

COLUMBIA SQUARE {PORTLAND, OREGON}



Columbia Square receives a 45% reduction in energy usage by installing two high efficiency chillers and upgrading their DDC control system

THE PLAN

- ☑ Optimize new equipment and control system to maximize energy savings and reduce utility costs
- ☑ Maximize incentives available from The Energy Trust of Oregon and BETC

BY THE NUMBERS

527,000 annual kWh savings = energy to power 34.4 homes for one year
194,000 gallons per year water savings

\$ 473,000 total project costs
\$ 35,600 yearly operational cost savings
\$ 233,150 total program incentives
\$ 239,850 net owner cost

Trane did a great job replacing our old chiller plant at Columbia Square. Trane replaced two chillers, installed new VFD motors and drives on our chilled water and condenser water pumps. This complete chiller plant replacement also included new total plant operating control. The new plant uses 45% less kWh than the original and reduces our peak kW load. Stan McIntyre of Trane was the general contractor and did the work without delay or added cost. We are very happy with the design build process used by Trane and with the final results".

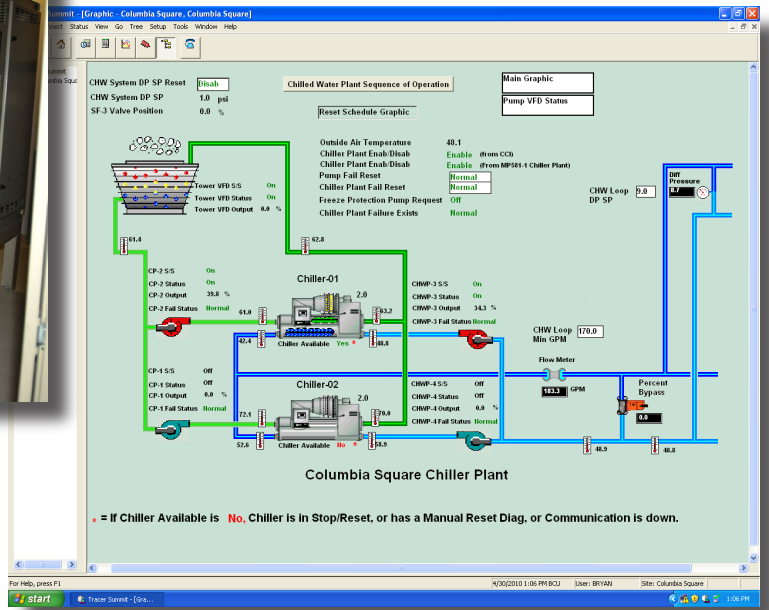
~ Byron Courts - Director, Engineering Services MelvinMark Companies

Columbia Square is a 15 story 274,000 sq/ft commercial office building in downtown Portland. The two 300 ton chillers were over 30 years old and the chilled water and condenser water were all constant volume pumping. The building is served by two large built up air handling systems. One of the air handlers is in the basement and serves the lower floors of the building and the second air handler is in a penthouse on top of the building which serves the upper floors of the building. The chillers and pumps are located in the basement while the cooling tower is located on the roof.

A Trane Trace 700™ energy analysis was performed on the building and a baseline was established comparing the past years utility bills with the output from the Trace 700™ run. Once this baseline was established new equipment and various pumping schemes were looked at to make the building run as efficiently as possible.

Columbia Square 2009 Four-Globes Certified





TRANE OREGON PROJECT CAPTAIN

Stan McIntyre - slmcintyre@trane.com

TEAM MEMBERS

MelvinMark Companies
TraneOregon
Energy Trust of Oregon, Inc.

TRANE OREGON ENERGY SERVICES

We are committed to help buildings operate at maximum efficiency to reduce environmental impact. Achieving maximum building efficiency is accomplished by owning efficient equipment, maintenance of that equipment and a dedicated focus on energy management systems and monitoring.

- ✘ Securing you energy rebates and incentives
- ✘ Energy audit services
- ✘ Performance contracting
- ✘ Turnkey equipment and control retrofits

SUCCESS IS IN THE DETAILS

- ✘ Air handler control valves changed from three way to two way
- ✘ Flow meter and bypass line with a control valve were installed to insure proper minimum flow through the chiller barrels
- ✘ Tracer Summit Control System installed to coordinate control of the central plant
- ✘ Two new high efficiency chillers installed, one with an AFD on the compressor
- ✘ AFDs for the chilled water pumps and AFDs for the condenser water pumps

NUTS, BOLTS AND SOFTWARE

- ✘ Two Trane Centrifugal Chillers, one of them with a factory mounted AFD
- ✘ Four 25 HP Trane/Danfoss AFDs for pumps
- ✘ RWME Trane Refrigerant Monitor
- ✘ Tracer Summit Control System

COMPLETION DATE

March 2008

PROUD ALLIANCES



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