

Background

A Texas church, designed to the VRP, was over budget. Seeking savings, the design team turned to right-sizing ventilation with the Indoor Air Quality Procedure (IAQP). In the revised design, latent load fell as outdoor air was cut in half resulting in a substantial reduction in equipment capacity and energy. An immediate ROI materialized, duct work remained the same, and the project landed below budget.

smartIAQ + IAQP = Reduced O.A. for Immediate ROI

Ventilation Design

Using the smartIAQ Calculator, new ventilation requirements were set for the worship space, vestibule, and meeting rooms. Following IAQP from 62.1-2022, all design compounds were below design limits with smartIAQ in a sidestream configuration.

Savings resulted from on-demand air cleaning replacing half of the O.A.

which was sized for maximum occupancy. Since smartIAQ extracts contaminants when spaces become occupied, dilution ventilation requirements drop. smartIAQ delivers verifiable IAQ and an impressive ROI..

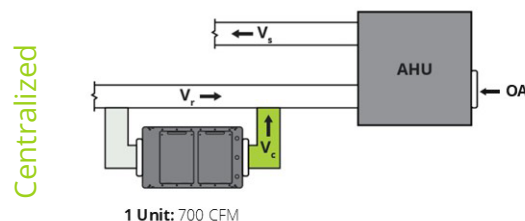
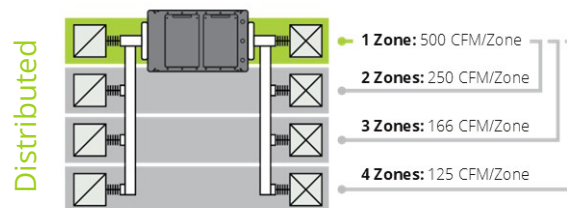
Equip ID	VRP O.A. (CFM)	IAQP O.A. (CFM)	O.A. Reduc.	Capacity Saved (tons)	# sIAQ Units	Equip. Savings (\$3k/ton)	smartIAQ Cost	Annual Energy Savings	Year 1 smartIAQ Benefit
RTU-1	5,345	2,685	50%	19	2	\$57,000	\$12,200	\$1,850	\$46,650
RTU-2	5,345	2,685	50%	19	2	\$57,000	\$12,200	\$1,850	\$46,650
RTU-3	2,225	1,125	51%	8	1	\$24,000	\$6,100	\$787	\$18,687
RTU-4	6,925	3,475	50%	25	3	\$75,000	\$18,300	\$2,410	\$59,110
RTU-5	1,450	750	52%	5	1	\$15,000	\$6,100	\$525	\$9,425
Totals	21,290	10,720	50%	76	9	\$228,000	\$54,900	\$7,422	\$180,522
						(Equip - smartIAQ) \$173,100			

What is smartIAQ?

smartIAQ is an air cleaning system aligned to ASHRAE standards. Working on-demand with closed-loop control it verifies the air in the space is achieving design goals in real time while extending filter life. \$1 of smartIAQ saves you \$4-\$10 in HVAC equipment. smartIAQ cleans air by extracting contaminants vs diluting them, delivering reliably clean air.

What does it do?

Through air cleaning, smartIAQ allows designers and owners to reduce outdoor air to reduce expensive and complex HVAC systems for immediate return on investment. It is available as a distributed or centralized system.



Features

1. Sensors drive operation to achieve air quality goals,
2. Long life filters provide 1-3 year operation without replacement,
3. Quiet and efficient EC blower, and
4. NPBI output for small particle and pathogen control

smartIAQ only runs when needed, saving energy and extending filter life.

