THE 1 QUESTION THAT SHOULD BE ASKED – BUT NEVER IS – WHEN BUYING A CONDO

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Many factors go into making a decision about buying a condo, but there's a key aspect that's always overlooked – the type of heating, ventilation and air conditioning (HVAC) system that's installed. Why is the HVAC so important? Out of everything in a condo, it's the one item that's most responsible for indoor comfort and wellbeing. Additionally, it can be expensive to operate and time-consuming to maintain, as well as nearly impossible to change.

Therefore, when in the process of making a buying decision, the one question you should ask is: **"What type of HVAC system is in the condo?"** Many

options exist, and every condo building has unique needs, but in New York City (and most major U.S. cities) there are four main HVAC types commonly installed in condos. We've broken down these systems and matched them with their ideal buyer profiles so that you can make an educated decision to match your personal needs.

1. Packaged Terminal Air Conditioner (PTAC)

Overview: A Packaged Terminal Air Conditioner (PTAC) is a self-contained heating and air conditioning system used mostly to heat or cool a small living space. PTACs are installed in either window or masonry walls, and you can think of PTACs as a nicer-looking version of window air-conditioning unit.

Pros: PTACs are inexpensive to purchase, and are simple to install in all types of housing, including new construction and renovations. There's no building-wide infrastructure in a PTAC system, so this may result in lower common charges. Also, because PTACs are self-contained and aren't part of a common building system, replacing one is relatively easy.

Cons: PTACs are inefficient in their use of electricity, which can result in hefty monthly bills. Additionally, they're noisy and take up considerable floor space inside the occupant zone. This results in them not being "hidden," thus impairing aesthetics and limiting rearranging abilities. PTACs are also typically considered less visually appealing from the exterior of the building because vents – called louvers – from each unit are required to go through the masonry wall.

Buyer Profile:

- **Profile:** The entry-level buyer of either a condo or a rental property.
- **Why:** A PTAC's low cost makes it ideal for the entry-level homebuyer. Alternatively, someone looking to purchase a rental property may find PTACs to be a good solution because there's minimal building-wide infrastructure, which keeps common charges low and allows the condo owner to pass operational costs onto the tenant.

2. Variable Refrigerant Flow (VRF)

Overview: A Variable Refrigerant Flow (VRF) system is made up of multiple indoor units connected to a single outdoor unit. VRF consists of a condenser and heat exchanger located outside the building and numerous blowers inside the occupant zones moving air around. The VRF system pumps refrigerant

throughout the entire building for heating and cooling, and the whole infrastructure is set up on a shared platform for multiple rooms.

Pros: VRF systems keep indoor noise levels low since the primary mechanical equipment is located away from the living area. Due to limited or no ductwork, equipment costs are reduced and space can be saved inside the building, thus enhancing aesthetics and minimizing maintenance requirements for the condo owner.

Cons: VRF operates on a building-wide refrigeration system that offers numerous challenges for larger buildings. In short, maintaining refrigerant leaks on miles of refrigerant piping as well as numerous small pieces of equipment becomes incredibly cumbersome, time-consuming and costly to buildings with large numbers of residents. VRF systems are also proprietary, which leaves the owner at the mercy of the building-wide system, thus making alterations and upgrades difficult.

Buyer Profile:

- **Profile:** The boutique owner.
- **Why:** VRF is an excellent solution due to its low-noise characteristics and ease of initial installation. However, it's only appropriate for smaller buildings (ranging from townhomes to approximately 10 condos) where fewer condensing units are required and refrigerant piping can be kept reasonably short so that maintenance is manageable.

3. Water-Source Heat Pump (WSHP)

Overview: A Water-Source Heat Pump (WSHP) system circulates water throughout the building via a common, building-wide heat-rejection loop that pumps heat in during the winter and removes it during the summer.

Pros: WSHP systems can be applied to just about any size building, and are essentially a water-cooled version of a PTAC, which eliminates through-the-wall vents and increases efficiency. WSHPs are also typically hidden in walls or closets, making them more aesthetically pleasing.

Cons: Because WSHPs contain a compressor and are typically located in the living space of a condo the noise that's generated can be significant. Also, WSHPs require the use of a cooling tower and a boiler, which results in maintenance expenses and common costs for the building.

Buyer Profile:

- **Profile:** The amenities seeker.
- **Why:** While WSHPs can be applied to nearly any building, the best application is for larger ones that want a step up from the entry-level PTAC system. While the sound levels aren't going to be as ideal as with a VRF system, WSHPs won't be subject to the complications associated with VRF when applied to a larger infrastructure.

4. Fan Coil Unit (FCU)

Overview: A Fan Coil Unit (FCU) is a very simple appliance that heats and cools the space with hot water and chilled water generated by a central building system. FCUs effectively move nearly all the responsibility of operating the heating and cooling system onto the building operations staff. By doing this, it's possible to achieve an incredibly energy-efficient and reliable system that's very flexible and quiet. FCUs come in a variety of types, and are most commonly hidden in the ceilings or walls.

Pros: The simplicity of an FCU is one of its biggest advantages. Because it operates on hot and cold water produced by a central system, there are no compressors or refrigerants for the condo owner to worry about. The only equipment in the residence is a fan, coils and some valves, thus making FCUs easy and inexpensive to fix and maintain, as well as quiet. What's more, FCUs provide exceptional individual temperature control, and they're the most energy-efficient option on the market today, thus generating significant energy cost savings.

Cons: Despite the FCU being very simple for the condo owner, the central building system that generates cold and hot water can be rather complex. This makes these systems expensive to purchase and install on the developer side, which in turn makes the condos more expensive. Also, even though electricity costs for the condo owner will be lower with an FCU due to maximized energy efficiency, air conditioning is a shared expense among all the residents in the building, thus leading to potentially higher common charges.

Buyer Profile:

- **Profile:** The luxury homebuyer.
- **Why:** FCUs are an excellent HVAC option for any size building. However, the impressive sound performance, reliability and energy efficiency of FCUs doesn't come without a cost. Expect these condos to carry higher price tags as well as increased common charges.

In Sum

Out of all the aspects to consider when buying a condo, the HVAC system needs to be at the top of the list. Understanding which kind of system might match your preferences will help ensure your future comfort and happiness. Plus, a high-performing HVAC system can boost condo resale value down the road. So, empower yourself in the buying process, and make sure to ask about the condo's HVAC system the next time you're looking to make a move.

When you're ready for your next condo viewing, download HIGHMARK's **HVAC System Identification Checklist** in order to help you identify the type of HVAC system that's already been installed in the building.

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