

Is the 100% Fresh Air Norm Hiking up your Energy Bills ?

In your modern healthcare facilities ...

Postoperative recovery rooms

Surgical suites

Autopsy rooms

Radiology unit

Isolation units

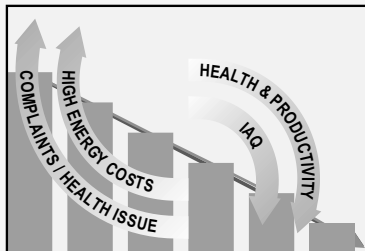
Infectious disease and
virus laboratories

ICUs

Burn wards

Meet mandatory healthcare air quality (fresh air) standard without extra energy/project cost

Nowhere, is the importance of IAQ as critical as in hospitals and health care facilities. Continual advances in medicine and technology necessitate the air-conditioning of hospitals and medical facilities. Often, relatively high energy cost of air conditioning leads to inadequate and improperly designed systems with not enough care to factor in specific requirements for ventilation, filtration and cross contamination.



Modern healthcare facilities, whether they are hospitals, clinics or doctor offices, have to pay particular attention to indoor air as people who visit them are frequently ill and are susceptible to developing adverse health reactions to poor Indoor Air Quality (IAQ). In addition, some hospitals have special units such as:

Surgical suites

- ✓ Postoperative recovery rooms
- ✓ ICUs
- ✓ Burn wards
- ✓ Isolation units
- ✓ Radiology department
- ✓ Laboratories
- ✓ Infectious disease and virus labs
- ✓ Autopsy rooms ...

that have special Indoor Air Quality (IAQ) requirements.

The Solution to Pollution is Dilution !

The Problem :

The patients and healthcare workers spend many hours per day in less than optimal indoor environments with potentially greater likelihood of exposure to infectious agents. Physicians and nursing staff can be directly exposed to :

- Carcinogenic substances such as Anaesthetic halogens or Methyl methacrylate.
- Ongoing Nitrus Oxine exposure that can result in spontaneous abortions among the females
- Chemicals such as Glutaraldehyde or biological contaminants like Streptococcus, Aspergillus, Penicillium, Stachybotrys atra and Latex proteins
- Uncontrolled Biological, Anesthetic Gas and Hazardous Chemical Substances
- Likelihood of infection from Bacteria, Virus, Mould ...

The Cause :

- Air-borne pollutants such as dust, dirt, odours of chemicals such as Glutaraldehyde, disinfectants, cleaning compounds, gases, and radioactive pollutants, bacteria, virus, humidity, biological contaminants like Staphylococcus, Streptococcus, Aspergillus, Penicillium, Stachybotrys atra & Latex proteins, and other antagonists
- Low or inadequate Air Ventilation in air-conditioned spaces
- Cross-contamination of conditioned air, if re-circulated, instead of Fresh Air

The Solution:

In **Operation Theaters** you need **100% fresh air** (5 to 15 air changes) and in **ICUs**, you need 2 air changes, as per ASHRAE standard

The Fear :

The 100% fresh air will add tremendous heat and moisture load and thus, more energy would be required by the conditioning systems to condition (cool/heat) the air.

The Fact :

Good IAQ depends on adequate supply of fresh air, absence of pollutants and good distribution of air to the breathing zone of occupied spaces, and **FlexAir Treated Fresh Air (TFA) Units** with EcoFresh Inside can provide the required fresh air **without increasing the load on air-conditioning systems** and thus reducing the overall energy bills.

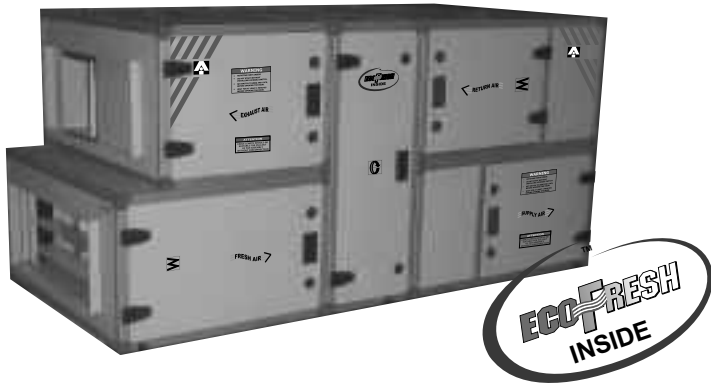
More fresh air in conditioned space provides a better IAQ...

Indoor Air Quality !



* ASHRAE : American Society of Heating, Refrigerating and Air-conditioning Engineers

Towards Fresher & Healthier 'In'vironment with FLEXAIR Treated Fresh Air (TFA) Unit



The **FlexAir** Treated Fresh Air (TFA) Unit with EcoFresh Inside, exhausts stale, contaminated, conditioned room air and exchanges it with **fresh outdoor air**, recovering upto 75% energy from exhaust air through a next-generation **EcoFresh** enthalpy rotor.

FLEXAIR IAQ FOR BETTER

PATIENTS NEED CLEAN INDOOR AIR
Critical for all air-conditioned spaces
As per ASHRAE Standard 62*

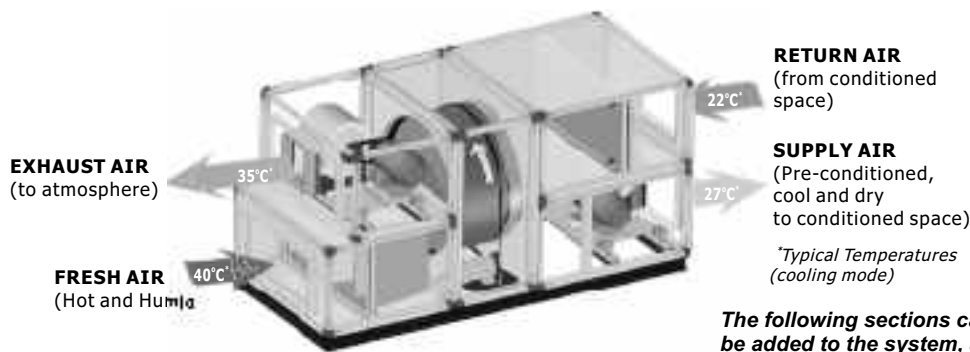
Recommended* Fresh Air in	Per person
● Patient Room	25 CFM
● Medical Procedure	15 CFM
● Operating Rooms	5 to 15 air changes/hr
● Recovery & ICU	2 air changes/hr
● Physical Therapy	15 CFM
● Laboratories	as per specifications

*By ASHRAE: American Society of Heating, Refrigerating and Air-conditioning Engineers

The many hospitals/medical centers, maintaining Indoor Air Quality (IAQ) with EcoFresh:

- Apollo KH Foundn., Chennai & Ranipet
 - Asian Heart Research Instt., Mumbai
 - Base Hospital, Agra & Guwahati
 - Cancer Hospital, Chennai
 - Dhirubhai Ambani Hospital, Mumbai & Raigarh
 - Escorts Heart Inst. & Research Centre, New Delhi, Baroda & Jaipur
 - Max Devki Devi Hospital, New Delhi
 - Saifee Hospital, Mumbai
 - Vinayak Hospital, Salem
 - Woodlands Hospitals & Medical Research Centre Ltd., Kolkata
 - Government Institute, Taiwan
 - Kota Bahru Hospital, Malaysia
 - Putra Jaya Hospital, Malaysia
 - Queen Elizabeth Hospital, Malaysia
 - Damansara Specialist Hospital, Malaysia
 - Kuala Lipis Hospital, Malaysia
 - Sultanah Aminah Hospital, Malaysia
 - Alor Setar Hospital, Malaysia
 - Sandakan Hospital, Malaysia
- ... and many many more!

How Does It Work ?



The heart of the **FlexAir** Treated Fresh Air Unit is the EcoFresh desiccant coated energy recovery wheel, which slowly rotates between its two sections. In one section, the stale, conditioned air is passed through the wheel, and exhausted in the atmosphere. During this process, the wheel absorbs sensible and latent energy from the conditioned air, which is used to condition (cool / heat) the incoming **Fresh Air** in the other section, during the second half of its rotation cycle. Thus, you can have more **Fresh Air** at lower energy costs inside your conditioned space.

The following sections can be added to the system, as per customization requirement:

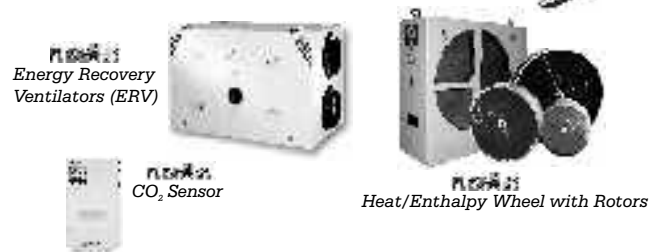
- ✓ Heating Coil section
- ✓ Cooling Coil section
- ✓ Humidifier section
- ✓ Inspection section
- ✓ Odour removal filter section
- ✓ Additional Fine filters
- ✓ Sound Attenuators

Upgrade your Indoor Air Quality (IAQ) for healthier environment

The benefits with **FLEXAIR** include...

- ✓ Maintain IAQ thus reduced IAQ-related health risks
- ✓ Avoid risk of Infections from spreading
- ✓ Huge savings on air-conditioning/energy bills
- ✓ Decrease indoor exposure to mold
- ✓ Decrease in absenteeism and health-related complaints from staff
- ✓ Avoid negative publicity and loss of trust

OTHER IAQ PRODUCTS FROM



The **FRESH AIR** solution for all air-conditioned spaces all over the world is now available in India

Contact The Airgineers today, for **FLEXAIR** Fresh Air Solution to provide more ventilation to dilute air-borne pollutants present in your air-conditioned spaces, and Save Energy !

For further information, please contact us at :

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(formerly Arctic India Engineering Pvt. Ltd.)

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