

# COOLING TOWER REPLACEMENT

Capital Investment Opportunity



## OVERVIEW

The average life expectancy of a cooling tower is 15-20 years before needing to be rebuilt or replaced; however, many can last beyond 30 years. Cooling towers are intended to reject heat from a building equipped with a water-cooled chilled water system. Essentially, towers consist of an evaporative media, large fans, pumps, and a sump basin. Tower degradation will lead to a decrease in system efficiency as the tower will be less capable of rejecting heat. Ultimately, this results in warmer return water to the chiller condensers and an increase in compressor energy to provide the desired chilled water temperature to the space.

## CONSIDERATIONS

- Colder condenser water can often result in improved chiller efficiency.
- Decreased cooling tower performance can result in excessive energy and water use.
- Refurbishment is an option over full replacement and can result in significant electricity and water savings, at a fraction of the cost.
- Effective towers will drastically improve waterside economizing capabilities (if applicable) leading to further energy savings.

## KEY PERFORMANCE INDICATORS (KPIs)

- **1-3 point energy use intensity (EUI) reduction potential**
- **Up to 5% sitewide electric and water savings**
- **12 - 20 year simple payback**