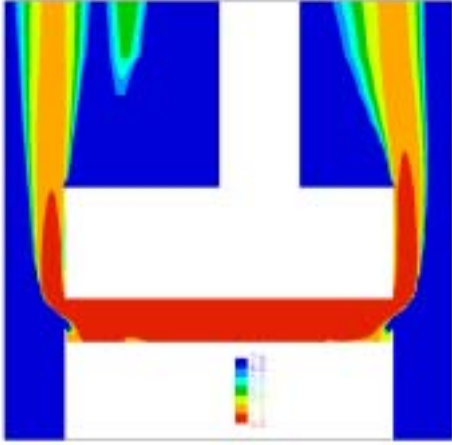


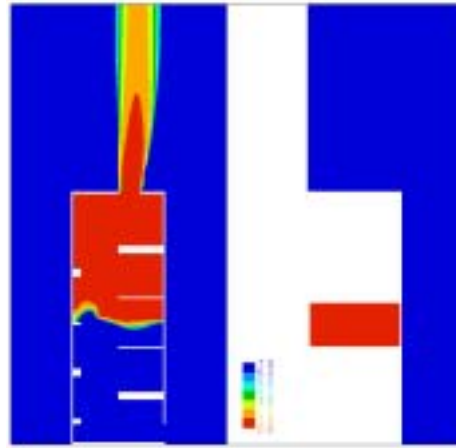


Smoke Ventilation of Common Access Areas  
of Flats and Maisonettes  
Appendix Fiii – Selected 'visibility distance'  
contours for CFD 'corridor' scenarios; 2.5 MW  
fire and 0.78 m dwelling & stair door openings

*The authors of this report are employed by BRE. The work reported herein was carried out under a Contract placed by the ODPM. Any views expressed are not necessarily those of the ODPM.*

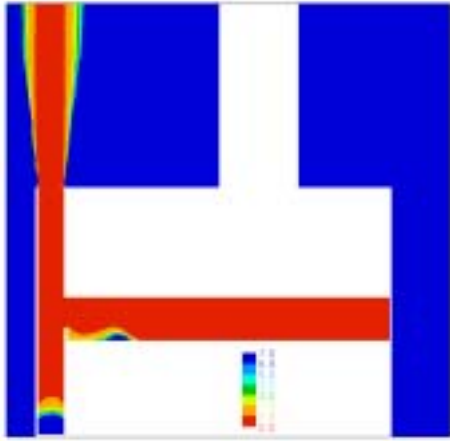


Lobby: L: 1.5m high-level wall vent  
R: 1.5m high-level wall vent  
**Mean temp in occupied space = 116°C**



Stair: Top and bottom vent

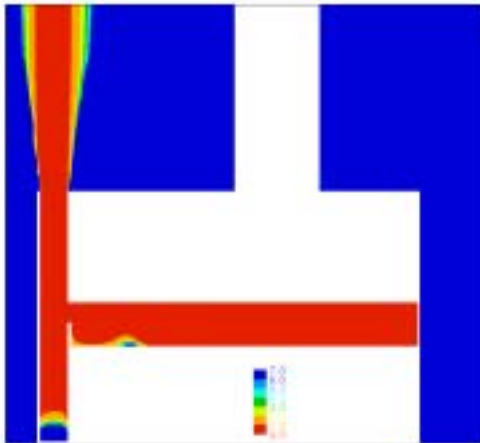




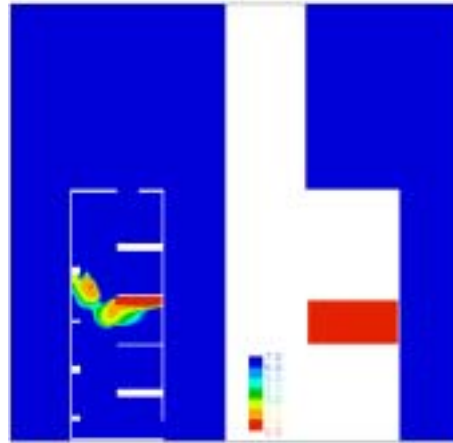
Lobby: L: Natural closed-base, **2m<sup>2</sup>** shaft  
 (1.5 m<sup>2</sup> high-level vent to lobby)  
 R: No vent  
**Mean temp in occupied space = 252°C**

NO SMOKE IN STAIR

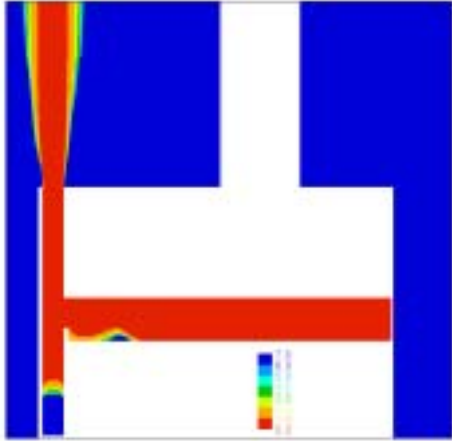
Stair: Top and bottom vent



Lobby: L: Natural closed-base, **2m<sup>2</sup>** shaft  
 (1 m<sup>2</sup> high-level vent to lobby)  
 R: No vent  
**Mean temp in occupied space = 245°C**



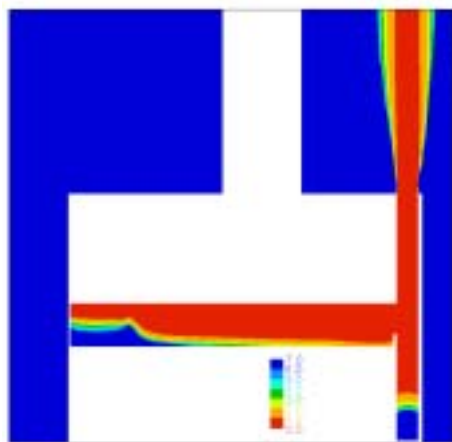
Stair: Top and bottom vent



NO SMOKE IN STAIR

Lobby: L: Natural closed-base, **1.5m<sup>2</sup>** shaft  
(1.5 m<sup>2</sup> high-level vent to lobby)  
R: No vent  
**Mean temp in occupied space = 249°C**

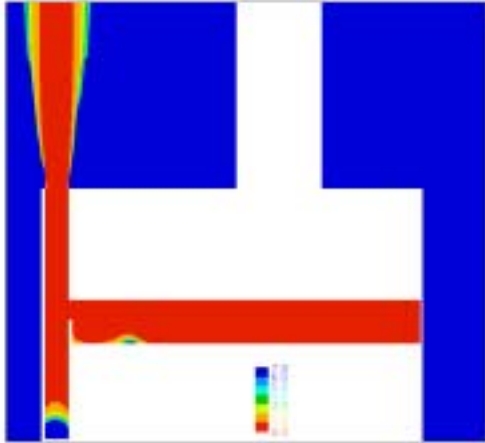
Stair: Top and bottom vent



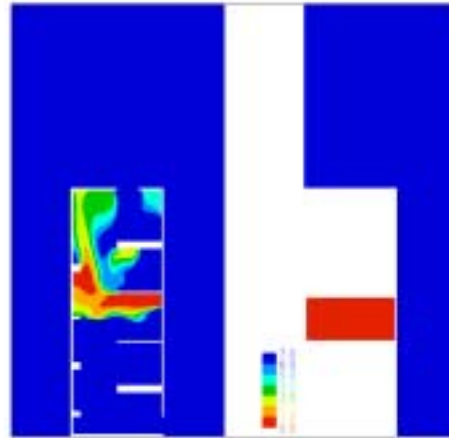
NO SMOKE IN STAIR

Lobby: L: No vent  
R: Natural closed-base, **1.5m<sup>2</sup>** shaft  
(1.5 m<sup>2</sup> high-level vent to lobby)  
**Mean temp in occupied space = 91°C**

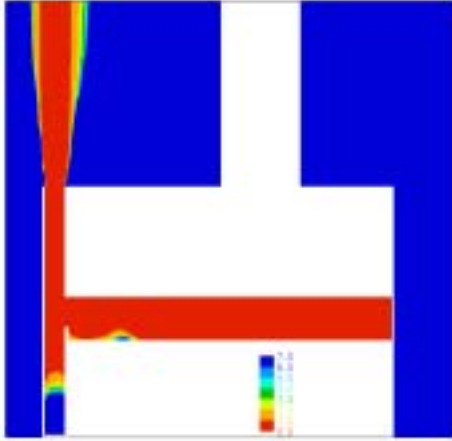
Stair: Top and bottom vent



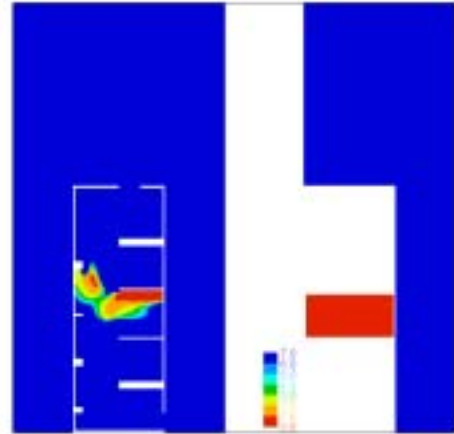
Lobby: L: Natural closed-base,  $1.5\text{m}^2$  shaft  
( $1\text{ m}^2$  high-level vent to lobby)  
R: No vent  
*Mean temp in occupied space =  $249^\circ\text{C}$*



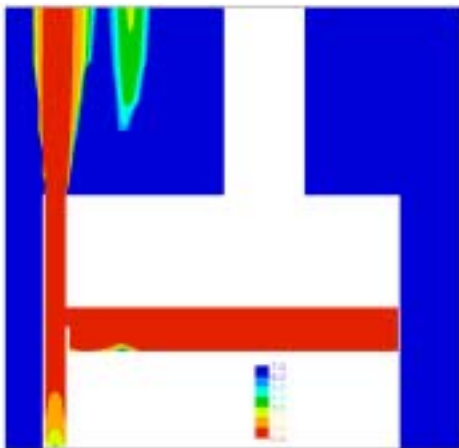
Stair: Top and bottom vent



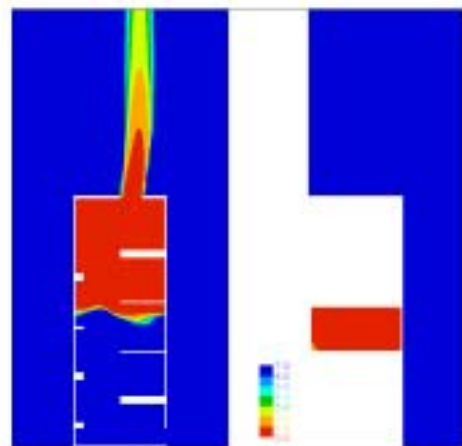
Lobby: L: Natural closed-base, **1.25m<sup>2</sup>** shaft  
 (1.5 m<sup>2</sup> high-level vent to lobby)  
 R: No vent  
**Mean temp in occupied space = 247°C**



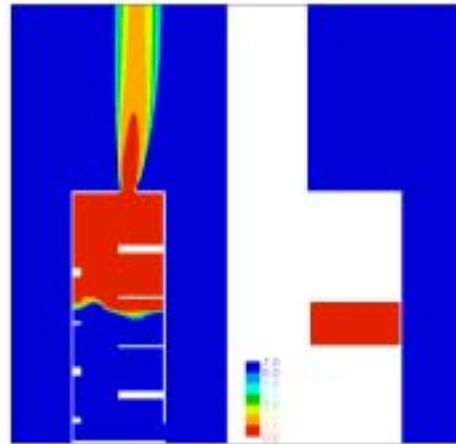
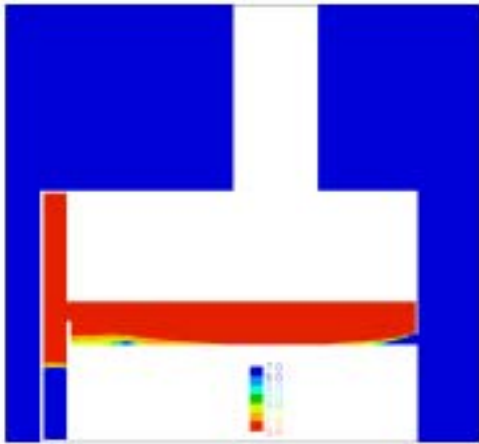
Stair: Top and bottom vent



Lobby: L: Natural closed-base, **1.25m<sup>2</sup>** shaft  
 (1 m<sup>2</sup> high-level vent to lobby)  
 R: No vent  
**Mean temp in occupied space = 266°C**



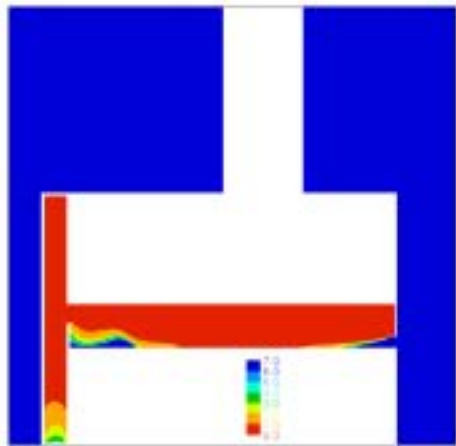
Stair: Top and bottom vent



Lobby: L: Mechanical closed-base, **1.5m<sup>2</sup>** shaft  
(**160 ach<sup>-1</sup>** (2.6 m<sup>3</sup>s<sup>-1</sup>) and  
1m<sup>2</sup> high-level vent to lobby)  
C: No vent  
R: 0.5m<sup>2</sup> low-level vent

Stair: Top and bottom vent

**Mean temp in occupied space = 175°C**  
**Closed door ΔP = 25Pa; open door vel = 1.1 ms<sup>-1</sup>**

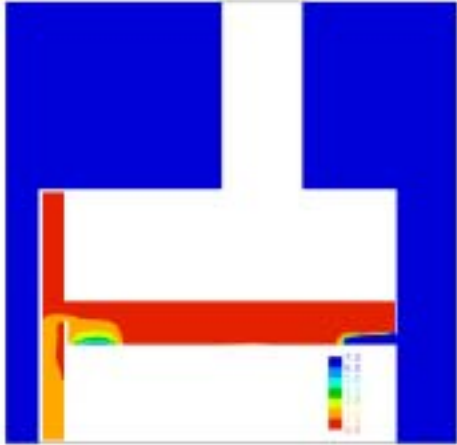


NO SMOKE IN STAIR

Lobby: L: Mechanical closed-base, **1.5m<sup>2</sup>** shaft  
(**320 ach<sup>-1</sup>** (5.2 m<sup>3</sup>s<sup>-1</sup>) and  
1m<sup>2</sup> high-level vent to lobby)  
C: No vent  
R: 0.5m<sup>2</sup> low-level vent

Stair: Top and bottom vent

**Mean temp in occupied space = 179°C**  
**Closed door ΔP = 102Pa; open door vel = 2.2ms<sup>-1</sup>**



NO SMOKE IN STAIR

Lobby: L: Mechanical closed-base, **1.5m<sup>2</sup>** shaft  
(**640 ach<sup>-1</sup>** (10.3 m<sup>3</sup>s<sup>-1</sup>) and  
1m<sup>2</sup> high-level vent to lobby)

C: No vent

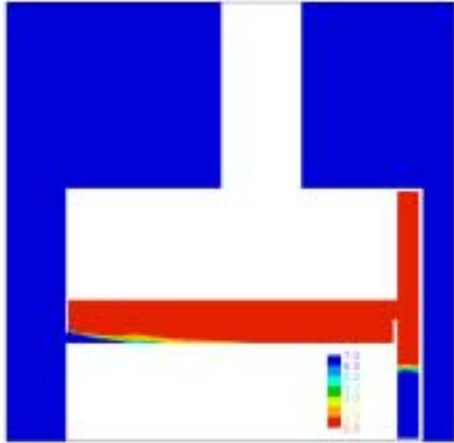
R: 0.5m<sup>2</sup> low-level vent

**Mean temp in occupied space = °C**

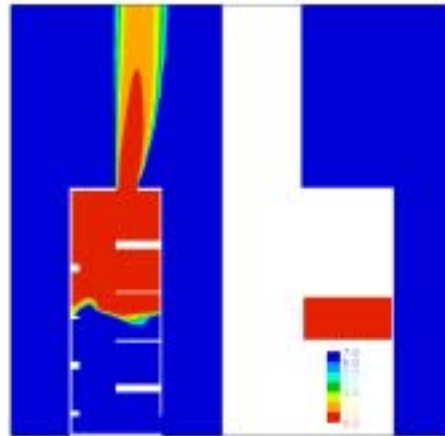
**Closed door  $\Delta P = 400 \text{ Pa}$ ; open door vel = 4.4ms<sup>-1</sup>**

Stair: Top and bottom vent

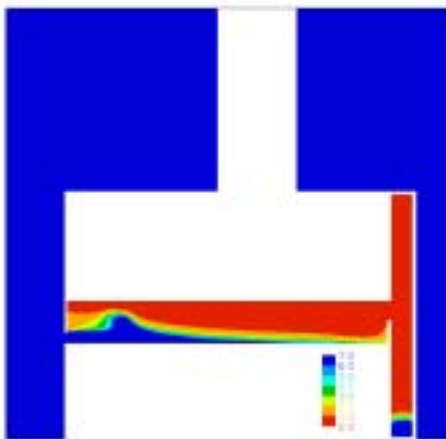




Lobby: L: 0.5m<sup>2</sup> low-level vent  
 C: No vent  
 R: Mechanical closed-base, 1.5m<sup>2</sup> shaft  
 (160 ach<sup>-1</sup> (2.6 m<sup>3</sup>s<sup>-1</sup>) and  
 1m<sup>2</sup> high-level vent to lobby)  
**Mean temp in occupied space = 147°C**



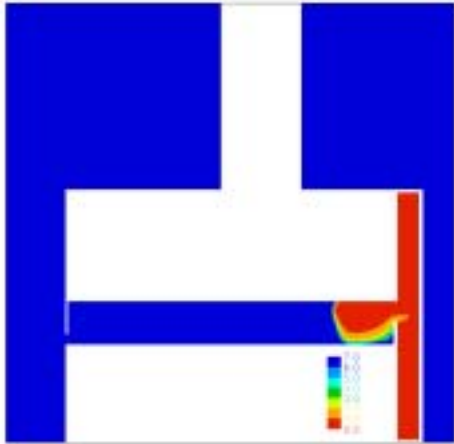
Stair: Top and bottom vent



Lobby: L: 0.5m<sup>2</sup> low-level vent  
 C: No vent  
 R: Mechanical closed-base, 1.5m<sup>2</sup> shaft  
 (320 ach<sup>-1</sup> (5.2 m<sup>3</sup>s<sup>-1</sup>) and  
 1m<sup>2</sup> high-level vent to lobby)  
**Mean temp in occupied space = 75°C**

NO SMOKE IN STAIR

Stair: Top and bottom vent



NO SMOKE IN STAIR

Lobby: L: 0.5m<sup>2</sup> low-level vent  
C: No vent  
R: Mechanical closed-base, 1.5m<sup>2</sup> shaft  
(640 ach<sup>-1</sup> (10.3 m<sup>3</sup>s<sup>-1</sup>) and  
1m<sup>2</sup> high-level vent to lobby)  
**Mean temp in occupied space = 38°C**

Stair: Top and bottom vent