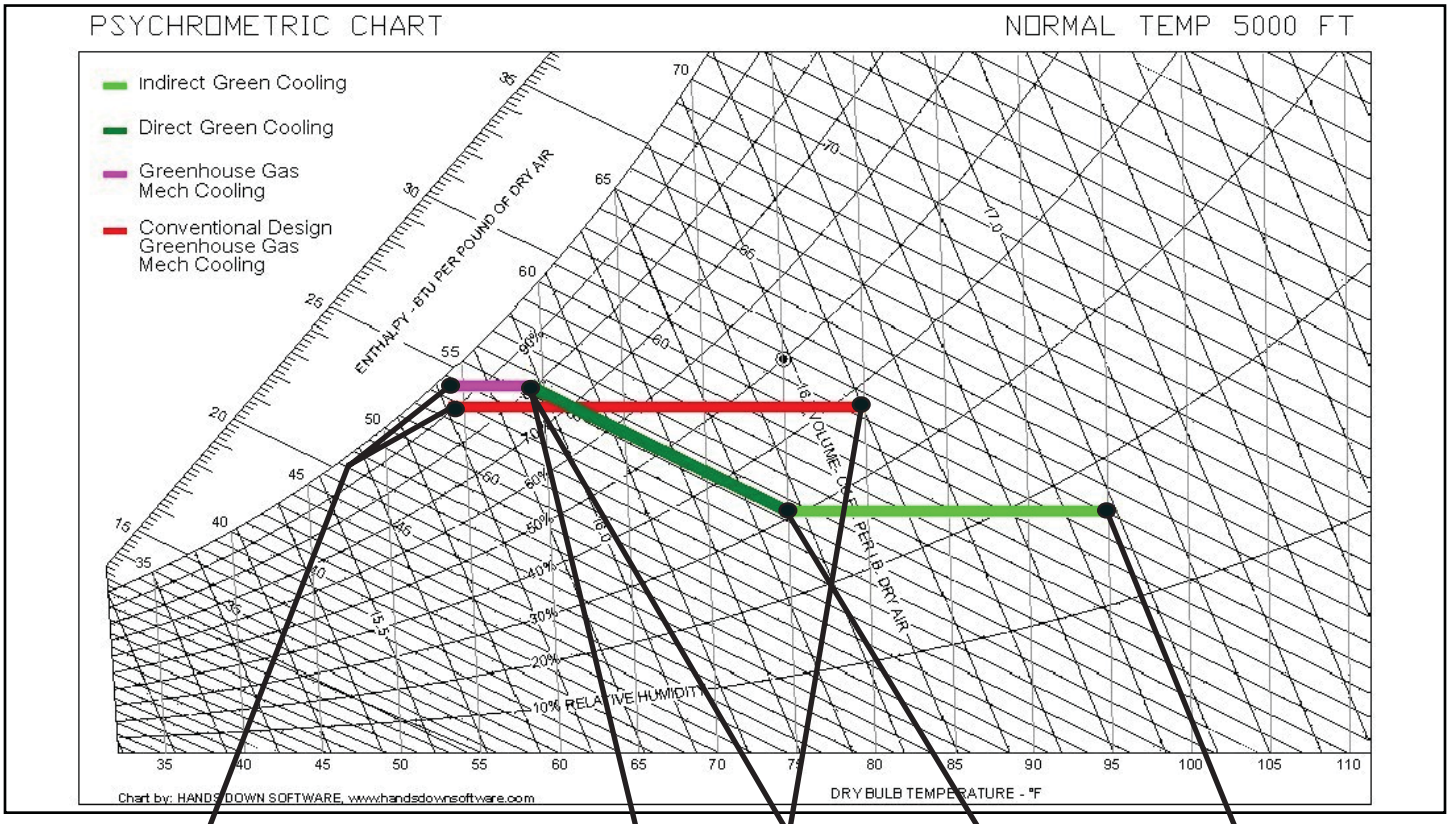
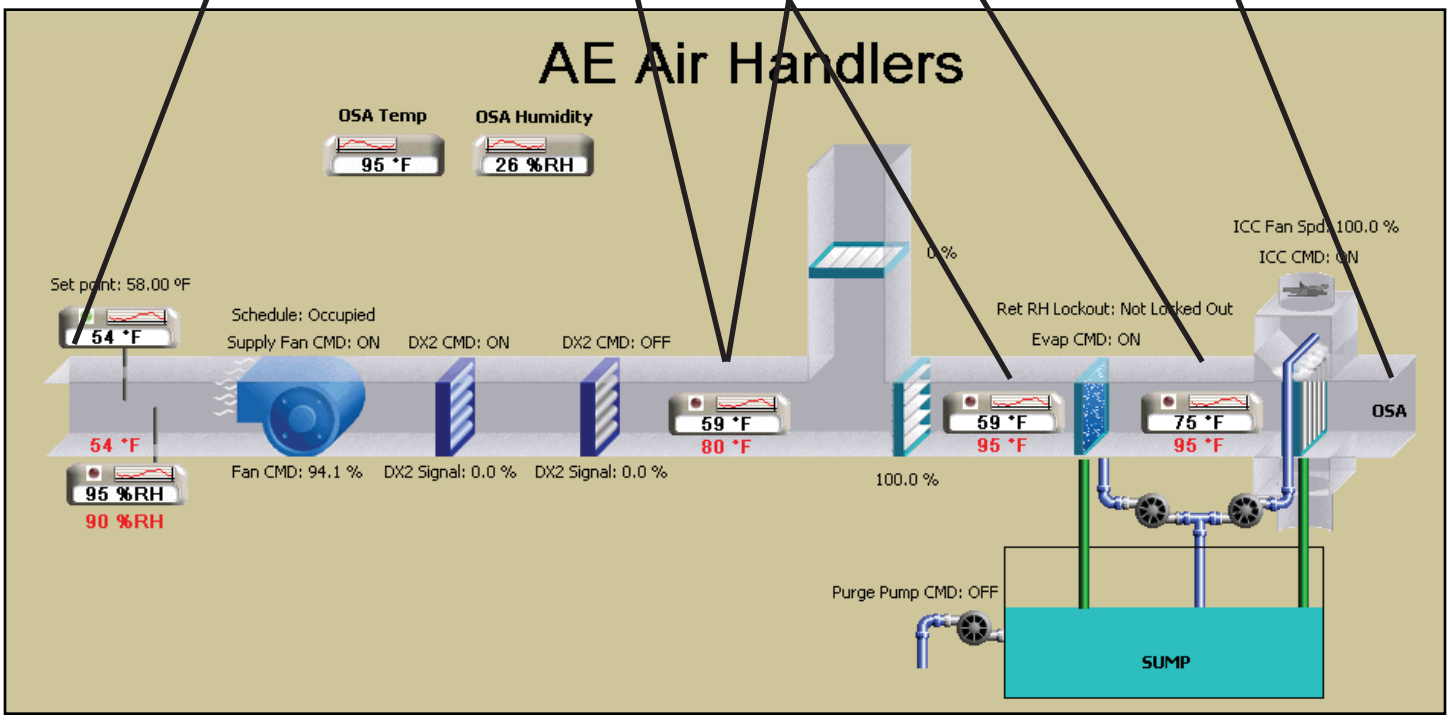
ATKINSON ELECTRONICS INC.
BUILDING AUTOMATION

THREE-STAGE COOLING AND ROOFTOP RETROFIT





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In early spring of 2010 we replaced our 20-year-old, air-cooled DX roof top units with 3-stage indirect/direct evaporative cooling (Green Cooling) and supplementary 14 SEER DX refrigeration. All of the fans and compressors in our HVAC system are now controlled by variable frequency drives for optimum energy efficiency.

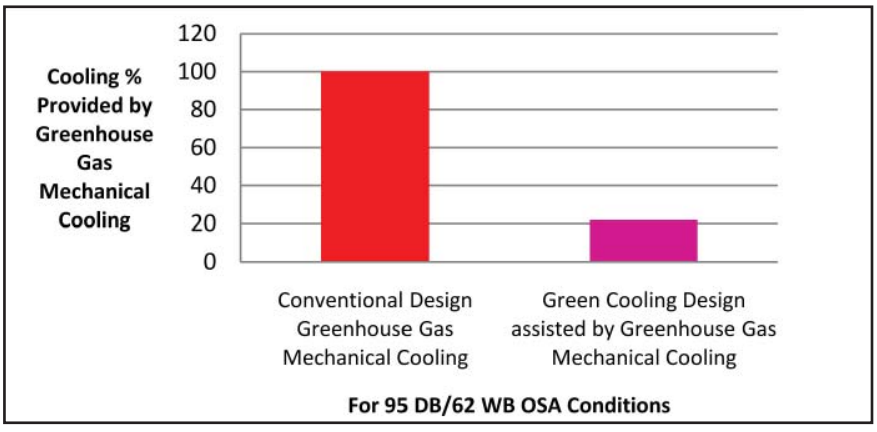
Our Spec-Air indirect/direct evaporative cooling units have played a critical role in helping us to achieve 50% energy savings, replacing our refrigerated air conditioning units as our primary cooling source. They pre-cool outside air by an indirect evaporative cooling section that adds no moisture to the air stream thus depressing the wet bulb temperature. A direct evaporative section further cools the air to between 57-58°F at 80% relative humidity.

Except for humid summer days, this supply air is sufficient to cool our office spaces via VAV boxes. When higher outside wet bulb or dry bulb temperatures exceed the capacity of the indirect/direct evaporative coolers, variable speed DX refrigeration provides supplemental cooling in the supply air stream to maintain a 58°F set point. The Spec-Air indirect/direct evaporative cooler also uses a common sump to improve wet bulb depression on the indirect section.

Our evaporative cooling retrofit, coupled with VFD motor/compressor control, has enabled us to achieve the same cooling capacity tonnage, but with half the average electrical power consumption over the cooling season. In addition, since no chemical water treatment is required, the purge water is used for outdoor plant irrigation.

This condition shows a design summer day.

Mechanical cooling is typically not used below 80° OSA, unless it is a muggy day.



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