



US Army Corps  
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# ENGINEERING AND CONSTRUCTION BULLETIN

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**Subject:** Dining Facilities Demand Controlled Ventilation.

**Applicability:** Guidance

1. **Purpose:** To provide guidance on the application of DCV for kitchen exhaust hoods.
2. **Background:** In FY11 the Environmental Security Technology Certification Program (ESTCP) funded a demonstration project to determine the applicability of DCV for kitchen exhaust hoods. This system works by sensing temperature and opacity to determine the level of cooking and using that feedback to control the amount of exhaust and makeup air. This results in significant energy savings. The sites demonstrated showed a typical total installed first cost of \$43K and a simple payback of approximately 5 to 7 years for a 5,000 CFM hood. Larger hoods have an even better payback.

3. **Applicability:**

Many factors affect the amount of energy savings and the cost of installing DCV, therefore each situation must be analyzed to determine the cost effectiveness. However there are several factors that can be used to screen out applications which are unlikely to be good candidates. Factors that indicate a hood or hoods are a good candidate include the following:

- Relatively large exhaust hood (minimum of 5,000 cfm)
- Climate requiring significant heating and or cooling of makeup air
- Relatively long operating hours
- Medium to high utility costs
- Kitchen area with dedicated make-up air unit

4. **Technical support:** Assistance with the analysis of potential candidate systems is available from:

- The Center of Standardization - NAO: David Gary, Enlisted Personnel Dinning Facility (EPDF) Subject Matter Expert, 757-201-7519, [David.A.Gary@usace.army.mil](mailto:David.A.Gary@usace.army.mil)

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**Subject:** Dining Facilities Demand Controlled Ventilation (DCKV)

- Engineer Research and Development Center Construction Engineering Research Laboratory (ERDC-CERL): Dave Underwood, 217-373-6780, [David.M.Underwood@usace.army.mil](mailto:David.M.Underwood@usace.army.mil)

The results of the demonstration project funded by ESTCP are available in the form of a technical note. This note and other pertinent technical subject matter are available at the USACE technical note webpage on the Whole Building Design Guide website at:

[http://www.wbdg.org/ccb/browse\\_cat.php?c=266](http://www.wbdg.org/ccb/browse_cat.php?c=266)

5. **Contact:** The Headquarters USACE point of contact for this ECB and its distribution is Scott Wick, CECW-CE, 202-761-7419, [Scott.C.Wick@usace.army.mil](mailto:Scott.C.Wick@usace.army.mil).

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