

CASE STUDY

Chase Tower Building Automation System

2200 Ross Avenue, Dallas, TX

Introduction

Late in 2013, the 55-story skyscraper located in the City Center District of downtown Dallas, TX, moved forward in their pursuit of an upgraded Energy Management / Building Automation System. The 4th tallest building in the city, 12th tallest in Texas, was seeking multiple bids from reputable companies to install an extensive system in efforts to lower their energy costs, manage the building environment, and improve building comfort. Frustration with the existing antiquated system, which caused the building engineering staff countless hours investigating and troubleshooting cooling and heating requests, ultimately led to the building improvement project.

The "Keyhole Building" built in 1987 has an central plant system comprised of two chillers, five cooling towers, multiple heat exchangers, pumps, and six thermal storage tanks. The HVAC system served by the plant consists of seventy-five building air handling units, variable air volume boxes, and fan powered boxes on the exteriors of the tenant floors. Strategic lighting points are also controlled throughout the building.

Solution

As a part of the extensive renovation schedule during the 2013-2014 years, the building automation system was a hot topic. The building engineers were losing confidence in the system's ability to satisfy the comfort needs of Chase Tower. A new system was imminent. Although a system of this size can be expensive, the building owners realized the need and moved forward with an Automated Logic BAS installed and commissioned by Logical Solutions, Inc. (LSI).

LSI provided a "hybrid" system to achieve full control of the massive skyscraper. Automated Logic (ALC) control modules were installed to handle the bulk of the equipment. All major equipment has complete control and monitoring via the Automated Logic WebCTRL software. Niagara/Tridium JACE modules were installed as an extension to the ALC system. The JACE provided a necessary gateway to utilize the existing building automation system's control of the terminal boxes on each tenant floor, easily exceeding 1500 boxes. This extension was agreed upon to save the ownership further cost associated with upgrading the terminal box controls. The building plans on upgrading each tenant floor with new ALC controls in the near future.

The enormous central plant proved to be the most complicated portion of the controls project. The building contains six thermal storage tanks, a cold well, and a warm well for storing necessary water pertinent to the cooling and heating of the building. The storage tanks are charged at night to allow the building's operation to lessen during the day, saving energy by not running the chiller and towers during peak time. A multitude of temperature sensors, level sensors, and valve control, have reinstated confidence levels and achieved optimal plant operation.

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Result

With the competent team of operators having attended Logical Solutions BAS training courses, proper scheduling and routine preventative maintenance have improved, along with the comfort level within the building. Installation and system commissioning were completed on July 1, 2014. Logical Solutions received many thanks from the building operators and owners as a result of the 8-month installation.

Logical Solutions continues to work closely with the Chase Tower engineering team. There have been several successful extensions finished since the initial BAS installation. A few of these include:

- o Fitness Center
- o Rotunda
- o P1 Locker Room Areas
- o Norton Rose Fulbright
- o Locke Lord
- o Deloitte
- o Prudential
- o Greenberg Taurig