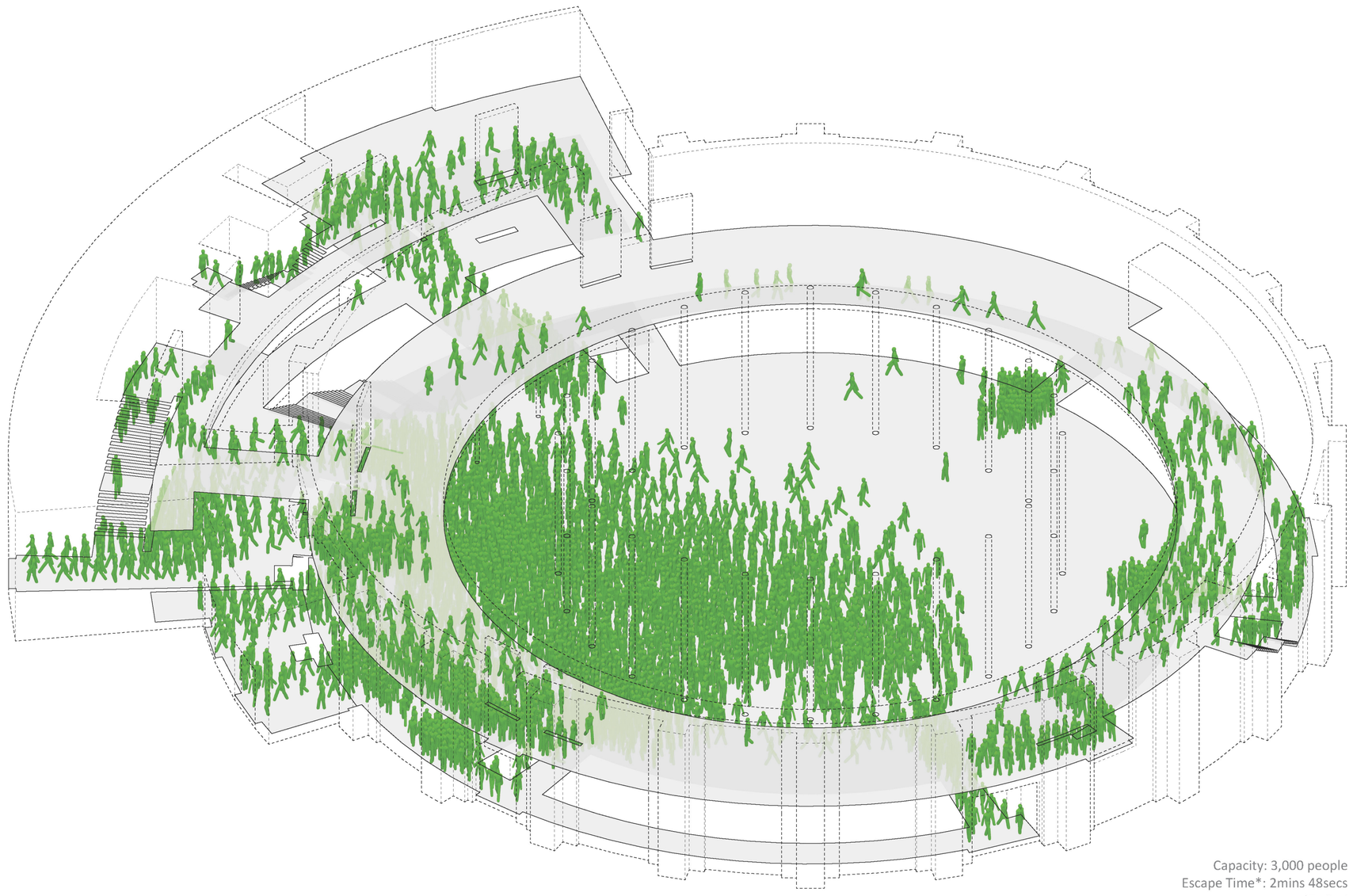
MASS EVACUATION: REGULATORY COMPLIANCE

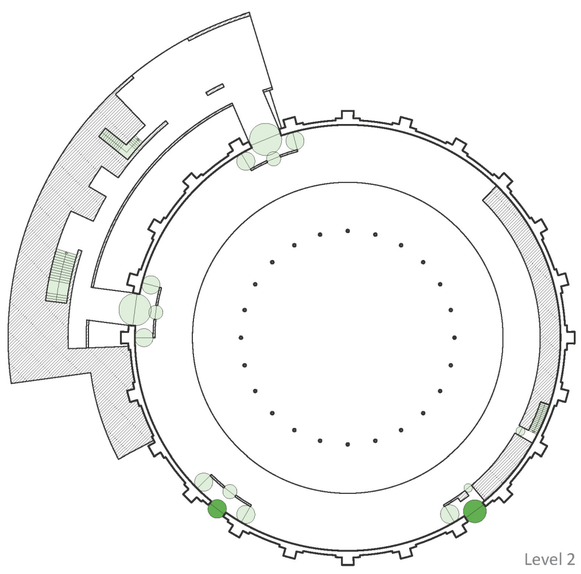
The Roundhouse Theatre, Chalk Farm, London

2016, Concert (Following Renovation in 2006)

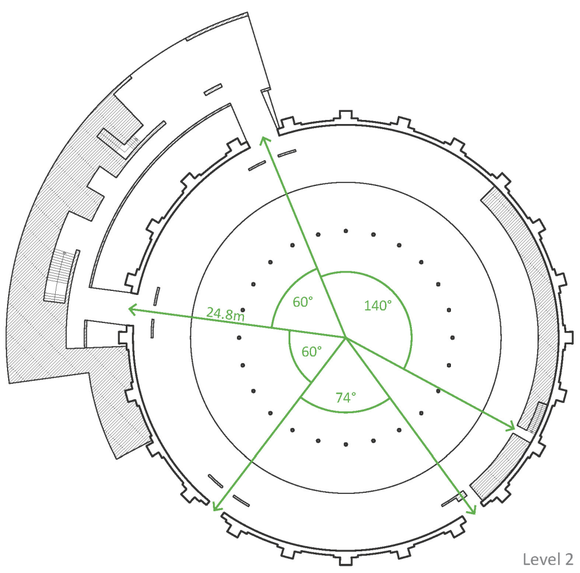
Max Ochel + Richard Fleming



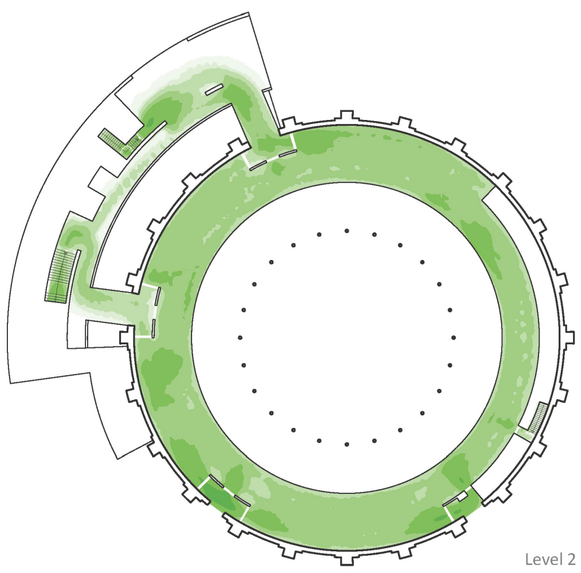
Capacity: 3,000 people
Escape Time*: 2mins 48secs
*Simulated
Scale 1:200



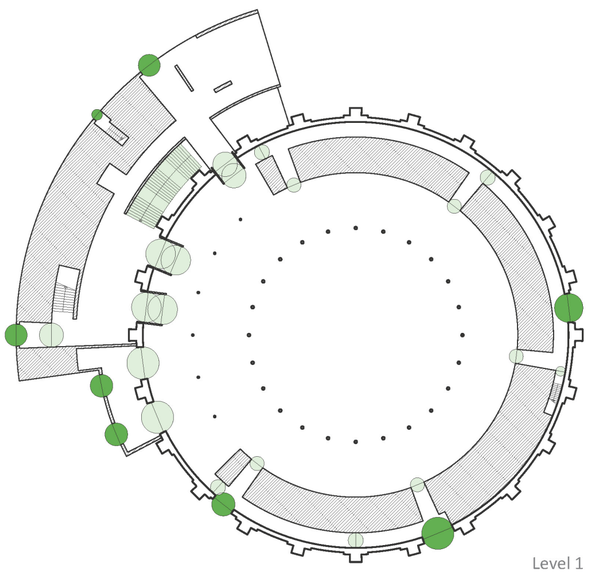
Level 2



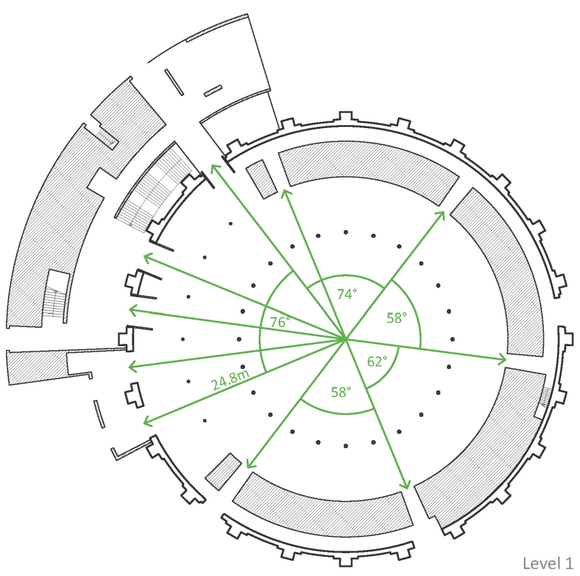
Level 2



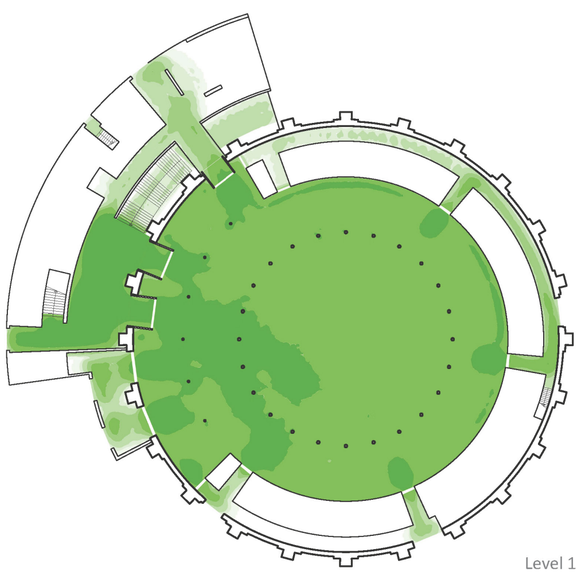
Level 2



Level 1
Scale 1:500



Level 1
Scale 1:500



Level 1
Scale 1:500

External Exit
Internal Door
11 Total Number of Exits
24,500mm Total Width of Exits
15,000mm Total Width of Exits Required for 3,000 People

24.8m Distance to Exit
>45° Angle between Escape Routes

Highest Experienced Density*
Lowest Experienced Density*
*Simulated

B1 Design for Horizontal Escape

Escape Route Design

Number of Escape Routes and Exits
3.2 The number of escape routes and exits to be provided depends on the number of occupants in the room, tier or storey in question and the limits on travel distance to the nearest exit given in Table 2.
Note: It is only the distance to the nearest exit that should be so limited. Any other exits may be further away than the distances in Table 2.

(from) **Table 2: 5.b.** For areas with seating in rows 32m maximum to the nearest exit (with exits in more than one direction)

Alternative Escape Routes
3.9 A choice of escape routes is of little value if they are all likely to be disabled simultaneously. Alternative escape routes should therefore satisfy the following criteria:

a. they are in directions 45° or more apart; or
b. they are in directions less than 45° apart, but are separated from each other by fire-resisting construction.

Number of Occupants and Exits
3.8 The figure used for the number of occupants will normally be that specified as the basis for the design.

Table 3 gives the minimum number of escape routes and exits from a room or storey according to the number of occupants. (This number is likely to be increased by the need to observe travel distances and by other practical considerations.)

(from) **Table 3:** Minimum number of escape routes and exits from a room, tier or storey.
Maximum number of persons: More than 600
Minimum number of escape routes/exits: 3

Width of Escape Routes and Exits
3.18 The width of escape routes and exits depends on the number of persons needing to use them.

3.19 Where the maximum number of people likely to use the escape route and exit is not known, the appropriate capacity should be calculated on the basis of the occupant capacity.

3.21 If a storey or room has two or more storey exits it has to be assumed that a fire might prevent the occupants from using one of them. The remaining exit(s) need to be wide enough to allow all the occupants to leave quickly. Therefore, when deciding on the total width of exits needed according to the above table, the largest exit should be discounted.

3.22 The total number of persons which two or more available exits (after discounting) can accommodate is found by adding the maximum number of persons that can be accommodated by each exit width. For example, 3 exits each 850mm wide will accommodate 3 x 110 = 330 persons (not the 510 persons accommodated by a single exit 2550mm wide).

Appendix C: Occupant Capacity
(from) **Table C1: 2.b.** The occupant capacity of a room, storey, building or part of a building is the number calculated by dividing the area of a room or storey(s) (m^2) by a floor space factor (m^2 per person).

Venue for pop concert and similar events and bar areas without fixed seating: 0.5 m^2 per person floor space factor.

References:
HM Government, (2010), *The Building Regulations 2010: Fire Safety: Approved Document B, Volume 2 - Buildings Other than Dwellinghouses.*