

Apartment : Unit Type C

1. Windows/Pressure Conditions

South/East :

Master bedroom	: South	Size=1.8*1.4 m, Position=1.0m, P= 2.74 Pa
	East	Size=1.8*1.4 m, Position=1.0m, P= 2.74 Pa
Bedroom-1	: East	Size=1.8*1.4 m, Position=1.0m, P= 2.74 Pa
Bedroom-2	: East	Size=0.5*1.4 m, Position=1.0m, P= 2.74 Pa
Living room	: South	Size=1.8*1.4 m, Position=1.0m, P= 2.74 Pa
	East	Size=1.8*1.4 m, Position=1.0m, P= 3.15 Pa

North :

Sitting room	: Case-1	Size=2.0*2.8 m, Position=1.0m, P= -0.92 Pa
	Case-2	
	Window1	Size=1.8*1.4 m, Position=1.0m, P= -0.92 Pa
	Window2	Size=1.8*1.4 m, Position=3.0m, P= -0.92 Pa
	Case-3	Size=1.8*1.4 m, Position=1.0m, P= -0.92 Pa

*Window size is size of effective area.

2. Results

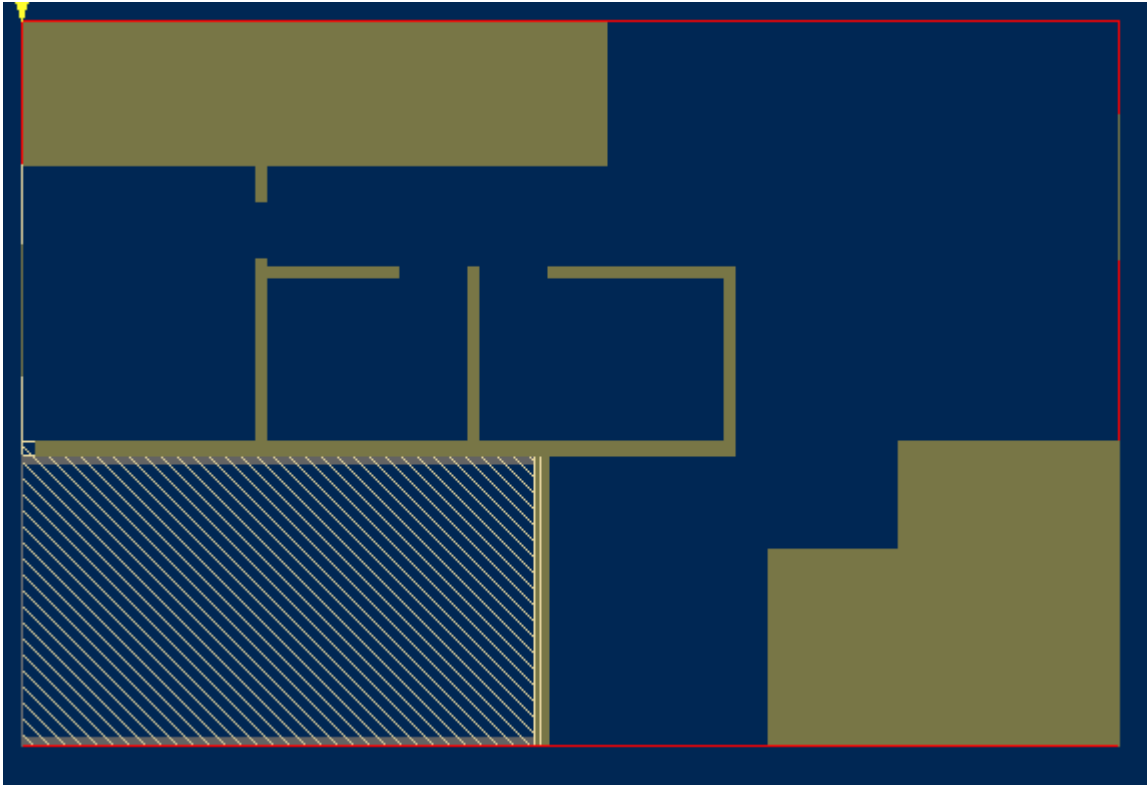
Air velocity(only North windows)/ACH

Case-1 :	Velocity=1.27m/s,	Mass Flow Rate=8.61kg/s,	ACH=80
Case-2 :	Window1 Velocity=1.42m/s,	Mass Flow Rate=4.29kg/s	
	Window2 Velocity=1.30m/s,	Mass Flow Rate=3.93kg/s	
	Total	Mass Flow Rate=8.22kg/s,	ACH=77
Case-3 :	Velocity=1.70m/s,	Mass Flow Rate=5.14kg/s,	ACH=48

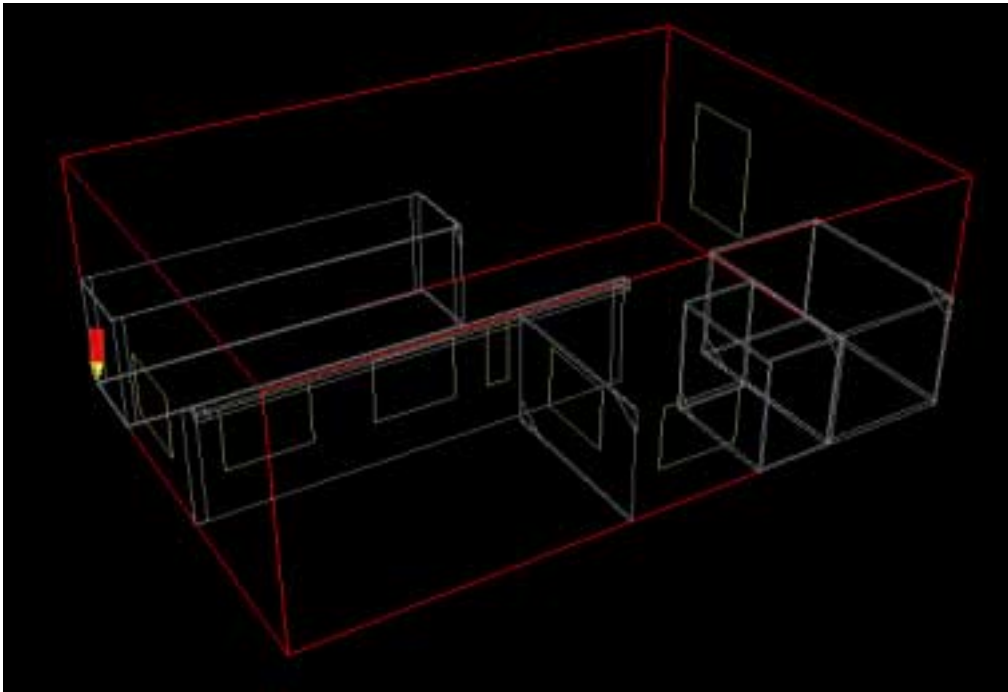
*Only North windows are outlets.

3. Comments

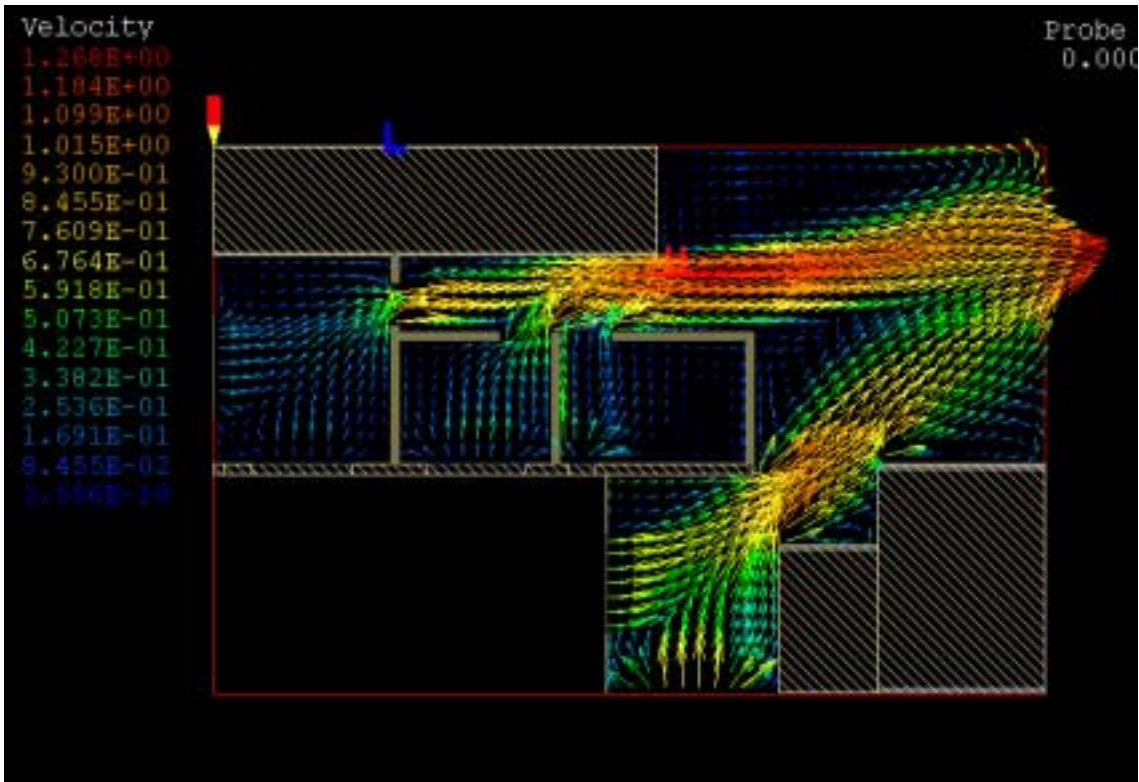
- 1) It is obvious from the results that only North windows work as outlets.
- 2) When the sizes of the North windows, or outlets, are changed, smaller windows have higher air velocity. But velocity is not proportion to window size.
- 3) One of two bedrooms does not have enough air change, since the room can have only small window because of the small area of the wall which faces the outside. In addition, the location of the door of the bedroom makes the environment worse. Because the door is installed near the window and most of fresh air go straight from the window to the door, not go to the entire room.



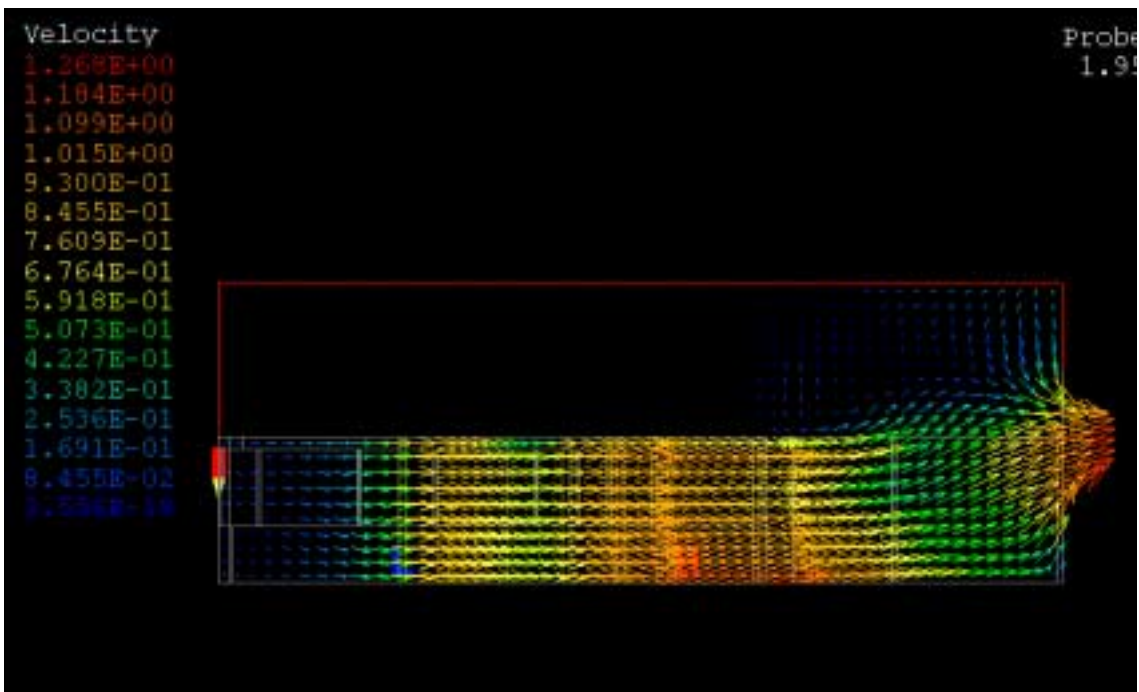
Apartment / Unit Type C



Location of the windows

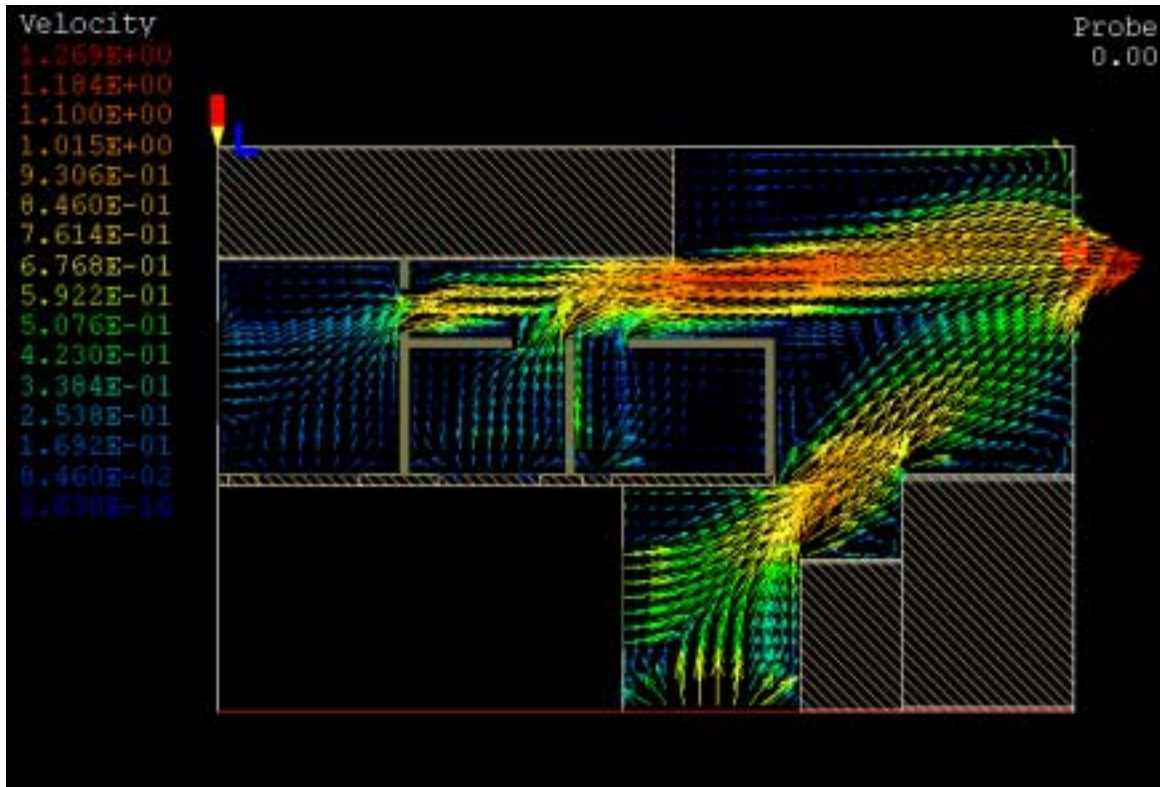


Plane (H=1.5m)

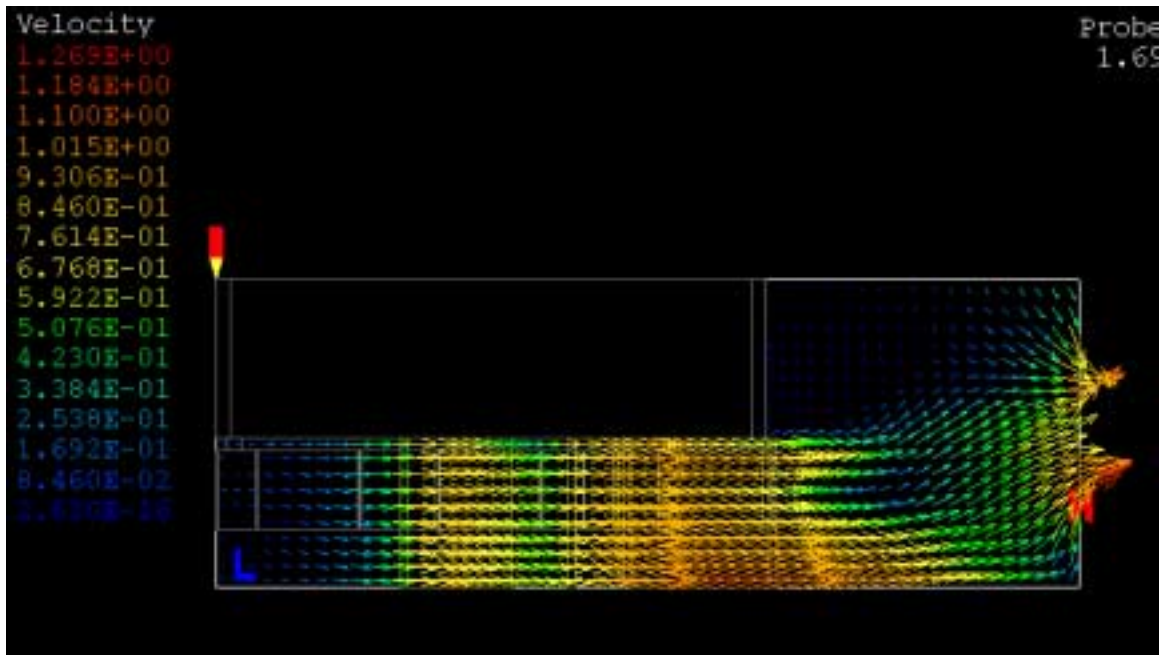


Section (Hall way)

Air flow in the room (Case-1)

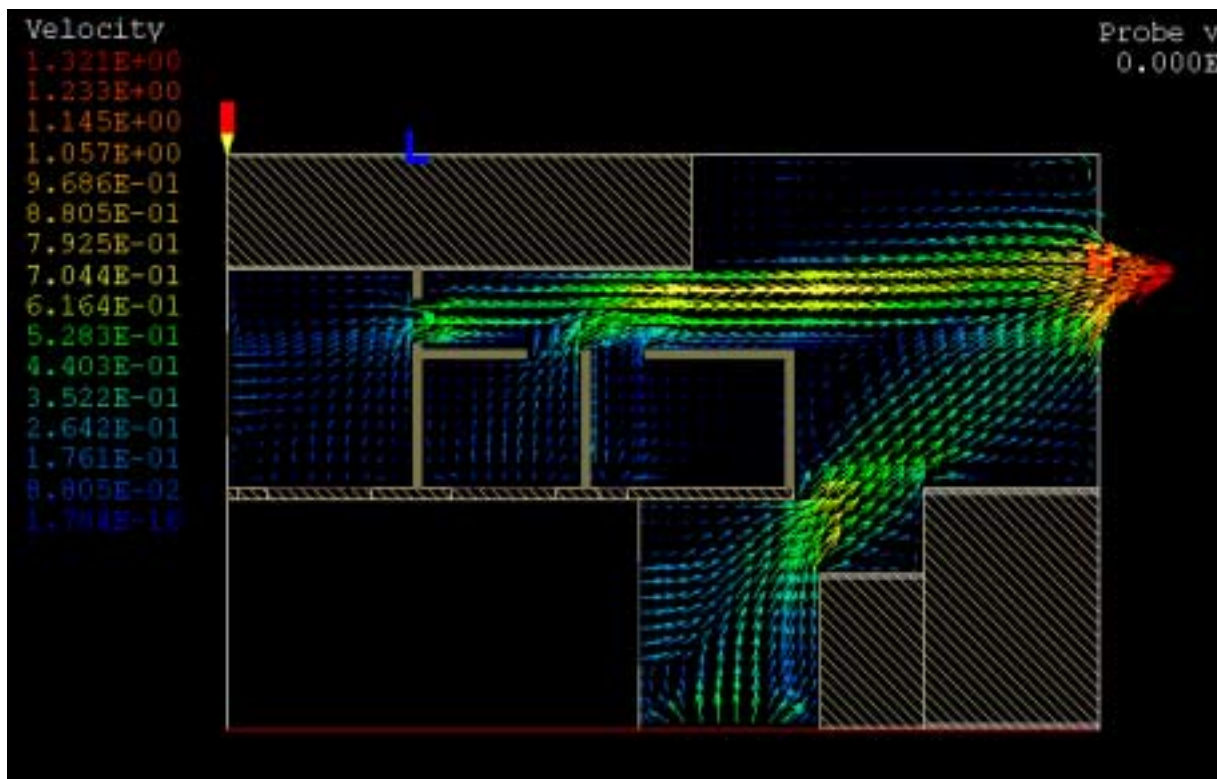


Plane (H=1.5m)

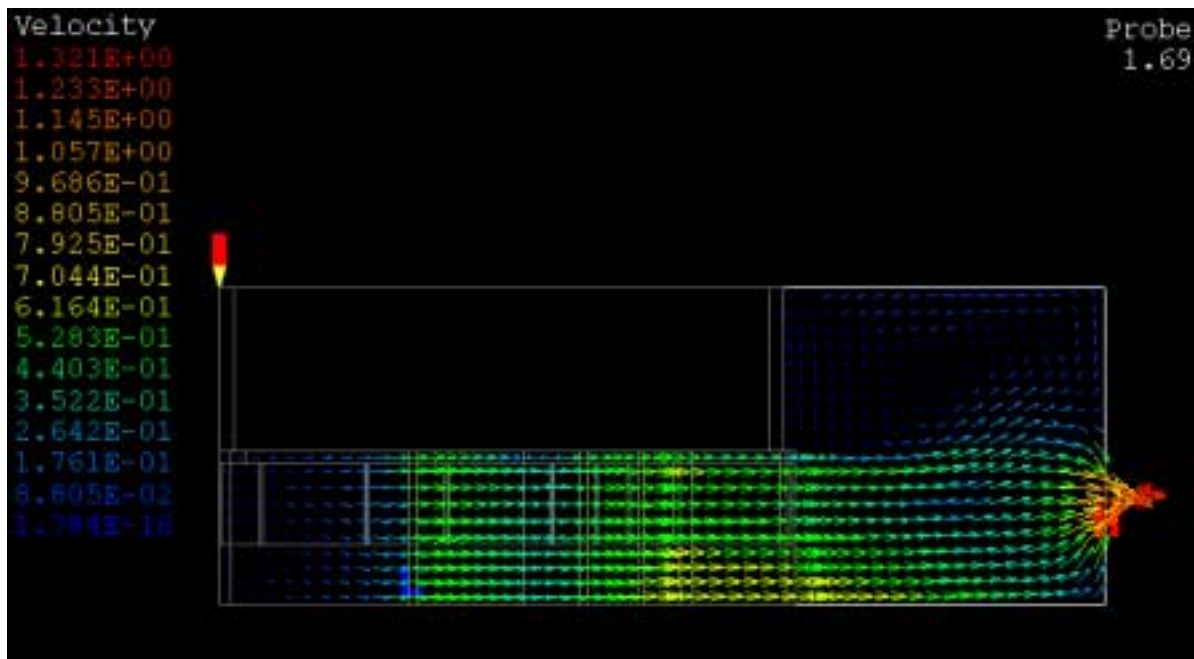


Section (Hall way)

Air flow in the room (Case-2)



Plane (H=1.5m)



Section (Hall way)

Air flow in the room (Case-3)