Internal Ventilation (HVAC) Studies For Complex Architectural Geometry

Summary

HVAC efficiency studies are carried out for geometrically complex halls (atriums). The results of the numerical simulations, in terms of temperature, velocity and air exchange fields, are used to modify the ventilation systems for the two atriums. Computational Fluid Dynamics (CFD) provides useful information to the mechanical engineers in order to assess and improve the HVAC design.

THE CONCERT HALL

Preliminary HVAC System

Modified HVAC System

VELOCITY FIELD

TEMPERATURE FIELD

MIXTURE FRACTION FIELD

THE OPERA HOUSE

Preliminary HVAC System

Modified HVAC System

VELOCITY FIELD

TEMPERATURE FIELD

MIXTURE FRACTION FIELD