



# Data Centre Cooling Control

Seminar

CHAM



Data and graphics courtesy of  
Stephen Grubitts & Associates





# Data Centre Cooling Control

## Design issues

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- **Heat Rejection Sources**
  - IT racks with blade servers: 2 ~ 7 kW/rack
- **Cooling System (typical)**
  - Under floor supply cooling air from CRAC units
- **ASHRAE TC 9.9: Temperature Control for Class 1 Data Centres**
  - Allowable: 15 ~ 32 °C
  - Recommended: 20 ~ 25 °C
- **Cabling Conditions under Floor Plenum & above Racks**



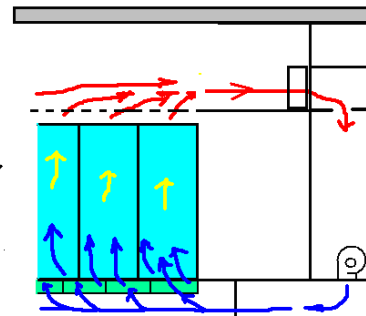
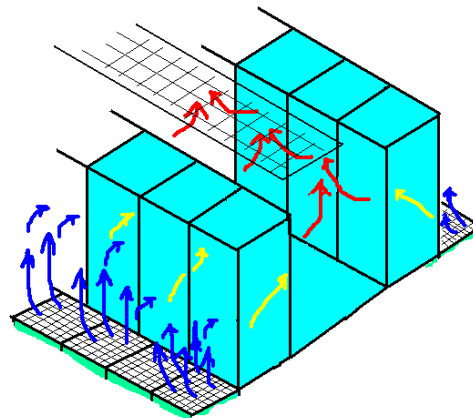
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Cooling air → floor grilles

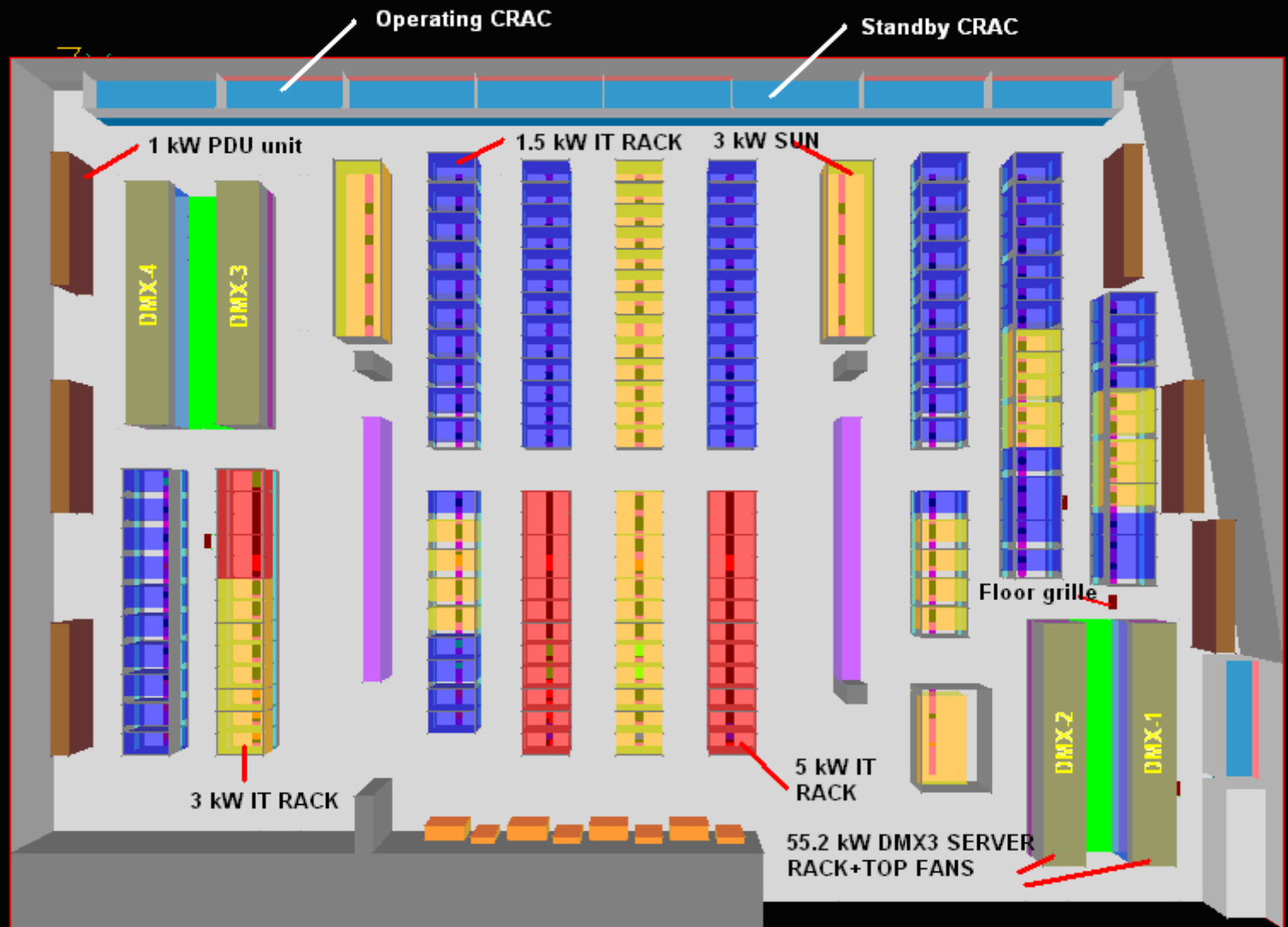




# Data Centre Cooling Control CFD model

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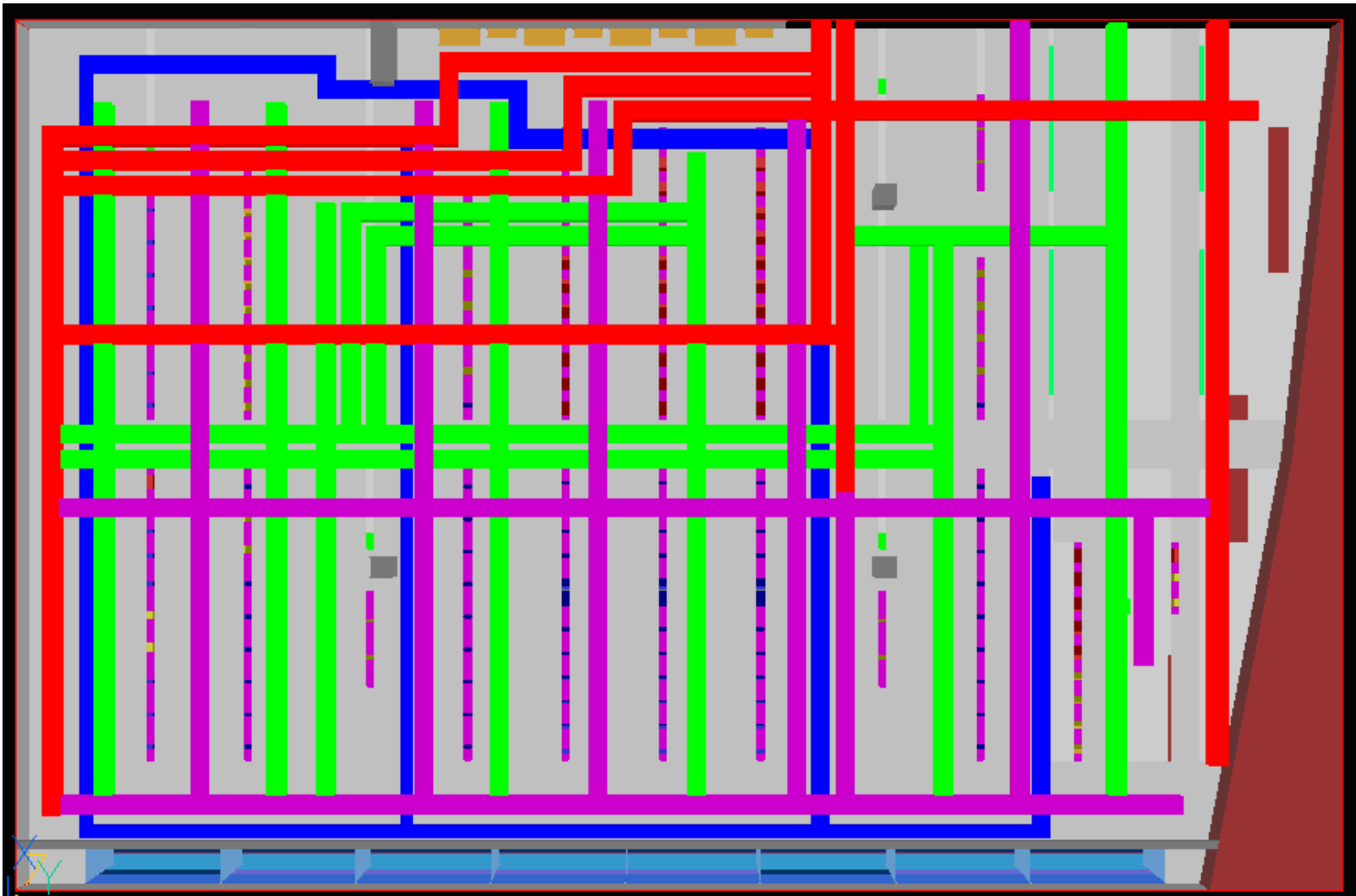




# Data Centre Cooling Control CFD model - cabling

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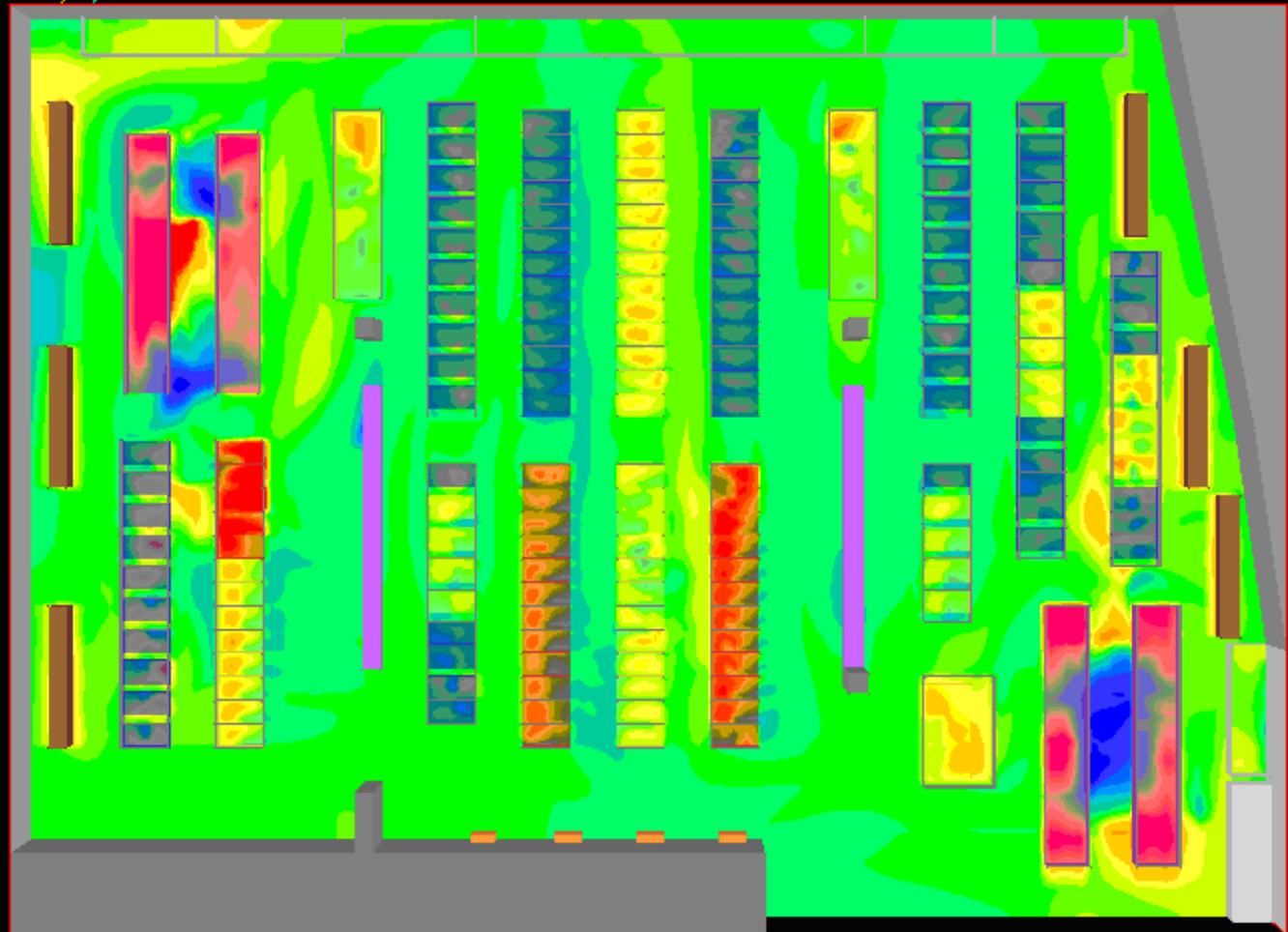
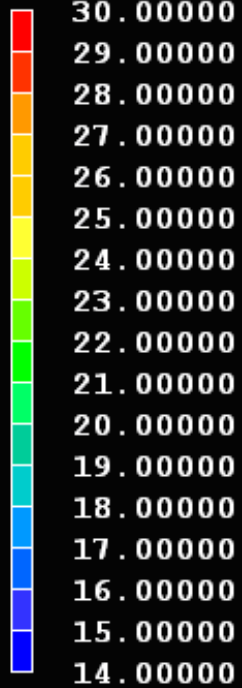


# Data Centre Cooling Control Results

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Temperature, °C Temperature contours

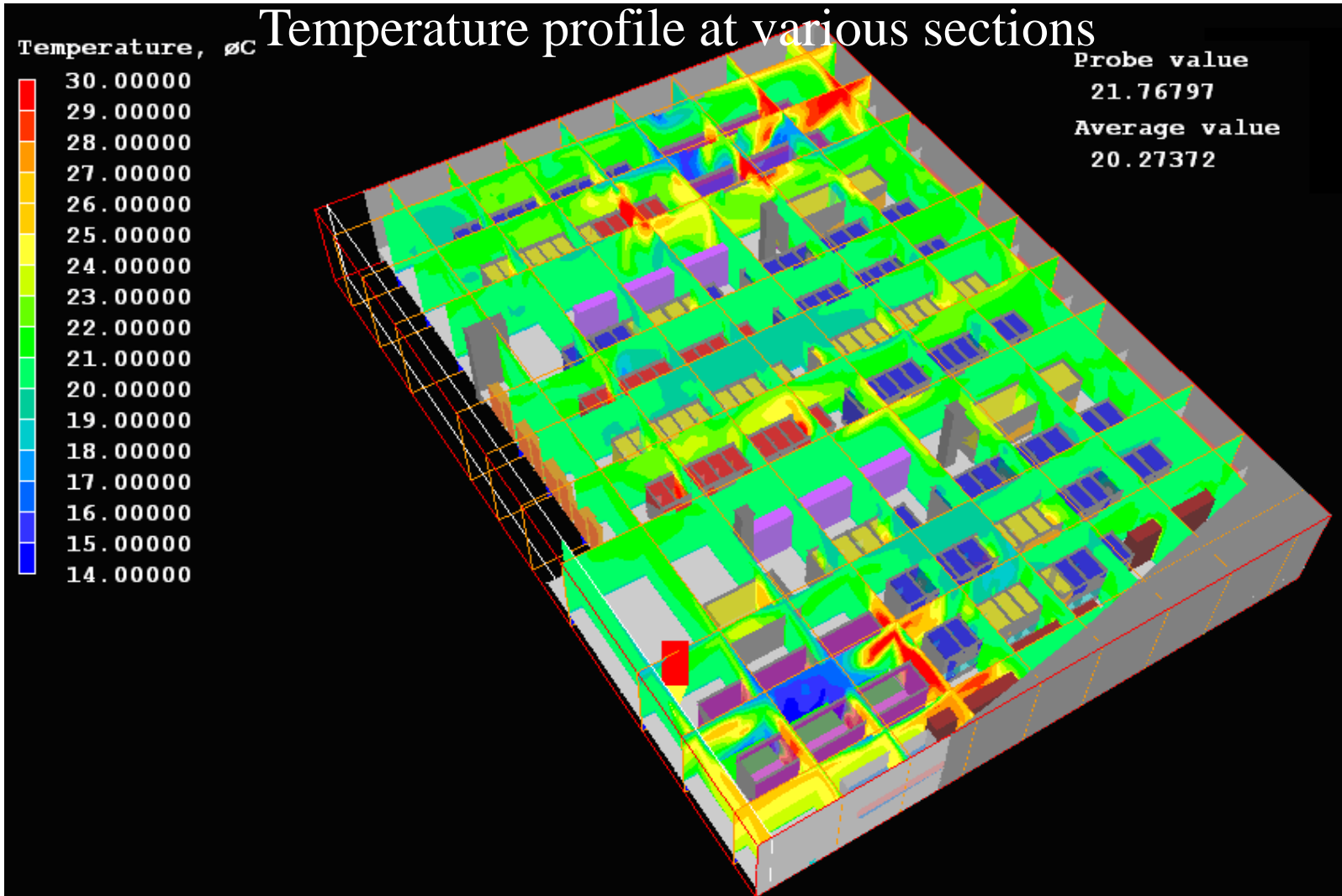




# Data Centre Cooling Control Results

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