

## CASE STUDY

### Project Details

#### LOCATION

Phoenix, AZ

#### BUILDING TYPE

Healthcare/Hospital

#### SCOPE & SIZE

Phase I: 10 Buildings: 4.2M ft<sup>2</sup>

Phase II: 9 more Buildings : 4.5M ft<sup>2</sup>

Phase III: 6 more Buildings: 4.2M ft<sup>2</sup>

Total of 25 Buildings: 13M ft<sup>2</sup>

#### KEY TECHNOLOGIES

- BuildingFit™
- SkySpark®
- ClimaCheck®

#### VALUE DELIVERED (Phase I)

- \$3.8M annual savings
- 14M kwh annual energy savings
- 88K 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*

## Banner Health Turnkey MBCx



Banner Health®



### THE PROBLEM: PERFORMANCE DRIFT

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 also important to ensure Banner facilities would deliver comfortable environments for patients and staff as well as maintain compliance and improve reliability of critical systems. Banner 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 environmental and compliance standards across more facilities.

### TURNKEY MONITORING-BASED COMMISSIONING

ETC Group introduced a monitoring-based commissioning (MBCx) program that was piloted at the Banner Thunderbird medical center in Phoenix. 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 created a system that would be replicated across Banner's facilities. Banner's energy management team and ROC worked with ETC Group to monitor, analyze, and enact plans to maximize energy savings. The consolidated communications and shifting the mindset from project-based work to a turnkey approach with ETC Group has accelerated Banner's ability to identify issues and enact change.

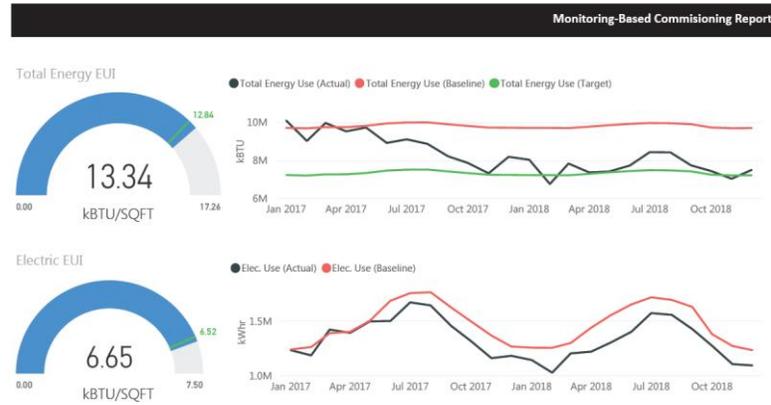
# Banner Health Turnkey MBCx

## ENABLING POWERFUL MBCx TOOLS

The program leverages advanced MBCx tools such as SkySpark®, ClimaCheck® and BuildingFit™, a powerful smart building analytics and visualization tool. A custom reporting dashboard was also developed by ETC Group and BuildingFit™ to meet Banner's unique needs. These tools and analytics make energy efficiency efforts more agile to reach greater energy savings faster, all while establishing new systems for better environmental and compliance controls.

## RESULTS

ETC Group's turnkey MBCx program includes three phases, totaling 25 Banner Health buildings (13M ft<sup>2</sup>). ETC Group's work for the ten buildings (4.2M ft<sup>2</sup>) in Phase I has 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 savings estimates by about \$1 million. Work for Phase II (nine more buildings and 4.5M ft<sup>2</sup>) is underway and is on track to deliver similar results. Phase III work has just begun and includes six more buildings (4.2M ft<sup>2</sup>).



Sample BuildingFit™ energy use dashboard.

Banner streamlined communications and decision-making by creating ROC and teaming with ETC Group. Issues are now identified and corrective actions taken faster than before. As a result Banner 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.



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](http://www.etcgrp.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](http://www.skyfoundry.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](http://www.buildingfit.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](http://www.climacheck.com)