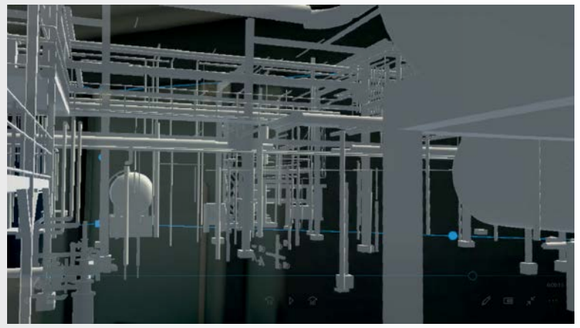
MAPPING THE FUTURE

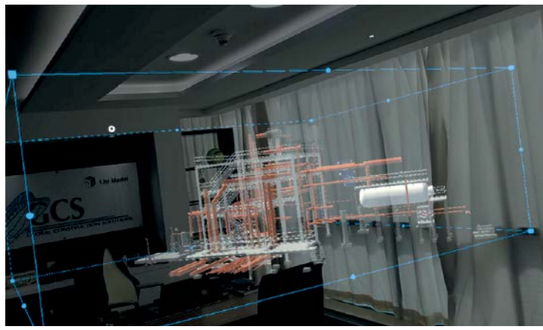
We are known for embracing the latest technologies on the market & as GCS, we are transforming the way the world works by making use of products that connect the physical and digital worlds. Core technologies in positioning, modeling, connectivity and data analytics enable us to improve productivity, quality, safety, and sustainability, especially in this era of Covid 19.

Our solutions are tailored for each phase of the building lifecycle, from the initial survey to design, construction and operation, and enable stakeholders such as architects, engineers, contractors, building managers, and property owners to gain agility and insight.



Firsts in the world to use the latest hologram technology in engineering design.





SECTOR

INFRASTRUCTURE

GCS pushes the boundaries of thinking in design to create increasingly innovative project solutions, thereby increasing client outcomes. Major infrastructure projects, by their very nature, involve significant investment. They require solutions that are cost-effective, efficient, sustainable, and delivered in an environment in which risks are managed.

- ROADS & HIGHWAYS
- MASTERPLANNING
- STORM WATER MANAGEMENT
- WATER DISTRIBUTION NETWORK DESIGN
- TELECOMMUNICATIONS INFRASTRUCTURE
- TRAFFIC & TRANSPORTATION

RELATED EXPERIENCE

With more than 20 years of experience at experience and counting

GCS provides its infrastructure and transport customers with every service they need for a successful project of any size.

AQABA LOGISTIC CITY, JORDAN
Only Logistic city in Jordan and of the biggest in the region with Logistic services, Cargo Handling & public and recreational zones

SEWER TUNNEL PROJECT, BAGHDAD, IRAQ
One of the largest projects in the world with a depth of 20-30 meters, a length of 22 kilometers,and a pipe diameter is (5.5) meters.

RAILWAY DEVELOPMENT AQABA, JORDAN
Connecting the existing railway in Jordan to the Saudi Arabia border and railway system, the railway is running in the mountain area of an overall length of 23 KM with Multiple location station

POUNDBURY ECO TOWN, UK
Poundbury is the world-famous and highly influential Dorchester extension, best-known for its integral adoption of our very own principles of sustainable development Poundbury's plan carefully integrates different building

AQABA LOGISTIC CITY, JORDAN

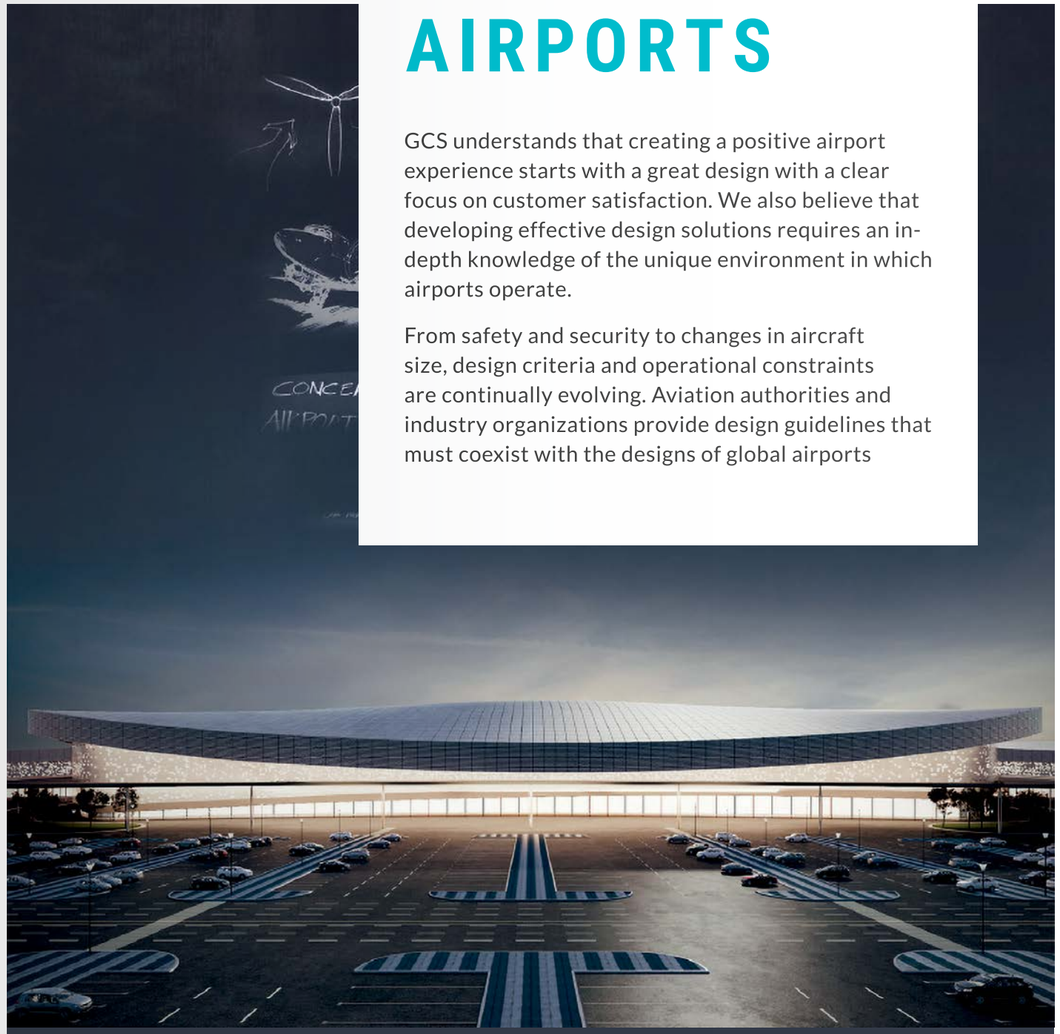
The Aqaba Logistics Village offers warehousing, logistics, and cargo support services from a 470,000 sqm site adjacent to Aqaba Container Terminal (ACT). Managed by APM Terminals, the facility is designed to allow flexibility for handling a wide variety of cargo as regional and international trading patterns continue to evolve in the Middle East. 40,000m2 of hard-standing and asphalted open yards are used for storing containers, cars, timber, and project cargo moving through the port. Its two distribution center warehouses are located in close proximity to Aqaba Container Terminal (ACT).

SECTOR

AIRPORTS

GCS understands that creating a positive airport experience starts with a great design with a clear focus on customer satisfaction. We also believe that developing effective design solutions requires an in-depth knowledge of the unique environment in which airports operate.

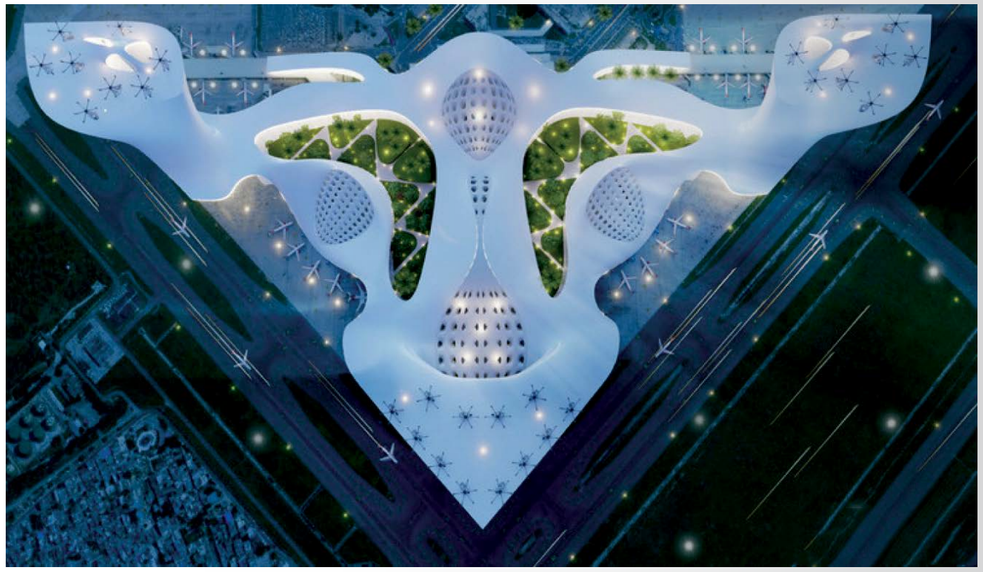
From safety and security to changes in aircraft size, design criteria and operational constraints are continually evolving. Aviation authorities and industry organizations provide design guidelines that must coexist with the designs of global airports



- TERMINAL AND FACILITIES PLANNING
- LANDSIDE AND TERMINAL ACCESS DESIGN
- BUILDINGS AND STRUCTURES DESIGN
- HANGERS, TAXIWAY & RUNWAY DESIGN
- AIRFIELD ENGINEERING AND DESIGN
- AIRPORT LAYOUT PLAN DEVELOPMENT

SECTOR

AIRPORTS



RELATED EXPERIENCE

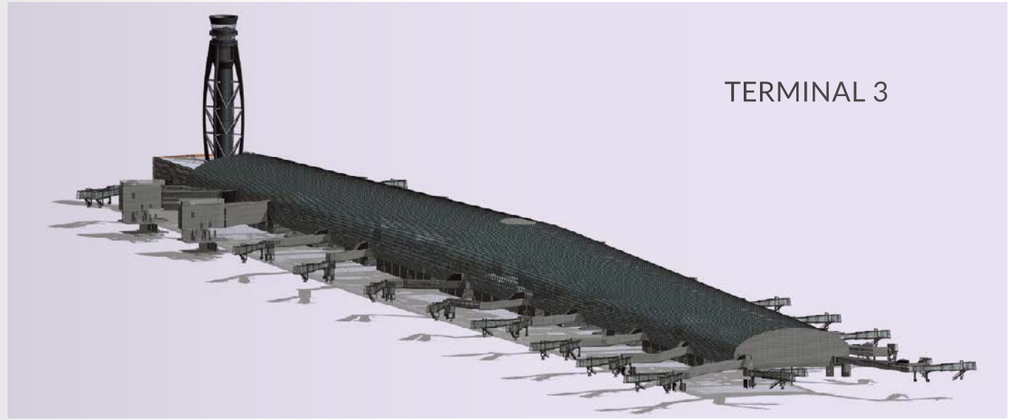
With more than 20 years of experience at experience and counting

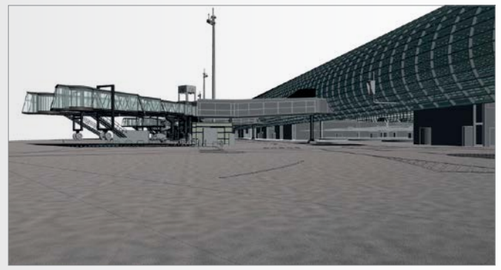
The aviation industry around the world considers GCS an ideal partner to help airports efficiently plan how to replace aging infrastructure and how to best respond to industry change while enhancing competitiveness

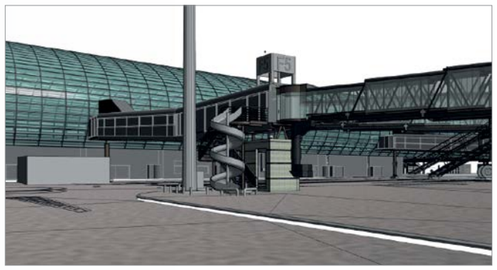
- **DUBAI INTERNATIONAL AIRPORT DXB, UAE**
  To cope with the projected growth in the number of travelers, Dubai Aviation commissioned us to make this major development plan a reality.
- **AL MAKTOUM AIRPORT, UAE**
  Meeting resilience, security, and maintenance requirements while providing a best-in-class passenger experience at
- **US AIR FORCES MILITARY AIRFIELDS**
  The project delivered resilient, low-maintenance infrastructure with minimal disruption to airport users, ensuring US Military Airbase continued to operate amidst the major redevelopment.
- **MUSCAT INTERNATIONAL AIRPORT, OMAN**
  Using Technology to Enable Sustainability. We delivered complete BIM services within a complex multiple-stakeholder project.

DUBAI INTERNATIONAL AIRPORT DXB TERMINAL 3

Dubai International Airport is the primary international airport serving Dubai, United Arab Emirates, and is the world's busiest airport by international passenger traffic. It is also the nineteenth-busiest airport in the world by passenger traffic, one of the busiest cargo airports in the world, the busiest airport for Airbus A380 and Boeing 777 movements, and the airport with the highest average number of passengers preflight. In 2017, DXB handled 88 million passengers and 2.65 million tonnes of cargo and registered 409,493 aircraft movements.

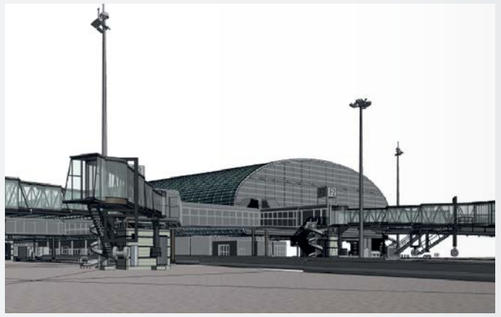
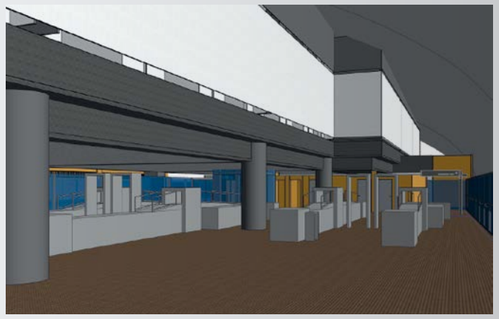
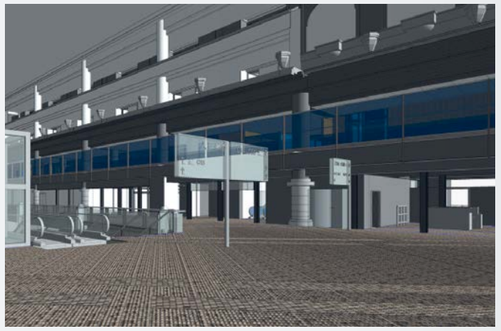


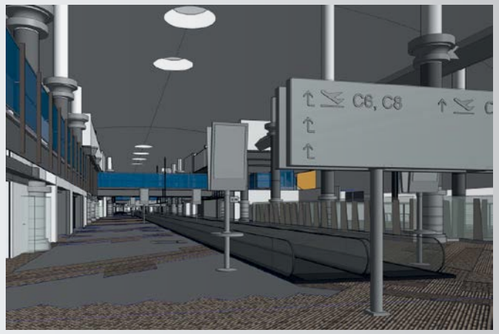


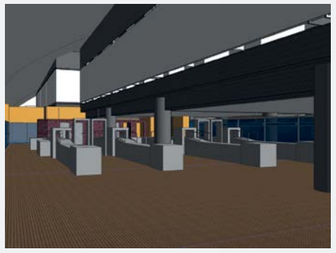
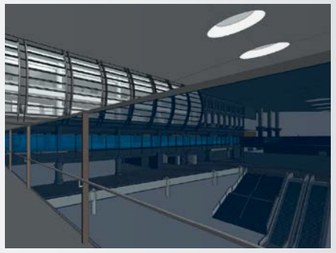
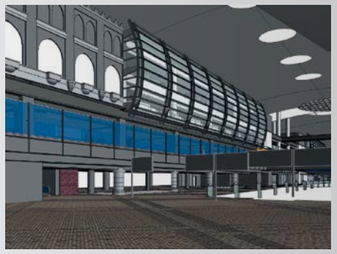


SECTOR

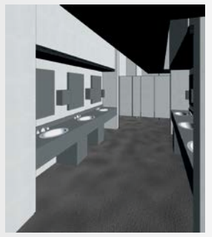
AIRPORTS

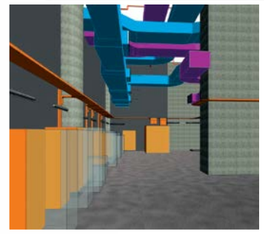




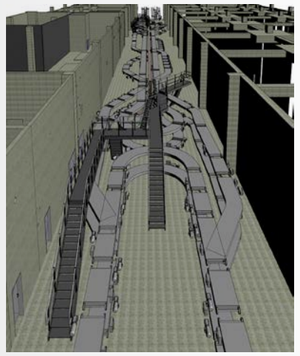
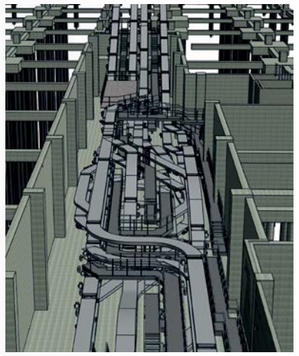



ARCHITECTURAL
STRUCTURAL MEP



BAGGAGE
HANDLING
SYSTEM (BHS)

SECTOR

OIL & GAS

We're playing a leading role in helping our clients deliver complex and efficient projects as the oil and gas sector experiences accelerated change and new global trends emerge.

Our consultancy services range from initial concept, front end, and detail design, to project management, procurement, and site supervision. For all kinds of projects, we can provide value-added solutions that integrate safety, reliability, sustainability, health, and environmental requirements.

- TANKS & TERMINALS
- GAS PRESSURE STORAGE
- ENVIRONMENTAL IMPACT ASSESSMENT
- PUMP STATIONS & PIPELINES
- PROCESSING & RELATED FACILITIES
- ONSHORE & OFFSHORE DESIGNS

RELATED EXPERIENCE

With more than 20 years of experience at experience and counting

Our project execution services span FEED into engineering execution, detailed design as well as procurement, commissioning, and site support.

RAS TANURA REFINERY, ARAMCO, KSA
GCS worked with Aramco to specifically design and configure its refining system to optimize production using the crude oil it produces.

JUBAIL REFINERY, SABIC, KSA
The primary objective of the project was to design underground utilities that will compliant with future specifications

AL YANBU REFINERY, ARAMCO, KSA
Designed to reduce supply chain cost and improve operational efficiency in its refining operations, and therefore, the supply of refined products to its downstream customers.

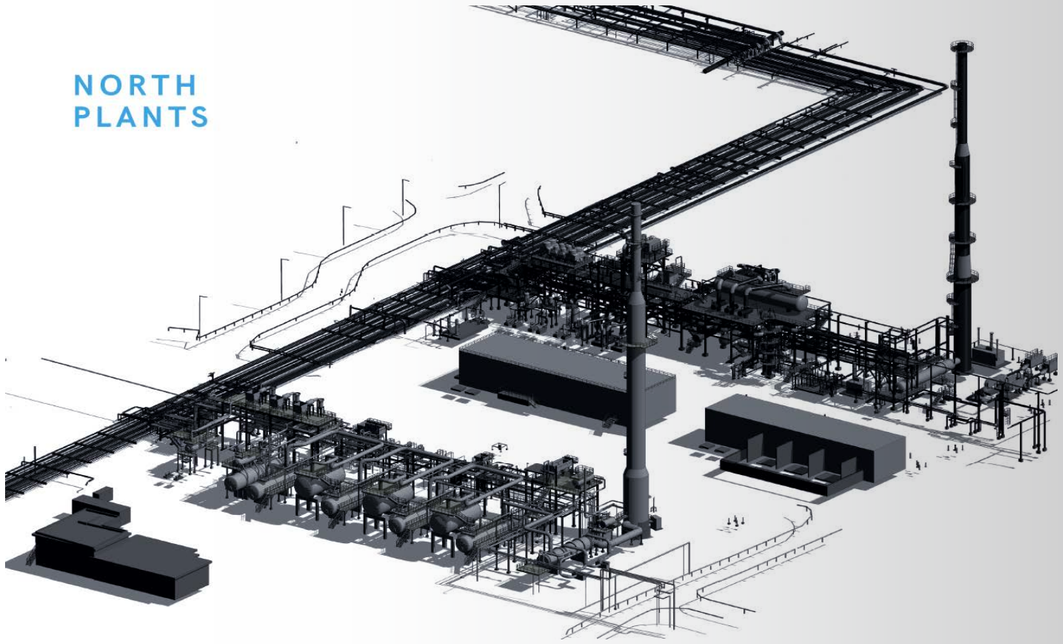
JUAYMAH NGL PLANT, ARAMCO, KSA
New process units that provide flexibility for maximizing fuel production in the near term, while being able to transition to petrochemical production in the future.

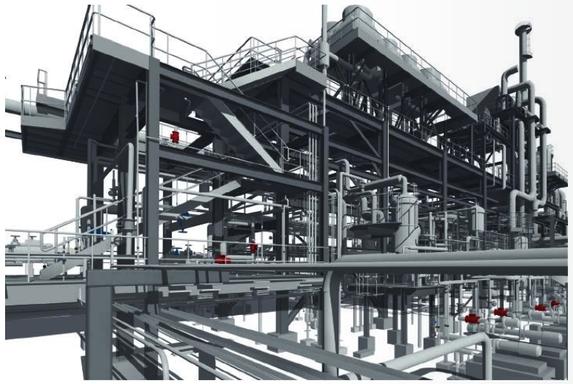
RAS TUNARA REFINERY ARAMCO, KSA
Ras Tanura is the oldest refinery on the Persian Gulf coast. located near the industrial port city of Jubail in Saudi Arabia. It has a crude distillation capacity of 550,000 barrels per day (BPD). The refinery began operations in September 1945 with an initial production capacity of over 60,000bpd The scope of work under the project included carrying out front-end engineering design (FEED) services for the inside and outside battery limits and modifications to the refinery in line with environmental regulations.

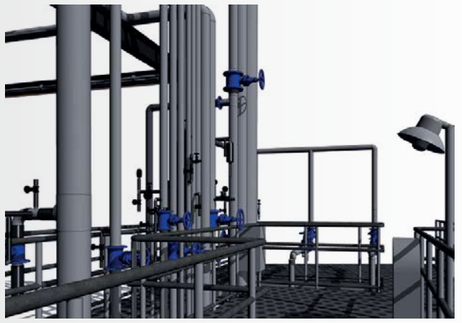
SECTOR

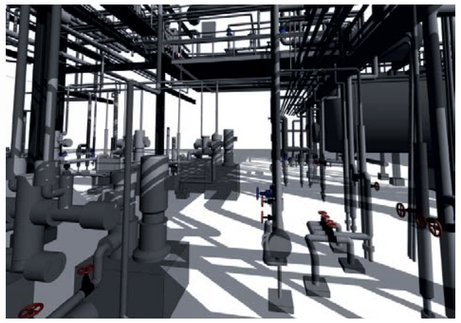
OIL & GAS

NORTH PLANTS





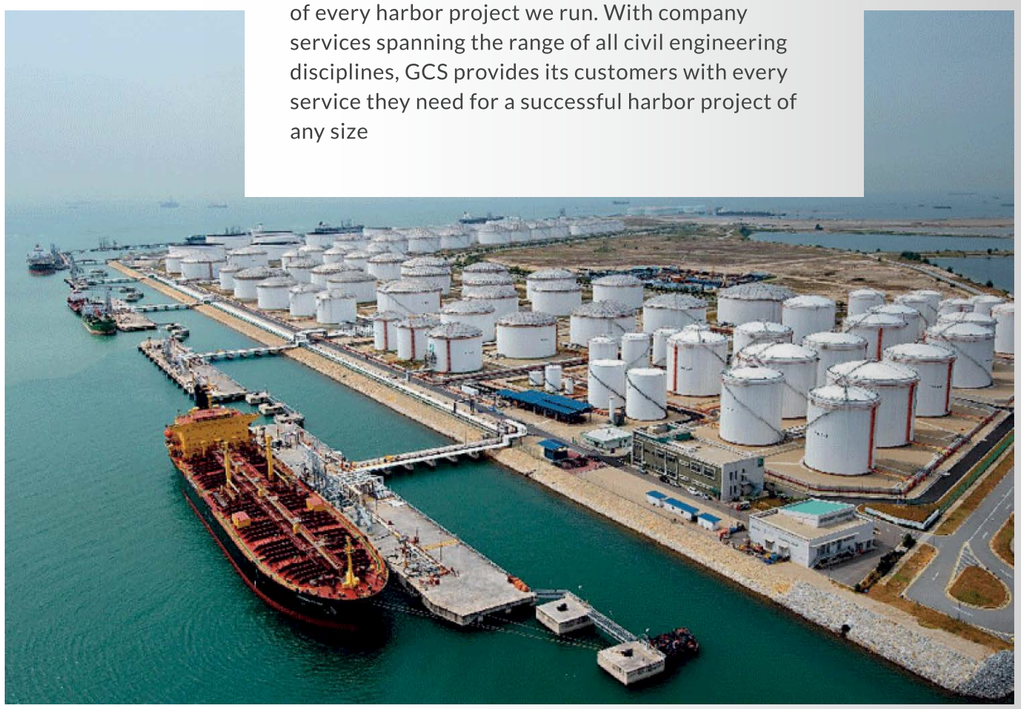




SECTOR

PORTS & DREDGING

The company offers the full range of harbor engineering, design, and consulting services delivered in a multidisciplinary approach, drawing on specialists from other sectors to ensure the success of every harbor project we run. With company services spanning the range of all civil engineering disciplines, GCS provides its customers with every service they need for a successful harbor project of any size



- MASTERPLANNING AND TERMINAL PLANNING
- BERTH AND CARGO HANDLING DESIGN
- COASTAL IMPROVEMENT
- SHIP MANOEUVRING SIMULATION
- PORT SAFETY AND SECURITY PLANNING
- MARINE STRUCTURES

RELATED EXPERIENCE

With more than 20 years of experience at experience and counting

Our portfolio of projects also includes fishing harbors, passenger ferry berths, work boat harbors, and leisure marinas. And our experience extends to inspection and appraisal of ports and harbour structures, asset management and advisor services

LONDON GATEWAY PORT, UK
GCS has provided support to the project through the initial site assessment and constraints analysis phases, through the Environmental Impact Assessment process

PORTLAND PORT, UK
GSC has provided high-quality reviews and reporting services pertaining to proposed port development plans and potential environmental constraints

SHIP REPAIR YARD, ABU DHABI, UAE
We provide the full range of services necessary to deliver the development of modern and efficient port and harbor facilities, from accommodating the latest generation of a cargo ship

FALMOUTH HARBOUR, UK
GCS analyzes the seafloor and the fauna found in the relevant Maerl beds prior to, and following translocation, to assess the extent to which the translocated Maerl could provide equivalent habitat before and after translocation

LONDON GATEWAY PORT, UK

DP World London Gateway is a port within the wider Port of London, United Kingdom. Opened in November 2013, the site is a fully integrated logistics facility, comprising a semi-automated, deep-sea container terminal on the same site as the UK's largest land bank for the development of warehousing, distribution facilities, and ancillary logistics services.

SECTOR

COMMERCIALS

GCS is a leader in delivering transformative commercial and residential real estate projects around the world, playing a critical role in developing diverse office environments, domestic dwellings, and dynamic retail destinations. We play a critical role in the conceptualization and execution of these spaces and have been involved in some of the most iconic projects ever delivered; buildings that define the skyline of many of the world's most illustrious cities.

- CLIENT CONSULTANCY
- HIGH-RISE BUILDINGS
- PROJECT & PROGRAM MANAGEMENT
- SUSTAINABLE BUILDINGS
- TECHNOLOGY & SCIENCE
- HOSPITAL

RELATED EXPERIENCE

With more than 20 years of experience at experience and counting

GCS works with owners and developers who demand creativity and flexibility because, while they must develop a distinct project for today that stands apart, their project must also be able to seamlessly pivot towards future trends in the market.

DAR AL SALAM HOSPITAL, YEMEN
103,972 m2 200 beds Hospital For Dar Al Salam Medical University Facility. 200 bed Multi General Hospital

RAS AL KHAIMAH GATEWAY, UAE
A landmark in RAK built over 270,000 sq. m with a value of $232 Million. GCS team provided infrastructure and another technical consultancy

WESTFIELD MALL, UK
The project is Europe's largest shopping center and included the design of a major public transport interchange with a new rail. The design also provided a new access road from the A3220

INTERNATIONAL SYRIAN HOSPITAL, SYRIA
200 beds ExpandableTo 500 bed Hospital For International Syrian University for Science and Technology Provides An Innovative And Functional Design That Will Carry The Sensitivities of the Traditions, And Security Concerns.

RAS AL KHAIMAH GATEWAY, UAE

The architectural proposal is inspired by the surrounding desert and mountain landscape. This concept provides for an infinite variety of naturally shaded, intimate, and protected spaces, around which the multiple uses associated with the development are woven.

GCS | OUR SURVEY SOLUTIONS

HIGH-TECH SURVEY

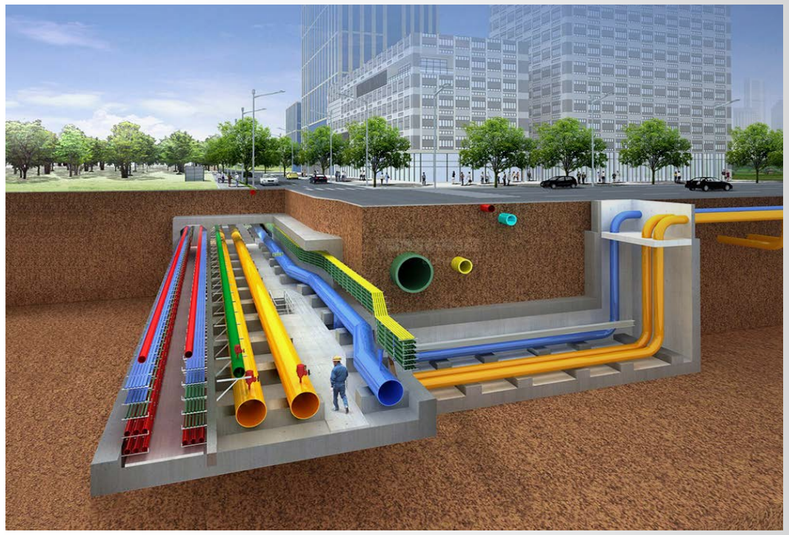
Global Construction Solution has grown to become one of the best & dynamic surveying consultancy worldwide. Through consistency and commitment, our dedicated team have established a market leading reputation for the provision of innovative and expert solutions to mapping and planning challenges. By utilizing the latest state of the art surveying technology like the Matterport VR Camera, we are able to provide professional engineering and surveying services across the whole industry.

- **UNDERGROUND MAPPING SURVEY**
- **PIPE INSPECTION CCTV CAMERA**
- **LEAK DETECTION**
- **LASER SCAN - SCAN TO BIM**
- **BUILDING EVALUATION: STRUCTURE AND FOUNDATION ASSESSMENT**
- **DRONE SURVEY**
- **MARINE BATHYMETRIC SURVEY**

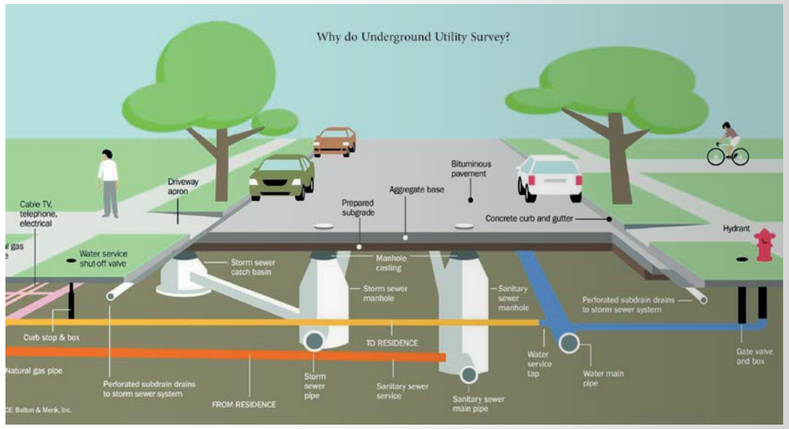
1

UNDERGROUND MAPPING

We provide innovative utility locating and mapping, non-destructive digging and survey services for the civil, design, environmental, geotechnical, utilities, infrastructure and facilities management sectors.

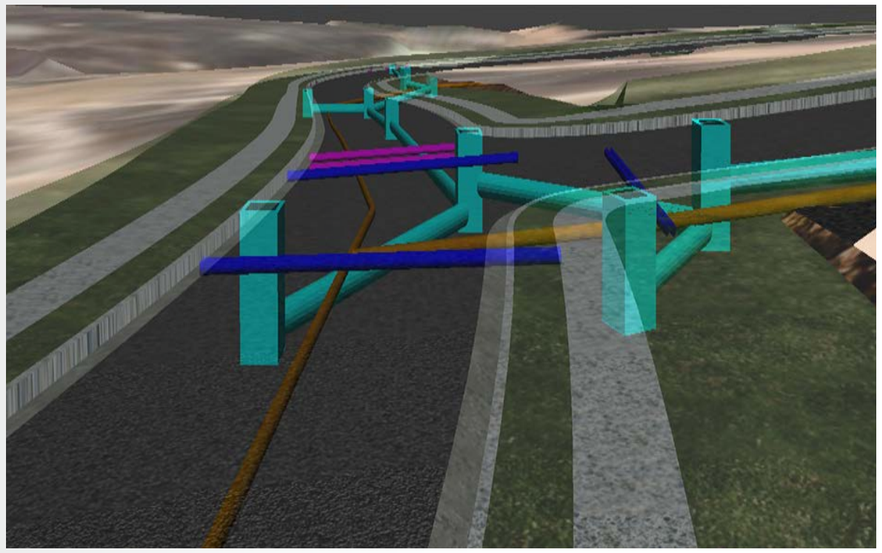


- Depth of 10 meters
- Any type of services (HV cables, LV cables, Fiber Optics, Drainage & Sewer Pipes, Water conduits, Gas Pipes, Live & Dead Cables...etc.)
- All utility GIS attributes as depth, type, material, and status
- Outputs: BIM, DWG, DGN, KML, and SHP formats
- Accuracy ± 3 mm horizontally and ± 30 Vertically



Wide range of UT mapping techniques are in GCS for various soil conditions or utilities types:

Underground Utility Mapping Survey boosts your confidence in progressing with hazardous excavation works. We implement all the necessary safety tools and adhere to all the safety regulation standards to reduce any risk and thus ensure the best practice.



- Direct Method
- Electrical Method
- Electromagnetic Methods
- Ground Penetrating Radar
- Potential-Based Method
- Pipe Tagging Methods
- Multisensory Technology

We have some of the most qualified and experienced infrastructure engineers on board who can take care of all your requirements with ease. We leverage the latest and best infrastructure tools and technologies while delivering top-notch services to clients.

2 PIPE INSPECTION CCTV CAMERA

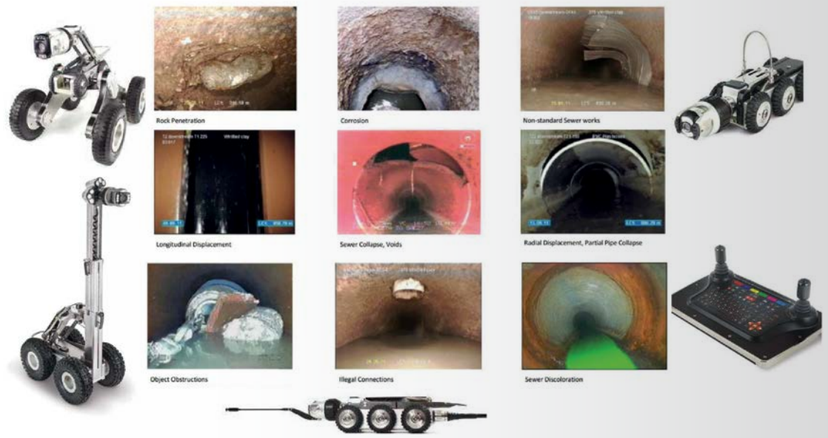
These instruments capture high-quality data-rich images and video with a host of intuitive features to boost productivity, protect assets and help ensure safety and quality. The CCTV camera is connected to a computer and it feeds real-time data and images back to the operator with information stored for referencing at a later date.

Pipeline Inspection

Using the latest robotic mobile CCTV Pipes camera technology we can provide the client with information on inaccessible drainage runs; highlighting damaged runs, joint displacement, root intrusion and also general conditions. Coupled with either a utility mapping or drainage survey, we aim to provide the best understanding of the services as possible.

Applications:

- 100 - 2000 mm Pipes and various Ducts Sizes
- 450 m distance chamber to chamber
- HD Camera 1280 x 960 and live video frame speed 30 fps Onsite Reports
- Laser Profile
- 360 Camera Rotation ,recorded video frame speed up to 10 fps Accurate Location Mapping

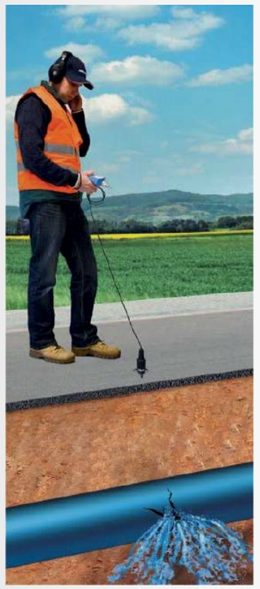


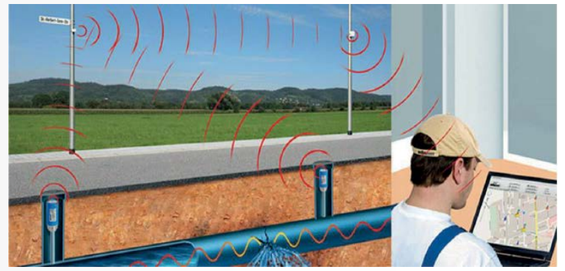
3 LEAK DETECTION

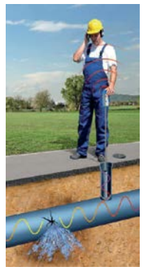
With a strong commitment to research and development, our portfolio features many technologies that can help utilities at various stages of an infrastructure management program. Based on our science expertise, multiple technologies have been developed, including correlator units for underground Water and Electric leak detection, next- generation continuous leak detection monitoring platforms and user-friendly condition assessment technologies.

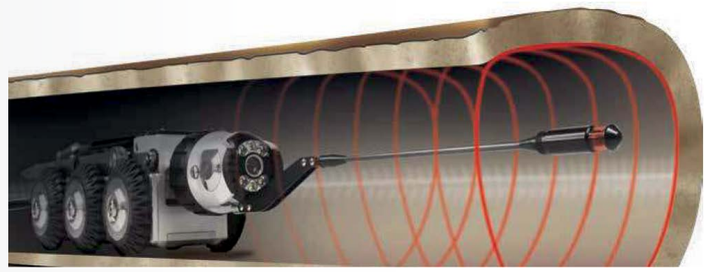
Methods

- Laser Profiler
- CCTV Inspection
- Gel Train
- Smart Bean
- Leak noise Correlator. Other Smart Solutions





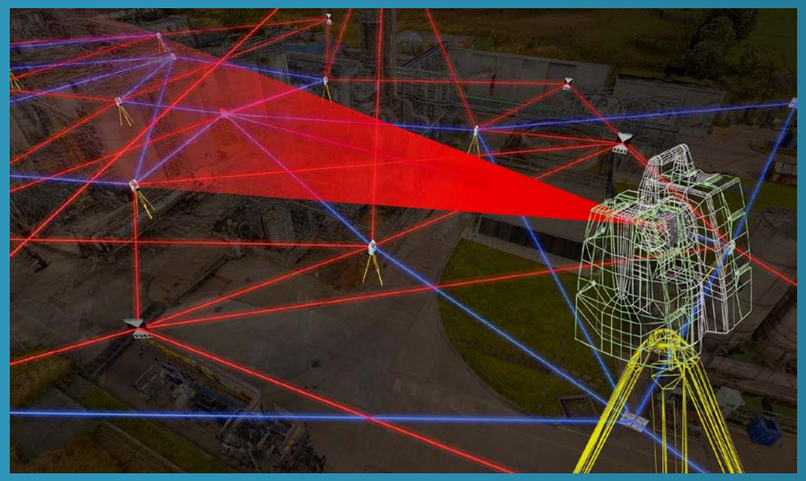




4 LASER SCAN - SCAN TO BIM

At A Glance

3D Laser Scanning or LIDAR (Light Detection and Ranging) is the process of shining a reflector-less laser line over a surface in order to collect 3-dimensional data. The surface data is captured by a camera sensor mounted in the laser scanner which records accurate dense 3D points in space. The 3D survey points collected combine together to form a point cloud that represents the surface surveyed. GCS solutions help you meet this challenge with 3D laser scanning. We offer a unique solution that delivers high-definition 360-degree by 320-degree photo-realistic panoramic scans to a 3D CAD surface model.

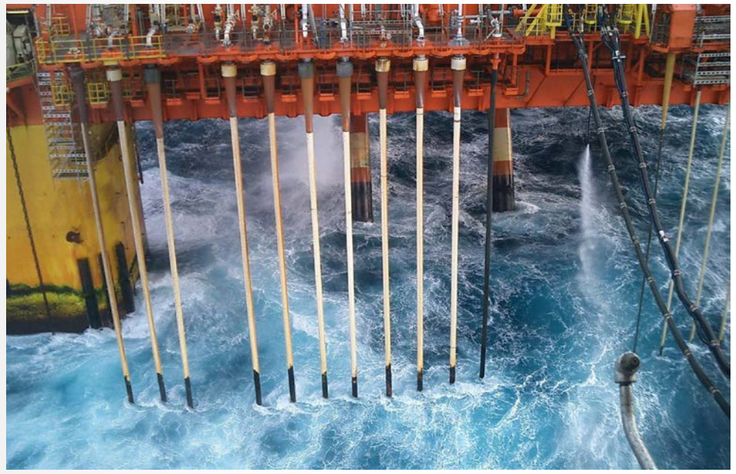


Our high definition 3D digital capture techniques gather a large amount of field information in a very short period of time. The process works by capturing a series of high definition 3D laser scans on site that can be processed immediately for analysis. Point clouds can be viewed in multi hue colours (based on signal intensity return) or true colour from a digital camera. This technique provides a solution for the rapid surveying of inaccessible surfaces or complex geometrical details. The data can be linked in 3D to your site grid and matched seamlessly with topographical survey plans, elevations and & sections.

5 BUILDING EVALUATION: STRUCTURE AND FOUNDATION ASSESSMENT

A structural assessment is a procedure utilized to check the adequacy, structural integrity, and soundness of structures and their components. An assessment is made to evaluate a structure's current and future use and conformance to current building codes.

As structures are aging, the assessment of buildings, bridges, tunnels, dams, and industrial structures is becoming increasingly important. and all these require a periodical inspection to ensure structural safety, strength, and stability under normal/actual loads as well as reduce the possibility of disproportionate collapse under unanticipated or accidental loads.



The main task of assessment is to ensure that the structure or parts of the structure do not fail under loading. The assessment is carried out for ultimate limit states, which are:

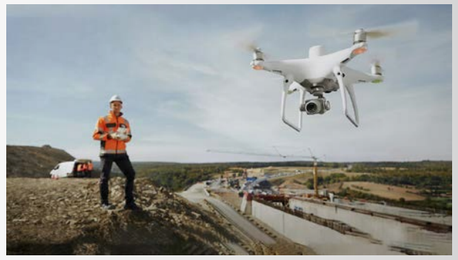
- Loss of equilibrium of the structure or parts of it as a rigid body (e.G. Overturning)
- Attainment of the maximum resistance capacity
- Transformation of the structure or part of it into a mechanism
- Instability of the structure of part of it
- Sudden change of the assumed structural system to a new system (e.G. Snap through)

6 DRONE SURVEY

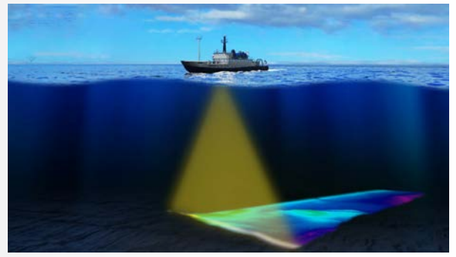
Global Construction Solutions provides aerial solutions to a wide range of industries and through our technical innovation, we offer the extraordinary time and cost-saving benefits of drone surveys to sectors such as Construction, Oil & Gas, Infrastructure & Civil Engineering, Utilities & Renewables, Mining, and Agriculture.

What We Offer:

- Our drones carry a range of sensors including high-resolution film and photography cameras, thermal cameras, LIDAR & UV cameras.
- We utilize the latest in survey data capturing and processing techniques and we offer high-resolution Reality Modeling and mapping services with measurable accuracy for the volumetric, area, and distance measurements.
- Our aim is to provide you with exactly what you need, delivered when you want it
- We will work with you to tailor a specification and proposal that suits your requirements. Depending on the size and type of your project we can provide the information important to you.



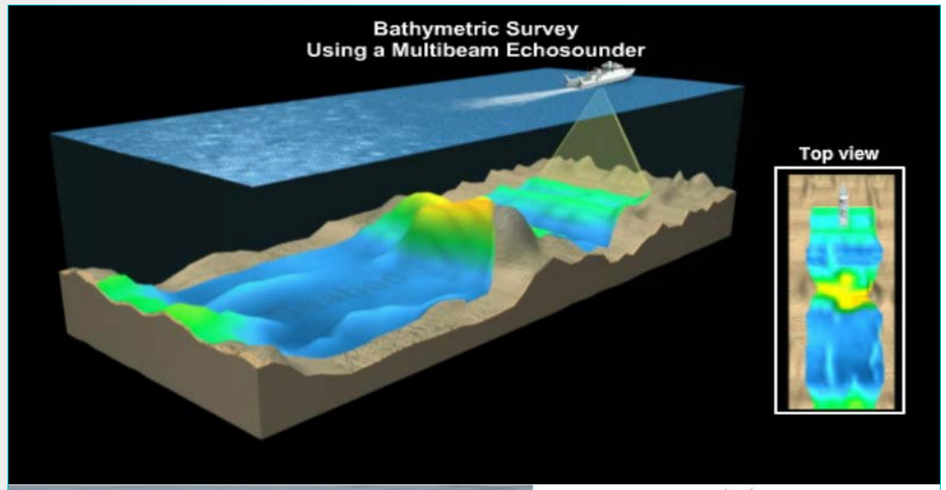
7 MARINE BATHYMETRIC SURVEY

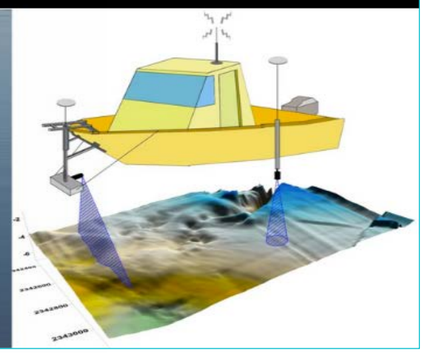


GCS provides a full suite of Marine Survey services including single beam and multi beam bathymetric surveys, scanning sonar and multi beam imaging surveys, side scan sonar surveys, and marine geophysical surveys.

Global Construction Solutions provides a full suite of Marine Survey services including single beam and multibeam bathymetric surveys, scanning sonar and multibeam imaging surveys, side scan sonar surveys, and marine geophysical surveys.

GCS is able to offer a variety of services and carry out projects of various sizes to clients at home and abroad, thanks to our multidisciplinary experts and cutting-edge technology. Recognized for our rapid mobilization of field teams and capacity to successfully complete mandates, we are ready to tackle projects year-round. Whether for environmental purposes, hydroelectric power plants, bridge structures, mining projects, or coastal and marine engineering projects, we are confident that our team will be able to meet your needs and exceed your expectations.





ENGINEERING SOLUTIONS

- Consultancy Engineering
- Digital Twin:
  Building Information Modeling BIM
- Software: 12d Model

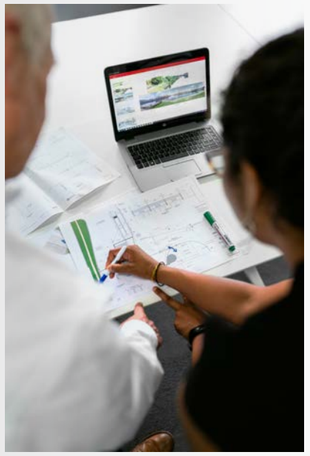
1

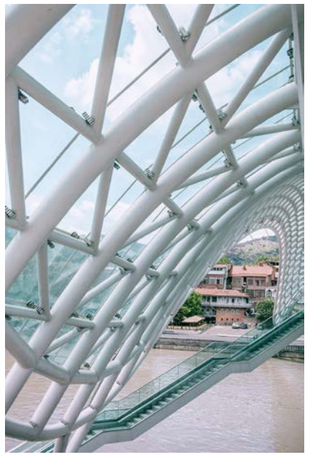
CONSULTANCY ENGINEERING

GCS has an integrated team of design engineers with structural, electrical, and mechanical experiences. GCS provides different solutions to determine the best engineering design process by using modern & new design software and the latest international and local codes. Our output covers a broad range of civil and structural permanent works design.

All types of temporary Jobs, land surveying, and the provision of specialist advice on temporary works, geotechnics, concrete technology, and materials selection and testing. GCS engineers are available to investigate construction problems and report on the causes and possible solutions.

- The bankable feasibility study, EPCM for the project
- Process optimization and flow sheets
- Instrumentation and control engineering





2

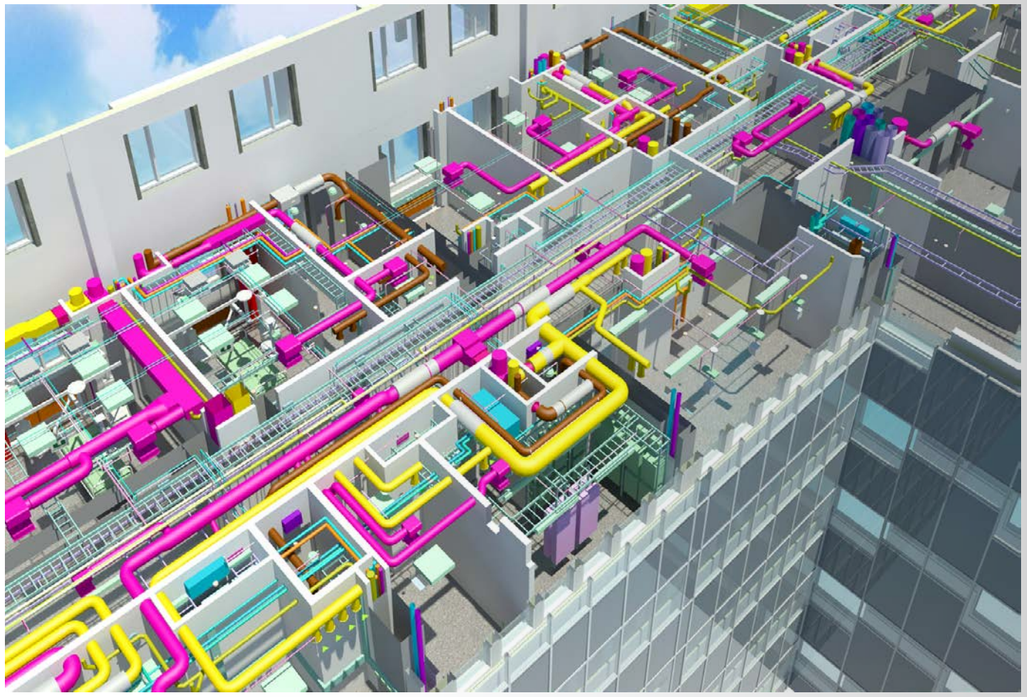
DIGITAL TWIN:

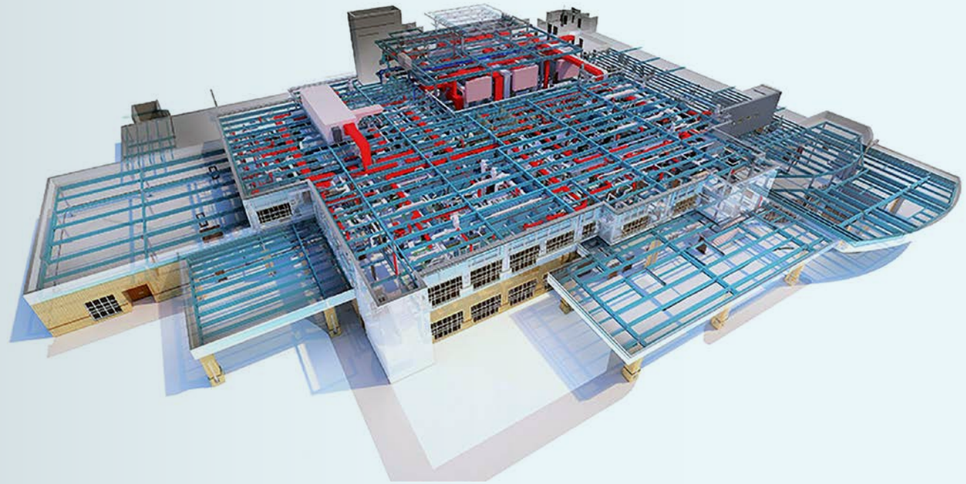
BUILDING INFORMATION MODELING (BIM)

BIM (Building Information Modelling) is a process that provides architecture, engineering, and construction professionals with a collaborative way of creating and managing information, resulting in a more transparent and efficient way of planning, building and managing projects from start to finish.

With a building information modeling process, GCS can leverage BIM for greater energy efficiency in new designs as well as in renovation and retrofit projects. We have the expertise, knowledge and resources of the industry's biggest BIM Consultancies – but with a distinct difference because we use 12d Model in our designs.

The Civil industry never stands still! Years ago, only alignments and cross sections were used for design. Next, string design was introduced to model the complex geometries that cross sections couldn't handle...and now we have Civil BIM!

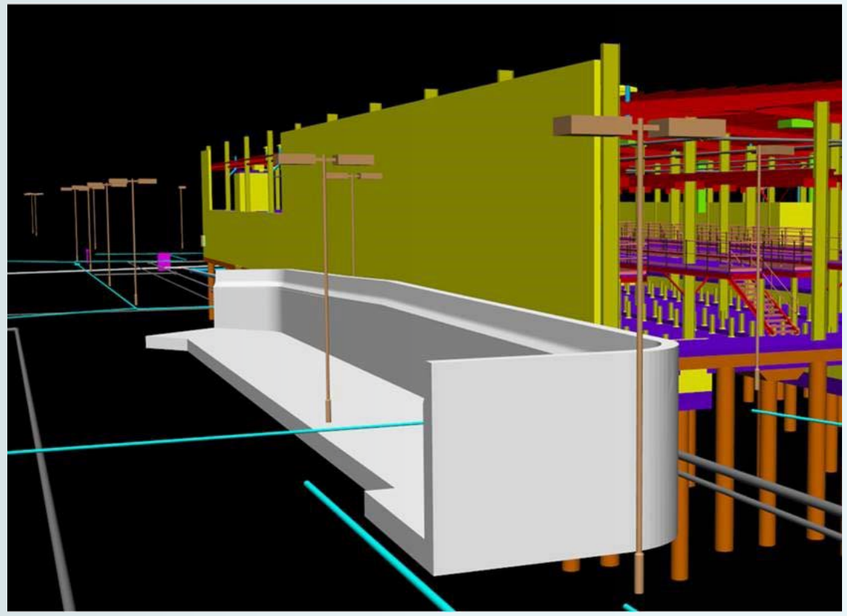




This revolutionary approach means that 12d Model can display, perform clash detection, set out for construction and do conformance checks, for data in projects ranging from building sites that cover hundreds of square metres, to roads, rail and other linear structures that extend over tens or hundreds of kilometres.

Using their unique knowledge, 12d Solutions has worked on the Precinct Information Modelling project as part of the CRC for Low Carbon Living. And as a founding member of the Open BIM Alliance, 12d Solutions is actively interacting with other Vendors supporting the International IFC format.

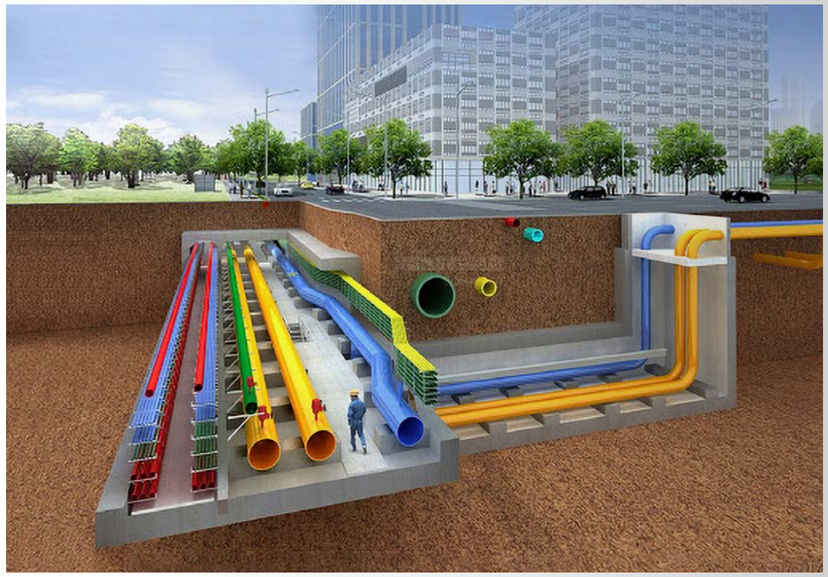
12d Solutions is also involved in the International Building SMART IFC Summits and meetings that define the IFC format, and in particular the development of the coming IFCs and Civil BIM standards for Alignments, Roads, Rail, Bridges and Tunnels.



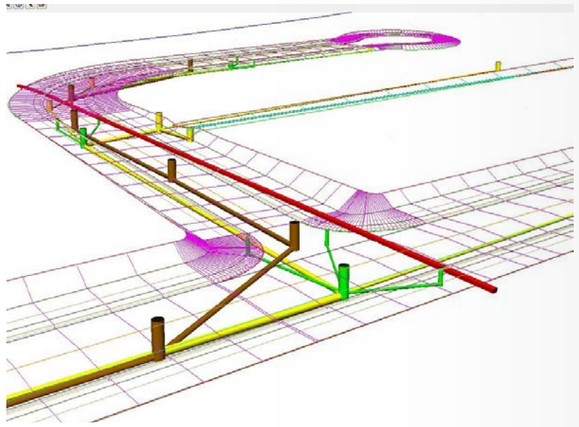
3

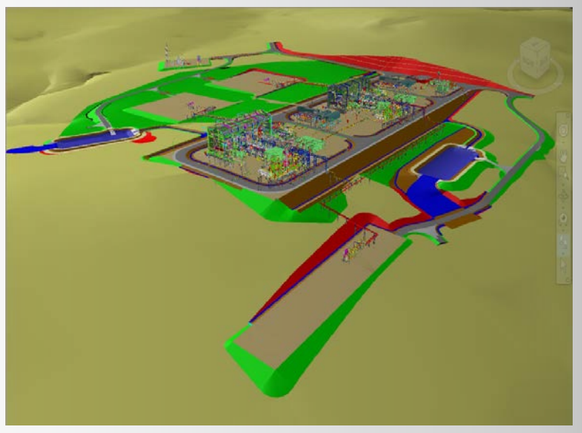
12D MODEL

12d Model is a powerful terrain modeling, surveying, and civil engineering software package. It is ideal for use at all stages of projects and is particularly useful for large route selection and corridor studies.



12d Model is a powerful terrain modeling, surveying, and civil engineering software package. 12d Model has been specifically designed for easy use. It is ideal for use at all stages of projects and is particularly useful for large route selection and corridor studies. With 12d Model's powerful design capabilities, difficult surveying and civil design tasks can be easily visualized and completed.





It allows quick and high quality production in a wide variety of projects including:

- Roads
- Rail
- Channels
- Storage Tanks
- Sub-divisions
- Landscaping
- Major Pipelines
- Surveying
- Waste Water Reticulation
- Site Layouts
- Flood Modeling
- Environmental Impact Studies
- Ports
- Airport infrastructure
- And Many More...

CONSTRUCTION SOLUTIONS

- GCS Formwork System
- Project management
- Scheduling and Planning
- Value Management
- Cost Management

1

GCS FORMWORK SYSTEM

The GCS Formwork product will reduce the time required to assemble the shutters to 50% and, therefore, significantly reduce the cost associated with project implementation. It is considered an environmentally friendly product, as it maintains extensive use of wood in construction and other industries. Moreover, it does not require special skills to assemble shutters only a few basic understanding of the concept. Using the Pin-Wedge will make it easier to attach one panel to the other without having to screw and hammer into your old plywood fitting.

OUR PRODUCTS

- STANDARD COLUMN
- ROUND COLUMN

1

STANDARD COLUMN

Our new GCS series formwork is a state of art design that provide several advantages while serving the same Formwork purpose. The Formwork consist of a single steel sheet, which make it a lightweight steel panel that can be carried by two workers without the need for a crane.

The side frame is consist of a flat bar to form an upright angle to the sheet. The flat bar will be used to joint panels horizontaly using the side holes.

The upper and lower frame consist of perforated flat bar, the number of holes varies based on the panel size. These holes are used for cascading the panels vertically to meet the desired height of the columns and walls.

For every 25cm there are horizontal belts made folded steel sheet to form a semi-rectangle shape. For sizes above 40cm there are total of 8 horizontal belts in every 3.5 meters panel height. On levels 1, 3, 6, and 9 there are two rectangular tube at each level which provide horizontal support and Tie-Rod Holder Belt. The two rectangular tube located above and below the Tie-Rod holes.

We can meet your project specific heights, as our panel can be fabricated in the range of 25-400cm. The height of 400cm can be achieved in a single panel or with extension, as per the customer requirements.

In today's construction technology, the insufficiency of qualified staff causes the installation process to take up more time and cost. This is why our systems are developed so that they are easy to assemble and barely require a guide during installation. No nails are needed during the installation of our Formwork, simply use hammer to fix the pin and wedge during this process.

The fact that our Formworks are ready to be installed as soons as they arrive at the construction site, their ease of mobility and the ability to obtain different measures with only few accessories boost the competitive advantage of the economical construction.

2 ROUND FORMWORK COLUMN DONATION

Our new GCS round formwork is a state of art design that provide several advantages while serving the same Formwork purpose. The Formwork consist of a single steel sheet, which make it a lightweight steel panel that can be carried by two workers without the need for a crane.

The side frame is consisting of a flat bar to form an upright angle to the sheet. The flat bar will be used to join the two halves of the round column using the side holes.

The upper and lower frame consist of curved flat bar. Optionally, the flat bar can have several holes which varies based on the panel size. These holes are used for cascading the panels vertically to meet the desired height of the columns and walls.

For every 50cm there are horizontal belts made of curved flat bar to provide additional support to the panel. There are total of 7 horizontal belts in every 350cm panel height. Additionally, at least one Flat Bar vertical support will be included in each panel, the number of flat bars increased based on the panel sizes.

We can meet your project specific heights, as our panel can be fabricated in the range of 100-400cm.

2

PROJECT MANAGEMENT

GCS Provides among its services provides Construction Management and Technical Supervision using qualified team of professionals to insure high quality construction, through project planning, time and cost control, construction management, contract administration and technical supervisions along with quality assurance and quality control supported by its design team.

Our Construction Management Services Includes:

- Cost control and schedule
- Quality management
- Safety
- Constructability
- Startup and commissioning
- Construction coordination
- Field engineering
- Contract management
- Materials management
- Labour relations

Construction Supervision Services Include:

- Project management consultant for building, industrial and infrastructure facilities
- Program management consultant for infrastructure development plans
- Site supervision in accordance with technical and construction legal requirements
- Continuous supervision of construction works (quality, schedule and budget)
- Design supervision
- Non-destructive testing supervision
- Delivered documentation supervision
- Technical and legal advice, and assessment consulting

3

SCHEDULING AND PLANNING

As GCS, we are very much aware of the importance of providing our services with the latest and most modern innovations and technological tools that allow our clients to make an agile and proactive decision making, anticipating the problems that may arise during the life cycle of their infrastructure. We lead the planning, organization and control of resources linked to engineering and construction projects, guaranteeing profitability, quality and meeting deadlines.

We typically find that there is much more emphasis on front-end preconstruction activities such as design, planning, and legal and understand how important it is to capture the chain of events on the program that leads up to and enables the start on site.

GCS Construction Management solution delivers Work Pack Management, Workforce Planning, reporting, and simulation capabilities. Combined, these enable projects to be delivered on time and on budget, maximizing the efficiency of craft labor and increasing project control.

Undertake a preconstruction program exercise, identifying client actions along with key design release milestones and procurement activities for major works packages

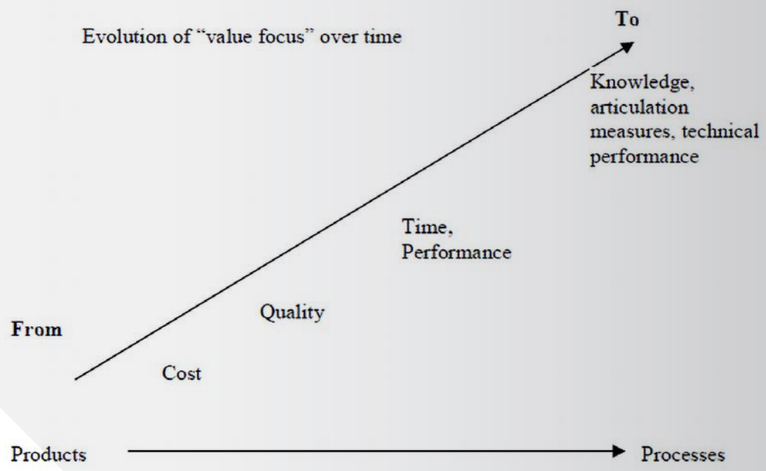
Phasing plans and sequencing plans are often produced as a means of graphically demonstrating the program sequence to a timescale, and can be client focused to demonstrate impact on access routes and areas of possession etc..

3d Site Modelling and animation as an alternative to phasing plans, where you really want to bring the programme to life Particularly informative especially for ‘non construction people.

4 VALUE MANAGEMENT

We pride ourselves on offering a project management service tailored to help our clients make their choices, define their needs, and manage project delivery - we have become a trusted advisor. We have an excellent reputation for successfully delivering projects on time, within budget, and maintaining required quality standards. We ensure that our client's corporate goals and business benefits are achieved through a controlled and well-managed set of activities that are visible to achieve the desired results.

- Bidding and contracting
- building coordination
- Cost estimates
- Renovations
- Getting Started Strategies
- Tailored Partnership Methods
- Risk Management
- Schedules of subcontractor and vendors



Value management is a team-based approach used to define the client's objectives and ensure the best value, whole-life solutions are selected to satisfy those objectives. It is not necessarily about cost cutting.

To achieve maximum benefit, value management should be carried out from the very early stages of a project, not simply introduced when problems occur. The process of value management includes value engineering, which is a more systematic approach to ensuring specific functions are satisfied to the required standard for the least cost. It assesses a range of possible solutions against the values required by the client.

Value management exercises can also be used to recover cost divergence (costs diverging from the budget) that may become apparent when design reports are prepared. Under these circumstances, the client may have to choose priorities or decide to increase the budget.

5 COST MANAGEMENT

As GCS, we are very much aware of the importance of providing our services with the latest and most modern innovations and technological tools that allow our clients to make an agile and proactive decision making, anticipating the problems that may arise during the life cycle of their infrastructure. We lead the planning, organization and control of resources linked to engineering and construction projects, guaranteeing profitability, quality and meeting deadlines.

GCS Quantity Surveying team delivers project specifications using CSI, NBS while complying with the local format of each country, in addition to contract conditions using FIDIC, World Bank and the local terms of the contract, as well as Bills of Quantities using international Methods of Measurement.

Our Services Include:

- Feasibility Studies & Development Budget Appraisal
- Cost Planning & Cost Estimating
- Value Engineering
- Engineering Services Cost Advice
- Cashflow Forecasts
- Risk Analysis / Risk registers
- Life Cycle Costings
- Insurance Replacement Valuations
- Employer's Agent role
- Advice on forms of Contract
- Preparation of Tender / Contract documentation
- Tender Evaluation & Negotiation
- Management of the tendering process, including the provision of tender reports
- Preparation of valuations and final accounts
- Valuation analysis and certification
- Provision of cost reports
- Contract Administration, Progress Claims & Variations
- Preparation of valuation reports to Funder's including cash flow projections
- Final account analysis and certification

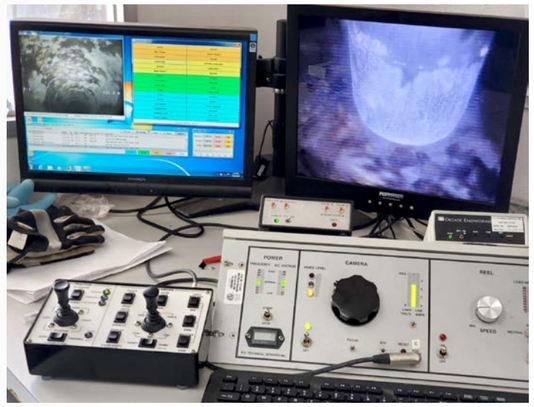
FACILITY MANAGEMENT SOLUTIONS

- CCTV Pipes Camera
- Pipes Cleaning
- Pipes Maintenance
- Pipes Repair

1

CCTV PIPES CAMERA

Closed Circuit Television Video (CTTV) sewer inspection refers to the process of using a camera to see inside pipelines, sewer lines, or drains. CCTV cameras allow plumbers to see the root causes of sewer issues without needing to conduct more invasive methods like digging or removing walls or flooring to gain access to plumbing. These types of sewer inspections tend to be a more cost-effective way to pinpoint the location of sewer and pipe blockages.



CCTV video cameras can help homeowners find the exact cause of sewer damage, including:

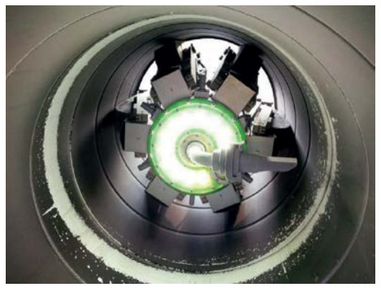
- Root intrusion
- Earthquake damage
- Pipe cracking
- Offset joint pipes
- Corrosion
- Deterioration over time
- Poor installation or previous repair efforts
- Accidental puncturing
- Severe blockage

They Identify Problems Quickly.

You can ensure that a CCTV inspection will isolate the plumbing issue right away. This is because the cameras used for CCTV inspections can check the whole pipe, thereby reducing guesswork to allow plumbing professionals to identify root causes and issues. In one visit, you can get expert advice on a solution for your pipe and make a plan to fix faulty pipework.

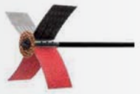
2 PIPES CLEANING

GCS offer water pipe cleaning using different smart methods from simple brushes to sophisticated dry ice blasting and the right choice is crucial in order to achieve an excellent result. GCS has experience with many of these methods and so can easily find the best solution for your need.



Cleaning Methods:

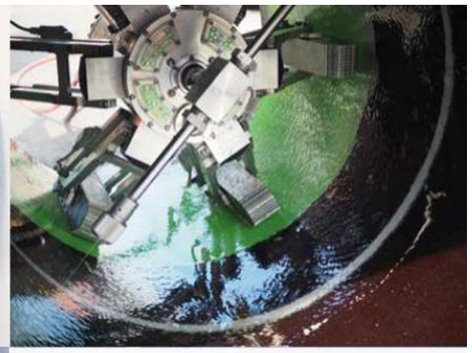
- Non-abrasive Blasting
  - Dry Ice Blasting
  - Compressed Air blasting
- Abrasive
  - Soda Blasting
  - Wallnut Shell Blasting
  - Sponge Blasting
  - Sand Blasting
  - Grit Blasting
  - Shot Blasting
- Water Jetting
- Vacuuming
- Scraping
- Brush cleaning
- Other Methods On Request



The most challenging situation in life is when a duct or pipe gets damaged, needs insulation, painting or any other kind of repair. When you are unable to reach inside the duct yourself due to its size or for security reasons, GCS is capable of solving this in a very powerful and accurate way , we are able to use tools with an accuracy of 0,1 mm. As your needs in this area are unique, we use an individual approach in every single case

Technologies:

- Cleaning and Repair Robot
- Picote Miler Pipe Cleaning System Ultrasonic Testing Technology Mechanical Cleaning
- Chemical Cleaning
- Pipeline Coating Solutions
- Other Techniques



3

PIPES MAINTENANCE

Pipe servicing and pipe maintenance works for mid-stream and downstream oil and gas industries.

We undertake:

- Design of pipelines
- Pipe laying
- Pipe installations and commissioning
- Underwater pipeline installation
- Pipe rehabilitation
- Replacement of pipes and fitting
- Welds testing
- Pressure testing
- Stabilization works
- Loading gantry piping

4

PIPES REPAIR

Repairing a broken, cracked, or damaged pipe can be an extremely complicated endeavor, whether you opt for the “in-place repair” option or the “shutdown” method. Regardless of the type of solution you choose and the type of Mueller repair clamps you select, it’s essential to be familiar with the most important factors that can affect the process of repairing your pipes in order to be as prepared for the procedure as possible.

What factors affect pipe repair?

Each pipe burst, crack, or pinhole leak is different and offers its own set of unique challenges you need to overcome in order to properly repair the pipe, each of them carrying vast importance for the success of the process itself. Here are several of the most essential considerations of pipe repairs you need to think about before starting:

When repairing pipes it’s essential to consider the reasons why the pipe you’re repairing is made from a specific material and use repair methods and equipment that will not alter those essential properties necessary for normal daily operations.

PROJECTS

1 Infrastructure Engineering

2 Infrastructure Development

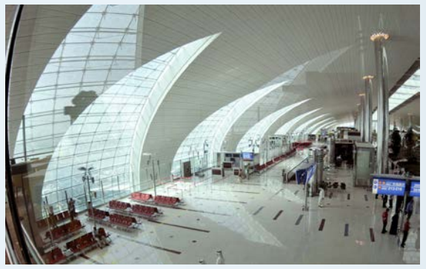
3 GCS Formwork

4 Buildings

5 Project Management

1. Infrastructure Engineering

1.1 AL MAKHTOOM AIRPORT



Water Leakage Detection
Location: Dubai (UAE)
Area: 3 Kilometers

Scope Of Work
The client asked the Contractor to replace the whole pipeline of 3KM because they weren't able to find the leakages. The Contractor requested GCS to perform a Water leakage service and find the leakage. After the survey, GCS was successfully able to find the leakage and the client had to only replace 100m of the pipe.

1.2 ARAMCO – RAS TANURA

Underground Utility Mapping, Laser Scanning Survey, BIM
Location: Kingdom Of Saudi Arabia
Area: Underground Utility - 133, 300 M²
Area: Scan To BIM - 54, 662 M²

Scope Of Work
GCS was hired by Saudi Aramco to detect Underground Utilities and Above ground scans to BIM at one of the oldest refineries in the world. The whole refinery was scanned and modeled in an exceptional time of 2 weeks. Three offices in Australia, U, and Dubai worked parallel on this project to meet all the deadlines regardless of the Covid 19 situation. WME Hired GCS for the structural Assessment of one of the oldest Malls in the capital of the UAE, Marina Mall Abu Dhabi. The team scanned all the elements of the structure and delivered the client in 2d&3d As-built drawings.

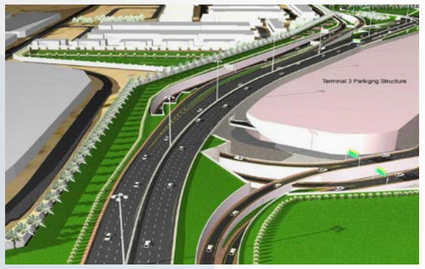
1.3 SHIP REPAIR WAREHOUSE

Bathymetric Survey
Client: Royal Haskoning DHV
Location & Area: ICAD 3, Abu Dhabi: 54,000 m²

Overview:
GCS used high-tech survey equipment to perform the Bathymetric Survey which includes Multi-Beam Sonar, Velocity Profiler and tide gauge. The client wanted to measure the tide levels on the day of Survey was performed. GCS successfully completed the survey prior to the agreed time with 100% client satisfaction

Scope Of Work
We submitted results which were easy to interpret and included colour coded contouring at any required intervals, depth data, all available digital topographic data.

1.4 DUBAI AIRPORT



Project: Scan To BIM
Client: Dar Al Handasah
Location: Dubai (UAE)
Area: 3 Kilometers

Al Maktoum Airport
Dubai Airport Engineering Department hired GCS to perform Scan to BIM service, later to bring some alterations like retrofitting, renovation, refurbishment, or reconstruction. It is very important to have a detailed and accurate representation of the existing conditions of the building. 5 teams of 3D laser scanning devices were used to capture the existing conditions, the scanned data was in the form of "Points" where more than 10 billion such points were combined together which formulates a Point Cloud Scan. A Point Cloud Scan was then imported into a 3D Modeling platform with the purpose of creating an As-built model.

The intended use of the Scan to BIM process was for: site verification, design validation/planning/comparison, develop as-built drawings, interference checks, MEP or construction elements demolition, addition, documentation of existing building conditions, quantity take-off, and budget estimation.
Execution of a Scan to BIM project was very challenging, to implement the project successfully we made a step-by-step process, which is described below and involves four steps [1] Capture [2] Process [3] BIM Modeling and, [4] Quality Assurance and all four steps should be executed as per BIM Execution Plan (BEP/BXP) and as per project workflow.

1.5 OIL PLANT DEVELOPMENT

Client: Petroleum Development of Oman, Bahwan Engineering Company (BEC)
Location: Mena'a Al Fahal (Oman)
Area : Underground Utility 40,000 m²

Background: Mena'a Al Fahal
It is also known as Miana al Fahl, Saih al Malieh, and Saih al-Malih) is a coastal area in the northeast of Oman, near Muscat. It is a key area for the country's petroleum operations.

Scope Of Work
The zone of interest for the GPR survey covered a total area of around 40,000 m and was partially covered by existing structures. The survey was performed on flat areas and sandy surfaces.

1. Infrastructure Engineering

1.6 NASYRIA RESIDENTIAL COMPOUND

Services: Master Planning
Client: Al-Nasyriah Investment Association
Location: Al-Nasyriah – Iraq

Background
It is situated along the banks of the Euphrates River, about 360 km (225 miles) southeast of Baghdad, near the ruins of the ancient city of Ur.

1.7 ORMEAU RIDGE DEVELOPMENT

Designer: Roger Brisbane
Contractor: Morton Urban Solutions
Client: Stockland Development Pty Ltd
Location: Ormeau, Gold Coast City, Queensland, Australia

Background:
Mortons Urban Solutions was commissioned to undertake design, project management, and construction supervision of the project to fulfill part of the region's demand for residential lots in the fastest growth corridor in Australia.

Outline:
Ridge is an 890 lot residential subdivision located adjacent to an existing flood plain and within the Gold Coast / Brisbane "Green Belt". Compensatory earthworks for flood mitigation and requirements to place bio-retention basins above major storm levels presented technical challenges for piped stormwater conveyance systems.

Methodology:
Restrictive floodplain dynamics presented opportunities to utilise the full potential of 12d Dynamic Drainage Analysis (DDA), and permitted calculations, iterations and interrelations that would be unthinkable in any other drainage analysis package.

Issues:
In order to fully utilise the site's potential an end of line bio-filtration approach was adopted, however this presented additional problems with conveyance of large quantities of piped stormwater. 12d's DDA facilitated a highly interrelated system incorporating bio-filtration basins, piped drainage, multiple bi-directional pits and overland flow components, with each component affecting the functioning of the other. A series of 16 bi-directional pits within the estate permitted low flows (Q3 month) to be directed towards bio-filtration basins, whilst larger flows were discharged directly into the floodplain.

1.8 AQABA LOGISTIC CITY CENTER (ALCC)

Project: The Central Logistic City Of Jordan
Client: Golden Logistic Triangle Investment
Project Value: $47 Million

Project Description:
It will be the biggest logistics center in Jordan; the project is allocated in the southern border of Aqaba city to be connected with new Aqaba seaport.
The Project Had Contain 3 Types Of Services:
Logistic services which are loading, unloading, warehousing, trucks parking and maintenance.
Customs and Cargo handling and clearance agencies.
Public and recreational zone to serve the project contains hotel, mall, free market, restaurants, shops and retails.

The Master Plan Idea And Development Designed According To:
All according to feasibility study prepared by Global Constructions solutions design and studies Team.

- Areas required and Functions continuity.
- Providing security for all logistics Operations
- Site topography
- Future investment opportunities
- Reducing the cost.

This route is totally separated from car rout. The truck to be checked at one of the two main entrances of the city.

- ALCC Main entrance.
- Or the entrance located on the connection with new port.
- The truck will enter the inspection yard after weighing to start required customs operations or will turned to exit if it's rejected.
- The trucks will be driven easily around the warehouses and storage yards zones.
- Designed levels allow the truck to access the storage area from any point of route.
- An emergency exit allocated at the end of warehouses zone

The Driver Will Be Directed To One Of The Following:

- As Customs or Agency employee, he will park his car next to his work place with less than 250 meters tour long.
- As a visitor, he will park his car at visitor center parking and use secured shuttle bus to visit the city.
- As a visitor, that will travel by tourists agencies located in terminal.

Services Provided

- Project feasibility study.
- Economic Study
- Hydraulic Study
- Traffic Study
- EIA – Environmental Impact Assessment
- Site Analysis & data collections
- Coordination with all targeted clients
- Master plan & Zoning
- Project Program & function
- infrastructure design
- Buildings Program and Architectural Design
- Buildings Structural design
- Buildings Mechanical & Electrical design
- Water Harvesting system design
- Water treatment Study
- Trash collection and recycling Study

1. Infrastructure Engineering

1.9 NEWTON FARM RESIDENTIAL DEVELOPMENT

Client: Ballway Homes
Location: Glasgow, Scotland
Infrastructure Designer: Makram Jaibaji

Background
Situated near the popular residential area of Cambuslang, Newton Farm enjoys a semi-rural setting alongside the River Clyde.
With a variety of 2, 3 & 4 bedroom homes, there's something for everyone. Set in stunning landscaped surroundings, this community presents a wonderful opportunity to combine modern living with comprehensive local amenities.

1.10 TENNIS COURT AND LANDSCAPING

Project : Tennis Court and Landscaping
Services: Infrastructure and Architect Design
Client : Private owner
Location : Amman – Jordan

1.11 MARYHILL, BOTANY ESTATE UK

Client: Maryhill Housing Assocition
Location: Glasgow Scotland
Project: Maryhill, Botany Estate,Large Scale Housing Development

Infrastructure Designer
Makram Jaibaji / Buro Happold

Overview
These were attained in 1856 and the town took its name from combining the forename and surname of a wife of the proprietor of a local estate. classes." Despite the fact that Maryhill was an independent burgh, it agreed to the erection of Glasgow's new barracks, which were moved to Maryhill from the East End.

1.12 POUNDBURY ECO-TOWN

Client: The Dutchy of Cornwall
Infrastructure Designer: Makram Jaibaji
Architect: Leon Krier

Background:
The Project Area Information
Poundbury has proved increasingly influential, attracting international interest and generating many organised tours every year. These include architects, town planners, academics, house builders and land owners. The success has been recognised far beyond Dorset and many of the founding principles of Poundbury have now been incorporated into the British Government's Planning Policy.

1.13 WESSEX HIGHWAY PROJECTS

Client: Wessex Council, South West England – UK
Infrastructure Designer: Makram Jaibaji

Project Description:
+40 Miles of Highways, Drainage & SUDS

Background:
Successful infrastructure projects depend on strong collaboration. Our experience of working on these complex projects means that our input at all stages is based on a pragmatic understanding of construction impacts and practical proposals for mitigation combined with the ability to deliver BIM compatible outputs.

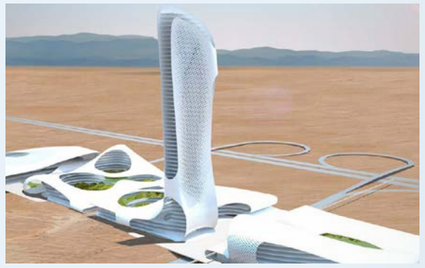
1.14 LONDON 2012 OLYMPICS MASTER

Client: Olympics Delivery Authority
Location: South West England
Infrastructure Design: Makram Jaibaji

Background:
In order to ensure the site would have flexibility for the future, the site design needed to be suitable for both large crowds attending the Olympics and for the smaller number of visitors to the site in the years following the games. During the planning of the central Olympic precinct, attention was given to ensure that the large areas of public domain required for the safe and comfortable passage daily of over 250,000 spectators could be reduced to provide a more intimate environment for future legacy developments.

1. Infrastructure Engineering

1.15 RAS AL KHAIMA GATEWAY



Client: Ras Al Khaima Investment Authority & Rakeen
Infrastructure Designer: Makram Jaibaji / Buro Happold
Area : Landmark In RAK: 270, 000 m²

"Urban design addresses how people perceive and use their environment. People care about the look, feel, and livability of their communities and urban design tools are a planner's most effective tools to address this need."

Anthony Sta.Ana

1.16 CHILDREN'S DISCOVERY CENTRE

Client: MASSAR
Infrastructure Designer: Makram Jaibaji / Buro Hapold
Area: 170, 000 m²

Landmark In Damascus, Syria
The building structural design is influenced by the unique Damask rose, it has shell structure that allows a dazzling scenography of light beams into the interior. The core of the rose has a big communal orientation space- the place where a cross pollination of knowledge occurs. The central region under the open sky confronts the normal horizontal movement in the Arab city. The Massar Centre will be the heart of a Syrian educational program – Massar. The center will offer activities to empower young Syrians to contribute actively in building their future.

1.17 MECCA PROJECT

Client: Jabal Khandama Development Company
Designer: Buro Happold
Location: Mecca, Saudi Arabia
Project Value: US$4 Billion

Services Provided
Infrastructure Design, Urban Planning & Hydraulic Studies

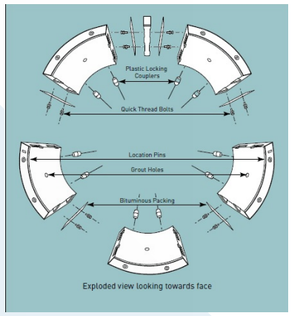
Description
Commissioned to produce Earthworks, Road Design, and create a 3-D landform model for master planning. Other services included utility coordination and geotechnical studies. Due to the extremely high number of Muslims that visit Al Haram, be it for the annual pilgrimage to the Holy Mosque (during Ramadan) or simply daily prayer, there has become a need for long-term accommodation in the adjacent mountains. Khandama, with a prime location looking down onto the Mosque, is ideal for both visitors and investors.

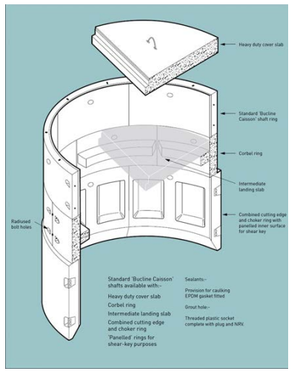
1.18 BAGHDAD MUNICIPALITY SEWAGE TUNNEL

Client: Baghdad Municipality
Location: Baghdad, Iraq
Project Value: $3.46 Billion

Background: Baghdad Municipality
In the 1950s, the government greatly expanded public services in Baghdad, providing low-cost housing for poor and middle-income families, as well as electricity, sewage, and medical facilities. For a variety of reasons, rural migrants have been particularly drawn to Baghdad, the country's political, economic, and communications hub. For a variety of reasons, rural migrants have been particularly drawn to Baghdad, the country's political, economic, and communications hub.

Project Description
It is one of the largest projects in the world with a depth of 20-30 meters, a length of 22 kilometers, and a pipe diameter are (5) meters. This project will serve the North side of Baghdad city to around 5 million people. Baghdad Main Sewage line will be composed network ended with water treatment plant Infrastructure Design





1.19 LE ROYAL RESORT & HOTEL WASTE WATER RECYCLING

Project Objectives
To minimize the usage of water and recycle wastewater to be reused for irrigation.
Purpose: To provide high-quality, sustainable Green Solutions and the best use of Water.

Services Provided
Construction Supervision and Engineering Design.

Background:
Jordan's archaeological treasures, landmarks, and biblical history have delighted visitors for decades. Le Royal Hotels & Resorts – Amman is in itself an impressive landmark in the country at the cutting edge of hospitality and design. Yet this deluxe hotel with 8 food and beverage outlets is always aiming to improve its standards. The lobby has been redesigned to feature additional seating areas. A grand piano on a rotating platform with orex stone lighting has transformed the area into a lounge against a background of live entertainment. With 286 impeccably furnished guest rooms and suites with free basic speed internet , international satellite TV and individually controlled AC system.

1. Infrastructure Engineering

1.20 SUSPENSION BRIDGE MOSUL

Client: Roads & Bridges Department of Mosul Governorate
Location: Mosul, Iraq
Project Value: $534 Million

Background
Mosul is a major city in northern Iraq. It is the capital of Nineveh governorate and is Iraq's second largest city. Located approximately 400 km north of Baghdad; Mosul stands on the Tigris river.

Project Description
Design and study the new Mosul bridge and develop all highways and connection to link the city of Mosul with main Baghdad Highway, included several junctions, connection bridges, highways and intersections For around 40 KM

1.21 RAILWAY DESIGN AQABA

Client: Aqaba Development Company ADC
Location: Aqaba – Jordan
Project Value: 1 Billion JOD

The Project
- Project: Design of Railway
- Timing: Six Months
- Project background information: Connecting Jordan with the GCC railway network, works include full engineering design of 23 Km of Standard gauge Network
- Project objectives: Built Complete Middle East Railway Network
- Services Provided: Railway Engineering, Infrastructure Design, Tunneling, and Bridges
- Purpose: To provide the most effective way of transportation

1.22 SHIP REPAIR WAREHOUSE

Client: Royal Haskoning DHV
Project: Bathymetric Survey
Location & Area: ICAD 3, Abu Dhabi: 54,000 m²

Overview:
GCS used high-tech survey equipment to perform the Bathymetric Survey which includes Multi-Beam Sonar, Velocity Profiler and tide gauge. The client wanted to measure the tide levels on the day of Survey was performed. GCS successfully completed the survey prior to the agreed time with 100% client satisfaction

Scope Of Work
We submitted results which were easy to interpret and included colour coded contouring at any required intervals, depth data, all available digital topographic data.

1.23 JEBEL HAFEET GLACIER DEVELOPMENT

The Project
The project at Jebel Hafeet will comprise 'White Water Rafting Facilities' and a large Surf Pool, plus required support buildings. The Surf Pool will generate waves to a height of 10 feet with a number of different wave patterns being offered.

Whitewater Rafting Courses
There will be three courses:-
- Green Run – An easier, beginners course, about 375m long
- Blue Run – An intermediate course, also about 270m long
- Black Run – An advanced course potentially meeting Olympic requirements some 488m long
- Total length of runs 1,133 meters

There will be two conveyors to take craft to the top of the runs. One will service the black run and the other both the Green and Blue courses. All three courses will be suitable for rafts or kayaks.Two large lakes will provide the water to operate the runs; these are approximately 2m deep and are sized at 10,058 s/m for Lake 1 and 6,249 s/m for Lake 2, totalling 16,307 s/m.A connection pipe will enable the water to be transferred from one lake to the other in case this is ever required.Water in the lakes will be maintained at a high quality by a water treatment plant located under the pond that is the starting point for the black run.

SURF POOL
The surf pool will cover an area of approximately 6,000 s/m and be 2.5m deep at the deepest end.The beach area will be some 70m long.The wave machinery will be capable of operating two separate systems – a hydraulic system capable of generating surfing waves up to a height of 3.2 meters and a pneumatic system capable of generating a number of smaller waves and different patterns more suited to the family market.

BUILDINGS
The following buildings will be constructed:-

PUBLIC FACILITIES
- Building 1 – Entry Building – This will provide ticketing and retail space
- Building 2 – Restaurant – This is the only two-story building on site
- Building 3 – Staff Office and Equipment Rental Building
- Building 4 – Guest changing rooms, showers, and toilets.
- Building 5 – White water rafting operations building, contains hire craft, briefing area, and staff room

SERVICE BUILDINGS
- Building 6 – Security and storage area – A back-of-house building
- Building 7 – Workshop and drinks area for surf pool guests
- Building 8 – Substations (3 in number)
- Other – Plant and pump rooms

1. Infrastructure Engineering

1.24 MASTERTON CITY INFRASTRUCTURE DEVELOPMENT

Client: Tomlinson & Carruthers Surveyors Ltd
Location: New Zealand
Project Type: Land Development

The Project
12d Model was used extensively on a recent project in the northern end of Masterton, near a big roundabout on the way out of town. The land concerned is known as 'the horseshoe', which was part of a significant local car park."

"The project started as a straightforward two-lot subdivision to provide a council-owned car park with the balance remaining in private ownership. On closer inspection, it was found that a larger than normal percentage of the land was actually being utilized as a road. To formalize the situation these areas were vested as roads in the ownership of the Local District Council. The back of the footpath was used to define the inside lot boundary with the outside being the existing Certificate of Title boundary (road carriageway). In conjunction with this, to the southwest, there is part of a river with an open stream flowing through the area. The stream actually forms a natural boundary which we picked up to be compared with the underlying data in preparation for a future project."

"We did absolutely everything in 12d for this job, including creating all cadastral data, design, CAD and plotting. We started by creating our scheme plan (plan of proposal) in 12d which was plotted out and used as part of the application, and then survey pre-calcs were completed within 12d before visiting the site. This information was uploaded into the GPS unit directly from 12d, so when on site we were able to walk directly onto these marks via coordinates rather than having to use conventional methods. This in particular has meant a huge saving in time and also given us a different approach to the majority of our jobs."

"The information gathered by GPS and also conventional instruments was then downloaded into 12d Model. This data was used to form the basis of the 12d traverse spread sheets through which the majority of the linework for the title and survey plans was prepared and submitted on A2 litho paper. As this project was done using GPS, we also had to use the transformation functions to work out and apply the appropriate scale factors. Using GPS combined with 12d Model's interface for processing pre- and post-data has probably halved the time required on site. A project of this nature would take approximately two weeks' worth of work spread over the different stages, including about three days in the field and five days' worth of calculations and drafting. This is phenomenal compared with the time it would have taken using conventional methods!"

"For Tomlinson and Carruthers, the major benefits of using 12d on this and similar projects have come from the 12d traverse spread sheet – in particular the way it does all the line work, point symbols and annotation of the plan all at once. This has the advantage over other software because 12d is able to calculate and annotate the true information rather than just the projected information."

"Once the information is in the 12d traverse spread sheet, the drafting is done automatically. This means the potential for human error – which occurs mainly with reading and writing at the different stages – is kept to a minimum while the whole process is simplified and sped up. We are finding that using 12d Model in conjunction with GPS is saving us around 30-50% of our time spent on this and other projects. 12d's ability to reduce errors has served us well, particularly with the use of GPS and electronic data recorders. Though you can never beat independent checks, the Traverse Spread Sheet Drafting has removed one of the more difficult areas to police."

"Luckily, we have found that the training curve for 12d is very small, even for those with minimal CAD experience. For new users of 12d, probably half the learning time has been spent gaining an understanding of survey calculation methods rather than of 12d itself. Ease of learning was particularly facilitated by the ability to set up default files and screens to standardise procedures throughout the office and the whole firm."

"Being a former SDR Map user, I found the 12d traverse spread sheet very appealing and easy to use overall. 12d has really revolutionised our methods and our approach to the majority of our projects!"

2. Infrastructure Development

2.1 UTILITY MAPPING: MUSCAT AIRPORT ASSESSMENT

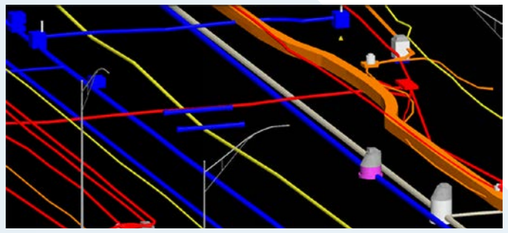
Client: Oman Aviation Group
Location: Muscat - Oman
The surveys were undertaken to follow the client's service protection process and mitigate the risk of damaging services while works got underway. The survey was required to prevent any potential damage to services that could significantly impact the operation of the airport – avoiding hitting a cable or fuel main for example which could result in aircraft stand or taxiway closures.

PAS 128 is a specification for underground utility detection, verification and location, ensuring that the survey a client chooses is being undertaken to the highest professional specification.

2.2 UTILITY MAPPING: HYDRAULIC STUDY FOR MUSCAT

Client: Muscat Municipality
Location: Muscat – Darsait
Area: 5 Km
Al Makhtoom Airport
When conventional engineering cannot solve complex challenges, GCS's engineers, hydrologists, geologists, and computer modelers will collaborate to devise a multi-disciplinary approach that works for your project and meets your goals. Our expertise includes hydrologic and hydraulic analyses, permitting, sedimentation and scour analysis, stormwater quantity and quality issues, and the design of hydraulic structures ranging from pipes, culverts, canals, detention basins, and outlet structures to major water control and pump structures. Furthermore, our experience with local and national regulations means we can streamline the approval process to a successful completion.

2.3 UTILITY MAPPING: RAHAYEL PROJECT



Client: KEO Consultant
Location: Abu Dhabi – United Arab Emirates (UAE)
Area : Utility Mapping 4km

Scope Of Work
GCS was commissioned to undertake an underground utility mapping. We used a wide range of cutting edge technology such as Ground Penetration Radar (GPR), Radiodetection and many other in-house processes and procedures to ensure we provide the most accurate and reliable underground utility information possible for the project without the need for costly excavations.

2. Infrastructure Development

2.4 UTILITY MAPPING: AL ANSAB HIGHWAY

Location: Ansab Road
Area: 17km
Client: Muscat Municipality

Utilities Detected:

- Electrical 11,000 VA of 3CX240 Sq.mm cable
- Electrical 5,000 VA of 3CX185 mm cable
- Fiber Optic Communication line of 1 Inch cable
- Water HDPE pipe of 110mm
- Water HDPE pipe of 180mm Water HDPE pipe of 225 mm
- DN 300 mm DI pipe
- DN 400 mm DI pipe
- Gas Pipeline
- Telecom OT lines 1 inch

2.5 UTILITY MAPPING: RESIDENTIAL DEVELOPMENT UK

Client: Merry Hill Real Estate Developer
Location: Merry Hill – United Kingdom
Area : Underground Utility 10 Ha

Scope Of Work
The survey was undertaken to: determine the depths and positions of cables and pipes The pipes and cables within the survey area were required to be relocated / diverted due to redevelopment. The survey assisted with providing essential information for current awareness, and provided information for accurate utility route planning and avoidance.

2.6 UTILITY MAPPING: ROYAL GUARD OF OMAN, SULTAN PALACE

Client: Royal Guard of Oman
Location: Sultan Da Bous Palace – Oman
Area: 88, 000 m²

Scope Of Work
Having carried out the detailed survey, Technics was able to compare the GPR data and evidence from boreholes, which included optic fiber cables, water pipelines and sewerage. Analysis of the GPR data revealed the positions of a series of probable structures. The results enable the Client to undertake planned works with prior knowledge that will allow them to minimize damage.

2.7 12D MODEL: WESTFIELD SHOPPING CENTRE

Client: Westfield Shoppingtowns (UK) Ltd
Location: White City, London, W12
Designer: Transport & Development Ltd

Outline:
The project is Europe's largest shopping center and included the design of a major public transport interchange with new rail, underground, and bus stations connecting directly to the center. The design also provided a new access road from the A3220 trunk road, a new Bus Station, two new railway stations, and re-siting the Central Line Railway depot to accommodate a major new shopping mall with leisure facilities.
The project was conceived to regenerate the White City area and benefit the region by providing a commercial development with good transport links. It also provides improved facilities for the existing railways. It represents one of the bigger re-developments within the London area.

Methodology:
Feasibility studies were carried out to support the architects planning documents. Outline scheme options were developed using 12d Model to demonstrate the horizontal and vertical components of the development were achievable.

Scope Of Work
There were a number of underground obstacles and tunnels with minimal clearance above them which greatly influenced the vertical profile of the finished construction surfaces. The powerful design editing capacities of 12d allowed the design to be refined locally to overcome the issues by achieving the specified construction depths.

2.8 12D MODEL: FERRARI WORLD ABU DHABI

Project Description
The scale of the project covered a retail mall, with a built-up area of over 300,000 m², 4 multi-storey car parks, 2 4/5 Star Hotels, Ferrari world, a Welcome Pavilion and Italian Boulevard with associated landscaping and infrastructure development.

Project Summary
The scale of the project covered a retail mall, with a built-up area of over 300,000 m², 4 multi-storey car parks, 2 4/5 Star Hotels, a Welcome Pavilion and Italian Boulevard with associated landscaping and infrastructure development.

Design:

- Building Architecture
- Structural Engineering
- MEP Service
- Landscape Architecture
- Roads, Drainage and other infrastructure

The multi-storey car parks, welcome pavilion, retail, site enabling works and infrastructure were completed on site, when Aldar elected to re-consider the entire development in the light of world economic down turn.

2. Infrastructure Development

2.9 12D MODEL: BURJ KHALIFA TOWER & DUBAI MALL

Client: Emaar Properties
Location: Dubai – United Arab Emirates (UAE)
Project Value: $1.5 Billion

Project Description
Tallest existing structure: 829.8 m designed to be the centrepiece of a large-scale, mixed-use development that would include 30,000 homes, nine hotels (including The Address Downtown Dubai), 3 hectares (7.4 acres) of parkland, at least 19 residential towers, the Dubai Mall, and the 12-hectare (30-acre) man-made Burj Khalifa Lake

2.10 UTILITY MAPPING: AIRFIELD UPGRADING- US FORCES

Client : US Air Force
Location : Military Airfield - Jordan
Area : Utility Mapping - 120 Ha

US Airfield
The air base was officially opened on May 24, 1981. In 2019 the United States began a $143 million expansion of the airbase. The expansion includes a new airlift apron, a personnel recovery and special operations forces apron, and a close air support (CAS) and intelligence, surveillance, and reconnaissance (ISR) apron as well as a cargo marshaling yard.

Scope Of Work
GCS performed a GPR survey of the area with the purpose of locating buried utilities. GCS performed all services in a workman-like manner and in accordance with standard geophysical practices. GCS's deliverable for this work was to provide a plan view map of the site that summarizes the results of the evaluation, including the interpreted center line and depth of each utility line.

2.11 12D MODEL: JEBEL HAFEET GLACIER DEVELOPMENT

Designer: Mony .P. Mathew
Client: Tamouth
Location: Jebel Hafeet Glacier Development

Outline
The Rafting Courses and Surf Pool are the first project components being built by Tamouh Investments, PLC and will form the first phase of their major integrated development on this site.

The Project
The project at Jebel Hafeet will comprise 'White Water Rafting Facilities' and a large Surf Pool, plus required support buildings. The Surf Pool will generate waves to a height of 10 feet with a number of different wave patterns being offered.

A number of similar White water Rafting facilities have been built elsewhere in the world, normally to meet Olympic Games kayaking and canoeing event requirements. One or two large surfing Wave Pools have been built elsewhere, but this one will generate some of the highest man made waves in the World. As well as a commercially based white water rafting facility, it is envisaged that the facilities will encourage the growth of competitive kayak and canoe paddling in the Middle East thereby providing nation building, sporting and recreational facilities of the highest possible standard. In general, the facilities will have a positive impact on the Jebel Hafeet tourist and visitor profile and assist in further establishing Al Ain as an international tourist destination.

2.12 UTILITY MAPPING: MULTI-STOREY CARPARK

Client: KOM
Location: Muscat – Rusail
Area: 20, 000 m2

All our surveys are carried out using the most advanced technology and by incorporating industry standards. Further to this our utility survey division have adopted PAS:128 Specification for underground utility detection, verification and location to all our works to ensure we can provide you with confidence, accountability and consistency in the results.

3. GCS Formwork System

3.1 BIN GATTI

Contractor: Granada Europe Engineering
Project type: Residential, Apartments

BINGHATTI VIEWS TOWER
Dubai Silicon Oasis, May 2015

BINGHATTI PEARLS TOWER
Dubai Silicon Oasis, February 2016





3.2 BIN GATTI

Contractor: Granada Europe Engineering
Project type: Residential, Apartments


BINGHATTI VIEWS TOWER
Dubai Silicon Oasis, May 2017





3.3 BLUE BAY WALK - AJMAL MAKAN


Date: September 2020
Contractor: High Star
Project type: Residential



3.4 BUKHAMSEEN TOWER - AL QASIMYA, SHARJAH


Date:
March 14th, 2016
Contractor:
Neptune Contracting
Project Type:
Mixed Use Hotel, Apartments



3. GCS Formwork System

3.5 RDK TOWER

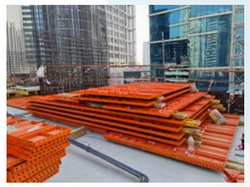







3.6 WEST BAY TOWER - BUSINESS BAY


Date:
March 2022
Contractor:
Tameer Expert
Project type:
Residential


2.7 WAVE TOWER - BUSINESS BAY

Date: August, 2017
Contractor: World Legend Contracting
Project Type: Commercial






2.8 AL MUNEERA ISLAND, KHOR AL RAHA PROJECT

Abu Dhabi, United Arab Emirates
Al raha beach development
(3000 L.M) Island concrete sea wall



4. BUILDINGS

4.1 POOLE HOSPITAL

Client: NHS South West England (UK)
Location: United Kingdom
Infrastructure Designer: Makram Jaibaji

Background
Poole Hospital is an acute general hospital in Poole, Dorset, England. Built in 1907, it has expanded from a basic 14-bed facility into a 789-bed hospital. It is the trauma centre for east Dorset and provides specialist services such as cancer treatment for the entire county.

4.2 RESIDENTIAL BUILDING AMMAN

Client: Private Owner
Location: Amman - Jordan
Service: Structure, Architect Design And Interior Design

Background
In 1989 the government of Jordan approved the national housing strategy, which aimed at enabling the private sector to participate and be involved in the production of housing units for certain target groups and in sufficient numbers to meet the demand of such groups taken into consideration their financial capabilities in order to implement the national housing strategy. The policies track patronages of the housing sector through implementing the 2025 Jordan program vision, this program will help low income Jordanians to access affordable housing with the participation of private sector

4.3 GREENOAK ART CENTER

Client: Earl of Wessex
Project: Greenork Art Center
Location: London, England
Infrastructure Designer: Makram Jaibaji

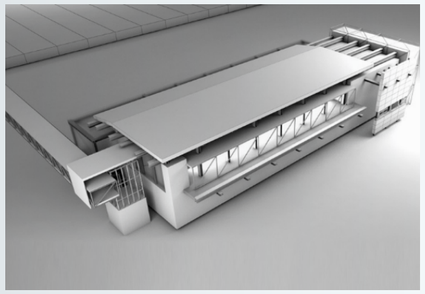
4.4 CART STREET RESIDENTIAL DEVELOPMENT

4.5 DESIGN AND BUILT SCHOOLS IN ERBIL

Client: Agency For Technical Cooperation & Development (ACTED)
Location: Erbil - Iraq
Service: Infrastructure, Service & M&E Designs

Background
Erbil is one of the safest cities in Iraqi Kurdistan, despite the so-called Islamic State having advanced to less than 100 miles from the outskirts of the city. Erbil is known for its modern malls, ancient sites, and was appointed to be the 2014 Arab tourism capital by the Arab Council of Tourism.

4.6 GOLDEN TRIANGLE FOR INVESTMENT LTD



Location: Aqaba City - Jordan
Client: Golden Triangle For Investment Ltd.
Project Value: 2,039,040 JOD
Built Up Area: 3398.4 M²

Description
3 Storey building with maximum 368 capacity users, one-window service offices and waiting area, bank branches, port police offices, ministries offices and adminstration

Services Provided:
Program, zoning and design, Value estimation and tendering

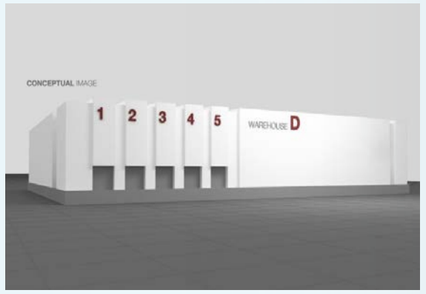
4. BUILDINGS

4.7 ORPINGTON COLLEGE

Orpington Campus is conveniently located in Orpington town centre, the campus has undergone a £26m redevelopment and its impressive new facilities include Ozone building which houses the Learning Resource Centre, Advice & Guidance Centre and new classrooms. Located in the main building are a new entrance and reception area and a new Student Common Room and The Hive.

The College has a range of modern sports, science and catering facilities as well as a large, well equipped learning resource centre and Labs.

4.8 COLD WAREHOUSES

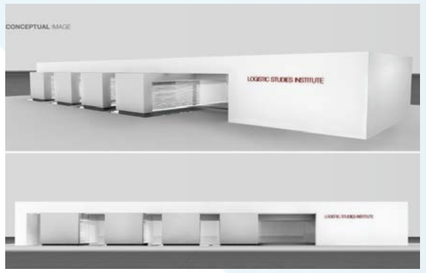


Location: Aqaba City - Jordan
Client: Golden Triangle For Investment Ltd.
Project Value: 640.000 JOD
Built Up Area: 3000 M²

Description
2 Blocks – steel structure on concrete base, hydraulic ramps & cooling system

Services Provided:
Program, zoning and design, Value estimation and tendering

4.9 UNIVERSITY LOGISTICS STUDIES / JORDAN

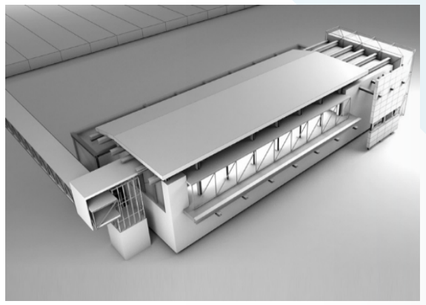


Location: Aqaba City - Jordan
Client: Golden Triangle For Investment Ltd.
Project Value: 302,400 JOD

Description
One storey building with maximum capacity of 90 students, 3 lecture rooms, laboratory, staff offices and services

Services Provided:
Program, zoning and design, Value estimation and tendering

4.10 GOLDEN TRIANGLE FOR INVESTMENT LTD

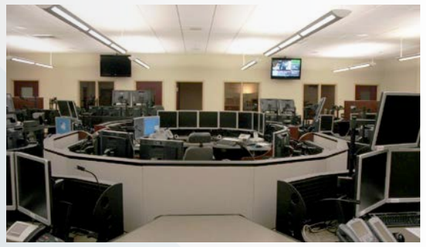


Location: Aqaba City - Jordan
Client: Golden Triangle For Investment Ltd.
Project Value: 2,039,040 JOD
Built Up Area: 3398.4 M²
Description
3 Storey building with maximum 368 capacity users, one-window service offices and waiting area, bank branches, port police offices, ministries offices and administration.

Services Provided:
Program, zoning and design, Value estimation and tendering

5. Project Management

5.1 PROJECT MANAGEMENT AND PROCUREMENT SERVICES



Client: United Nations Office of Project Services (UNOPS)
Location: Kurdistan (Iraq)
Service: Project Management/ Contract Management

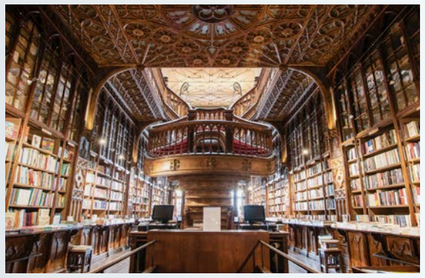
Our services cover from the initial feasibility, solution design, procurement of equipment, on-site installation, commissioning, and troubleshooting to the final handover. Our experts provided and supplied with all the required IT equipment for the office & production facility: laptops, computers, printers, copiers, servers, and telephone equipment.

5.2 PROJECT MANAGEMENT AND PROCUREMENT OF OFFICE FURNITURE

Client: Development Alternatives Inc. IQRFP
Location: Iraq, (Multiple sites)
Service: Project management / Contract Management

Client:
Every workspace needs office furniture that is built for modern day tasks and activities. We provided and managed in the construction of a workspace that facilitates productivity and enables effective working.

5.3 SUPPLY CHAIN MANAGEMENT OF VARIOUS BOOKS



Client: Development Alternatives Inc. IQRFP
Location: Karbala: Iraq
Project: Supply of Books

Background
Our supply chain management solutions, tools, and services, ensured various books are delivered from suppliers to the client in the most efficient way. Every supply project has different challenges & solutions, and that is why we don't believe in a one size fits all approach to supply chain management, we customize to meet your requirements.

5.4 PROJECT MANAGEMENT AND PROCUREMENT FOR BLOOD BANKS

Client: United Nations Office of Project Services (UNOPS)
Location: Iraq: Kurdistan
Service: Project Management

Background
The main objective was of procuring the project materials, equipment and services on time and tailored to the specific needs of the client.

5. Project Management

5.5 PROJECT MANAGEMENT - MEDICAL EQUIPMENT FOR HOSPITALS

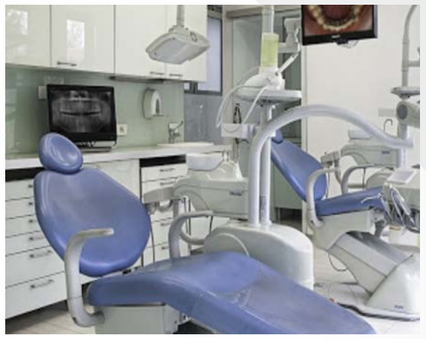
Project: Supply and Install Medical Equipment for Hospitals
Client: US Army , Rock Island Contracting Center
Location: Iraq , Salah El Din

Service:
Supply and Install Medical Equipment for Hospitals:

5.6 PROJECT (CONSTRUCTION) MANAGEMENT HIGH RISE COMMERCIAL CENTER

Client: Private Owner
End customer: Medical Center
Project: Construction Management of 11 floor Center
Location: Amman Jordan
Brief to GCS: To provide full engineering and Management services
Timing: Construction of the development began in 2013 and is scheduled to 2014.
Project background information: The Building Consist of 11 Floors and build up area of 8,000 Sq.m
Project objectives: To minimize the risk of the project goes over buidget or exceed project's quality without affecting the building quality
Project requirements: Full Management Expertise
Services provided: Construction Supervision, Contract and Procurement, Time Management, Schedule, Quality Control, Cost Control and Value Management
Project Value: 2,000,000 GBP
No Of Staff Assigned: 12
Purpose : To provide a high quality, sustainable Green Building to be used for medical purposes

5.7 PROJECT MANAGEMENT AND PROCUREMENT OF DENTAL EQUIPMENT FOR CLINICS



Client: Development Alternatives Inc. IQRFP
Location: Baghdad: Iraq
Service: Project management

Background
As GCS, we are committed to bringing only the highest quality, largest selection and best values of the client's budget. And on this project we supplied top of the range equipment available on the market and with a long life span.

5.8 PROJECT (CONSTRUCTION) MANAGEMENT HIGH RISE MEDICAL CENTER

Client: Private Owner
End customer: Medical Center
Project: Construction Management of 12 floor Center
Location: UK – Bournemouth
Brief to GCS: To provide full engineering and Management services
Timing: Construction of the development began in 2012 and is scheduled to 2015.
Project background information: The Building Consist of 12 Floors and build up area of 10,000 Sq.m
Project objectives: To minimize the risk of the project goes over buidget or exceed project's quality without affecting the building quality
Project requirements: Full Management Expertise
Services provided: Construction Supervision, Contract and Procurement, Time Management, Schedule, Quality Control, Cost Control and Value Management
Project Value: 3,000,000 GBP
No Of Staff Assigned: 23
Purpose: To provide a high quality, sustainable Green Building to be used for medical purposes

OUR PARTNERS

United States of America:

Mark Poynter (12d Design),
T: +1 (206) 905 1464
E: americas.sales@12d.com

Australia:

P.O.Box 351, Narabeen NSW, 2101,
Tony Ingold Extra Dimension Solutions, AU
T: (020) 9452 6771
E: tingold@exds.com.au

New Zealand:

Lane Irwin 12d NZ, P.O.Box 47094,
Trentham 5143
T: +64 4 528 2885
E: lane@12d.co.nz

Kingdom of Saudi Arabia:

Level 18, Al Faisaliah Center
King Fahd Road, Olaya
District, Riyadh 11524
T: +966 11 490 3800
M: +966 557370042

Qatar:

Level 22, Tornado Tower
West Bay - Doha
T: +974 (4) 4292300
M: +974 66694689

Kingdom of Jordan:

3rd Floor, El Husaini Building, 170
King Abdallah,
2nd street, Dabouq, Amman
T: +962 (6) 541 2351
M: 962 785 017 855

Kingdom of Bahrain:

Office #2, M-Floor, Regus Centre,
Boushar, Muscat
T: +968 2423 0921
M: +968 9173 2834

Republic of Iraq:

7th Floor ,Jaibaji Building, Harthiya ,
Kindi St. Baghdad
P.O.box 213-54-8
M: + 964 78235 4199

United Arab Emirates:

41st Floor, Emirates Tower -Dubai , UAE
P. O. Box 123422, Dubai
T: +971 4 565 0435
F: + 971 4 565 6104
M: +971 54 3 116 793
E: admin@gcsolutionsltd.co.uk
E: dubai@gcsolutionsltd.co.uk
www.gcsolutionsltd.co.uk

GLOBAL
CONSTRUCTION
SOLUTIONS

United Kingdom HQ :

1st Floor One Mayfair,
Place Devonshire House Mayfair
W1J 8AJ

T: +44 (0) 207 268 4840
F: +44 (0) 1202 313 601
M: +44 7472 447214

E: admin@gcsolutionsltd.co.uk
www.gcsolutionsltd.co.uk