

# Reinventing Underfloor Air in Existing Buildings



PROJECT INNOVATION

## Challenged with finding the optimal space for their growing business needs

An East Coast financial data and software company began looking for space in their local marketplace. Having identified an existing building that met their requirements for space and location, the project team partnered with Global IFS to incorporate innovative products and design strategies to create a space which will deliver a high degree of flexibility, operational efficiency, and occupant comfort. Key to the strategy was incorporating a low profile underfloor air system featuring the Global IFS TecCrete access flooring system, Vertical Air Tower fan units, and a continuous linear plenum system to condition the perimeter of the space. The team also chose to take advantage of a plug and play modular power distribution system offering more efficient initial installation and long-term flexibility for the client. This customer's 40-year old building will now offer all the design features found in many of today's newest Green Buildings.

## Objectives

- Find additional office space to house all employees in one building due to the rapid growth they have experienced.
- A flexible space to be able to adapt to their changing business requirements.
- A space that will offer all the health and wellness benefits of state-of-the-art commercial buildings.
- Create a space that will attract and retain the best talent for their company.
- Finding an existing Class-A office building to house their new headquarters.

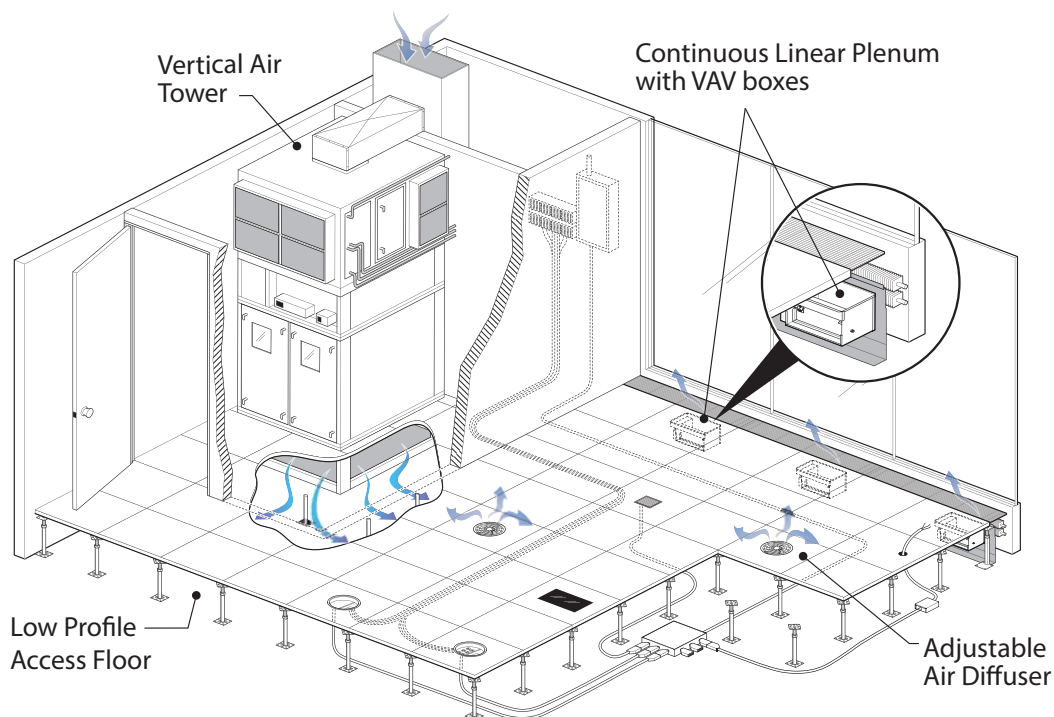
## Challenges

- Existing building and architecture.
- Efficient distribution of power and data to the workstations
- Create flexibility for the future growth of their business

## The Solution

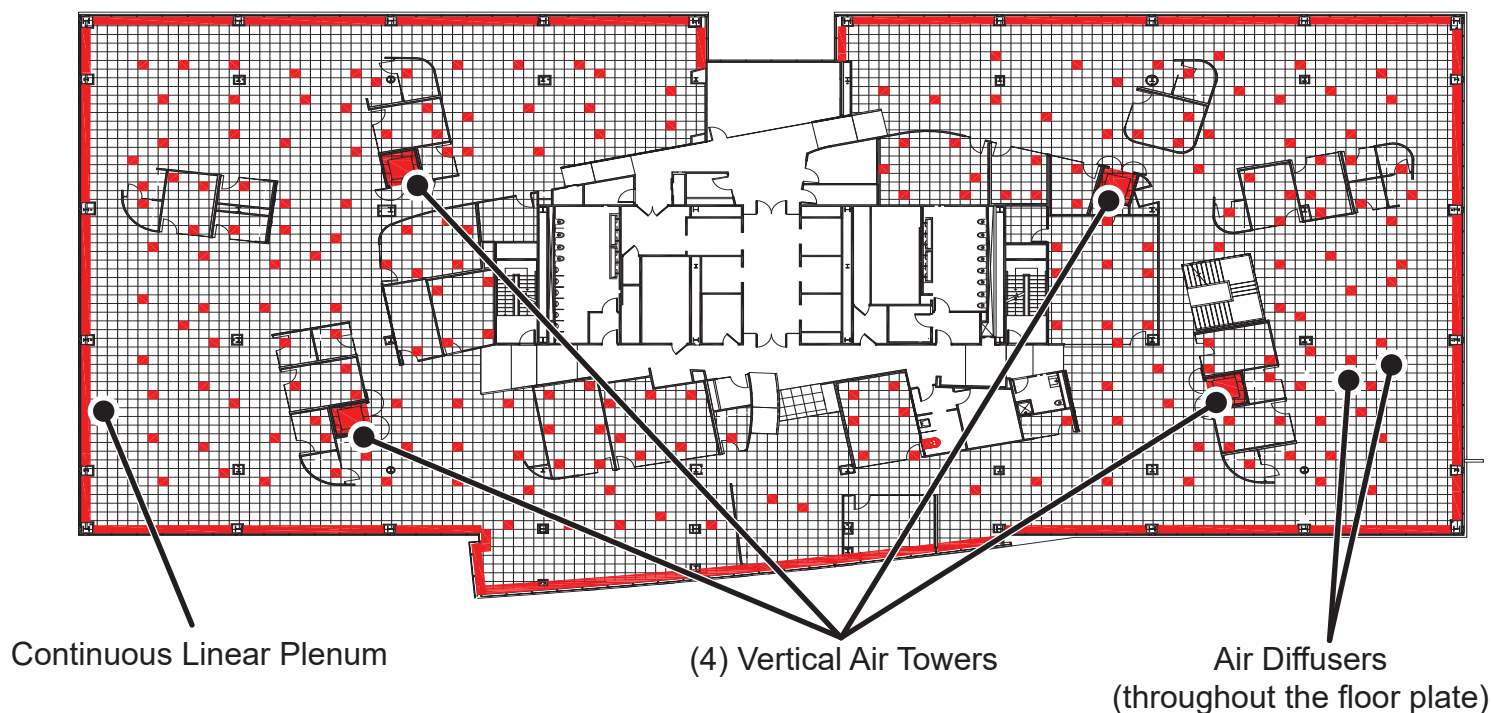
The chosen building is a typical office building constructed in the 1970s. The office space had been vacant for some time presenting an opportunity to attract a marquis tenant. The building owner saw a low profile UFAD system and modular power as an innovative design strategy to allow them to stand out from other competing building owners.

- The project architect utilized a 7.5" low profile underfloor air distribution system in their own offices, determined that a similar application would be ideal for this customer.
- Continuous linear perimeter troughs with hot water fin tube and modulating VAV dampers for cooling. This method creates a more efficient method to condition the perimeter temperature of the space.
- Individually adjustable and automated floor diffusers in the conference rooms and private offices.
- Vertical Air Towers were designed to provide uniform cooling of the workspace.



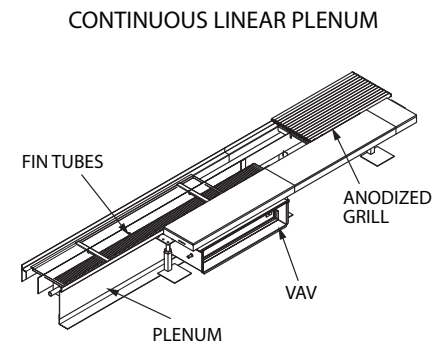
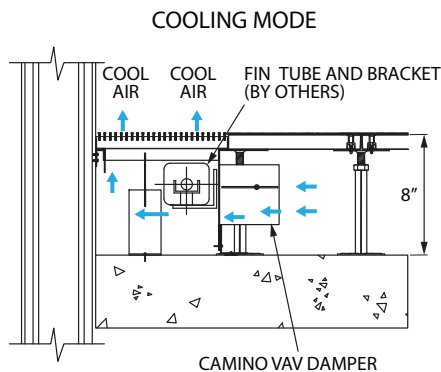
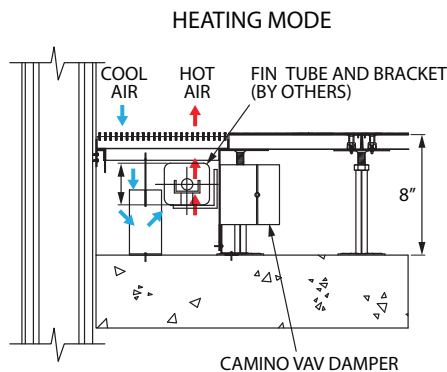
## Air Towers Optimally placed in the floor plate increases usable floor space

For the existing building this is the air tower placement selected by the architectural and engineering team. This layout took advantage of the small footprint of the mechanical rooms creating the greatest flexibility in the space; optimizing air distribution, space planning and eliminating underfloor ductwork.





## Continuous Linear Plenum offers better energy usage and consistent temperature throughout the floor plate

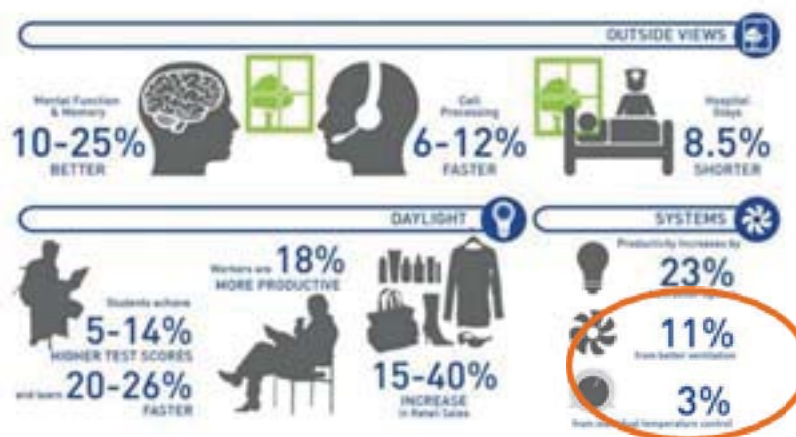


### Less Expensive to Operate

- Lower mechanical system build-out cost
- Less expensive to operate due to the efficiencies recognized with an underfloor air system.
- The office building was modeled to meet ASHRAE 90.1-2016. For this location they are anticipating a 20% energy efficiency

### Greater Worker Productivity due to Better Indoor Air Quality

According to a study on buildings with underfloor air systems done by the World Green Building Council, worker productivity increases 11% due to better ventilation plus an additional 3% due to individual temperature control.



Source: World Green Building Council

Utilizing a unique vertical air tower, underfloor air, continuous linear plenum, modular power and a low access floor building platform yields a highly functional new space to grow and change as business changes. Today, companies can incorporate all the design benefits of a new green building while maintaining the character and interest of an existing historical building.

## Why wouldn't you use this unique building platform when renovating your building to create new space for your business?

- **Lower Costs** - An underfloor air system utilizing Vertical Air Towers is one of the single most effective strategies to reap savings at initial construction and in building operating costs.
- **Underfloor air in existing buildings** - Underfloor air systems can now be accommodated in a minimal 8"FFH space.
- **Flexibility for the future** - When utilizing modular power, power can be accessed easily and quickly where needed.
- **Optimizing usable floor space** - Vertical Air Towers maximize the usable floor space in the building as compared to conventional air handling units.
- **New building construction norm** - Underfloor air systems have been used effectively for over 20 years in North America. This building construction is the norm in Europe.
- **Worker comfort is one of the top workplace issues challenging organizations** - Clean and newly conditioned air is introduced through the raised access floor, directly into the occupied zone. The air with the impurities naturally rises to be removed from the space. Air diffusers can be adjusted by occupants to give them greater temperature control, allowing them to focus on their work.
- **TecCrete is solid underfoot** - A concrete and steel composite structure that flexes 50% less than ordinary steel access floor panels eliminating the feel of being on an access floor.
- **LEED & Well building focus** - Underfloor Air in combination with Modular Power and Raised Access floor contributes significantly to attaining LEED points and allows building to comply with WELL building design. Our floors have been installed in some of the largest and highest scoring LEED-certified buildings in the country.

Global Integrated Flooring Solutions is the leader in providing a fully integrated, high-performing building platform utilizing Underfloor Air, Modular Power and Raised Access Floor. This unique building infrastructure creates a cost effective, adaptable, sustainable space that promotes employee productivity and comfort along with delivering value across the full life cycle of your building.