

Corporate Capabilities 2019



Sustainability. Energy. Infrastructure

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Customer Segment

Customer Needs We Provide

Contract Needs

- Single Award DB/DBB (\$1M - \$5M)
- Medium MACC DB/DBB (\$1M-\$15M)
- Responsiveness
- Safety
- Quality
- Best Value
- Geographic Diversity

Engineering-Construction Needs

- Design to Requirements/Budget
- Maintain Schedule
- Control Costs
- Minimize Change Orders
- No Lost Time Incidents/Fatalities

We Provide

- Project Team Approach
- Partnering with Clients
- System Engineering Based
- MS-Project™
- Primavera

Staffed to Meet Clients Needs

- Experienced Energy & Facilities Staff
- Experienced Construction Managers
- Ability to Rapidly Respond
- All Engineering Disciplines

High Quality

- National SBA Award of Excellence
- Client Endorsed
- NASA, MSFC Small Business Contractor of the Year, 2009

Our Customers Say-1

“[SEI]... always had the best interest first ahead of their own. Customer’s mission requirements were always number one.”

- Mitchell Hanson, Senior Project Manager
Whiteman Air Force Base

“I would rate [SEI] number one or two of over 100 contractors that have performed work for our organization over the last nine years.”

- Alain Flexer, Energy Manager
Marine Forces Reserve

“[SEI] overcame delays in obtaining access to the work site and was cooperative with scope changes... Construction was completed ahead of schedule with quality workmanship.”

- Gregory Jones, Contracting Officer
Air Force Contracting

“All projects have their ups and downs, but this has been the easiest and most professional group that I have been around in thirty years of design and construction.”

- Contracting Officer’s Representative
Maxwell Air Force Base

“[SEI] was excellent to work with, straight forward team player. I never felt that there was an adversarial nature to any of our encounters or discussions and that is a welcome change considering with some of our contractors it is the complete opposite.”

- Craig Hickle, PE, Senior Project Engineer/Manager
Offutt Air Force Base

Our Customers Say-2

“The government performed engineering cost analyses on all aspects of the task order. **The contractor was diligent in earning the government’s respect** by ensuring the government received the **best price available.**”

- ESSV TO 28 CPARS. USACE/Aberdeen Proving Grounds, MD Senior Project Manager

“The contractor **provided fantastic full time management** and onsite project management personnel for this project who worked well with Huntsville Center and the [Ft. Bragg] DPW personnel. Onsite personnel were always trained for the position and professional in job performance. The schedule had been extended for this project three different times due to various delays caused by the government or changes that were within scope. These delays were **handled in a professional manner** and with **very little negative impact** to the building end users.”

- ESSV TO 18 CPARS. USACE/Ft. Bragg, NC Senior Project Manager

“QC testing was provided **timely with little oversight required**. Contractor QC Program **was proactive** which kept down time for HVAC to buildings to a very minimum.” Contractor was proactive in offering alternatives when existing conditions interfered with installation. The **onsite PM did an impressive job** of coordinating many difficult scheduling issues and coordination with the customer and building users.

- ESSV TO 04 CPARS. USACE/Ft. Carson, CO Senior Project Manager

“**Great contractor, great service.** The contractor effectively managed all members their team, schedule, cost, and provided a quality product. Given what I know today about the Contractor’s ability to **execute what they promised** in their proposal, I definitely would award to them today given that I had a choice.

- ESSV TO 32 CPARS. USACE/Ft. Benning, GA Senior Project Manager

Contract Vehicle Segment

USAF SATOC

FA3002-08-D-0014

Small Business 8(a)
Design-Build
Facilities Sustainment, Renovation & Maintenance
Building Systems Upgrades
Energy Conservation Measures

GSA

00CORP (SINs C871-202; 871 1; 871 7; 871-4)
03FAC (SINs 811 005; 811 006; 003 01) **Pending**

USACE UMCS IV

W912DY-15-D-0011

Design-Build
Mechanical and Electrical Systems
Building Automation and Controls Systems
Advanced Utility Metering

Joint Ventures with 8(a) Tribal or Alaska Native Corporations

Design-Build
Energy & Technologies

Subcontractor

IAP/RMS
Honeywell
Pond Engineering



Worldwide Experience



Company Segment

Mission

SEI achieves operational success by satisfying customer needs, selecting growth opportunities, rewarding associates for performance, and meeting citizenship responsibilities for society.

Sustainability. *Energy.* *Infrastructure.*

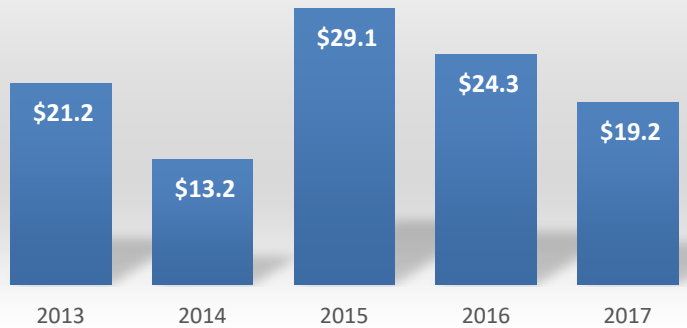
- Global Market Focused
- Superior Quality Performance
- Profit is Defined as Customer Satisfaction
 - Perform on Contracts
 - Meet Technical, Quality, Schedule, and Cost Requirements
 - Reduce Schedule Time
 - Reduce Cost Continuously
- Health & Safety
- Learn
- Organize

- Founded in 1996 in Huntsville, Alabama
- 51 Employees and 17 Engineers
- Small Disadvantaged Business
- \$50 Million Bonding Capacity (\$15 Million/Project)
- Completed 650+ Projects in 17 Countries
- Current Projects Total Value Exceed \$53.15M
- Joint Venture & Mentor to ANCs and Tribal 8(a)s
- Boeing Performance Excellence Award 2007
- Hispanic Business 500 Magazine Feature Every Year (2002- 2015)

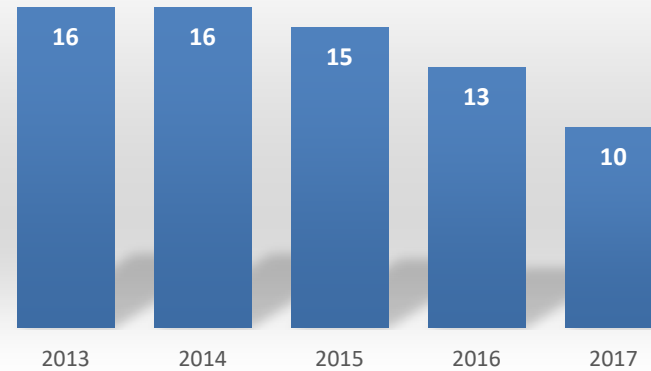


NASA MSFC Small Business
Prime Contractor of 2009

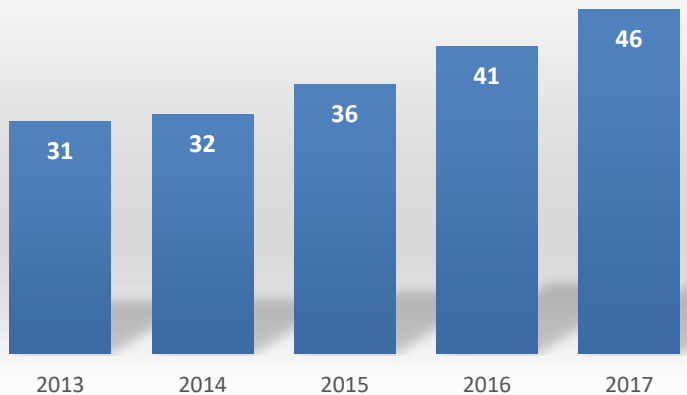
Sales
(\$ Millions)



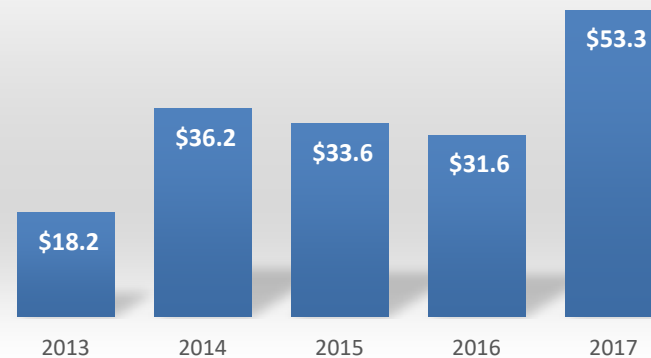
Contracts



Employees

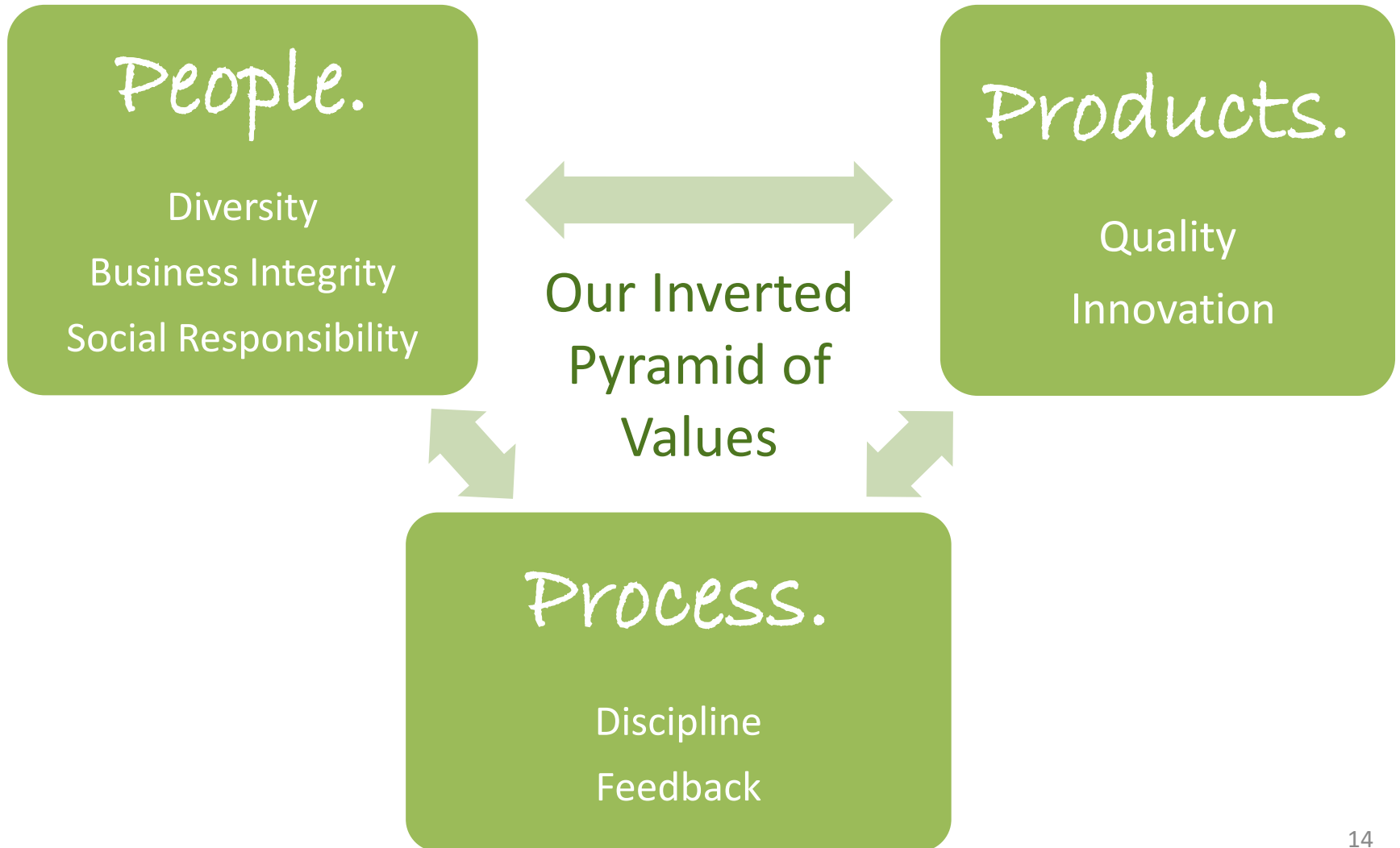


Backlog
(\$ Millions)

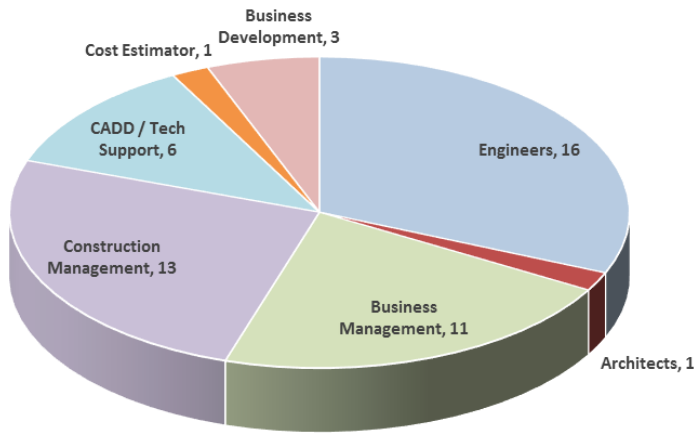


Our Culture

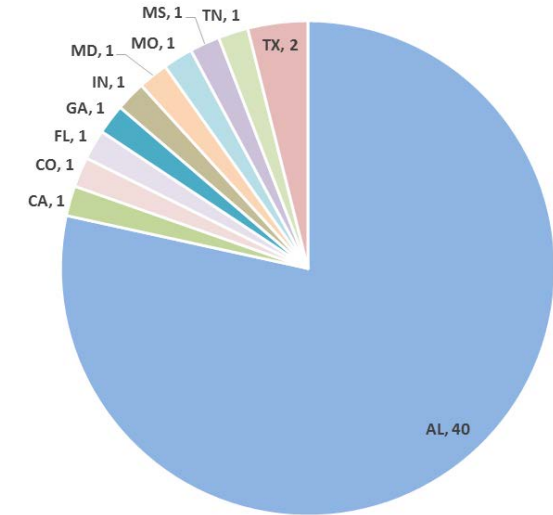
The SEI 3 P's



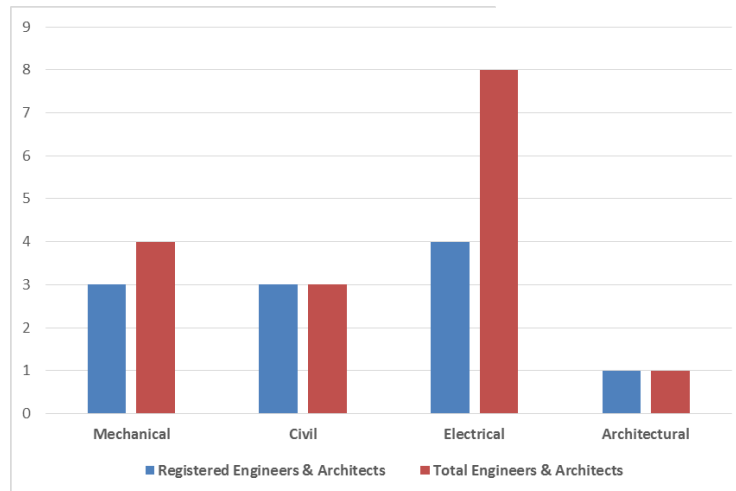
Discipline Total - 51



State Total - 51



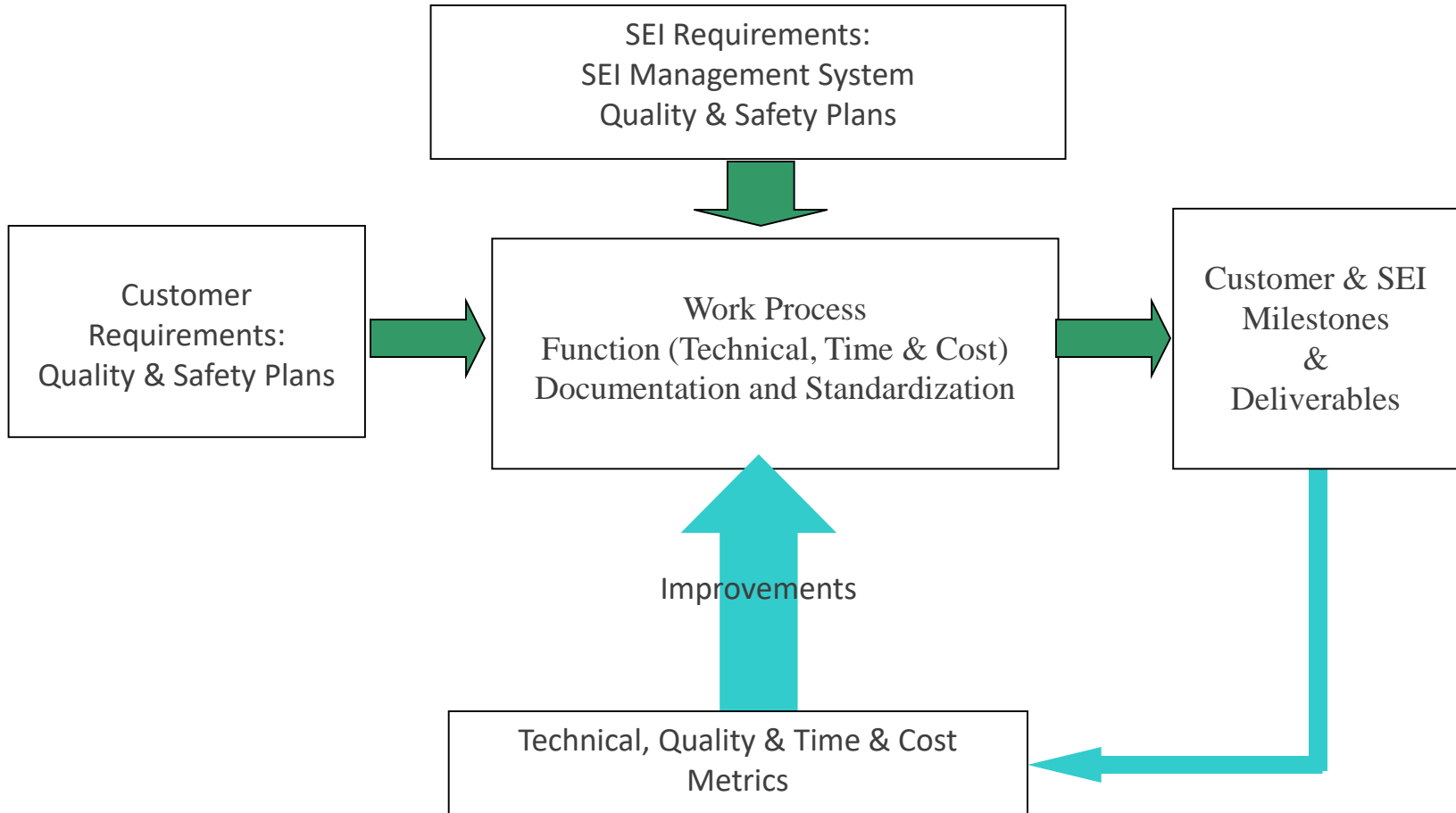
**Registered Engineers & Architects
 Total - 11**



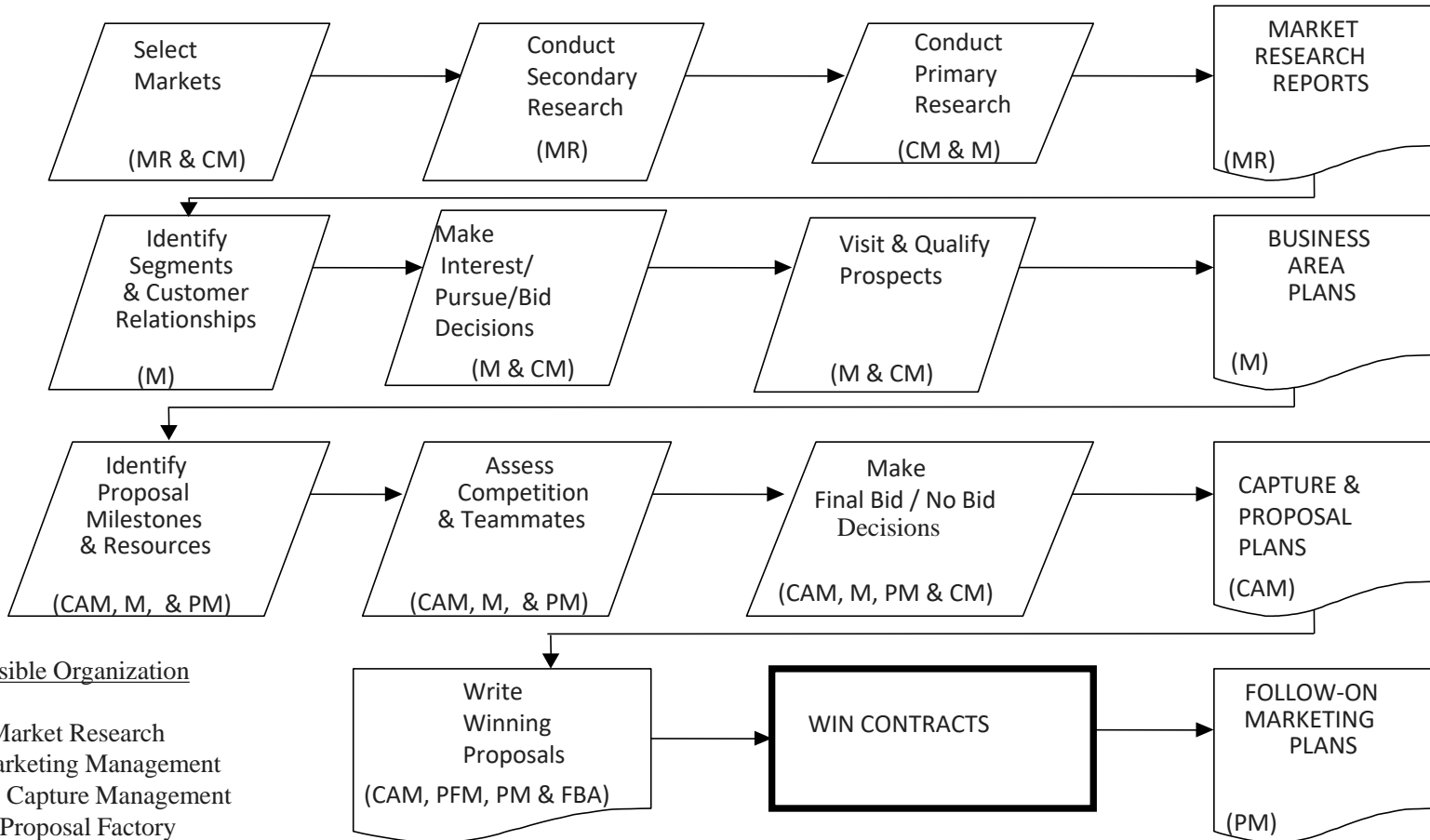
People Expertise and Certifications

Discipline	Registration/Certification
4 Mechanical Engineers	3 PE, 1 CEM, 1 CPD, 1 LEED [®]
3 Civil/Structural Engineers	3 PE
8 Electrical Engineers	4 PE, 3 CEM, 1 CEA
1 Architect	1 RA
2 Security/Electronics Engineers	1 RCDD
14 Construction & Cost Managers	1 PE

- Member, Association of Energy Engineers
- RCDD Registered Communications Distribution Designer
- USGBC LEED[®] Accreditation
- CEA Certified Energy Auditor
- CPD Certified Plumbing Designer
- CEM Certified Energy Manager



FEOTB Winning Contracts Process



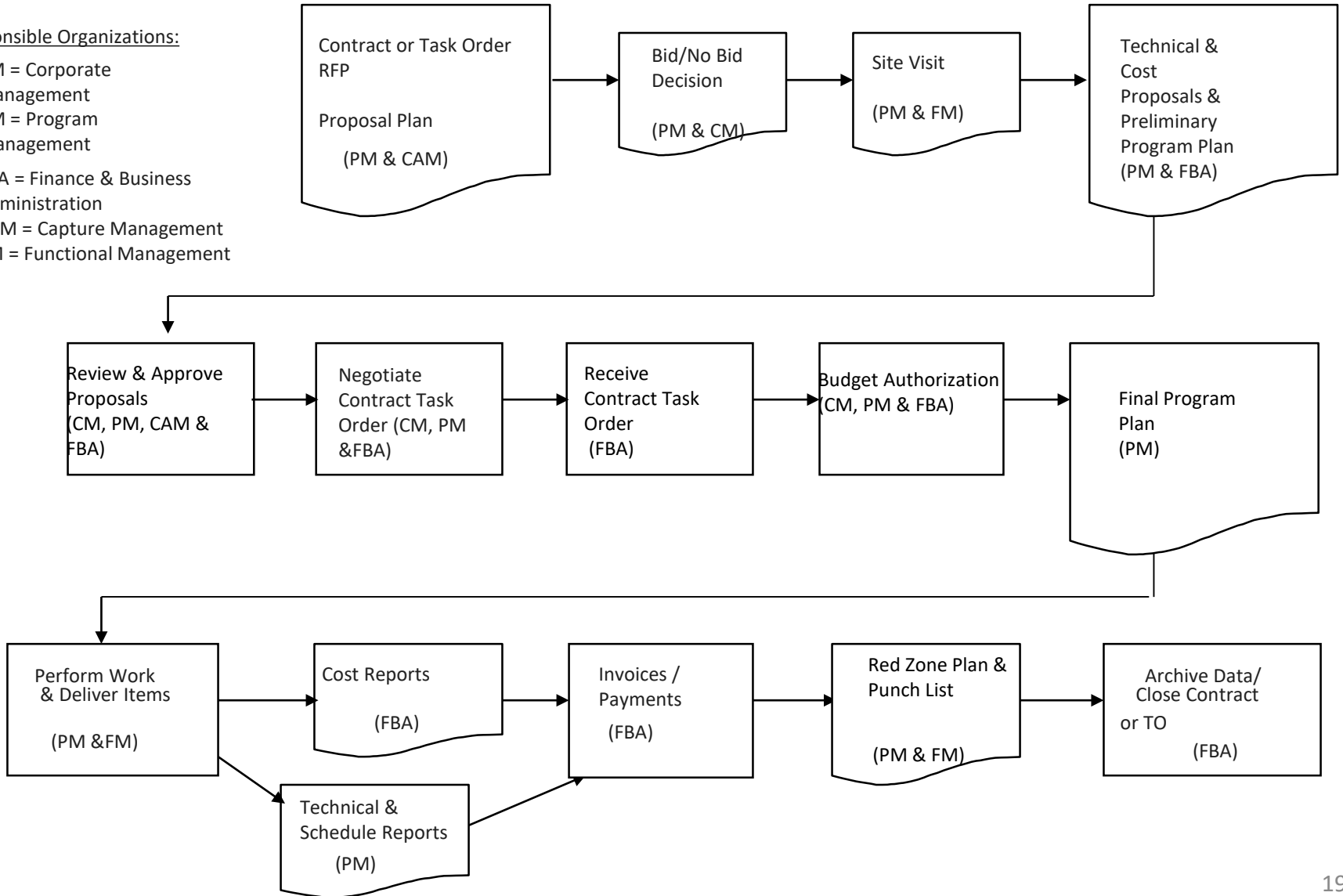
Responsible Organization

- MR = Market Research
- M = Marketing Management
- CAM = Capture Management
- PFM = Proposal Factory Management
- PM = Program Management
- CM = Corporate Management
- FBA = Finance & Business Administration

Program – Contract Execution Process

Responsible Organizations:

- CM = Corporate Management
- PM = Program Management
- FBA = Finance & Business Administration
- CAM = Capture Management
- FM = Functional Management



Sustainability

- Turnkey Sustainable Solutions
- Architecture Engineering & Design Services
- Design-Build & Design-Bid-Build Construction
- Construction Management & Inspection
- Operations & Maintenance
- Information Assurance & Cyber Security

Energy

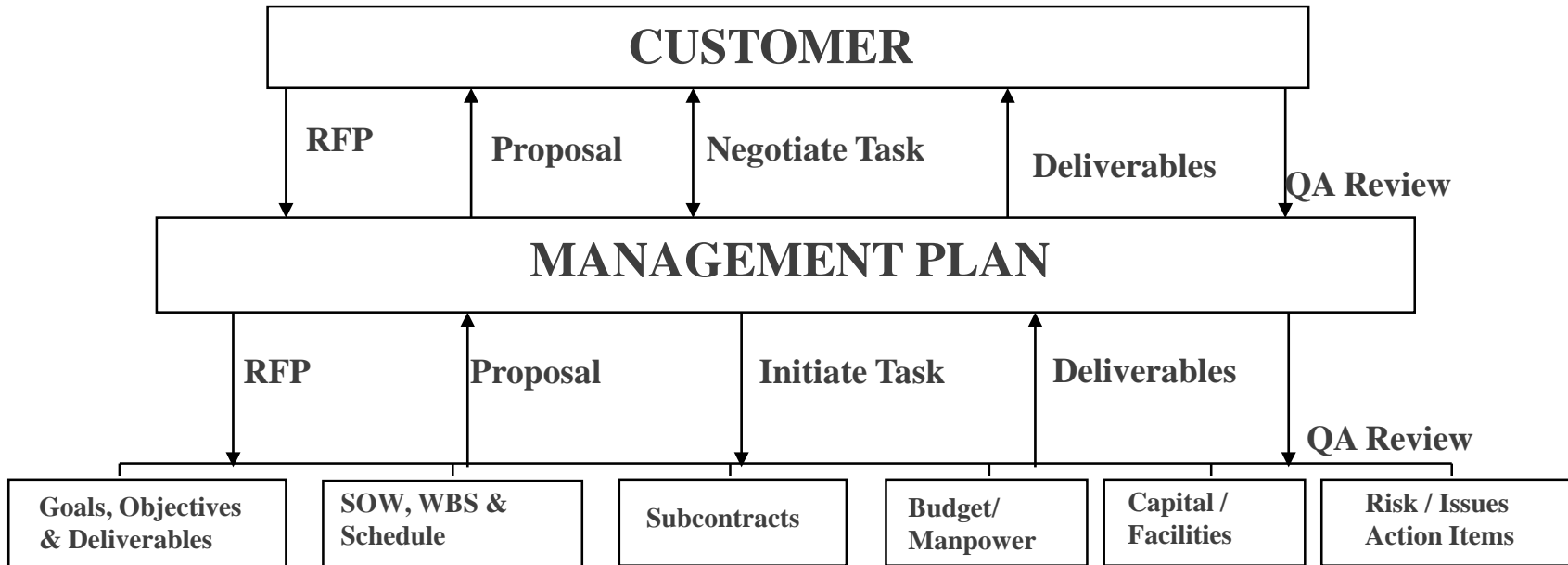
- Energy Services
- Control Systems Technologies
- HVAC
- Renewables
- Wind, Photovoltaic, Solar Thermal, Geothermal
- Power Generation & Distribution

Infrastructure

- Building Automation Systems
- Utility Monitoring & Controls Systems
- Fire Protection and Alarm Systems
- Electronic Security Systems
- Advanced Utility Metering & Monitoring

Management Segment

Management Principles



- First Who ... Then What ... Right People ... Right Places
- Innovative ... Proactive ... Responsive ... Disciplined
- Decentralized Structure ... Follows Strategy
- Information & Communications ... Team Manager
- Plan the Work ... Work the Plan ... Review the Plan ... Review the Work
- Fulfill People's Needs ... Mentor ... Objectives & Performance ... Not Personality/Charm

Program Management

- Planning
- Design to Requirements
- Scheduling
- Cost Control
- Lessons Learned

Construction Management

- Construction Plan Execution
- Cost Estimating
- Cost-Loaded Scheduling
- Procurement
- Safety
- Quality

Construction Management

Functions

Planning	Procurement	Site Management
Inspections	Troubleshooting	O&M Training
Retrofitting	Restoration	Modernization

Facilities

Military	Dams	Airfields
Industrial	Office/ Admin	Laboratories

Systems

Lighting	Power Generation	Power Distribution
Controls	Meters	Fire Alarm Systems

Services Business Lines Segment

-
- Requirements Definition
 - System & Major Component Specifications
 - End to End Integrated Design Development
 - Energy Audits
 - Energy Efficient System Trade Studies/Troubleshooting
 - Integration With Existing Equipment
 - Real Time Optimal Control
 - Project Commissioning/Retro-Commissioning
 - System Integration & Test
 - Measurement and Verification
 - Hardware/Software Integration & Test

-
- Architectural, Civil & Structural Engineering
 - Electrical, Mechanical & Controls Engineering
 - Design Plan
 - Energy Efficient Designs
 - Validation of New Technologies
 - Optimal Control Designs
 - LEED Design & Services
 - Applied R&D Engineering
 - Retrofit-Renovation Design
 - Renewable and Alternative Energy Systems
 - Energy Audits & Surveys
 - Measurement and Verification
 - System Commissioning/Retro-Commissioning

Marshall Space Flight Center and NASA Project

A-E & Design Services Include:

Design + Planning
Engineering Support
Construction Support
Cost Estimating
Facility Maintenance
Emergency Response
Contingency Engineering

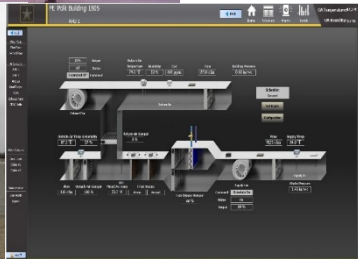
Awarded 2009 MSFC Small
Business Prime Contractor of the
Year for this Project



Engineering - Construction Services

Services

- Designs
- Reviews
- Assessments/Inspections
- Consulting
- Installation
- Demolition
- Renovation
- Construction
- Construction Management
- Cost Estimating
- Emergency Response



Projects

- Anti-Terrorist / Force Protection
- Security Gates & IDS
- Test & Training Ranges
- Office Buildings, Medical Facilities, Dorms, Utilities, HAZMAT Storage & SCIFs, Science Labs & Clean Rooms
- Airfields, Hangars, & Lighting Systems
- Electrical Power Generation, Distribution & Utilities Metering
- HVAC Systems Renovation & Repair
- Alternative Energy – Solar, Wind & Geothermal



Maintenance and Services (M&S) of Facilities and Equipment



Noble Training Center, Anniston, AL
 National Center for Health and Medical Education
 in Disasters and Terrorism

- 162,000 square feet & 20 acres of land
- Utilities Relocation
- Fleet Management
- Training Support
- Student Support
- Dormitory Management
- Student Transportation



West Point, NY.
 United States Military Academy.

- Installation's utilities metering systems.



Ft. AP Hill, VA.
 Regional Training Center

- Geothermal System
- HVAC Systems
- UMCS/DDC

Fort Meade, MD.
 The Nation's Center for
 Information, Intelligence
 and Cyber Operations.

- HVAC
- SCADA
- UMCS/DDC
- Electrical Power



Renewable - Alternative Energy Services

Energy Audits
LEED Services
Validation of New
Technologies
Applied Research &
Development Engineering
Energy Efficient Design
Retrofit-Repair-Renovation
Integration with Existing
Equipment
New Construction
Project Commissioning
Retro-Commissioning
Independent Evaluation
Measurement & Verification



Ft Bliss PV Canopies

**Ft. Sill Solar Thermal
Swimming Pool
Technology
Demonstration**



Contingency Operations

AFCAP Projects

Created infrastructure for
deployed forces in Afghanistan
and Kyrgyzstan

Power Generation and
Distribution

Airfield Lighting Design

Emergency Response for
Natural Disasters

Eglin and MacDill Featured



Emergency Response Disaster Relief

- Recovery from 2003 Hurricane Isabel, Langley AFB, VA
 - Evaluated numerous buildings for USAF
 - Site assessment
 - Specification preparation
 - Design analysis & drawing preparation
 - Cost estimation
 - Prepare construction documents
- Recovery for 2004 Hurricanes, Hurlburt Field, FL
 - Evaluated entire base for USAF
 - Site assessments & construction document preparation
 - General design analysis & cost estimates for numerous renovations caused by wind damage
 - Detailed design and repair
- Recovery for 2005 Hurricane Katrina, NASA Michoud Assembly Facility, LA
 - Evaluated entire facility for NASA
 - Site assessments & construction document preparation
 - Cost estimates for budget submission



Product Business Lines Segment

Sample Projects

NOAA- MATOC

Weather Station, AK
Hollings Marine Lab, SC

US Air Force / SR&M Contract (SATOC)

Holloman AFB (6), Whiteman AFB,
Westover ARB, Wright-Patterson AFB
(4), Maxwell AFB, Langley AFB, Offutt
AFB (2), Vandenberg AFB, Hill AFB

NAVFAC HVAC MACC

Miramar Marine Base, Camp
Pendleton

US Army / UMCS III & IV

Aberdeen Proving Ground, MD (23)
Ft. Bragg, NC (14), Ft. Polk, Ft. Benning,
Ft. Stewart, Ft. Leavenworth (2),
Ft. Carson, Ft. Campbell, West Point,
SPAWAR San Diego , Grissom ARB (2)



Restoration - Modernization



Barriers at Maxwell AFB



High Performance, Low Energy Lighting
US Air Force Museum, W-P AFB



Relays and Controls, Sqd Ops
Bldg, Westover ARB, MA



New Pumps, Valves APS Ops
Bldg, Westover ARB, MA

Customer: United States Air Force - SATOC
Location: US Air Force Installations
Worldwide

Program Details:

- Competitively won 44 task orders exceeding \$74.5M
- Design-Build and Construction only tasks
- Energy, security, infrastructure, building renovation and POL facilities tasks
- Tasks in AL, AZ, CA, FL, GA, IL, MA, MI, MO, MS, NE, NM, OH, OK, PA, SD, TN, TX, UT, and VA



Construction of PV Parking Canopy
Los Angeles AFB



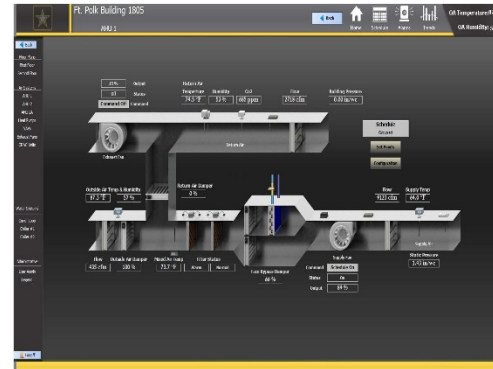
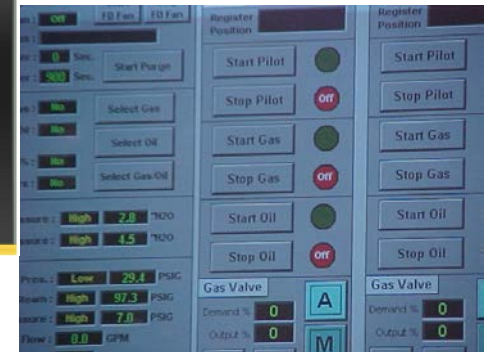
Site Prep, Child Development Ctr
Davis-Monthan AFB

- Utility Monitoring and Controls Systems
- Optimal Energy Management Controls
- Process and Facility Instrumentation
- Supervisory Control and Data Acquisition
- Programmable Logic Controllers
- Distributed Control Systems
- Single Loop Controllers
- Variable Speed Drives
- Relay Based Controllers
- Real Time Optimal Control

Well Pump Controls



Fire System Controls



Utility Monitoring & Controls Systems

HVAC and Controls Systems



Cooling Towers at APG, MD



Chiller at Ft. Carson, CO



Relays and Controls, Sqd Ops Bldg, Westover ARB, MA



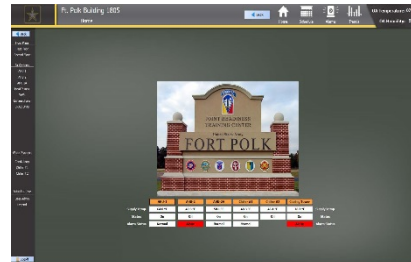
New Pumps, Valves APS Ops Bldg, Westover ARB, MA



New Boiler at APG, MD



Base Wide UMCS at Ft. Benning, GA

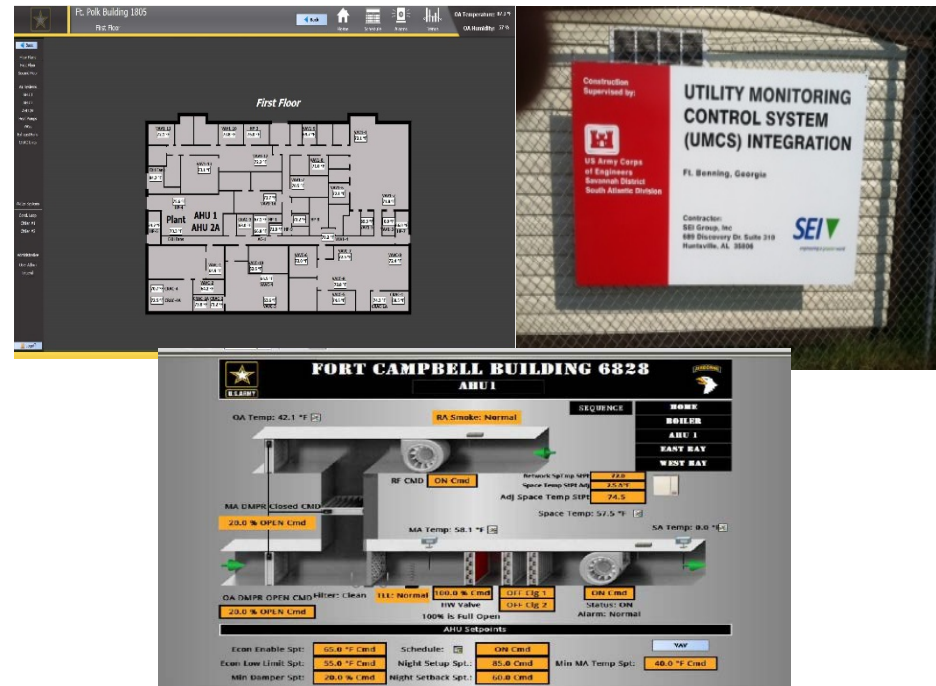


Upgrade DDC Controls at Ft. Polk, LA

- **Mechanical/HVAC Design & Install**
 - 48 Tasks for US Navy involving new technology worth \$15.8M over 4-1/2 years
 - 55+ Tasks for US Army and USAF involving HVAC Systems and UMCS Integration worth more than \$48M in past 6 years.
- **Controls**
 - Over 8 UMCS/DDC Upgrade Tasks worth \$ 14.0M in past 4 years.

- **Ft. Polk, LA.** Utility Monitoring and Control System (UMCS) Direct Digital Controls (DDC) for 26 buildings. Provided a Niagara AX-based Tridium framework utilizing Vykon branded JACE-600 controllers.
- **Ft. Campbell, KY.** Installed & integrated 180 new AX JACES at multiple facilities throughout Ft. Campbell.
- **Ft. Benning, GA.** Installed all hardware and software and accomplished system programming to integrate 116 buildings' existing controllers into the installation's Niagara^{AX} Server.
- **Presidio of Monterey, CA.** Installed new Direct Digital Control (DDC) equipment and controllers for 4 Buildings, to include the HQ's building.
- **Ft. McNair, Washington, DC.** Replaced the head end of the UMCS system and installed DDC components in the central HVAC plant.

- **88th USARC, Wabasha, Duluth & Brainerd, MN.** Procured and installed all new DDC hardware, software & accomplished system programming.
- **Ft. Bragg, NC.** Update controls on 17 hot water boilers and 19 chillers (multiple buildings).



Utility Monitoring and Control Systems

USACE- Huntsville Center

Includes:

- Electronic Security Systems (ESS)
- Heating, Ventilation, and Air Conditioning (HVAC) Controllers
- Direct Digital Control (DDC) Systems
- Supervisory Control and Data Acquisition (SCADA) Systems
- Fire Alarm Safety (FAS) Systems
- Advanced Metering

Implementation:

- Specialty computer-based monitoring, surveillance, and control systems
- Connection of sensors, surveillance equipment, and control devices to the local monitoring system via hardwiring
- Connection of local monitoring, surveillance, and control systems to

campus-wide supervisory systems via the secure IP network



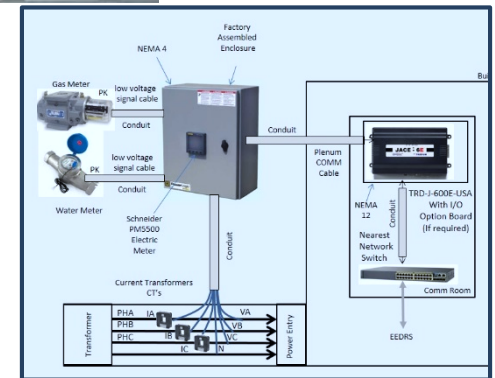
Examples:

Vendor specific camera systems, radar systems, intrusion detection systems, access control systems, annunciation systems, etc.

Installation and Integration of Smart Meters: 7 Task Orders worth \$6.152M in past 4 years.

- US Military Academy, West Point, NY (Installed electric, gas, water & steam meters in excess of 90 buildings)
- JB Langley-Eustis, VA. (92 AMRS compliant electric meters)
- Beale AFB, CA (49 AMRS compliant electric meters)
- Arnold AFB, TN (65 AMRS compliant meters)
- Hill AFB, UT (Installed AMRS compliant electric meters and gas meters in 16 bldgs.)
- USACE Civil Works Locations at New Orleans, LA; East Alton, IL; Warsaw, MO. (Electric meters)

- Ft. Campbell, KY (Install advanced electric, gas, water, and steam meters)



Projects

Vulnerability Assessments

179 Offices Across United States
And 2 US Territories

Vehicle Gate Modifications/ACP

Andrews AFB, Maxwell AFB, Fort
Campbell, Redstone Arsenal

Electronic Security/CCTV

Ft. Meade, JB Eustis-Langley, Ft. Sam
Houston, Grand Coulee Dam,
Jennings Randolph Dam, Jones Bluff
Dam, Millers Ferry Dam, Huntsville
Madison County Airport Authority

Fire Alarm and MNS Systems

Ft. Wainwright, Grissom ARB,
Holloman AFB, Adelphi Laboratory,
USARCs in Wabasha & Brainerd, MN



Installation of Fire Alarm and MNS Systems:

- Ft. Wainwright, AK
- Grissom ARB, IN
- Holloman AFB, NM
- Adelphi Laboratory, MD
- 88th USARC in Brainerd, MN



Electronic Security/CCTV

Ft. Meade, JB Eustis-Langley, Ft. Sam Houston, Grand Coulee Dam, Jennings Randolph Dam, Jones Bluff Dam, Millers Ferry Dam, Huntsville Madison County Airport Authority



Vulnerability Assessments

179 Offices Across United States
And 2 US Territories



Vehicle Gate Modifications/ACP

Andrews AFB, Maxwell AFB, Fort Campbell, Redstone Arsenal



Representative Projects

US Navy NAVFAC

- Point Mugu, CA; Monterey, CA; Pearl Harbor, HI; Portsmouth, ME; Newport, RI; Port Hueneme, CA

US Army Corps of Engineers

- Grissom ARB, IN; Ft. Bragg, NC; Ft. Campbell, KY; DLA Richmond, VA; AFRRRI Bethesda, MD

Air Force Civil Engineering Center

- Wright-Patterson AFB, OH



Projects

USAF – Langley AFB, VA

- ACC HQ's Campus
- Two Bore Fields
- 528 Total Wells @ 400' Deep
- Approx. 880 Tons of Cooling
- \$6.706M

US Army – Ft. Hunter Liggett, CA

- Family Housing Duplex
- 8 Total Wells up to 500' Deep
- \$394K

US Army – Iowa Army Ammunition Plant

- Administrative Building
- Remove steam requirement from building by modifying HVAC, connecting to new geothermal field.
- \$1.294M



Electrical Power Systems



Electrical Power Design - Build ... Over 35 Tasks

- 1250KVA Substation, Ali Al Salem AB, Kuwait – Construction Value: \$1,000,000
- Aircraft Parking Ramp Electrical, Al Dhafra AB, UAE and Al Udeid AB, Qatar - Construction Value \$29,000,000
- 7 MW Power Plant Design and Build, Iraq Construction Value: \$6,900,000
- Special Operations Command (SOCOM) Data Center Upgrades, MacDill AFB, FL
- Redundant Electrical System Study – Missile Defense Agency (MDA) HQ's; Ft. Belvoir, VA
- Replace Backup Generator at Ft. Leavenworth, KS

Electrical Power Systems

- ✓ Camp Falcon 7 MW Power Plant
 - Complete Diesel Fueled Generation
- ✓ High-Security Industrial Facilities
 - 1,000,000 Sq Ft High-Bay Lighting
 - Electrical Panels & Wiring
- ✓ Electrical Substation– 1250KVA Substation
 - 3-167KVA UPS 1,000KW Emergency Generator
- ✓ Electrical & Lightning Protection System, 3 Pad-Mounted Substations
- ✓ Primary and Secondary Distribution System for 5,000 Man Military Camp
- ✓ Power Plant Improvements– Cable and Fuel Troughs
- ✓ Modular Office Electric Power Maintenance Shelter Water Line & Power



Energy Products



Roof Mounted Crystalline PV
Ft. Benning, GA & Tampa, FL



Geothermal
Langley AFB, VA & Ft. Hunter Liggett, CA



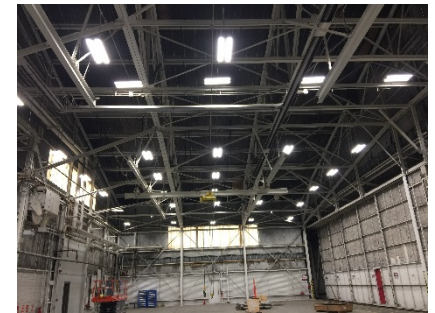
Wind Turbines
Great Lakes, IL; Amarillo, TX, and
Battle Creek, MI



PV Parking Canopies
LAAFB, CA & Ft. Bliss, TX



LED Parking Lot Lighting
NBVC Port Hueneme, CA



High Bay Hanger Lighting
Point Mugu, CA & Ft. Bragg, NC

- Clean Coal to Liquid Fuels
- Waste to Energy
- Geothermal Energy
- Solar Thermal Energy
- Geothermal Heat Pump Systems
- Waste Fuels Recycling
- Integrated Energy Technologies Systems

Building Integrated Photovoltaics
Turbocor Compressor Chiller Retrofit
LED Parking Lot Lighting
Roof Mounted Crystalline PV
External Insulation Finish Systems
Microturbines / CHP
Destratification Fans
Window Films
Induction Lighting
CO₂ Control
Zinc Bromide Flow Battery
Desuperheaters
Occupancy HVAC Control
Building Pressure Control
Optimization
Aerosol Duct Sealant
Solar Air Conditioning
Condensing Boilers
Wind Turbines





POL Systems ... USAF SATOC ...Over 17 Tasks Exceeding \$40.3M in Value

- Demolition of Jet Fuel Complex at Lambert IAP/ANGB, MO
- Repair Above Ground Fuel Storage Tanks IAW API 653 and API 579 Standards
- Repair Fuel Stands and POL Facilities to include:
 - Construct New Canopies
 - Repair Grounding & Lightning Protection Systems
 - Repair Electrical Systems to NFPA Class 1/Div1 Standards,
 - Correct Drainage and Secondary Containment Deficiencies
 - Repair/Replace Fuel Distribution Piping
 - Install New Fuel Dispensing Control Systems

Prime Contract with Naval Facilities Engineering Service Center



Before



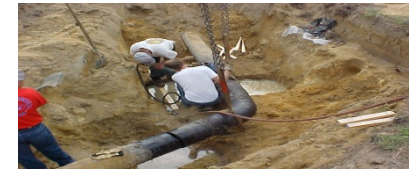
After



- Demolition-Remediation-Renewal of Fueling Station...Point Mugu NAWS, CA
 - Disposition...Gasoline & Diesel Fuel Pumps and Underground Pipe...Underground Gasoline Tank...Valves on Tank Berms
 - Remediation...20,000 Cubic Foot Area
 - Installation...Dual Hose Fuel Pumps...Containment Pan... Double Walled Pipe... Fuel Farm Pumps...Vapor Recovery System...Under Ground Piping Leak Detection System
- Maintenance, Service, & Emergency Repairs for 14 Army Sites in Republic of Korea
 - MOGAS Stations & “Hot Point” Aircraft Refueling Facilities
 - Maintenance and Minor Repairs

POL Tanks & Pipelines

Prime Contract with Naval Facilities Engineering Service Center



- Program Management & Design-Build ... IN-HOUSE
- Over 20 miles of Pipeline Inspection & Repair, NAS Guam
- Repair / Alteration of Large Bore Pipelines (6 miles) at Seymour Johnson AFB, NC...Indian Head NAS, MD... Patuxent River NAS, MD...El Centro NAF, CA
- API 650 Tank Retrofitting at Point Mugu NAWS, CA
- Accommodated Increased Refueling Capacity & Emergencies
- Sales...\$986,700...2000 to 2002



Rocket Engine Test Stands
Cryogenics
High Pressure Systems

Communications and ADP Facilities
UPS and Critical Power Distribution
Redundant HVAC Systems



Marshall Space Flight Center, Alabama

Approximately 300 Buildings and Structures

4.2 Million Gross Square Feet

1,841 Acres



Space Utilization
Master Planning
Cost Estimating
Energy Management
Interior Design
Civil/Surveying
Systems Drawings



Mission Essential Infrastructure
Security and Facility Protection
Utility Control Systems

**Utilities and Installation of
Special Test Equipment**
Clean Room Designs
Feasibility Studies



Facilities Operations & Maintenance

- **FEMA National Emergency Training Center**
 - McClellan, AL (2003-2005)
 - \$3M for facility operations ... transportation services ... maintenance ... student support services.
- **Corps of Engineers Gulf Region Division (2005-2006)**
 - \$2M for operations ... repair & maintenance of 7 MW power plant ... substations ... distribution systems
 - Camp Falcon, Baghdad, Iraq
- **Corps of Engineers, Huntsville**
 - Various medical locations across US (2005 – 2006)
 - \$3M for operations ... maintenance and engineering ... repair and upgrades.
 - Various locations for HVAC and Utility Metering Systems (2016 – Current)
 - \$2.54 M ceiling (to date) for preventive maintenance ... corrective maintenance



Corps of Engineers, Mobile (2003-2004)

- \$15M ceiling for O&M ... support repair ... incidental demolition and construction ... renovations
- North and central Mississippi & Alabama



Facilities Maintenance		Management Responsibilities (SOW C 9.0)	
Allocation of Resources		HVAC and Refrigeration (C-10.0)	
Categories of Labor		Painting, Finishing and Glazing (C-11.0)	
Chief	1.0	Elevator Maintenance (C-12.0)	
HVAC	25.0	Electrical Utilities (C-13.0)	
Architectural	25.0	Maintenance & Repair of Appliances and Equipment (C-14.0 & 15.0)	
Apprentice Helper	1.0	Painting (SOW C-16.0)	
Plumber	1.0	Roofing/Cladding Maintenance (C-18.0)	
Locksmith	1.0	Fire Protection and Safety (C-19.0)	
Carpenter	1.0	Hazard & Pest Control (C-20.0)	
Gen. Maint	1.0	Preventive Maintenance (C-21.0)	
Gen. Maint/Helper	1.0		
Welder/Welding	1.0		
Total Staff in Dept	13.0		
Subcontractors:			
None			

Technologies

Energy Solutions

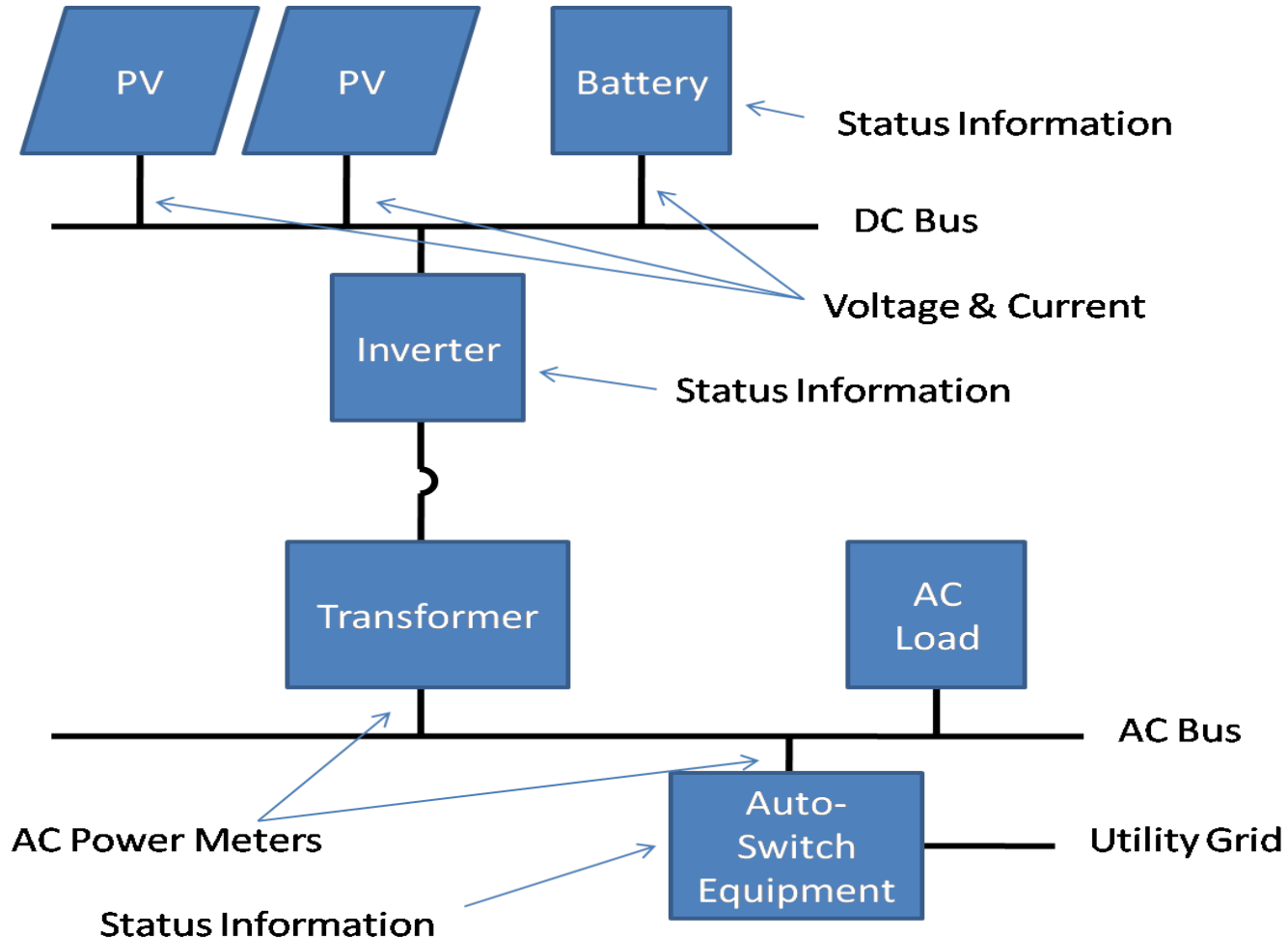
Energy Services:

- 3rd Party Consulting
- Life-Cycle Project Planning
- Energy Audits
- Validation of New Technologies
- Applied R&D Engineering
- Energy Efficient Design
- Retrofit – Repair – Renovation
- Integration with Existing Equipment
- New Construction
- Project Commissioning
- Retro-Commissioning
- LEED Services
- Independent Evaluation
- Measurement & Verification
- Reporting & Lessons Learned

Energy Technologies:

- Building Integrated Photovoltaics (BIPV)
- Turbocor Compressor Chiller Retrofit
- LED Parking Lot Lighting
- Roof Mounted Crystalline PV
- Cool roofs
- External Insulation Finish Systems
- Microturbines / CHP
- De-stratification fans
- Window Films
- Induction Lighting
- CO2 control
- Zinc Bromide Flow Battery
- Desuperheaters
- Occupancy HVAC control
- Building pressure control optimization
- Aerosol Duct Sealant
- Solar Air Conditioning
- Condensing Boilers

Energy Renewables R&D



System Components

- 18 kW Copper Indium Gallium Selenide (CIGS) Photovoltaic (PV) – 200 panels
- 17 kW Amorphous Silicon/Microcrystalline PV – 132 panels
- Zinc Bromide Flow Technology Battery – 50kWh
- Auto-Switching Equipment Grid Connection
- New LED and Induction Lighting Fixtures Load
- Monitoring System

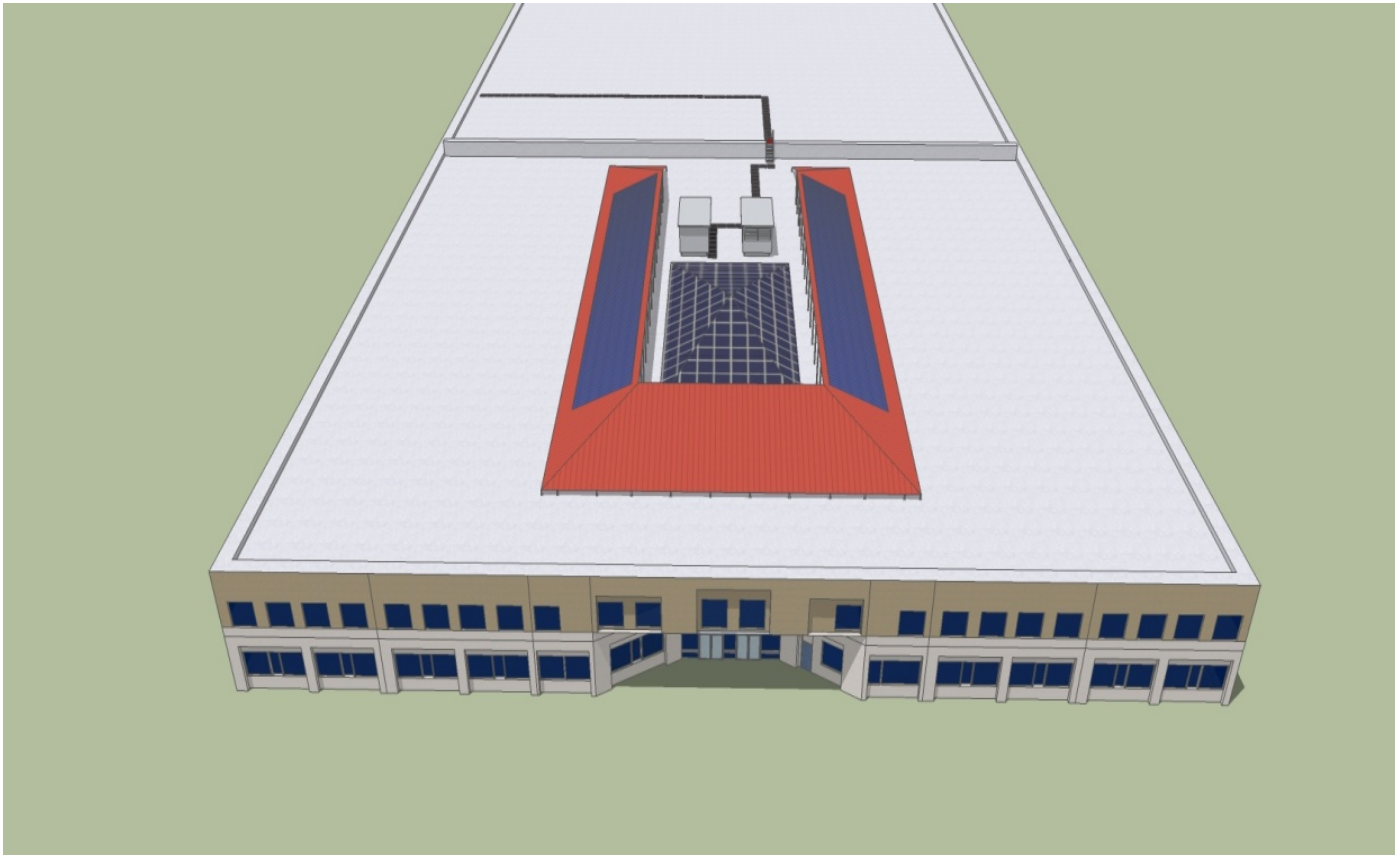
Modular Battery Technology

Zinc Energy Storage System (ZESS)



- 50kWh Regenerative Fuel Cell (RFC) system
- Chargeable from a variety of power sources
- Differing charge rates
- Fast re-charge time (3-4 hours)
- Discharge at continuous rates up to 300A
- Totally self-contained
- Runs independently from the grid
- Fully automated control system

Roof Mounted PV Technology



PV Mounted on existing Roof Facade to Avoid Roof Penetrations

Solar Partnership and ESTCP Research & Development

- Solar Cogeneration Technology Manufacturer Co-Performer
- ESTCP Proposal to develop the SEI SOLVE
 - Our new solar software solution currently in development



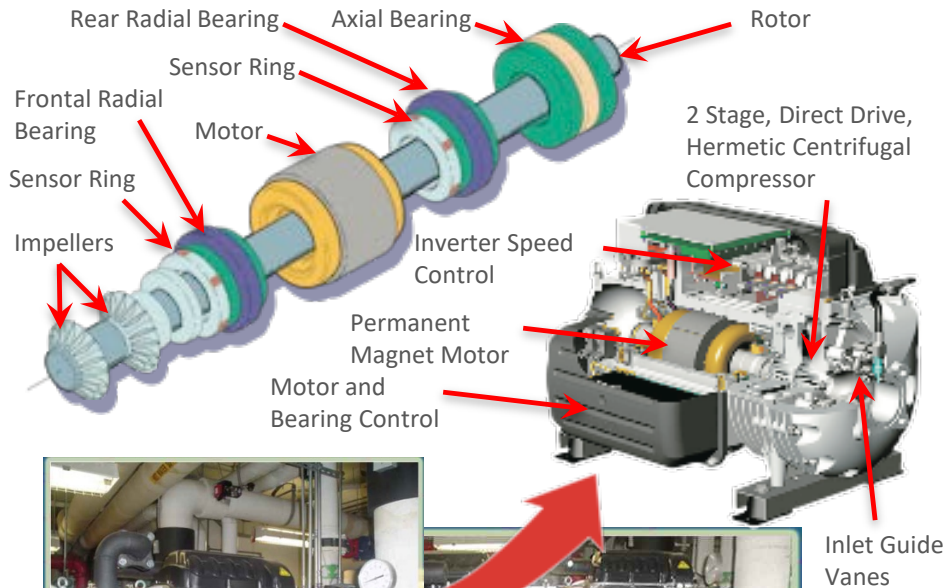
Sonoma Winery Solar Cogeneration Project

The SEI- SOLVE

Solar. Software. Solution.

Magnetic Bearing Chiller Compressor

Magnetic Bearing System



Customer: United States Navy – NAVFAC ESC

Location: NAS Jacksonville, FL – Bldg 926

Project Details:

- Oil free chiller compressor
- Magnetic bearings
- 60 to 90 ton capacity
- Retrofit to existing York chiller
- 286,000 kWh annual energy savings (41%)
- Reduced operating noise levels
- Operates as low as 0.3 kW/ton

Magnetic Bearing Chiller Compressor

Scope of Work:

- Site assessment
- Risks and issues reports
- Project plan development
- Designs
- Procurement and installation of chiller for Rhode Island
- Procurement and retrofit of chiller in California
- Installation of selected monitoring system components
- Minimal disruption to facility
- Commissioning
- O&M training



New Chiller with Magnetic Bearing
Compressor at Newport



Compressor Retrofit, San
Diego – Three Compressors



Compressor Retrofit
at San Diego – Two Compressors

Scope of Work:

- Diesel fired Microturbine
- Electric generator
- Heat exchanger
- Controls
- Emissions test
- Data collection equipment
- Boiler feed water tie-in



Capstone Microturbine

Indirect Evaporative Cooler



Occupancy HVAC Control



Small Destratification Fans



Aerosol Duct Sealant



LED Parking Lot Lighting

Customer: United States Navy –
NAVFAC ESC

Location: NBVC Port Hueneme, CA –
Bldg 1100

Project Details:

- 23 Existing 400W high pressure sodium fixtures
- Replaced with 19 new 156W LED fixtures
- > 60% measured and validated reduction in energy usage
- Non-existent to minimal lumen depreciation
- 150,000 hour lamp life
- Designed to IESNA standards



Building Integrated Photovoltaics



Customer: United States Navy – NAVFAC ESC

Location: NAS Patuxent River, Maryland – Bldg 515

Project Details:

- Peak power output of 27 KWp DC STC
- Expected energy output of 31,560 kWh annually
- Building integrated PV meeting Cool Roof rating standards
 - Overlay of existing roof without exceeding roof loading units
- Panel type
 - Amorphous silicon panels enable maximum kilowatt-hour output, producing electricity using a wider spectrum of light than traditional
- Remote on-line monitoring of energy production and usage in real-time

Crystalline Photovoltaics



Customer: United States Navy – NAVFAC
ESC

Location: NAS Lenmore, California- Bldg
50

Project Details:

- Peak power output of 14.4 kWp DC STC
- 72 - 200 Watt high efficiency solar modules
- Expected energy output of 26,280 kWh Annually
- Stainless & galvanized custom mounting
- Without exceeding roof loading limits
- Monitoring and validation of energy output
- Reduction of over 800,000 lbs. CO₂ during 20 year life of product