

[REDACTED]
[REDACTED]
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Dear [REDACTED]

We appreciated the invitation to visit your building last April 20, 2005 to review with you the indoor air issues resulting from the extensive renovation being undertaken there. We are also looking forward to receiving your input and coordination on the guidance that we are now formulating to identify best practices for IAQ in both new building construction and O&M. While we don't routinely conduct site visits, it was a rare opportunity to tour such a historic building and we find it very helpful when we can work with other federal agencies to address problems of mutual interest, when our resources allow it.

The following is a summary of our observations about indoor environmental quality issues at the DOI HQ building:

- 1) The air handling system in the newly-renovated 6th floor wing does not appear to be functioning properly. The relief air fan and the exhaust air fan were not operating, even though they should be continuously operating during occupied conditions. Although not measured, this is likely causing a significant decrease well below the minimum of outdoor air that should be supplied to occupants, based both on the design and on building codes. This condition is also causing unintended pressure imbalances in the affected wing that could allow construction contaminants to migrate into occupied spaces.
- 2) The strategy to maintain negative pressure in the construction zone relative to the occupied areas did not appear to be functioning well. Strategically placed exhaust fans in the construction zone combined with closing unneeded openings could go a long way towards solving this problem. It would also be a good idea to keep the exhaust fans operating at all times, including nights and weekends.
- 3) The outdoor air intake for the corridor air handling systems is co-located next to the passive relief air for the M floor. This could easily allow the relief air to be re-entrained back into the outdoor air intake. By design, the primary component of the relief air is air that has been removed from the offices and intended to be permanently exhausted outdoors and should not be allowed to re-enter the corridor outdoor air intake.
- 4) By design the HVAC units in the mechanical room do not recirculate return air back into the office spaces, even though the HVAC units being installed are capable of doing this should the design require it. (Note that the corridor HVAC systems do recirculate air to those occupied areas.) The parts of the HVAC units that could recirculate return air to the office spaces have been blanked off with sheet metal panels. Unfortunately, the panels, made of thin gauge metal, have buckled and are neither gasketed nor caulked. With smoke pencils, we observed that a considerable amount of air from the mechanical room was being recirculated unintentionally into the occupied spaces. This can easily be corrected by using heavier gauge metal panels and using either caulk or gaskets to seal the panels.
- 5) Because the new mechanical equipment being installed is much smaller than the equipment being replaced, the mechanical rooms are now very spacious. We know from experience that, when space such as this is available, it will most likely be used eventually, e.g., for storage of supplies, including cleaning materials, solvents, paints and lubricants. We know from experience that this situation can easily cause IAQ

problems because emissions from such products often migrate into occupied areas. In your particular situation, the possibility that such material may eventually be stored in the mechanical room makes it all the more critical to insure that the mechanical room's exhaust system functions as designed so that air from the mechanical room is never recirculated back into the occupied spaces, even during unoccupied hours. As a general rule, however, it would be advisable to find alternative storage space for such materials.

In closing, we want to thank you again for the opportunity to visit, and we look forward to obtaining your feedback and assistance as we develop our guidance.

Sincerely,

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U.S. Environmental Protection Agency

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