

# CASE STUDY

Hospital



## TOP RANKED DETROIT AREA HOSPITAL

**AIR FILTERS. CONVERTING TO HIGHER PERFORMANCE AIR FILTERS PROVES A 40% SAVINGS IN HOSPITAL'S TOTAL HVAC-RELATED EXPENSES.**

### COMPANY PROFILE

Leading health care facility ranked within the top 20 Best Hospitals in the Metro Detroit area provides the most comprehensive medical care to its patients. A recent \$64 million renovation to its facilities included the only Level 2 Trauma Center serving the community.

### THE SITUATION

The hospital's administration was looking to save money in all areas of its facilities and quickly realized there were significant savings opportunities in the operation of their heating, ventilating and air conditioning system. With the existing filters, the facilities team was burdened with changing out the prefilters four times a year and the final filters at least once a year. They also discovered that their existing filters were unable to maintain the rated efficiency over the expected life of the filters. While the current filters were inexpensive, the short filter meant frequent reordering and changing as well as excessive filter disposal.

### THE ACTION

Camfil proposed replacing the current Grainger Air Handler HC pleat and 2V air filters with Camfil's 30/30® prefilter and Durafil® ES final filter. The steps were taken to conduct Life Cycle Cost (LCC) Analyses on three of the hospital's air handlers. Camfil's proprietary LCC analyses provided a true modeling of the current filter configuration performance versus the proposed 30/30-Durafil ES configuration. The results proved to the hospital that significant savings could be achieved just by converting to the 30/30 and Durafil ES. Since the current prefilters needed to be replaced quarterly and the final filters yearly, the LCC showed the savings were obvious because Camfil's 30/30 would last at least twice as long or longer and the Durafil ES would last at least three times as long. A test was also conducted using the CamTester filter chamber where performance was evaluated each month on the four filters. After just six months of running the test, the hospital's facilities team recognized the substantial savings that could be achieved with Camfil's premium air filters.

### THE RESULT

The conversion to Camfil's 5-Star energy efficient filters resulted in at least a 40% savings opportunity for the hospital with their HVAC-related expenses. The lower total cost of ownership to operate the 5-Star filters offered the hospital a reduction in energy cost of 53%, reduction in filter costs of 26%, and a reduction in labor cost of 59%.



*"With the 30/30 and Durafil ES combination, prefilter life is doubled and final filter life is tripled."*



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## THE PROOF

### Cost Analysis Summary: Air Handling Units 1, 2, & 4

TCO Elements	FGI AHU 1	Camfil AHU 1	FGI AHU 2	Camfil AHU 2	FGI AHU4	Camfil AHU 4
Energy Cost	9258 USD	4512 USD	9258 USD	4512 USD	4684 USD	1873 USD
Filter Cost	6972 USD	5165 USD	6972 USD	5165 USD	10956 USD	8116 USD
Labor Cost	756 USD	308 USD	756 USD	308 USD	1188 USD	484 USD
Waste Cost	0 USD	0 USD	0 USD	0 USD	0 USD	0 USD
Mean Life Efficiency (MLE)	63.2%	77.1%	63.2%	77.1%	63.2%	77.1%
Energy Cost Index (ECI)	2.62 USD/%	1.05 USD/%	2.62 USD/%	1.05 USD/%	0.84 USD/%	0.28 USD/%
CO <sup>2</sup> Impact	153113.66 lb	74615.43 lb	153113.66 lb	74615.43 lb	77467.73 lb	30983.63 lb
Landfill Impact	17.74 yd <sup>3</sup>	9.12 yd <sup>3</sup>	17.74 yd <sup>3</sup>	9.12 yd <sup>3</sup>	27.90 yd <sup>3</sup>	14.34 yd <sup>3</sup>
Time of LCC Calc.	3.0 yrs	3.0 yrs	3.0 yrs	3.0 yrs	3.0 yrs	3.0 yrs
<b>Total Cost of Ownership</b>	<b>16986 USD</b>	<b>9985 USD</b>	<b>16986 USD</b>	<b>9985 USD</b>	<b>16828 USD</b>	<b>10473 USD</b>
<b>Performance Satisfaction Guarantee</b>						

The Life-Cycle Cost Analyses performed proved a total savings of \$20,357 acrossed the hospital's three tested air handling units.

### Air Handling Unit Filter Banks



Camfil 30/30<sup>®</sup> Prefilter



Camfil Durafil<sup>®</sup> ES