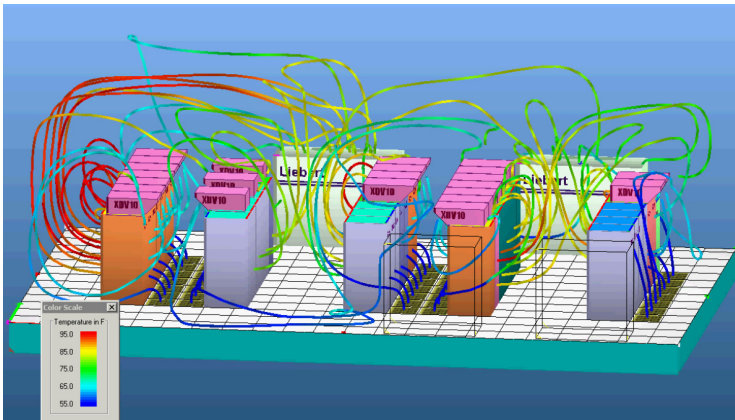




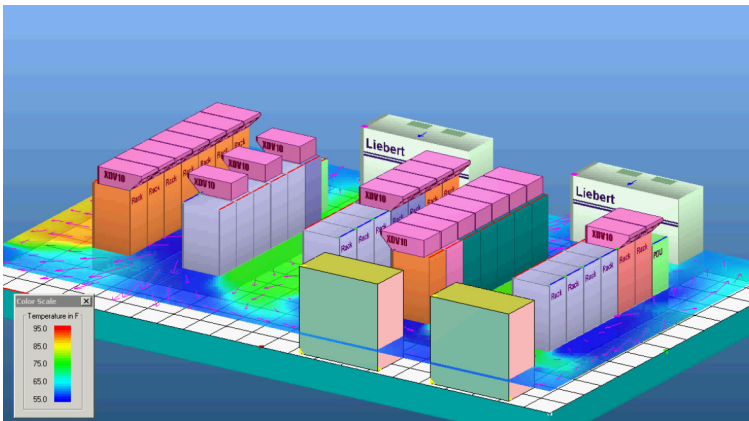
## Services

Quick and accurate CFD (Computational Fluid Dynamics) modeling of airflow patterns, floor pressure distribution, and temperature distribution for data centers.

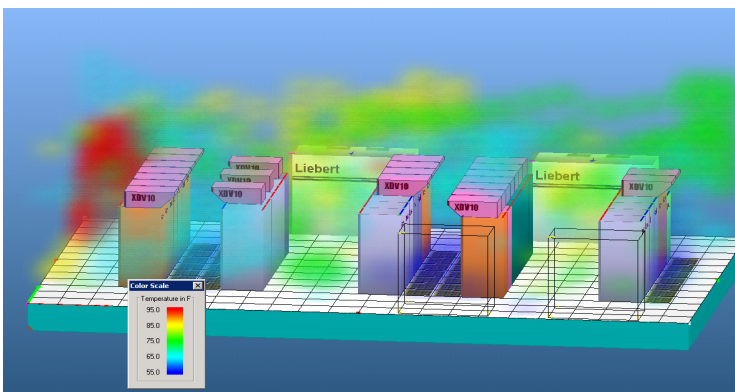
- Evaluate existing cooling, airflow or energy performance
- Recommend placement of new equipment and outlets
- Assess energy, airflow, or cooling improvement alternatives
- Identify recirculation or potential overheat locations
- Study cooling equipment failure scenarios



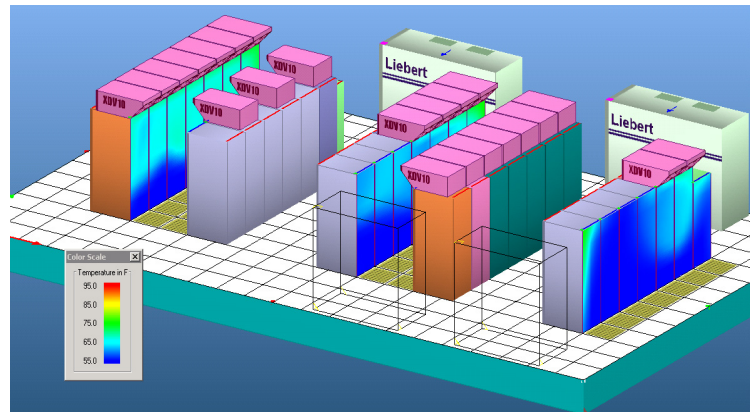
**Air Movement Above the Raised Floor**



**Horizontal Temperature Distribution**



**Temperature Fog**

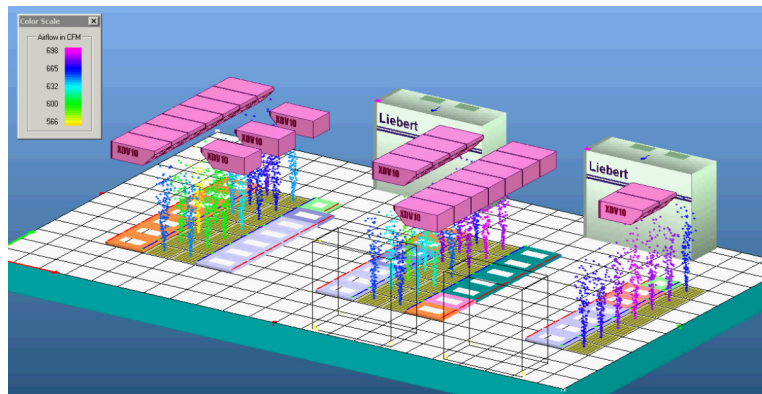


**Rack inlet temperature distribution map**

## Comprehensive Visualization of Results

We can provide many output formats, graphical, text and animated video for presenting the air flow and temperature distribution. The results are easy to understand which gives guidance for improving the design.

- Pressure, temperature and air flow display for under-floor
- Temperature distribution and airflow pattern on selected horizontal and vertical planes
- Indication of overheated server racks
- Rack temperature maps and heat load distribution
- Inspection tool to probe particular locations
- Airflow rates, rack inlet temperatures and CRAC units supply and return temperatures can be imported into Excel
- Animation of air movement above the raised floor



**Thermal plume animation**

## Company Profile

Capital Engineering is a 70+ person, full service, mechanical engineering consulting firm, based in Sacramento, providing unparalleled services since 1947.

Anthony Colacchia, M.E.  
Principal

Phone: 916-851-3508

Email: acolacchia@capital-engineering.com