

NEW ENGLAND

**ENGINEERING WITHOUT COMPROMISE**

## ABOUT US

# Mission and Vision.

We are a professional services firm specializing in the design and manufacture of critical cooling and power solutions for myriad clientele markets. Our associates dedicate themselves to the pursuit of symbiotic balance demanded by clients with regards to financial performance, system efficiency, and sustaining resiliency. Our portfolio includes completed projects on six continents, including the most grueling environments on earth.

**GOVERNMENT and INSTITUTIONAL**

Federal State &  
Local Government  
Military Facilities  
Embassies and Consulates

**EDUCATION**

Early Childhood  
K-12  
College and University  
Vocational Training

**MISSION CRITICAL**

Data Centers  
Laboratories  
Life Science  
Pharmaceutical

**COMMUNITY and CULTURAL**

Performing Arts Centers  
Hospitality  
Mixed Residential/Commercial  
Natatoriums

**HEALTHCARE**

Hospitals  
Medical Office and Surgical  
Patient Urgent Care  
Long Term Care

Critical Systems is one of the fastest-growing engineering services firms in the DC, Maryland, Northern Virginia, and New England markets. As a representative of HVAC manufacturers from all over the world we offer products, knowledge, and services to forward-thinking building owners, architects, engineers, development, and construction teams to meet their current and future challenges.

Our mission is to support customer needs and green initiatives with high-quality, innovative solutions. Our sales, engineering, building services, operations, and account management teams consist of highly trained, technically focused individuals with over 700 years of experience. We are committed not only to helping our partners save valuable budget dollars but also to doing our part to make the world a better place.



OUR INSPIRATION +

## Technology Partners

**CRITICAL SYSTEMS** provides professional services within industries as diverse as our clientele. Since 2008, our associates have served building owners and their chosen construction partners, whether requirements be smaller in scale or campus wide modernizations. We're proud of the portfolio of projects we have accumulated and appreciate the opportunity to share their stories.

### TECHNOLOGY PARTNERS

	<b>WATER-COOLED CHILLERS</b>	Magnetic bearing centrifugals using Turbocor compressors (75-880 TR), traditional centrifugals chillers (300-3000 TR), VFD screw chillers (60-1000 TR). Made in the USA.
	<b>AIR-COOLED CHILLERS</b>	High efficiency scroll chillers, single packaged or modular design (10-185 TR), high efficiency VFD inverter screw chillers (115-470 TR), low noise, high ambient, microprocessor controls. Made in the USA.
	<b>AIR HANDLING UNITS</b>	Modular and semi-custom air handling units with No-Thru-Metal casing, 2 inch or 4 inch double wall construction, energy recovery wheels, flat plate heat exchangers, wrap around heat pipes. Outdoor or indoor. 1000 - 56000 CFM. Made in the USA.
	<b>PRECISION ENVIRONMENTAL CONTROL UNITS (CRAC/CRAH)</b>	High efficiency scroll compressors, DX, chilled water, dual coil, touch screen control panel, high ambient operation, R410A or R407C, 2-30 TR.
	<b>WATER-COOLED SELF-CONTAINED</b>	Modular and semi-custom air handling units with No-Thru-Metal casing, 2 inch or 4 inch double wall construction, energy recovery wheels, flat plate heat exchangers, wrap around heat pipes. Rooftop or indoor. 1000 - 56000 CFM. Made in the USA.
	<b>AIR-COOLED ROOF-TOP UNITS AND SPLIT-SYSTEMS</b>	100% outside air, semi-custom, and custom split systems when energy wheel, heat pipe, or flat plate heat exchanger. 3-135 TR.
	<b>ICE THERMAL STORAGE SYSTEMS</b>	Dunham-Bush patented ice thermal storage systems. Modular and high efficiency tanks, only 25.7 F brine required in freezing mold. Fiberglass double wall tanks, high density polyethylene (HDPE), heat exchanger for durability and efficiency.
	<b>INDUSTRIAL LOW TEMP ICE RINK CHILLERS</b>	Customized design, manufactured to requirements. R507 refrigerant.

dbamericas.com





 <a href="http://petra-eng.com">petra-eng.com</a>	<b>PACKAGED RTU / DOAS</b>	100% Outside Air, Semi-Custom and Fully Custom Packaged DOAS or Rooftop Units with energy wheel, heat pipe, or flat plate heat exchanger. Water-cooled indoor and outdoor units. Copeland digital scrolls and Danfoss VFD compressor options available.
	<b>CUSTOM AIR HANDLING UNITS</b>	Custom Air Handling Units with No-Thru-Metal casing, 2" or 4" double wall construction, energy recovery wheels, flat plate heat exchangers, wrap-around heat pipes.
	<b>AIR-COOLED CHILLERS</b>	Scroll or Screw compressors. Options for ultra low noise, VFD compressors, and many custom options.
	<b>WATER-COOLED SELF-CONTAINED</b>	Modular systems available sized to fit through mechanical room access doors. Copeland Digital Scroll and Danfoss VFD compressors available. Modulating hot gas reheat available. Heat recovery available to supplement hot-water VAV reheat coils.
	<b>SPLIT SYSTEMS</b>	100% Outside Air, Semi-Custom, and Custom split systems with energy wheel, heat pipe, or flat plate heat exchanger.
 <a href="http://tandemchillers.com">tandemchillers.com</a>	<b>AIR-COOLED MODULAR CHILLERS</b>	2-pipe and 4-pipe (heat recovery) chillers, scroll and screw compressors, split system available, free cooling modules or stacked coils.
	<b>WATER-COOLED MODULAR CHILLERS</b>	4-pipe and 6-pipe (heat recovery) chillers, scroll and screw compressors, refrigerant base heat recovery (triple heat exchanger for independent water loops – no mixing).
	<b>LOW AMBIENT HIGH WATER TEMP HEAT PUMP BOILERS</b>	Hot water temperature up to 165 F, double wall heat exchanger for domestic hot water, cascading refrigeration circuit for high temperature water production.
 <a href="http://www.klimak.com">www.klimak.com</a>	<b>CUSTOM AIR HANDLING UNITS</b>	1"(R-8), 2.25"(R-17), 3"(R-22), and 4"(R-28) double-wall panels. Foam injected or fiberglass insulation. Galvanized, stainless steel, aluminum, fiberglass reinforced polyester (FRP) cabinet liners. Standard No-Thru-Metal construction. Enthalpy and sensible wheels, plate heat exchangers, energy recovery heat pipes. Full wash down construction. ECM plenum fan array, NEMA premium + VFD, TEFC with VFD. Chilled water, hot water, steam, DX heat pump. Airfoil aluminum dampers, humidification, UV lamps, airflow monitoring stations, sound attenuators, HEPA/ULPA filtration. Lab/medical grade. Up to 100,000 CFM.
 <a href="http://vtsgroup.com">vtsgroup.com</a>	<b>SEMI-CUSTOM MODULAR AHUS</b>	Standard 2" Double Wall Foam-Injected No-Thru-Metal Casing with 2400 hour salt spray rating. Indoor or Outdoor Construction. Standard 3-Week Lead Time. Ships as single piece, modular, or field erected. Energy recovery wheels and cross-flow heat exchangers. EC plenum fans. Horizontal or vertical configurations. DX Cooling/Heating, Chilled/Hot Water, SCR Electric Heat. VRF interoperability.
 <small>CRITICAL SYSTEMS' DEDICATED OUTDOOR AIR SYSTEM</small>	<b>ROOFTOP DOAS</b>	100% Outside Air Packaged DOAS Rooftop Units. Energy Recovery Wheels, modulating hot gas reheat, VFD inverter compressors, 90% AFUE furnaces. Factory remote monitoring. Three week lead time.



  <a href="http://ruskinrooftopsystems.com">ruskinrooftopsystems.com</a>	<b>ENERGY RECOVERY VENTILATORS</b>	<p>Single or Double Wall Construction. Indoor or outdoor installation. Up to 12,000 CFM. DX Cooling/Heating, Hot water/Chilled Water, Electric/Gas Heat w/10:1 modulation. Factory installed controls w/BACnet interface. VRF condensing unit interoperability.</p>
  <a href="http://dstamerica.com">dstamerica.com</a>	<b>DESICCANT DEHUMIDIFICATION</b>	<p>DST America is a subsidiary of DST Seibu Giken who is a world leader in desiccant dehumidification technology. Complement any indoor or outdoor DST dehumidifier with a fully modulating inverter driven Samsung heat pump condensing units to provide optimum temperature and humidity control for low dew point applications in any installation arrangement.</p>
  <a href="http://1-act.com">1-act.com</a>	<b>AIR-AIR HEAT PIPES</b>	<p>Pump assisted air-air energy recovery heat pipe. 70% thermal effectiveness. Winter and summer recovery. Fractional horsepower refrigerant pumps. Similar to glycol run-around without the pumping skid, controls, or boiler injection. Custom coil sizes and capacities. BACnet capable.</p>
	<b>WRAP AROUND HEAT PIPES</b>	<p>Single air tunnel design. Directly before and after active (DX/Chilled water) cooling coil. Capacity reduction. Custom coil sizes and capacities. BACnet capable.</p>
  <a href="http://criticalsystemsllc.com">criticalsystemsllc.com</a>	<b>AIR FILTRATION HOUSINGS</b>	<p>P&amp;G offers a wide variety of air filtration equipment including Bag-In/Bag-Out Containment Housings, HEPA and Carbon Side Access Housings, ASHRAE Housings, Room Side Replaceable Terminal Modules, HEPA Holding Frames, and Bubble Tight Isolation Dampers.</p>
  <a href="http://pghvac.us">pghvac.us</a>	<b>HYDRONIC FAN COILS INVERTER PTACS/VTACS</b>	<p>VRF-Style Hydronic Cassettes, Low Static, Medium Static, High Static, Vertical, Horizontal, Consoles, PTACs and VTACs with Inverter Compressors.</p>
  <a href="http://islandaire.com">islandaire.com</a>	<b>PTACS/ VTACS / WSHPS</b>	<p>PTACs/VTACs for New Construction or Replacements for Amana, Friedrich, GE, McQuay. Also provide direct fit replacement WSHPs for ClimateMaster, AAF, Singer, McQuay, ElectroHydronic.</p>
  <a href="http://reymsa.com">reymsa.com</a>	<b>COOLING TOWERS</b>	<p>Non-Corrosive Fiberglass Cooling Towers and Fluid Coolers. High-Efficiency Cooling Towers to compete with partial/full Stainless Steel. Custom Color Configurations and Logos available.</p>
  <a href="http://bosch-thermotechnology.us">bosch-thermotechnology.us</a>	<b>CONDENSING MODULAR BOILERS</b>	<p>High efficiency modular condensing boilers. 1,000 - 4,000 MBH per bank, up to 8,000 MBH per controller. Common flue, gas, and water headers. Stainless steel burner. 10:1 turndown. 96.8% thermal efficiency. 194°F max LWT. Internal circulator pumps. Condensate neutralization.</p>
  <a href="http://lynxspring.com">lynxspring.com</a>	<b>BMS/ATC</b>	<p>LynxSpring embraces open software and hardware using JENESys powered by the Niagra Framework, Onyx and Helix edge-to-enterprise products, and solutions used for Intelligent Buildings, Energy Management, CyberProtection, Equipment Control, and other specialty applications.</p>





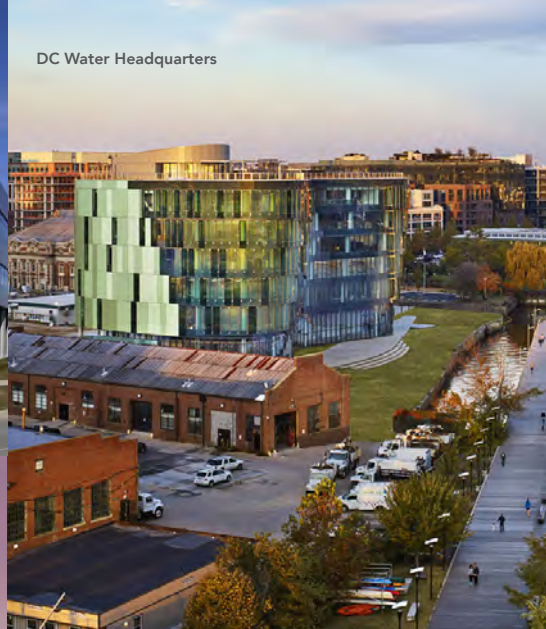
Providence Community  
Health Centers – Atwood



Axcelis Technologies



DC Water Headquarters



# Case Studies

The Works – Wentworth - Douglass Hospital



Taunton City Hall



660 North Capitol Street



Smithsonian Tropical Research Institute



The Kennedy Center



MedStar Georgetown University Hospital Surgical Pavilion



Walter Reed National Military Medical Center



Children's National Research &  
Innovation Campus at Walter Reed



Kaiser Permanente North Baltimore





## CRITICAL SYSTEMS SERVICES

### DESIGN & CONSTRUCTION

HVAC Engineering Services  
Code Compliance  
Application Expertise  
Procurement Flexibility

### SUSTAIN & RECOMMISSION

Evaluation of System Performance  
Recommissioning  
Space Reutilization Planning  
Contingency Planning

### OPERATE & MAINTAIN

Factory Certified Commissioning  
Preventative Maintenance  
Measurement & Verification  
24/7/365 Service Availability

### MODERNIZE

Evaluation of Leading Technologies  
Capital Planning  
Financial Analysis of System Options  
Retrofit and/or Replacement Services



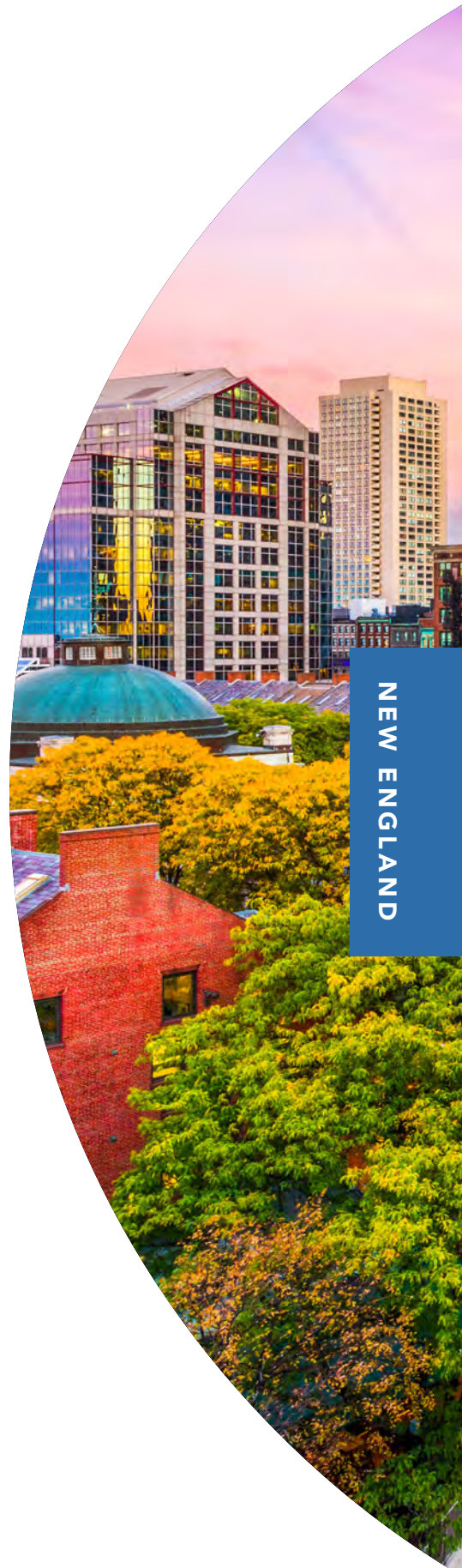
## ENGINEERING WITHOUT COMPROMISE

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