

LEADING THE WAY **CampusEnergy**2022

Feb. 15-18 | Westin Boston Seaport District Hotel | Boston, Mass.





Central Utility Plant Replacement Project P3 at Fresno State University

Stephen Hill: Key Banc Capital Markets

Jeff Schaller: NORESKO

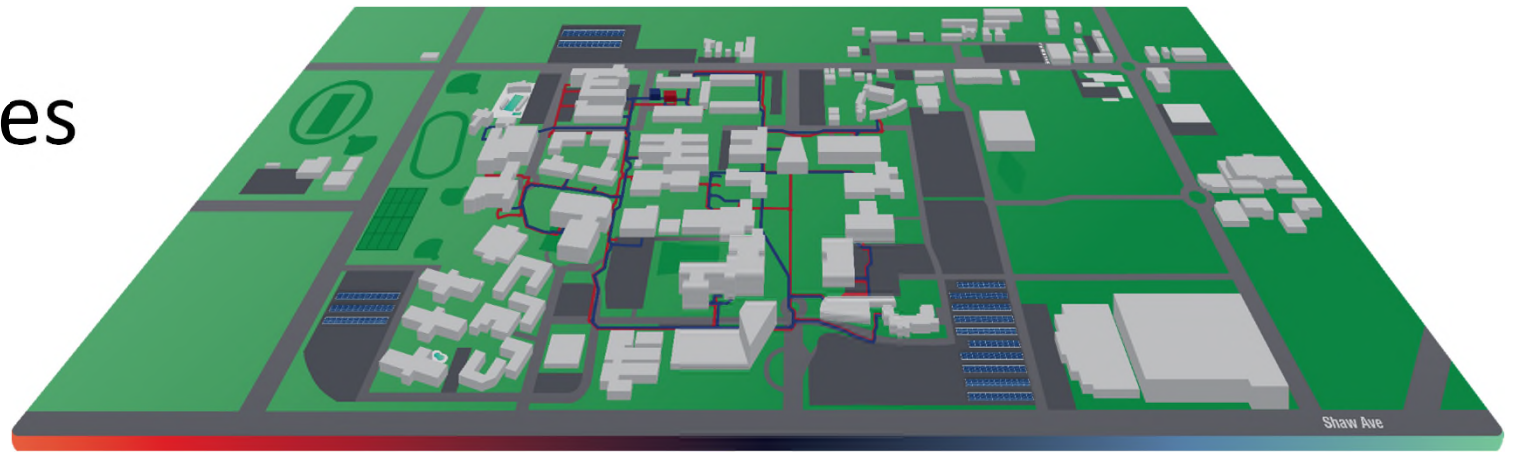
Doug Stingelin: GLHN

Emre Erkovan: Meridiam



University Challenges

- Infrastructure Needs
- Climate Action Plan Commitments
- Commitment to Maintain Fresno State Operations
- Budgetary Challenges



Infrastructure Needs



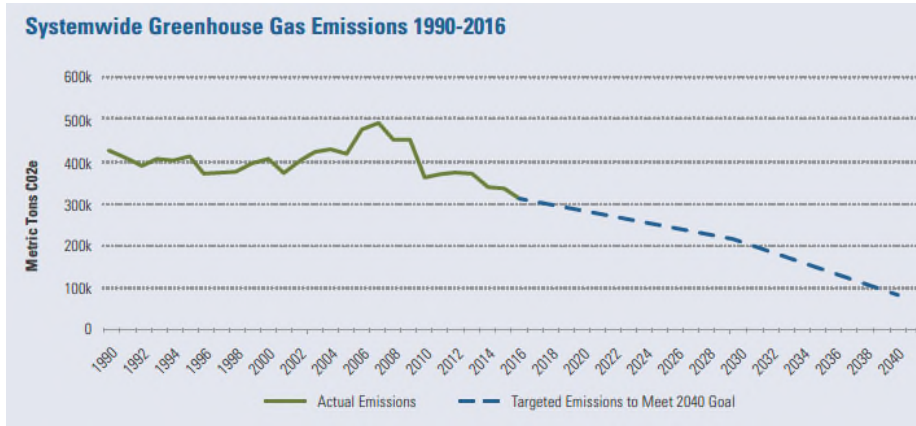
Defined capacity requirements for central utility plant (CUP) service

Availability commitments through key performance indicators (KPIs)

Assignment of maintenance and life cycle replacements

Required handback conditions for major assets

Climate Action Plan Commitments



Quantitative Goals

- Aggressive performance deductions based on plant efficiency targets
- Scoring methodology of RFP commitment to Guaranteed Energy Savings similar to the Availability Payment scoring mechanism



Qualitative Goals

- Required Central Utility Plant Replacement Opportunity Program to support and invest in academic programs, scholarships, local community benefits:
 - mentor-protégé programs
 - apprenticeship programs
 - workforce development

Commitment to University Operations

- Project agreement includes defined charts of university operators' responsibilities versus Developer responsibilities
- Fresno State continues to provide daily operation, fixed costs for staffing
- Fresno State is not at risk for equipment failures, life cycle replacements and other potential unforeseen costs
- Fresno State retains maintenance of like-for-like upgrades in buildings: lighting, HVAC controls, water heaters
- Performance deductions on service responsiveness ensure performance of Developer



Budgetary Challenges

Budgetary Challenges

- Budgetary uncertainty caused by increased and continuous repair expenditure for failing campus utility system elements beyond useful life
- Unavailability of CSU System budget required to fund the Fresno State project capital expenditure

Procurement Strategy

- Scoring criteria: 50% technical, 50% net present value of Availability Payments
 - Within the technical score, 15% was allocated to Guaranteed Savings proposed
- Evaluation criteria combined the traditional long-term value-for-money approach of DBFM P3s with guaranteed energy savings, therefore ensuring the lowest combination of availability payments and utility bills to the university

Project Summary

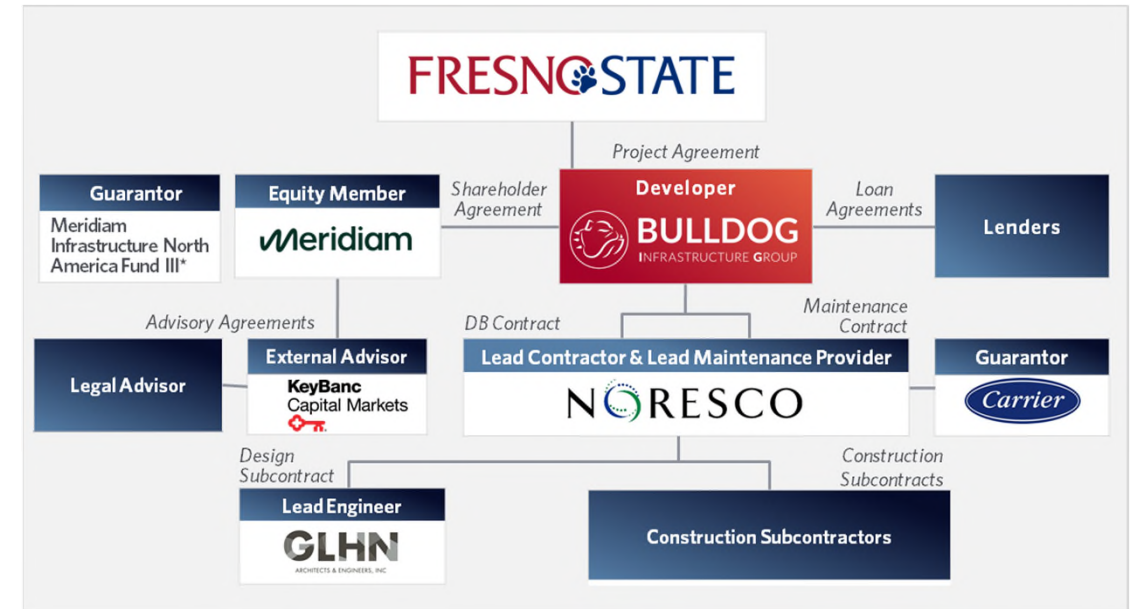
Project Cost: \$170 Million

Contract Type: Availability Payment P3

Contract Term: 33 Years

Primary University Objectives:

- New Central Utility Plant & Distribution System
- Cost Stabilization
- Reliable HVAC Delivery
- Reduced Energy Import and Carbon Footprint
- Long Term Maintenance Plan



Project Summary

Project Includes:

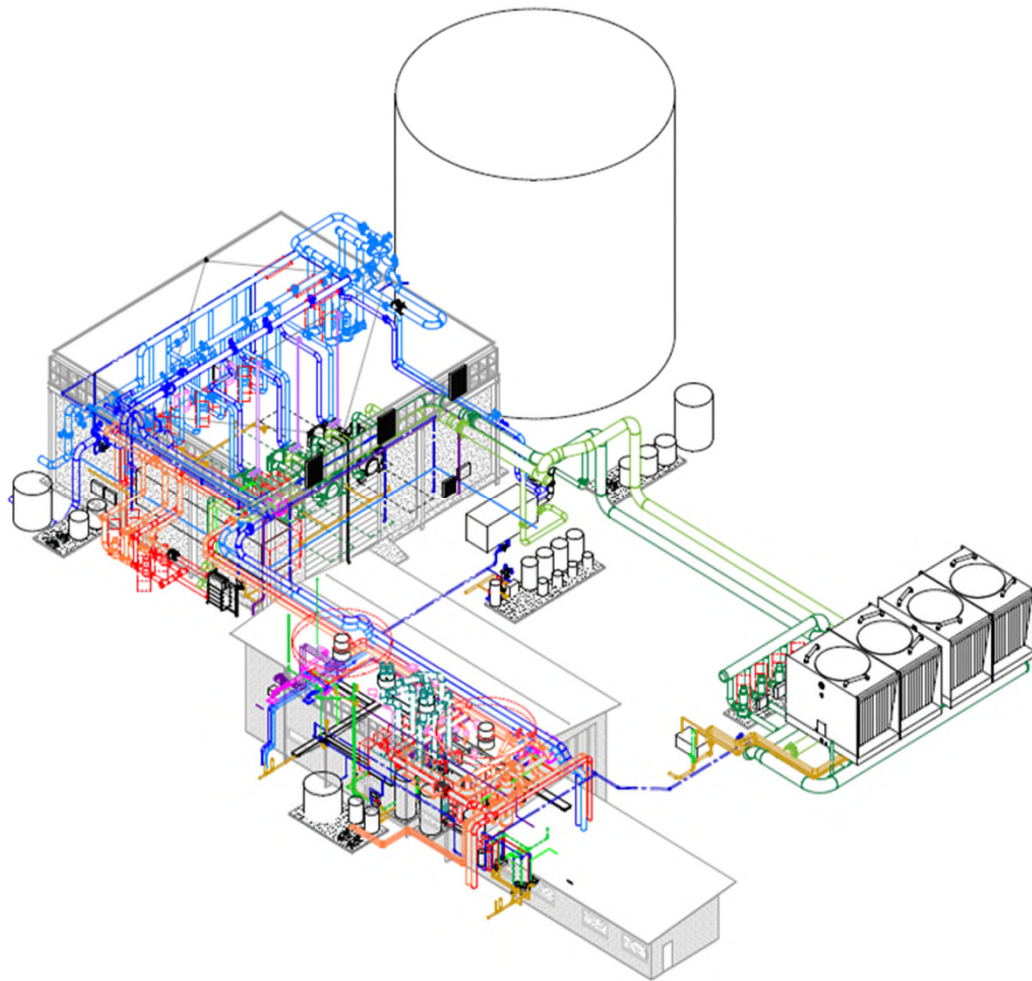
- New Central Utility Plant & Distribution System
- 5 MW of Renewable Generation with Carport PV
- \$20 Million of Building Energy Efficiency Measures
- 33% Reduction in Campus Energy Consumption
- Redundancy, Serviceability Built into the Design
- Funded Life Cycle Equipment Renewal Plan
- 30 Years of Maintenance Services

**Central Utility
Plant**

**Utility
Distribution**

**Renewables and
Energy
Conservation
Measures**

Infrastructure Needs – Central Utility Plant



3,700 tons of cooling capacity

46,100 MBH of total heating capacity

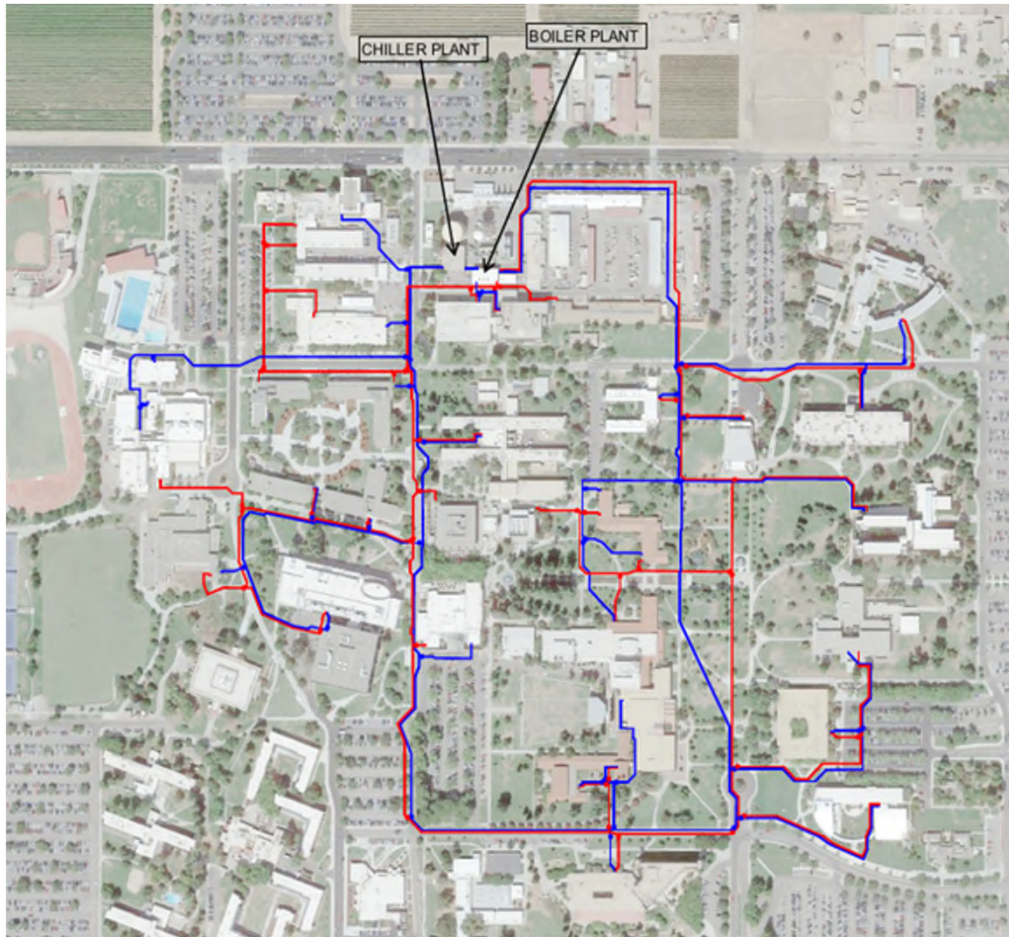
700-ton modular heat recovery chiller

Upgrade and reuse CUP buildings, thermal energy storage (TES) and cooling towers to increase sustainability and reduce cost

Detailed life cycle replacement plan

Overall coefficient of performance (COP) greater than 5.0, on-site CUP energy use will decrease by 47%

Infrastructure Needs – Distribution Piping



- 30,000 linear feet of new heating hot water (HHW) and chilled hot water (CHW) piping
- Optimized routing around campus to reduce disruptions
- Isolation valves system-wide provide ease of maintenance
- Detailed restoration plan protects campus features variable volume primary pumping for energy savings
- New HHW distribution piping with integral leak-detection system monitors leaks within 3 feet to expedite repair

Commitment to University Operations

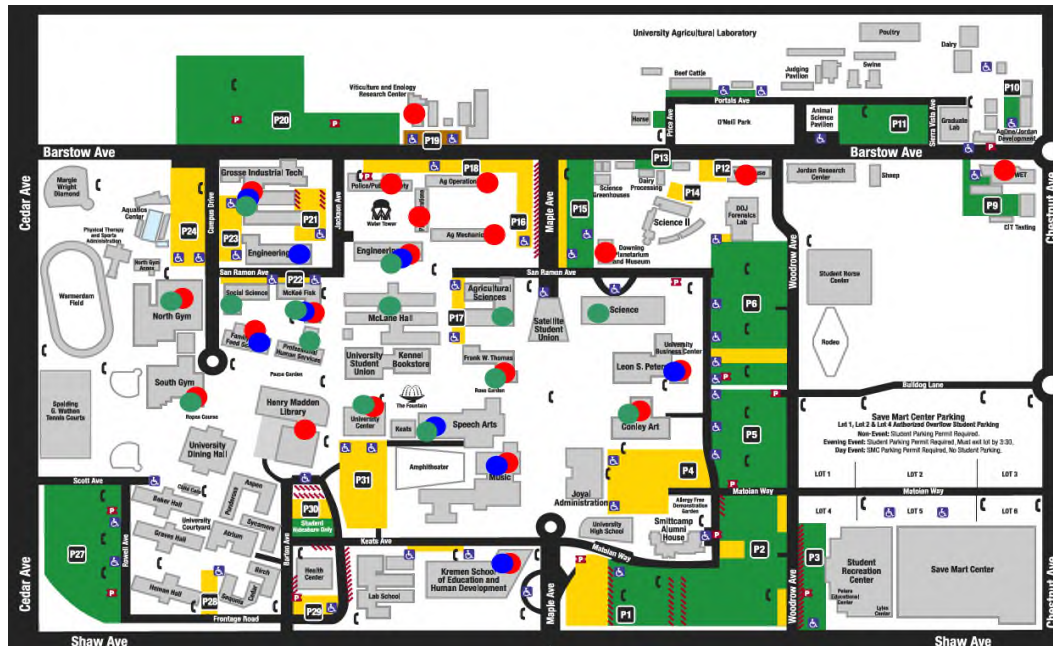
- Robust integrated design build and services team
- Collaboration with university during RFP to improve understanding of operations versus maintenance
- Planned collaboration with university operators during Services Term to maintain high performance of campus systems
- Integrated technology including computerized maintenance management system energy management system that work seamlessly with the university's existing systems

Collaborative development of Service Plans will take place during the design/build phase:

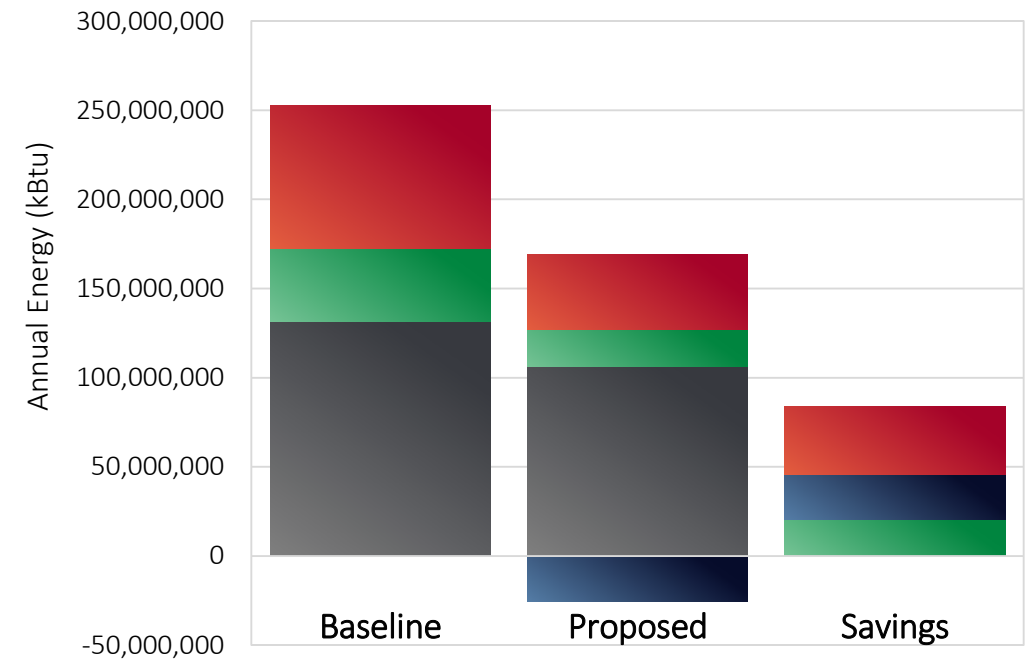
- Startup Plan
- Annual Services Plan
- Multi-Year 52 Week Preventative Maintenance Plan
- Environmental Management Plan
- Quality Management Plan
- Life-Cycle Plan

Climate Action Plan Commitments

(Quantitative Goals)



● EMS Expansion ● LED Lighting ● DHW HP



Baseline and Proposed Usage Compared to Guaranteed Savings Breakdown by Project Element

■ Remaining Campus ■ ECMs ■ Renewables ■ CHW / HHW

Climate Action Plan Commitments

(Qualitative Goals)

- Project Internships and Workforce Development
- Scholarships
- Human Behavior Energy AuditSM
- Awareness Communication Program
- Everyone is an Educator
- Community Outreach
- Alumni Involvement
- Prospective Students
- Guest Lectures and Seminars
- Living Learning Communities
- Student Group Engagement
- Partners and Professional Network



www.bulldoginfrastructuregroup.com
will host details on Opportunities
Program participation including
internship and scholarship applications
and schedules for seminars, tours and
guest lecture events.

Financial Structure

Funding and Payment Structure

- Project was funded with equity, progress payments contributed by the university, and debt in the form of privately placed Sustainable Development Goal (SDG) Impact bonds
- Availability-based payment structure during 30-year maintenance period post construction completion
 - Subject to performance deductions including total system availability, response times, actual vs guaranteed savings, etc.
 - Portion of availability payments linked to Consumer Price Index (CPI)

Financial Structure

SDG Impact Bonds issued by Developer:

- Interest rate of the bond includes financial penalties if energy savings are not met
- Further aligns the Developer with the university to ensure guaranteed savings are achieved or exceeded

UN Sustainable Development Goals pursued:

- Sustainable Development Goal 7 (Affordable and Clean Energy)
- Sustainable Development Goal 13 (Climate Action)



Questions?

Thank you!

Stephen Hill
Director, Infrastructure and
Public-Private Partnerships
Mobile: 903.738.3607
Email: stephen.hill@key.com



Jeff Schaller, P.E.
Director, Strategic Initiatives
Mobile: 530.867.2041
Email: jschaller@noresco.com



Douglas Stingelin, P.E.
Director of Mechanical Engineering
Mobile: 520.465.8360
Email: rdsting@glhn.com



Emre Erkovan
Associate
Mobile: 718.578.2346
Email: e.erkovan@meridiam.com

