ArdenACCESS Update

Presented by:
James Bryan
Vice President/Arden Realty

Mike Putich
Director/Climatec
Agenda

- ArdenACCESS Review
- Project Update & Results
- Challenges
- Axcess Overview
- Summary
- Questions
ArdenACCESS Review

• Last CCC presentation
  – October 23, 2009

• Create an “Integrated BAS”
  – Sustainable operations
  – Real time data
  – Control “Drift”
  – Process efficiency
  – Platform for growth & innovation
Enterprise BAS Offerings

The key capabilities of the Enterprise BAS platform are outlined below.

- Improved Retrocommissioning
- Compare Equipment to Pre-defined Conditions
- Identify Energy Inefficiencies & their Financial Impacts
- Perform Equipment Lifecycle Analysis
- Standardized Tenant After Hours A/C
- Tenant Participation in Lowering Consumption
- Increased Revenue
- Perform Load Shedding
- Enhanced Programming (Resets/Schedules)
- Ability to Engage in Demand Response
- Tiered Reporting Specific to Arden
- Property Benchmarking
- View Energy Consumption, Costs
- Examine HVAC Performance/Operation
- Evaluate Carbon Footprint
- View Energy Consumption, Costs
- Examine HVAC Performance/Operation
- Evaluate Carbon Footprint
- Review LEED-EBOM Opportunities
- Enhanced Fault Detection (automatically identify issues Outside of Pre-Defined Conditions)
- Reduce ‘Drift’
- Improved Response to Alarms
Network Architecture

Network Architecture

CLIMATEC DATA CENTER

CLIMATEC EMS NETWORK

WEB SERVER

EMS SERVER

DATA STORAGE

CLIMATEC REVENUE NETWORK

USER (A)

USER (B)

USER (C)

USER (X)

USER (Y)

USER (Z)

AR DEN CORPORATE

BUILDING (A)

BUILDING (B)

BUILDING (D)

BUILDING (E)

REMOTE USERS

THIRD PARTY APPLICATIONS
ArdenACCESS Stats/Results

• Enterprise system incorporates –
  – Dashboards
  – Building Automation
  – Tenant After Hours
  – Fault Detection
  – Business Systems Integration

• System statistics –
  – Buildings – 13M SF / 90+ buildings
  – Geographic area – U.S. /5 states/7 regions, United Kingdom
  – System size - >95,000 points / >300 users

• Payback - <2yrs
• Savings - >$2M

“Utilizing the platform has resulted in energy and operational savings as well as increased tenant satisfaction”

Vice President - Sustainability
Challenges & Lessons Learned

• Geography
• Diversity of systems
• Tribal knowledge
• Change management
• Understanding stakeholders & every level
Introducing Axcess by Climatec
Overview

• Software based solution developed to help customer **IDENTIFY** building issues, **IMPROVE** operating performance and **INFORM** owners of real-time results of their efforts.

• Modular software design making it easy to add “apps” for enhanced system operation and building performance
Axcess Features

Basic & Advanced Apps

- Energy and KPI Dashboards
- Building Automation System
- Fault Detection and Diagnostics
- Tenant After Hours Requests
- Business Systems Integration
- Central Plant Optimization
- Kiosk and Educational Interfaces
- Mobile Device Support
- Hosted and Secure Web Access

Software “apps” can be added at any time
Energy Dashboard Levels

Level 1: Display
Level 2: Integrate
Level 3: Fault Detection, Analytics, Optimization
Level 1: Display Dashboards

**Intent**

- Guest Kiosk
- Display Energy Use
- Static or Limited Variable Display
- Internal vs. External Facing

**Typical Display**

- Energy Use
- Building Facts
Level 1: Display Dashboards

Data Sources

• Energy Meters
• Building Design Data
Level 1: Display Dashboards
Level 1: Display Dashboards
THE BULLITT CENTER
BUILDING SOLAR PRODUCTION

SOLAR PRODUCTION
A. YEAR TO DATE  MONTH TO DATE  WEEK TO DATE

Historical Solar Production

Usage

Production

14,303 square feet: Area of 244 kW PV array on the roof of the Bullitt Center
44,752 square feet: Area of PV array for a conventional building built to Seattle’s current code

SOLAR PRODUCTION

NET ZERO PROGRESS YEAR TO DATE

B: Energy Surplus vs Energy Deficit

ACTUAL USAGE

ACTUAL PRODUCTION

PREDICTED USAGE

PREDICTED PRODUCTION

The building is aiming for net-zero energy on an annual basis. Half the year the solar array will produce a surplus and half the year the building will draw from the grid.
Level 1: Display Dashboards
Level 2: Integrated Dashboards

Intent

• Real-Time Energy Usage Data
• HVAC Control
• Lighting Control
• Access Control
• Irrigation Control
• Utility Costs

Typical Display

• Control Smart Building Systems
• Leverage Web Data for Energy Savings
• Demand Response
• Energy Efficiency
Level 2: Integrated Dashboards

Data Sources

- Building Automation System
- Lighting Controllers
- Smart Grid
- Web Services
- DRAS
Level 2: Integrated Dashboards
Level 2: Integrated Dashboards
Level 3: Global Dashboards

Intent

• Optimize HVAC Energy Performance
• Automated Energy Reporting
• Automated Benchmarking
• Fault Detection & Analytics

Typical Display

• Central Plant Performance
• Real Time Energy Metrics
• Energy Performance vs Historical Data
• Energy/Systems Faults
• Building Ranking
Level 3: Global Dashboards

Data Sources

- Building Automation System
- Central Plant
- Energy Meters
- Supervisory Controllers
- Trend Data
- Web Services
Level 3: Global Dashboards
Level 3: Global Dashboards
Level 3: Global Dashboards

[Image of a dashboard showing weather in Washington, DC, and various equipment statuses]
Axcess Customers

Logo List:
- ARDEN Realty, Inc.
- Kaiser Permanente
- Banner Health
- GE Real Estate
- MSG
- LASC Los Angeles Southwest College
- San Diego Community College District
- Higley Unified School District
- Scottsdale Unified School District
- ARTIC
- Hines
- J. Craig Venter Institute
- Transwestern
- Bullitt Foundation
- SDGE
- SWC
- Marine Corps Air Station, Yuma, Arizona
- Soka University of America
- Los Angeles Community College District
Bullitt Center

• Location – Seattle, WA
• Owner – Bullitt Foundation
• Six Stories / 42,000 sqft / Net Zero Office
• Promoted as “Greenest Commercial Building in the World”
• Living Building Challenge
  – 20 specific imperatives / 7 performance areas (must meet all)
• Sustainable Building Features
  – Heavy Timber Construction, Solar Array, Operable Windows, Daylighting, Reclaimed Rain Water to Potable, Compostable Toilets, Geothermal Heating & more.
• Axcess shall perform –
  – Energy dashboards, reporting and education to operators, tenants and general public
  – Hosted platform and quarterly services

http://bullittcenter.org/

“When we saw what you could bring to the project, it was clear that Axcess was the right product for us”
– Joe David, Project Manager, Point32 (Developer)
Remote Operations & Support

• Axcess 24/7 Remote Operations Center
• Monitor Critical Comfort & Energy Alarms
• Identify and resolve issues
• 24/7 Customer Support
• Opening Q1-2014
Summary

Advanced software tools like energy dashboards and analytics will allow owners valuable insight into their buildings.

Solutions can be scaled to meet the needs and expectations of every building.

Systems allow for more stakeholders to be involved on the success of energy efficiency and sustainability commitments of a company.
Questions