

Making an energy reduction impact on even the most well-maintained equipment.

Creating efficiency gains of 10% - 15% on Carrier 4-Ton packaged DX equipment.

Overview

ECM Technologies worked with ISS Facilities Services on one of their client's corporate headquarters, operating older buildings in Scottsdale, AZ. This specific campus included three separate buildings, one of which included our pilot study. The building was 37 years old and had previously been subdivided with many separate utility meters and 71 RTUs on the one pilot building.

ECM Technologies treated two RTUs as part of a study in partnership with the ISS, a Facilities Services Management Group. ISS has a great reputation for the quality of their facility preventive maintenance program, evidenced by the pristine condition of the HVAC equipment.

Even with drastic changes of client building usage during the test period, ThermaClear™ was still able to make a notable impact to reduce energy consumption on this well-maintained equipment.

Savings

Estimated annual energy reduction



31,522 kWh

CO₂ equivalent savings



22.3 metric tons

Estimated annual carbon reduction



2,514 gallons of gasoline

“[Performance validation was challenging during this pilot given the varied use of the office space, with frequent changes to building space use and thermal loading. In the end we were successful in finding like data sets for a high confidence in energy reduction characterization.](#)”

Proving the efficacy of ThermaClear™

Unit Type

**4-Ton DX
packaged units**



**Conditioned Space
46,742 ft²**

Installed by



Critical cooling needs

Well maintained equipment through rigorous preventative maintenance. Building was HVAC partitioned for 13 separate business, with individual utility meters, which led to excessive conditioning capacity. Average of 159 ft²/ton cooling compared to norms of 350 ft²/ton.

Performance Measurement & Verification

ThermaClear™ performance was validated through comprehensive, real-time monitoring throughout ECM Technologies research and development process. Our monitoring system adhered to International Performance Measurement and Verification Protocol standards to capture key indoor and outdoor metrics like temperature, humidity, chilled water / air flow and energy consumption. Data was recorded every minute over an extended testing period, ranging between 3 and 9 months per test, to capture both pre- and post-treatment data.

Corp. Bldg. Unit 49 - kW/Ton versus Outside Air Temperature

