

DATA CENTER

Bringing nuclear quality and standards to system simulation.

FLOWNEX[®]

SIMULATION ENVIRONMENT



Flownex[®] SE contains a large library of thermo-fluid components designed specifically for both steady state and dynamic system performance analysis and optimization.

TYPICAL USES

- Simulate large integrated systems
- Verify thermal designs
- Control philosophy testing and optimisation
- Assess performance changes following modifications to design
- Root cause failure analysis
- Simulate failure scenario thermal ride-through
- Quantify expected excursion hours based on typical weather data
- Quantify cooling infrastructure water usage

FEATURES

- Clean and intuitive user interface
- Accurate fluid models
 - Humid air model
 - Two Phase Refrigerant models
 - Secondary refrigerants (Ethelene Glycol and Propylene Glycol)
 - Brine models
- Full transient capabilities, including:
 - Adaptive time-step functionality
 - Thermal and inertia
 - Distributed control system library
- Comprehensive component library for modelling of both chilled water systems and AHUs
- Customizable components allowing multiple levels of detail where limited performance data is available
- Import complex chilled water piping from Revit BIM files
- Built-in design and analysis features allowing automated parametric studies



6SIGMA INTEGRATION

Flownex[®] is developed within an ISO 9001:2015 quality management system that is ASME NQA-1 compliant.

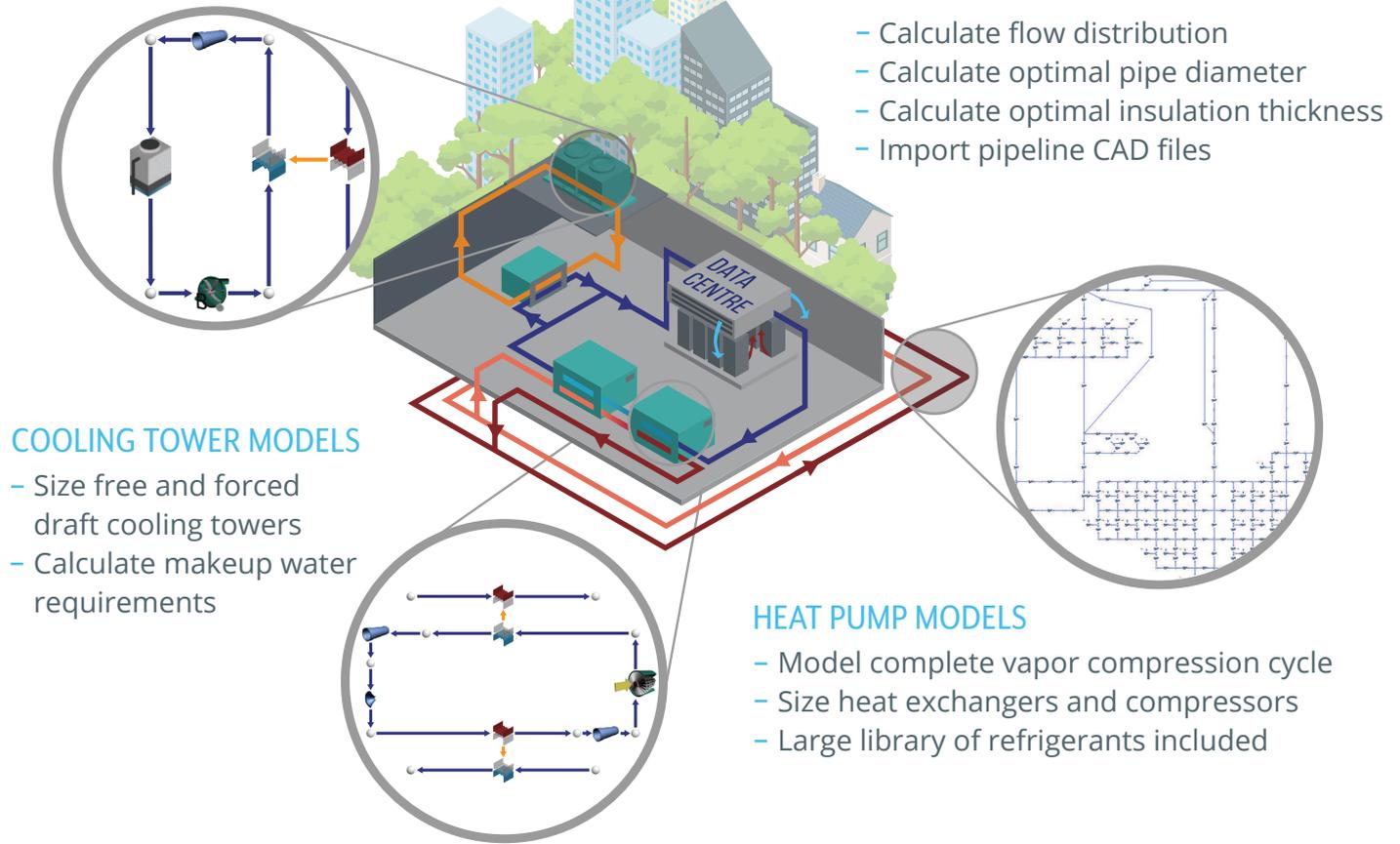


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HEAT RECOVERY



DISTRIBUTION PIPELINE MODELS

- Calculate flow distribution
- Calculate optimal pipe diameter
- Calculate optimal insulation thickness
- Import pipeline CAD files

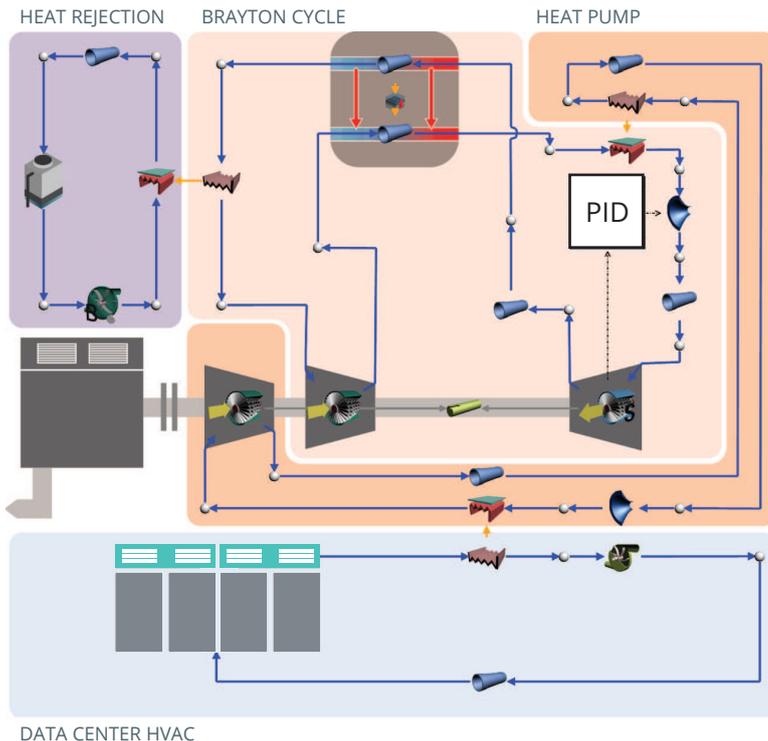
COOLING TOWER MODELS

- Size free and forced draft cooling towers
- Calculate makeup water requirements

HEAT PUMP MODELS

- Model complete vapor compression cycle
- Size heat exchangers and compressors
- Large library of refrigerants included

LINKS TO EXTERNAL SOFTWARE



WASTE HEAT POWER GENERATION

CONCEPT DESIGN

- Power cycle selection
- Working fluid selection

CONTROL SYSTEM INTEGRATION

- Optimize control system logic
- Investigate load changes
- Investigate trip scenarios

ANSYS INTEGRATION

- Co-simulate between 1D and 3D CFD
- Complete system modeling