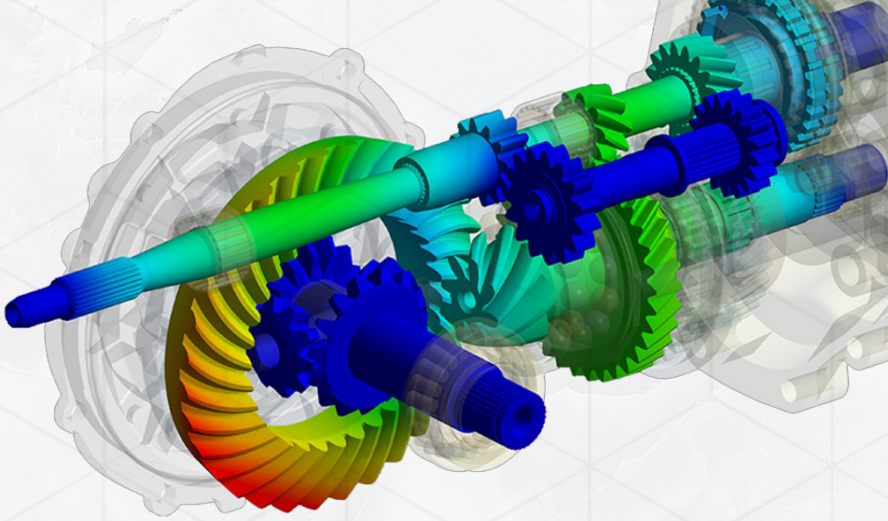

CASE STUDY

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FLUIDCODES

CASE STUDY

dar al-handasah
shair and partners

SMOKE & VENTILATION ANALYSIS DUBAI AIRPORT TERMINAL 3

CHALLENGES

Dar Al-Handasah, an internationally recognized engineering firm, was involved in the design and construction of Terminal 3 concourse at Dubai International Airport. As part of the project, ANSYS CFD was used to design the ventilation system and validate the safety and thermal comfort within the concourse. Fluid Codes provided the software and supported Dar's staff during the investigation.

Figure 1. *Dubai Airport Terminal 3*

Engineering Solution

In the event of a fire, an emergency smoke exhaust system will start to operate within one minute of detection. This system includes the deployment of emergency curtains, a popular means of creating zones within large indoor structures to control the spread of smoke.

For buildings containing atria, curtains are a prime smoke management strategy as they can efficiently isolate these large open spaces from the rest of the building.

For any given structure, designers need to understand how smoke spreads in order to position curtains where they are most needed. CFD played an important role in order to identify the visibility contour as well as the smoke shape.

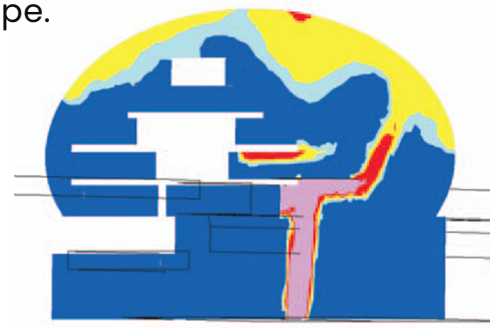

Figure 2. *Visibility contour*

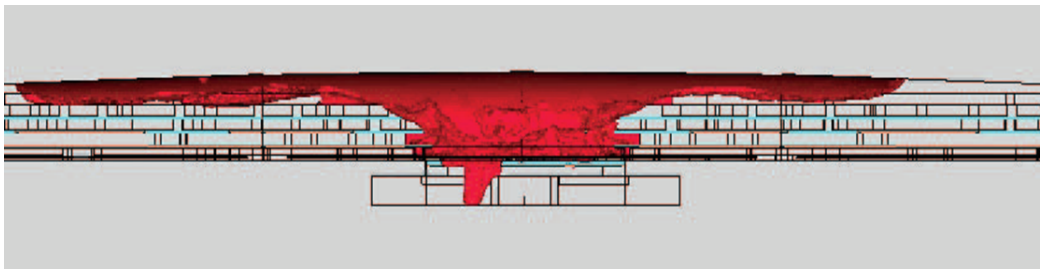

Figure 3. *Iso volumes of smoke plume*