LEADING THE FUTURE OF LIGHTING + TECHNOLOGY

HVAC + UV-C Coil Cleaning Case Study

Project Details

- 60,000 sq-ft facility
  - 4,500 annual cooling hours
  - 11 cents per kWh utility rate
- HVAC coil cleaning systems installed in selected rooftop units (RTU's)
- 86,000 kWh annual HVAC energy savings
  (kWh savings is equivalent to of the savings achieved with the customer's earlier fluorescent-to-LED lighting retrofit.)
- 61 metric tons of CO_2 emissions avoided
- 3-year Coil Cleaning payback*

Operational Benefits

- **Manual evaporator coil cleaning eliminated**
- **Enhanced Indoor Air Quality (IAQ):**
  97% single [air] pass COVID-19 deactivation
- **Extended RTU service life (est. 1.7 years on selected RTUs)**
- **Extended HVAC durability**
  Reduced fan/pump/compressor runtime + coil corrosion

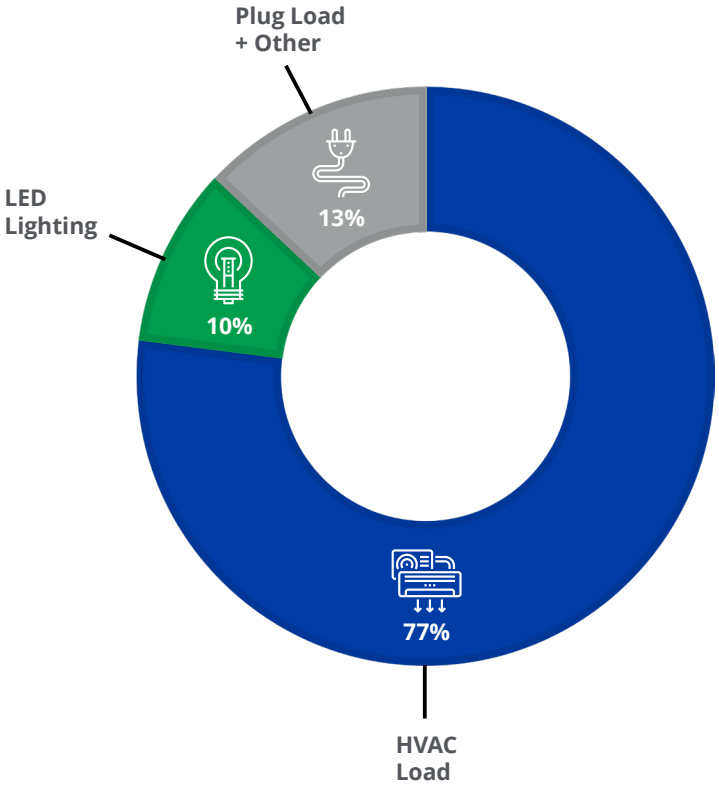
*Payback can vary based on climate zone + electricity cost

EMC's Disinfection Solutions

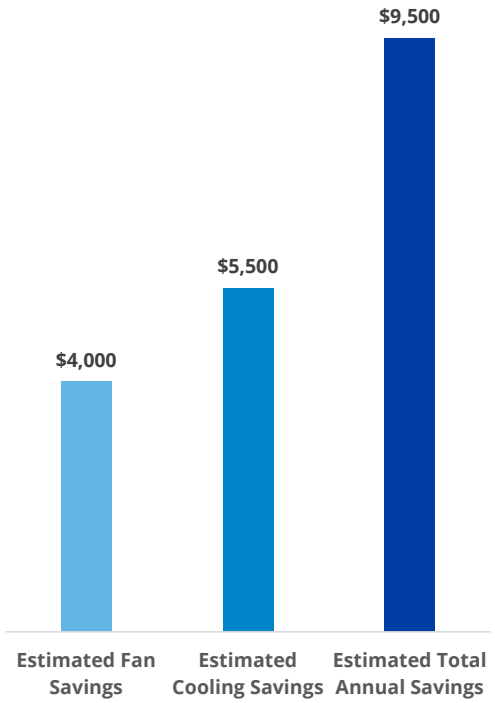
- HVAC Coil Disinfection
- HVAC Air Disinfection
- HVAC Air Purification
- Upper Air Disinfection
- Active Air + Surface Disinfection
- Custom Disinfection Solutions

EMC's Total Approach

Energy Usage Profile



Annual HVAC Energy Cost Saving [after adding UV-C coil cleaning]



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Energy Saving UV-C Coil Cleaning

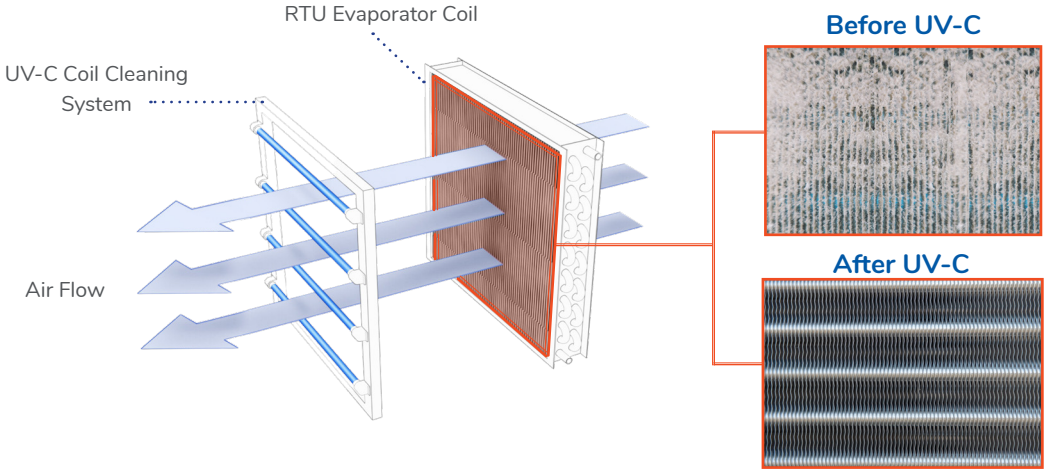
Overview

- HVAC (heating, ventilation and air conditioning) can account for up to 80% of a commercial building's electricity consumption.
- Roof top mounted HVAC units (RTUs) are typical for commercial buildings. These units contain heat exchangers (evaporator coils) that are used to cool air going into a building.
- Over time, biofilm grows on these coils, restricting airflow and disrupting their ability to pull heat out of the air.
- As a result, the RTU must run longer to achieve the desired cool air temperature. In addition, as the RTU is running, the biofilm causes its fan and compressors to run less efficiently resulting in additional power consumption for every hour of operation.

RTU (Roof Top Unit)

- Periodic manual cleaning can temporarily remove the biofilm. However, it regrows between cleanings. This cycle of cleaning and biofilm regrowth can increase RTU energy consumption up to 15%.
- Retrofit UV-C coil disinfection systems eliminates biofilm and returns an HVAC system to its optimal performance.

HVAC Coil Cleaning with UV-C



Is anyone else doing this?

Yes. A good example is the U.S. General Services Administration (GSA) that requires that UV-C coil cleaning be used in all buildings under their jurisdiction.

Is it really effective?

Yes. The technology is endorsed by the U.S. Dept of Energy and recommended by ASHRAE as a tier 2 performance enhancement to existing HVAC systems. There are numerous peer reviewed research studies confirming the effectiveness.

What sort of payback can I expect?

EMC is seeing a 2-year to 5-year paybacks, depending on cost of power and the climate region where a building is located.

Is UV-C safe?

Yes. UV coil cleaning systems are completely enclosed within the RTU. The systems also include RTU door sensors which automatically turn off the UV lamps automatically if the RTU doors are opened.