SUSTENA

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SUSTENA'S BI-MONTHLY NEWSLETTER

Centralised Vs. Decentralised Air Conditioning

Centralised air conditioning systems have been used for decades, and they are still widely used in commercial buildings today. The centralised system uses a single unit to provide cooling throughout a building. There are several advantages to this type of system, including:

- Lower installation costs than other types of systems because there are fewer units to install;
- Lower operating costs because there are fewer units to maintain;
- More efficient use of energy because there is only one compressor;
- Reduced risk of failure because if one unit fails, others do not fail as well.

The main disadvantage is that it uses more space than decentralised systems, which means that it may not be suitable for smaller buildings or homes where space is limited. Also, if there is a problem with the central unit, it will affect all areas within the building – so if you want individual control over each room then this isn't possible with a centralised system.
Decentralised air conditioning systems are less energy efficient and less convenient, but they're much cheaper to install. In a decentralised system, there's no one big unit that does everything; instead, there are several smaller units throughout your home or building. Each unit has its own evaporator coil and condenser coil connected by copper pipes. There's no need for valves or unions because each unit's parts are all together in one place.

There are some advantages for decentralised systems including:

- Control over temperature – You can set different temperatures for different rooms or areas of your home
- More affordable than centralised systems, as decentralised units are cheaper to produce and install.
- Takes up less space than a centralised system.

·Decentralised air conditioning systems can be installed in any room or area of the house without affecting other rooms/areas of the house. The choice of which system to use ultimately comes down to the cost effectiveness of each. One has higher installation costs, but lower energy and water consumption. The other has less costly installation, but higher energy and water consumption. Which will be most cost effective?

Variable Refrigeration Flow (VRF)

VRF stands for Variable Refrigerant Flow. This is a type of centralised HVAC system used to heat, ventilate and cool buildings. They are most commonly found in commercial buildings such as offices, large residential buildings, schools and hospitals. VRF systems have the capability of providing individualised heating and cooling to each room or zone within the building.

In a VRF system, one unit serves multiple rooms, but it monitors and adjusts the temperature in each room separately. The ability to adjust the temperature in each room allows you to use less energy than you would with traditional systems.

The benefits of VRF systems over traditional split systems include:

- Better energy efficiency - Because they use fewer ducts, VRF systems have better energy efficiency than conventional split systems.
- Better control - With less ductwork, VRF systems provide more precise temperature control than conventional splits. For example, you can create separate zones using multiple air handlers spread throughout the building and use sensors to monitor temperatures within those zones. This helps ensure that each area has the right temperature without wasting energy on areas where it isn't needed.
- Lower installation cost - One major advantage of VRF systems over conventional splits is that they require less installation work because there isn't as much ductwork involved, so contractors don't have to spend as much time installing them in your home or office building

VRF systems come in mini (side flow) in lower capacities and normal (top flow) types with higher capacities. Obviously each type would have different capabilities in terms of maximum connectable indoor units' number and total capacity.

In terms of control types, VRF systems are categorised into two main types of Heat Pump and Heat Recovery. Heat pump VRF products can provide either cooling or heating based on number of factors (e.g. priority based on majority of indoor units' mode, etc.), while Heat Recovery VRF systems can provide simultaneous cooling and heating. As a result, Heat Recovery VRF systems would provide more comfort for the end user, better energy efficiency and more flexibility. The main disadvantage of the Heat Recovery VRF systems would be the cost and additional parts required for the installation and operation.

VRF is designed to meet all of your comfort and energy-efficiency cooling needs — all in one system. From the simplest, most cost-effective installation to ease of use and personalised comfort, VRF will improve your world — one room at a time.

Latest from SUSTENA

Low Carbon Building Services Engineering

In recent times, there has been a lot of focus on the environment. People are trying to reduce their carbon footprint and become more eco-friendly. This is because of the fact that pollution is causing several adverse effects on our planet and its inhabitants.

Many people and design consultants have started using green products to help them in reducing their carbon footprints. They have also started using renewable energy sources such as solar power and wind energy.

Read more:
Low Carbon Building Services Engineering

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