HVAC & PLUMBING PRODUCT NEWS
HVAC/P

New Life for Old Equipment

Pure Air Control Services' HVAC restoration service makes sense to bottom line

Commercial and institutional properties have to maintain aging infrastructure on a daily basis. One of the most critical components to a building's health, occupant comfort and energy efficiency is the HVAC system. Most look at replacing this equipment between the 15-20 year milestone. But, when factoring in the size of inventory, financial hard costs and downtime, is replacement the only option? No. Thankfully there are processes, such as HVAC New Life from Pure Air Control Services, which can restore the AHU to near-factory specifications for a fraction of the cost.

INDOOR AIR QUALITY & PEOPLE

HVAC is responsible for thermal comfort, air exchange and cleanliness of a building's air. Even with the best filtration, coils become fouled with dust, bacteria and fungi. This causes a range of issues from unpleasant odors to allergen triggers that can affect the health and productivity of occupants.

Hygienic cleaning is the important first step in restoration. Chemical rinsing only superficially cleans and eliminates some odors. However, steam coil cleaning processes, like PURE-Steam, provide increased pressure that goes completely through the coil to eliminate all fouling, while the high temperatures ensure thorough disinfection.

Restoration also features antimicrobial/antioxidant coatings and drain pan liners, plus fiberglass-free insulation that improves both IAQ and equipment longevity.

RESTORATION IS LESS DISRUPTIVE TO OCCUPANTS

Just like HVAC replacement, restoration projects are undertaken in phases.

From top: Steam coil cleaning processes, like PURE-Steam, provide increased pressure that goes completely through the coil to eliminate all fouling, while the high temperatures ensure thorough disinfection. > Blower casing before and after a restoration process done by Pure Air Control Services.

A major difference is that restoration causes less disruption. Replacement requires temporary cooling systems. This causes the building to be out of balance from an engineering and workflow perspective. Restoration occurs outside of normal operating hours. The system is shut down, cleaned, primed, recoated, reinsulated and restarted all when the building is unoccupied.

SUSTAINABILITY & ENERGY EFFICIENCY

HVAC New Life optimizes the AHU in place. This is incredibly useful in situations with tight mechanical rooms like historic buildings or where architecture cannot be altered to fit new.

Furthermore, restoration reduces the project's carbon footprint since there is no need for new equipment to be transported in and old equipment trucked to the scrapyard.

While there is no doubt a new AHU is more efficient than a neglected one, units restored with the steam coil cleaning process can be just as efficient as new. A recent case study with Pure Air Control Services and Georgia Tech University found that the PURE-Steam process improved airflow by 42.6 percent, and added 7 tons of cooling capacity to their test system. It took a 25 ton system that was operating at 15 tons and got it back to near spec at 22 tons.

FREEING CAPITAL EXPENDITURE BUDGETS

HVAC New Life increases the useful lifespan of an asset. As such, restoration can be purchased and depreciated out of capital expenditure budgets just like replacements. On average, the hard costs of labor and materials for HVAC restoration are 1/10 that of HVAC replacement. Now factor in the human resource and energy savings and it's easy to see that HVAC restoration makes sense over total new replacement.

The University of Central Florida Rosen Campus projected it would cost them $1.2 million to replace 15 RTUs. They were able to restore all 15 units for around $120,000 with zero disruption to its day-to-day operations.

In addition, because HVAC restoration can be purchased with capital expenditure budgets and the results bring the equipment to near new condition, operational expenditure budgets can be spared for use toward more critical maintenance issues. This is especially helpful with facilities that constantly operate in a deferred maintenance scenario.

OTHER CONSIDERATIONS

Whether undertaking an HVAC replacement or a restoration program, the cornerstone data needed to proceed can be found in the facility's mechanical inventory. This should be a complete resource that includes all the nomenclature, specifications, serial numbers, ages and service records of the HVAC equipment used in the facility. This is extremely helpful in prioritizing AHUs for when and what type of restoration is needed.

Of course, not every single AHU is a candidate for HVAC restoration, and solid mechanical inventory data should flag the units that absolutely need to be replaced. But at the same time, it will also demonstrate that the majority of units can be restored for many additional years of operation.

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