

## CASE STUDY

### Plasma Air Cleans and Reduces Outside Air for New VRF System at Virtua

- Meets IAQ Procedure Requirements
- Delivers Significant Cost Savings
- Installs Quickly and Easily

“VRF units have a limited ability to process outside air. What Plasma Air allows you to do is reduce the amount of outside air while maintaining acceptable indoor air quality.”  
Thomas Pisarek, Owner,  
Pisarek Engineering PC

## Virtua - Center for Weight Loss

### Occupants of the Center for Weight Loss Benefit from Cleaner Air as They Embark on Their Wellness Activities

#### THE SITUATION

Tozour Trane's Systems Sales Engineer Shaun Stephens met with Tom Pisarek (Pisarek Engineering) to discuss the outside air requirements for the newly renovated Center for Weight Loss (CFWL) for Virtua – a nonprofit healthcare system in Voorhees, New Jersey. Their findings revealed that the existing outside air intake system would be inadequate for the new space.



The dated building was fitted with a residential rather than a commercial-grade HVAC system. Also, the limited space meant limited HVAC options. The existing structure provided no room for items such as chillers or standard ductwork. For this reason, Stephens and Pisarek decided that a Variable Refrigerant Flow (VRF) system would be the best solution. VRF cassettes blend with any room interior and offer the ideal solution for small commercial applications where space is limited.

“It seemed to be the obvious solution for this particular building and how it was designed and set up,” said Pisarek. However, VRF is only half of the solution. Pisarek goes on to say that, “VRF units have a limited ability to process outside air; they are just not designed to handle a great deal of outside ventilation air, as required by code. This is where the Plasma Air solution comes in. What Plasma Air allows you to do is reduce the amount of outside air while maintaining acceptable indoor air quality.”

#### AN INNOVATIVE APPROACH

Pisarek knew that certain HVAC components, such as high-performance air filters, would not fit within the VRF cassettes, so different solutions were sought. He contacted his longtime partner Plasma Air for help in providing the ideal solution.

Plasma Air's PA660 series of bipolar ionization products were an ideal fit for this project. By utilizing ASHRAE's Standard 62.1 IAQ Procedure for healthier indoor air, these solutions effectively control harmful contaminants that can enter the breathing zones — while at the same time provide the engineer with the flexibility to reduce outside air (OA) intake while complying with building codes. This reduction of OA also contributes to a reduction in energy bills. In addition, the small footprint of the ionizer allows for ease of installation in the VRF unit. Continued on page 2



Plasma Air model PA664 was installed in multiple VRF round cassettes and ducted air handling units.

## PLASMA AIR'S PA664 VRF IONIZER

The PA664 is a 208/230V bipolar ionization-based air purification system that produces a balanced quantity of both positive and negative ions. The ions are delivered to the occupied space where they interact with pollutants on a molecular level. This ionizer also includes BAS contacts allowing the building control system to monitor the status of the ionizer.

The PA664 ionizer provided very flexible installation options for the project. Two 360° round flow ceiling cassettes and eight ducted VRF air handling units were designed for the project. "It's also very easy to install, saves energy, and doesn't require maintenance," says Pisarek. "The units (ionizers) were installed in under 30 minutes."

## AWARD-WINNING SOFTWARE WRAPS UP THE SOLUTION

Plasma Air's award-winning software PlasmaSoft® was the final piece of the solution. PlasmaSoft® Indoor Air Quality Procedure (IAQP) software is designed to help engineers properly reduce outside air intake and verify reduced contaminants in the building spaces. It is a turnkey, easy-to-use solution for the execution of complex calculations required by the IAQP. PlasmaSoft® calculates and compares contaminant levels side-by-side for ASHRAE 62.1's Ventilation Rate Method and the IAQ Procedure. The software, developed by Plasma Air's software team, is free to the HVAC community.

## THE RESULTS

Working together, Stephens, Pisarek and Plasma Air's customer support team were able to engineer a solution that combined VRF technology with Plasma Air's PA660 series of ionizers and thus provided Virtua with a system that was far less expensive than most other HVAC options, but one that met all applicable outside air codes.

"In our business, no news is good news," according to Pisarek. He summed it up: "The project is completed, the new space is occupied, and all is going well. The only time we get a call is when there's a problem and we haven't received any calls."



PlasmaSOFT IAQP

## ABOUT PLASMA AIR

Plasma Air manufactures air purification products that result in healthier, more productive indoor environments in institutional, commercial and industrial applications. The company uses highly efficient bipolar ionization technology that supports the engineering community in utilizing ASHRAE's Standard 62.1 IAQ Procedure to reduce outside air intake.

## ABOUT TOZOUR ENERGY SYSTEMS & PISAREK ENGINEERING

Tozour Energy Systems (Tozour) is a full-service HVAC and building automation provider based in suburban Philadelphia. As the Trane commercial equipment franchise for Philadelphia and South Jersey, Tozour offers a multitude of climate solutions for commercial buildings.

Pisarek Engineering PC is a consulting engineering firm in southern New Jersey, specializing in healthcare applications.



Positive Air Quality - Negative Energy Costs

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