

CASE STUDY

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CFD ANALYSIS FOR SMOKE EXTRACTION SYSTEM OF THE MERAAS OUTLET VILLAGE MALL

CHALLENGES

Fluid Codes was engaged in to carry out a CFD study for smoke extraction in the Meraas Outlet Village Mall, which was in the final construction stage.

The simulation was carried out to validate the performance of smoke extraction system within the mall, for two different fire scenarios at different instances. The fire sources were assumed to be 5MW burning for 30 minutes each.

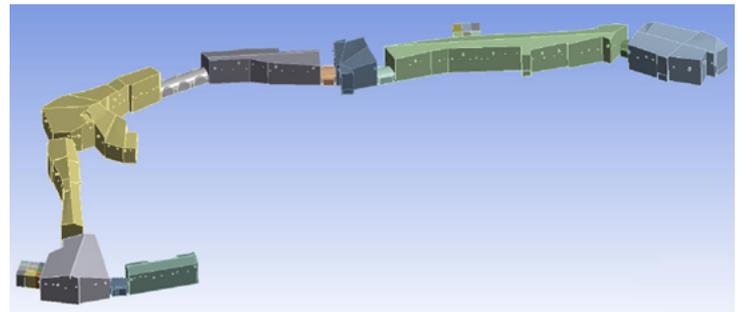


Figure 1. Simplified geometry of Meeras Mall

Engineering Solution

The two fire incident locations were the potential fire accident zones, like a kitchen area in the food court, and an electric room with transformers and high voltage devices.

The critical height at which the smoke had to be cleared was the average height of a human being, i.e. 1.5 m.

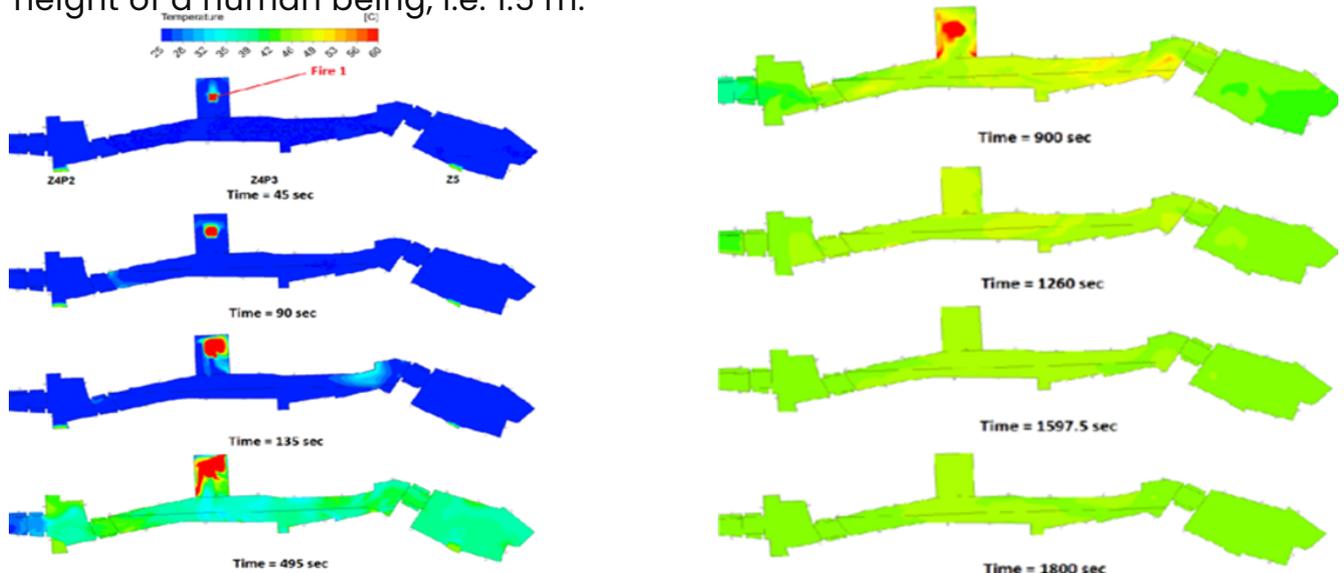


Figure 2 & 3. Shows fire 1 zone, where the fire evolves with time and then decaying gradually. With red being the highest and blue as lowest points of temperature scale.