**CHAM Limited**
*Pioneering CFD Software for Education & Industry*

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# PHOENICS Case Study
## Urban Wind Flows – Building geometry created using AC3D

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In this demonstration example, PHOENICS has been applied to the simulation of air lows around a set of high-rise buildings in Hong Kong, to investigate the wind velocities at various heights.

On this occasion, a 3D solid model of the geometry was not available, and the client supplied only a scale drawing as a plan view, with heights shown for each building:
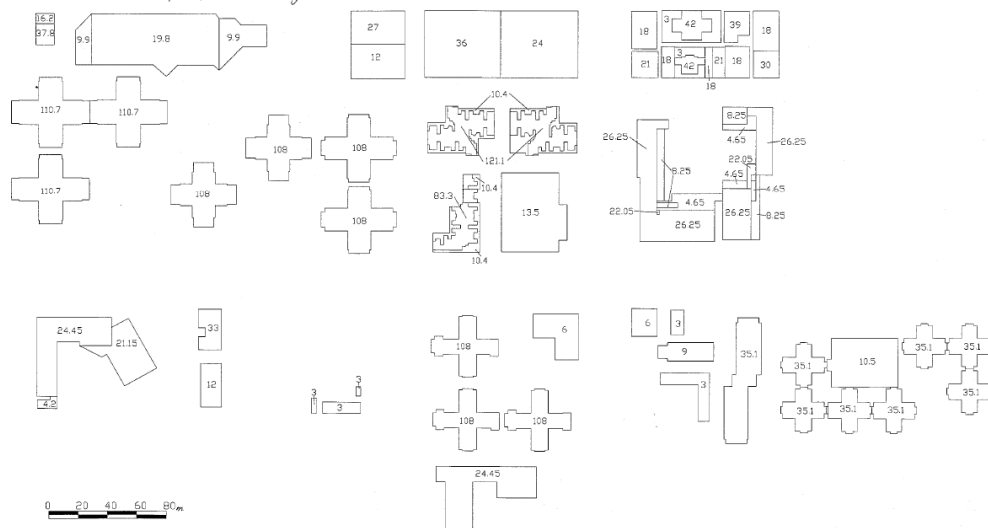


The drawing was scanned, and used as a backdrop in the AC3D software, supplied as a utility to PHOENICS/FLAIR .The outlines of the buildings were then traced to create polygons, which were then extruded to produce the individual buildings.
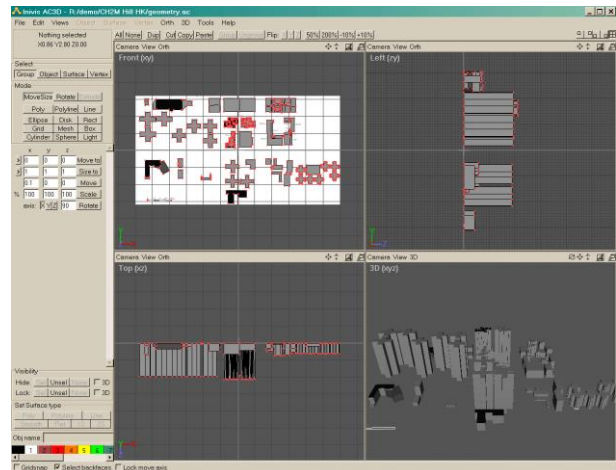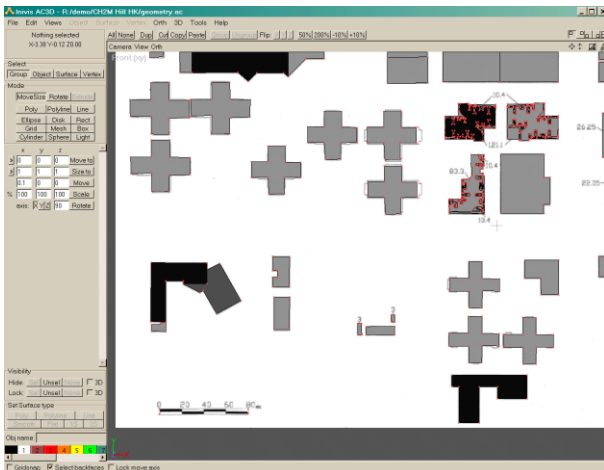


Finally, the entire scene was exported to the VR-Editor as a single PHOENICS object.
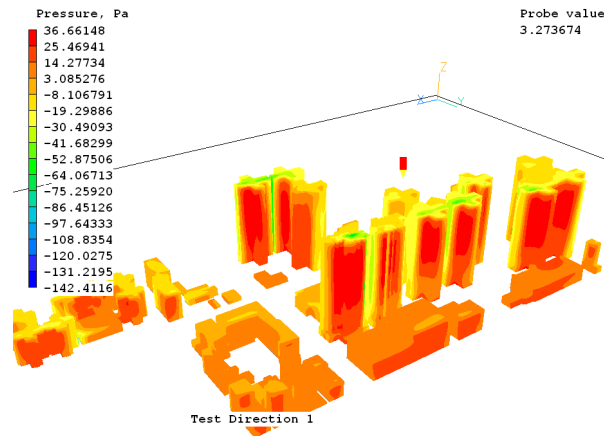
The inbuilt wind-profiling feature of PHOENICS/FLAIR was used within the model to more-accurately represent a real situation though, for this particular demonstration scenario, no representation was made of the surrounding hilly terrain that would greatly affect the results.
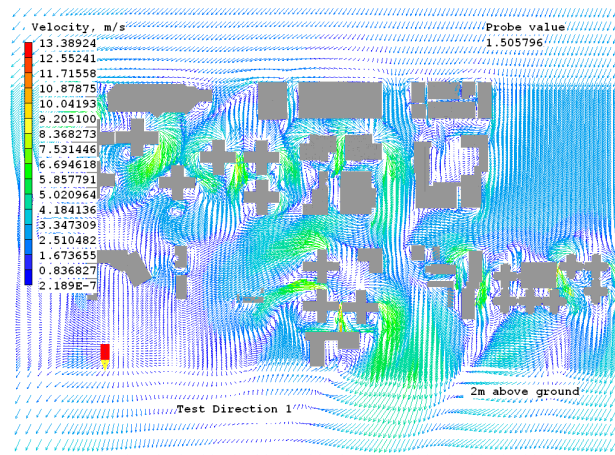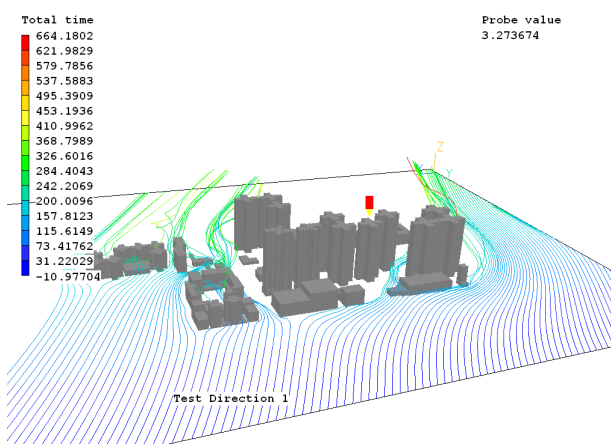




Images were generated to show various views of the velocity fields at 2, 20, 40, 60, 80 and 100m above the ground, of which two are shown below.