

Central Utilities

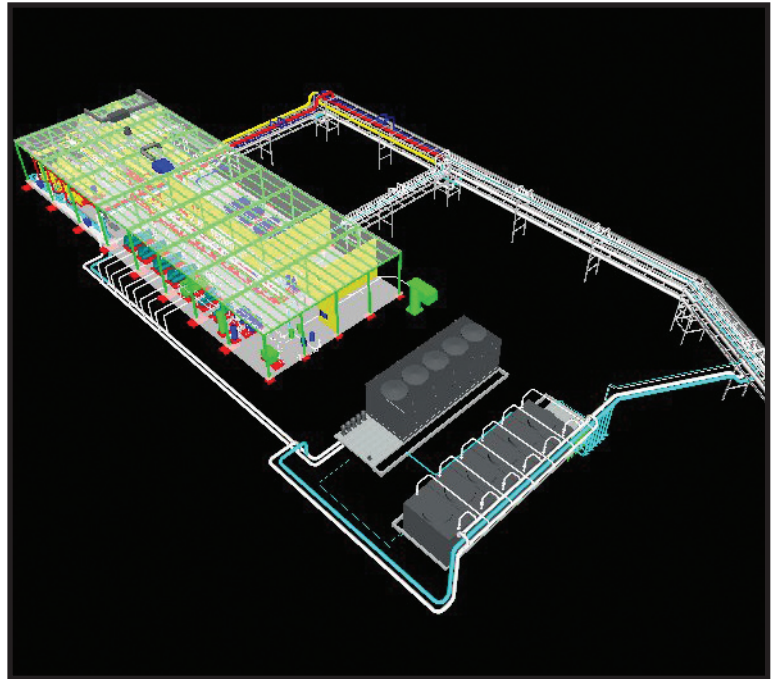
Planning and Design

Reliable and energy efficient central utility operations start with sound engineering design. The right solutions include systems that are simple to operate and maintain, and flexible and adaptable to meet your current and future needs. We are engineers and communicators. We listen to your needs... understand your requirements... then strive to deliver solutions that meet your expectations.

Whether you are planning a new central plant or renovating an existing one, CRB can provide the experience and resources that you need. Our team of experienced engineers and designers can provide you an integrated approach, through the use of 3D modeling, to deliver your project with the end results in mind. By modeling the central plant equipment, it will enhance interdisciplinary coordination and reduce costly interferences prior to actual construction.

Energy efficiency, reliability and safety are critical factors in the operation and success of any facility. CRB understands that owners spend only what is necessary for utilities to support current manufacturing operations but need central utilities buildings (CUBs) to be designed for flexibility so that they can be expanded to meet manufacturing and facility growth plans. We can provide hydraulic modeling and piping stress analysis, which result in systems that are economically sized to meet facilities' needs.

CRB provides a total service package from the planning and budget phase through design, construction and system start-up. The services we provide include mechanical, electrical, plumbing, fire protection, specialty gases, clean and plant piping, instrumentation, commissioning and start-up for retrofits and new facilities.



CENTRAL UTILITIES PLANNING AND DESIGN

Project Management

The goal of CRB is to provide quality engineering services in a timely and cost-effective manner. These goals often conflict. You require good managers as well as good engineers, and it is our job to understand your objectives and priorities first so that we can evaluate:

- Schedule Development and Tracking
- Budget Development and Tracking of Earned Value
- Project Scope Development and Programming
- Same Team Throughout Project Duration

Innovative Planning and Design

- Strategic Utilities Master Planning and Layout
- Interactive 3D Modeling with Infrastructure Clash Detection
- Intelligent P&IDs with Integrated Database Management
- Due Diligence/Feasibility Studies/Life Cycle Cost Analysis
- Hydraulic Modeling of Piping Systems
- Start-up and Commissioning Support
- Energy Management Optimization
- Central Utility Plant Expansions and Upgrades

Mechanical

- Right Sizing Central Plant Equipment
- Chillers (Centrifugal, Absorption, Reciprocating)
- Hydraulic Modeling of Piping Systems
- Steam and Hot Water Boilers
- Thermal Storage (Stratified Tank, Ice Banks)
- Energy Recovery (Runaround Coils, Air-to-Air Heat Exchangers, Enthalpy Wheels)
- Free Cooling Plate and Frame Heat Exchangers

Piping, Plumbing and Fire Protection

- High Purity RO/DI Water Systems
- Specialty Gases (Nitrogen, Oxygen, Argon, Carbon Dioxide)
- Compressed Air and Lab Vacuum
- Piping Stress Analysis
- Process/Sanitary Waste and Vent
- Storm and Roof Drainage
- Automatic Wet and Dry Sprinkler Systems
- Special Systems (FM200)

Electrical

- Low and Medium Voltage Power Distribution Systems
- Lighting Systems
- Voice, Data, and Public Address Systems
- Fire Detection and Alarm Systems
- Short Circuit Analysis
- Load Studies and Peak Shaving
- Power Conditioning and Surge Protection
- Emergency Power and Uninterruptible Power Supplies

Instrumentation and Controls

- Building Control and Automation Planning and Philosophy
- Control System Architecture
- Critical Equipment Monitoring (Freezers and Incubators)
- Instrument Data Sheets
- Control Loop Diagrams
- Sequence of Operation
- Single Loop and Relay Logic
- Control System Programming

