



Pressure Balancing Between Rooms

Lesson Undercutting doors does not always allow for adequate air flow to balance pressures between rooms.

Goal Balance pressures between rooms.

What Happened At Viking Terrace, testing revealed excessively high pressures in bedrooms. This was a result of a design that delivered more air to the bedrooms than could move back to the central return located in the main living space of the apartments. The only way for air to move was under bedroom doors. This problem could have resulted in serious problems for the garden level apartments where the extra pressure was likely to force moist air from the apartments into the walls and, over time, created mold problems. After the project was complete, the developers went back and installed jump ducts to resolve the interstitial pressure imbalances.

Viking Terrace wasn't able to control light and noise because of the post-construction nature of the jump duct additions. SWMHP has changed their standard practice as a result of the experience at Viking Terrace. On Orness Plaza, where they have over 100 small units, SWMHP is carefully balancing air flows and pressures in units and the atrium during the design phase.

Recommendations Have the mechanical engineer verify that room pressures will be balanced when doors are closed. Careful design can allow for a type of jump ducts that are specially designed to control light and noise.

Take Away Developers need to confirm that architects and/or mechanical engineers or contractors have designed duct systems to have balanced interstitial pressures.

For more information on related topics, see related Lessons Learned fact sheets: Ductwork, Duct Design, Duct Sealing, and Kitchen Ventilation.

Relevant Green Communities Criteria:

- 5.1 a, b Energy Efficient Building Design
- 7.5 a, b, c Exhaust Fans
- 7.6 a, b Ventilation



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LESSONS LEARNED Minnesota Green Communities Demonstration Projects

This publication is part of a series of lessons learned originating from Minnesota Green Communities demonstration projects. The Minnesota Green Communities initiative is currently the largest green building program in Minnesota, with 497 units completed, 908 under construction, and another 1,645 under development. Eight demonstration projects were funded through the Minnesota Green Communities program. The initiative is completing building performance testing on the demonstration projects, and has gathered lessons learned in several areas.

The Lessons Learned series includes the following publications: Integrated Design, Multifamily Green Rehabilitation, Construction Training and Monitoring, Ductwork, Duct Design, Duct Sealing, Kitchen Ventilation, Radon Testing and Mitigation, Pressure Balancing Between Rooms, Water Efficiency, and Cost Increase Triggers in Plans and Specifications. All publications can be found online at www.mngreencommunities.org.

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Minnesota Green Communities, a collaboration of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise, is an initiative designed to foster the creation of affordable, healthier, and more energy-efficient housing throughout Minnesota. The initiative will support the production of affordable housing with markedly reduced energy costs, use of materials beneficial to the environment, conservation-minded land use planning, and attention to the creation of healthy environments and lifestyles for individuals, children, families, and communities. For more information, please visit www.mngreencommunities.org.

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