



Project: Solar HVAC System and photovoltaic solar Upgrade at Kittle Building

Project Location: Indianapolis, Indiana

Project Overview: Replacement of Desert Aire 50-tons rooftop unit with iAIRE ultraDRY unit with Solar HVAC and ultraCOOL options. Installation of 268 photovoltaic solar panels

Project Details:

- **Client:** Kittle Building at Two Parkwood in Indianapolis, IN. Chantal Crabtree was the buildings representative who was involved in the project.
- **Property:** 4-story office building with 97,982 sq feet of space.
- **Project team:** HSI Solar Provided the photovoltaic solar design and installation as well as the overall project management. iAIRE, LLC provided the Solar HVAC equipment and the installation of the HVAC equipment.
- **Old HVAC System:** Desert Aire 50-ton DOAS rooftop package unit supplying outside air to the building. Water source heat pumps provide tenant cooling & heating
- **New HVAC System:** iAIRE ultraDRY 100% DOAS rooftop package unit
 - **Features:**
 - **Solar HVAC Option:** Utilizes solar energy to enhance efficiency by up to 30% compared to conventional units.
 - **ultraCOOL Option:** Employs a water-cooled condenser while still having an air-cooled condenser, resulting in superior energy efficiency and better heat transfer. The air-cooled condenser is a backup so if the water system is down, the unit can still produce cooling.

Benefits:

1. **Energy Generated:** The photovoltaic system should generate 144,369 KWH annually for the customer. This should save the customer annually \$16,984.
2. **Energy Efficiency:** The iAIRE Solar HVAC units harness solar power, significantly reducing energy consumption and operating costs. The system is designed to be up to 30% more efficient than standard HVAC units, providing substantial savings.
3. **Federal Tax Credits:** By pairing Solar HVAC with photovoltaic solar, the project will receive a 40% federal tax credit on both the equipment and installation of both the photovoltaic and Solar HVAC installed on site. Pairing these two technologies together allows both the photovoltaic and Solar HVAC to receive the 40% credit.

4. **Enhanced Performance:** The ultraCOOL option's water-cooled condenser offers more efficient heat transfer, enhancing the overall performance of the HVAC system. This feature ensures optimal cooling, even during peak load times, and minimizes wear and tear on the unit.
5. **Sustainability:** By integrating solar energy into the HVAC system, the project aligns with sustainable practices, reducing the carbon footprint and supporting green initiatives.
6. **Extended Equipment Life:** Solar HVAC technology allows for the compressors in the HVAC system to operate at a slower speed. This allows for less wear during normal operation allowing for lengthened equipment longevity.

Project Impact:

The successful replacement of the existing HVAC system at the Kittle Building showcases a commitment to adopting cutting-edge, energy-efficient technologies. This upgrade not only enhances the comfort and well-being of the building's occupants but also demonstrates a proactive approach to environmental stewardship and operational efficiency.

