WAREHOUSE FACILITIES

JOHNSON
AIR-ROTATION® HVAC SYSTEMS

THE EFFECTS OF CLIMATE CONTROL WAREHOUSES ON EMPLOYEE RETENTION & RELATIONS

The traditional method of cooling storage of dry goods and general merchandise warehouses has been to draw in large volumes of outside air during the nighttime and circulate air during the daytime. This method has the lowest first cost ($1.5 - $2.0/SF) and uses moderate amount of energy (75 – 100kW/100,000SF). Unfortunately the amount of cooling and warehouse temperatures is limited by the ambient air temperatures and exposes employees to large amounts of airborne contaminants. This method fails to provide relief during hot-humid months and control allergens, which directly effects employee productivity and retention.

Another method of cooling commonly used to condition warehouses has been to provide self-contained rooftop units that provide mechanical cooling to more accurately control the temperature and conditions in the space. This method has the moderate first cost ($2.5 - $3.0/SF) and uses the highest amount of energy (300 - 350 kW/100,000SF). This method provides relief to employees, but imposes additional operation burden due to the inefficiency of the type of fan and an air cooled refrigerant system of 4 times traditional cooling.

A lesser-known method of cooling warehouses combines the efficiency of glycol-cooled Johnson Air-Rotation® Systems with a centralized refrigeration system. This method has the highest first cost ($2.5 - $4.0/SF), but uses 1/3 the energy (100 – 150 kW/100,000 SF) of self-contained rooftop units or slightly more than traditional cooling. This method provides relief to employees while being environmentally conscience. In addition, the indoor Johnson Air-Rotation® System maintains a product life span of 30 plus years, as compared to the traditional roof top unit life of 10 to 15 years for your investment.

Why condition the warehouse space? According to the United States Bureau of Labor and Statistics, the average turnover rate for warehouse employees has been 17% with an average wage rate of $11 per hour or $22,880 annually. Assuming a cost of replacement multiplier of 1.5, the cost associated with replacing an employee would be $34,320. Further assuming 30 employees per 100,000 SF, the annual burden to a facility is $1.75/SF.

Statistics gathered after conditioning six (6) 1,000,000 SF plus warehouses for a top retailer in the US, employee turnover was reduced by 2/3 within the first year of operation. In this retailer's six sites, that turnover reduction represented a savings of $14,000,000.00! For comparison, from industry statistics, you can assume the annual burden associated with employee turnover of $1.75/SF, cooling the facility saves the facility $1.17/SF in labor costs with only a slight increase in operational cost. As a direct result of higher employee retention, cooling a warehouse with glycol-cooled air rotation units and centralized refrigeration system had a return on investment of 30 – 35% on retrofitting an existing building or 50 – 60% on a new building. In addition to gains in employee retention, employee relations and productivity also increased sharply as a direct result.

Manufactured in the USA

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