

CASE STUDY



SECOND
HOME

Moisture Removal & Energy Costs: What You Need to Know to Protect Your Second Home

According to NAHB estimates, the total count of second homes was 7.15 million in 2020, accounting for 5.11% of the total housing stock. Some people spend the winter months in warmer climates and head north before the brutal heat and humidity of the summer, while others keep second homes in cooler, and potentially just as humid, northern climates. Unfortunately, effective and efficient humidity control when the home is unoccupied can be especially tough to manage and particularly dangerous as issues that arise often go unnoticed until it's too late.

High indoor humidity in the home is known to lead to:

- + Microbial growth and mold
- + Increased energy costs
- + Damage to the home and its contents
- + Structural durability issues

Fortunately, including a dedicated dehumidifier that runs independent of the HVAC system can prevent problems like this from occurring.

PROBLEM

Summer in the south typically means intense heat and high levels of humidity. Nearly everything in the home is vulnerable to the effects of high humidity, which causes:

- + Rusting appliances
- + Mold and mildew
- + Corrosion to electronic equipment and computers
- + Deterioration of wood, cotton and leather
- + Warping of woodwork, including floors
- + Musty odors
- + Insect infestation
- + Flaking paint and peeling wallpaper

During unoccupied times, ventilation is typically reduced or eliminated because occupant comfort and health are no longer a primary concern. Indoor temperatures can also be maintained at higher levels to help minimize the air conditioning runtime and keep energy expenses down. Both of these factors can have a negative impact on the relative humidity in the

home though. Conditions need to be maintained at a relative humidity level < 60% to prevent the growth of mold and mildew. Although occupant comfort and health are no longer a primary concern, the home itself and its furnishings still need to be protected.

The major benefit of operating the air conditioner during unoccupied times is to reduce humidity. In order to guarantee operation, the set point needs to be almost the same as during occupied times. This results in a space that is cooler than it needs to be and higher energy bills.



Mold growth on an interior wall. Over-cooling the space to control the humidity.



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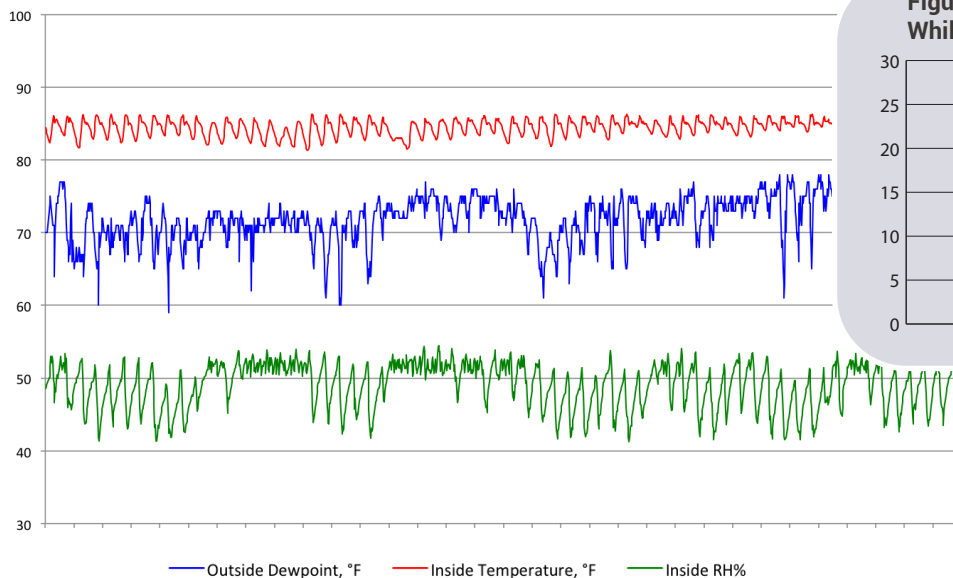
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SOLUTION

A **Santa Fe Ultra70 Dehumidifier** was installed during the spring in an 1,800 square foot ranch-style second home in Ocala, FL. During the summer, the homeowners set the air conditioner to 85°F and the Santa Fe Ultra70 to 55% relative humidity.

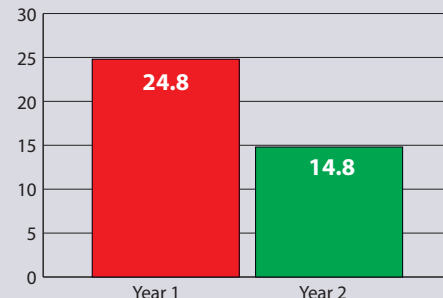
By using an Santa Fe Whole House Ventilating Dehumidifier to control humidity levels throughout the home, they were able to decrease their energy usage by 40%, saving money and effectively protecting their assets.

Figure 1: Conditions While Unoccupied



In Figure 1, the air conditioner is set at 85° F and indoor temperatures are allowed to increase. The dehumidifier keeps the relative humidity at a safe 55% or less, despite high outdoor moisture levels.

Figure 2: Average Daily Energy Use While Unoccupied, in kWh



In Figure 2, the homeowner saw a 40% reduction in their energy bill using a Santa Fe Dehumidifier (Year 2) versus using an air conditioner (Year 1) to manage the relative humidity when unoccupied.

Why Install a Whole House Ventilating Dehumidifier?

Using an Santa Fe Whole House Ventilating Dehumidifier, in conjunction with a higher thermostat set point, is the right solution for protecting a secondary home and minimizing energy costs when away.

Including a dedicated whole house ventilating dehumidifier as an integral part of the mechanical system protects the home and results in much lower energy consumption.



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