



CASE STUDY:

PRIVATE ATHLETIC CLUB PORTLAND, OREGON RETRO-COMMISSIONING



ABOUT

This club facility is a unique in history and size. It has undergone a series of retrofits and additions spanning several decades. The facility serves a variety of spaces such as restaurants, exercise rooms, pools, gymnasiums, and conference rooms. It currently has over 20,000 members.

Facility: 605,397 SF

Industry: Commercial

HVAC System serves: Fitness Rooms, Natatoriums, Locker Rooms, Admin Offices, Conference Rooms

WHY

This project was undertaken in an effort to address ongoing operational issues. Facilities personnel were also faced with issues with ventilation, space pressurization and temperature control problems resulting from age, use, and past renovations.

CHALLENGES

Initial challenges in this facility dealt with out of date as-built drawings, and multiple renovations leading to a patchwork of different mechanical and architectural changes. Considerable effort was made in tracing ductwork and equipment service areas. Equipment failures also topped the list.

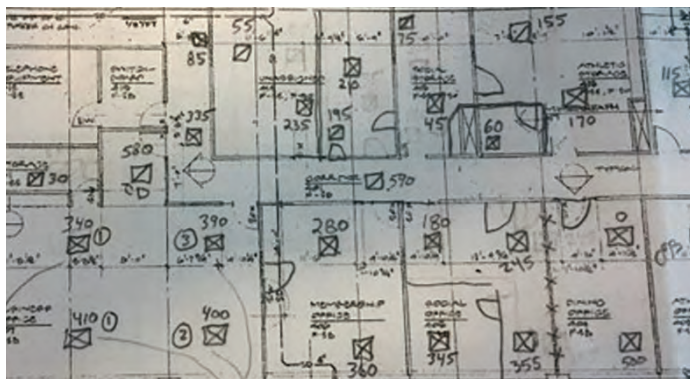
Specific Issues:

1. **Inaccurate Drawings:** Diffuser layouts did not reflect available drawings. Some floors required a complete rework of the TAB plan, and duct work had to be traced above the ceiling to determine exact service areas.
2. **Damper failures:** Multiple AHU and TU damper actuator failures prevented testing from proceeding as scheduled. Testing resumed only after repairs were made.
3. **Set Point Deviations:** Several TU's had airflow set points that strayed from design levels. Time was spent evaluating any changes to the space usage, original design intent and restoring values to reasonable levels.

APPROACH

In addition to Retro-Cx, this facility also had a number of secondary services which included system drawings updates and TAB and hydronic coil analysis. Testing included a thorough DDC analysis involving point to point verification, sequence testing and set point analysis. Following the DDC testing, the air moving systems were checked for airflow capacity and calibrations. Lastly, the coils were checked for flow, and sample units selected for in-depth troubleshooting.

NWESI identified and addressed the different issues this facility was facing with an eye to improving occupant comfort and building longevity. A number of these system corrections were directly tied to failed equipment and poor integration of retrofit projects into the existing building.



OVERALL IMPROVEMENTS

1. Identified high number of equipment failures.
2. Vast improvement in ventilation
3. Improved temperature control
4. Improved building and space pressurization.
5. Systems back up to operating near design levels.
6. Ongoing issues identified and a clear path forward for repairs.

