Van der Hoeven
Horticultural projects with IQ

ModulAIR
Since 1953 Van der Hoeven has been designing and realizing horticultural projects worldwide. Always offering complete, tailor made solutions for growers, defined to provide them with maximum returns on their investment. With the new ModulAIR concept, Van der Hoeven takes another step forward by introducing a flexible, modular and controlled greenhouse system for all sorts of climate conditions. The ModulAIR system has been designed to accommodate a variety of technical available solutions. Being modular also means these components can be easily adjusted to the growers needs. This allows for ideal integration of necessary components, dependant on greenhouses specific requirements.

The ModulAIR air treatment is built as a small corridor, the ModulAIR corridor, located on the outer gable end walls of the greenhouse. The system works by using outside air for cooling and dehumidification and inside air for re-use and recovery of valuable CO₂. This ModulAIR corridor is used as a mixing chamber for different sources of air before distributing it back into the greenhouse.

Sustainable stainless steel insect netting in front of the outside air inlet and integrated high quality nylon harmonica insect netting in the ModulAIR roof windows ensure that insects are kept outside of the greenhouse. This has proven to reduce pesticide reliance and the spread of disease within the crop.

Under each crop gutter, high quality PE air ducts are installed. This air duct is distributing the conditioned air from the ModulAIR corridor throughout the greenhouse which helps to create and control a homogenous climate, critical for even cropping, heat, and CO₂ regulation. This conditioned air is transported by an EC fan in front of the air duct. The fans are individually speed controlled. With these fans, the capacity of the ModulAIR system can be controlled and adjusted instantly.

The main heating consists of a pipe rail system and often a grow pipe system. In colder climates the ModulAIR chamber will be provided with heating modules which is an optional addition for extra heating. The heating modules have their own fans attached which will run when the heating modules are active.

The ModulAIR greenhouse can also be equipped with a pad cooling system for temperature and humidity control. This is the most efficient and effective method of cooling greenhouses while also giving a method to add humidity. When the outside air temperature becomes too high, the pad can be activated to cool down the outside air and increase the cooling capacity. The pad uses water and evaporation techniques to cool incoming air.

As the ModulAIR is designed to the growers needs, a detailed location analysis is used and the optimal components are selected in the correct dimensions. For example, in extreme climates with excessive heat and high humidity, it’s also possible to add an optional mechanical cooling system.

In essence the ModulAIR greenhouse brings:
• a better controlled greenhouse climate
• optimized use of energy and CO₂
• minimum use of pesticides
• better quality of crops
• sustainable production
which combined result in better returns on investment.

By adjusting ModulAIR step by step to adapt to the requirements of the crop, the local climate and availability/costs of energy, the client can choose the best customized solution. In some areas dehumidification could be enough to have great results, in other cases the cooling is essential. The first commercial successes have already been achieved, as expected with different options for each project. With this new development in the field of technology and climate, Van der Hoeven proves itself again to be a firm player in international and professional horticultural projects, in which economic feasibility and sustainability fit together.
The amount of windows are minimized creating additional light.

The Greenhouse maintains a slight overpressure which creates a more homogenous climate, critical for even cropping, along with heat and CO₂.

Air passage allows for re-use of CO₂ and heated air saving energy costs.

Additional heating or cooling modules can be installed.

Perforated air ducts below plants allow for an even distribution of warm and cold air.

EC-Fans individually controlled.

Sustainable stainless steel insect netting keeps insects out.

For warmer climates a pad cooling system can be installed for maintaining ideal temperatures.

CO₂ is directly pushed in the climate chamber.