PHOENICS / FLAIR – EFS [External Flow Simulator]
CFD software for fluid flow simulation for the external built environment

PHOENICS/FLAIR is a CFD software package specialising in the simulation of scenarios involving fluid flow, heat transfer, combustion and chemical reaction processes occurring in the built and natural environment. FLAIR is utilised by architects, design engineers and safety officers concerned with the performance of air-flow systems for both the internal and external environment.

PHOENICS/FLAIR-EFS is a subset of PHOENICS/FLAIR available at a reduced cost for users concerned only with the environmental conditions surrounding buildings and other structures.

The function of FLAIR-EFS is to simulate the air flow, temperature distribution and pollutant concentration around individual or groups of buildings. It will predict:

- Forces on the exterior of buildings, roofs and walls.
- Pedestrian comfort information [NEN 8100 Standard]
- Wind statistics to obtain yearly averaged results for the modelled wind direction(s) – [in progress.]
- Rates of heat loss or gain between buildings, atmosphere and sky (prototype Heatisle module.)
- Dispersion and concentration of pollutants.

FLAIR-EFS intended for architects, building engineers, urban planners, local authorities and environment engineers. FLAIR-EFS enables users to visualise, understand, evaluate and refine the air-flow patterns in steady-state or time-dependent scenarios, in micro- as well as macro-scale.

FLAIR-EFS shows results for:

- Air flow patterns
    - Velocity
    - pressure
    - temperature
    - turbulence
- Temperature distribution / stratification
- Pollutant spread and concentration

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FLAIR-EFS contains:

- CAD import and repair features
- Wind and wind profiling
- Solar gain
- Interface to weather databases (eg Energy Plus)

FLAIR-EFS permits:

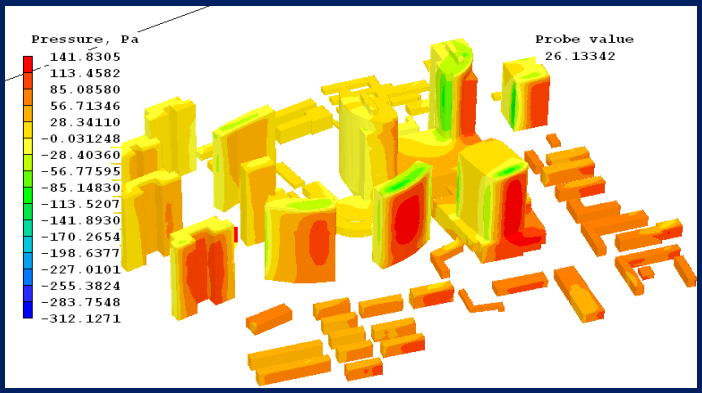
- Addition of user-defined functions
- Addition of user-defined materials
- Addition of user-defined properties

FLAIR-EFS applications include:

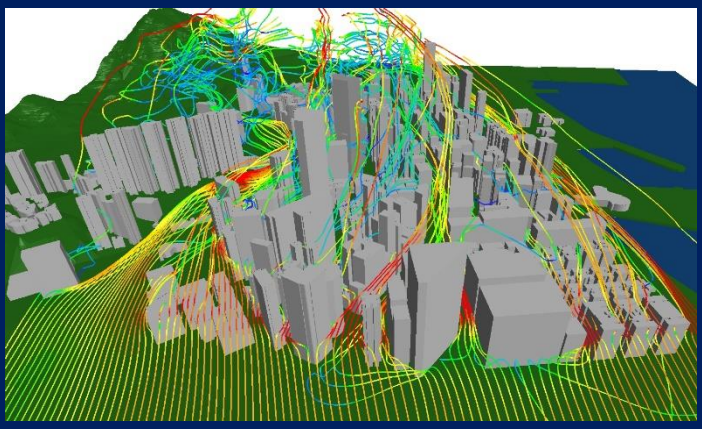
- Pedestrian comfort
- Pollutant release and spread
- Wind loading on structures
- Cityscape street canyons
- Urban Heat Islands (UHI)
- Hilly terrain

FLAIR-EFS displays:

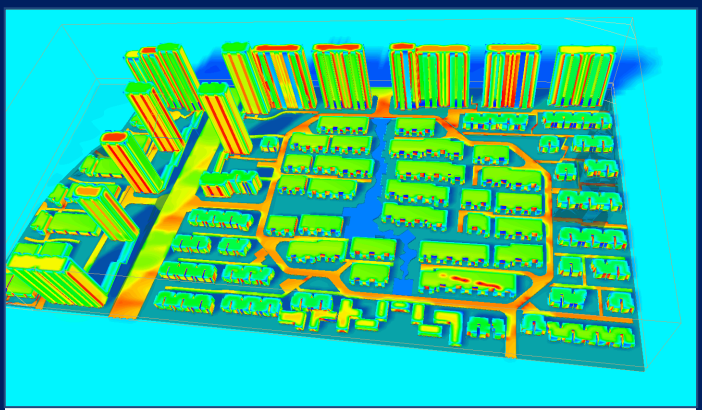
- Building geometry and terrain data
- Velocity vectors
- Streamlines
- Iso-surfaces
- Contours of pressure, temperature, concentration
- Surface contours & vectors
- Animated results



Surface pressures on structures



Velocity streamlines over hilly urban terrain [expanded view]



Heat absorption and shading

For further information contact Sales@cham.co.uk or call +44 (0)20 8947 7651