



PROJECT FOCUS ON CHILLER CHECK

THE PROJECT

INDEPENDENT, INVASIVE HOLISTIC ANALYSIS OF THE CHILLER SYSTEM AT AVIVA'S YORK OFFICES, TO VERIFY PERFORMANCE, INCREASE EFFICIENCY, AND STOP TRIP-OUTS

PROJECT TEAM

TELEREAL TRILLIUM (BUILDING OWNER)
NORLAND MANAGED SERVICES (FM COMPANY)
EFFICIENT AIR PROJECTS (HVAC SPECIALIST)

THE CHALLENGE

The chilled water system had been severely under performing for some time. It had suffered from multiple leaks throughout its life and most recently had undergone a change of refrigerant from the obsolete R22 to a non-ozone depleting alternative. The major issue however was the 'tripping out' of the Chillers when in excess of just 27°C ambient.

THE BRIEF

Efficient Air were to take a holistic approach to analyse the whole system, report on system suitability, outstanding issues, and ways to overcome problems and inefficiencies. The report's action plan was then to be implemented against a tight deadline, outside normal working hours and with the minimum of disruption.



PROJECT UNDERTAKEN
AT WELLINGTON ROW, YORK.
HEAD OFFICE OF AVIVA.



THE APPROACH

Working closely with the Facility Manager and the building owner, Efficient Air set about the challenge by assessing the current performance of chillers and condensers using their specialist field tool at the heart of their ChillerCheck service.

THE REPORT

Many issues were identified such as filter driers and elastomeric seals having not been replaced when upgrading the refrigerant. The refrigerant charge was also low. The main problem was that the equipment was originally designed to work at lower ambients encountered in today's climate, plus the fact that the replacement refrigerant was less efficient due to it being a combination of refrigerants and having 'glide'. There was also an issue with the re-circulation hot condensed air and extremely poor head pressure control.

THE BOTTOM LINE

Telereal Trillium invested £60,000 with Efficient Air and overcame all the issues with tripping out, having been operating satisfactorily in ambients in excess of 36°C with the combination of high efficiency fans and correct control, it is estimated that the work will be paid back within 15 months.

BEFORE



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THAT THE WORK WILL
BE PAID BACK WITHIN
15 MONTHS.

AFTER



THE SOLUTION

- High efficiency fans were installed with a 40% reduction in energy consumption 'fan for fan'
- EC motors were used to enable precise fully modulating control
- An 'EAC' controller was used to control the headpressure with ambient, this would then reduce compressor load by 2 - 3% per degree drop in ambient.
- An 'EAS' strategy was implemented to control the fans correctly, this reduced fan loads by typically 75% at half duty
- Some baffling was fitted to reduce short circuit of hot air.



PARTNERSHIPS THAT WORK.



WHAT THE CLIENT SAYS

"My gratitude goes to Steve Biggs and the team at Efficient Air for their efforts during the replacement of fans to the Searle Condensers at Wellington Row in York. This was a particularly challenging project for a whole number of reasons and I am impressed with the manner that the team handled all the problems we encountered at design/cost stage and during the work."



Arthur Potelli, CEng FIET FCIBSE
Assistant Technical Director, Telereal Trillium

Efficient Air is an independent energy consultancy, dedicated to achieving significant energy savings on it's UK customers' bills by evaluating all aspects of the HVAC system. By retrofitting technically advanced products into air handling units and air conditioning systems energy saving can amount to between 20 and 75 percent for large and medium size energy users.

Our independent evaluation service is based upon a proven knowledge of all types of air handling systems, and our ability to quickly calculate the percentage energy savings by installing the latest air movement technology.

By investigating thoroughly all aspects of the air conditioning systems, fan installations and related equipment we can guarantee our clients a maximum payback.

EFFICIENTAIR

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PLEASE FAX 01825 748151 FOR FURTHER DETAILS

- PLEASE CONTACT US TO ARRANGE A FREE ENERGY AUDIT ON A FAN SYSTEM.
- PLEASE CONTACT US TO ARRANGE AN HVAC SYSTEM INSPECTION
- PLEASE CONTACT US TO ARRANGE A VISIT BY ONE OF OUR ENGINEERS TO DISCUSS THE INITIAL SAVINGS

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