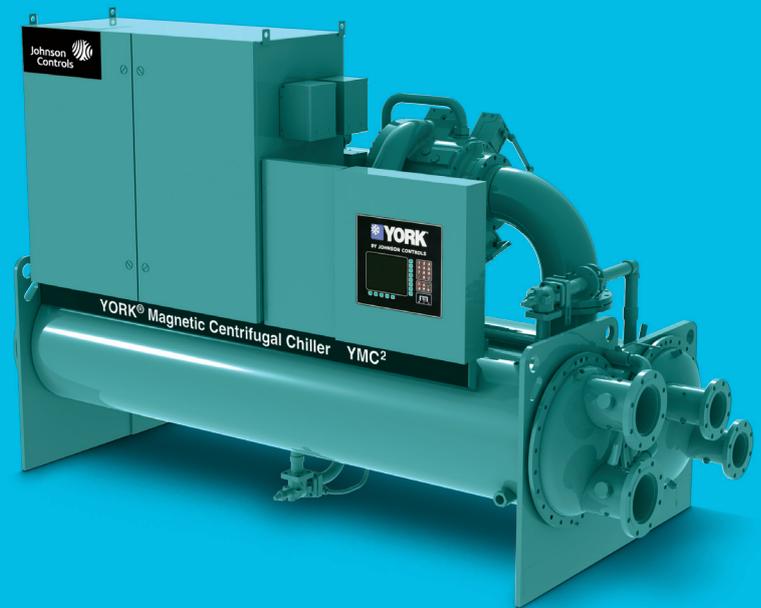


CENTRAL PLANT OPTIMIZATION

# The heart of building efficiency



This is one  
of the most  
efficient chillers  
in the world.



What a waste.

We're all more focused than ever on energy efficiency and selecting the right equipment is a good start. We're thinking green at every opportunity. We're looking into every nook and cranny in buildings, big and small, old and new, to cut costs and save energy.

In your building, the one place where you can realize the biggest savings is the place that consumes the most energy: the central chilled water plant.

# Re-think the central plant.

To become more energy efficient, a facility's central plant equipment and components must be designed, installed and operated as a single, integrated system, not as a collection of independent components and controls. The larger the building and cooling load, the more critical it is to design, operate and maintain your central chilled water plant holistically. We'll work with you to make the right design and operating decisions that can help you reach the highest potential in plant efficiency. Plus, as leading experts in HVAC service, we'll develop a service strategy that helps to achieve optimum performance and savings over the lifecycle of your plant.



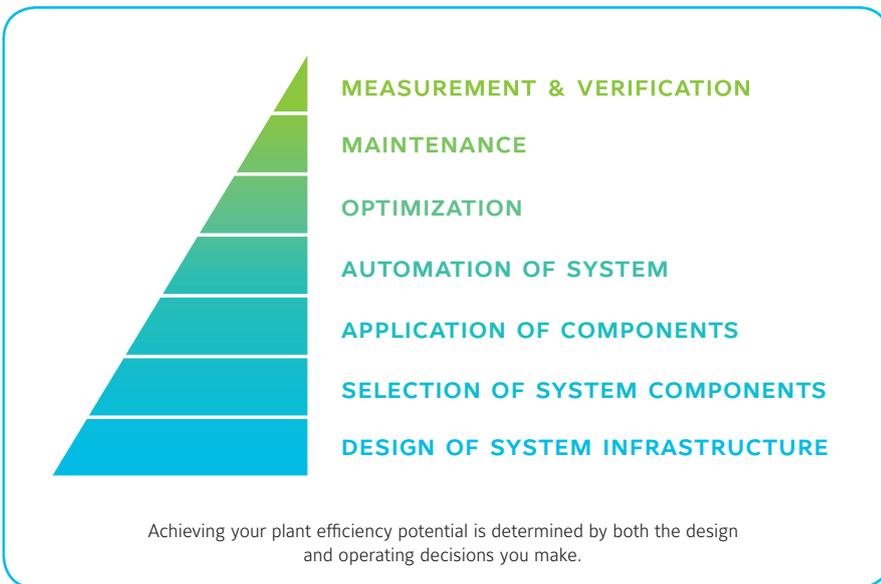
Variable speed drives



YORK® OptiView™ Control Center



Metasys Field Equipment Controller

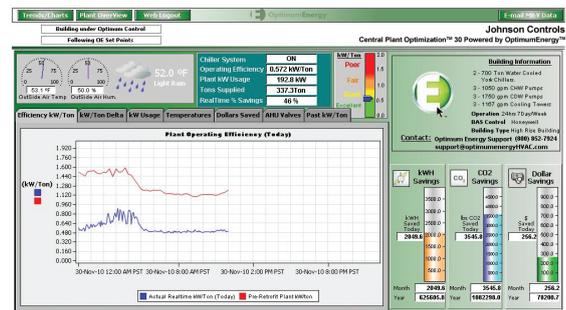


## The results?

- Achieve lowest possible lifecycle costs
- Up to 60% energy savings
- Faster payback on your investments
- Reduced carbon footprint
- Earn saved points towards LEED® certification
- Consistent performance over time

## It's never too soon or too late.

If you're in the design phase of a new facility or complying with mandates to make your existing building more energy efficient, go straight to the heart of the matter – the central plant. Johnson Controls chiller plant experts will analyze your needs and help you develop an optimization solution based on your efficiency goals and budget. Of course, the sooner you call us in, the sooner you'll start saving money and energy.



CPO 30: measurement, verification and management.

## Two options to optimize efficiency.

Whether you're installing a brand new central plant with the latest in innovative HVAC systems or retrofitting a dusty old one, Johnson Controls has the automation software to optimize performance and savings.

**Central Plant Optimization™ 10** (CPO 10) software is powered by Metasys to achieve energy savings up to 15%. It leverages Johnson Controls global expertise in building management systems and chiller technology. Plus, it incorporates best-in-class practices from world class chiller plants to deliver optimization solutions for thousands of plant configurations. And with Metasys add-ons, Ready Access Portal and Energy Essentials, you get real-time plant performance monitoring and periodic energy reporting.

**Central Plant Optimization™ 30** (CPO 30) powered by OptimumEnergy™ allows you to operate your central plant at its most efficient level. The patented, innovative software algorithms make real-time automatic adjustments to the system based on real-time building loads. This results in 20 to 60% in energy savings. CPO 30 works best with all variable speed plant designs. Web-based, real-time dashboards enable you to efficiently measure, verify and manage your plant's performance. And you get invaluable troubleshooting tools to determine why performance isn't up to par.

	Central Plant Optimization 10 <i>powered by Metasys</i>	Central Plant Optimization 30 <i>powered by OptimumEnergy</i>
<b>APPROACH</b>	System level optimization	
<b>USER INTERFACE</b>	Web based	
<b>ROLE OF BAS</b>	Executes Metasys logic inherent in Metasys programs	Executes commands from dedicated optimization software
<b>PERFORMANCE MONITORING</b>	Ready Access Portal and Energy Essentials Reports	Real-time measurement, verification and management dashboards
<b>BASIS OF CONTROL</b>	PID, feedback-based control	Relational control algorithms
<b>APPROXIMATE ENERGY SAVINGS</b>	5-15% vs. the same plant with standard automation only	20-60% vs. existing plant before retrofits and optimization
<b>PLANT DESIGN CONFIGURATION</b>	Virtually any chiller plant	All variable speed drive plants



Believe it or not, the central plant can become the heart of your energy efficiency strategy. Whether you're building from scratch or retrofitting an existing plant, the cornerstone of any efficiency effort is innovative technology. YORK® chillers from Johnson Controls are some of the most efficient chillers on the planet. Standing alone, they can reduce some of your energy consumption. However, until you integrate Metasys® technology and optimize your chiller plant, your HVAC equipment is not reaching its high-performance, high-efficiency potential.

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