CASE STUDY
Lincoln Harris Office Plaza

Facility Multi Tenant Office, 32-Story Building

Location Charlotte, North Carolina

Facility Size 329,930 sq. ft.

Constructed 1990

Client Lincoln Harris managed facility services

Introduction

HVAC Systems Description: 3 Chillers, Floor Level SCU's with Electric Reheat
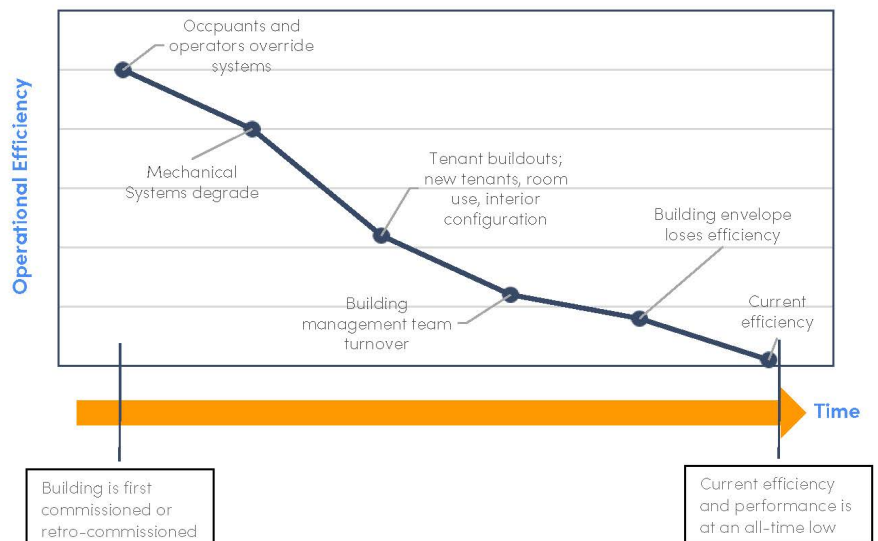
Control System: Tridium Niagara 4

MBCx Platform: PointGuard/SkySpark (Cloud-Hosted)

Client Story: Located in Uptown Charlotte, the West Trade building is a multi-tenant office building that Lincoln Harris purchased in 2018. With every building, the facility team aims to commission their buildings' mechanical systems for peak operations both in terms of energy savings and asset performance. In the commissioning process (whether it be retro-commissioning, or commissioning new construction), operators have great opportunity to tune their buildings for maximum mechanical output and efficiency.

To do this, Lincoln Harris, deploys the PointGuard Platform across their portfolio. Lincoln Harris is able to use the resources of their top facility team + the PointGuard Platform in a two-fold approach that gets new buildings in their portfolio running efficiently.

By moving the resources of their top facility teams to new buildings to manually inspect and tune building conditions, and simultaneously using the PointGuard Platform to drive performance up with data-based decisions, Lincoln Harris can quickly commission a building. Then as their resources need to be shifted, the PointGuard Platform is already in place to monitor building performance over time and keep building drift at bay.

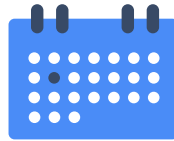How operational efficiency decreases over time due to building drift

Operational Efficiency

- Occpuants and operators override systems
- Mechanical Systems degrade
- Tenant buildouts; new tenants, room use, interior configuration
- Building management team turnover
- Building envelope loses efficiency
- Current efficiency

Time

Building is first commissioned or retro-commissioned

Current efficiency and performance is at an all-time low

Program Benefits

1st Year Energy Savings
$31,580 ($0.30/sq.ft., or 12% overall)

Simple Payback
Less Than 6 Months

Program Duration
2 years (to date)

Building Story

When Lincoln Harris took over management of the West Trade Building in 2018, they were eager to bring the building up to the high performance standards of the rest of their portfolio. In February they started retrofitting the building HVAC equipment space by space and manually tuning the building with 'low-hanging fruit'. In June they brought in PointGuard.

With PointGuard installed, the software could look for all the small faults that contribute to building drift and long-term inefficiency, while continuing to retrofit the building floor by floor. Throughout 2018 and 2019 the building team continued to replace the equipment, while keeping a watchful eye on the faults PointGuard was detecting.
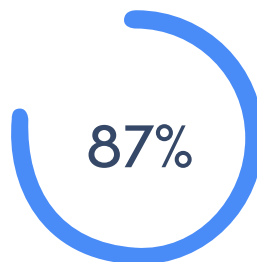
Finally in 2020, with all the new HVAC equipment in place, and the PointGuard Platform fully integrated, the West Trade Building's retrofit and retro-commissioing were complete. The final energy savings results now speak for themselves...

Current PointGuard KPIs

COMFORT SCORE
98%

**ASSET HEALTH SCORE**
87%

ENERGYSTAR SCORE
89

Conclusion

From the energy baseline we created from 2017 bill data to the fully retrofit and retro-commissioned bill data of 2020, West Trade has seen an average month-to-month comparison of 40% energy savings. About half of the savings can be attributed to the upgraded equipment, but the other half can be directly attributed to the first 10 months of 2020 when the Lincoln Harris team used the Platform to fine tune the building for maximum performance an efficiency.

By showing BMS data in intuitive and impactful visualizations and charts, the software also allows for an efficient use of the facility teams' time. One dedicated Lincoln Harris engineer can manage a portfolio of 20MM square feet with PointGuard monitoring the controls data, because we show the most important faults upfront.

Energy Consumption Trends

Baseline ■ Previous Year ■ This Year ■ % Savings
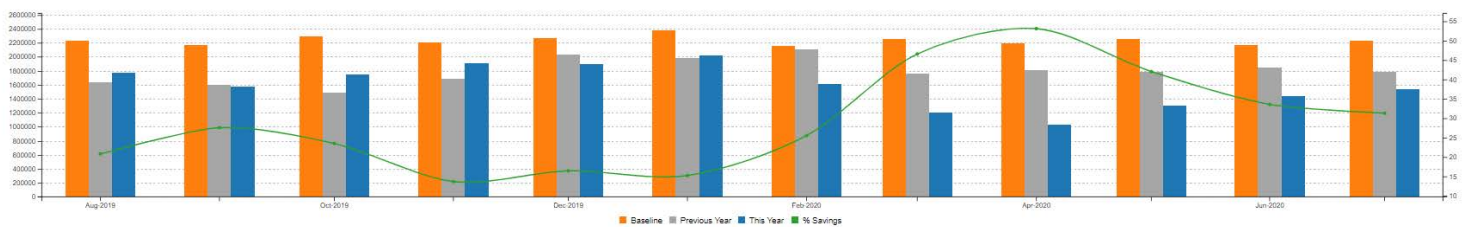
In this visualization, compare for each month the orange bars (the Baseline energy spend) to the blue bars (the current years energy spend).

Learn more about the tools available for facility teams by reaching out to: info@pointguardtech.com.

Specific Issues Remedied

Excessive Runtime Multiple RTU's found to be running 24/7 despite schedules set to normal office hours. It was determined to be due to network issues within BACnet/MSTP trunks.

Excessive Fan Energy It was discovered that an RTU fan was running 24/7 despite schedules and occupancy mode. The fan's VFD was determined to be in "hand" mode.

Excessive Heating Multiple zones identified with conflicting setpoints causing excessive re-heat (zones fighting each other). The PointGuard Platform has a Simultaneous Heating and Cooling Quick Tool designed for detecting this exact issue.

Critical Control Point Failure A critical control point for an RTU (supply air temperature) went bad, causing the unit to drastically overcool the primary air, causing excessive reheat at the zone level, and unusually cold temperatures in zones without reheat.

Overcooling Multiple zones found with excessive minimum airflow setpoints that were causing overcooling and excessive reheat.
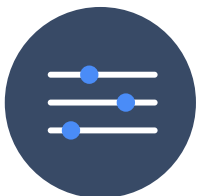
Excessive Off-Hours Reheat Multiple zones found to be ignoring the BAS schedule and maintaining occupied heating setpoints during off-hours.

Comfort Issues Some zones found to be undercooling due to maximum airflow setpoints being too low for the actual load in the zone. A couple zones also found to have damper control and heating issues that were causing discomfort.