



S & P USA

CASE STUDY

Fresh Air in Guest's Home Away from Home:
Increasing Hotel Indoor Air Quality

OVERVIEW

As buildings are being built with higher quality construction methods, balanced ventilation is more important than ever. An unbalanced structure results in low Indoor Air Quality (IAQ), causing poor conditions for hotels. All buildings are susceptible to poor Indoor Air Quality, not just homes. You'll be learning more about the problems unique to a hotel and the solutions S&P USA Export Department can provide to increase indoor air quality.

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As buildings are being built with higher quality construction methods, balanced ventilation is more important than ever. An unbalanced building results in poor Indoor Air Quality (IAQ), causing poor conditions for hotels.

IAQ refers to the air quality within and around buildings and structures. The air indoors is often 2-5 times more polluted than the air outside due to buildings' tighter installation. The Environmental Protection Agency (EPA)

now ranks indoor air quality as one of the **TOP FIVE** environmental health risk.

Poor IAQ can result in allergies, headache, cough, asthma, and other breathing difficulties. Long time exposure can lead to cancer, liver disease, and kidney damage. A buildup of Carbon Dioxide (CO₂) can negatively impact thinking and decision making. Hotels have many unique problems when dealing with Indoor Air Quality, from location to higher cleaning standards. These problems can be solved with the right ventilation solution.

Exterior pollution

The location of the hotel plays a vital role in the quality of the air. Often located in city centers and near airports, outside air pollutants are more common than those found in a suburban setting. Exterior pollution includes smog, traffic, emission from aircraft, and pesticides.

Indoor pollution

The way the hotel is built and cleaned is negatively impacting the indoor air quality. For example, glue from carpets and Volatile Organic Compounds (VOCs) from cleaning supplies are build-up creating lower quality of air. The occupants contribute to the increase in VOCs with the use of perfumes and aerosol hairsprays. Other indoor pollutants include paint, indoor smoking, steam from showers, dishwashers and cooking.

Humidity in the indoor environment

As humidity increases considerably in hot and humid climates such as kitchen areas, the growth of mold and mildew arises within the building. This is true as well when a hotel has a gym, spa, or indoor pool.



The exchange rate between indoor and outdoor air

Unbalanced air exchange can cause the room to feel stuffy. This feeling is due to the lack of exhausting dirty air and bringing in fresh outside air.

The solution to all of these problems is balanced air exchange. S&P USA recommends a good, better, best approach in meeting this goal.

Good: Supply only or Exhaust Only

This solution provides new air to dilute the air or exhausts the dirty air. This solution allows the introduction of fresh air or the removal of old air but does not provide a balanced solution.

Better: Supply Fan + Exhaust Fan OR Filtered Supply Unit

Pairing an inline fan, such as a TD-Mixvent or motorized damper with an inline Exhaust fan such as a Premium CHOICE fan, will provide a balanced air solution.

Another option is to use a filtered supply fan, such as reFresh. This provides new air that has been filtered to remove outside particulates that would further contaminate the air.

Best: Filtered Supply Fan + Exhaust Fan or Energy Recover Ventilator

There are two options for the best Outside Air Solution. It is pairing a Filtered Supply Fan (reFresh) with an exhaust fan, such as Premium CHOICE or TD-Mixvent. This provides a clean air supply while exhausting contaminated air.

The best option is an Energy Recovery Ventilator (ERV). This fan transfers humidity and temperature through a filter and core that does not allow contaminated air to touch clean air. In the long run, this saves energy.

Our focus is to provide Indoor Air Quality (IAQ) and energy-saving solutions for the hotel property to focus on their most valuable asset - Their guests.

PROJECTS from S&P USA Export Department

The Ritz-Carlton Residences

Turks & Caicos, Grace Bay

PRODUCTS INSTALLED:

- eSQD Direct Drive Square Inline Centrifugal Duct Fan with EC Motor
- CM Belt Drive Utility Vent Set
- STXB-RHUL Upblast Belt Drive Centrifugal Roof Exhaust Fans for Restaurant
- KSFV - Belt Drive Kitchen Supply Fan
- STXDe Upblast Direct Drive Centrifugal Roof Exhaust Fans with EC Motors
- RCXII - Gravity Relief/Intake Ventilators
- Premium CHOICE Bathroom Exhaust Fans

Tranquility Beach Resort

Hilton Dominica

PRODUCTS INSTALLED:

- TD-Silent - In-line Mixed Flow Duct Fan

Kempinski Resort

Dominica

PRODUCTS INSTALLED:

- TDB -Belt Drive Tubeaxial In-line Duct Fan
- TD-SILENT In-line Mixed Flow Duct Fan
- Premium CHOICE Bathroom Exhaust Fans

- Silent CZ Design
- STXD/STXD RHUL - Upblast Belt Drive Centrifugal Roof Exhaust Fans
- TTT/4-1000

El Conquistador Resort

La Marina Village, Puerto Rico.

PRODUCTS INSTALLED:

- TD Mixvent In-line Mixed Flow Duct Fan

Hotel Hilton

Costa Rica

PRODUCTS INSTALLED:

- SDBDe-Downblast Direct Drive Centrifugal Roof Exhaust Fans with EC Motor

Hotel Atton by Pullman

San Isidro, Lima Peru

PRODUCTS INSTALLED:

- CM-RHUL Belt Drive Utility Vent Set for Restaurants