



**OPPORTUNITY/CHALLENGE**

Originally constructed in 1980, Centennial Center is a 265,000 square feet office building located in Schaumburg, Illinois. In 2007 the original HVAC systems serving the building were beyond their expected service life and were costly to operate. The older equipment was also much less energy efficient than current generation equipment. In addition, the building’s 1970s mechanical design did not meet current ASHREA ventilation standards – and assurances of indoor air quality were needed to keep and attract tenants to the property.

**SOLUTION**

In order to correctly size the new mechanical plant, loads were recalculated to include outside air requirements to meet current ASHREA standards, and existing load conditions were assessed through a complete energy inventory and audit. Once completed the following items were addressed:

- Original water-cooled reciprocating compressors were replaced with two high-efficiency York variable speed chillers. Existing evaporative condensers were replaced with a two-cell cooling tower equipped with variable speed fans. The chilled water system was designed to be optimized; chillers, pumps, and cooling tower cells were all interconnected to minimize pumping and equipment usage.
- Existing air handling units were replaced with larger capacity custom-built units with chilled water coils, high efficiency filter banks and variable speed supply fans. The outside air and return air dampers were resized and rebuilt and air damper motors were replaced – assuring building ventilation rates and indoor air quality.
- The existing HVAC control system was upgraded to provide controls of the building HVAC systems as a whole. The system is expandable to allow for future direct digital control of variable air volume, which is being phased in with tenant rollover.

**VALUE ADDED BY TRANSWESTERN**

ENERGY STAR® ENERGY PERFORMANCE RATING						
Before Upgrades = 63				Current Rating = 85		
Cost	Cost	Annual Savings	Annual Savings	ROI	Asset Value Increase	Annual Energy Savings
\$1,572,000	\$5.93 psf	\$80,000	.30¢ psf	11%	\$1,600,000	20%