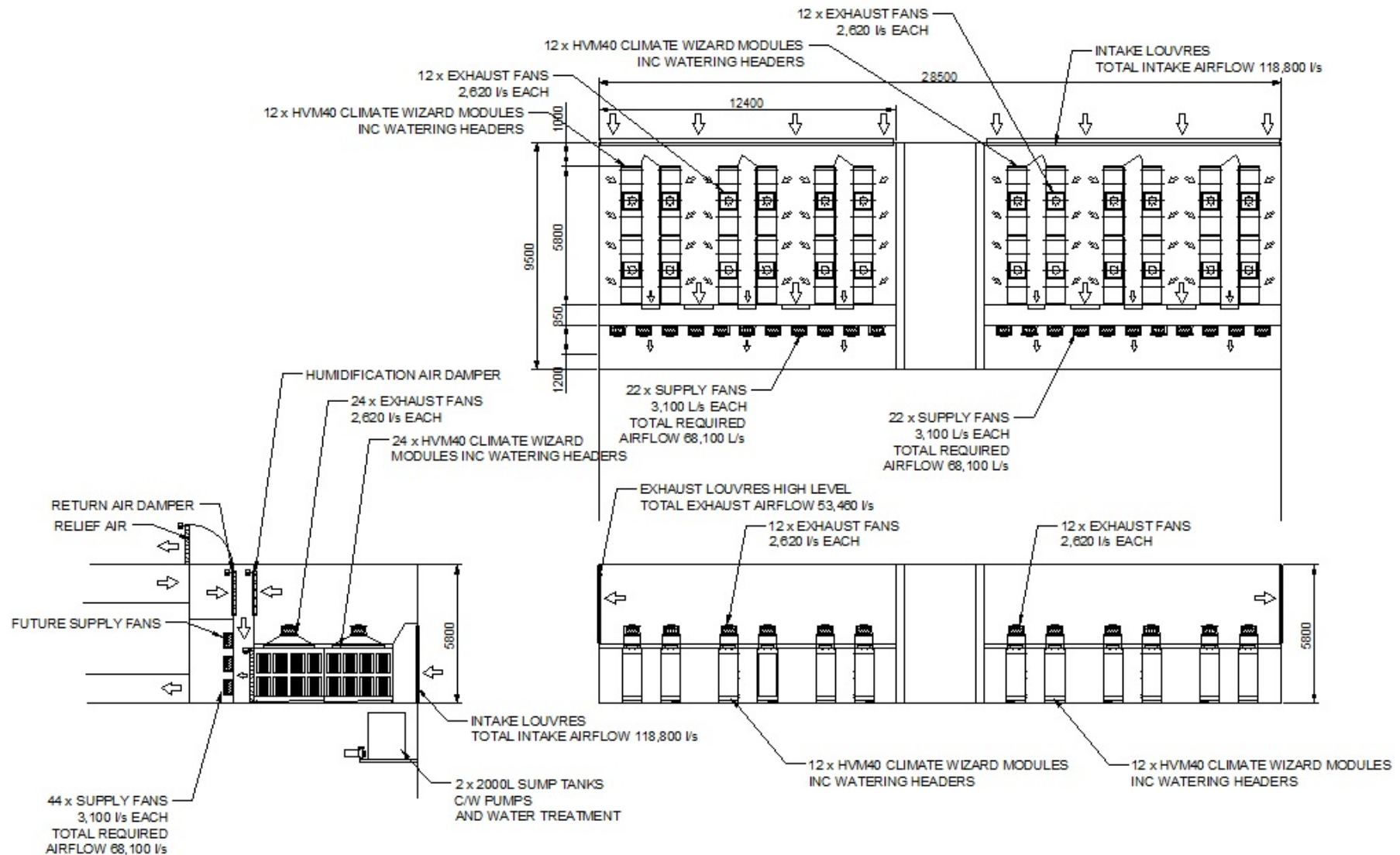


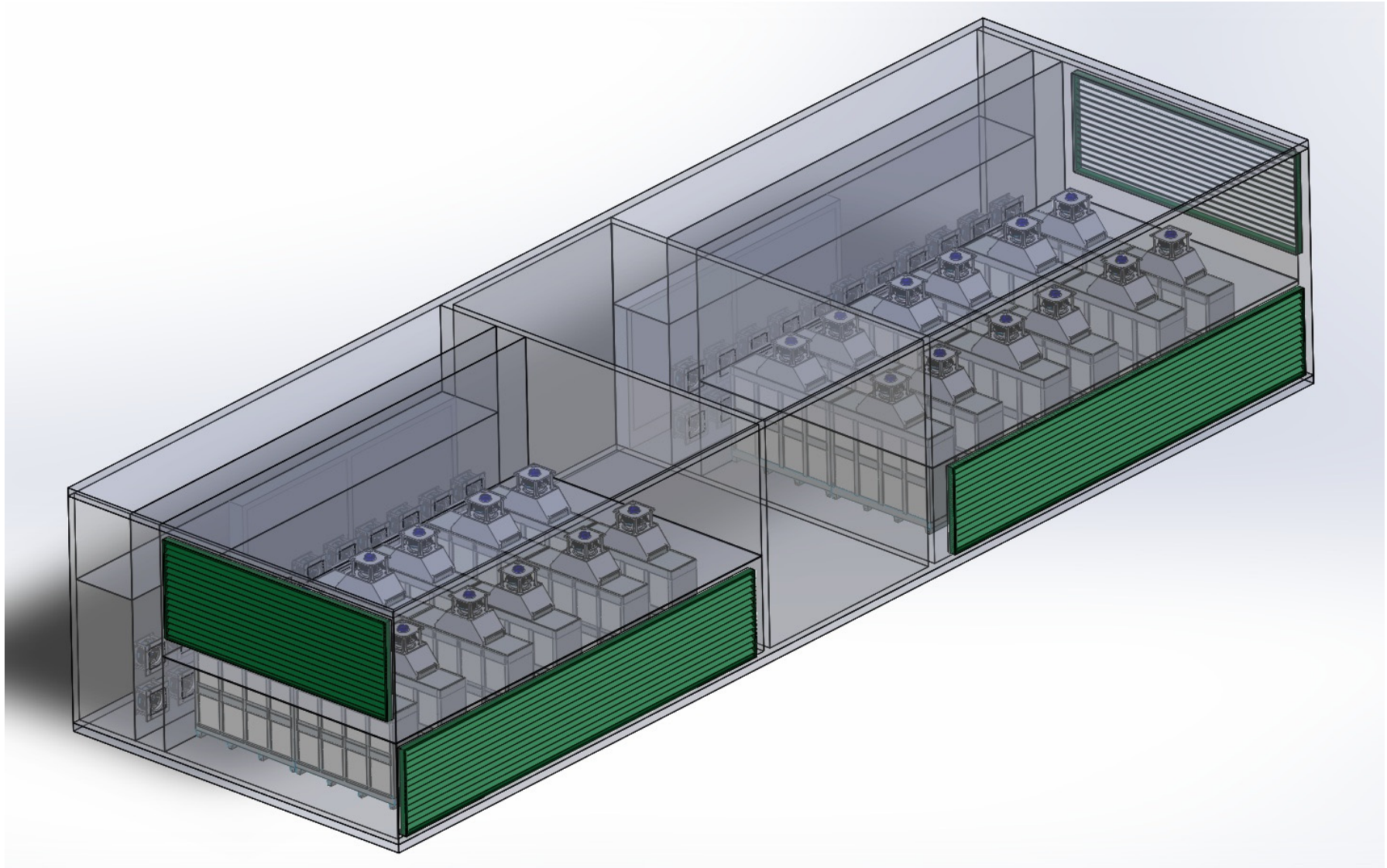
# Data Centre Design Criteria

- 1 MW of heat load
- 68.1 m<sup>3</sup>/s of airflow
- Tier 4 classification (2N)
- ASHRAE Class A1 supply air condition
  - 15°C to 30.2°C
- Air filtration
- Johannesburg design conditions of 36°C DB / 18°C WB

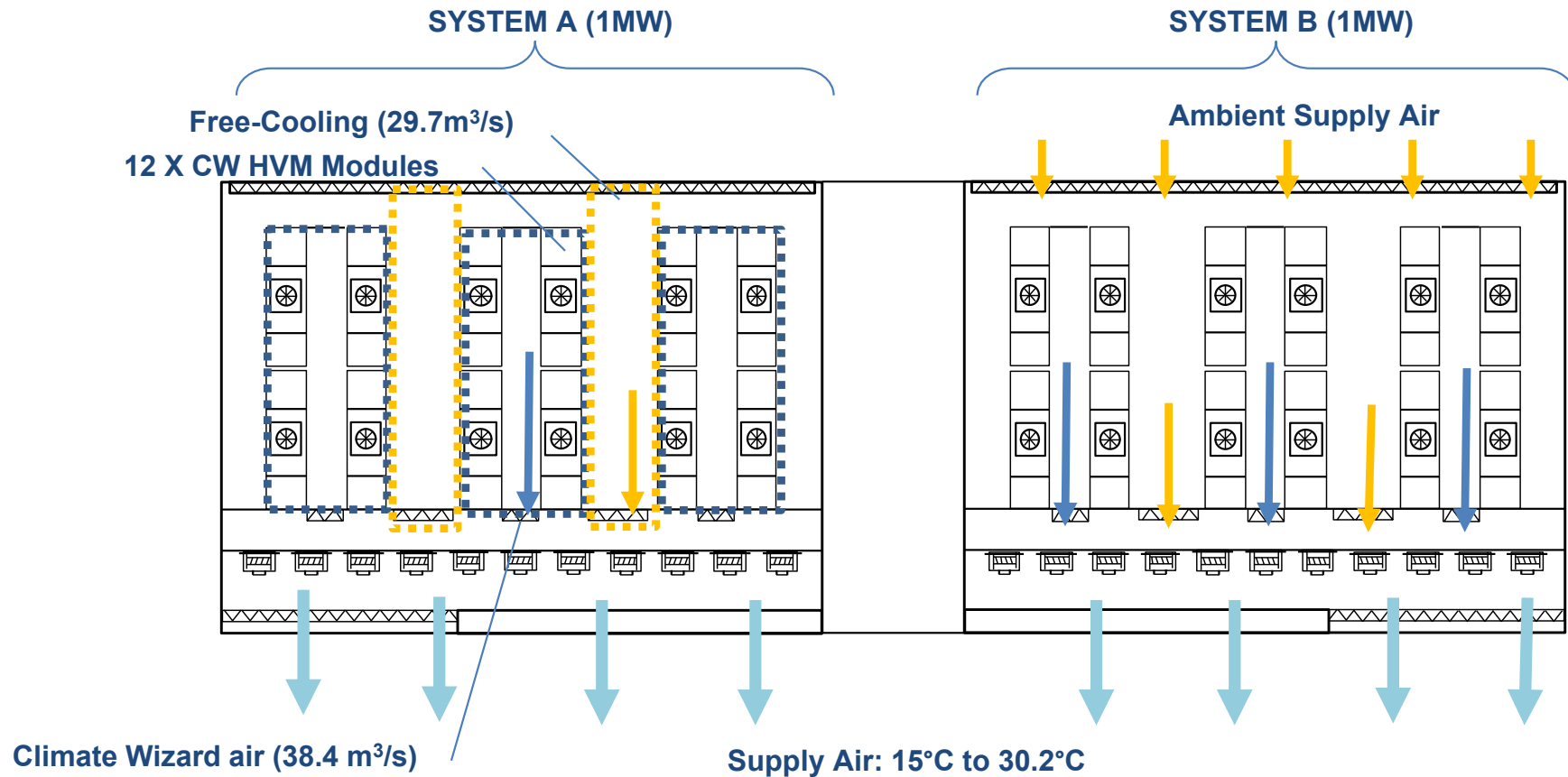
# Climate Wizard Plant Layout



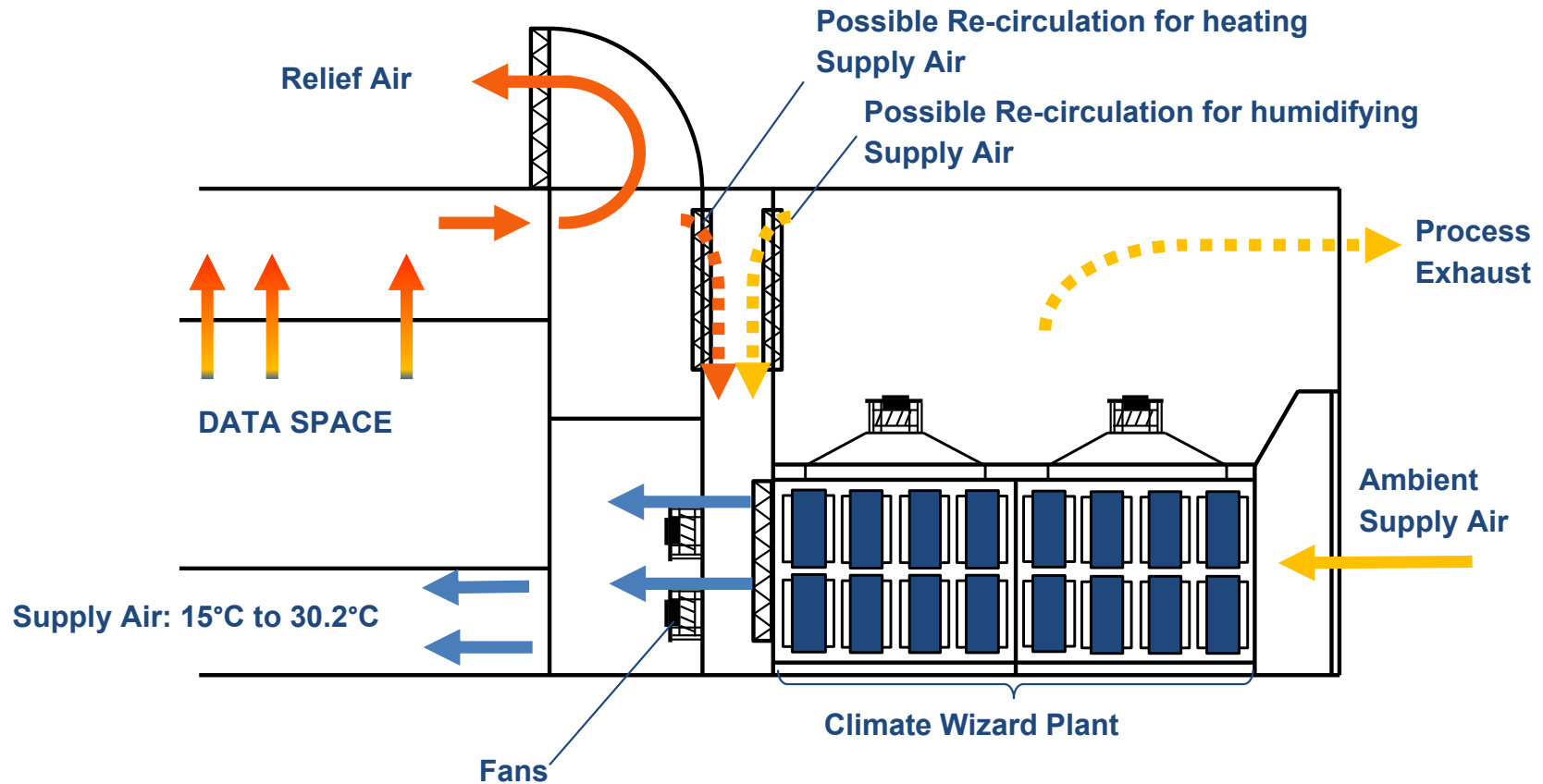
# Climate Wizard 3D Representation



# Climate Wizard Air Flow



# Climate Wizard Air Flow



# Climate Wizard Performance

- Climate Wizard supply air of 17°C
- Climate Wizard/outside air mixed temperature of 25.2°C at design conditions
- Estimated fan input power of 30kW
- COP of 33



# Climate Wizard Energy Saving

- Annual cooling requirement = 6,832,800 kWh
- Chiller annual input (COP 2.9) = 2,356,140 kWh
- Climate Wizard annual input = 245,500 kWh
- Energy Savings = **2,110,640 kWh**
- Climate Wizard annual COP of 27.8
- Climate Wizard annual pPUE of 1.05





# Climate Wizard Key Features

- Energy efficient
  - 10x more efficient than refrigerated
- Flexible design
  - Utilise outside air free cooling when ambient temperature permits
  - Utilise humid Climate Wizard exhaust air to add moisture during dry conditions
  - Utilise return air from data centre to add reheat







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