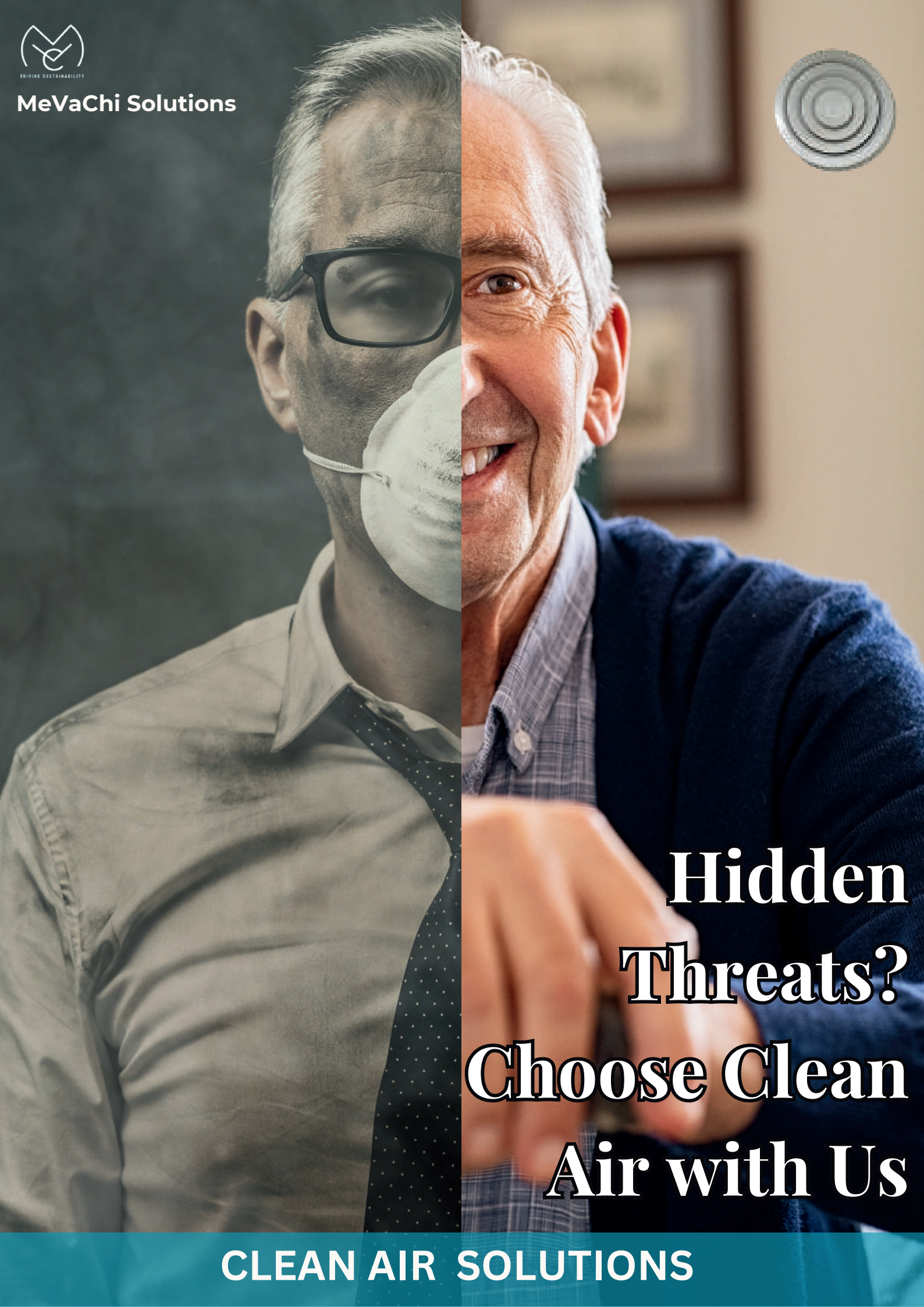




**MeVaChi Solutions**



**Hidden  
Threats?  
Choose Clean  
Air with Us**

**CLEAN AIR SOLUTIONS**



# IS YOUR AIR MAKING YOU SICK?

We may survive for several days without food or drink, but we cannot last longer than a few minutes without breathing. Air pollution poses a significant risk to human health. Each breath we take contains harmful particles and gases, such as fine dust, viruses, and bacteria. These pollutants contribute to various health issues, emphasizing the urgent need to address air quality concerns to protect public health.

## SOURCES OF AIR POLLUTION

Both natural and man-made factors can be sources of air pollution. Natural sources include wind-blown dust, volcanic eruptions, wildfires, etc.

The particle size of the pollutants from both sources varies. Particles from natural resources tend to be larger and include pollutants like pollen, forest fires, volcanoes, windblown sand, and soils. On the other hand, man-made sources are responsible for the release of very small particles in the air. The combustion process, vehicle exhaust, fossil fuel-powered electrical generation, construction, and industry are major contributors to these pollutants.

Additional sources of indoor pollution may come from the everyday surroundings like wood, paint, cleaning materials, photocopiers, and candles.

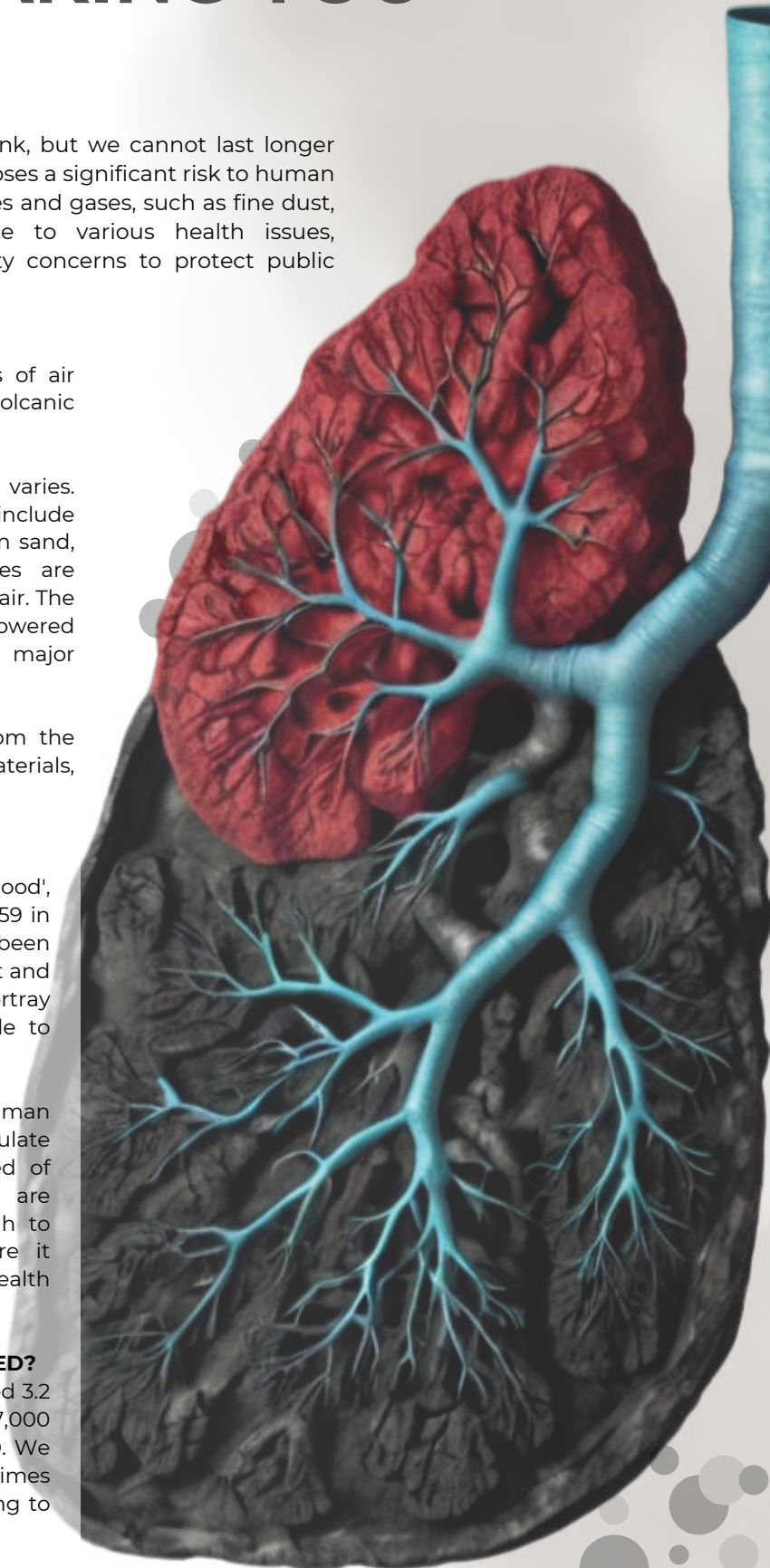
## MOST DANGEROUS PARTICLES

As per the CPCB report 2021, the number of 'good', 'satisfactory', and 'moderate' days has increased from 159 in 2018 to 197 in 2021. Additionally, PM10 and PM2.5 have been found to have declined from 2018 to 2021 by 13 per cent and 9 per cent, respectively. Statistically, all these trends portray a good signal; however, more effort has to be made to sustain improved air quality.

Today, PM1 has become one of the greatest risks to human health. It is the smallest and most dangerous particulate matter that, by number, is predominantly comprised of nano and ultrafine particles. The major sources are combustion and diesel engines. PM1 is small enough to pierce lung tissue and enter the circulation, where it circulates throughout the body, causing systemic health impacts.

## INDOOR OR OUTDOOR AIR, WHICH IS MORE POLLUTED?

Household air pollution was responsible for an estimated 3.2 million deaths per year in 2020, including over 2,37,000 deaths of children under the age of 5, as per the WHO. We spend 90% of our lives indoors, which can be up to 50 times more polluted than the outdoor environment, according to the European Union.





## FILTRATION TO THE RESCUE

Improvement of air quality is a critical factor in health and comfort in the living space. This is where air filters come in handy; they are the unsung heroes of your indoor environment. These elements are specifically developed to trap the aerosols and ensure such particles do not circulate through a particular environment.

As it was already mentioned, the quality of an air filter determines its efficiency. Lower-quality filters let dust, allergens, and other small particles enter the room's air and possibly affect your health. On the other hand, the high-performance filter traps the above contaminants and makes the environment healthier.

As mentioned, there are several advantages of choosing quality air filters. They can reduce allergy and asthma triggers to a large extent due to their capacity to capture airborne allergens. Besides, they help to clean the air from dust, smoke, and other contaminants, enhancing the quality of the air in the room. These benefits are not exclusively reserved for human health; clean air also means that dust does not accumulate inside the equipment, which can significantly prolong the life of HVAC systems. Finally, quality air filters play a central role in providing a healthier, more comfortable, and more enjoyable environment for all.

### Air's a surprising blend, with whispers of pollutants that can offend.

**Pollutant** - Carbon dioxide (CO<sub>2</sub>)

**Impacts** - Headaches, low productivity, poor concentration, loss of attention, increased heart rate and nausea.

**Pollutant** - Nitrogen Dioxide (Toxic Gas)

**Impacts** - Symptoms of bronchitis in asthmatic children, reduced lung function

**Pollutant** - Sulfur Dioxide (SO<sub>2</sub>)

**Impacts** - Increased asthma, headaches, and general discomfort.

**Pollutant** - Ground Level Ozone (O<sub>3</sub>)

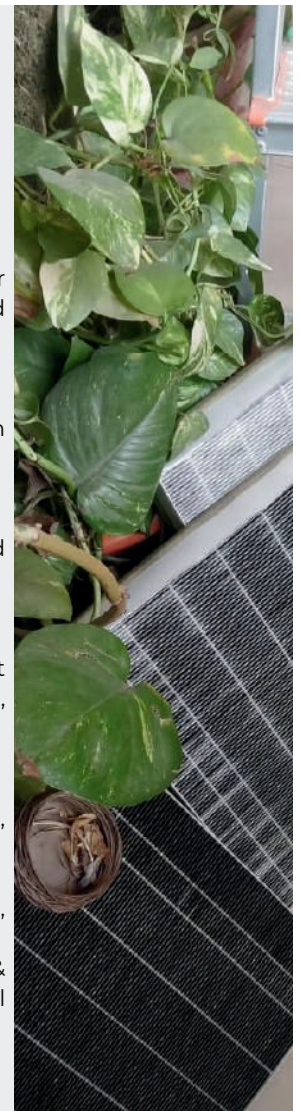
**Impacts** - Chest pain, coughing, throat irritation, congestion, aggravated, asthma, and lung diseases.

**Pollutant** - Formaldehyde

**Impacts** - irritation to the eyes, nose, throat, and respiratory system

**Pollutant** - Heavy Metals (Arsenic, cadmium, lead, mercury and nickel)

**Impacts** - Damage organs, reproductive & respiratory systems, impaired mental development, allergic skin reactions



# POLLUTED WORKPLACES HINDER EMPLOYEE PRODUCTIVITY

Clean air is a fundamental human necessity. The quality of the air we breathe has a profound impact on our health and well-being, which is documented in various studies. A study conducted by the Centre of Excellence for Research on Clean Air (CERCA) at the Indian Institute of Technology Delhi (IIT Delhi), highlights the significant impact of indoor air quality (IAQ) on worker productivity.



## CLEAN AIR PROVIDES A BETTER WORK ENVIRONMENT

Poor air quality is harmful to our health while also having an impact on people's performance. Pollutants such as bacteria, dust, viruses, and CO<sub>2</sub> can cause itchy eyes, headaches, and a clogged nose. It is critical to identify the key pollutants in your environment and seek solutions to the problem. MeVaChi Solutions, with its team of professionals, expertise, and skills, can resolve the issue and offer you complete IAQ monitoring, analysis and solutions.

## AIR QUALITY IS A SERIOUS GLOBAL CONCERN

Maintaining a healthy and productive workforce is critical for any firm. Indoor air quality (IAQ) is becoming increasingly important in influencing employee well-being and performance, according to research.

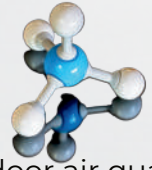
Researchers at Harvard University conducted a 2016 study titled "Productivity Losses in Offices Caused by Sick Building Syndrome" that shed light on this connection. The study investigated the effects of poor ventilation and high levels of carbon dioxide (CO<sub>2</sub>) on cognitive function and decision-making in office workers.

The results were compelling. Participants exposed to greater CO<sub>2</sub> concentrations had significantly lower cognitive performance than those working in a well-ventilated setting. This translates into possible ramifications for businesses, as diminished cognitive function can lead to decreased production, increased error rates, and eventually a negative impact.

The Harvard study is only one example of a growing body of research that shows a clear correlation between indoor air quality and worker productivity. Companies that prioritize appropriate IAQ through measures such as better ventilation, air filtering systems, and regular monitoring can provide a healthier and more effective work environment for their staff. Investing in IAQ solutions is an investment in a healthier, more productive workforce. And MeVaChi Solutions can help you attain the same.



# NEED OF IAQ MONITORING



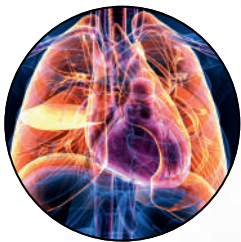
The air we breathe indoors can be surprisingly polluted, even if it appears clean. Indoor air quality can be a hidden threat, with pollutants lurking unseen and creating health problems over time. That's why indoor air monitoring is crucial, for which you can select MeVaChi Solutions. Our in-depth IAQ analysis acts as a microscope, revealing hidden threats in your air. This empowers informed decisions for a healthier environment.

We provide real-time analysis, which allows you to readily compare all the pollutant-related data that is gathered. Our IAQ reports are based on standards like NAAQS and WHO that depend on the customer and site requirements.



### **Invisible Threat:**

Unlike outdoor air pollution, indoor pollutants are often invisible and odorless. You can not rely on your senses to detect a problem. Monitoring provides data-driven insights into the quality of the air you're breathing.



### **Health Issues:**

Many health problems linked to indoor air pollution, like respiratory issues and allergies, develop gradually. Early detection through monitoring allows you to take preventative measures even before symptoms arise.



### **Identify Root Cause:**

Monitoring helps in identifying the source of pollutants. Is it mold growth? or Chemical emissions from furniture? Knowing the culprit allows you to address the root cause of the problem effectively and we can help you in making a customized solution for the same.



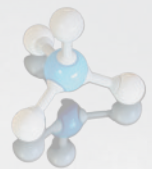
### **Post Monitoring:**

Once you implement strategies to improve air quality, monitoring allows you to track the effectiveness of those actions. Are air purifiers working? Has ventilation improved? Monitoring provides data to guide adjustments and ensure continuous progress.



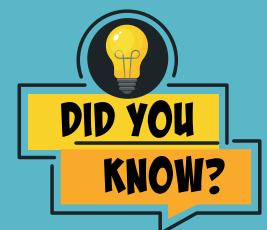
### **Peace of Mind**

Knowing the air quality in your home or workplace can provide significant peace of mind. Monitoring results can reassure you that your environment is safe or can prompt you to take action and create a healthier space.



**Employee absenteeism due to illness can cost businesses significantly. Research suggests that poor IAQ can contribute to headaches, respiratory problems, and fatigue, potentially leading to increased sick days. IAQ monitoring can help identify and address these issues, potentially leading to a healthier workforce and reduced absenteeism.**

source - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11043824/>





# BEYOND THE VISIBLE: HOW MOLECULAR FILTRATION REDEFINES CLEAN AIR

Molecules are 1,000 to 10,000 times smaller than particulate matter. It becomes impossible to treat them with conventional particle filters such as HEPA or ULPA.

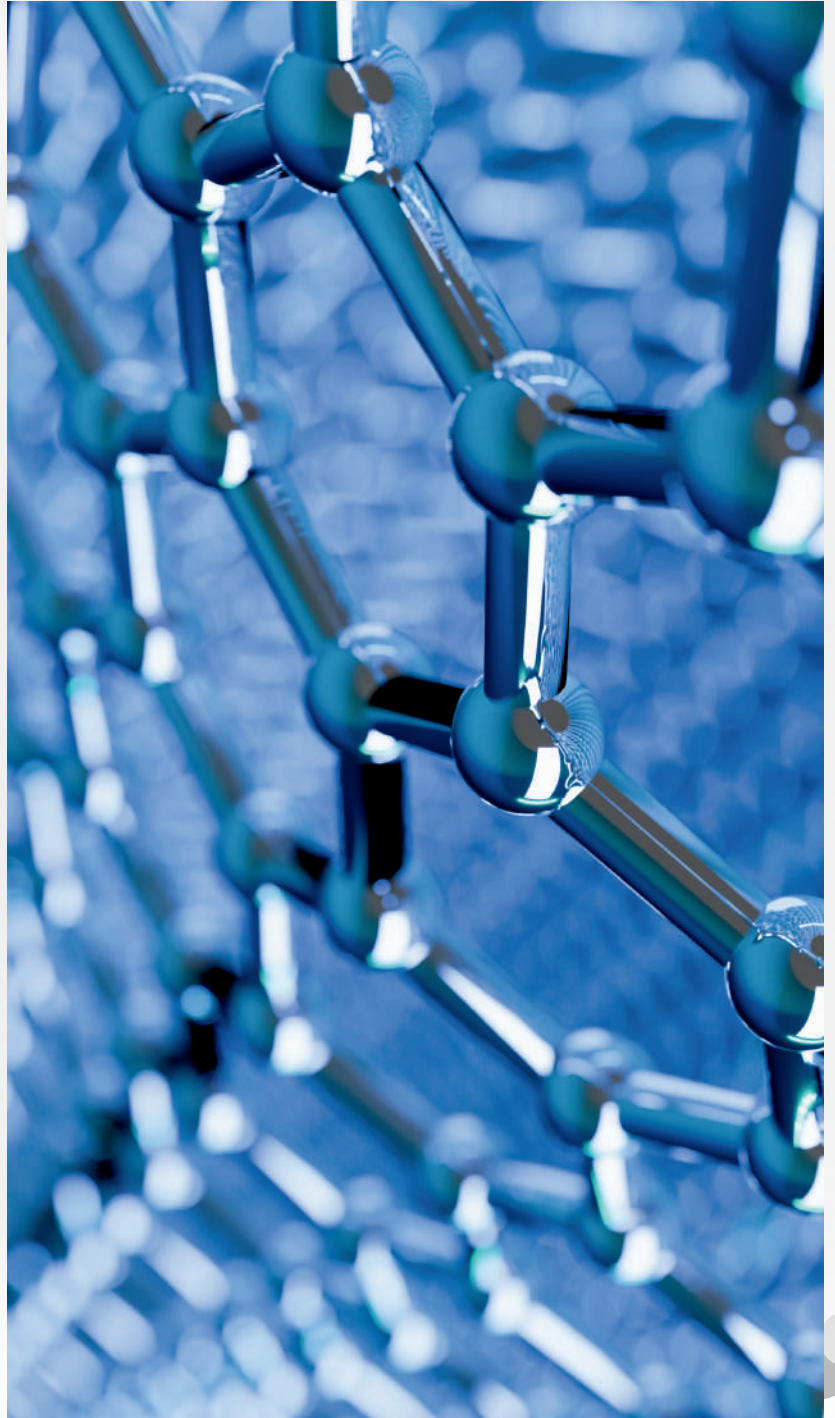
Molecular filtration solutions are designed based on a technology called adsorption. These filters utilize both physical and chemical adsorption.

We mainly use activated carbon or activated alumina as an active material because of their high porosity and high internal surface area.

The harmful molecules get trapped in the adsorbent and stick to its surface due to its extremely high surface area.

Our solution helps you by removing smells from VOCs and bad odors from drainages, landfills, and other exhaust systems, which ensures sound human health. This is also used to protect control rooms in refineries, paper and pulp industries, data centers, and various similar applications, as it helps protect electronic equipment from corrosion.

[Our solution ensures safeguarding you  
and your equipment.](#)





# BEYOND AIR PURIFICATION: UNVEILING THE POWER OF MVC CARE+

Concerned about your indoor air quality? MeVaChi goes beyond basic air conditioning maintenance with our comprehensive MVC Care+ program. This advanced service offers an in-depth analysis of your entire HVAC system, ensuring optimal performance and a healthier environment for you and your loved ones.

## **INITIAL AND REAL-TIME MONITORING:**

We provide monitoring throughout. This service will include:

- Filter inspection for those not being changed or replaced
- Condition of drive belt in case of AHU's and TFA's complete assessment
- Fan/ motor/ bearing assessment for its condition and recommendation on its maintenance
- Condition of coils and fins for leakage/ corrosion if any
- Interior/ exterior inspection of HVAC Units installed including rusting and denting
- General hygiene and comments on cleanliness of the HVAC system and AHU rooms

## **Air Flow Condition**

It is important to keep track of airflow conditions. We keep track of:

- Supply and return airflow volume, including air change rate
- Room pressure differential, leakages

## **AIR QUALITY CONDITION AND ANALYSIS**

Beyond the breeze, air is a surprising blend, with whispers of pollutants that can offend. Before providing clean air solutions, we ensure that we conduct air quality analysis so that the solution can be tailored as per the needs & requirements.

- Concentration of particulate matter, including mass concentration and particle count
- Measuring the concentration of gaseous pollutants like CO<sub>2</sub>, H<sub>2</sub>S, SO<sub>x</sub>, NO<sub>x</sub>, O<sub>3</sub>, CO, and HCHO indoors as well as outdoors to study nearby vicinity
- Measuring microbiological parameters such as total bacteria, fungal, yeast, mold, and more
- Temperature and relative humidity study

## **HYGIENE AND OTHER RISK ANALYSIS**

It is important to keep track of airflow conditions. We keep track of:

- Condition of duct and mold growth if any
- Olfactometry analysis
- Pressure drop testing of filters and the kind of dust deposited on the filters





# INVESTING IN HEALTHIER INDOOR ENVIRONMENTS WITH MEVACHI

MeVaChi goes beyond checking AQI. We're your ultimate solution for optimizing indoor air quality and creating healthier workspaces.



## **BETTER ENVIRONMENT**

At MeVaChi, with our experience and in-depth understanding, we provide comprehensive indoor air quality solutions. We conduct a thorough analysis of your specific environment, ensuring a data-driven approach to optimizing your indoor air quality. We ensure a better environment for you and your loved ones.

## **METICULOUS MONITORING**

Our comprehensive IAQ analysis involves sophisticated air sampling to accurately quantify the concentration of specific pollutants and to determine their source(s) for a protracted period, for example, weekly or monthly.

## **STANDARDS-BASED APPROACH**

Our analysis is performed according to internationally recognized standards, such as those of the WHO. This helps to validate the findings and make the results more credible.

## **ANALYSIS OF MULTIPLE POLLUTANTS**

We usually employ a broad range of parameters in the monitoring process. These parameters include particulate matter (PM2.5, PM10), volatile organic compounds (VOCs), carbon dioxide (CO2), temperature, and humidity.

With MeVaChi Solutions, you will be able to work with a team of professionals to ensure that the occupants of the building get a healthier and more productive environment.



**MeVaChi Solutions**



## **MeVaChi Solution is a leader in optimizing Indoor Air Quality (IAQ)**

MeVaChi has a visionary commitment to safeguarding human health and processes amid the dynamic challenges posed by our ever-evolving environment. We take a multidisciplinary approach to addressing our client's various indoor air and environmental quality issues. Having developed our expertise and experience over the years allows us to provide our clients with a customized service and solution that is specific to the individual needs of each of our customers. We believe we provide the best combination of our services through access to local know-how.

The founding team has combined experience of managing ten million sq. ft. of area, where we have completed some of the most premium projects across the country, the team has designed some of the most critical solutions for the country that not only include managing particulate matter but also help clients to breathe air free from gaseous pollutants as well as other pathogenic and non-pathogenic microorganisms.

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