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defined areas within the building. Sometimes one AHU will supply the whole building but its common in newer buildings to have multiple smaller AHU's feeding different parts to provide a better indoor environment as well as energy savings. AHU's typically do not have their own cooling system built in, instead they will be connected to a central plant water or air cooled chiller, occasionally they will use some sort of split a/c unit and you can also find these connected to district cooling networks. How AHU works, Air Handling Unit AHU's are connected to duct work which provides a defined route for the air to travel around the building. In a simple form, an AHU will use a fan to suck in fresh ambient outside air which will then pass through some filters to remove any dirt and dust. It will then pass through the cooling and heating coil heat exchangers which, as discussed, are typically fed from central plant units. Once the air has passed over these coils it will be pushed out around the building. Another set of duct work will be collecting the warm used air from the rooms and will bring this back to the AHU via another fan. This fan will then eject the air from the AHU and building. RTU on roof These units are always located on the roof, as the name suggests. They are very common in shops and small commercial properties and are popular because they are simple, compact, self contained, all in one HVAC units. Their purpose is to distribute conditioned air around define areas within a building. RTU's are also connected to duct work which provides a defined route for the conditioned air to travel along. RTU's typically have their own inbuilt refrigeration system to provide cooling only, but they can also contain a heat pump or a separate heat source such as gas fired heater. RTU Rooftop Unit animation RTU's house all the components within the rooftop unit. This contains a number of dampers to control the flow of air and can allow air re circulation, if conditions are right. The unit will also contain filters, to clean the air, as well as heating and cooling coils and at least 1 central fan. The refrigeration system is also connected, typically to the back or side, to control the temperature. The fresh ambient air is sucked in via the fan and passes across the dampers. It then passes through the filters to remove any dust and dirt before its temperature is adjusted in the heat exchanger. The fan then pushes this out into the building to condition the space. Another duct will collect the warm used air from the rooms and will distribute this back to the rooftop unit where it will be ejected or recirculated, if that option is available and conditions are right.