

New Parkland Hospital Central Utility Plant (CUP)





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Presenter



Agenda

Introduction
Program
Design Challenges
Reliability Measures
Sustainability
Current Status

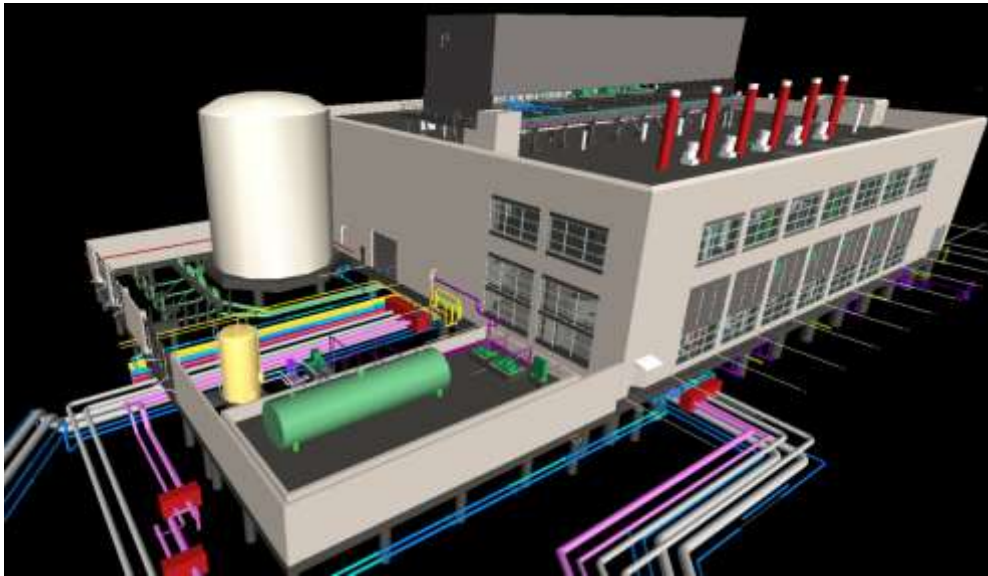
Introduction

Five main areas of campus to evaluate:

- Health Sciences District
- St. John Arena & North Residential District
- Academic Core North
- Herrick Dr. Research Corridor & River Housing
- Athletics District

Systems to be evaluated:

- Steam and Condensate
- Chilled Water
- District Electrical Service
- Natural Gas
- Domestic Water



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Design Challenges

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Reliability Measures

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<<< 150 F HEATING WATER SUPPLY TO HOSPITAL <<<

(Charged with beneficial heat that would typically be discharged and wasted to atmosphere via a cooling tower)

**ESTIMATED WATER SAVINGS:
15,000,000 GAL/YEAR**

(Recovered heat has been harnessed to reheat surgical suites and maintain comfort conditions.)

>>> 120 F HEATING WATER RETURN FROM HOSPITAL >>>

>>> 42 F CHILLED-WATER SUPPLY TO HOSPITAL >>>

(Heat has been "moved" to heating loop – offsetting electric chiller load.)

**ESTIMATED NATURAL GAS
SAVINGS: \$635,000/YEAR**

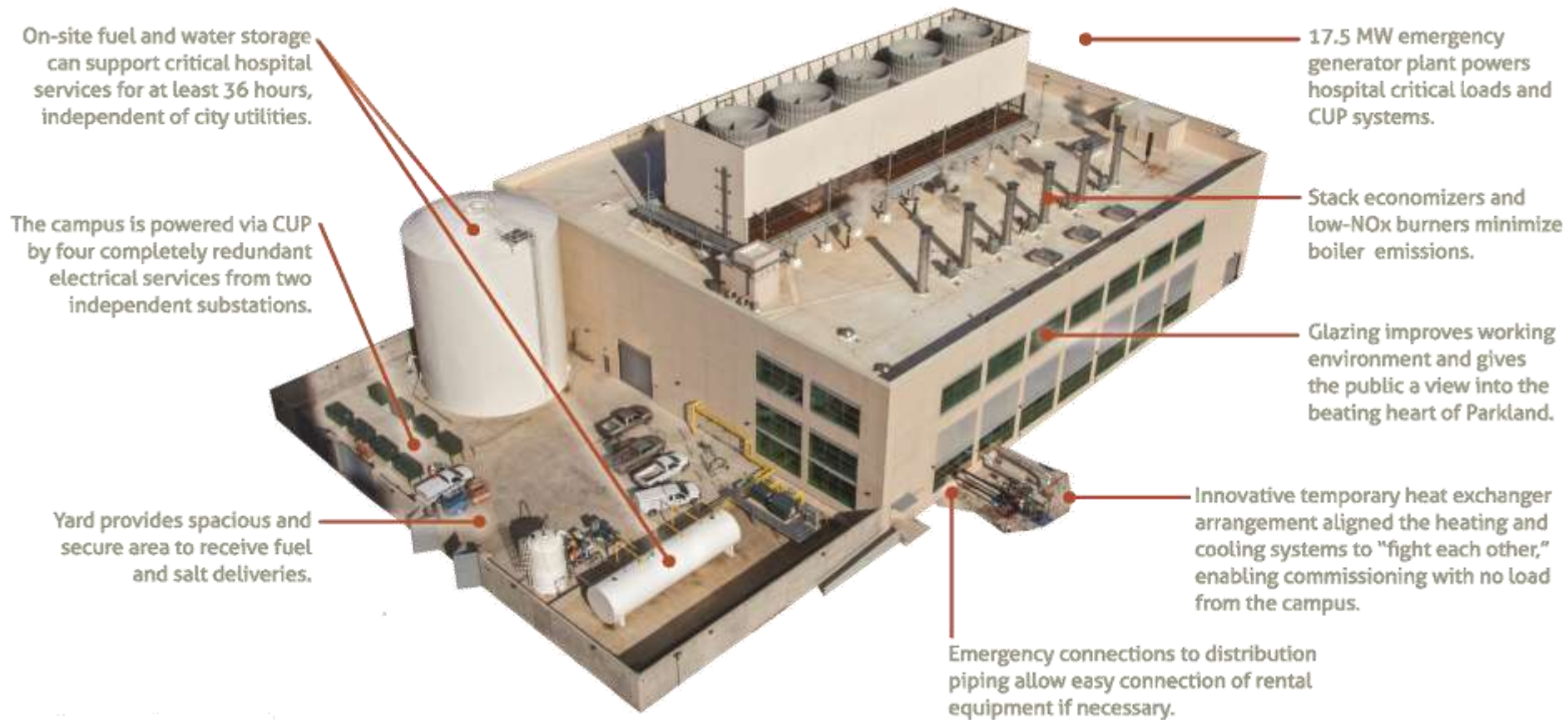
(Contains absorbed heat from occupants, lights, outside air, etc.)

<<< 58 F CHILLED-WATER RETURN FROM HOSPITAL <<<









On-site fuel and water storage can support critical hospital services for at least 36 hours, independent of city utilities.

The campus is powered via CUP by four completely redundant electrical services from two independent substations.

Yard provides spacious and secure area to receive fuel and salt deliveries.

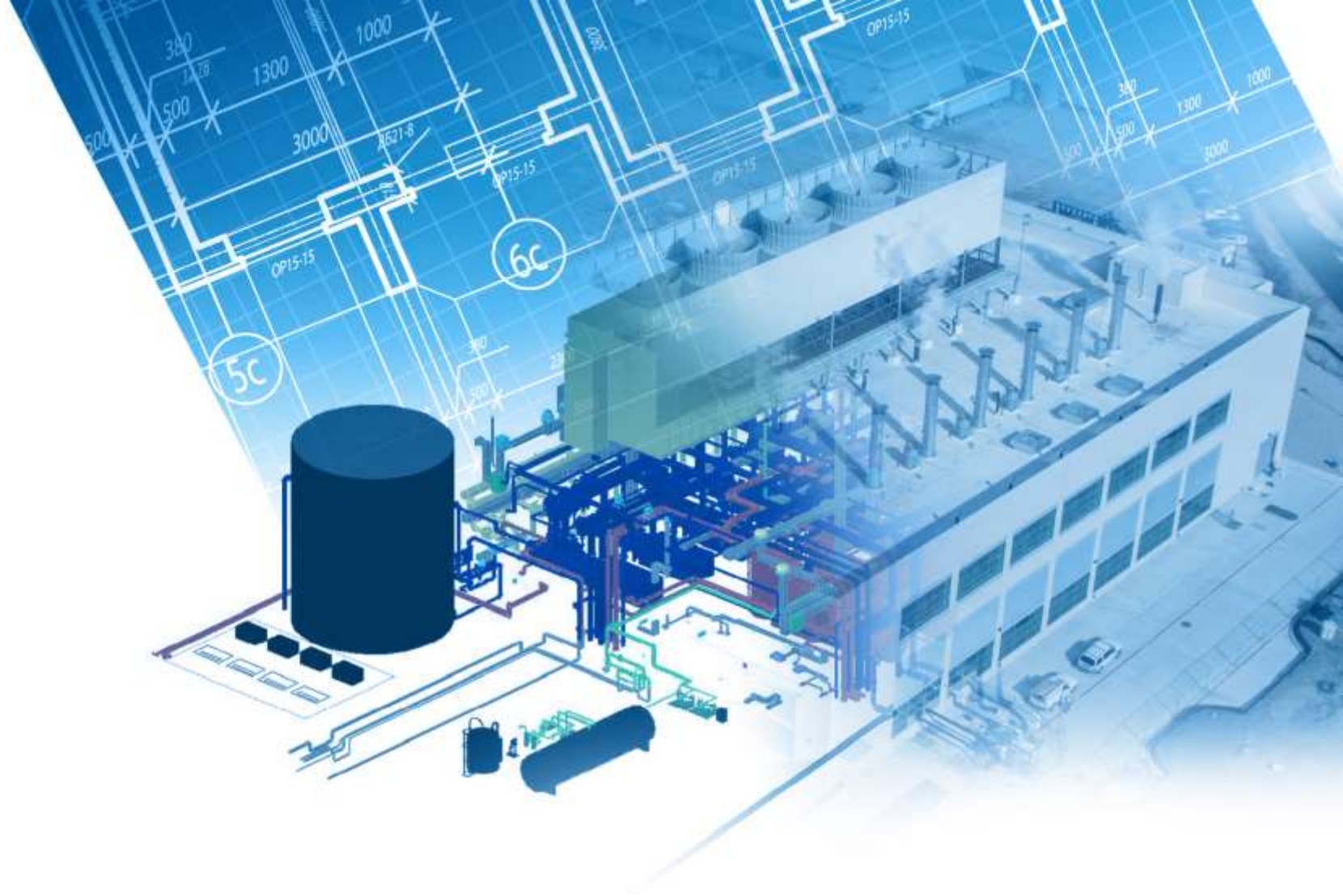
17.5 MW emergency generator plant powers hospital critical loads and CUP systems.

Stack economizers and low-NOx burners minimize boiler emissions.

Glazing improves working environment and gives the public a view into the beating heart of Parkland.

Innovative temporary heat exchanger arrangement aligned the heating and cooling systems to "fight each other," enabling commissioning with no load from the campus.

Emergency connections to distribution piping allow easy connection of rental equipment if necessary.







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New Parkland Hospital Central Utility Plant

Dallas, Texas

The New Parkland Hospital Central Utility Plant (CUP) provides essential thermal, electric, water and emergency utilities to the new 2.5 million-square-foot Acute Care Hospital (ACH) and surrounding campus. The ACH serves as Dallas County's public hospital and one of only two Level 1 trauma centers in Dallas — making the CUP an extremely vital "must run" facility for thousands of residents every hour of the year. And with the region's population expected to double by 2025 — and Parkland caring for more patients with nowhere else to turn than all other Dallas hospitals combined — the project is designed to meet the county's public health care needs well into the future. Parkland's critical services prompted extreme measures to

protect the hospital's reliability. Electrical service to the campus is provided via four completely redundant feeds served from two independent utility substations. In the event that all four incoming feeds are lost, the CUP includes 17.5 megawatts of diesel generator capacity capable of maintaining the majority of the hospital's normal operations, all essential functions, as well as CUP utility services. Outgoing power, water and thermal utilities routed from the CUP to the hospital were designed in a redundant "looped" configuration, to further enhance the system's resiliency. This maintains full capacity even if one side of the buried piping/duct bank loop is severed.



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