

## **Bellingham University Residence Apartment Building Test**

### **Description of Building**

**All concrete construction with brick facing. Nine stories with 8 floors with 28 student apartments, one kitchen, two washrooms, 1 study room and 1 lounge per floor.**



**Front, showing apartments.**



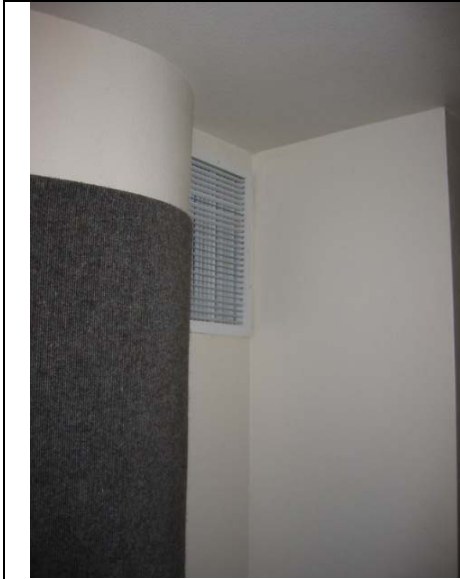
**Hallway showing individual apartments**



**Supply vents in all bathrooms.**



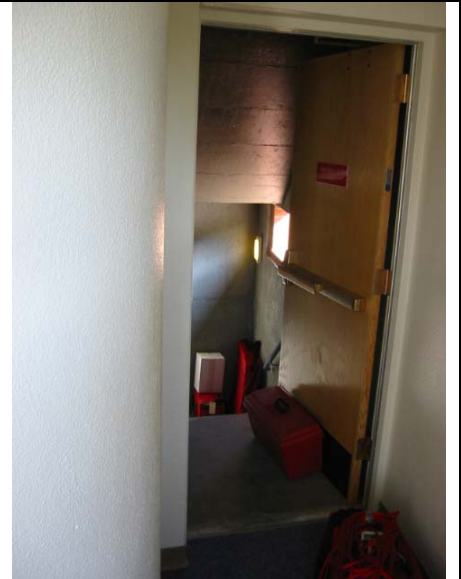
**Active and passive returns in toilet area**



**Fresh air vent supplies about 0.1 m<sup>3</sup>/s to hallway**



**Atrium that joins 8&9, 6&7, 4&5, 2&3 floors**



**One stairwell is open to outdoors**



**Small exhaust grille for kitchenette**



**Supply of fresh air to kitchen**



**Vestibule in hallway isolates enclosed stairwell and elevator doors.**



**Lack of weatherstripping on double doors at the end of the hallway would allow smoke from the lobby to enter the apartment areas.**



Main floor lounge.



Front door to main floor lounge.



Doorway to enclosed stairwell is not weatherstripped.



Exhaust vent at ground level.



**2 HP fan on Variable Frequency Drive mounted from stairwell side ready to depressurize the floor.**



**Gauges measure the pressure on each floor as well as the flow from each fan.**

### Test Equipment Used

**One Retrotec 1.5 hp calibrated fan per floor. Three systems used for the floor above, the test floor and the floor below. Controls shown are for two fans but when testing started, it became apparent that a third system would be needed to isolate and measure each floor slab.**



**Rapid deployment panel sets up in seconds. Fan turns around to measure in the opposite direction.**



**Windowless vent holes in stairwell used for testing.**



**Back of building show the 8 floors that were tested in units of two floors at a time.**