

Underfloor Service Distribution



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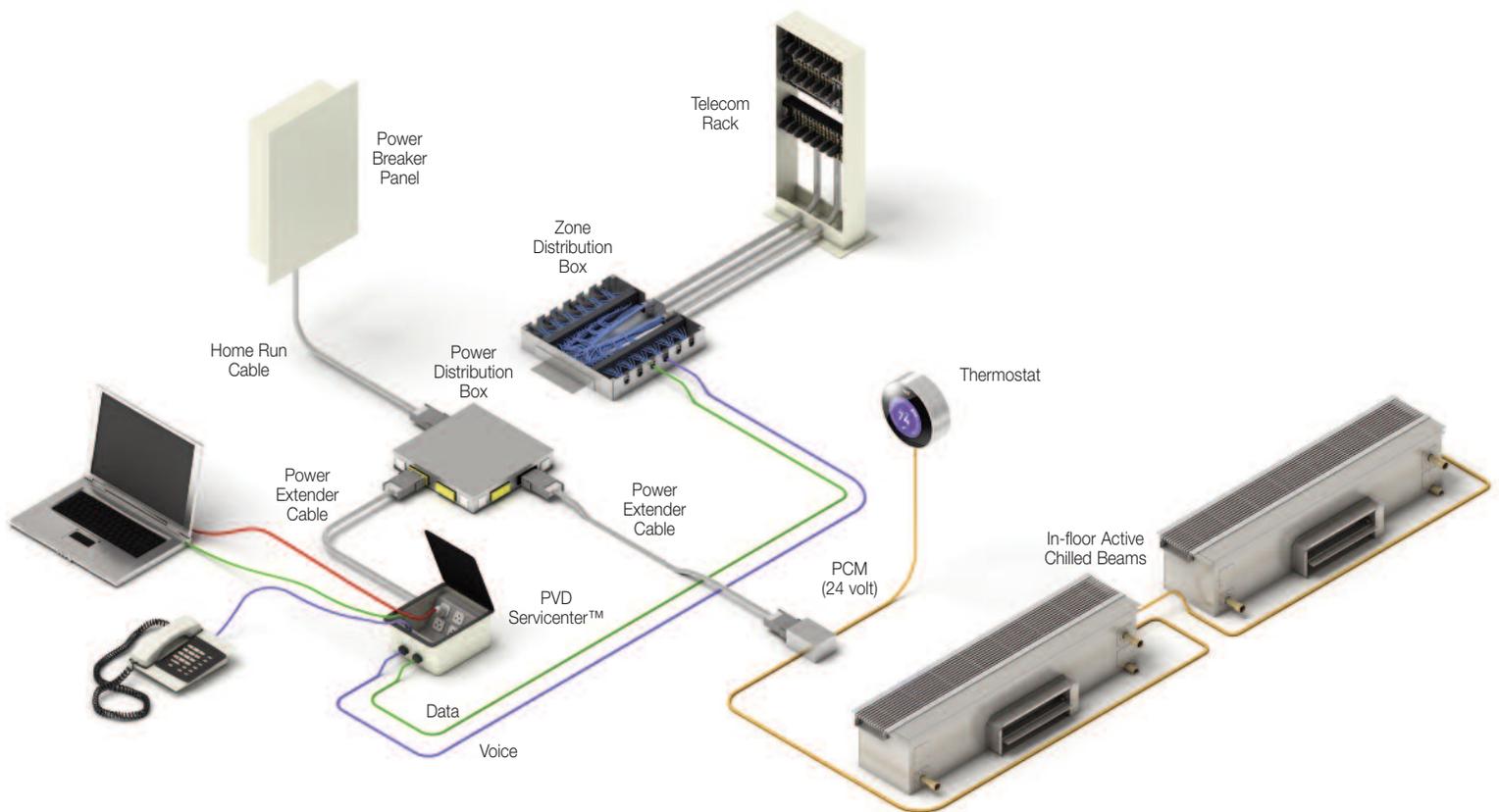
Underfloor Wire & Cable Management

Tate's has partnered with Cii, the leading manufacturer of modular power and voice data systems to provide flexible solution for commercial interiors. Cii offers superior quality and fast, flexible service with custom application capabilities.

Cii's StationLink® and PVD Servicenter® are the modular answer to providing multiple power and data circuits to desktops and workstations in the office. This plug-and-play system allows you to add new equipment or make moves, adds and changes very simply and quickly. The patented connectors are UL listed and approved to connect and disconnect while energized, meaning the circuit breaker does not need to be locked and tagged-out to make changes. As easy as unplugging a lamp, the user can disconnect and move an entire workstation with a minimal amount of disruption to the rest of the office.

Key features Modular Power & Data Management

- Flexibility- with plug-and-play units, installing and reconfiguring the office layout is fast, easy and cost-effective.
- Capacity – multiple outlet units allow high capacity multi-circuit wiring configurations to be added for future staffing needs.
- Customization – the StationLink® and PVD Servicenter® can be custom engineered to accommodate any office furniture and provide any power, voice or data service required.
- Life Cycle Costs – the mobility of these devices allow you to add, move or relocate as often as you need, without having to reinvest in a new power system.
- Safety – all StationLink and PVD Servicenters are UL and CSA approved. The power connectors have a “first make – last break” grounding and are keyed to ensure proper connection.



Underfloor Air Distribution

Tate Advancements in Perimeter Heating and Cooling

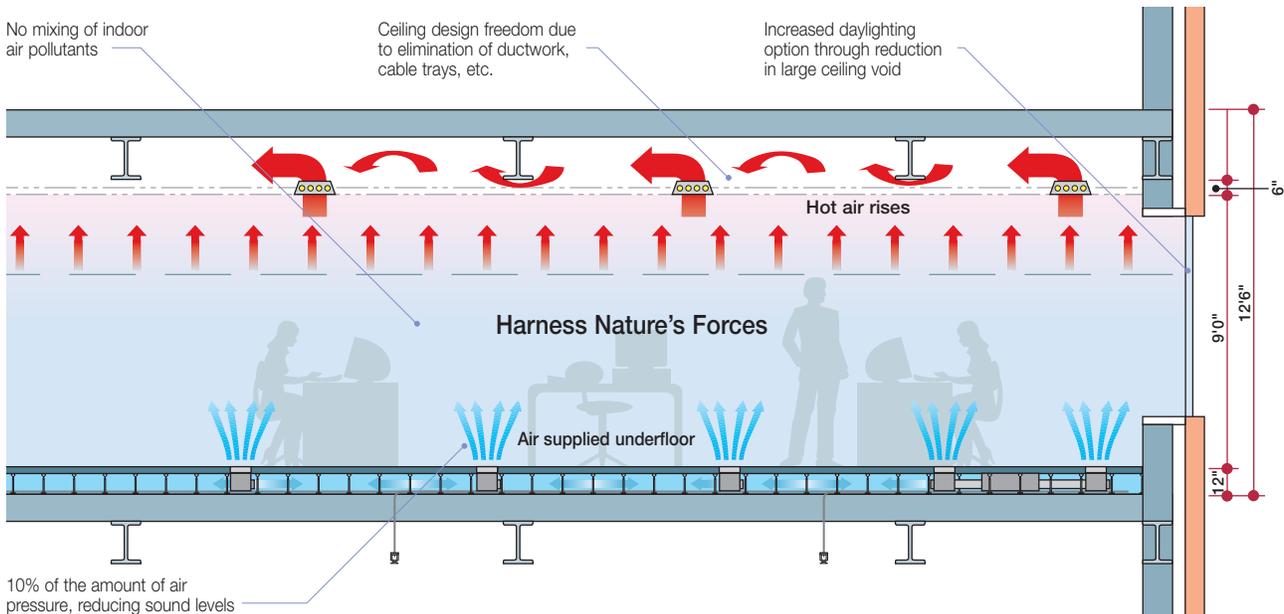
Underfloor Air Distribution (UFAD) has become a popular strategy for heating and cooling an office building due to the significant HVAC energy savings it offers while addressing a variety of other indoor environmental needs. These needs include maintaining high-quality clean air, improving personal comfort control, attenuating noise, responding to organizational and technology changes quickly and easily, and supporting the overall aesthetic value of the facility – all while being cost-effective in both during construction and operation.

Tate is committed to improving UFAD design. One of the most critical aspects of any Commercial HVAC system is the ability to deal with the perimeter load before it affects the occupants inside the building. Tate's EcoCore and In-Floor Active Chilled Beam are two of the latest technological advancements by Tate design to improve UFAD perimeter design.

Advantages of UFAD

- Enhanced indoor environmental quality through superior IAQ, improved acoustics, and increased daylighting opportunities.
- Maximize flexibility at design inception and throughout the life of the building. With UFAD you can relocate, add or remove diffusers to rezone the space based on current load profiles.
- Save 20% or more on your HVAC energy costs through economizer operation, and less fan energy requirements.
- Easily adapts to technological and organizational changes over the building's lifecycle at low cost.
- Improve personal comfort control with individual volume and air direction control.
- Reduced first cost and construction time due to significant reduction in HVAC ductwork.
- Reduced operating costs and lower facility and maintenance costs through accessible, flexible, and adaptable services.

Tate underfloor air distribution system



In-Floor Active Chilled Beam

With a wide product range the In-floor Active Chilled Beam offers many benefits over other perimeter solutions commonly used in raised floor office environments. Improved energy efficiency, the reduction of equipment and ductwork under the floor, and the ability to create a seamlessly integrated look along the perimeter are just a few of the advantages.

Features & Benefits

- Handle perimeter heating and cooling loads
- Chilled water is delivered safely below the floor
- Gain the full energy efficiency advantage of water heating and cooling by conditioning at the source of the load
- Ability to use water below dew point and control condensation
- Easily manage shoulder season conditioning
- Gain advantages of stratified airflow vs. overhead chilled beams

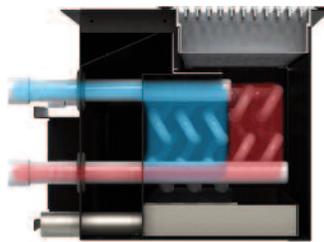


In-floor Active Chilled Beam for heating and cooling



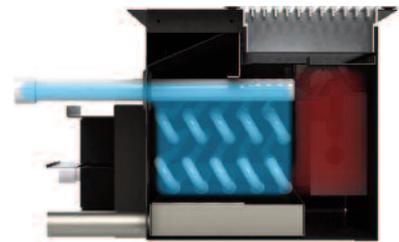
2-Pipe

The 2-Pipe model is designed to have either hot or cold water pass through the unit based on building demands. Supply and return water connections are located on opposite ends of the chilled beam. Thermostatically controlled the unit time modulates the air valves and water valves to meet the perimeter demands.



4-Pipe

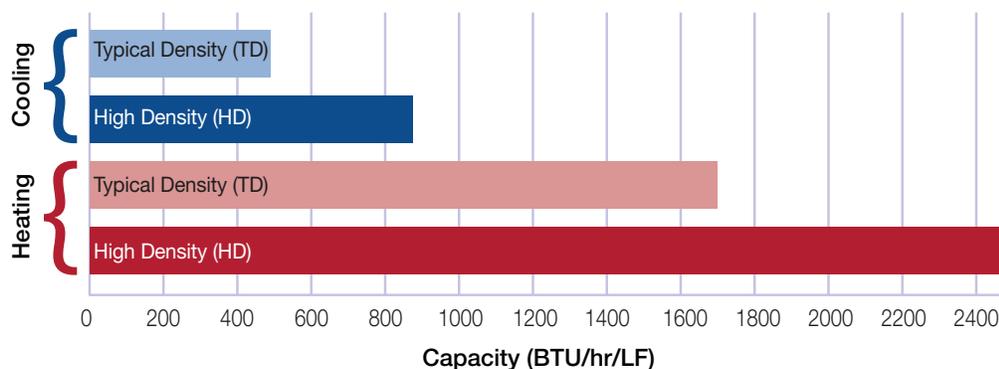
The 4-Pipe model has the ability to supply hot and chilled water to the unit without switch over. Two supply and two return water connections are located on opposite ends of the beam. Time modulated air and water valves allow the unit to meet demand based on a thermostat located in the space.



2-Pipe with Electric Heat

Much like the 4-Pipe model, this unit is capable of both heating and cooling without changing the water supply. Both supply and return water connections and an electrical connection is located on the device. The perimeter demands are met by time modulating the air valves, water valves, and electric heat.

In-floor Active Chilled Beam Performance Chart



For more information get Tate's In-floor Active Chilled Beam brochure online at: www.tateinc.com

EcoCore

Phase Change Technology for Energy Efficiency

EcoCore access floor panels are steel welded shells filled with a unique mixture of structural cement and PCM that allows the panel to absorb thermal energy while maintaining the high level of integrity and quality expected from Tate's raised access floors. This is possible due to utilizing a patent pending method of mixing microscopic spheres of encapsulated PCM into the cement. The spheres maintain their size, shape and integrity throughout phase transitions. This allows the panels to seamlessly integrate into a raised floor installation providing a low impact thermal mass to absorb energy during the day that would otherwise affect both the energy efficiency and comfort level of the office. The stored energy is then released again overnight as the temperature drops below the 75° F melting point.



Benefits of Phase Change in a Raised Floor

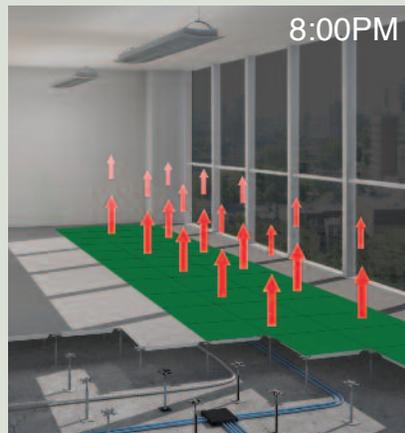
- Reduce perimeter heating and cooling loads during normal business hours
- Use free or low cost cooling to handle the thermal load stored in the panels during non-business hours
- PCM lasts the life of the building (over 100,000 changes)
- Tate's raised floor panels provide a safe solution for applying phase change material in a building. By embedding the material in cement and then fully encapsulating it in a steel welded shell, the material is protected from the external environment
- Gain advantages of a raised floor system

EcoCore Perimeter Solution

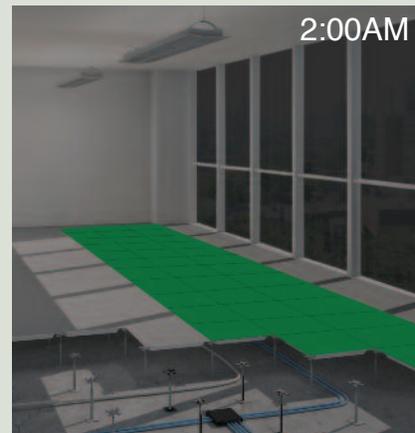
Using EcoCore in the perimeter zone of the office will help to reduce the overall peak load in the space and delay the occurrence of the peak load to later in the day. By reducing the overall peak load the amount of cooling required to keep the space comfortable is reduced. In addition, by delaying the peak to later in the day the load can often be handled with free economizer cooling or with reduced rate electricity.



Solar load warms the panels during the day. As the panels warm the phase change material melts absorbing energy.



The energy is stored in the panels to be released during non-peak hours.



As the panels cool overnight the phase change material solidifies.

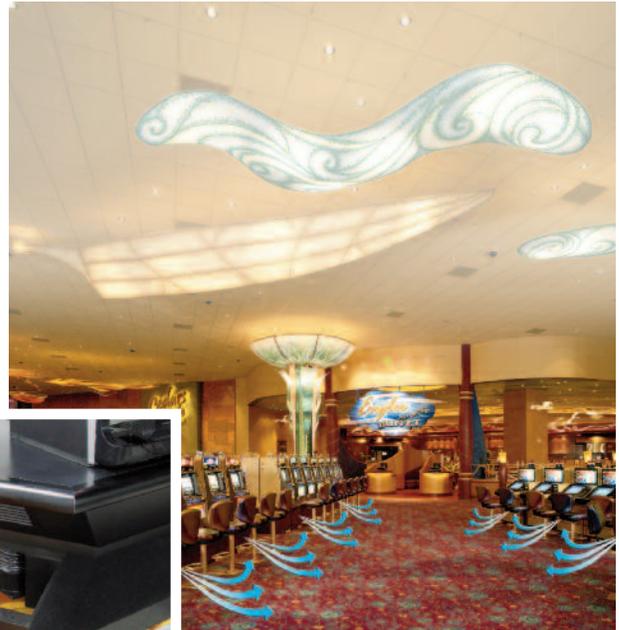
Casino Air»Connect

Creating A Healthy Gaming Environment

Tate's **Air»Connect** provides significant advantages in maintaining air quality, flexibility and the aesthetic integrity of a Casino's gaming environment. **Air»Connect** uses a variable-air-volume damper or flexible duct to tap into the pressurized plenum of an underfloor air distribution system. The air is then delivered at or near the floor through diffusers mounted in slot bases and other structures built on top of the raised floor. **Air»Connect** offers the same flexibility and improved indoor air quality of a typical floor mounted diffuser only the diffusers can be concealed out of sight for a more appealing aesthetic.

Features

- Easily mounts under any slot base cabinet or pit boss stand.
- Can be used with any air diffuser provide by a third party vendor or custom fabricated by the slot base manufacturer for a seamless integrated look.
- All components are quick connect for easy installation and removal during casino layout configuration changes.
- **Air»Connect's** 'plug and play' placement flexibility ensure maximum comfort is maintained.
- Delivers air near floor level to maximize acoustic performance, energy efficiency, and help eliminate smoke in the occupied zone.



Air»Connect with a concealed diffuser



Casino: FireKeepers Casino,
Battlecreek, MI, 107,000 ft²