GREEN SQUARE
GULF CONTRACTING CO.

CAPABILITY STATEMENT · 2026

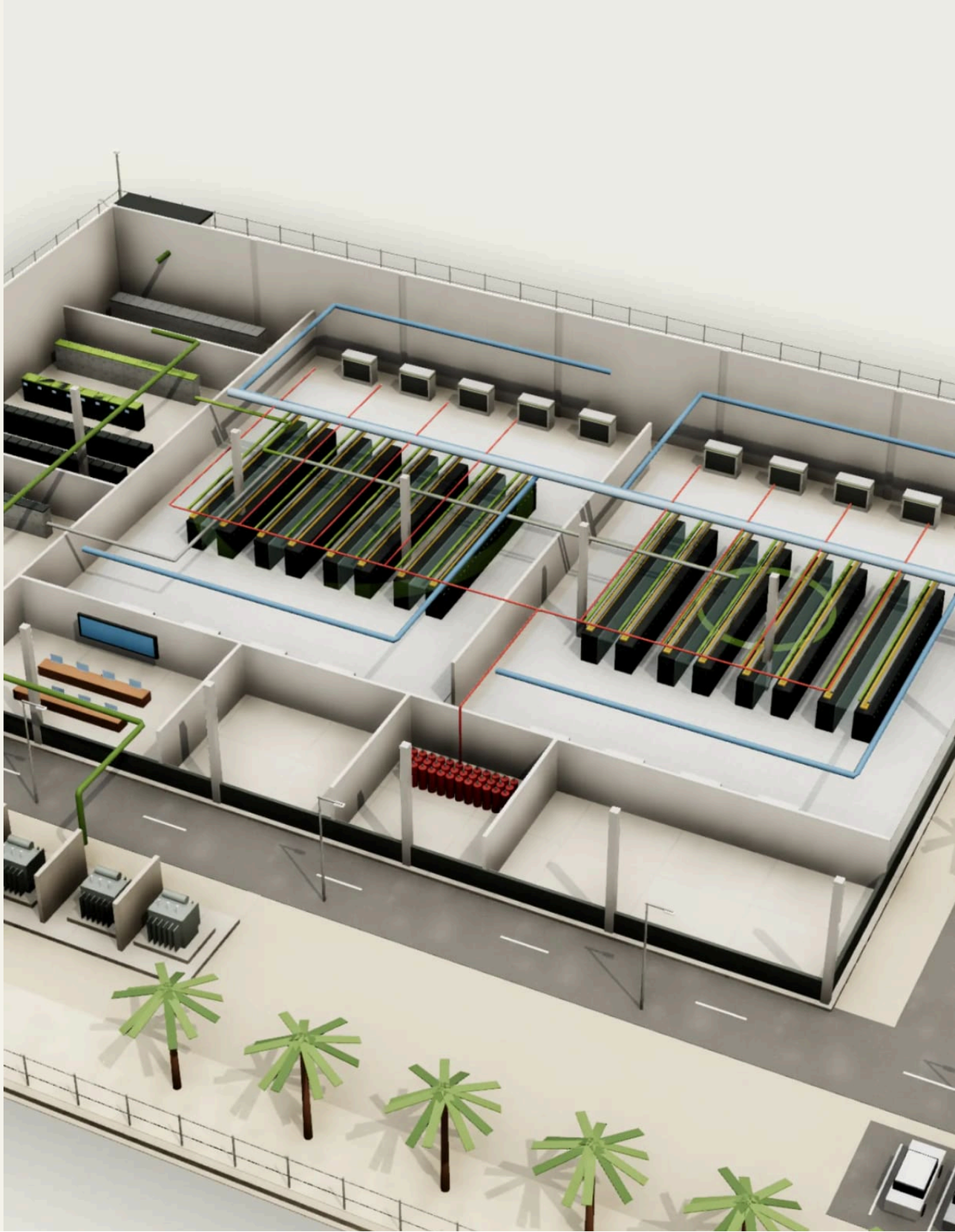
Data centres

Data centre infrastructure: power, cooling, fire and controls.

We deliver the data centre infrastructure below the server: MV/LV distribution, UPS and generators, chilled-water and CRAH cooling, clean-agent fire suppression, BMS, EPMS and DCIM integration, and integrated systems testing.

Green Square Gulf Contracting Co.

TIER III REFERENCE DESIGN · 4 MW · PROVEN AT FULL LOAD BEFORE HANDOVER



DATA CENTRES AT A GLANCE

Everything below the server is ours.

Our scope is everything below the server: the two paths from the grid to every rack, the plant that rejects megawatts of heat into a Gulf summer, the clean-agent fire system, the controls that watch all of it, and the commissioning that proves it. The compute, storage, and network inside the racks belong to the operator; the facility they depend on is ours.

4,000 kW
IT load

1.45
Design PUE

400
Racks, 16 rows

99.982 %
Tier III availability

WHAT WE SUPPLY

- MV/LV distribution and switchgear
- UPS 2N and N+1 standby generation
- Chilled-water plant and CRAH cooling
- Clean-agent suppression and VESDA
- BMS, EPMS and DCIM integration
- Integrated systems testing and T&C

WHAT THE OPERATOR BRINGS

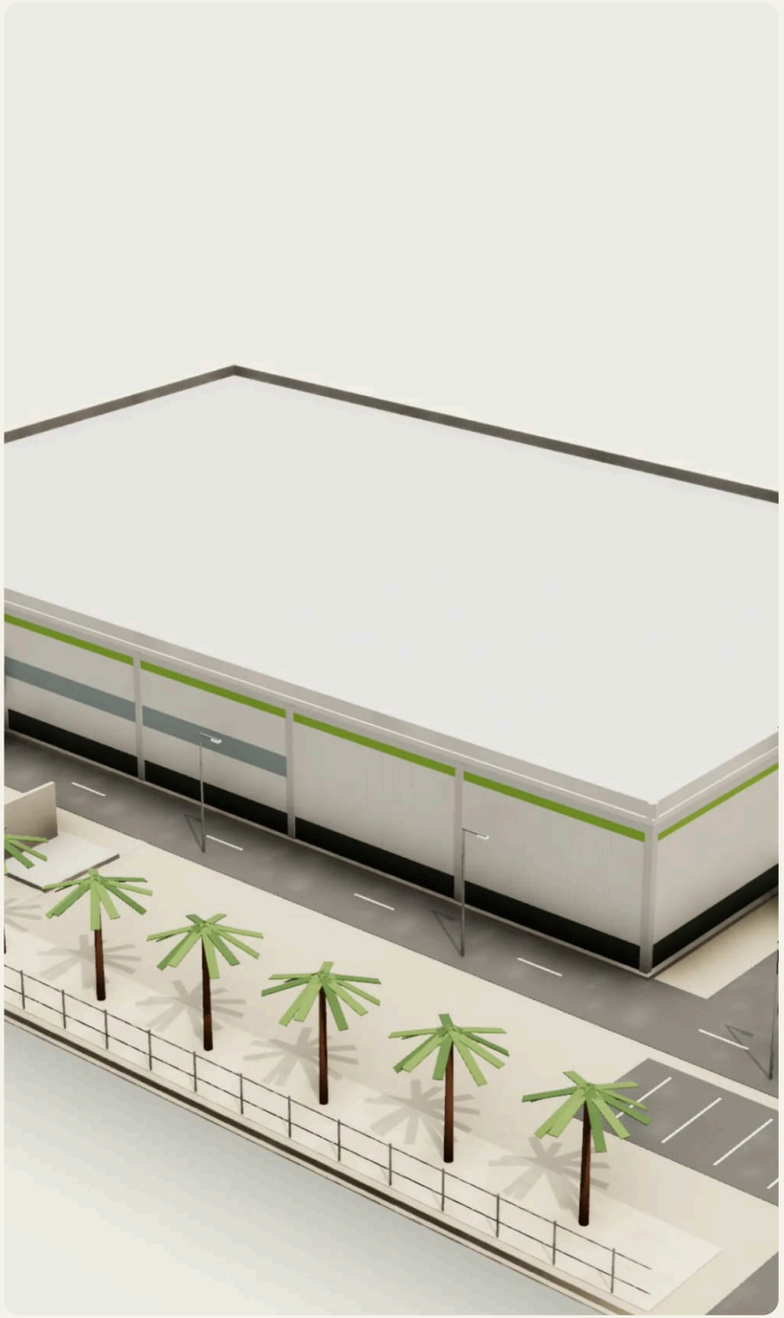
- Servers and compute
- Storage
- Network and carrier equipment
- Software and services

HOW WE PROVE IT

- Factory witness tests
- Site inspection and start-up
- Functional performance tests
- Integrated systems test at 4 MW

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Everything below the server is ours.

Power, cooling, fire, controls and structure, in colour; the compute is the operator's.

Our scope is everything below the server: the two paths from the grid to every rack, the plant that rejects megawatts of heat into a Gulf summer, the clean-agent fire system, the controls that watch all of it, and the commissioning that proves it. The compute, storage, and network inside the racks belong to the operator; the facility they depend on is ours.

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01 **Site and civil**
Plant pads, duct banks, drainage, earthing, and the fenced yard.

02 **Structure and envelope**
The portal frame, insulated shell, and two-hour rated partitions.

03 **Electrical**
MV intake, transformers, LV boards, UPS, generators, and busway.

04 **Cooling**
Chiller plant, pumps, buffer tank, CRAH units, and containment.

05 **Fire, safety and security**
Detection, clean-agent suppression, access control, and CCTV.

06 **IT fit-out**
Containment, cable tray, fibre routes, and the meet-me room.

07 **Controls and commissioning**
BMS, EPMS, and DCIM, and the integrated systems test.



02 · REFERENCE DESIGN

A 4 MW data centre, built in seven layers

Eastern Province, Saudi Arabia. Tier III, concurrently maintainable. 50 °C design ambient.

REFERENCE DESIGN FIGURES

IT load	**4,000 kW**
Design PUE	**1.45**
Racks, 16 rows	**400**
Average per rack	**~10 kW**
Two data halls	**2 × 900 m²**
Building footprint	**3,900 m²**
Plot	**11,700 m²**
Tier III availability	**99.982 %**

CHOOSING A TIER

Tier III means any chiller, UPS, switchboard or pump can be taken out of service for maintenance with the hall at full load. Tier II has spare plant on a single path; Tier IV survives a fault as well as maintenance. The reference design is Tier III, at 99.982 % design availability.

The reference design is a design basis. Equipment counts, ratings, and redundancy are set per project against the site's load study, the utility's connection offer, and the client's tier target.

Two paths from the grid to every rack.

Everything downstream of the switchgear exists twice, A and B, so any piece can be switched off for maintenance with the hall at full load. The generators stand behind both, and the UPS carries the gap between the grid dropping and the engines taking over.



01

Utility intake

Two medium-voltage feeds from the grid, so one can be lost without the hall knowing.

Dual 13.8 kV intakes from the Saudi Electricity Company

02

MV switchgear

The incoming supplies are isolated and metered here, with a tie between them.

Metal-clad switchgear, two sections and a bus tie

03

Transformers

Step the supply down to the voltage the building uses, with a spare for maintenance.

N+1 cast-resin units, derated for 50 °C

04

Generators

Pick up the whole facility within seconds of a grid loss, and run for days on stored fuel.

N+1 diesel sets, paralleled, 48 h of fuel at full load

05

LV switchboards A and B

Two independent boards. Everything downstream exists twice, one on each.

Form 4 switchboards with automatic transfer

06

UPS A and B

Hold the load on batteries through the gap between the grid dropping and the generators taking over.

2N static UPS on lithium-ion batteries

07

PDUs and busway

Carry both feeds along every row of racks, so each rack plugs into A and B.

Power distribution units and overhead tap-off busway

08

The rack

Dual-corded equipment draws from both feeds. Lose one, and nothing changes.

A and B rack PDUs, metered to the outlet

Four megawatts of heat, moved outdoors on a fifty-degree afternoon.

Every watt the servers draw becomes heat, and all of it has to leave the building. Chilled water carries it from the hall to chillers selected at the real summer ambient, with enough stored cold water to ride through a restart. In the hall, containment keeps the hot exhaust and the cool supply apart so none of the cooling is wasted.



01

Chillers

Make chilled water outdoors, in plant selected to perform at the real summer ambient rather than the catalogue's.

N+1 air-cooled chillers rated at 50 °C

02

Pumps and buffer tank

Keep the water moving, and keep enough cold water stored to carry the hall through a chiller restart.

Duty and standby pumps, five minutes of ride-through

03

Chilled-water loop

Insulated pipework in two paths, so any section can be isolated for maintenance.

Looped distribution with sectional isolation

04

Computer-room air handlers

Blow cool air into the cold aisle at a temperature the servers are rated for.

N+1 CRAH units, 24 °C supply within ASHRAE A1

05

Hot-aisle containment

Keep the hot exhaust separate from the cool supply, so none of the cooling is wasted mixing the two.

Contained hot aisles with return to the CRAH

06

Ready for liquid

High-density racks are cooled by water taken to the rack door or the chip. The plant and the loop are designed to take that on.

Coolant distribution unit provisions for rear-door and direct-to-chip cooling

Built to the standards the industry audits against.

A data centre is bought on evidence. These are the standards a facility is designed, built, and operated to, the certifications the company holds, and the accreditation held on the team that delivers it.

FACILITY STANDARDS

Uptime Tier III	Tier Standard: Topology · Uptime Institute Our reference design is Tier III; we support Tier Certification of Design Documents and of the Constructed Facility.
TIA-942	Telecommunications Infrastructure Standard for Data Centers · TIA Designed and documented to Rated-3.
EN 50600	Data centre facilities and infrastructures · CENELEC, as ISO/IEC 22237 Applied as the availability and energy framework beside the Tier standard.

DESIGN STANDARDS

ASHRAE TC 9.9	Thermal Guidelines for Data Processing Environments · ASHRAE Halls are designed to the A1 envelope; supply air at 24 °C.
NFPA 75 and 76	Fire protection of IT equipment and telecommunications facilities · NFPA The basis of the fire design, with NFPA 2001 for the clean agent.
BICSI 002	Data Center Design and Implementation Best Practices · BICSI Used as the design checklist alongside TIA-942.

COMPANY CERTIFICATIONS

ISO 9001, 14001, 45001	Quality, environment, and safety management · ISO Certified; one integrated management system on every site.
ISO 50001	Energy management · ISO The operating framework we hand over with the PUE metering.
LEED	Leadership in Energy and Environmental Design · USGBC USGBC member; designs prepared for certification where the client wants it.

IN THE KINGDOM

SBC 801	Saudi Building Code, fire · Saudi Building Code National Committee The suppression design is prepared for Civil Defense review from day one.
CST	Data centre services licensing · Communications, Space and Technology Commission The registration dossier is part of the handover.

ON THE TEAM

CDCMP	Certified Data Centre Management Professional · EPI Held on our operations and handover team.

Five levels of commissioning, ending with the grid pulled.

Nothing in a data centre is assumed to work because it was installed. Every system is tested at the factory, on arrival, alone, against its specification, and then all together at full load.

L1

Factory witness

Switchgear, UPS, generators, and chillers tested at the factory before they ship.

L2

Site inspection

Every item checked on arrival and after installation against the drawings.

L3

Start-up

Each system energised and run by its manufacturer, alone.

L4

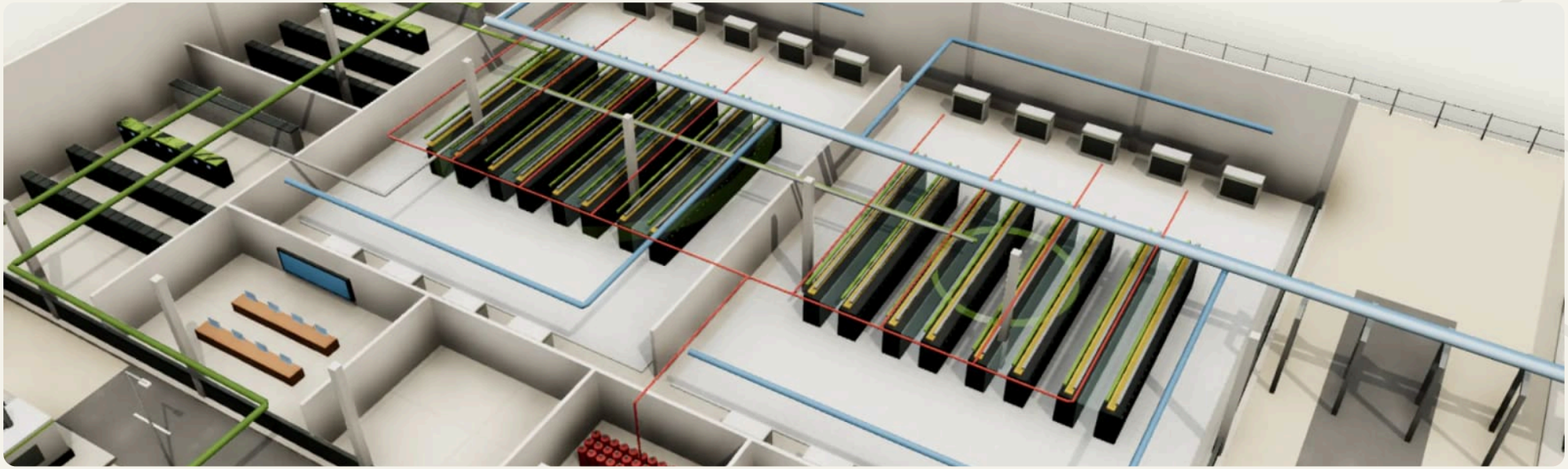
Functional performance

Each system proven against its specification: transfers, restarts, alarms, set points.

L5

Integrated systems test

The whole facility at full load on load banks. The grid is pulled and the generators, UPS, and chillers carry the hall.



L1 to L5	4 MW	Tier III	CST
Commissioning levels	Load-bank test	Certification support	Registration dossier

HANDOVER

Handover includes the dossier for the CST data-centre services registration and the records Civil Defense and the municipality ask for at occupancy.

- BMS, EPMS, and DCIM integration with one set of alarms
- Integrated systems test, witnessed, at full load
- O&M manuals, training, and the first year of maintenance



The first meeting, answered in advance.

What PUE is realistic in Saudi Arabia?

Around 1.4 to 1.5 for a Tier III hall with air-cooled chillers, because free cooling is unavailable for most of the year. Warmer supply air within the ASHRAE envelope, hot-aisle containment, and chillers selected at the real ambient are what get it there.

Can the facility take high-density or liquid-cooled racks later?

Yes, if it is designed for it now. The chilled-water loop, the plant capacity, and the floor are provisioned for coolant distribution units, so rear-door or direct-to-chip cooling can be added row by row.

How long will it run without the grid?

As long as the fuel lasts. The reference design carries forty-eight hours at full load, with a fill point at the gate and a refuelling contract in the operating plan.

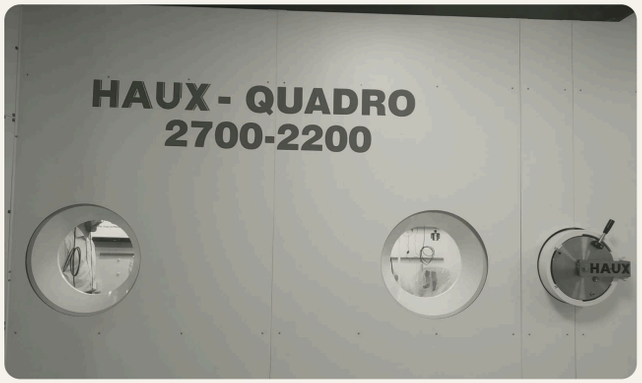
Who certifies the facility?

Uptime Institute certifies the design and the constructed facility against the Tier standard; we prepare the submissions and host the demonstrations. The Kingdom's CST registration and the Civil Defense sign-off are part of the same handover.

How long does a 4 MW facility take?

From a fixed brief, roughly fifteen to eighteen months to integrated systems test, with the long-lead switchgear, transformers, generators, UPS, and chillers ordered in the first eight weeks.

Plant rooms and critical services, built and commissioned.



Hyperbaric Oxygen Therapy Suite

Hamad Medical Corporation, Doha

A room that is a pressure vessel, in a hospital that never closed: the services around a multiplace chamber, built to run live.

- Pure-oxygen pipework and controls
- Installed inside an operating hospital
- Tested and handed over against the manufacturer's specification

SCOPE

Specialist MEP, medical gas, and controls inside a working hospital



Al Hazm Mall

Markhiya, Doha

The chilled-water plant behind a luxury mall: cooling towers on the roof, pump sets in the plantroom, and the pipework that ties them to the building.

- Chilled-water pump sets and headers
- Rooftop cooling towers
- Insulated plantroom pipework

SCOPE

Chilled-water plant, cooling towers, and plantroom pipework



Manateq Pumping Stations

Qatar

Mechanical works for the pumping stations that serve Manateq's economic zones: pump halls, packaged plant outside them, and the panels that run it all.

- Packaged plant and pump halls
- Control panels and instrumentation
- Commissioned station by station

SCOPE

Pump halls, packaged plant, and control panels



LET'S TALK

Bring the IT load, the site, and the tier you need.

We come back with a sized plant list, a plot layout, and a programme.

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EXPLORE GREEN SQUARE

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Data centre infrastructure: power, cooling, fire and controls.

CIVIL · MEP · ELV · MISSION-CRITICAL DATA CENTRES · OUTDOOR COOLING

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