

# CASE STUDY

## FLUID CODES

 SOFTWARE    SUPPORT    TRAINING    CUSTOMIZATION

### CONTACT OUR LOCAL OFFICES

UNITED ARAB EMIRATES +971 4330 8666  
SAUDI ARABIA +966 13 8318182  
EGYPT +971 4330 8666  
BULGARIA +359 88 8813820  
UNITED KINGDOM +44 20 3753 4607

 [sales@fluidcodes.com](mailto:sales@fluidcodes.com)  
 [consulting@fluidcodes.com](mailto:consulting@fluidcodes.com)  
 [fluidcodes.com](http://fluidcodes.com)

### EFFECT OF THE AIR QUALITY DUE TO CAR PARK SHAFT EXIT

#### CHALLENGES

CFD is now a commonly used tool for assessing atmospheric dispersion of pollutants from stacks. Fluid Codes was engaged to study the dispersion of CO released from a car park exhaust system onto a newly proposed building to be positioned directly adjacent. The client was concerned about that the new building, which was in a planning stage, could potentially be immersed in high concentrations of CO.

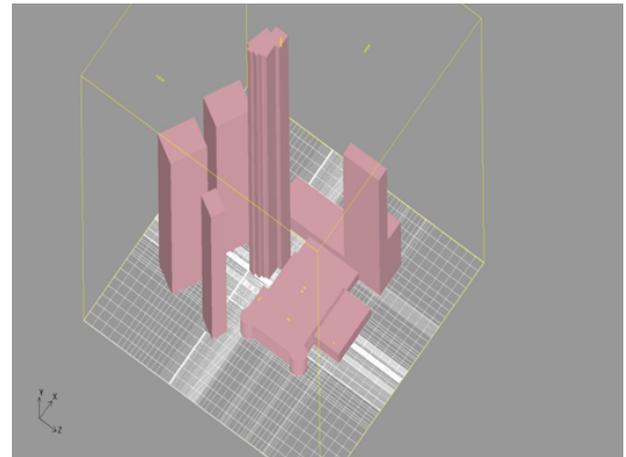


Figure 1. 3D model and mesh configuration

#### Engineering Solution

Fluid Codes has extensive experience in assessing a wide range of air quality issues resulting from built environment development. These assessments often support occupational health and safety studies in an attempt to reduce associated environmental impacts. Such assessments include dust collection design reviews, temperature rise studies and exhaust and fume dispersion modelling.

This study dealt with the simulation of CO concentration on surrounding buildings due to car park shaft exit. Specifically, the study investigated the dispersion of CO levels under different wind direction and speed data obtained from the site conditions.

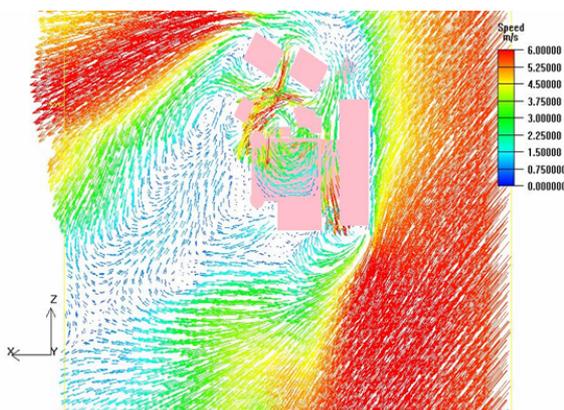


Figure 2. Velocity contour

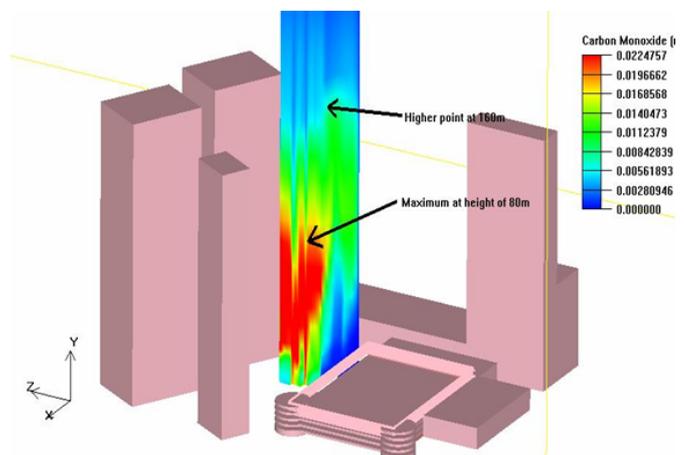


Figure 3. CO concentration on building