

SA corporates can achieve hospital-grade indoor air quality to give them the edge

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Two years of Covid restrictions have given employers a taste for just how complex managing airborne pandemics will be in future. But smart managers have already understood the business benefits of supplying hospital-quality air management in our offices. From property owners looking to secure high-end, long-term tenants, to CEOs hoping to attract and retain scarce skills, indoor air quality must be more than a regulatory tick-boxing exercise.



“How we ventilate our buildings has a significant impact on the transmission of airborne diseases and the pandemic has placed the spotlight squarely on how we manage air quality in the built environment. Unfortunately, based on current regulations most building management and business leaders are focussed only on odour and dust control as well as thermal management, with little regard to how they could be making significant, and possibly life-saving changes, thanks to technical advances over the last few years,” explains Edward Hector, MD of the SFI Group.

Governments requiring more action

The need to better manage the quality of air workers breathe has long been on the regulatory radar. In response to the pandemic, the South African Department of Labour has published a new [Code of Practice](#), which includes a focus on increased ventilation rates in order to reduce the viral load in occupied spaces.

This has been the response of many global regulators, with Belgium taking it a step further, publishing a [ventilation plan](#) applicable to all places open to the public, including bars, restaurants, cinemas, etc.

“The Belgian regulator has the right idea. We certainly have the ability to significantly cut down the spread of airborne diseases through better air quality management. However, increasing your fresh air intake also increases your energy consumption as the air-conditioning system has to cool down or heat up the fresh air to maintain comfort levels. And, for green buildings certification, energy consumption is one of the key aspects to achieving a Green Star rating, not to mention

the new guidelines published on energy consumption for new buildings,” Hector shares.

It's not as simple as it seems

The solution is not as simple as just pumping more air into a building. Hector explains that when calling for ventilation rates to be increased, there is an assumption that the outside air being introduced is of a high quality.

“Numerous studies have highlighted the toxic nature of our outdoor air, particularly in industrial areas and places close to power stations, but also from emissions from motor vehicles in cities. Sadly, South Africa is well behind developed countries in reducing greenhouse gas emissions and we should carefully consider the term ventilation being synonymous with ‘fresh’ air,” he warns.

He goes on to explain that the problem is exacerbated when it comes to heating and cooling the air in buildings.

“The traditional Air Handling Unit is a breeding ground for pathogens because it builds up condensation in drip trays and the coils have fine fins. This is where we get a build up of biofilm where pathogens can thrive. In addition, these coils get dirty, block up and cause a poor heat transfer surface and have to be regularly cleaned,” he says.

Emerging technology used in hospitals could hold the key

For many years, particularly in the USA, hospitals made use of Ultraviolet Germicidal Irradiation (UVC-GI) to kill pathogens which caused Hospital Acquired Infections (HAIs), spread in the air conditioning systems. The technology has proved itself especially effective with UVC GI lamps used in air handling plants reducing HAIs by up to 70%.

Refinement of the technology now makes it suitable for commercial use and one of South Africa's major banks has already retrofitted all the air-handling units for some of their larger offices around the country.

“The bank was looking for a way to protect and reassure their staff when they returned to the office after working remotely for many months. They investigated various technologies and found UVC to be a well proven technology, and one which did not require any system design changes. Multiple sample swab tests were done on the coils and drip trays before and after installation to check the microbial count which indicated just how effective UVC GI lamps are in this application,” he shares.

Hector says the installation of UVC GI lamps requires no modifications to the existing system design and can be retrofitted into air handling units. In the event of air-handling units not having sufficient space, they are installed within the ducting, causing little to no system downtime.

“While some may be regarded as emerging, technologies like UVC GI, needlepoint bipolar ionisation, photocatalytic oxidation and HEPA and electrostatic filters can be very effectively used to deliver high quality air to buildings in the most compromised of areas. Each application needs to be carefully assessed, but in the majority of instances improved IAQ can be achieved without major changes and at relatively low capex and opex when we consider a basket of options now available. For property owners looking to differentiate themselves in a severely downturn market, offering indoor air quality that will slash the chance of airborne contagions is a low risk, high return solution. For business owners looking to offer the safest possible environment for their most valuable asset – their team – providing the best air to breathe should be the minimum requirement,” Hector says.

About SFI Group

[SFI Group](#) was established in 2004 as a provider of air-conditioning and related maintenance services, and is a leader in the field of HVAC maintenance. Since launching, SFI has grown its original Cape Town based business to a national footprint with operations in Johannesburg and Durban. SFI is a trusted partner to some of the largest commercial and industrial property owners and management companies in South Africa. Its proven track record in the provision of technical services supports building and facilities managers in enhancing the performance of their assets.

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