SkyFoundry

SkySpark® Analytics in Healthcare

Banner Healthcare

Case Study
January 2020

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Identifying and Controlling Performance Drift with Monitoring-Based Commissioning (MBCx)

Identifying, and controlling performance drift through analytics ensures energy savings remain in place over time.

Manual commissioning programs are time consuming and difficult to maintain over time.

Monitoring-based Commissioning using SkySpark provides continuous expert analysis of system performance.

ETC Group Delivers Dramatic Savings Using SkySpark® Analytics for a Major Healthcare Institution

Overview

Starting in 2010, ETC Group began working with Banner Health to implement retro re-commissioning (ReCx) projects for multiple facilities, achieving significant energy savings. Over time, performance drift on past ReCx projects eroded much of the savings that had been achieved.

It was important to ensure Banner facilities would, once again, deliver comfortable environments for patients and staff, as well as maintain compliance and improve reliability of critical systems. Banner Health adopted an enterprise-wide approach to energy savings and organized an energy management team and a Remote Operations Center (ROC). Banner's ROC and ETC Group collaborated to focus on maintaining cost and energy savings, while meeting stringent environmental and compliance standards across their healthcare facilities.

Key to the campaign was a comprehensive ETC monitoring & analytics solution based on SkyFoundry's SkySpark® Analytics.

Project Details

Location: Phoenix, AZ

Building Type: Healthcare/Hospital

Scope & Size:

Phase I: 10 Buildings: 4.2M ft2

Phase II: 9 more Buildings: 4.5M ft2

Phase III: 6 more Buildings: 4.2M ft2

Total of 25 Buildings: 13M ft2

Key Technologies:

BuildingFit™
SkyFoundry SkySpark® Analytics
ClimaCheck®

Approach

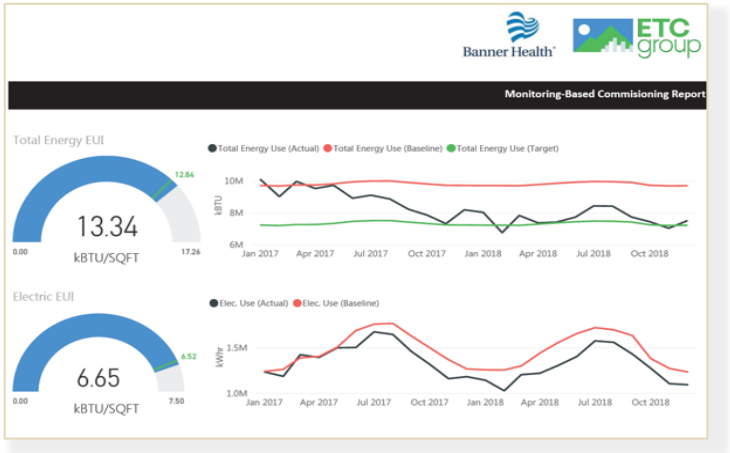
ETC Group introduced a Monitoring-Based Commissioning (MBCx) program that was piloted at the Banner Health Thunderbird Medical Center in Phoenix, Arizona. Significant annual savings was achieved for this initial pilot, including **$449,000 in lower energy costs, and energy savings of 4.7 million kwh and 13,600 dtherms.**

To eliminate performance drift and proactively address energy savings on a broader level, Banner and ETC Group implemented a system that could be replicated across Banner Health facilities. Banner's energy management team and ROC worked with ETC Group to monitor, analyze, and enact plans to maximize energy savings. By consolidated communications and shifting the mindset from project-based work to a turnkey approach, ETC Group has helped accelerate Banner Health facilities ability to identify issues and enact change.

Powerful MBCx Tools Engage Operators

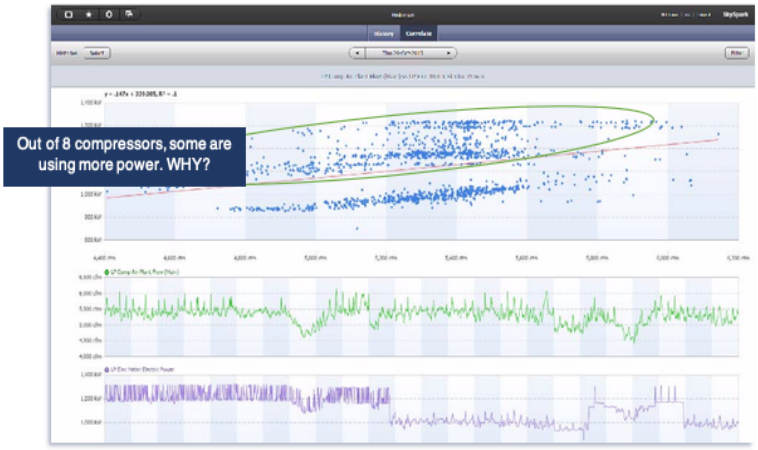
The program leverages advanced MBCx tools including SkyFoundry's SkySpark® Analytics, ClimaCheck® Performance Analysis, and BuildingFit™Analytics, a powerful smart building analytics and visualization tool.

In addition to SkySpark Apps, a custom reporting dashboard was developed by ETC Group and BuildingFit™ to meet the unique needs of Banner Health →



Sample BuildingFit™ energy use dashboard.

The combination of these tools made energy efficiency efforts more agile and able to achieve greater energy savings faster, all while establishing new systems and processes for better environmental results and compliance controls, which is a key requirement for healthcare facilities.



Results

ETC Group's turnkey MBCx program includes three phases, totaling 25 Banner Health buildings (13M ft^2). Work for the ten buildings (4.2M ft^2) in Phase I resulted in $3.84 million in annual cost savings, including 14M kwh and 88K dtherms in annual energy savings. Phase I results have exceeded cost-saving estimates by about $1 million.

Work for Phase II (nine more buildings - 4.5M ft^2) is underway and on track to deliver similar results. Phase III work has just begun and includes six more buildings (4.2M ft^2).

Banner also streamlined communications and decision-making. Issues are now identified, and corrective actions taken faster than before. As a result, Banner Health now proactively combats performance drift to maintain energy savings.

The use of key smart building technologies provides actionable data for smarter and more efficient decision-making. The BuildingFit™ team works to continuously develop new tools to save energy, ensure code compliance and improve overall reliability of equipment.

- $3.8M annual savings
- 14M kilowatt hour (kwh) annual energy savings
- 88K dekatherm (dth) annual energy savings
- Exceeded estimates by ~$1M

"Working with ETC Group has delivered tremendous success for Banner Health. The people we've worked with are insanely obsessed and passionate about their work – most importantly they are innovative problem-solvers."

- S. Mathiesen, Banner Health

For More Information

This Case Study document provides a summary of the project and results. For more information on the project, please contact the ETC Group. For information on SkySpark and the other technologies used contact the companies shown below.

ETC Group™ is an energy efficiency engineering company that provides services to reduce building energy waste, save money, and create healthy and comfortable environments. Services include commissioning, retro-commissioning, monitoring-based commissioning and energy audits. ETC Group is also a leader in developing and implementing innovative smart building technologies.
www.etcgrp.com

BuildingFit™ is smart building data analytics software that helps make buildings more energy efficient, lower operational costs and improve occupant comfort and health. BuildingFit™ works with building automation systems (BAS) and SkySpark® and applies AI and advanced data analytics to deliver meaningful recommendations and reports on building performance. www.buildingfit.com

SkySpark® is an open analytics platform that automatically analyzes building data from sensors, automation systems, meters, and other smart devices to provide useful building insights for building owners and facility managers.
www.skyfoundry.com

ClimaCheck® offers an array of products and services for performance analysis of air conditioning, refrigeration and heat pump systems. The company's approach focuses on preventative maintenance and performance documentation to improve energy efficiency. www.climacheck.com

SkySpark® – Analytics for a World of Smart Device Data

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems using a variety of standard protocols, to support for web services and xml data schemas, it is now possible to get the data produced by the wide range of devices found in today's buildings and equipment systems.

Access to this data opens up new opportunities for the creation of value-added services to help businesses reduce energy consumption and cost and to identify opportunities to enhance operations through improved control, and replacement or repair of capital equipment. Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from these smart and connected devices. SkyFoundry SkySpark directly addresses this challenge.

*The new frontier is to efficiently manage and analyze data to **find what matters™**.*

About SkyFoundry

SkyFoundry's mission is to provide software solutions for the "Internet of Things". Areas of focus include:

- Building automation and facility management
- Energy management, utility data analytics
- Remote device and equipment monitoring
- Asset management

SkyFoundry's software helps customers derive value from their investments in smart systems. Learn more and request a demonstration at www.skyfoundry.com.

SkyFoundry

www.skyfoundry.com
info@skyfoundry.com