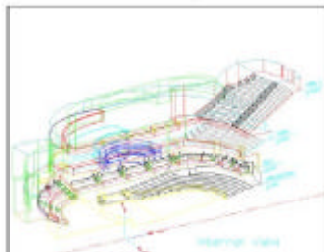




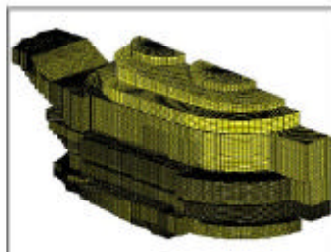
Internal Ventilation (HVAC) Studies For Complex Architectural Geometry

THE CONCERT HALL

Geometry



Grid



Summary

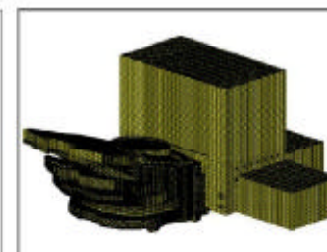
HVAC efficiency studies are carried out for geometrically complex halls (atriums). The results of the numerical simulations, in terms of temperature, velocity and air exchange fields, are used to modify the ventilation systems for the two atriums. Computational Fluid Dynamics (CFD) provides useful information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

THE OPERA HOUSE

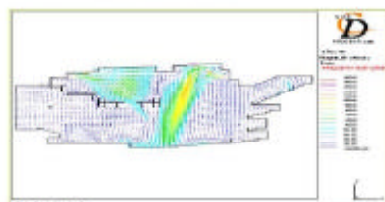
Geometry



Grid



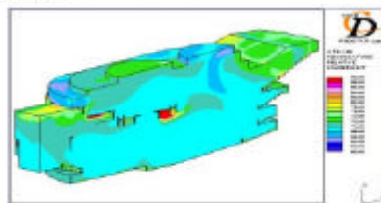
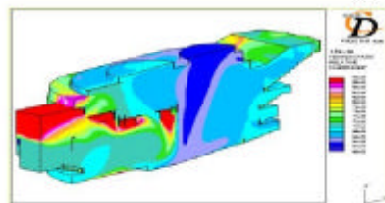
Preliminary HVAC System



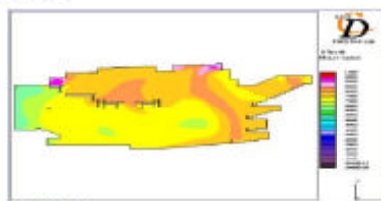
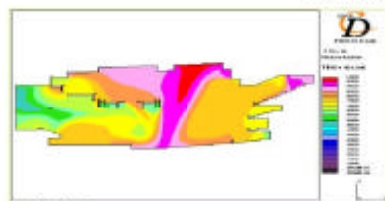
Modified HVAC System



VELOCITY FIELD

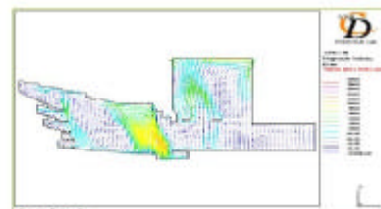


TEMPERATURE FIELD



MIXTURE FRACTION FIELD

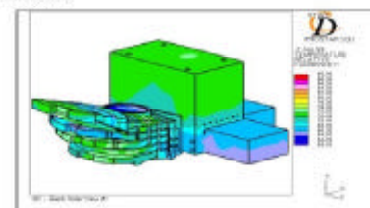
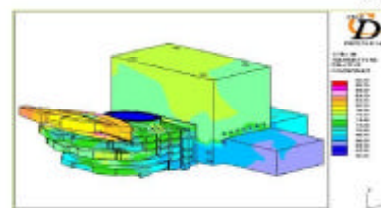
Preliminary HVAC System



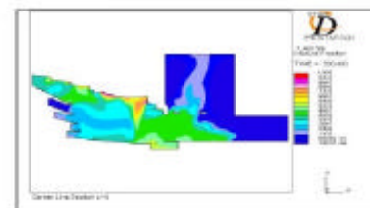
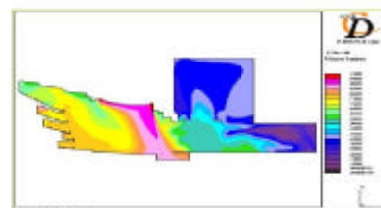
Modified HVAC System



VELOCITY FIELD



TEMPERATURE FIELD



MIXTURE FRACTION FIELD