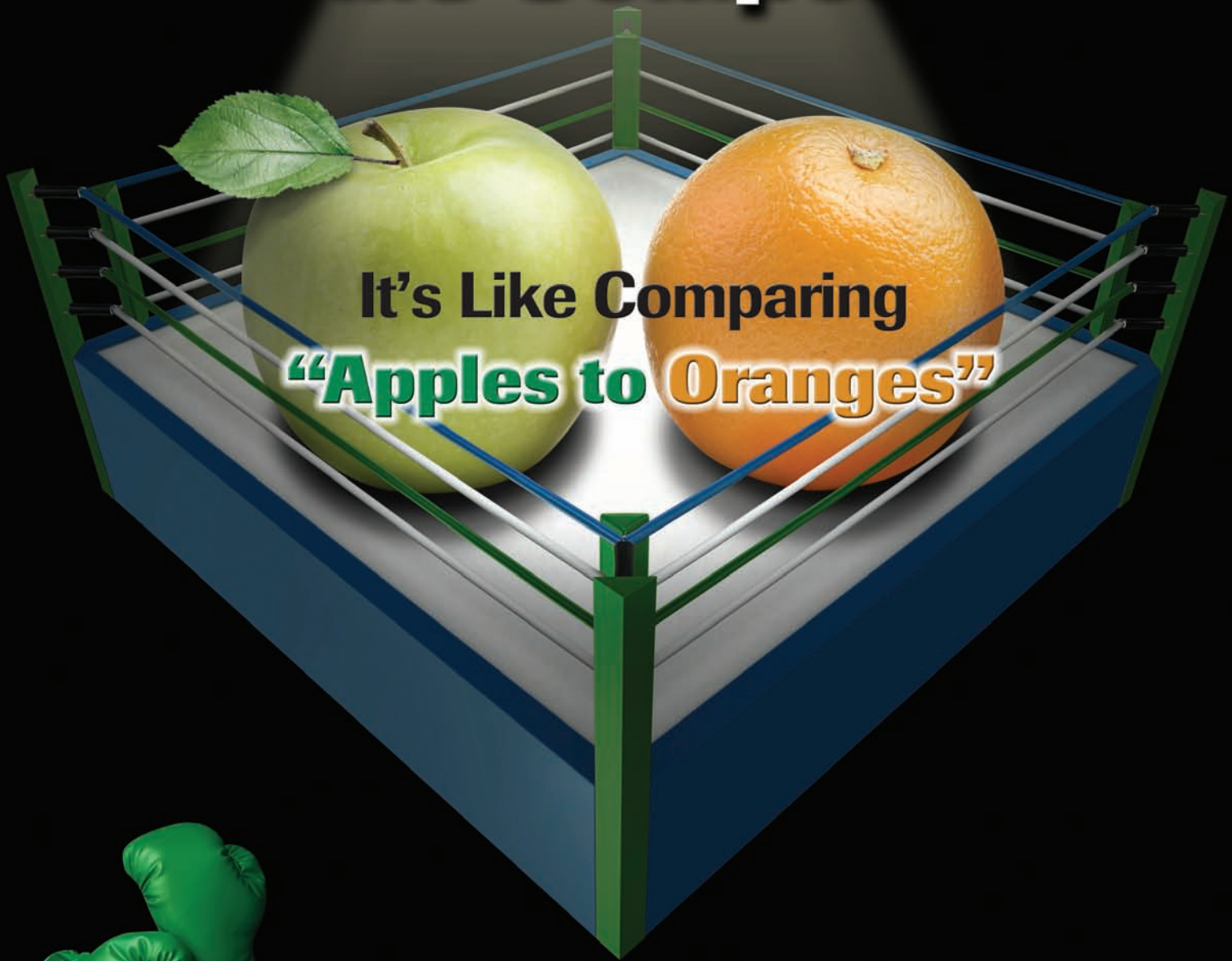




Truly **GREEN** Air Filters vs. the Competition



It's Like Comparing
"Apples to Oranges"



Only Camfil Farr **5-Star Premium** Filters Score a
"Knock-Out Punch" in Total **GREEN** Performance.

• *energy savings* • *air quality* • *waste reduction* • *environmental impact*



Don't be fooled by competitors who promise energy savings at the cost of declining air quality during use.

Don't be fooled by competitors who offer low up-front cost but shorter service life and therefore high carbon footprint and waste.

Don't be fooled by competitors whose literature claims can't be backed up by "real life" field testing under actual operating conditions.

Here are some facts to consider to help you make the best decisions regarding sustainable air filtration:

- Energy savings is based on average pressure drop over the life of the filter, not initial pressure drop, which is only valid at the time of installation. Also, pressure drop is always a curve, never a straight line, a fact that renders "energy calculators" useless.
- Energy savings is an important benefit only if good air quality is maintained *during the entire life of the air filter.*
- LEED sets air filter requirements based on initial MERV rating, not actual MERV performance during

use. ASHRAE changed its test standard in 2008 to better reflect actual performance through an "Appendix J" test procedure which has not yet been formally incorporated into LEED requirements.

- Energy Star is an EPA program, but the EPA does not rate or set standards for air filters. In its brochure, *Using The Energy Star Promotional Mark*, the EPA instructs members to avoid:

Implying that any product has met ENERGY STAR performance criteria.

and

Using the mark to denote ENERGY STAR endorsement.

The bottom line? Don't be misled by imposters who have paid membership dues and are thus entitled to use the Energy Star logo on marketing materials.

- **Only one company guarantees the "green" performance of their 5-Star premium air filters throughout the life of the filters: Camfil Farr.**

Camfil Farr Filters Optimize Efficiency and Energy Use

When designing air filters, three factors are critical to performance:

Filter Media

Media fiber type, density and structure combine to determine key performance characteristics

of air resistance and particulate holding capacity. Camfil Farr is the largest user of filter media in the world; our premium 5-Star Energy Rated products only use media that is proprietary to us.

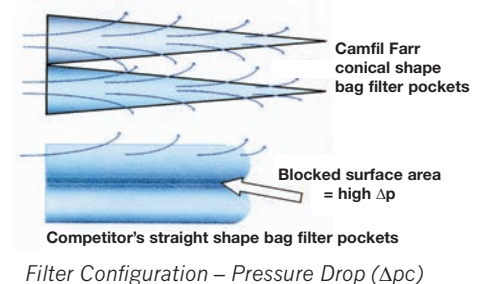
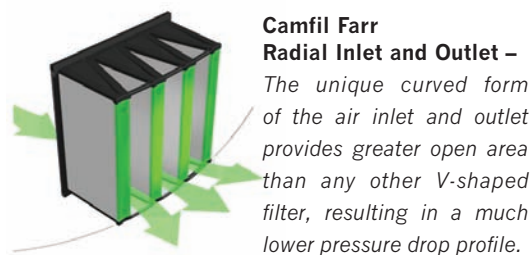
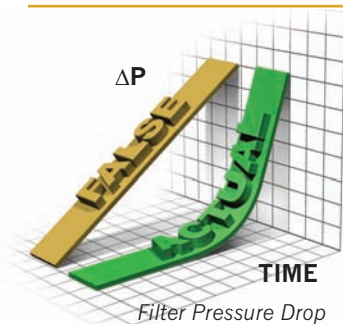
Media Configuration

Media configuration is how the media is shaped during production. Media shape impacts total pressure drop from 30 to 70% and is why filters that look alike do not necessarily perform alike, especially when it comes to energy analysis.

Camfil Farr shapes its media using a process technology designed and built by Camfil Farr. Competitors use commercial equipment that can't duplicate the Camfil technology, resulting in average pressure drops that are 20-50% higher.

Filter Configuration

Filter configuration includes the design of the frame or support structure that holds the media. For example, the Durafil ES® (Energy Saver) unit uses a patented radial inlet and outlet system, that combined with a proprietary media and pleat spacing, creates a 20% lower average pressure drop than any competitor's 4V filter. That equates to, on average, \$80-100 per year in energy savings or \$160-200 over the life of the filter compared to any like competitor.



The Completely Green Philosophy: Innovation → Prosperity + Sustainability



the proof you need

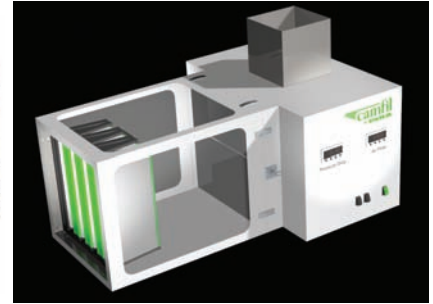
LCC GREEN is a powerful software modeling tool that identifies the most effective filter strategy for every operating condition based on “life cycle” cost, which includes the cost of filters, energy, labor, carbon footprint and waste disposal. It indicates the ideal pressure drop at which changeout is recommended to minimize energy use, and maximize the filter life. Competitors use literature claims and partial incomplete test data, not verified real-life application data.



Camfil Farr also offers the **MOBILE MEDIA TESTER (“MMT”)**, which allows users to evaluate and compare both fine fiber and coarse fiber media. Products are tested on site, at user locations.



THE CAMFIELD LAB is a mobile air filter testing unit that compares four pre/final filter combinations simultaneously under local conditions, at your site.



CAMTESTER is a portable unit that evaluates individual filters for pressure drop. Users can view various values, such as air velocity and resistance across the filter.

CASE STUDY: \$26.1 Billion Research and Development Facility Credited with Some of the Most Important Discoveries of the Modern Chemical Industry

Company Profile:

With nearly 2,000 scientists and researchers – including roughly 600 with PhDs – the company pursues opportunities for global markets including agriculture, nutrition, electronics, safety, protection, coatings, and performance materials.

The Situation:

A facilities engineering consultant was tasked with delivering annual energy savings based on quantifiable financial returns.

The Action:

The incumbent supplier and Camfil Farr were asked to provide their best filter solution to meet site efficiency requirements of MERV 13 while delivering the lowest Total Cost of Ownership (TCO). The incumbent supplier provided Purolator Dominator®, rated at



MERV 15, AAF VXL rated at MERV 13, and Flanders Super Flo® V rated at MERV 13. Camfil Farr supplied the 30/30® and Durafil® ES rated at MERV 13 as a single source supplier.

The four air handlers had a common air intake plenum and the same runtime and airflows during the 8-month study.

The Result:

The in-situ test demonstrated that Camfil Farr’s 30/30 and Durafil ES delivered MERV 13 efficiency with the lowest average pressure drop. One of the competitive filters only delivered a MERV 11 and increased in pressure drop so quickly that it had to be removed from service prematurely after just six months of operation.

In fact, this product dropped 4 MERVs in less than six weeks. After 32 weeks in service, the 30/30 and Durafil ES combined pressure drop was only 0.48”, where the other filters under test were 0.75” and 0.58”, significantly higher.

The site consultant determined the customer would save approximately \$300,000 per year in reduced filter, energy, and labor costs by using the 30/30 and Durafil ES filters.



carbon footprint

“Carbon footprint” expresses the amount of CO₂ emitted from the burning of fossil fuels. Every phase of a product’s manufacture, distribution and waste requirements contributes to this total.

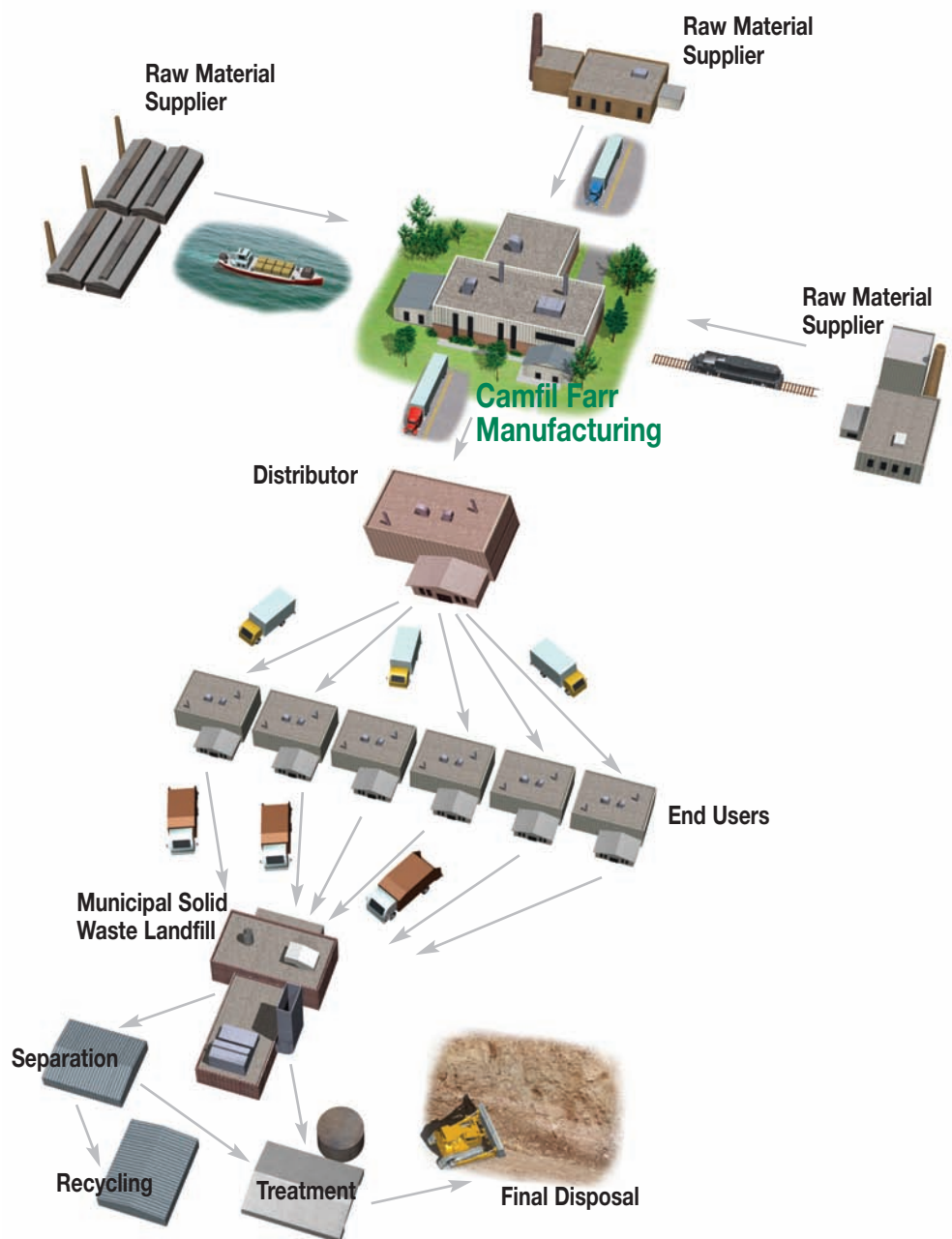
The benefits of using filters that perform more efficiently, use less energy, and require less-frequent changeouts, are substantial. Using fewer filters means fewer dollars spent on fuel at every step – from raw material acquisition and processing to filter manufacturing, distribution, transportation to users, and ultimately, transport to a landfill, and recycling.

Using fewer filters also reduces the consumption and demand for critical raw materials, including lumber, metals, adhesives and filter media, which are often petroleum-based. Of course, there are also savings in the energy necessary to produce the filters.

At the other end of the filter’s life cycle, fewer filters translates directly into reduced greenhouse gas emissions. All landfills generate greenhouse gases, including CO₂, sulfur, and methane – which contribute mightily to water and air pollution.

The lower amounts of energy consumed at every stage of the filter’s life can contribute substantially to a reduced carbon footprint.

Air Filters have a powerful impact on carbon footprint because energy is consumed at every step, from raw materials sourcing, to disposal

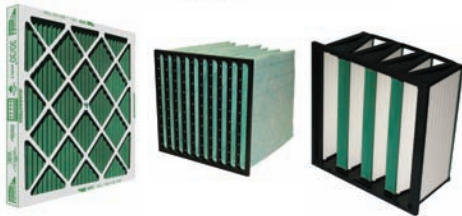


A medium-sized hospital has 320 total filter openings for its air handling units. By replacing their current air filters with Camfil Farr 5-Star products, they can reduce pressure drop system-wide by 0.75" w.g. This translates to 275,641 fewer lbs. per year in CO₂ emissions. In addition, reductions in transportation and disposal will reduce CO₂ emissions associated with these activities by 50% or more. For an exact savings calculation customized to your facility, let Camfil Farr run an analysis using our new LCC Green Simulation Software.



waste reduction

Only Camfil Farr guarantees that our 5-Star premium filters will substantially reduce HVAC-related energy use, waste and environmental impact. And only Camfil Farr offers the tools and technologies to prove it.




When Camfil Farr 5-Star premium filters replace competitive filters, annual waste volume is typically reduced 30% to 75%.

As part of a corporate sustainability commitment, a major electronics retailer replaced the

conventional air filters used in its stores with Camfil Farr 30/30® filters. At the end of one year, the chain documented 90 fewer tons of waste to landfills.

There was another surprise as well: along with less wear and tear on the AHUs, which didn't have to work as hard to maintain set temperatures, the company experienced substantially less cost for roof repair due to 50% less filter changeouts annually.

LCC Green Analysis – Financial & Sustainability Summary

TCO Elements	Solution (1)	Solution (2)	Camfil Farr (3)
Energy Cost	6610 USD	4669 USD	3322 USD
Filter Cost	1140 USD	1670 USD	2345 USD
Labor Cost	340 USD	315 USD	195 USD
Waste Cost	210 USD	190 USD	110 USD
CO2 Impact	102873.29 lb	72671.79 lb	51714.56 lb
Landfill Impact	146.91 ft³	108.42 ft³	75.57 ft³
Total Cost of Ownership (TCO)	8300 USD	6844 USD	5972 USD
Performance Satisfaction Terms			

The Camfil Farr LCC Green Software is the only air filtration testing tool based on real-life performance values and void of hypothetical formulas. LCC Green is a proprietary modeling software based on actual, lifetime performance of commercially-marketed air filter products. LCC Green data is developed from numerous sources, including real-life operating performance, insitu testing and CamField Lab testing for accurate pressure drop and real-life particle removal efficiency.





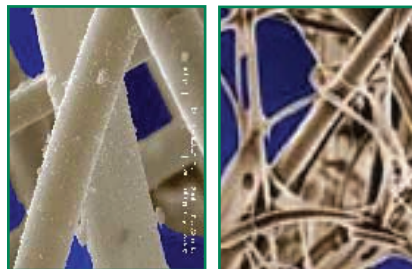
LEED and IAQ

LEED certifies buildings that prioritize energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources. As it applies to air filtration, however, "LEED" has a loophole.

For managers responsible for IAQ, the loophole is serious. Specifically, LEED standards require only that a filter rated at MERV 13 perform at MERV 13 at the time of installation. This allows low-cost coarse fiber synthetic filters, whose efficiency quickly drops from MERV 13 to as low as MERV 10, to claim LEED status, even though the drop in efficiency represents a severe compromise of air quality for most of the filter's life.

To its credit, in 2008, ASHRAE changed its test standard with a document titled Appendix J. According to ASHRAE, "the Appendix was developed because filter users and committee members recognized that the method

in the original version of 52.2 might not reflect actual filter performance in an air handling system, and that filters might demonstrate high efficiency when clean, and drop in efficiency during their actual use cycle. Therefore, they concluded, "the minimum efficiency during the test might be higher than achieved during actual use."



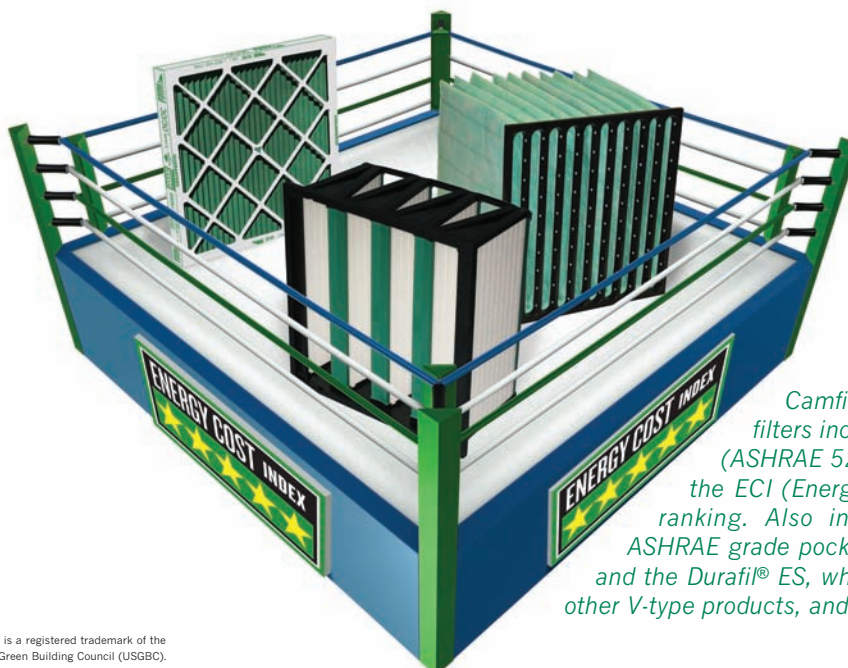
Coarse fiber media relies on an electrostatic charge for their performance. Unfortunately, this charge dissipates rapidly over time. Fine fiber media does not use a charge, and the fine fiber media used in Camfil Farr 5-Star premium filters maintain rated efficiency during the entire service life of the filters.

Insist on using air filters whose MERV and MERV A rating (per ASHRAE test method standards) are of equal value:

"USGBC does not certify, endorse or promote products, services or companies, nor do we track, list or report data related to products and their environmental qualities. LEED is a certification system that deals with the environmental performance of buildings based on overall characteristics of the project. We do not award credits based on the use of particular products but rather upon meeting the performance standards set forth in our rating systems."



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Camfil Farr "completely green" 5-Star premium filters include the "30/30®" – the first true MERV 8 (ASHRAE 52.2-2007) prefilter. It earned five stars on the ECI (Energy Cost Index) – the highest performance ranking. Also included are the Hi-Flo® high-efficiency ASHRAE grade pocket-type air filter in MERV 11, 13 and 14, and the Durafil® ES, which uses 20-35% less HVAC energy than other V-type products, and is available in MERV 11, 13, 14 and 16.

LEED is a registered trademark of the U.S. Green Building Council (USGBC).



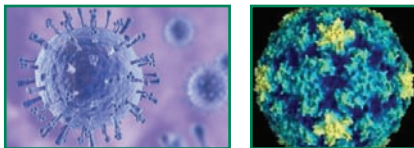
information you can trust

The health and well-being of employees, patients, guests and staff are all affected by the choice of air filtration. Productivity is also an issue. An article presented by the U.S. Green Building Council and Building Operating Management summarizes studies that have shown how good indoor air quality leads to higher worker productivity.

Conversely, poor IAQ contributes to the incidence of respiratory diseases, aggravates asthma and allergy symptoms, and produces the symptoms associated with sick building syndrome.

The American College of Allergy, Asthma & Immunology estimates that half of all illnesses are caused or aggravated by poor IAQ.

With so much at stake, those who make air filtration decisions are wise to consider only information they can document as true. In addition to the new LCC Green software modeling, and the 3 other information tools discussed earlier in this brochure, Camfil Farr also offers insitu testing.



Dust mites and the allergic reactions they cause, the common flu virus, and the more dangerous H1N1, are all affected by the type and quality of the air filtration used. Air filters substantially influence the number of sick days that students and teachers suffer, the incidence of nosocomial infection in health care facilities, and the overall well-being and productivity of workers in all settings.

Testing aside, however, many decision-makers believe the most relevant information comes from other companies in their industry. Here are some case studies – a good representation of the retail, hospitality, medical, academic and manufacturing companies who now use Camfil Farr filters.



Multi-billion Dollar Grocery Chain

The chain found they could save over 10% of their AHU energy costs by changing to the Camfil Farr 30/30® filter. By converting, the stores would save \$30 per filter opening annually and reduce changeouts by 50%.



Company with 445 Hotel Properties

By changing to the 30/30, the hotel reduced the number of air filters used per year from 8,400 units to 1,680 units, and reduced the energy cost per room by 17% annually.



University Medical Center

The 30/30 filter lasted eight months, extending filter life by 400% over the two month life of the competitive high-capacity product. The 30/30 required one and a half filter changes per year in each AHU vs. six changes per year with the lower cost pleated panel filter.



Large University

Filter usage dropped from 9,850 units per year to 3,300 units with the 30/30, saving \$11,000 in material. Labor savings based on \$5.25 per unit for storage, handling, changeout, and disposal is \$35,000 per year.



Computer Hardware Manufacturer

The extended life of the 30/30 saved the company \$34,786 annually, and reduced labor costs significantly.

35 detailed case studies can be found at . . .
www.green-air-filters.com/fine-fiber-media.htm

Camfil Farr: a Company You Can Believe In

Camfil Farr's commitment is to deliver value to customers worldwide, while contributing to the clean air that is essential to everyone. As the leading manufacturer and supplier of best-in-class air filtration products, Camfil Farr realizes this concept through:

- A continuous commitment to air filtration products and systems that meet customers' needs to protect people, processes and the environment.
- Continuing investments in proprietary R&D and external research cooperation to maintain the best product portfolio in the industry.
- Continuous development of processes and resources for manufacturing, customer service and logistics to enable on-time deliveries with short lead-times, in a cost-efficient way.
- Being a sustainable and socially responsible supplier that maintains the highest professional standards.

Camfil Farr is the world's first air filtration company to publish a Corporate Sustainability Report.

The report describes the company's actions, goals and performance indicators as it works to become a truly sustainable enterprise. In Camfil Farr's view, sustainability is vital for continuing growth, and essential for understanding the social and environmental concerns of customers, employees and other stakeholders.

Camfil Farr has been greening its operations, as well as those of customers, for close to half a century. By implementing a continuous sustainability program, Camfil Farr is taking yet another step to become a global business that is socially responsible as well as environmentally friendly.

The report can be found at www.green-air-filters.com/sustainability.pdf.



"I want Camfil Farr to be recognized as the 'sustainability leader' in the air filtration industry by our clients, our partners and the markets in which we compete."

Alan O'Connell
CEO, Camfil Farr

35 case studies describe how food and pharma, hospitals and hospitality, technology firms, retailers, manufacturers and airports have used Camfil Farr 5-Star premium filters to reduce energy costs and waste, while taking a major step toward sustainability and carbon footprint reduction. **Read them here**

www.green-air-filters.com/fine-fiber-media.htm



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The United Nations Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

