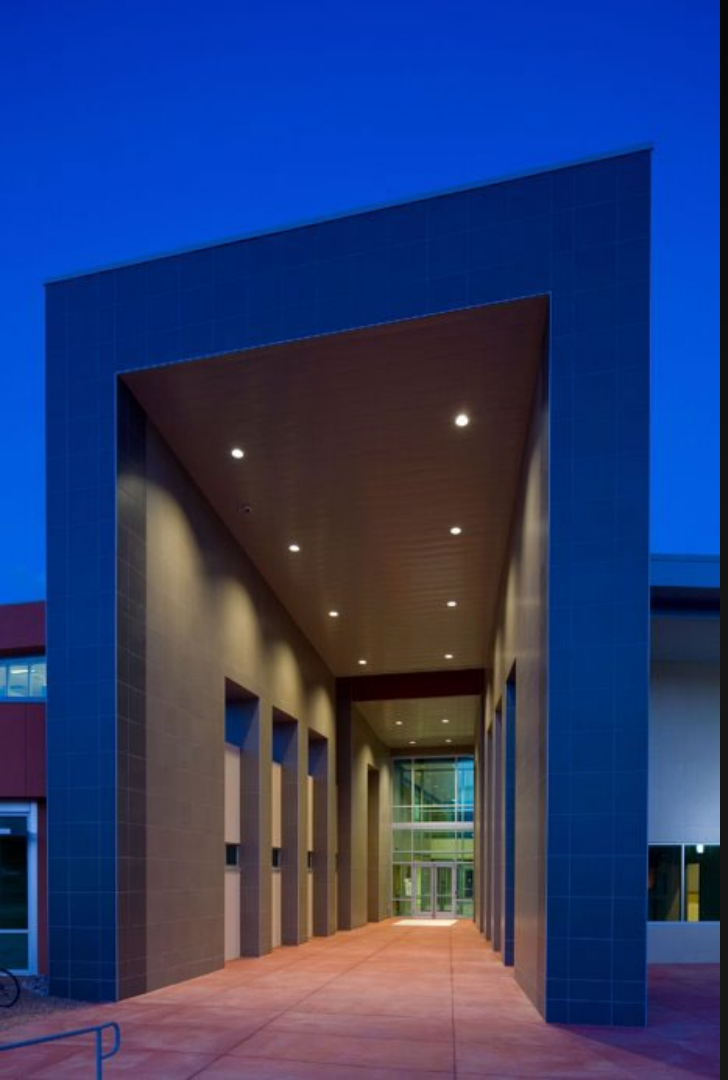
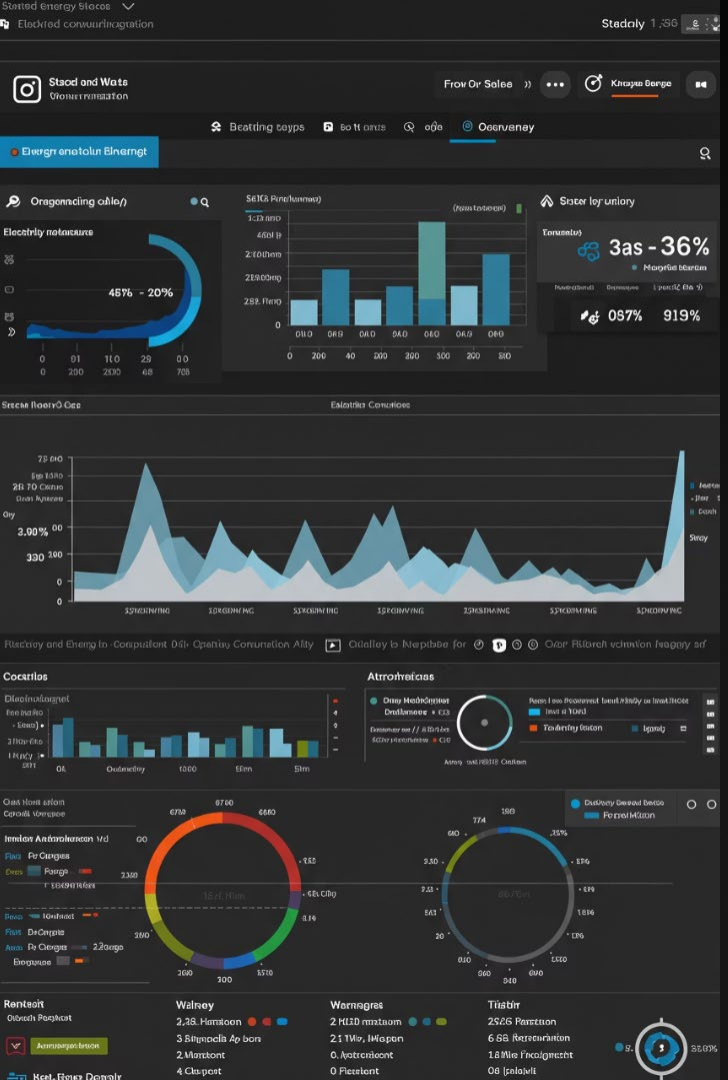


LAC Energy Management Program Proposal: Building Efficiency for a Sustainable Future

LOS ALAMOS



Energy Management: A Strategic Approach

Systematic Analysis

Audit building systems to identify inefficiencies, repair malfunctioning equipment, and optimize control sequences

Performance Tracking

Monitor utility data and building metrics to validate improvements and identify opportunities

Comfort Optimization

Balance energy efficiency with occupant comfort through intelligent setpoints and schedules

Climate Action Alignment

Reduce emissions and energy waste to support LAC's sustainability commitments

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Program Implementation Roadmap

Targeted Energy Audits (Months 1-12)

Begin with 2-3 high-energy-use County buildings to demonstrate early results and savings of and savings of 15-20% per building

Develop Audit Templates & Intern Program (Months 3-12)

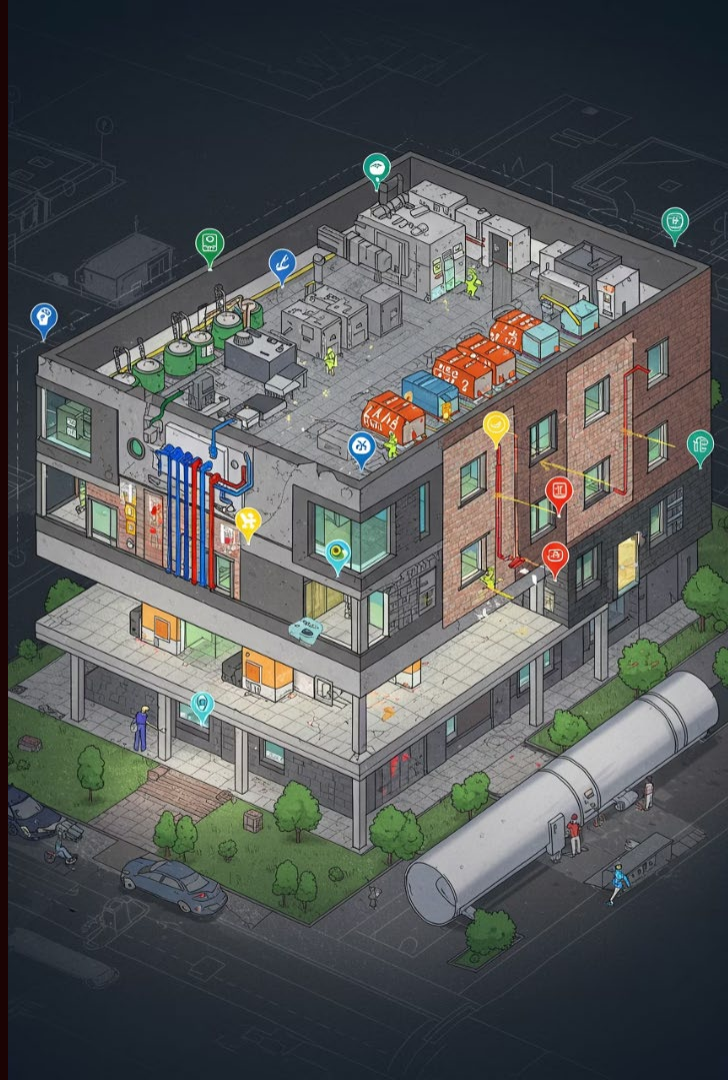
Scale efforts through standardized processes and recruit local talent to expand coverage to coverage to 6-8 additional facilities

Pilot BrainBox AI Optimization (Months 6-18)

Evaluate AI-based HVAC control on one County building with potential for 15-25% additional 25% additional energy reduction

Full Program Implementation (Months 18+)

If demonstrated success, propose adoption of an Energy Manager position funded entirely funded entirely through energy savings



Municipal Building Audit: Revealing Opportunities

The Challenge

The Municipal Building consumed 16.3 kWh/SF-YR of electricity—electricity—approximately 25% higher than similar buildings in the buildings in the region. Despite LEED Gold certification, operational operational inefficiencies had developed over time.

Total annual consumption: 1,220,960 kWh electricity and 17,076 CCF natural gas, representing significant opportunity for improvement.

Audit Findings

- HVAC equipment running 7 days/week unnecessarily
- Economizers broken or disabled for 2+ years
- Supply air temperature fixed at 62°F
- Static pressure controls not optimized
- Heating Hot water loop operating 24/7/365
- Outdated BAS controls limiting capabilities

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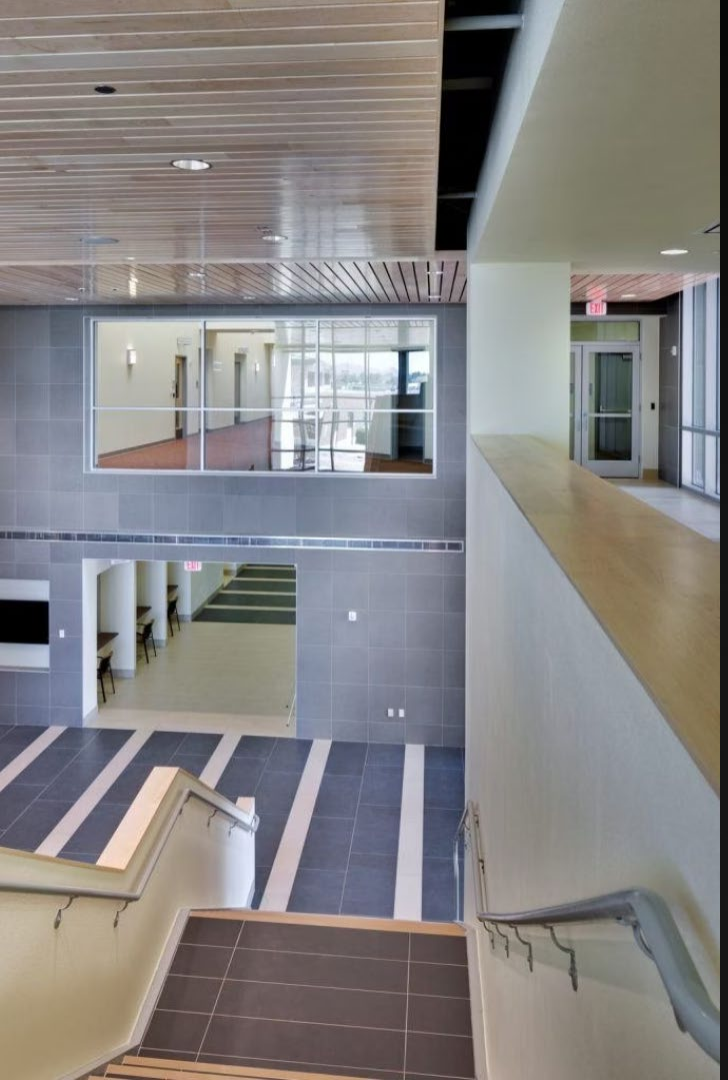

Municipal Building Improvements: Tangible Tangible Results

Schedule Optimization

Revised operations from 7-day to 5-day schedule, reducing runtime by 28% with no comfort impact

Economizer Restoration

Repaired economizers to utilize free cooling instead of mechanical refrigeration when outdoor conditions permit

Supply Air Reset

Implemented dynamic temperature adjustment using trim and response algorithm based on Pacific Northwest National Labs best practices

Duct Static Reset

Enabled dynamic fan speed control, reducing unnecessary air movement and associated energy use use

Boiler Reset

Reprogrammed heating hot water loop to provide heat only when called for, eliminating unnecessary continuous operation

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BrainBox AI: Maintaining Optimization Through Intelligence

Continuous Learning

System analyzes building performance performance patterns, weather data, and and occupancy to predict optimal settings settings and identify faulty equipment equipment

Continuous Improvement

Refines strategies over time to adapt to to seasonal changes and building usage usage patterns

Autonomous Adjustment

Makes real-time adjustments to maintain maintain efficiency without requiring staff staff intervention

Performance Tracking

Monitors results and validates energy savings with detailed reporting

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Airport Terminal Net-Zero Demonstration Project

Energy Audit

Comprehensive assessment of current energy usage patterns and identification of efficiency efficiency opportunities in terminal operations

Renewable Energy Implementation

Possible repurposing of PV panels from the Los Alamos Power Pool landfill PV array for for installation on the terminal roof to generate clean electricity for operations

HVAC Modernization

Replacement of conventional heating systems with efficient heat pumps to eliminate natural gas eliminate natural gas consumption and utilize daytime solar for cooling

Smart Building Controls

Implementation of automated systems for window shades, lighting, and access control to control to optimize energy usage