

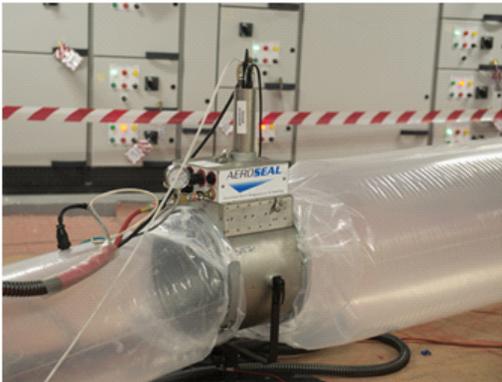
ARZANAH MEDICAL COMPLEX, ABU DHABI, UNITED ARAB EMIRATES

SETTING

- Type of Facility – New construction
- Function – Clinic and hospital
- Scope – 600,000 sq ft; five floors
- Completion Date: 2013

Challenge: Construction on the multi-billion dollar medical complex was wrapping up and the grand opening of the new facility was scheduled to take place in one month. Last minute traverse readings, however, indicated that leaks in the duct system were robbing the facilities of half the air traveling throughout the ductwork. This was not only unacceptable from a building code perspective but it also created concerns regarding indoor air quality, building performance and energy costs.

When the leakage was first discovered, walls of the two five-story structures had already been built around the ductwork, making the leaks seemingly impossible to access without significant demolition.



ARZANAH MEDICAL COMPLEX



Goals: Building engineers used AeroSeal with the following goals in mind: *Reduce leakage to more than 8%. Seal leaks without disrupting new construction. Attain LEED Gold certification. Meet schedule for construction completion date.*

Solution: AeroSeal duct sealing was used to seal leaks from the inside of the duct system. The technology, developed at Lawrence Berkeley National Laboratory, has proven to be 95% effective at sealing duct leaks.

After the technology passed rigorous safety criteria, an AeroSeal team was brought in from the U.S. to demonstrate its capabilities on sealing several leaking risers. Test results were so impressive that the building engineer decided to use

AeroSeal throughout the complex, including the HVAC exhaust, the HVAC supply, the HVAC return, the lab exhaust, the kitchen exhaust and the structure's entire smoke extract system – a 127,000 CFM system in all.

Results: The AeroSeal team completed two to three shafts per day on the initial 15 shafts. The entire project was completed in less than two weeks. Final results showed an average reduction leakage of around 90 percent. Prior to duct sealing, each of the newly constructed shafts exhibited a leakage rate of between 20% and 40%. After AeroSeal was applied, average leakage was around 5%. The entire duct sealing project was completed without disrupting a single wall of the newly constructed buildings. The opening of the Arzannah Medical Complex remained on schedule and the building received LEED Gold certification for energy efficiency.

TEAM

- Engineer: Habtoor Leighton Group
- TAB: Trent Technical Services
- Duct Sealing: AeroSeal LLC

