

BURNER RETROFIT ON EXISTING BOILERS TO ACHIEVE EMISSION REQUIREMENTS

BOILER CASE STUDY

St. Paul's Towers

Oakland, California

Boiler Retrofit

CUSTOMER APPLICATION AND KEY CHALLENGES

St. Paul's Towers, one location in the Episcopal Senior Community network, is a nonprofit senior living community that provides complete continuing care while encouraging intellectual, physical, and social activities. With beautiful views of Lake Merritt and the East Bay, the 23-story St. Paul's Towers community offers 215 rooms, 43 skilled nursing beds, and 35 assisted living beds.

But the fragile nature of the residents requires reliable heating and hot water 24 hours a day, 7 days a week. To accommodate this need, St. Paul's Towers was using two Cleaver-Brooks hot water heating boilers, each with inputs of 6 million BTU per hour. When new state regulations mandated that the boilers be brought into NOx emission compliance of less than 15ppm, St. Paul's Towers was forced to look for a cost efficient solution to seamlessly upgrade their equipment.



St. Paul's Towers in downtown Oakland is the home to hundreds of senior citizens

THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

R.F. MacDonald Co. has serviced the boilers at St. Paul's Towers and were contacted regarding the emission requirement needs. After an analysis of the gas hookup available on the premises, evaluation of the existing equipment and review of the requirements, R.F. MacDonald Co. recommended to retrofit the existing boilers with Cleaver-Brooks ProFire MTH series burners.

The ProFire MTH series burner includes full modulation with parallel positioning and offers low NOx and CO emissions without FGR. The equipment also includes automatic tuning to achieve accurate water temperature under changing conditions, as well as network connectivity for remote control. The Cleaver-Brooks burners were successfully installed in less than one week, and the residents never experienced a minute of downtime.

PROJECT RESULTS

After the new burners were installed, the enhanced efficiency immediately became apparent. In fact, the new burners were optimized so effectively that in normal conditions, usually only one of the boilers was required to supply sufficient hot water for the entire building.



The new CB ProFire MTH Burner and control panel on one of the boilers

BOILERS

PUMPS

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SERVICE

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Final installation of two new burners

Not only has St. Paul's Towers noticed an increase in performance, but the NOx emissions is in the single digits, well below the 15 ppm requirement of the new BAAQMD regulation. Because the new Cleaver-Brooks burners are working more efficiently and producing less hazardous emissions, this upgrade has been good for St. Paul's Towers, as well as for the environment.

In addition to fulfilling the requirements of the emission regulations, the gas usage bill at St. Paul's Towers has reduced 30% from \$38,000 per month, to under \$26,000 per month; a significant savings for a nonprofit organization.

Now St. Paul's Towers enjoys a substantial reduction in NOx emission, improved water temperature control, and a tremendous operational cost saving.

"Not only did R.F. MacDonald Co. provide a turn-key solution, but they provided handholding every step of the way. We never felt left alone with the new burner technology, and were always a phone call away from a quick solution."



R.F. MacDonald Co.

your boiler & pump solutions team

~ since 1956