Alabama State Capitol

Retro Commissioning Services

About the Facility:

Built in 1851, the Alabama State Capitol is located on Capitol Hill in Montgomery and was declared a National Historic Landmark in 1910. For over 150 years, it has hosted the office of the Governor and other executive branch officers while serving as a museum of state history and politics. The Alabama State Capitol was challenged to preserve the historic beauty of its building, while needing to upgrade legacy control systems and aging equipment to address humidification problems impacting the overall infrastructure.

Scope of Work

SEA was initially contracted as the building investigator which led to commissioning services to investigate air quality issues, life expectancy of the existing HVAC system and overall architectural damage incurred over the years from humidfication issues. To do this, SEA established a baseline of conditions measuring humidity which proved to be as high as 78% (the ASHARE standard is 55%). The building receives heating and cooling from the chiller and boiler located across the street at the State House and has 43 Air Handling Units (AHUs), four Fan Coil Units (FCUs) and 16 exhaust fans. SEA reviewed the existing capabilities and tested all equipment and current control strategies. SEA performed functional performance tests on:

- Airflow traverses on supply, outside and return ducts
- Pressure drops across the air handler
- Sensor calibration
- Pressurization and thermography tests on the building envelope
- Chiller plant inspections

SEA concluded the investigation identifying a series of issues such as restrictions in the supply and return air ducts as well as challenges with the pneumatic control system. Additionally, SEA compiled a list of issues for each of the AHUs prioritizing repairs that needed to be performed.

SEA helped reduce humidification issues from 78% to 55% to meet ASHRAE standards and achieve building sustainability.

55%

Achieved ASHRAE Humidity Standard

150

Age of Infrastructure

132k

Square Feet

As a result, SEA developed a short and long-term capital improvement plan outlining steps to correct discovered issues. Going beyond investigation and analysis, SEA also created a plan for new controls to replace failing pneumatics. Currently, SEA is providing oversight during installation and provided commissioning once installation was complete.

SEA doesn't just discover the issues that need to be fixed. We are your long-term partner to ensure the repairs are completed efficiently. We will continue to work with the capitol to ensure proper humidity levels are achieved. This is just one example of how SEA partners with our clients to see a project through to completion and beyond.

SEA

SAIN ENGINEERING ASSOCIATES, INC