FLOWNEX®
SIMULATION ENVIRONMENT
HEAT RECOVERY
DATA CENTER

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:

ANALYSIS

- Simulation.
- Performance assessment.
- Modification assessment.
- Root cause failure analysis.

DESIGN

- System sizing.
- Component sizing.
- Determining operating ranges.
- Flow, temperature, pressure, power consumption, etc.
- Testing of control philosophy.

TRAINING

- System behavior examination.
- Performing basic flow and heat transfer calculations.
- Thermohydraulic principles and properties referencing.

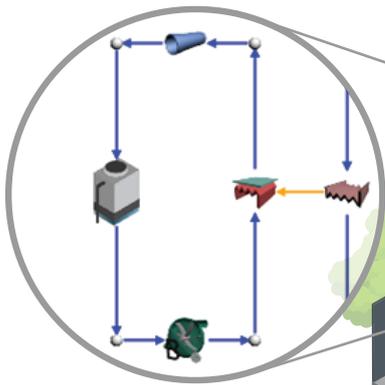**BRINGING NUCLEAR QUALITY AND STANDARDS TO SYSTEM SIMULATION**

Flownex® is developed in an ISO 9001:2008 quality assurance system and NQA1 supplier approved environment.
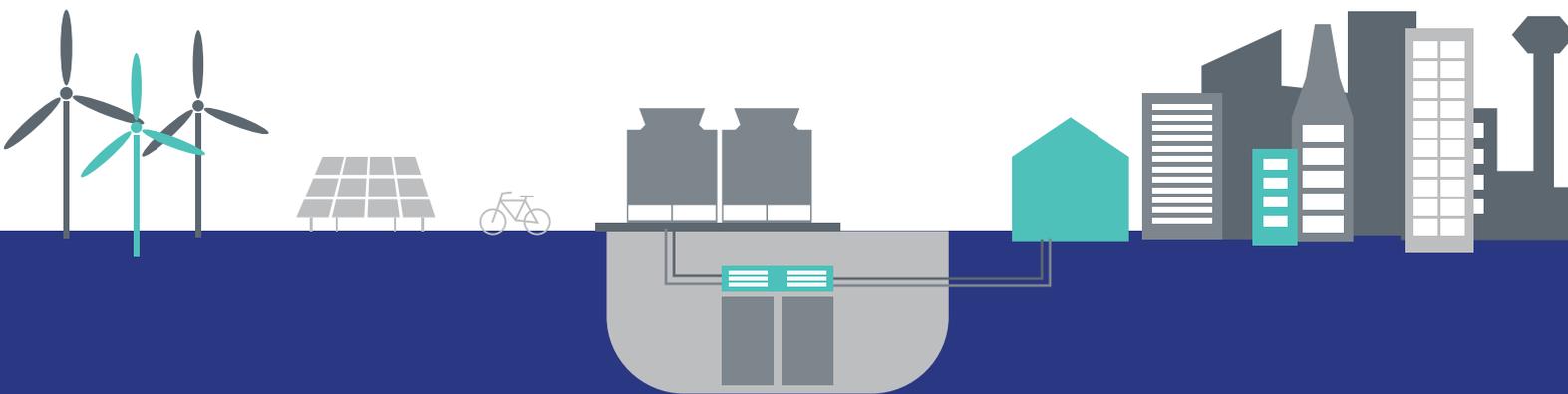
Many possible technologies are available for recovering the vast amount of waste heat produced by data centers. Flownex Simulation Environment provides an ideal tool for analyzing and optimizing waste heat recovery system concepts in both steady state and dynamic simulations.
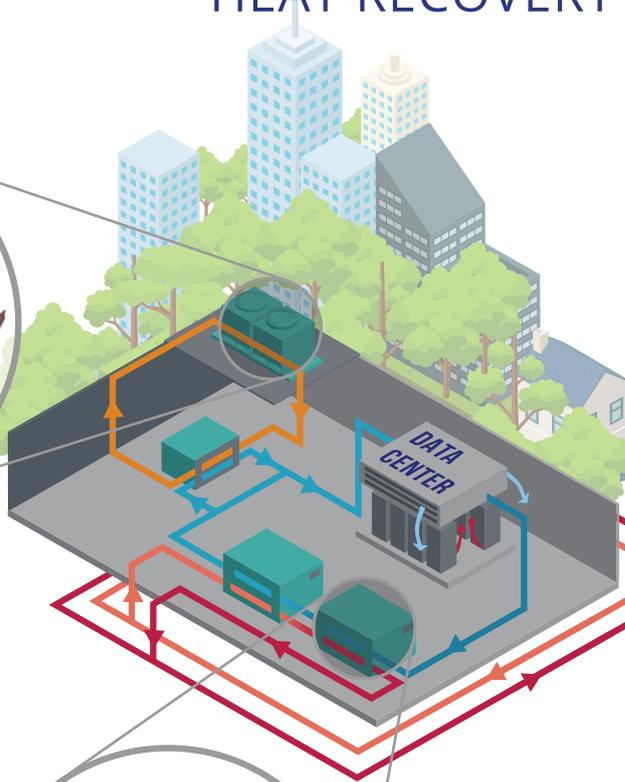
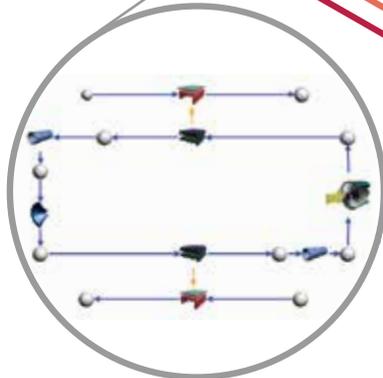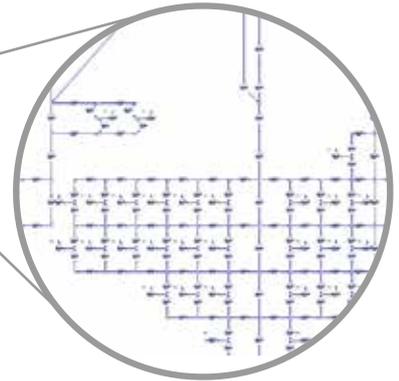See more at enginsoftusa.com/flownex-CFD.html

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

HEAT REJECTION   BRAYTON CYCLE   HEAT PUMP

PID

DATA CENTRE HVAC
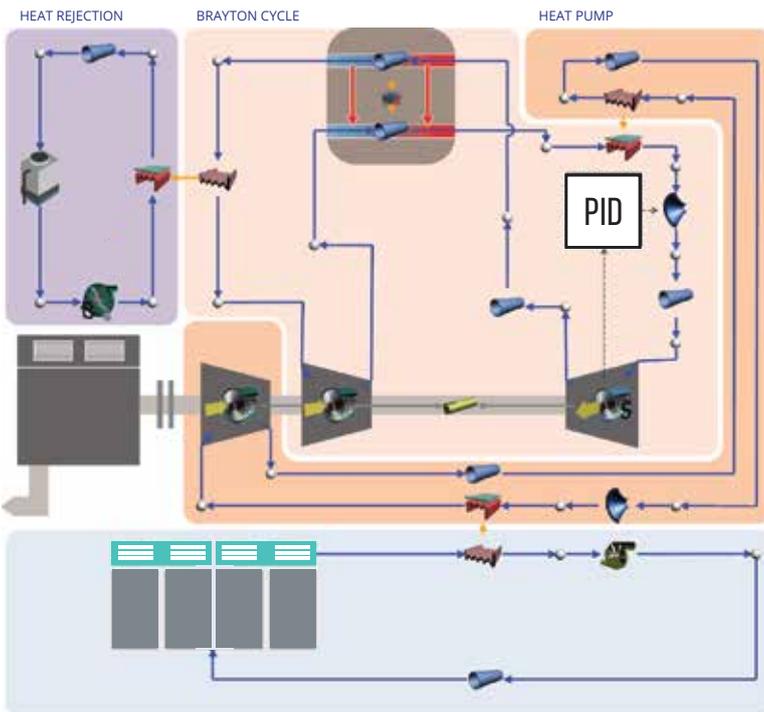
WASTE HEAT POWER GENERATION

CONCEPT DESIGN
- Power Cycle Selection
- Working Fluid Selection

FLOW & CONTROL CO-SIMULATION
- Optimize Control System Logic
- Investigate Load Changes
- Investigate Trip Scenarios

ANSYS INTEGRATION
- Co-simulate between 1D and 3D CFD
- Complete System Modelling

LINKS TO EXTERNAL SOFTWARE:

Excel

MATLAB &SIMULINK

FLOWNEX
SIMULATION ENVIRONMENT

ANSYS

WORKBENCH INTEGRATION