



Spokane South Landing Eco-District

Partnerships

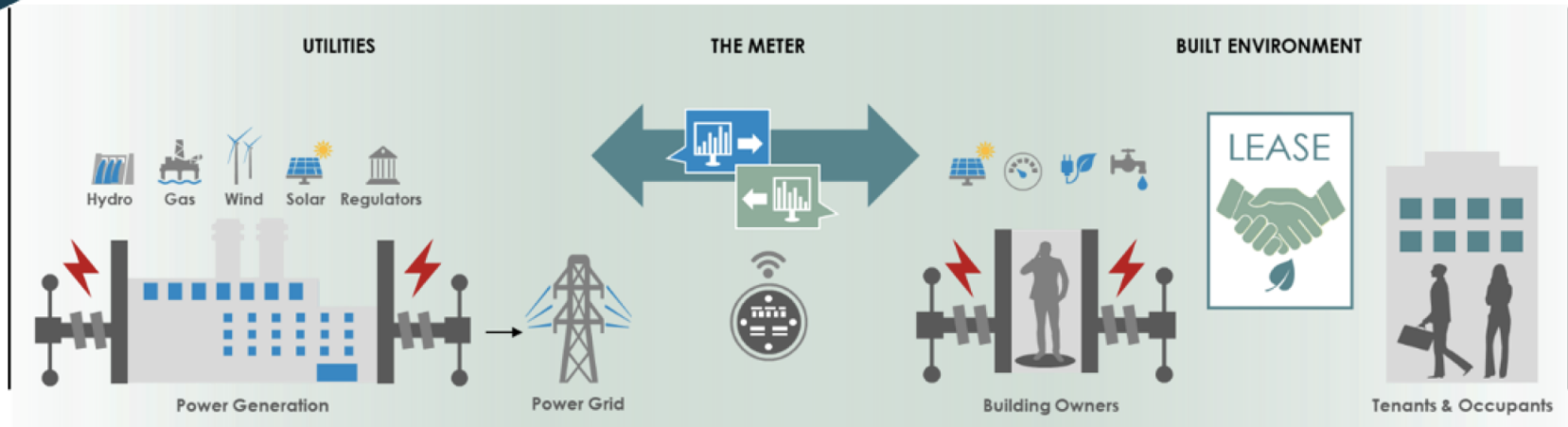





**Research, Development and
Demonstration Program**

Grid Modernization Program



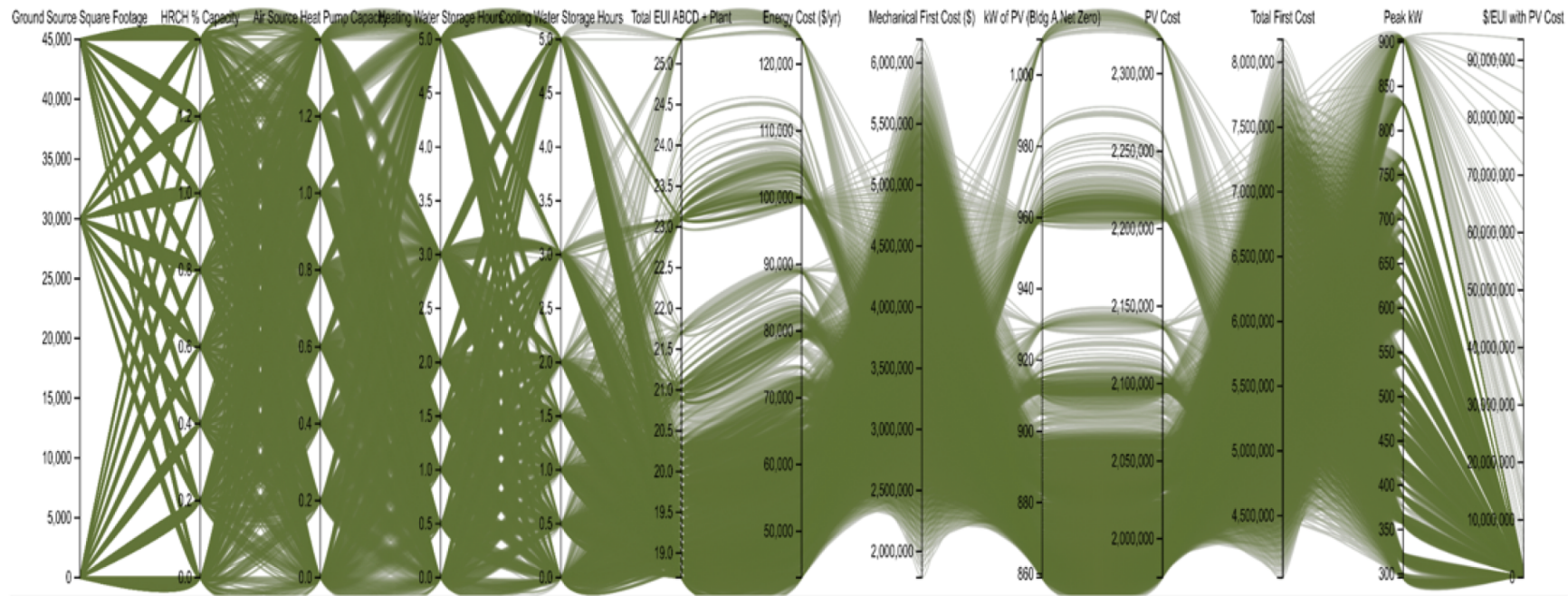
Project Goals



-  **Budget:** Deliver a commercially viable building
-  **Energy:** minimize annual energy use. Enable Catalyst as a Zero Energy building.
-  **Optimize the entire energy system by reaching through the Utility Meter and the Lease agreement**

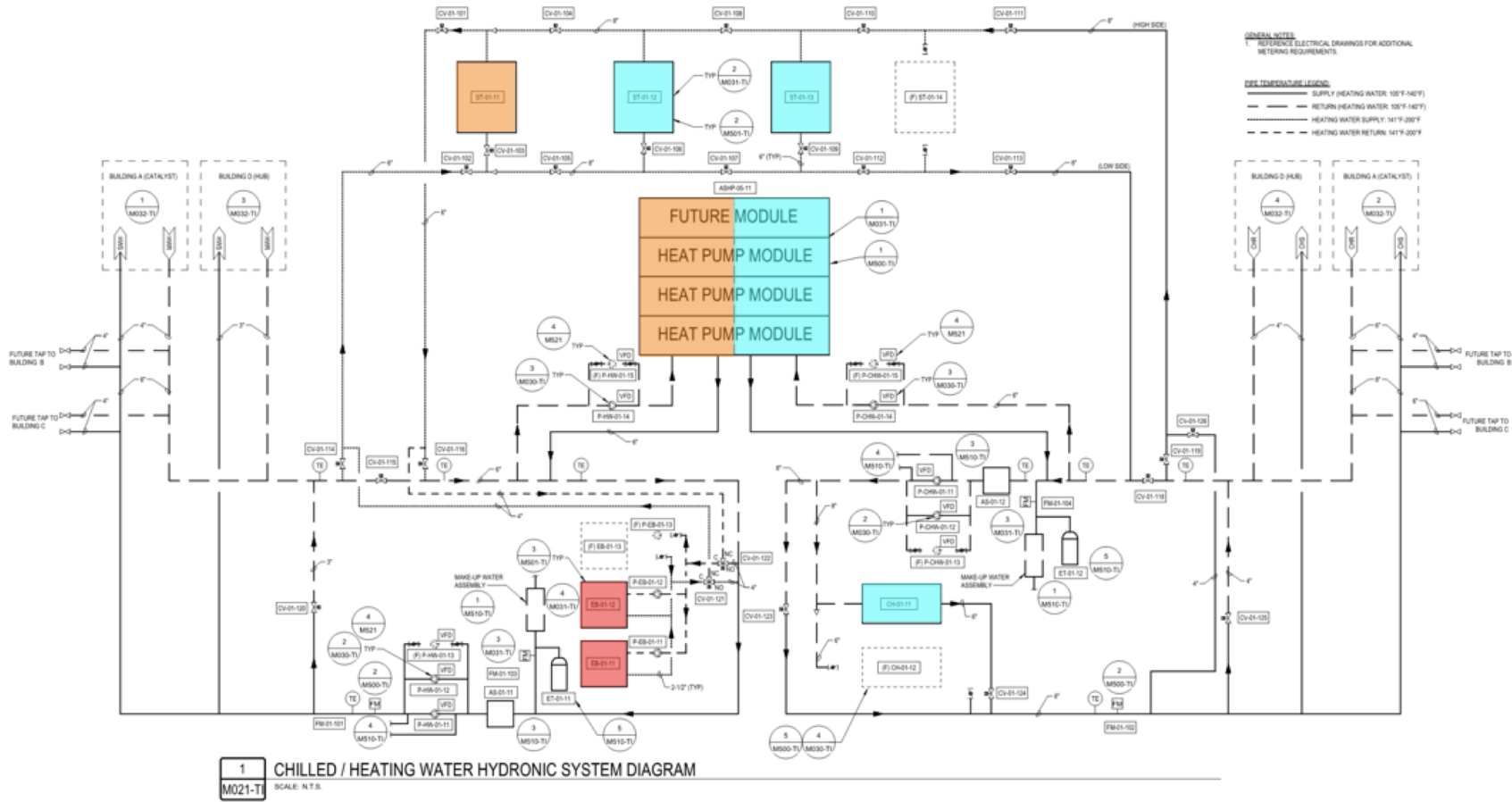
Selecting a Solution

All Possibilities

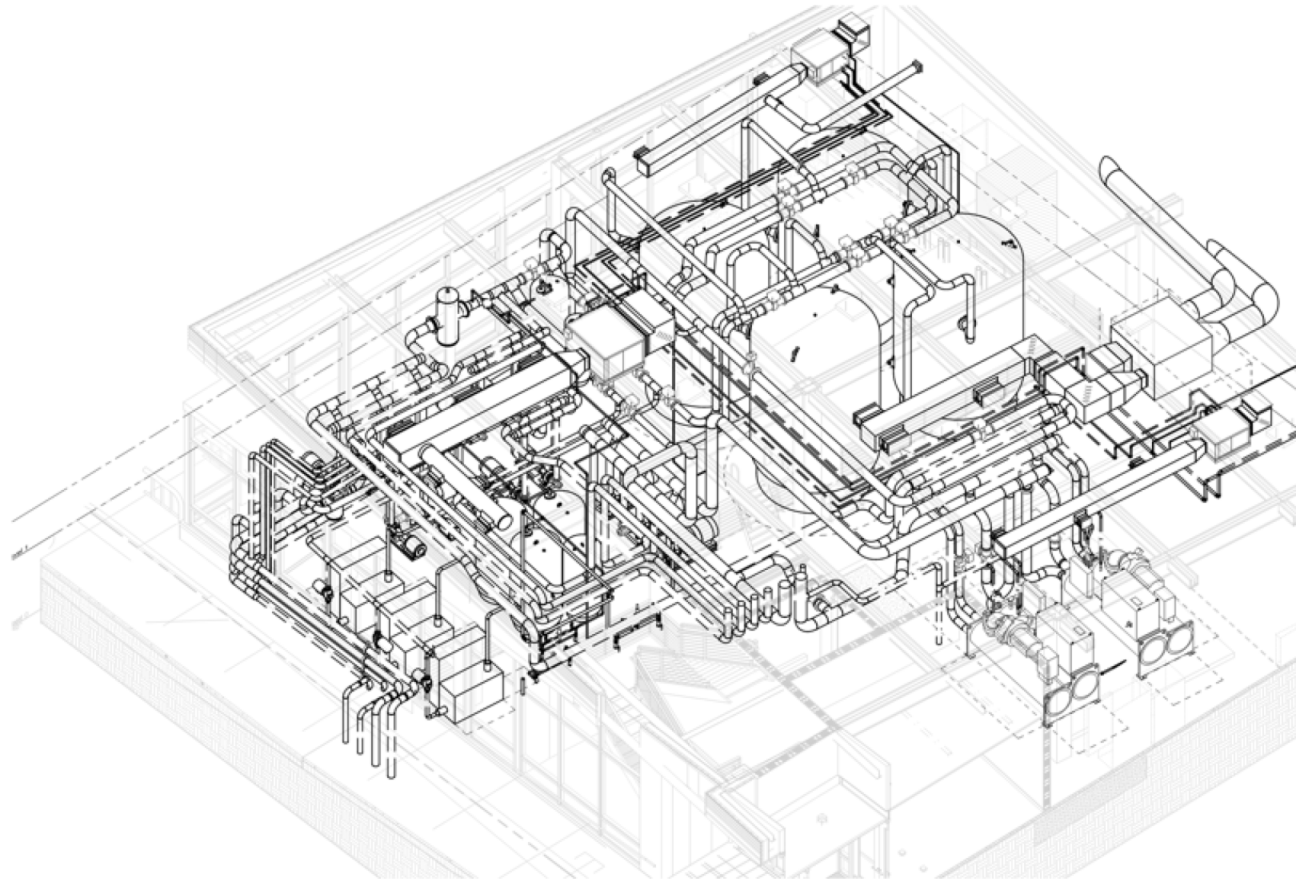


- 1 Green line = 1 parametric run
- Axis = inputs/outputs

The Optimized System Selection

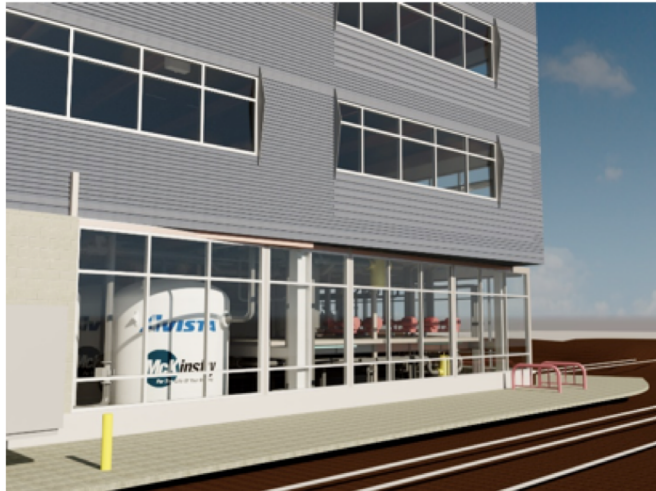


Engineer the Solution

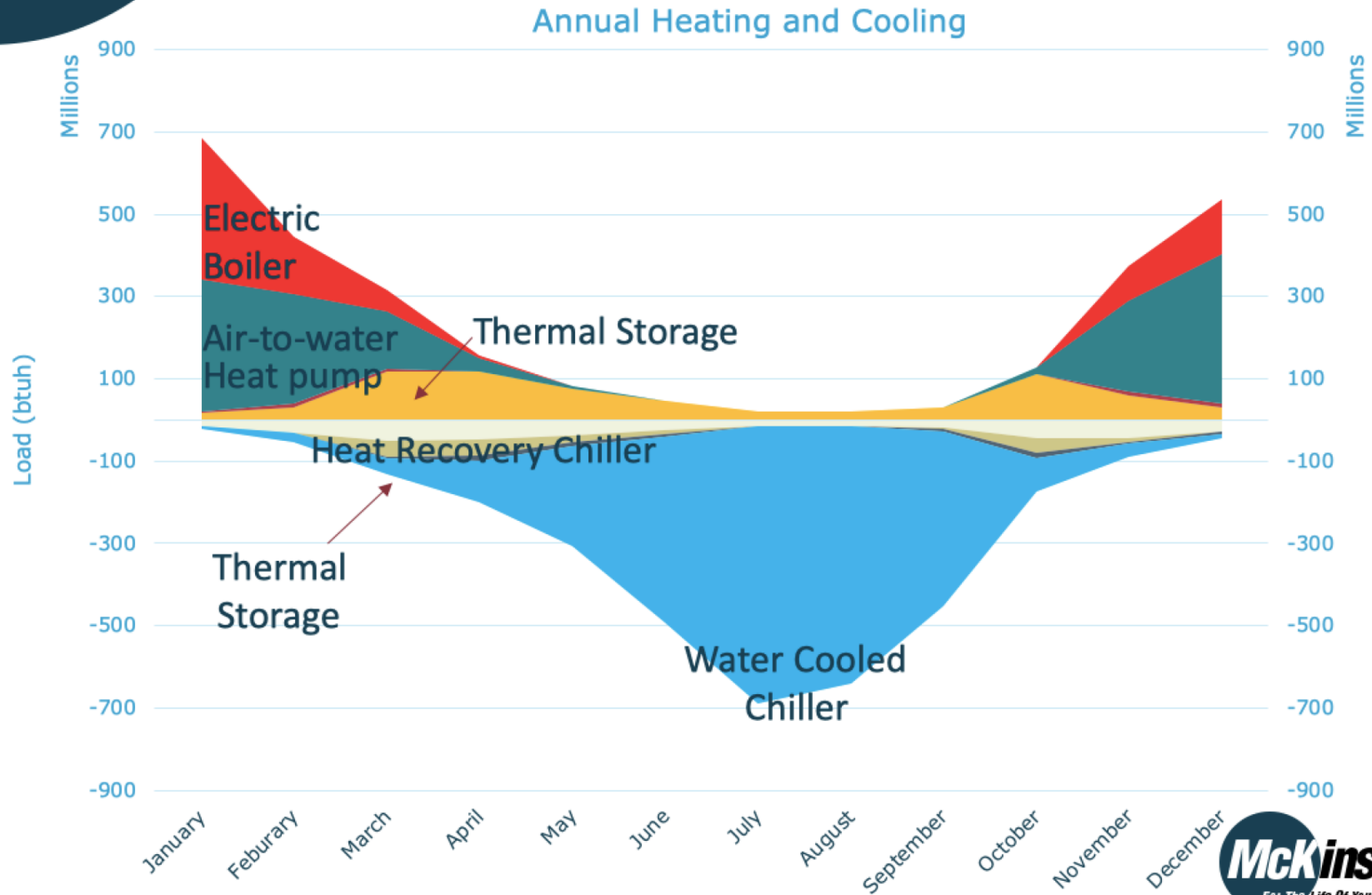


1 ECO DISTRICT - MECHANICAL ROOM
M900-T

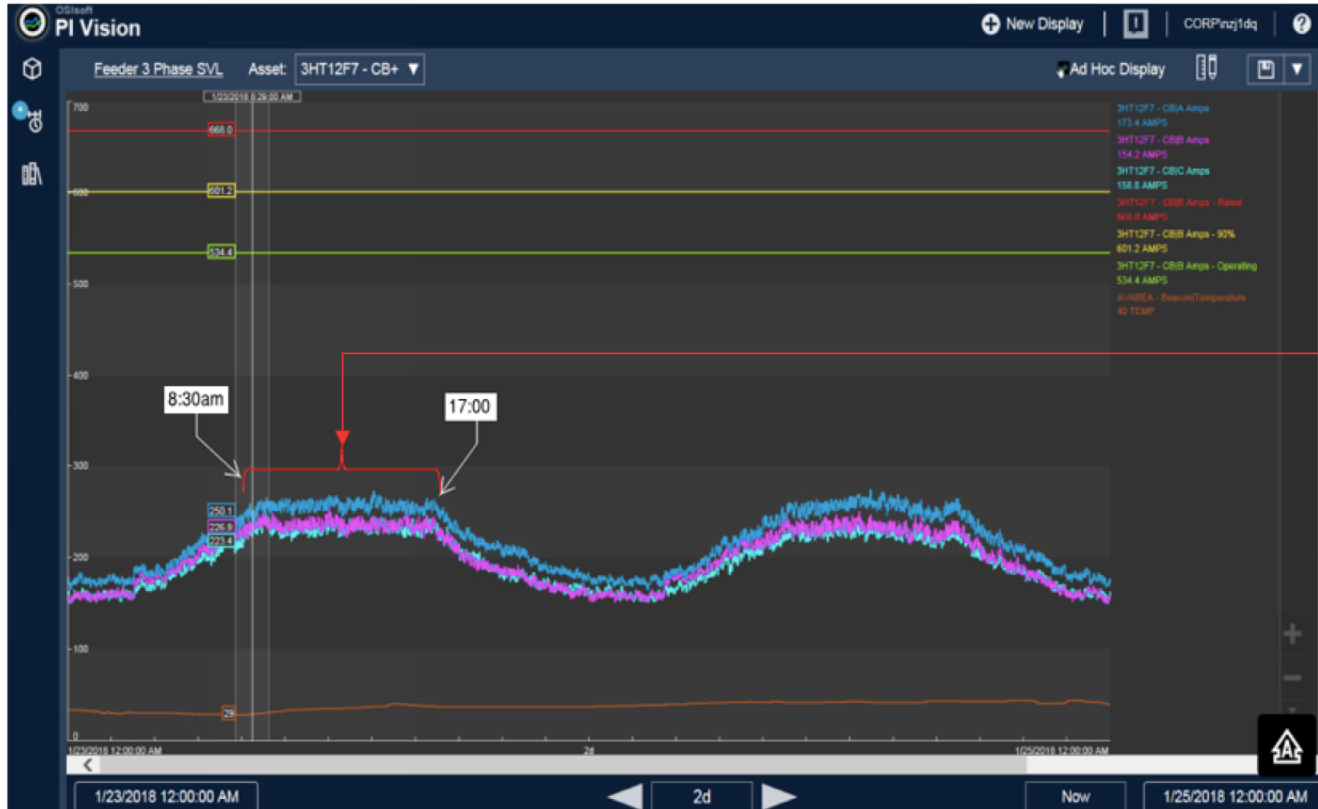
Implementing the Theory



Seasonal Equipment Utilization



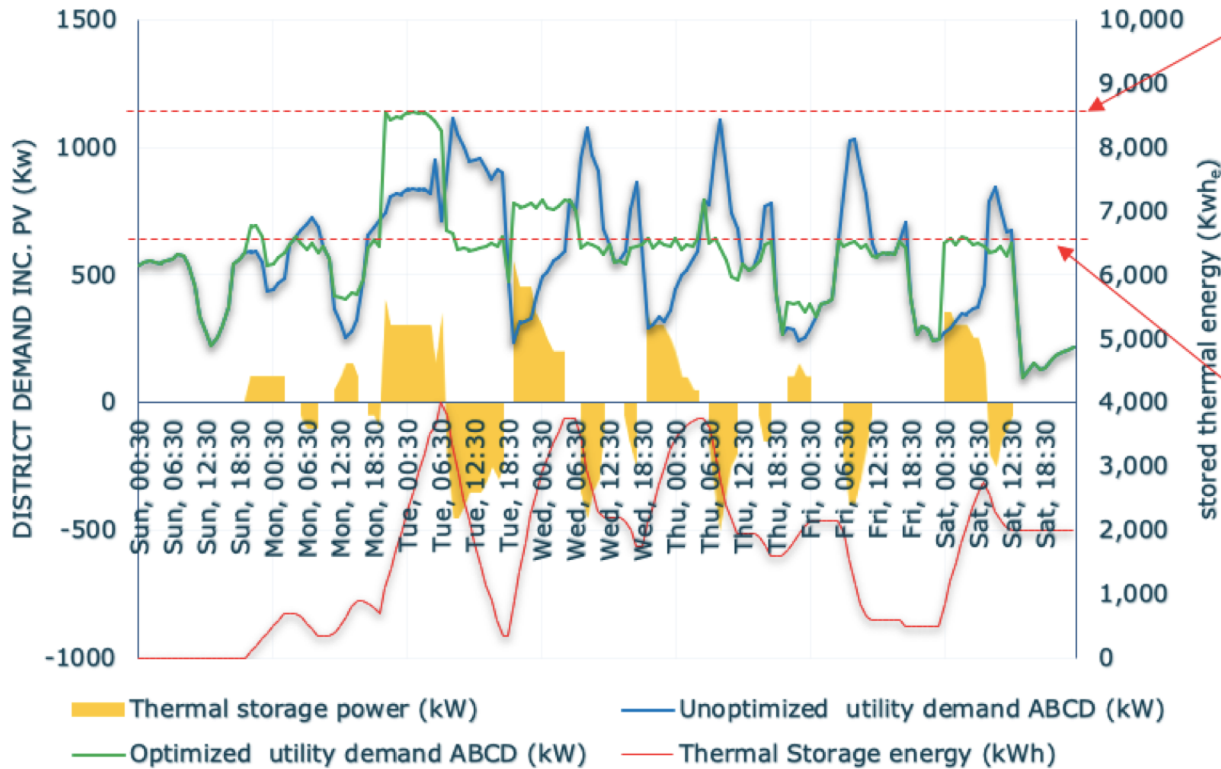
Feeder Peak Demand - Winter



3rd & Hatch 12F7
Winter Peak
Duration ~8.5hrs

Peak demand reduction - Winter

Winter peak week – utilizing thermal storage

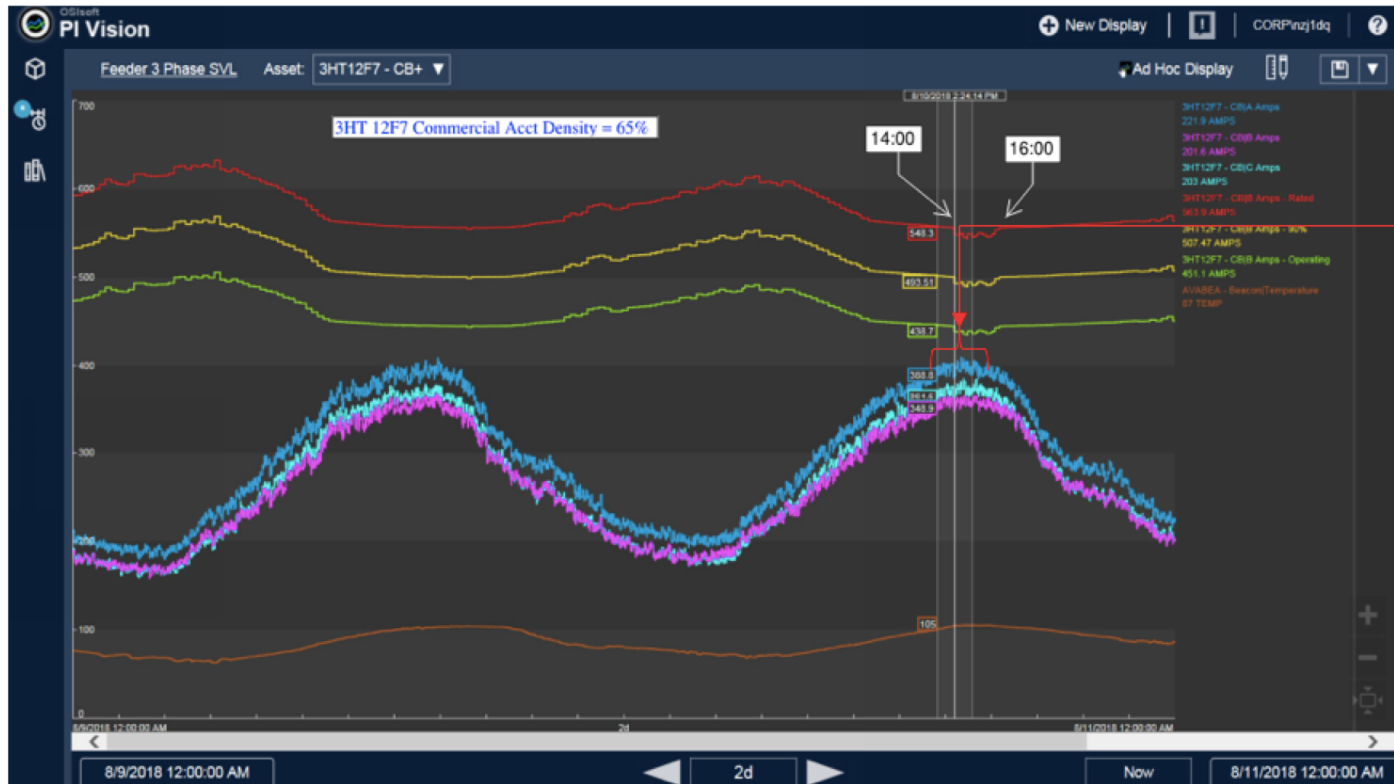


Customer peak
 1116kW
1142kW @ Tues
 8:30PM
 54 → 55 Amps @
 13.2kV
 Not coincident with
 utility peak.

Feeder peak
 contribution
 1116kW
652kW @ Wed
 01:30PM
 54 → 32 Amps @
 13.2kV



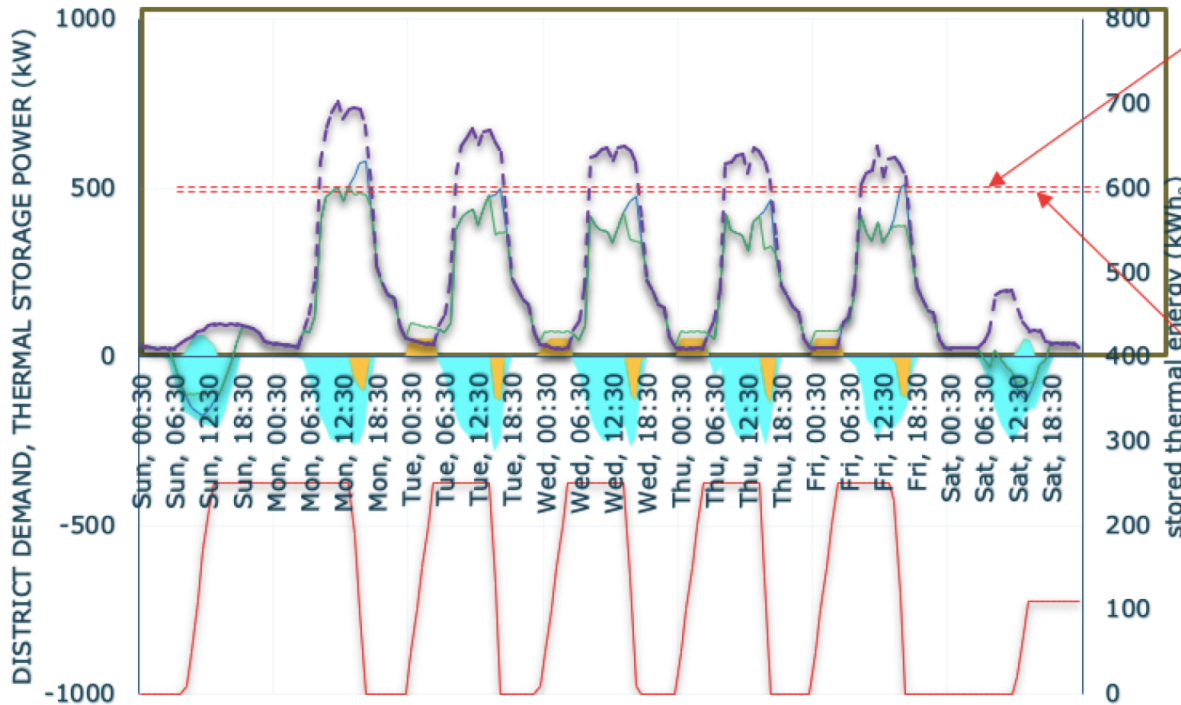
Feeder peak demand - Summer



3rd & Hatch
12F7
Summer peak
Duration
~2-3hrs

Peak demand reduction - Summer

Summer peak week – Utilizing thermal storage



- A (250kW)+D (75kW) Solar prod (kW)
- Thermal storage power (kW)
- Unoptimized utility demand ABCD (kW)
- Optimized utility demand ABCD (kW)
- - - Total District Consumption ABCD (kW)
- Thermal Storage energy (kWh)

Customer peak
756kW
580kW
505kW @ Mon 11:30AM
 37 → 25 Amps @ 13.2kV
 Not coincident with utility peak.

Feeder peak contribution
737kW
580kW
482kW @ Mon 03:30PM
 36 → 23 Amps @ 13.2kV



What's Next?

Achieving Grid Optimal / Plant Optimization

- Clean Energy Fund Grants
- Utilize Predictive Energy Management Partner
- Encourage Ongoing Aggressive Energy Management Through Technical Services Group

