



HVAC, Water & Power

Company Overview

Solutions, services and project delivery
for businesses and public institutions



Concept illustration

One company for essential facility systems

Mstead coordinates the equipment, interfaces and services behind a complete scope.

HVAC services

Commercial cooling and large residential portfolios, from preventive maintenance to system replacement.

Water systems

Reverse osmosis, atmospheric water generation, treatment, storage and pumping.

Power solutions

Fuel cells through Bloom Energy, generation packages and site-specific electrical integration.

The operating priorities we address

The customer's required service level determines the solution.

Continuity

Cooling, water and power aligned with the loads and services that must keep operating.

Water and environmental quality

Treatment requirements, water testing and discharge planning matched to the intended use.

Lifecycle cost

Investment, energy, fuel, maintenance and replacement considered over the same evaluation period.

Accountability

A defined owner for scope, coordination, acceptance and follow-through after installation.

Our solutions and services

Customers can engage one service line or a coordinated multi-system package.

Service line	Equipment and projects	Lifecycle services
HVAC	Chillers, rooftop units, VRF and controls	Assessments, maintenance, repairs and upgrades
Water	RO, AWG, treatment, tanks and pumps	Sampling coordination, commissioning and service
Power	Fuel cells, generators and hybrid integration	Load studies, testing and maintenance coordination
Project delivery	Engineering coordination and equipment supply	Logistics, installation oversight and handover

Who we serve

Typical customer settings and the operating questions that shape our work.

Customer setting	Typical need	Possible starting engagement
Commercial and mixed-use	Cooling condition and operating cost	Asset assessment and service plan
Large residential portfolios	Consistent maintenance across sites	Portfolio inventory and replacement plan
Hotels and resorts	Guest services and water availability	Cooling, water and power review
Industrial facilities	Process support and utility continuity	Demand, quality and load assessment
Healthcare and campuses	Critical-area service requirements	Defined scope and resilience study
Government and water operators	Public-service capacity and continuity	Feasibility study or demonstration scope

01

Commercial & residential HVAC

Maintenance and repair

Preventive service and fault response for commercial and large residential sites.

Phased modernization

Chillers, rooftop units and controls selected for the site.



Concept illustration

HVAC maintenance and repair

An asset-based service scope links preventive work with corrective action.

Service activity	Work covered by the agreed plan	Customer record
Baseline inspection	Condition, model, refrigerant and control review	Asset register and priority findings
Preventive maintenance	Scheduled checks and manufacturer tasks	Completed work and observations
Fault diagnosis	Troubleshooting and repair recommendations	Cause, scope and approval request
Corrective work	Approved repairs, parts and functional checks	Work order and test results
Ongoing review	Repeat faults and replacement priorities	Service report and next actions

HVAC modernization

Replacement and control upgrades follow a measured assessment of the existing system.

01

Assessment and right-sizing

Review demand, operating hours, equipment condition and site constraints.

02

Equipment and controls

Compare suitable replacements and define control sequences and interfaces.

03

Phased installation

Plan access, shutdowns and temporary arrangements with the facility team.

04

Commissioning and review

Check operation against the scope and compare performance with the baseline.

Large residential portfolio services

A common service program, adapted to each building and its residents.

Portfolio visibility

One asset register with equipment age, condition, service history and replacement priority.

Coordinated maintenance

Planned visits, access arrangements and resident communications agreed with property management.

Controlled spending

Repair approvals and phased replacement budgets organized by building and criticality.

Consistent reporting

A portfolio view of completed work, unresolved faults and decisions awaiting the owner.



Concept illustration

02

Water supply and treatment

Reverse osmosis and treatment

Treatment selected for source quality, required volume and the intended use.

Atmospheric water generation

A separate module collects air moisture. Local conditions determine output.

Storage, pumping and service

The complete package includes delivery, water quality controls and maintenance.

Reverse osmosis project scope

A complete water project includes the equipment around the membrane system.

Workstream	Scope to define
Source and intake	Water analysis, source access, seasonal variation and intake works
Pretreatment and RO	Filtration, dosing, membranes, pumps and suitable energy recovery
Product-water finishing	Treatment, disinfection and conditioning for the intended use
Concentrate management	Brine and cleaning-waste handling with an approved disposal route
Delivery and operation	Tanks, pumps, meters, controls, operator training and spare parts

Atmospheric water generation

An additional water source, evaluated for local conditions and the intended use.

Water from ambient air

AWG collects atmospheric moisture and treats the resulting water for the intended use.

Conditions determine output

Temperature, humidity and air quality guide site selection and performance evaluation.

Energy and quality matter

Measure electricity and usable water, with appropriate treatment, sanitation and testing.

A defined role in the system

Use measured results to establish whether AWG fits a standalone or supplemental application.

Water storage, pumping and quality

Production capacity becomes useful only when water reaches the point of demand.

Storage sized to operations

Usable storage, reserve capacity and turnover aligned with daily demand and interruption needs.

Pumping and distribution

Duty, pressure, controls and redundancy assessed with pipework and site electrical capacity.

Quality through delivery

Sampling points, treatment checks and sanitation responsibilities defined through the system.

Operating records

Production, tank levels, faults and maintenance recorded for the customer and operator.

Containerized water and power

Development program: seawater RO and atmospheric water generation, with fuel-cell power.



Concept illustration. Final modules, capacity and footprint follow engineering and field validation.

Combined-system architecture

Separate production paths share a coordinated operating and service plan.

Module	Primary role	Integration requirement
Seawater RO	Planned bulk water production	Source, pretreatment and residuals handling
Atmospheric water	Supplemental output from air	Climate performance and energy evaluation
Water finishing	Usable quality, storage and delivery	Treatment controls and source isolation
Power and controls	Electricity for the selected loads	Fuel, startup, protection and operating logic
Service package	Sustained operation of the full site	Named operator, spares and reporting

Fuel-cell power with Bloom Energy

Technology

Bloom Energy Server solid oxide fuel cells convert supplied fuel into electricity.

Site integration

Size the plant for water production and other selected loads, including auxiliary equipment.

Operating plan

Confirm fuel logistics, electrical protection and the specified response to a grid outage.

Fuel-cell power forms a separately engineered part of the combined site.

Generation and backup power

Duty and load

Prime or standby operation selected for the application and load profile.

Electrical integration

Switching, protection and controls coordinated with the site.

Fuel and service

Fuel logistics, operating duration and maintenance included in scope.



Hybrid power and microgrid integration

The operating strategy determines which sources and storage options belong in the design.

Element	Potential role	Design question
Utility connection	Normal supply or supporting source	Interconnection, tariff and outage conditions
Fuel cells or generators	Local generation for selected duty	Fuel, steady loads, transients and service
Solar generation	Energy contribution where suitable	Space, resource and production profile
Battery storage	Energy shifting or short-duration support	Charging source, duration and cycling
Controls and protection	Coordinated operation and safe switching	Operating modes and acceptance tests

Integration across HVAC, water and power

A combined project must manage the connections between systems.

The electrical load

Water pumps, AWG equipment and HVAC all contribute to the site demand and startup profile.

The operating priority

Critical services receive a defined priority when the available supply is constrained.

The maintenance plan

Isolation and redundancy allow planned work without losing more service than the customer accepts.

The acceptance test

Equipment tests are followed by the agreed system-level operating scenarios.

Our project delivery process

A controlled sequence connects the customer's need with an operating asset.

Understand and define

Site assessment, alternatives and an agreed design basis with acceptance criteria.

Engineer and deliver

Released design, procurement, factory checks, shipping and installation coordination.

Prove and support

Commissioning, customer acceptance, training and the contracted service program.

Discovery and site assessment

The output is a documented basis for the next investment decision.

Input	What we establish	Assessment output
Operations	Demand, criticality and interruption tolerance	Service objectives and operating scenarios
Existing assets	Condition, capacity, records and interfaces	Asset register and constraints
Water and energy	Source quality, climate, loads and fuel access	Technical design inputs
Site and delivery	Space, access, utilities and local conditions	Feasibility and installation assumptions
Commercial process	Budget, authority and purchasing requirements	Next scope and decision pathway

Engineering and proposal development

Technical definition and commercial scope advance together.

01

Design basis

Confirm loads, feed conditions, service levels and equipment interfaces.

02

Options and selection

Compare viable configurations, operating cost and support requirements.

03

A complete scope

Define site works, inclusions, exclusions and each delivery responsibility.

04

Agreement before purchase

Approve price, milestones, acceptance tests, warranty and change control.

Procurement and assembly

Manufacturer equipment and partner assembly follow the released project scope.

Supplier qualification

Technical fit, documented quality, warranty, lead time and local support assessed before selection.

Configuration control

Approved equipment schedules and interfaces carried into orders and assembly instructions.

Inspection and factory tests

Specified checks, traceable records and open-item closure before shipment release.

Project documentation

Manuals, drawings, certificates and spare-parts information prepared for the receiving team.

Logistics and site readiness

Delivery is planned around the receiving country and the installation site.

Transport and import

Packing, freight, insurance, customs documents and the importer's responsibilities.

Physical readiness

Foundations, access, lifting, drainage and space for operation and maintenance.

Utility and permit readiness

Required water, fuel and electrical connections aligned with local approvals and site works.

Installation coordination

Qualified crews, equipment arrival and customer shutdown windows planned together.

Commissioning and customer acceptance

Performance evidence is agreed before equipment purchase.

System	Acceptance focus	Typical evidence
HVAC	Capacity, controls and operating conditions	Commissioning records and functional tests
Water	Net output and quality for intended use	Metered production and laboratory results
Power	Selected loads and specified operating modes	Load, protection and transition tests
Integrated site	Required response across system interfaces	Documented operating scenarios
Handover	Readiness for routine operation	Training, manuals, drawings and open-item list

Service agreements and operating support

Coverage is built around the assets, location and customer’s operating model.

Engagement	Typical scope	What the agreement defines
Planned maintenance	Scheduled tasks and condition reporting	Asset list, frequency and consumables
Maintenance with response	Preventive work plus fault escalation	Hours, priorities and response commitments
Performance support	Monitoring review and corrective recommendations	Meters, reporting and review cadence
Operating support	Assigned operator tasks or partner-led O&M	Staffing, permits and division of responsibility

Monitoring and customer reporting

Selected measurements make performance and open issues visible.

Area	Information to track	Customer use
HVAC	Runtime, faults, conditions and selected energy data	Maintenance and replacement decisions
Water	Net output, quality results and consumable use	Production and treatment review
Power	Output, fuel use, operating events and availability	Duty and operating-cost review
Service	Completed work, backlog and parts status	Prioritization and accountability
Project and portfolio	Milestones, changes and unresolved actions	Management decisions and budget control

Our partner and delivery ecosystem

Mstead coordinates a project team with explicit technical and commercial responsibilities.

Participant	Role in the delivery model
Mstead Solutions	Customer scope, system integration, project coordination and service
Bloom Energy	Fuel-cell technology partner for selected power solutions
Water and HVAC manufacturers	Selected equipment, technical documentation and product warranties
Local engineers and contractors	Jurisdiction-specific design, installation and specialist work
Testing and service partners	Laboratory work, commissioning support and local maintenance

Project governance and accountability

Every contracted engagement has named owners and a documented escalation route.

Customer account owner	Commercial communication, approvals and continuity of the customer relationship.
Project and technical leads	Schedule, interfaces, engineering coordination and resolution of technical decisions.
Quality and site delivery	Inspection, work records, change control and closeout of defects or nonconformances.
Service coordinator	Maintenance planning, fault escalation and handover into routine support.

Ways to engage Mstead

Commercial structure follows the customer’s need and purchasing process.

Engagement	Deliverable	Commercial basis
Assessment or feasibility	Site findings, alternatives and a defined next scope	Agreed study fee and assumptions
Equipment and integration	Specified equipment with defined technical interfaces	Supply scope and acceptance milestones
Delivered project	Coordinated engineering, installation and commissioning	Scope, responsibilities and staged delivery
Recurring service	Maintenance, support or agreed operating services	Asset coverage and service obligations

International delivery, defined locally

A consistent project method with a country-specific execution plan.

Technical fit

Local voltage, frequency, water quality, climate and applicable equipment requirements.

Commercial and procurement fit

Buyer rules, contract entity, currency, taxes and import responsibilities.

Qualified local delivery

Engineering permissions, contractors, operator requirements and service coverage.

Support after handover

Parts access, documentation, training language and a workable maintenance arrangement.

Project economics and lifecycle value

Alternatives are compared using the same demand, service level and evaluation period.

Cost or value driver	Basis for the decision
Capital and installation	Equipment, engineering, freight, duties, site works and approvals
Operation	Metered energy, fuel, treatment consumables and labor
Maintenance and replacement	Service, spare parts, membranes and equipment renewal
Continuity	Documented interruption exposure and the required service level
Performance and uncertainty	Water output, seasonal conditions, utilization and sensitivity cases

Illustrative customer applications

Example configurations for discussion. These are not completed Mstead projects.

Setting	Possible package	What the customer would evaluate
Hotel or resort	HVAC service, water treatment and storage	Guest-service continuity and operating cost
Residential portfolio	Maintenance plus phased HVAC replacement	Asset condition, resident impact and budget
Industrial or campus site	Cooling support and onsite power integration	Load fit, operating modes and service coverage
Coastal public water site	RO, AWG trial and a fuel-cell power assessment	Net output, water quality and cost of delivery

Product development and demonstration

The combined water-and-power system advances through evidence-based decisions.

01

A defined design and supplier package

Agree interfaces, capacity assumptions, manufacturing scope and quotations.

02

First unit and site demonstration

Complete factory checks, installation and a measured operating trial.

03

Repeatable production and support

Release further units after acceptance, cost review and service readiness.

What a project proposal will include

A reviewable offer makes the scope and delivery obligations explicit.

Proposal component	Included definition
Technical scope	Design basis, equipment, interfaces and performance conditions
Delivery plan	Project stages, dependencies and customer-provided items
Commercial terms	Price, milestones, payment basis and change process
Acceptance and documentation	Test methods, records, training and handover requirements
Lifecycle support	Warranty boundaries, service coverage and critical spare parts

The Mstead customer proposition

A coordinated delivery model for equipment that has to work together.

One defined customer scope

A single view of the project with named responsibilities across manufacturers and field teams.

Technology selected for the site

Multiple technology options assessed against the operating need and lifecycle economics.

Service built into the decision

Maintenance access, parts, training and support considered before the equipment purchase.

Evidence at handover

Defined tests and records that demonstrate the contracted result.

Technical references and scope notes

Published references inform the technology descriptions. Project specifications remain site-specific.

Bloom Energy

Energy Server technology and microgrid applications

bloomenergy.com/technology/ / bloomenergy.com/microgrid/

U.S. Environmental Protection Agency

Atmospheric Water Generation Technology, November 2019

epa.gov / EPA/600/F-19/129

U.S. Department of Energy

Desalination Basics and Commissioning in Federal Buildings

energy.gov / Desalination Basics / Commissioning in Federal Buildings

DOE Better Buildings

Preventative Maintenance for Commercial HVAC Equipment

betterbuildingssolutioncenter.energy.gov



**Your facilities.
Our next discussion.**

Tell us the operating priority

Share the site and available records

MsteadSolutions.com

HVAC
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