



*An Energy-Efficiency Workshop and
Exposition*

Orlando, Florida

*Federal Sites &
Third-Party Partners*

*Cogeneration & Refrigeration
Plant Modernization*

Presented by:

U.S. General Services Administration
Heating Operation & Transmission District



Federal Sites & Third-Party Partners



U.S. General Services Administration



Washington Gas



Smithsonian Institution



*GSA Heating Operation & Transmission District
Energy Services Since 1933*





*GSA Heating Operation & Transmission District
Serving the Nation's Capital*



GSA — NATIONAL CAPITAL REGION STEAM DISTRIBUTION SYSTEM

SCALE: 1" = 200'-0"



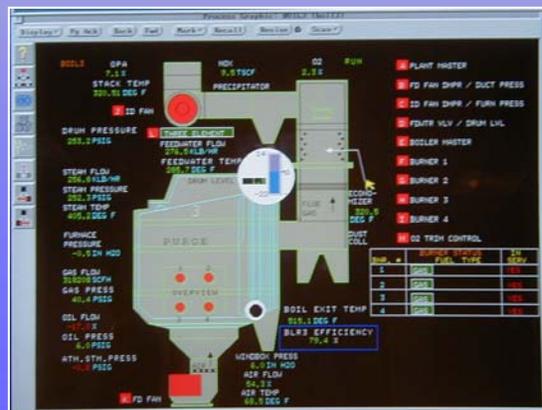


*GSA Heating Operation & Transmission District
Serving the Nation's Capital*





GSA Heating Operation & Transmission District 21st Century District Energy Services





*GSA Heating Operation & Transmission District
Cogeneration & Refrigeration Plant Modernization*





Outline of Presentation



Concept



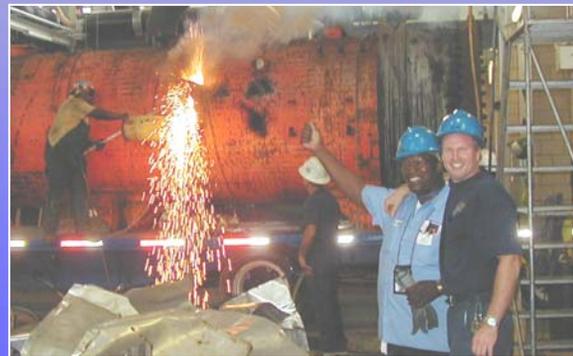
Financing



Design



Permitting



Construction & Operation

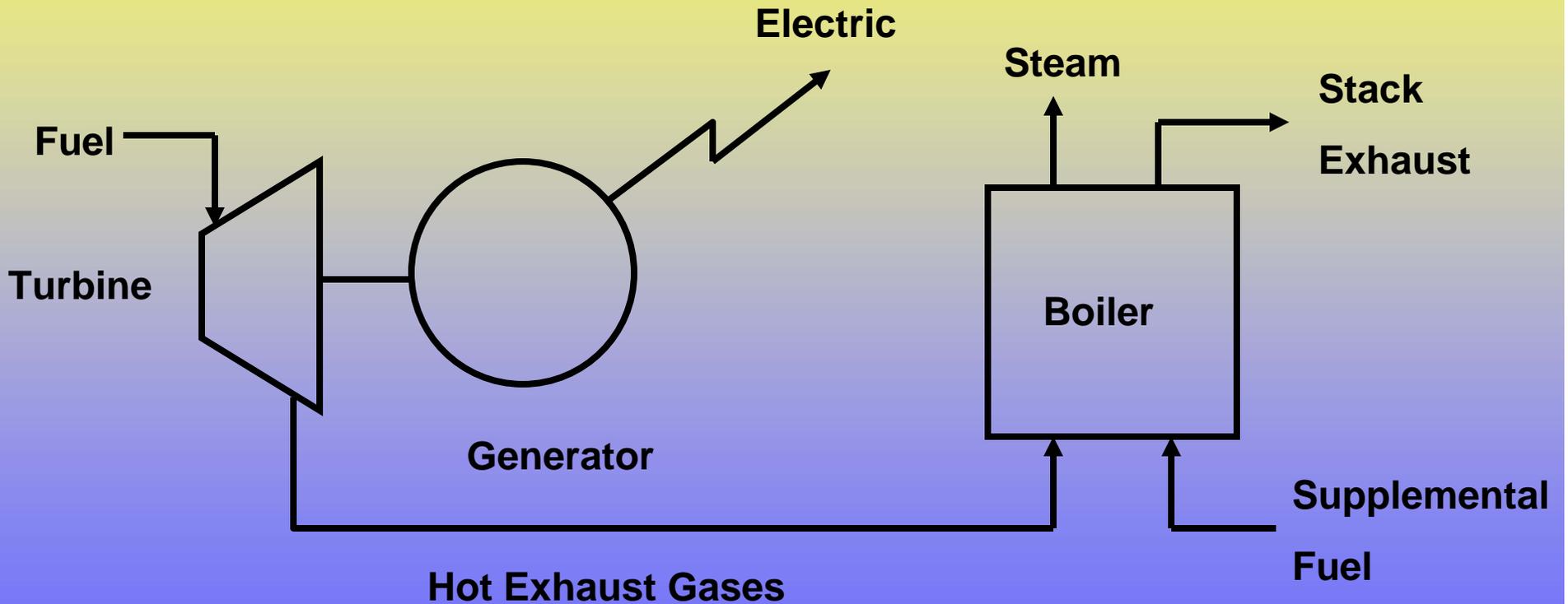


Project Concept: Flexibility





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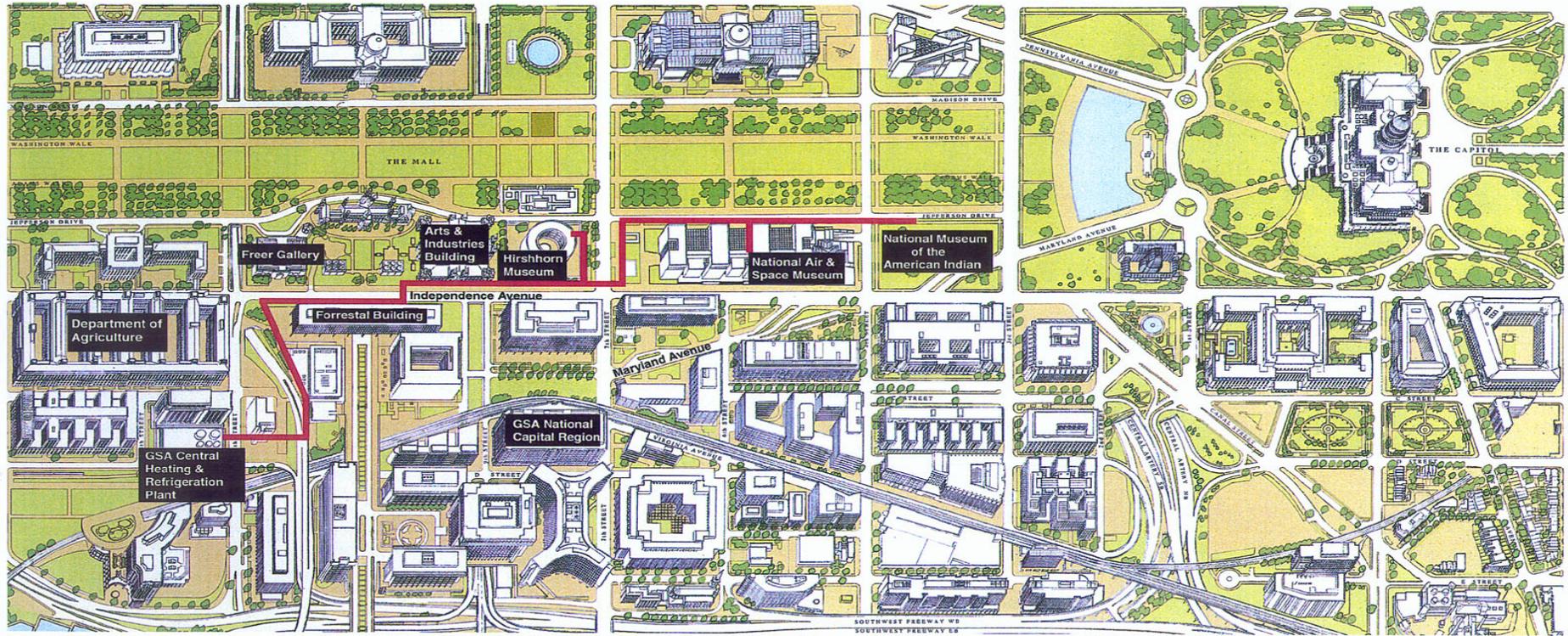




Project Concept: Flexibility

GSA

U.S. General Services Administration
National Capital Region



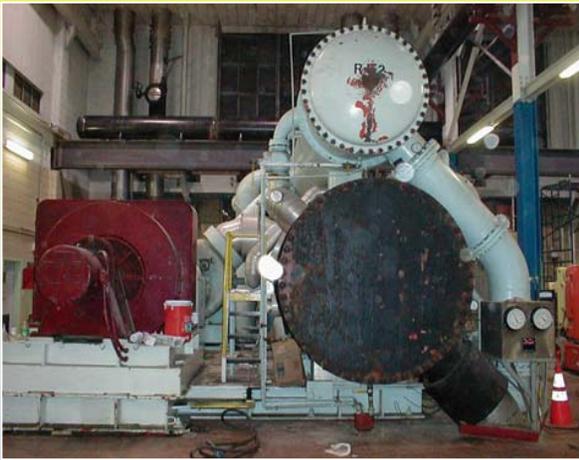
Chilled Water Distribution System
GSA Cogeneration and Chiller Plant Expansion Project

Joseph Passonneau & Partners
reproduced under license agreement by GSA

— Chilled water distribution lines



Project Concept: Flexibility





Project Concept: Flexibility

- Two 5MW gas turbines & gas compressors
- Re-engineered an existing boiler into a waste-heat boiler
- 17,000 tons of cooling equipment including two steam-driven chillers
- New cooling towers & auxiliary equipment
- Automated plant control system
- New electrical switch gear
- 1 mile of underground distribution piping serving 8 Smithsonian buildings



Project Concept: Flexibility





Project Financing: Getting a Guarantee

	ESPC	Utility Contracts
Authorization	EPAct 42 USC 8287 10 CFR 436	EPAct, 42 USC 8256 10 USC 2865 48 CFR 41; 48 CFR 16
Guaranteed Performance	Guaranteed performance required	Guaranteed performance not required, but negotiable
Term	25 year maximum	10 year maximum
Measurement & Verification	M & V and annual energy audit required	M & V and annual energy audit negotiable
Operation & Maintenance	O & M typically included	O & M negotiable
Contracting Time & Resources Requirement	Time and resource intense process	Reduced time & resources needed for selection process (close scrutiny of terms and technical issues required)



Project Financing: Getting a Guarantee



Guaranteed Savings vs. Government-Operations



Project Financing: Getting a Guarantee



*Guaranteed
Performance
= Guaranteed
Savings*



Project Design:

1999

2000

2001

2002

2003

2004

Chiller/Cogen Project Feasibility

National Capital Planning Commission

Memorandum of Agreement GSA & Smithsonian

GSA/ Washington Gas Chiller/Cogen Project Contract

South Side Chiller Plant On- line

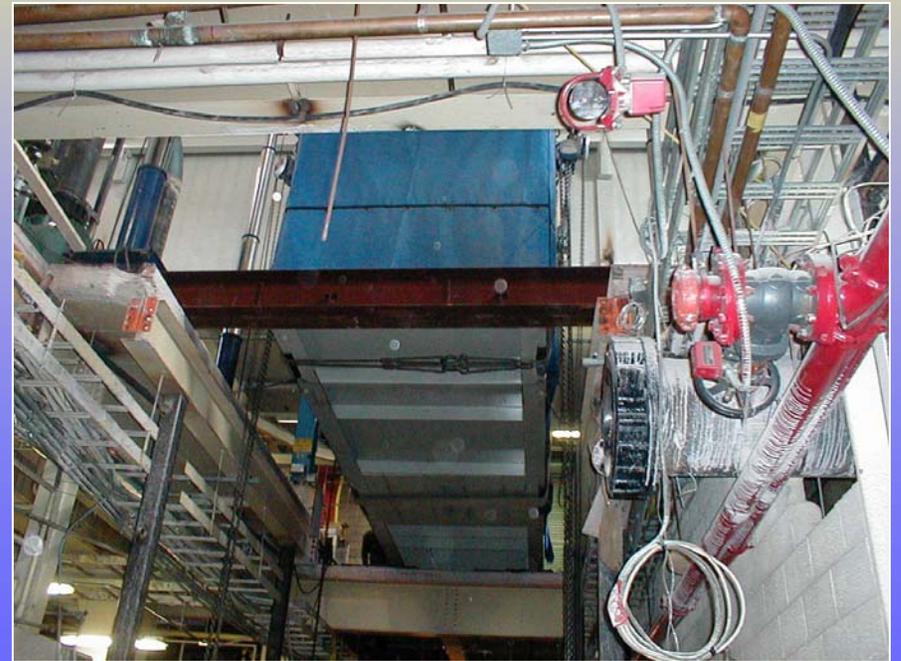
Cogeneration Plant Construction Complete

North Side Chiller Plant Construction Complete

Original Milestones

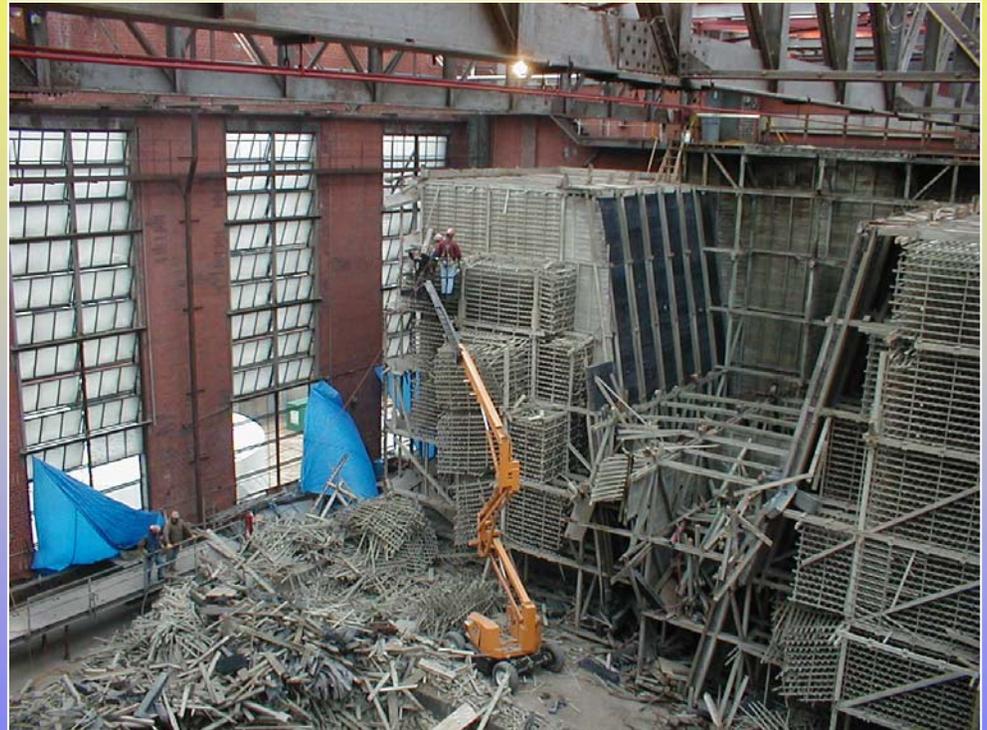


*Project Design:
Design/Build or Build/Design*





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*Project Permitting:
Watch your Schedule*





Project Design:

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South Side Chiller Plant On- line

North Side Chiller Plant Construction Complete

Cogeneration Plant Construction Complete

Actual Milestones



*Project Permitting:
Watch your Schedule*





Project Permitting: Watch your Schedule





Construction & Operation: Group Synergy





Conclusion



Concept



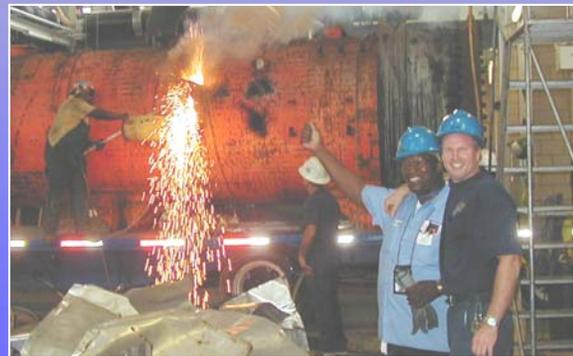
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Thank You

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