Information for Proper Design Of CFIS (DOA) Ventilation Systems

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The system labeled dedicated outdoor air (DOA) in this study (see www.healthyhomestraining.org/research -- Offerman presentation on 10-20-08) is more commonly known as central-fan-integrated supply (CFIS). The CFIS ventilation systems in this study did not provide their intended function due to poor design or installation (as shown by low flowrates and duty cycles). A properly designed CFIS system will not have either of these problems. A properly designed and implemented CFIS ventilation system is Building Science Corporation's recommendation for production homes in any climate in the U.S. BSC has experience with over 100,000 houses that, as part of the Environments for Living program by Masco, use this system and provide both energy and comfort guarantees for the occupants. In the beginning of this program, Armin Rudd of BSC conducted a lot of research on what type of ventilation system to use and how it should be designed, and settled on the CFIS system that we still recommend today. The system provides indoor air quality improvement through uniform distribution of ventilation air (http://www.buildingscience.com/documents/reports/rr-0602-field-test-of-room-to-room-uniformity-of-ventilation-air-distribution-in-two-new-houses/). He designed a controller that includes a minimum runtimer to ensure that the proper amount of ventilation is provided, even on mild days where there is no need for heating or cooling. Today there are several devices of this type on the market.

More information about CFIS ventilation systems and the controller are available at the website http://fancycler.com

Perhaps the most useful section for those just learning about ventilation systems is the articles page:
http://fancycler.com/articles/default.htm

This paper describes the technical design issues involved with CFIS systems and some economics regarding several ventilation systems:
http://fancycler.com/articles/design-sizing_cfi_systems.pdf

The following presentation details the different ways CFIS systems can be configured and the ways to increase airflow through the duct:
http://fancycler.com/articles/central-fan-integrated.pdf

This presentation is a general guide to several types of ventilation systems:
http://fancycler.com/articles/ventilation_guide.pdf

A question & answer session with several ventilation experts:
http://fancycler.com/articles/forum.htm

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