

***Warm air rises but DIRIVENT
puts it in its place***



FläktWoods

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Dirivent is an air distribution system capable of moving large volumes of air over long distances without the need for extensive duct installations.

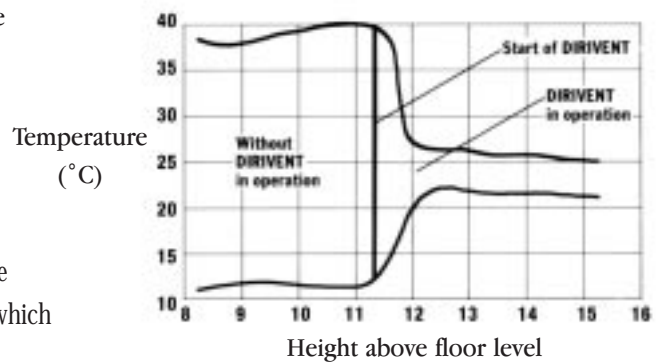
It consists of a small bore duct system with jet nozzles to direct the air. Supply air from the air treatment system is controlled and directed by strategically placed jet nozzles, making Dirivent particularly attractive for ventilation and heating purposes. The system can also be used for cooling.

Dirivent is extremely flexible in configuration and can be easily installed in new buildings, or within existing plants, to improve the pattern of airflow and temperature distribution.

Dirivent provides full control over temperature and airflow in all types of premises with ceiling heights above 4 meters and up to 36 meters. Stratification is prevented which would otherwise increase the overall heat loss and create cold drafts in working areas.

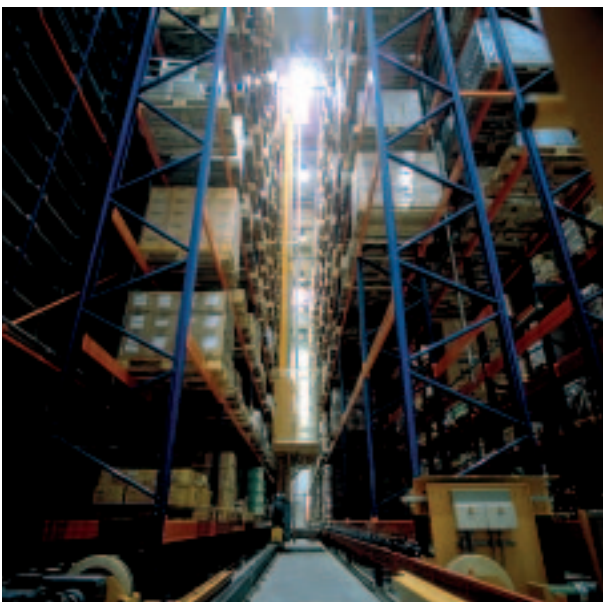
Dirivent Evens out the temperature differences

A key element in reducing heating costs and creating a good working environment, is the uniformity of air temperature from floor to ceiling. The smaller the difference between ceiling and floor temperatures the better. Reducing this temperature gradient (de-stratification) is the main concept behind the Dirivent system.



The chart above shows the temperature differences between floor and ceiling of a repair workshop, with and without Dirivent in operation.

Without Dirivent the temperature at 7.5 metres above floor level is +40°C and 11°C in the working area. Thirty minutes after Dirivent System start up, the temperature difference between floor and ceiling temperatures was reduced to 3.5°C.



Typical Warehouse Installation



Dirivent Installation in UCD Faculty of Commerce

Dirivent Puts the Right Air in the Right Place

Industry Applications

Over the past 15 years Fläkt Woods (Ireland) Ltd. has gathered vast experience from all kinds of Dirivent applications.

The benefits of the Dirivent system are highly valued in the following areas:

- Sports arenas
- Atrium spaces in hotels and commercial buildings
- Mechanical workshops
- Facilities for the automotive and aerospace industries.

A constant floor-to-ceiling temperature can also be of great importance for such industrial applications as:

- Food storage and printing facilities
- Warehouse applications

The patented Dirivent system has been installed in over 7500 installations worldwide. This collective know-how has been condensed in Fläkt Woods manuals and computerised design systems.

Dirivent Carpark Ventilation System

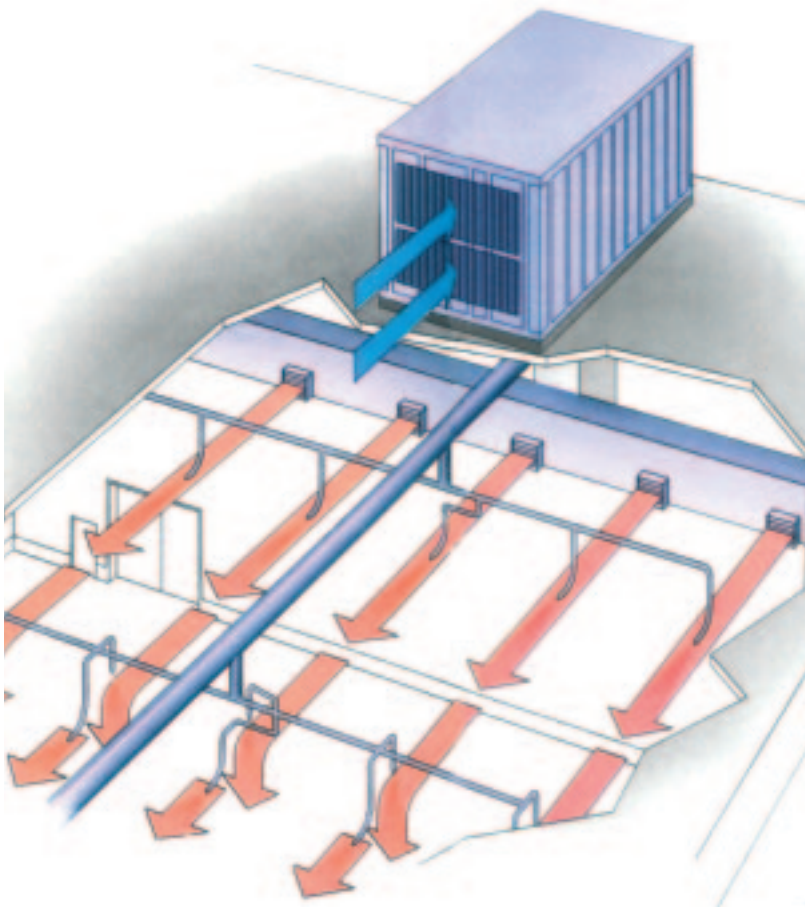
With the dirivent carparking system no fresh air ductwork is present within the space. The fresh air is transported by high velocity spirally wound ductwork from the fresh air intake system to the fire rated exhaust air system.

The entire garage is ventilated as fresh air is constantly induced, transported and mixed in the space between the supply and extract opening. A high velocity Air Jet is blown from the patented Dirivent nozzle. The volume from the nozzle increases as it induces the ambient air (thus losing velocity). A second series of nozzles are installed within reach of the first air jet to ensure the momentum of the air is continued.

6 air changes per hour (A/ch) is introduced and mixed in normal operation. 10 A/ch is introduced and mixed in fire mode operation via 2 speed Supply & Exhaust Fans. As no fresh air ductwork exists within the space, the meterage of ductwork installed is typically 60% of that required by a conventional system. With the Dirivent System, multiple nozzles are used to produce the main air stream for ventilation in the car passageway, whilst others are used to ventilate the car compartments.

The gentle air stream (0.1 - 0.3 m/s) in the carpark (from fresh air supply fan) is given momentum and the inertial force by the air jet produced by the nozzle creates a directional movement towards the exhaust air system.

Our installations have proved that Carbon Monoxide (CO) concentration in the space between the supply and extract openings is the same for both a conventional and Dirivent Carparking System.



Dirivent as a total concept

Advantages of the Dirivent System

- Dirivent cuts operating costs
The reduction of primary airflow means smaller air handling systems and reduced power consumption. These contribute towards making Dirivent operating costs lower than those of other systems.
- Dirivent cuts your energy consumption
By reducing temperature differences (de-stratification) Dirivent helps eliminate drafts, creates a better working environment and reduces energy consumption.
- Dirivent is easy to install
The compact Dirivent duct system does not interfere with cranes, hoists, piping or other ducting. It offers wide flexibility in configuration allowing simple and rapid modification if changes in lay out of the premises require it.
- Dirivent recovers heat
Dirivent is compatible with conventional heat recovery systems and can utilise heat from heat producing machinery to use in other areas.
- Dirivent helps fight pollution
The effective air changes help to reduce the concentration of dust, fume, smoke, smells and other unpleasant and unhealthy elements before they reach dangerous levels.

The Dirivent System as a Total Concept

Together with an air treatment system and exhaust system, Dirivent forms a complete indoor climate control system.

Demand-controlled airflow can be easily realised by using Fläkt Woods range of VAV flow regulators and VAV fans (AXICO, etc.)

Fläkt Woods heat recovery systems, such as ECOTERM or REGOTERM, can be installed in the exhaust air system to provide additional energy savings.

Creative Partnership

When you choose to work with Fläkt Woods (Ireland) you choose a partner with the global resources of the Fläkt Woods Group.

By choosing Fläkt Woods you can be certain of a strong partner with a long term commitment to service, product development and overall continuous improvement.

It is about translating best practice into flexible and responsive service. This is the reason that on project after project we succeed in not just meeting but surpassing our client's expectations.

Project Profiles

- UCD Faculty of Commerce (Institutional)
- Abbey Street (Car park)
- Derrylavin (Manufacturing)
- 3 Com (Manufacturing)
- Intel (Semi-Conductor)
- Mayor Street (Car park)
- CEL
- MRO Shannon (Aerospace)
- Wyeths (Pharmaceutical)
- Organnon (Pharmaceutical)