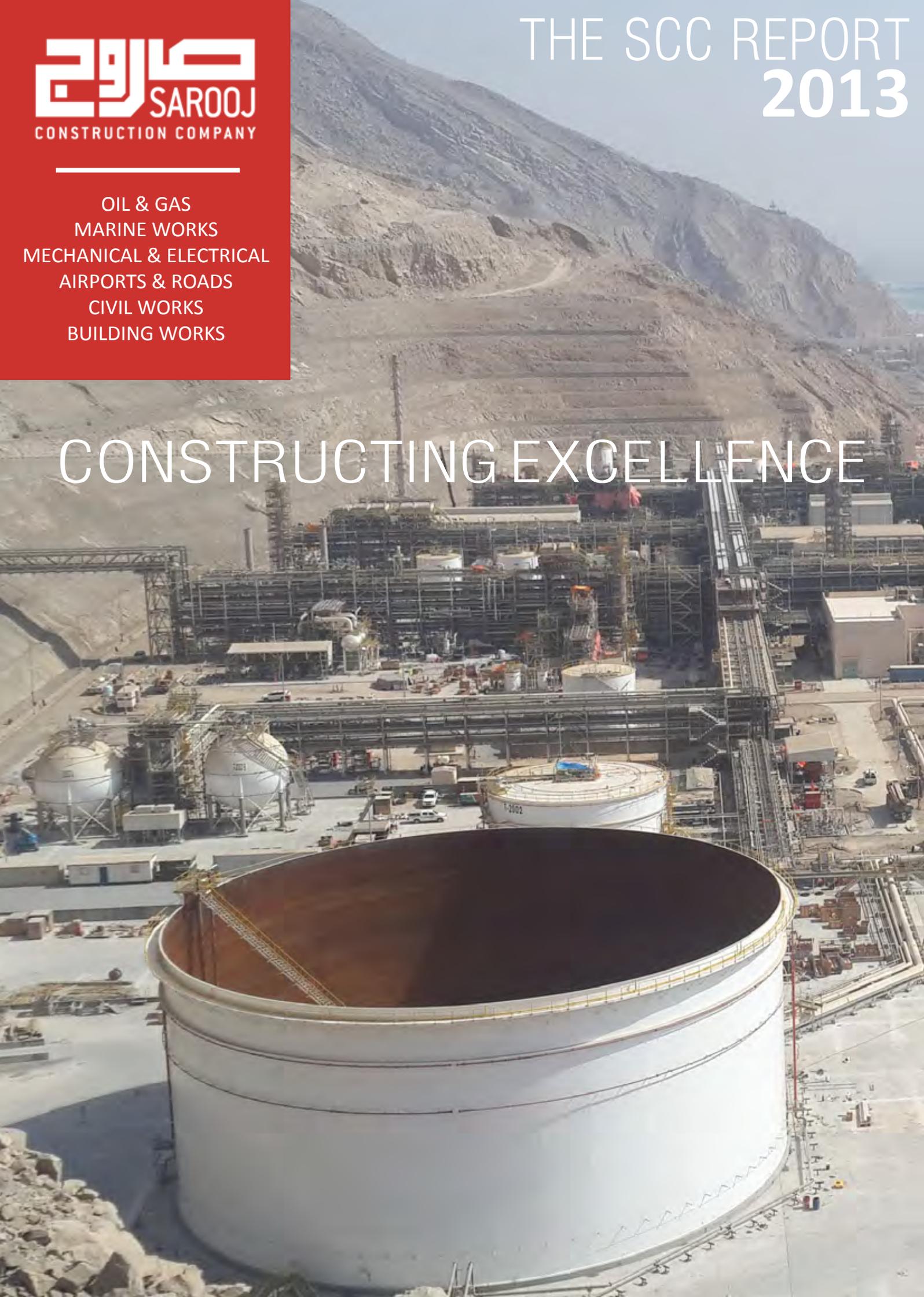


OIL & GAS
MARINE WORKS
MECHANICAL & ELECTRICAL
AIRPORTS & ROADS
CIVIL WORKS
BUILDING WORKS

CONSTRUCTING EXCELLENCE



OIL & GAS
MARINE WORKS
MECHANICAL & ELECTRICAL
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CIVIL WORKS
BUILDING WORKS



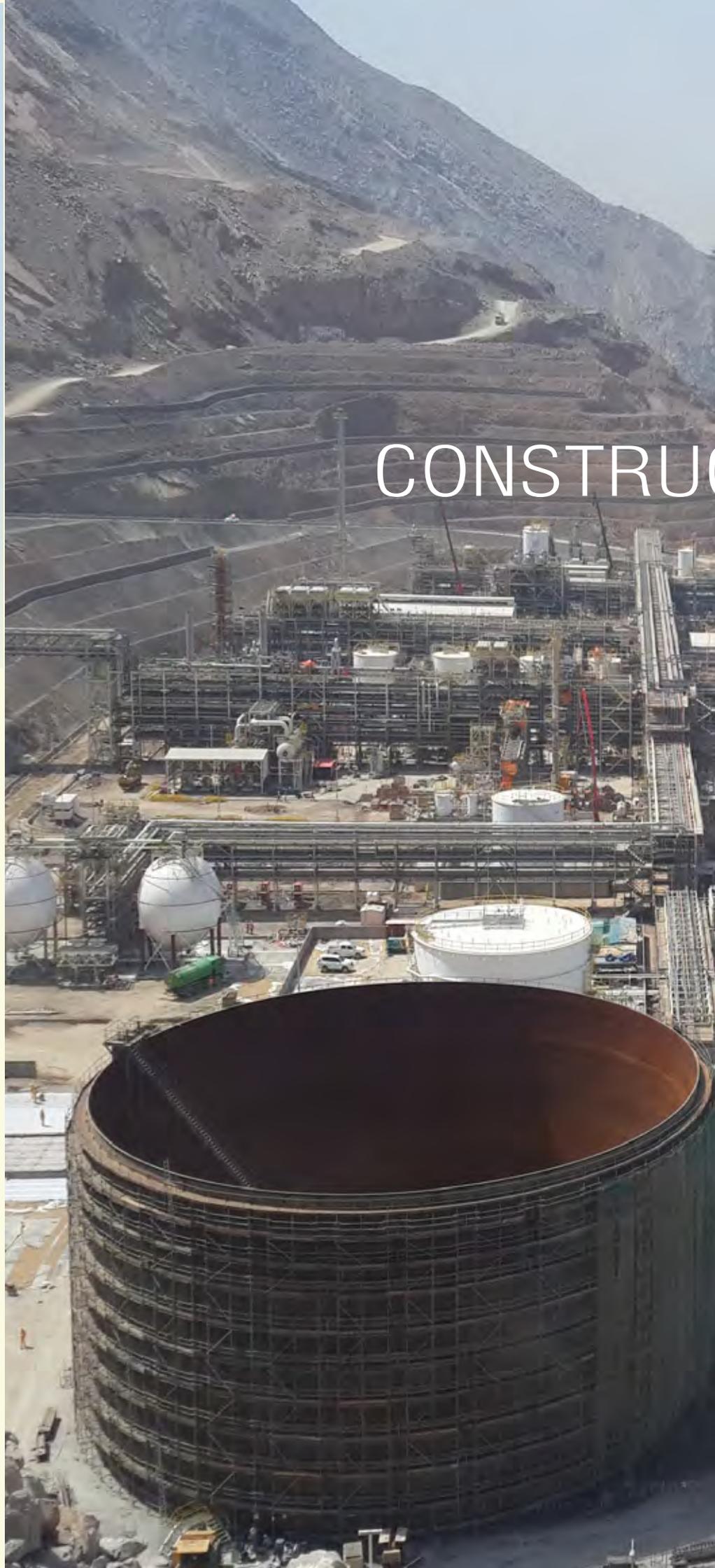
Across Oman and eastern UAE, on and off the oilfields, onshore and offshore, Sarooj Construction Company (SCC) continues to deliver its projects safely, on time, and as per the contracts' specifications; thus remaining true to its core values and to a legacy that has begun in 1973 by its founding members.

SCC continues to differentiate itself through its eagerness to take on inherently challenging projects.

SCC continues to differentiate itself by perpetually instigating a culture based on its four core values: 1. Human Development, 2. Health Safety & Environment (HSE), 3. Quality, and 4. Integrity.

SCC is by definition a local GCC company. SCC therefore cares. It cares for its clients, it cares for the development and advancement of its employees, it cares for the local communities that it serves, just as it cares for the company's financial health and its shareholders' visions.

SCC therefore cares and that is primarily what drives it towards striving for excellence in all that it does.



CONSTRU

ACTING EXCELLENCE



To our clients, colleagues, partners, bankers, suppliers, subcontractors, and friends:

In 2013 and early 2014, as the global economy witnessed a sixth consecutive difficult year, Sarooj Construction Company confidently reached new heights primarily through embracing what it does best: delivering projects safely, on-time, and as per the contracts' specifications. We achieved this performance during these times with the support of our partners, suppliers, subcontractors, bankers, and the heavy reliance on the ingenuity of our engineers value engineering their way through our projects, large and small, with the help of the nearly 3,000 dedicated people working on our sites and in our offices.

Our new work booked grew 20% percent over 2012 to total \$500 million in terms of value of ongoing projects in hand.

Our eagerness to become the most trusted partner in the provision of construction services on the Oilfields and in major Infrastructure projects in the GCC continues to drive our success amid ever-changing economic, legislative, and social conditions.

Our Oil & Gas Division, in addition to continuing to serve Petroleum Development Oman (PDO), Oman Oil Company Exploration and Production (OOCEP), and Occidental Oman (OXY) was proud to add British Petroleum (BP) and Block 61 to its portfolio of clients and concessions in which it operates. SCC prides itself in being one of the first construction firms to secure a contract with BP in their \$16 billion Block 61 development project.

Our Civil Infrastructure Division has secured contracts totaling \$100,000,000 in 2013. In addition, in partnership with Daewoo Engineering, Yuxel, and Porr of Austria, SCC is part of this consortium that has been prequalified to participate in the construction of the landmark Railway Project in Oman.

THE SCC RE

Our Marine Works Division, after gaining confidence with the successful and early completion of the Shinas and Khassab ports for the National Fast Ferry Company (NFC) in Oman, the Wave, Muscat, Barr Al Jissah Resort and Spa (Shangri-la), the offshore security barrier in Salalah, the marine works for Musandam's Gas Processing Plant (MGP) and Salalah's Sembcorp Power Plant, has further acquired more resources in view of this demand which is expected to increase exponentially in the near future.

Our newly formed Mechanical & Electrical Division is currently highly visible in the downstream Petrochemical Industry and the upstream Oil & Gas Industry. Most notably, the provision of Mechanical and Electrical services for Majis Industrial in the Petrochemical Port of Sohar and Veolia in Block 61 (BP's concession).



GHAZI HELOU

Managing Director - AL TAHER



SIMON KARAM

Director - SAROOJ



JAD KARAM

General Manager - SAROOJ



ANTHONY HELOU

Deputy MD - AL TAHER



KARIM KARAM, PhD

Projects Manager - SAROOJ

REPORT 2013

COMMITMENT TO HSE, QUALITY, INTEGRITY, IN-COUNTRY VALUE, & HUMAN DEVELOPMENT

Since its inception, SCC has held strong to four core principles that serve as the foundation for our modus operandi: HSE, Quality, Human Development, and Integrity.

Nothing short of zero incidents will do. SCC's management continues to provide all the necessary resources to achieve that. SCC works to prevent each and every accident, which is why SCC remains an industry leader in work-site safety.

Quality is another core value on which we will not compromise. SCC's quality management system rests on a five stage cyclical process: predict, prevent, review, correct, and improve. In this regard, SCC's management continues to invest in and provide all the necessary resources to ensure the seamless implementation of our Quality system.

At SCC, integrity transcends well beyond compliance with the local laws. Every constituent of the SCC family is expected to maintain the highest ethical standards. Our values demand that all our business conduct is proper, fair, impartial, and ethical.

Sarooj Construction Company, taking pride in its very nature as a local GCC company is committed to adding value in the communities in which it operates. This commitment goes well beyond the minimum requirement of implementing the projects, but includes the involvement of the community in the provision of services. This includes the recruitment, training, development of the local constituents of the community, prioritizing the local products, and adopting, overseeing, and upgrading Local Community Contractors (LCC).

In summary, we are off to a very solid start in 2014. We've won some new landmark projects and have reached new heights financially.

And whether on or off the oilfields, onshore or offshore, we continue to deliver our projects safely, on time, as per the contracts' specifications, with minimum impact to the environment, all the while adding value to our customers, employees and the community at large.




Simon KARAM
Director


Jad KARAM
General Manager



At SCC, the standard for excellence is measured vis-à-vis: 1. Profitability for our stockholders, 2. Stable and profitable employment to SCC's team members, 3. Continued unwavering commitment to HSE and QA/QC. SCC's overriding method of accomplishing excellence has been to focus on construction and construction management techniques of the highest professional standards to perform our services to the benefit our clients. In this regard, in 2013 SCC has increased its plant and heavy equipment by 15% and acquired major marine equipment, making it one of the largest marine fleets locally.

SCC has also added another land to its portfolio. We began the development of its 70,000 m² of land in Muscat, Oman. The land serves as an opportunity to develop accommodation, workshops, fabrication shops, batching plants, and asphalt plants of the highest standards. As of today, the development of the land is well on its way.

A recurring theme in SCC's journey spilled over to 2013 and 2014: challenge.

In our Oil & Gas Division, having gathered momentum and impetus following the various international and regional awards, most notably the international GLOBAL WATER TREATMENT AWARD in Berlin, Germany, and the regional MEED CONSTRUCTION AWARD in Abu Dhabi, UAE, we celebrated record LTI-free hours on the various Blocks in the Sultanate. The challenge for our Oil & Gas Division is therefore to maintain this international level in project execution. In early 2014, the division has added BP to the list of valued clients in the Upstream Oil & Gas:

BUSINESS REVIEW



Petroleum Development Oman (PDO)



OOCEP

Oman Oil Company - Exploration and Production (OOCEP)



Occidental Oman (OXY)



BP Exploration (Epsilon) Ltd.



Medco

We have previously proudly served: AMOCO, ARCO, ANADARCO, ENCANA, NIMR PETROLEUM, JAPEX EXPLORATION, JPD, MAERSK, PETROTEL, NOVUS, INDAGO, STATOIL, RAK PETROLEUM.

As so often is the case in our Civil & Infrastructure Division, the remoteness of our sites and their inaccessibility force our engineers to think outside the box. Our team had to innovate and value engineer every step of the way. In 2013 and 2014, we yet again had to resort to the use of helicopters in the Lighthouses and DGPS Project that we implemented for the Ministry of Transport and Communication.



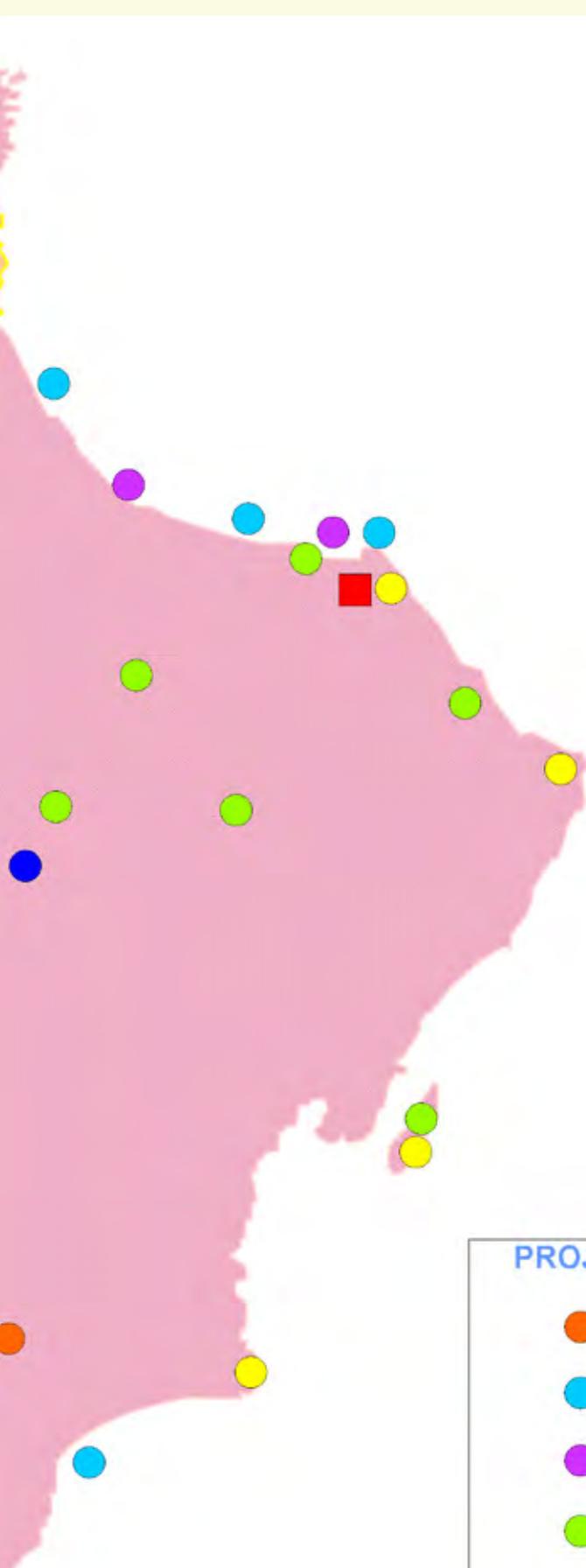
THE WAVE, MUSCAT MARINE WORKS

A joint venture of SCC and SNE carried out the marine works of the Wave Muscat: and integrated tourism complex (ITC). The works involved the construction of a leisure port with 5 km quay wall, two breakwaters (main and lee) to protect this marina and the reclamation area, and the construction of 2 km long offshore reef breakwater. The core of these structures consists of quarry run materials protected by armor stone and 12 – 16 tons of Core-Locks. SCC operates a quarry in Oman that yields 5,000 cubic meters of rock daily for this purpose.



PROJECT HIGHLIGHTS





OIL & GAS

MARINE WORKS

MECHANICAL & ELECTRICAL

AIRPORTS & ROADS

CIVIL WORKS

BUILDING WORKS

OIL & GAS



The main upstream operators in Oman have maintained their drive to boost the oil production close to one million bpd.

The application of EOR technologies has made this objective possible particularly after using the steam injection methods.

Of great importance to the Oil & Gas industry was the agreement reached between the Omani Government and the giant energy producer British Petroleum (BP) to develop unconventional gas in the Khazzan Concession (Block 61).

Petroleum Development Oman (PDO), Occidental, and Oman Oil Company (OOCEP) have also plans to extend their exploration and production activities. In 2013, Sarooj Construction Company aided these upstream producers achieve these goals.

Sarooj Construction Company have been awarded work with British Petroleum.

AS





▲ **BUILDINGS AND ONPLOT CIVIL WORKS**
 The Sarooj team casting the foundations for the various on-plot structures such as the pipe-racks and tanks. Sarooj building the on-plot buildings.



▲ **EARTHWORKS**
 Several millions of cubic meters of rock were cut from the mountains and placed in the sea in a perfect balance. This created enough land to build the MGP on.

▲ **CONCRETE PRODUCTION**
 As construction services are precarious in Musandam, the Sarooj team had to be self-sufficient in many activities. Particularly so was the production of aggregates and sand and the preparation of ready mix concrete using a 120 m³ per hour batching plant.

MARINE WORKS

The Sarooj team diverting the existing coastal road away from the plant into the sea. A special revetment was designed to protect the road from the sea's action.



MUSANDAM GAS PROCESSING PLANT

The Northern Province of Musandam in the Sultanate of Oman consists mainly of rugged mountains touching the sea, leaving no space between them and the waters. In order to build the Musandam Gas Processing Plant (MGP), Sarooj had to cut into mountains and reclaim land in the sea, with a precise balancing of materials due to lack of disposal area. This has necessitated a diversion of the existing coastal road about 200 m into the Gulf. In 2013, we continued casting the foundations of the various structures, such as pipe racks and tanks and constructing many on plot buildings like substations, sheds, and administration buildings. Another milestone was the completion of the main sea water intake basin below sea level. This allowed the completion of subsea pipelines. The upgrading and commissioning of the existing jetty together with the construction of quay wall allows marine vessels, barges, and tug boats to service and support the marine works particularly pipes and Single Point Mooring (SPM) anchors.

COFFER DAM / DEWATERING

The intake basin is below sea level and the coastal formation is rocky. Secant wall was built all around the structure and inside the coffer dam, a well point dewatering system was put in place to allow working in dry conditions.





▲ **GLOBAL WATER AWARDS**

The Nimr Water Treatment Plant project was internationally recognized and the team received the "Global Water Awards" in Berlin. The trophy was presented by HE Kofi Anan.



▲ **ROCK CUTTING**

The reed beds (wetlands) were built on an old ocean bottom, consisting of hard limestone. Large formation of rock were blasting and shallow outcrops were removed by excavators equipped with rock.



◀ **SEALING LAYER PRODUCTION**

To complete the endeavors to keep the project environmentally friendly it was decided to seal off the reed beds with an impervious layer of clay. Sarooj produced the material from existing approved borrow pits.

PHRAGMATIS AUSTRALIS

The young plants multiply and assist in clearing the produced water from its hydrocarbon content and provide enhanced evaporation through evapotranspiration of their leaves.



NIMR WATER TREATMENT PLANT

In many cases, when oil is extracted it is accompanied by water known as produced water. Traditionally, this water was re-injected into deep layers of the ground. PDO commissioned Bauer GmbH of Germany to build, own, and operate a reed bed (BOO) to biologically treat this water and clear it from its hydrocarbon content. Sarooj was appointed to build the Nimr water treatment plant using indigenous plant (Phragmatis Australis), a bacterium grows at its roots and breaks down the oil molecule. Before entering the wetland the bulk of the oil is separated by cyclonic effects and collected by surface skimmers. The clear water is guided to evaporation ponds. The wetlands are now the permanent habitat for several kinds of birds and the stop-over for many who migrate. Research is being carried out at present to diversify the plantation from monoculture and investigate other ways than evaporation to optimize the uses of the treated water: production of salt, desalination, production of steam, water injection as EOR technique. The plant treats at present 110,000 m3 per day.

REED BEDS

Grown in nurseries on site, to get the seedlings adapted to their ecosystem, they are planted in rows and lines into the substrate layer and across the beds. They shall multiply and eventually cover the whole wetland area.



OIL & GAS



▲ CUSTOMIZED OIL DRILLING RIGS

Special oil drilling rigs of high efficiency and mobility are provided to be able to cope with the intensive drilling program.



▲ OILFIELD (MUKHAIZNA)

It is in this congested environment that Sarooj had to move its heavy machineries to build access roads and rig locations. The management of interfacing and permit to work was essential.

◀ MATERIAL MIXING

In the approved borrow pits, the naturally occurring fill materials are screened to fit the gradation curve then moistened, tested and transported to final destination.

SCHRAMM DRILLING RIG

In order to avoid risks of delays due to the critical operation of installing conductor pipes at the exact oil well location, Sarooj procured a highly reliable rig from the USA



OCCIDENTAL OMAN RIG LOCATION AND ACCESS ROADS SERVICE CONTRACT

Heavy Oil Extraction is a difficult process and requires EOR techniques. On their concession in Mukheizna (Block 53) Occidental opted for steam injection. They developed an intensive program to drill injector and producer wells. The rhythm is approximately one well a day. They have procured special drilling rigs that can move fast from a location to another. In this congested environment with flow lines well-heads, stations, facilities, electrical lines, and other services, Sarooj were commissioned to do rig locations, cellars, conductor pipes, water pits and mud pits, access roads and maintenance operations. They too had to follow the same rhythm that is practically one well per day. Eight earthwork teams were permanently working to deliver the locations. A limiting factor, was the drilling and installation of conductor pipe 12 meters into the ground before it is grouted in. To cope with such a challenging requirement Sarooj procured a Schramm Drilling Rig from the USA supported by a smaller DrillTech rig on standby. Fencing works, HDPE lining for pits, installation of cellars, are carried out by civil works crews. Three years have passed without LTI.

RIG LOCATION

The location is now ready for use. The cellar is covered with metal grating and the conductor pipe is seen protruding from the cellar.



OIL & GAS

MARINE WORKS

MECHANICAL & ELECTRICAL

AIRPORTS & ROADS

CIVIL WORKS

BUILDING WORKS



MARINE



With the development of tourism as a global activity with the petrochemical industry flourishing in oil producing countries, with the acquisition of vessel fleets, with the growing demand on electricity and desalinated water, with the construction of sewage treatment plants, added to the local traditional fishing activity and the world trade growth, the demand for harbors, ports, marinas, intake pipes, outfall pipes, revetments, liquid terminals, jetties, fishing harbors, and dry docks, the demand for marine works has increased considerably during the last decade. Sarooj has been one of the first companies to enter this domain and has the early mover's advantage. Sarooj has acquired the resources and the expertise to participate in many of these projects.



WORKS

MARINE WORKS



▲ **QUAY WALL AND CAPPING BEAM**
 The nearly 3 km of quay wall and capping beam were built to demarcate the marina and provide mooring facilities. Stainless steel access ladders can be seen.



▲ **THE WAVE, AERIAL PHOTOGRAPH**
 This project aerial photograph shows the marina harbor, the quay walls, the reef breakwater (under construction), the reclaimed land, the new township and some beach groynes.

▲ **QUAY WALL UNITS INSTALLATION**
 Sarooj crawler crane assisting in the installation of quay wall units and capping beam.

CORE-LOCK PROTECTION

A view of the reef breakwater crown. It shows final layer of precast concrete units called "Core-Lock." The system is patented and the units interlock with each other and act as a mat. Raising one of them upwards lifts all the neighboring ones at the same time.



THE WAVE, MUSCAT

"The Wave, Muscat" resort is developed along 7 km of beach land, close to Muscat Airport. A major feature of the projects are the various Marine Works. Sarooj executed the project in joint venture with SNE. To supply the millions of tons of rock needed, a quarry of crystallized limestone was opened and operated 40 km away from site. The scope included the construction of main and lee breakwaters, of quay wall, reef breakwaters, reclamation of land using dredged material, and groynes along the beach to stabilize the sand and avoid its migration. Furthermore, revetment works were also executed to protect parts of the Golf Grounds. A hydraulic model was run by Sogreah of France to check the integrity under different simulated conditions. It is interesting to note that we had to build a temporary harbour to moor our equipment and also to load materials on vessels serving the reef breakwater construction. The harbour was demolished and removed upon completion .



MARINA BASIN

The marina basin can be seen practically complete. Breakwaters, quay walls, reclaimed areas.

MARINE WORKS



▲ **DREDGER AT WORK**
 Dredger “Ave Cesar” was mobilized to carry out the excavation works under water. It is seen here removing debris of previous revetment damaged by Cyclone Gonu

▲ **REVETMENT**
 In this magnificent setting the revetment blended nicely and tidily. Fort Mirani, another Portuguese fort could be seen in the background.



◀ **TRANSPORTATION OF ACCROPODES**
 The transportation of Accropodes across the city incited curiosity and offered Sarooj a free publicity.

ACCROPODES 40 TON

40 Ton concrete units called Accropodes were precasted in special panted steel moulds on a site close to the concrete batching plant. These were cured and stored before transportation to site.



FORT JALALI REVETMENT

Following Cyclone Gonu that hit the Omani coasts, causing havoc and considerable damage, marine engineers had to change their design parameters to account for lessons learnt. One area that was particularly affected was Fort Jalali, built by the Portuguese to control Muscat's natural harbor entrance. Sarooj were commissioned by the Royal Court Affairs (RCA) to design and build an adequate revetment that could withstand the sea's action. After conceptual design, hydraulic modelling was carried out in the UK and the final features were established. The crown had to be raised to +12.5 m above water, huge Accropodes had to be placed and massive concrete blocks formed the toe. Rock armor ensured resistance to scouring effects. Dredging was carried out by "Ave Cesar" mobilized especially for this work. The access to site and the confined space allocated for the works represented a difficult challenge. The finished product integrated nicely with its surroundings.



CROWN BEAM

The crown beam was cast at 12.5 meters above sea level to cater for 9 m high wave and 3.5 meters splash zone. From the land side, local rock were used to complete the structure.

MARINE WORKS



▲ **MAIN MARINA BREAKWATER**
 The team are seen working on the main marina breakwater. Special silt curtain was installed to protect the corals during the works.



▲ **REVETMENT AL HOSN HOTEL**
 Six star hotel “Al Hosn” overlooking the turtle beach area. The revetment protects the weathered and weak cliffs but leaves access to a sandy area for green turtles to come and hatch on the beach.

◀ **BREAKWATER ROUNDHEAD**
 A crawler crane working on placing Core-Lock concrete precast units on the breakwater roundhead. A navigational aid would be eventually installed at this roundhead.

MARINA AREA

An overview of the marina area showing the breakwater, the quay wall, as well as a new reclaimed zone to accommodate new residential and leisure activities.



BARR AL JISSAH RESORT AND SPA (SHANGRI-LA)

Built on a pristine site the Barr Al Jissah Resort (Shangri-la) is well integrated in the nature as the developers were committed to cause minimum adverse impact on the environment. A contract to develop, upgrade, and extend the marine facilities was awarded to Sarooj who had to operate without disturbing the guests. The works comprised of breakwaters, revetments, skiff beach, diving club, reclamation works, quay walls for refueling the boats, Marina floating pontoons, beach restoration, reserved turtle area, and internal roads and car parks. Considering the project location, the logistical support for the supply of rock and Core-lock units was done from the sea using landing crafts, barges, and tug boats. Two finger jetties were built at each side of the sand bay in front of the resort and clean white sand was imported to replenish some barren areas.

FLOATING PONTOONS

The Marina after it was commission, boats and yachts start mooring at the floating pontoons. ▶



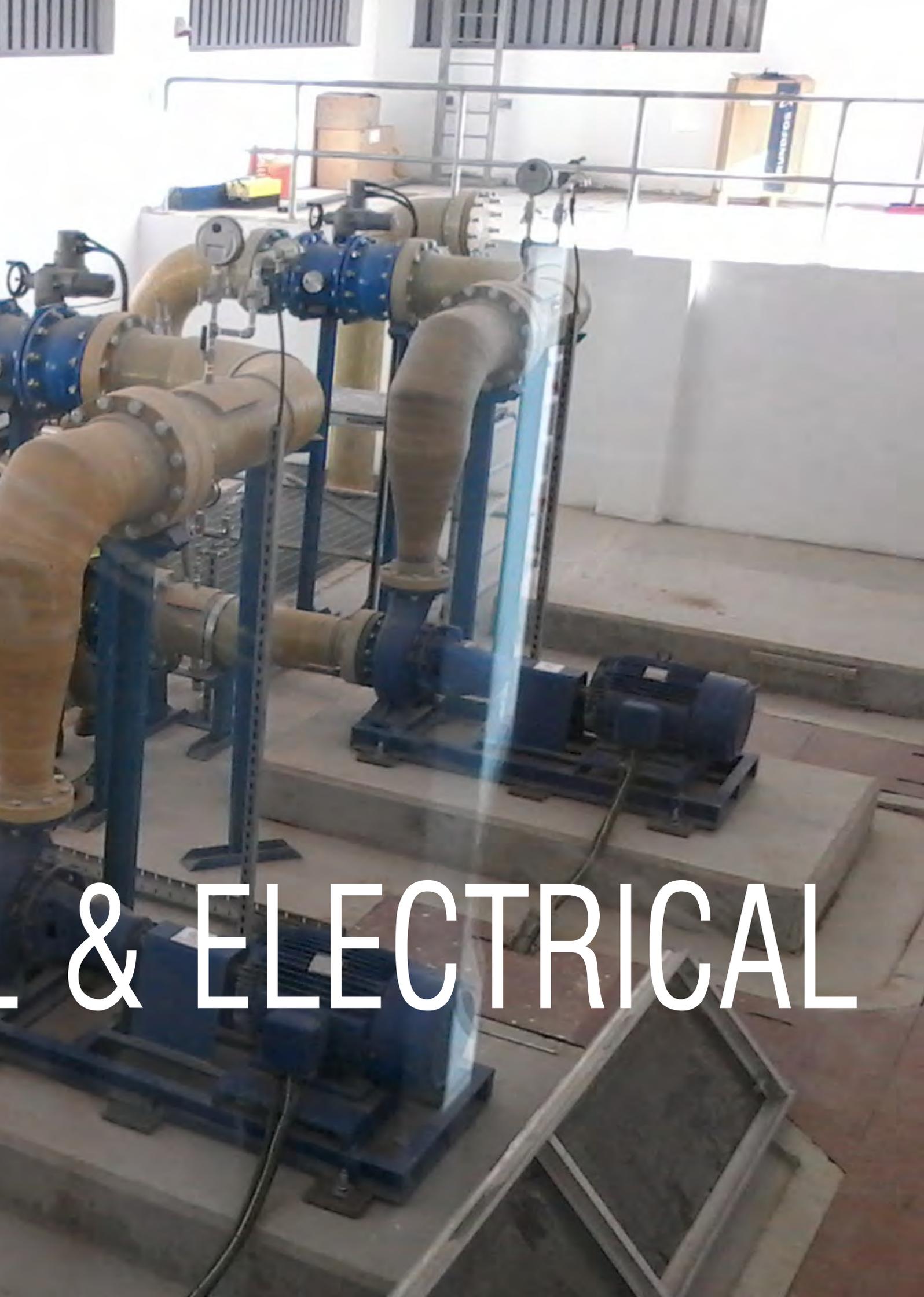


MECHANICAL



The projects that Sarooj secures particularly on the Oilfields and Petrochemical Plants, often comprise of mechanical and electrical works.

Taking leverage on the fabrication shop of its sister company Synergy Petroleum International in Samael and the experience of its other sister companies, most notably Electro-Mechanics Sarooj have thus decided to expand their activities to these disciplines. From experience, we know that we can serve better our clients and partners if we could offer them holistic solutions reducing thus interfacing and increasing efficiency. This division can count on total management support.

A photograph of industrial machinery in a factory or workshop. The equipment consists of several large, light-colored pipes and blue valves mounted on a blue metal frame. A blue electric motor is connected to the system. A high-pressure water spray is being directed from a vertical pipe towards the machinery. The background shows a metal railing and some storage containers.

L & ELECTRICAL

MECHANICAL & ELECTRICAL



▲ **AT WORK**
Skilled workers tighten the bolts on a flanged adapter under the specialist's supervision.



▲ **INSIDE THE PUMPHOUSE**
Inside the pump-house that drives the water towards the service reservoir. The whole system operates automatically using SCADA.

◀ **PIPELINES CORRIDOR**
Above ground pipeline. The pipes' route follows a corridor and goes into the ground and over bridges to avoid congested areas.

DUCTILE IRON PIPE

A 500 mm diameter ductile iron transmission main conveys water from the Reverse Osmosis Desalination plant to the PAEW service reservoir.



PORT OF SOHAR: MECHANICAL AND ELECTRICAL WORKS AT

The Port of Sohar houses myriads of heavy industries: refinery, methanol plants, steel smelters, fabrication yards, polypropylene plants, power and desalination plants, and others.

These industries require utilities and services. Apart from power, water, and sewage mains, they need seawater for cooling, telecommunication networks, natural gas pipelines, industrial waste systems, and irrigation schemes. Majis Industrial Services Company (MAJIS), a government body, was formed to manage these services and coordinate among the various agencies that produce or consume such products and use such services.

Sarooj takes pride in being the contractor that MAJIS entrusted to carry out utility extensions, diversions, and improvements. This mechanical work requires proper planning in terms of protecting existing services and procurement.

Sarooj is contended to announce that it has been working for almost four years with MAJIS without any lost time injury (LTI)

DEWATERING

Intensive dewatering in some areas generated a flow of water that was poured into the cooling canal.



MECHANICAL & ELECTRICAL



▲ BUILDING THE PUMPHOUSE

The pumphouse falls below sea level. A dewatering system composed of well points is placed at three tiers and six pumps ensure that the excavation is kept dry.



▲ THE INTAKE PIPE

The intake pipe is floated in 200m long sections before it is sunk in the sea. The sections are joined with special stainless steel flanged adaptors.



◀ ELECTRICAL CONNECTION

The submersible pumps are connected to power main with waterproof armoured cables and fittings.

INSIDE THE PUMPHOUSE

The pipework inside the pumphouse is made of GRP materials matching the on-shore network. Five Kisloskar pumps are housed in it.



MECHANICAL WORKS AT THE WAVE, MUSCAT

The ‘Wave, Muscat’ urbanists and architects conceived a meander of lakes offering waterfront for most of the residences. Stagnating water would have generated unwanted flora, algae and corals. This would have attracted mosquitoes and produced unwanted smells. Sarooj were commissioned to build an intake pipe equipped with Johnson filters at its source and feeding a series of pumps lifting seawater into the lakes. Water would drop from a weir before returning to the sea. A chlorination line accompanies the intake pipe and air system provide at regular intervals air bubbles to flash back the filters. The intake pipe is made from HDPE materials and manufactured in Oman under Krah German patent. The pipes were welded on-shore, floated and then sunk into position. Concrete rings worked against the pipes’ buoyancy.

PIPE WELDING

A special HDPE pipe welding machine is used to weld the pipes before they are launched into the sea.



OIL & GAS

MARINE WORKS

MECHANICAL & ELECTRICAL

AIRPORTS & ROADS

CIVIL WORKS

BUILDING WORKS

AIRPORT



The construction of Muscat and Salalah new International Airports, the construction of domestic airports in Ras Al Hadd, Sohar, Adam, and Duqm, Fahud and Marmul, have created a new market in Oman. Moreover, the ambitious program of the Ministry of Transport and Communications in terms of building highways, expressways, national roads, internal roads, streets, and thoroughfares, have placed the Sultanate in the third position on the world's scene for quality and relative quantity of roads (about 30,000 km of paved roads). It is not surprising that Sarooj equipped itself with modern road-building plant and machineries to take its part in this growing market. However, international and local competition have caused prices to tumble.

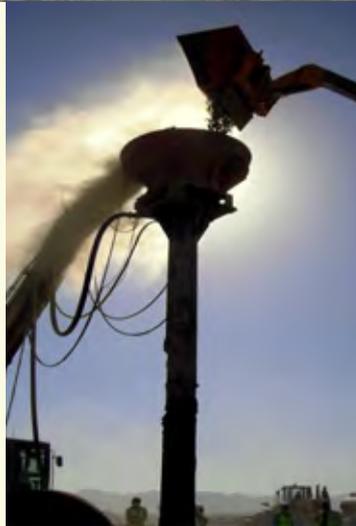


S & ROADS

AIRPORTS & ROADS



- ▲ **CONSOLIDATION**
To ensure the proper consolidation of bottom layers, the runway was laden by overburden materials seen being levelled by Caterpillar D8R Bulldozers.



- ▲ **REMOVAL OF UNSUITABLE MATERIAL**

The unsuitable materials occurring under the new runway had to be removed under dry conditions before they were replaced by dry sand of controlled gradation.

- ▲ **STONE COLUMN CONSTRUCTION**

The funnel that receives the crushed aggregates is being replenished. These stones would be vibrated and pressed into the ground forming thus a stone column.

RIGS AT WORK

Twelve rigs worked simultaneously on the activity of forming stone columns. Enough stock of crushed aggregates is always built up and replenished to ensure continuity of progress and minimal downtime.



**MUSCAT INTERNATIONAL AIRPORT
GROUND IMPROVEMENT**

The new runway at the Muscat International Airport rests partially on a marshland (Sabkha). Intensive ground improvement works had to be undertaken before the body of the runway could be constructed. Sarooj jointly with Soletanche-Bachy of France were awarded the contract. Basically, the weak ground was removed under dry conditions using well points and deep well techniques for dewatering. The soil was replaced by dry sand of approved gradation. A thick layer of stones was laid on geotextile membrane provided to halt any migration of fine particles into upper layers. One hundred thousand stone columns were driven into the ground. Approved fill materials, stored on site were used to build the embankment. 2,000,000 tons of materials were loaded on the embankment to ensure consolidation and settlement of the ground. The excavated materials were deposited on site either for removal or to be reused at a later stage; laboratory technicians ensured proper quality control and quality records book-keeping.

GEOTEXTILE MEMBRANE

Geotextile membrane receive a layer of crushed Gabbro stones that offer high performance and characteristics. The membranes tops the migration of fines.



AIRPORTS & ROADS



▲ **SPEED BREAKERS**
Yellow stripes force the fast drivers to reduce speed as they approach a T-junction on the road.



▲ **CUT & FILL**
The first operation consists of removing unsuitable top soil, preparing the existing ground to receive fill, and to cut high points to achieve design profile.

◀ **SLOPES**
The slopes of finished road section are trimmed to merge progressively with the natural ground to avoid possible roll-overs.

HOT MIX PLANT

MARINI semi-mobile 120Ton/hour hot mix asphalt plant was mobilized to site to produce the required quantity of asphalt. Bitumen 60/70 was used as prime coat to seal the aggregate base course layer.



PDO ROAD (BLOCK SIX NIMRRoad)

Petroleum Development Oman (PDO) awarded a 20 year contract to build, operate, and own (BOO) the Nimr Water Treatment Plant. The Plant is about 23 km away from the Central Processing Facility in Nimr. Considering the longevity of the project and the frequent commuting between the plant and Nimr, it was decided by PDO to build an asphalt road to minimize travelling time, road traffic hazards, and vehicle maintenance. Sarooj mobilized the aggregate producing plant and the hot asphalt mixing plant. Mobile crushers were used to make sub-base and aggregate base course materials. A brand new Marini semi-mobile asphalt plant of 120 tons per hour capacity was mobilized to site. The project design was carried out in-house and verified by third party.

Being present in the area, Sarooj extended their services to other contractors requiring asphalt works to be done on their contracts.

HAND MARKING

Where marking machine cannot be used, skilled labor achieve the work by hand using the same thermoplastic hot paint.





▲ **CONCRETING**

Concrete delivered by transit mixers from a stationary batching plant and placed using a concrete pump.



▲ **CULVERT**

5 Cell reinforced concrete culvert is built to accommodate rainfall flow in this mountainous environment.

◀ **WING WALLS**

Wing walls are cast at inlet and outlet of culverts to hold the embankment as well as easing the collection and dispersion of water.



EARTHWORKS

Twelve rigs worked simultaneously on blasting and pre-splitting the rock. Dumpers of 35-40 M³ capacity cart away the surplus materials to an approved dumping area.



MADHA ROAD

The northern enclave of Madha is surrounded by Fujairah territory with an inner circle belonging to Sharjah. In order for Omani citizens to communicate with each other, a road had to be built through the rugged mountains that characterize the area. The Ministry of Transport and Communications awarded Sarooj the challenging contract through competitive tendering / bidding. Sarooj had to obtain so many permits to cross the borders, to get road passes for the workforce, to produce evidence of fuel needs, to transport explosives through various emirates. The other challenge was to find a dumping area for the surplus cut materials evaluated at 4,000,000 cubic meters. Another challenge was the protection of permanent works under construction; protection from rainfall floods, and rock falls blocking the roads along the narrow gorge. Despite these challenges the team is progressing satisfactorily towards a completion date during Q1 2015. The road, however, may be extended to connect with the UAE road networks.

ROCK FACE

Trimming of rock face and cleaning from any loose rocks and stones





CIVIL WORKS



Sarooj, as a general civil and building contractor tenders and undertakes a variety of civil works: Quarrying and earthworks, surface drainage works, sewage schemes, potable water projects, aprons, car parks, foundation works, concrete structures, steel structures, bridges, trenching and telecommunication lines, concrete pavements, shotcreting, geotechnical works, soil improvement and dewatering. Furthermore, international companies operating in different fields other than civils, approach Sarooj to assist them in their civil works and Petrochemical plants, refineries, power plants, pipelines, water desalination plants. Sarooj resources are organized primarily to carry out this type of works.



BLACKS

AIRPORT & ROADS



▲ **WORK PROTECTION**
Whilst building the dam, it is important to protect the works from occasional floods.



▲ **EMBANKMENT LAYERS**
Each layer making the dam is composed of various materials: fill, filter, rock and gabions.

◀ **GABION PROTECTION**
Gabions are provided downstream and a pipe culvert crosses the dam and its entrance is controlled by penstock valve

FUNCTIONING DAM

This photo was taken after heavy rainfall. It demonstrates the purpose of the dam. It is hoped that this captured water has the time to percolate into the aquifer.



WADI SAHNA DAM

Oman is blessed by its mountains and wadis. However, the lack of vegetation allows rainwater to rush to the sea. Across many wadis the Ministry of Regional Municipalities and Water Resources decided to build Aquifer Recharge Dams to give the water a chance to percolate into the alluvial deposits. One of these wadis is Sahna in the Madha enclave. The dam also provides flood protection and control through a spillway and a culvert across the dam. It is an earth and rock dam with a central impervious core consisting of clayey materials. Blocking the Wadi by the dam, exposed the existing road and some neighbouring lands to floods. Saddle dam had to be built and the road diverted onto its crest.

SPILLWAY

The spillway is seen with its protection upstream and downstream and on the crown.





▲ **FOUNDATIONS**
 The stub columns are fixed exactly in their designated location and are secured to avoid their displacement during concreting.



▲ **TOWER LINES**
 Lines of Towers are pushed towards the mountains, away from settlements, clearing thus flat areas to be used for land development.

◀ **LATTICE TOWER**
 The lattice tower is ready to receive isolators and the cable stringing process may start.

TOWER ASSEMBLY

Trained workers, wearing harnesses well secured to the structure, assemble the towers piece by piece as heavy cranes could not be mobilized to these isolated locations.



OVERHEAD LINES

With the development and progress, power supply and demand grows at the high rate of 11% to 12% annually. This is a challenge on both generation and transmission. A national grid already covers and connects main metropolises. Frequently the grid has to be pushed away from settlements to find that the only possible routes are the mountains. Sarooj built the foundations for nearly 1000 kms of 132KV lines and 220KV lines. In this project, access roads and logistical support represented the main challenges. Rock anchoring and grouting techniques were used to secure the foundations in rocky areas. In loose or soft ground, we reverted to the more conventional method known as “pad and chimney” type foundation. In each location the ground electrical resistivity was measured for the purpose of providing adequate earthing system for towers and lines.

TOWER FOUNDATIONS

The four legs are ready to receive the metallic structure. Stub columns have been checked for position and level.



CIVIL WORK



▲ **LIFTING STATION**
The pipe is a gravity line and therefore may reach unwanted depths. Lifting stations are built to raise the water into shallower manholes.



▲ **CONNECTIONS**
Pipes are connected through precast manholes built on-line. These manholes are tailor-made to suit each configuration.

◀ **BEDDING MATERIALS**
The bottom of excavation is levelled, watered and compacted using vibratory rollers. Bedding materials are provided before laying the pipes.

EXCAVATION WORKS

Long reach boom excavator were used to dig and backfill trenches and to form the larger pits to accommodate the big manholes.



SEWAGE MAIN

HAYA are the government organization that regulates, builds and operates the effluent waste water system in Muscat and lately was mandated to extend its activities to the whole country. A large sewage treatment plant (STP) was built in the densely populated area of Seeb, Maabela and Al Khod. Sarooj was commissioned to built the sewage main that brings collected water into the plant. The pipe line route was carefully examined and was eventually approved by concerned authorities.

The GRP pipes were manufactured in Oman as well as the manholes which were designed and tailored for the project. Deep excavations were carried out in two tiers for safety reasons and to mitigate the risks of material collapse into the trench. The excavated materials are composed of alluvial deposits which were screened on site to produce bedding and fill materials. Micro-tunneling was used to cross a dual carriageway in the vicinity.

PIPE STRINGING

Pipes re strung out along the route. The presence of workers gives an impression of the pipe size.



CIVIL WORKS



▲ **HELICOPTER CONCRETING**

Concrete bucket trailing from a helicopter delivers concrete to these brave Sarooj workers.

▲ **HELICOPTER USE**

Helicopters are allowed to fly up to five hours per day. This helicopter was based in Salalah making the useful time very limited. Proper planning was essential.



◀ **DGPS**

In plain areas the DGPS sites are fenced and provided with an airconditioned equipment room.

LIGHTHOUSE

A completed lighthouse standing on this mountain peak of an isolated island. It is powered by solar energy. The solar panel could be seen fixed on the tower side.



LIGHTHOUSES AND DGPS INSTALLATION

The Port of Duqm is now fully operational, particularly the “dry-docking” activity. The number of vessels approaching the Port is increasing by the day. The Ministry of Transport and Communication has decided to install three lighthouses and three Differential Global Positioning System Stations (DGPS). The lighthouses are typically located on isolated islands and high peaks. Sarooj takes pride in executing these challenging contracts requiring land, sea, and air logistical support. Helicopter services were obviously required.

DGPS sites are generally on plain ground and therefore their sites had to be fenced and secured. An airconditioned room housing the equipment was provided on each site.

CONCRETING

Last touches before the concreting starts. Tower’s holding down bolts are held in position by the circular template.



CIVIL WORKS



▲ VERIFICATION AND CHECKING

Verifying and checking the final survey copper stud inserted into the concrete fulcrum.



▲ MONUMENT SETTING

It is in this spectacular setting that these monuments have been placed. The workforce took lots of pride in their achievements.

◀ HELICOPTER

Workers wait for the helicopter to bring them down from this acute ridge.

MONUMENT

A border monument carrying stainless steel indicator plates to tell the side of each territory.



OMAN-UAE BORDER DEMARCATION

We have been commissioned by both Oman and the UAE Governments to demarcate and install permanent monuments along the border. Sarooj did value engineering and changed the monuments' designs from cast-in-situ to precast units to be epoxy grouted together. This proved salutary for saving time, ensuring high quality and improving safety. Units would be cast in a yard, transported by land to the vicinity of the border line and then installed by helicopter. Sarooj entrusted Fugro to produce the required maps of the corridor along the border. Wherever possible, roads were built to provide permanent access to locations. In plain and inhabited areas a stainless steel guard rail was provided to protect the monument. On sand dunes larger foundation were cast in-situ.

SAROOJ DOZER

Wherever possible and reachable, Bulldozers (CAT D8R) were used to provide a permanent access and a small working area around the monuments.



OIL & GAS

MARINE WORKS

MECHANICAL & ELECTRICAL

AIRPORTS & ROADS

CIVIL WORKS

BUILDING WORKS



BUILDING



The real estate industry in Oman is growing like any other sector of the economy. In Muscat with new urban regulations, one could see higher buildings mushrooming between Athaiba and the Airport heights. However, apart from some prestigious buildings such as the Opera House and the National Museum, the construction of villas and detached houses represent the wider share of the market. Useful to note that some government pension funds (ROP and Social Security) are developing some large condominiums and residential complexes.



NG WORKS

BUILDING WORKS



▲ **ROOF SLAB**
 Casting of roof slab is underway. Concrete pump is ready to start mix delivery.

▲ **RESIDENTIAL COMPOUND**
 The photo shows the compound at the final stages of its construction. The sober external facade contrasts the luxurious atmosphere inside the building.



◀ **TOILETS**
 Vanity type washhand basins with marble top and side cladding.

DINING HALL

The dining hall is spacious, very well lit, and furnished with simple practical easy to clean tables and chairs.



PERMANENT ACCOMMODATION

The project client's management team and eventually the plant operators' staff require accommodation that is not readily available on the local market in the province of Musandam. Therefore, it was decided to build a residential compound for the staff with messing and kitchen facilities, recreation rooms, clinic and laundry; a self-sufficient compound. Considering that food is one of the rare pleasures the personnel enjoy in this remote place, special attention is given to the kitchen, food-stores, and to the dining halls. The rooms finishes are of top quality. The ventilation and HVAC works are highly reliable and the safety aspects have been very well studied particularly earthing and fire-fighting arrangements. The compound is now occupied and fully functional.

KITCHEN

A modern kitchen using hygienic appliances, fixtures, and surfaces. Anti-slippery and anti-acid tiles are used to cover the floor.



HSE

HEALTH SAFETY ENVIRONMENT

	2011	2012	2013
FATALITIES			
Work-Related Fatalities	0	0	0
Non-Work Related Fatalities	0	0	0
LOST TIME INJURIES (LTI)			
Worksite LTI	0	0	0
Road Traffic LTI	0	0	0
MOTOR VEHICLES INCIDENTS (MVI)			
Severe MVI (LTIs, MTC, RWC, & Rollovers)	0	0	0
Minor MVI (First-aid, Asset damage)	1	5	3
INCIDENT RATES			
LTIF (per million manhours)	0	0	0
TRCF (total injuries per million manhours)	0	0.26	16.47
MVIR (Motor Vehicle Incident Rate per million KM)	0.47	1.70	0.8
NMR (Near Miss Rate per million manhours)	0	0	11.23
EXPOSURE			
Manhours worked	2,846,600	3,946,775	4,566,780
KM driven	2,099,353	2,947,655	4,010,323
Near Miss	0	0	45
ENVIRONMENTAL IMPACT			
Environmental Incidents	0	0	0



Sarooj does not believe that HSE is only documentation, it is a culture emanating from strong beliefs and values. Sarooj aspires to conduct its business without causing any harm to people nor undue negative impact on the environment. We also believe that all incidents are avoidable. In 2013, we have reaped the benefits of such a culture and celebrated three years without incident on Occidental Oilfield, five million safe man-hours on Musandam Gas Processing Plant Project and several other achievements. The HSE Department is managed by highly competent managers and a team of dedicated staff, particularly Omani nationals. Sarooj, a founding member of OPAL, the NGO concerned with raising the Oil & Gas Industry Standards to become world-class, a founding member of ORSA (Oman Road Safety Association), a founding member of OSC (Oman Society of Contractors), is committed to extend the best practices to the community. Our goal is to ensure that all our employees always return to their families safe and in good health.



Celebrating at Nimr



Tool box meeting in Sohar Port



Early morning meeting in Nimr



After HSE meeting at Muscat Airport



Celebrating 3 years in Oxy Mukhaizna



Emergency drill in Musandam

ICV

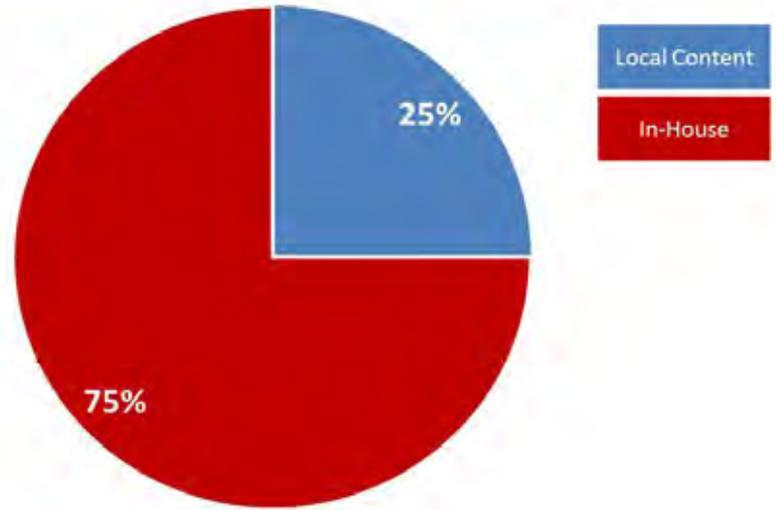
IN-COUNTRY VALUE



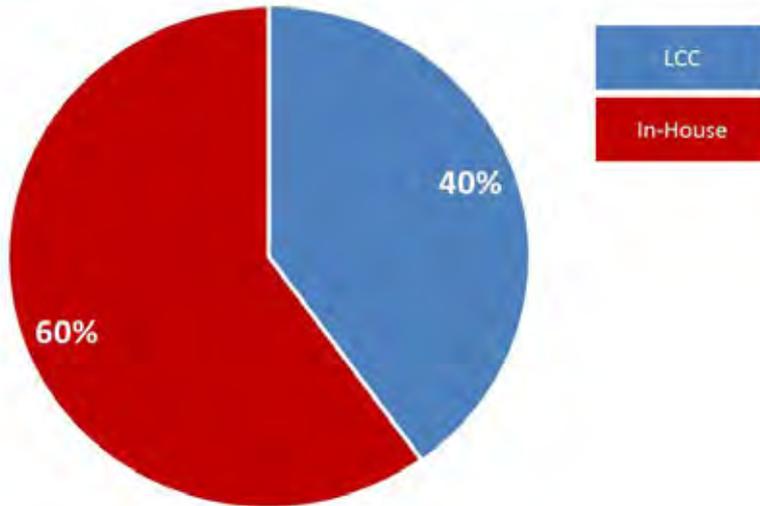
How can emerging oil producing countries diversify their economy and reduce their dependence on Oil and Gas as the main source of their income? The answer is not an easy one. One way to start the process is to map what a certain industry needs in terms of goods and services, and also map what is available on the local market, then try to fill these gaps by encouraging local entrepreneurs to bridge them. Incentives, regulations, training, expertise and funds would be made available to enhance the project.

This 'In-Country Value' (ICV) national drive started in the Omani Oil and Gas Industry some two years ago. It is now catching on many sectors under Government auspices. In each of its tenders Sarooj submits a plan describing how they intend to support the ICV drive by training and employing the national workforce, by buying products manufactured locally, and by using the services of smaller and medium sized contractors (SMEs). Buying fish from the local fishermen or appointing sub-consultants to develop working or as-built drawings are steps in the right direction. The right attitude!

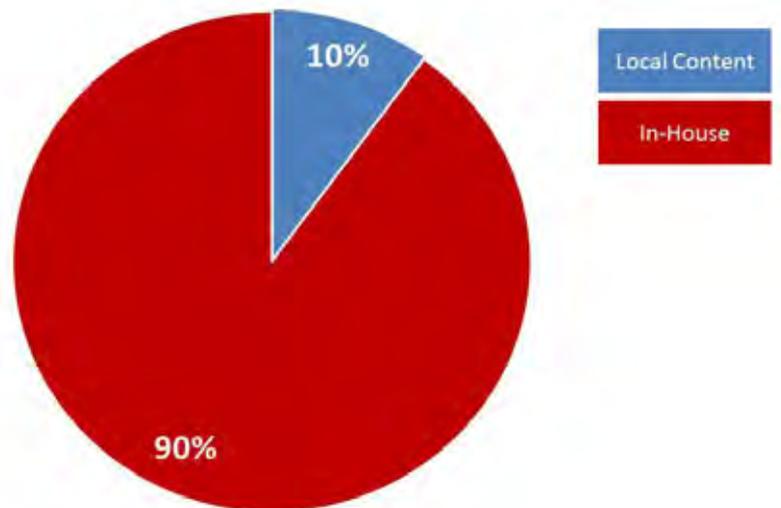
CIVIL WORKS DIVISION LOCAL CONTENT (BY CONTRACT VALUE)



OIL & GAS DIVISION LOCAL COMMUNITY CONTRACTORS (BY CONTRACT VALUE)



MARINE WORKS DIVISION LOCAL CONTENT (BY CONTRACT VALUE)



CSR

CORPORATE SOCIAL RESPONSIBILITY



It is generally accepted today that any company that wishes to sustain its activities in a certain social environment must interact with its neighbors and other stakeholders. Sarooj, who was born in the Omani environment does this in a natural manner. They would like to remain a force for the good in their society. They have a generous yearly budget to offer scholarships, build mosques, improve the common facilities in the area of their operations by drilling water wells, building public parks, or sewage treatment plants.

Sarooj are a strategic partner to DAR AL ATTA, one of the more successful charity Non-Governmental Organizations (NGOs). Where Sarooj is building roads, they always extend the paved areas to a school or to a hospital. In Musandam alone SCC gave back to the local community added value worth a massive 2 million dollars in contracts, rentals, trainings, sponsorships and many other positive initiatives.



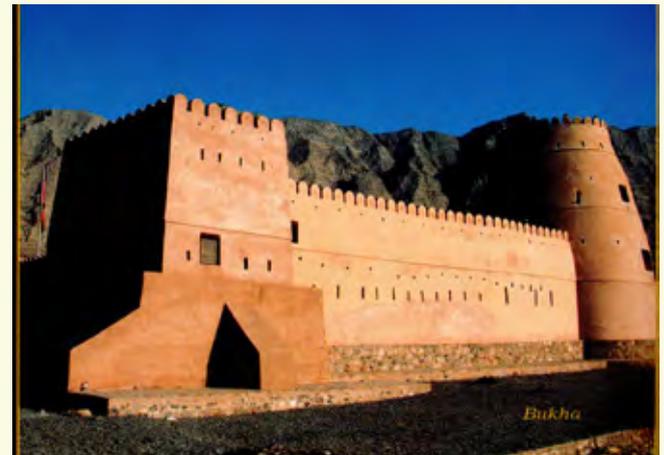
Preservation and restoration of heritage (In Miznefi)



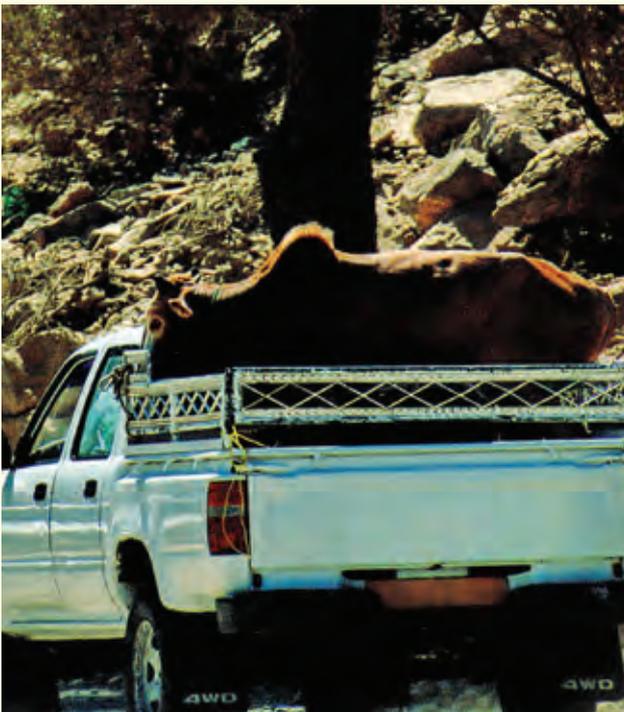
Constant support to local fishermen



Support to school initiatives (In Madha)



Donation to museums (in Bukha)



Upgrading of track roads (in Meebam)



Support to local traditional events (Camel Race in Mudhayreb)

SUBSIDIARY & SISTER COMPANIES



SYNERGY PETROLEUM INTERNATIONAL LLC
Oilfield Products & Services



ELECTROMECHANICS LLC
Contracting Mechanical & Electrical Works



SAM TRADING LLC
Landscaping & Beautification Projects



MASIRAH INTERNATIONAL MARINE SERVICES LLC
Bathymetry & Marine Services



GEOSOL ENGINEERING LLC
Geotechnical & Foundation Works



RAWASI ROAD SERVICES LLC
Asphalt & Bituminous Services



MAJUS SYNERGY LLC
Manufacturing



BAUER NIMR LLC
Environmental Projects



GAM & PARTNERS LLC
Overhead Electrical Lines



ATLAS INTERNATIONAL ENGINEERING LLC
Power & Electrical Services



SAROOJ PARS LLC
Investment-Iran



TRAVO SARL
Construction - Beirut - Lebanon



www.sarooj.com

MUSCAT -OMAN OFFICE
SAROOJ CONSTRUCTION
COMPANY LLC
P.O.BOX 1413
112 RUWI
SULTANTE OF OMAN
Tel : +968 24 59 60 01/02/03
Fax : +968 24 59 60 11

DUBAI - UAE OFFICE
SAROOJ CONSTRUCTION
COMPANY LLC
JUMEIRAH LAKE TOWERS
GOLD (AU) TOWER, OFFICE
16B
P.O.BOX 625789
UNITED ARAB EMIRATES
Tel : +971 4 431 1723
Fax : +971 4 431 1543

ABU DHABI - UAE OFFICE
SAROOJ CONSTRUCTION
COMPANY LLC
DANA OFFICE SUITES
UNITED ARAB EMIRATES
Tel : +971 50 3969755
Fax : +971 4 431 1543