



FLUID COOLING
SYSTEMS, LLC.

MODULAR MECHANICAL ROOMS

**COMPACT COST-EFFECTIVE INTEGRATED
SYSTEMS FOR OUTDOOR INSTALLATION**



We Deliver Solutions.



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MODULARITY MAKES SENSE

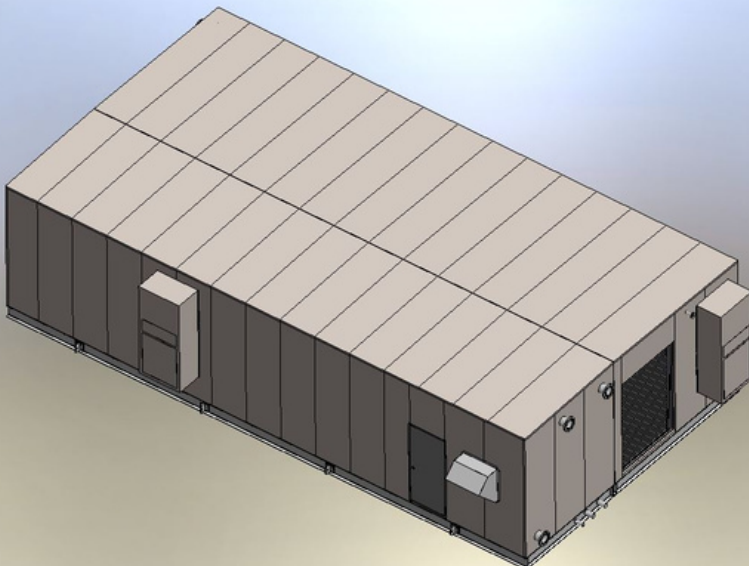
The FCS Modular Mechanical Room incorporates many of the engineered solutions for packaged heat-transfer systems we have done for more than a decade into a fully integrated and enclosed design with economic and operational advantages for Process and HVAC duties. It is a complete process utility solution that's fully enclosed and can be configured to suit your most complex needs.

Chillers, boilers, pumps, cooling-towers, hydronic components, heat exchangers, drives, valves and controls are expertly assembled and wired into rugged modular outdoor mechanical rooms.



ENGINEERED PERFORMANCE AND EFFICIENCY

- Modular designs are less costly to implement and easy to transport and install.
- Enclosures feature welded steel structures and rigid-foam steel-sided panels in many colors and textures.
- Floors are continuously welded to the structural steel support system. Walls and roofs are robust with all-welded structures.
- Enclosures can be designed for local wind and snow loads and codes.
- Modules are scalable to accommodate future demands and growth, or relocation.
- Enclosed mechanical rooms include a single point power connection.
- PLC/HMI controlled with off-site monitoring and diagnostics.
- Multiple lockable access doors and hatches for maintenance.
- Enclosures include exterior and interior lighting, air conditioning and heating, convenience receptacles, and emergency refrigerant exhaust systems.
- Track and trolley with chain fall for workers extracting equipment for maintenance.
- Protected conduit chase under the main deck
- Engineered lift points with lifting diagrams.
- PLC/HMI controlled, with remote laptop/ tablet options. Wired/wireless connectivity. Off-site monitoring and diagnostics. Data logging: multiple points - relative humidity, pressure, temps, water and air temp, etc.
- Battery backup for controls and any power-actuated valves.
- FCS has experience building stringent industrial specs in critical processes.
- Options for materials, location, weather, footprint, and welding procedures.
- Enclosed conditioned space with lighting, refrigerant monitoring and discharge, interior/ exterior convenience outlets, work tables, eye-wash stations, and more.
- Insulation options, up to 6" rigid foam in place with steel and aluminum sides.
- Anti-skid epoxy floors
- On-site assistance for build-out if desired
- Ongoing maintenance options





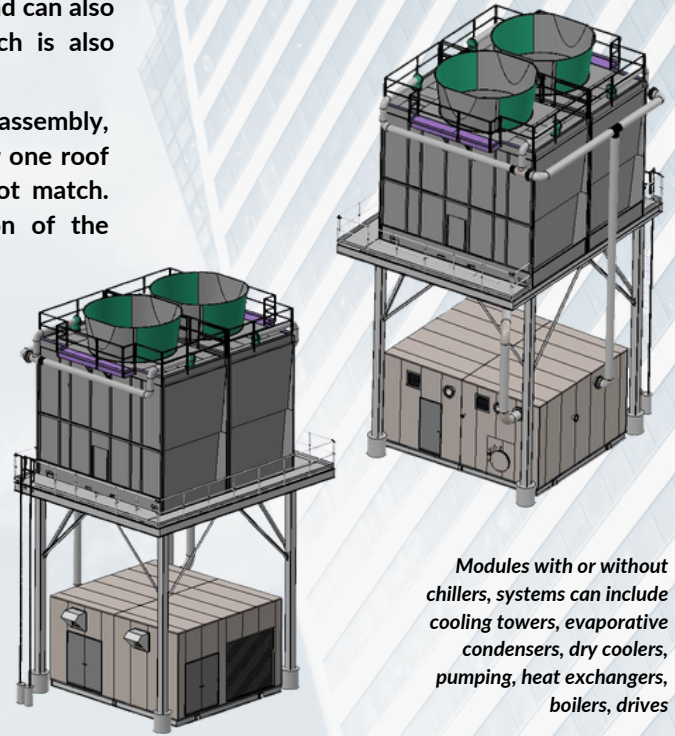
CAPEX AND TIME REDUCTION IS ACHIEVABLE

It only makes sense. Modular construction conserves capital initially and can also defer requirements until there is a need to expand capacity, which is also facilitated by modular designs and pre-planning.

Bringing engineering, single-point communications, pricing, assembly, fabrication, quality control, testing, delivery, and commissioning under one roof creates tangible efficiencies that site-built systems realistically cannot match. Consistency, speed, safety, higher quality, and detail. The duration of the installation is significantly reduced. Savings of 25% is not uncommon.

OBJECTIVES ARE ASSURED

Compact Modular Plants have the advantage of everything being close-coupled compared to larger facility rooms. Pipe runs are shorter with fewer bends or reductions for site realities. Fluid velocities, pressure drops, and delta-t are engineered in, better controlled, and assures every sub-system like chillers, heat exchangers, and boilers operate within their ideal conditions. Operational efficiencies are significant.



Modules with or without chillers, systems can include cooling towers, evaporative condensers, dry coolers, pumping, heat exchangers, boilers, drives

Variability in any of these areas can create havoc in downstream processes and control. If inadequately mitigated, process cooling system variability can undermine the company's bottom line.

FACTORY MANUFACTURING - TIME, MONEY AND RISK MITIGATION

Building the critical-path integrated chiller, boiler, pumping systems, cooling towers, free-cooling systems, and their control in a factory environment that is managed, quality-controlled, and efficiently manned every day.



Enables site work to require fewer diverse disciplines interacting in the space. Parallel work compresses the time required for the entire project. Site realities that result in higher pressure drops and pipe run with more bends and reductions are eliminated so that owner risks around ROI are mitigated.

The coordination of diverse contractors, worker availability, and site schedules are eliminated in a factory-built system.

THE TIME-USE-OF-MONEY IS RELEVANT.

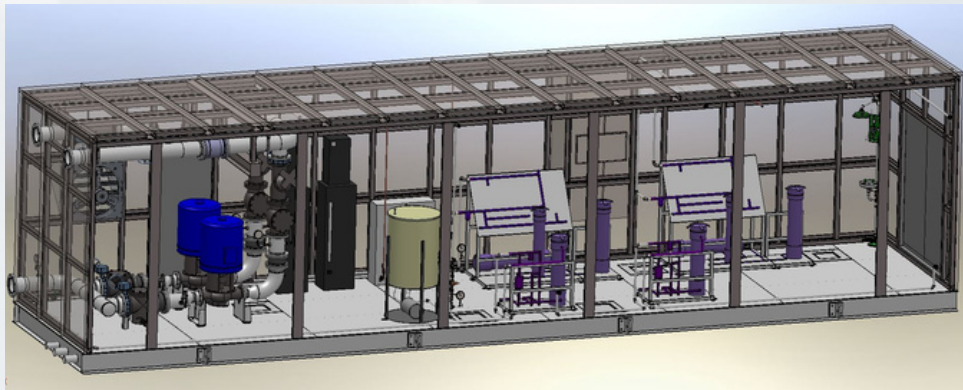
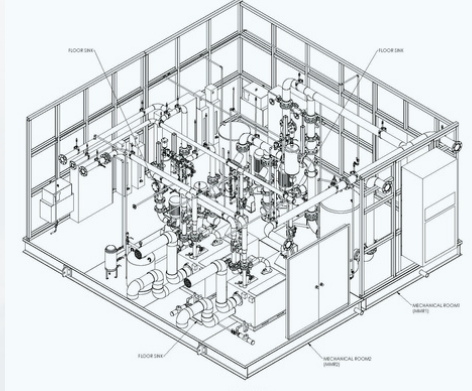
ADVANTAGES TO OWNERS, ENGINEERS AND CONTRACTORS

The Modular solution includes lower first cost and reduced operational costs, system expand-ability, better use of inside space to move utility systems outdoors or above the building, higher energy efficiency, better control of pressure, temperature, and flow, ease of maintenance, reduction of risk, guaranteed long-term performance and value, reduced installation time and inherently higher overall quality in detail and execution. For facility owners, it may be possible to enjoy the tax benefits of amortizing the entire plant as a unit. This may not be possible with other approaches

SAMPLE MMR'S PROJECTS

Stay cool, stay efficient, and stay ahead of the competition.
Explore our samples and unleash the power of innovation.

210830 China Lake



Hydrite



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