Aligning Around Design and Performance: 3 GSA Projects

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The Beck Group and Westlake Reed Leskosky - page 32.
SERA Architects - pages 28 (middle), 51 (top), 54 (top left), 59.
ZGF Architects LLP - page 68 (top).

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Wayne N. Aspinall Federal Building and U.S. Courthouse
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Demi Chavez, GSA, Design and Construction Division – Region 8
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Steve Ludwig, The Beck Group, Assistant Project Manager
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Rodger Chang, Westlake Reed Leskoski, Principal
Ravi Manikata, M.E. Group
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Edith Green - Wendell Wyatt Federal Building
Patrick Brunner, GSA, Design and Construction Division – Region 10, Project Executive
Paul T. Witherspoon, GSA, Design and Construction Division – Region 10, Project Manager
Donald Eggleston, SERA, President
Clark Brockman, SERA, Principal
Jim Riley, SERA, Project Architect
Mark Perepeletitz, SERA, Sustainability Resources Group Manager
Matthew Braun, Howard S. Wright Constructors, Project Executive
Troy Dickson, Howard S. Wright Constructors, Project Executive
Brad Nydahl, Howard S. Wright Constructors, Project Director
Erik Teyema, McKinstry, Manager of Mechanical Construction
Bill Bieganek, Energy Misers, Principal

Federal Center South Building 1202
Dan Brown, GSA, Design and Construction Division – Region 10, Director
Duane Allen, GSA, Design and Construction Division – Region 10, Project Manager
Rick Thomas, GSA, Design and Construction Division – Region 10, Project Manager
Dawn Ashton, GSA, Design and Construction Division – Region 10, Senior Contracting Officer
Todd Stein, ZGF Architects LLP, Partner
Jack Avery, Sellen Construction, Senior Vice President
Tom Marseille, WSP Flack + Kurtz, Senior Vice President
Who is GSA?

377 million RSF across the U.S.

- 1,574 owned assets
- 7,147 leased assets
- 486 historic properties
- House 1.1 million federal employees
- Landlord for over 400 different federal agencies, bureaus and commissions

Design Excellence

- Reflect the dignity, enterprise, vigor, and stability of the American Government
- Streamlined two-step A/E selection process
- Provide best value
- Private sector peer reviews
Planning for Federal Sustainability in the Next Decade: Executive Order 13693

“It therefore continues to be the policy of the United States that agencies shall increase efficiency and improve their environmental performance. Improved environmental performance will help us protect our planet for future generations and save taxpayer dollars through avoided energy costs and increased efficiency, while also making Federal facilities more resilient.”

- President Barack Obama
March 19, 2015
Research into Integrated Design & Performance Based Contracting

- The importance of integrated processes and teams are a core concept in creating high performance green buildings.
- Research is lacking on the effectiveness of using integrated processes, particularly for federal projects.
- This research links high performance outcomes with decisions made during the design and construction processes.
  - Focus on economic impacts and risk assessment
  - Assessment of performance-based contracting provisions
American Recovery & Reinvestment Act

- $5.5 Billion
- $4.5 Billion for Existing Buildings
- 261 Projects in 50 States, 2 Territories & DC
- High-Performance Green Buildings
- Jobs
Old Process

2000
Planning
Concept Study
Feasibility Study

2001
Prospectus Development Study

2002
Design Prospectus Approval Process
Construction Prospectus Approval Process

2003
Design Funding

2004
Construction Funding

2005
Construction Procurement

2006

2007
Initial Rent
Tenant Move-In
ARRA Process

Criteria

• High-performance features
• Speed of construction
• Execution risk
• Facility condition
• Improving asset utilization
• Return on investment
• Avoiding lease costs
• Historic significance
American Recovery & Reinvestment Act
Project Timelines

WAYNE N. ASPINALL FEDERAL BUILDING & U.S. COURTHOUSE

EDITH GREEN - WENDELL WYATT FEDERAL BUILDING

FEDERAL CENTER SOUTH BUILDING 1202

Project Phases
- Procurement Phase
- Design Phase
- Demolition Phase
- Construction Phase
- Verification Phase
Each of the three projects developed a strong collaborative culture. However, those cultures were established and developed in ways that were notably distinct. Using a series of diagrams, this study describes the timing of the development process for each project.

All three teams invested time and energy into establishing their team cultures and their internal working relationships. The selected team members were incorporated into the team culture through various means, both formal and informal. Additions and changes to the team were handled with a similar level of care, with opportunities for team feedback on the state of the team culture. Formal mechanisms for removing team members who did not support the culture supported this system. At the EGWW, a large investment in the team was made before the start of the project, and periodic team-building work followed throughout the project. The Federal Center South project had a strong core team, the members of which were comfortable shifting roles while maintaining clarity around responsibilities and deliverables; Aspinall greatly strengthened its team culture through co-location at a remote site. Though the process and sequence of time investment varied between the teams, the payoff of this intensive team building was evident in very high levels of alignment, mutual trust, and respect in all three teams.

Takeaways

The EGWW team recommended developing a tool that could be used to assess the fit of each team participant in the organizational culture as a way to improve future integrated teams. In addition to helping identify team members that would fit well in a collaborative environment, the tool could also help identify areas in the organizational culture where additional support is required for collaboration to be fully adopted by the entire team.
Wayne N. Aspinall Federal Building & U.S. Courthouse
design-build team with integrated firms

Owner
U.S. General Services Administration - Rocky Mountain Region, Region 8

Design-Build Team
The Beck Group
Design-Build Contractor
Architect of Record

Westlake Reed Leskosky
Lead Design Architect
Engineering
Sustainable Design
Historic Preservation
Interior Design
Information Technology

Construction Management Assist
Jacobs Technology, Inc.

Commissioning Agent
M.E. Group

Consultants
Civil Engineer - Del-Mont Consultants
Blast Consultant - Weidlinger Associates
Fire Protection - Protection Engineering Group

Key
- Owner
- Architect
- Contractor
- CMa and/or CxA
- Consultants
- Subcontractors
- Entity b is under contract to entity a
- Project interaction between entity a and b
Edith Green - Wendell Wyatt Federal Building
Edith Green - Wendell Wyatt Federal Building
custom-integrated team

**Owner**
U.S. General Services Administration – Northwest/Arctic Region, Region 10

**Custom Integrated Team**
Howard S. Wright
General Contractor
SERA Architects
Executive Architect
Interior/Lighting Designer
Cutler Anderson Architects
Design Excellence Architect

**Commissioning Agent**
Glumac

**Consultants & Subcontractors**
Mechanical Engineer Core and Shell - Stantec Consulting
Electrical Engineer - PAE Consulting Engineers
Plumbing Engineer - Interface Engineering
Structural & Civil Engineer - KPFF Consulting Engineers
Landscape Architect - Place Studio
Environmental Graphic Design - Mayer/Reed
Acoustics - Charles M. Salter Associates
Life Safety - Aegis Engineers
Blast Engineer - Weidlinger Associates
Curtainwall Subcontractor - Benson Industries
Mechanical Subcontractor & EOR-Tenant Buildouts - McKinstry
Electrical Subcontractor & EOR-Tenant Buildouts - Dynalectric

**Key**
- Owner
- Architect
- Contractor
- CMA and/or CxA
- Consultants
- Subcontractors
- Curtainwall
- Mechanical
- Electrical
- Environmental graphics
- Acoustics
- Life safety
- Blast engineer

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Diagram showing relationships between owner, architect, contractor, consultants, and subcontractors.
Federal Center South Building 1202

Space Type Key
1 - Office
2 - Circulation
3 - Support Space

2nd Floor Plan

0  30 ft
Federal Center South Building 1202
design-build team

Owner
U.S. General Services Administration - Northwest/Arctic Region, Region 10

Design-Build Team
Sellen Construction
General Contractor
ZGF Architects LLP
Architect

Construction Management Assist
Heery International

Consultants & Subcontractors
Structural & Civil Engineer - KPFF Consulting Engineers
Mechanical & Lighting & Telecommunications - WSP Flack + Kurtz
Electrical - Lane Coburn & Associates
High Performance Design - Built Ecology
Landscape - SiteWorkshop LLC
Graphics & Signage - Studio SC
Elevator - Lerch Bates
Acoustical - The Greenbush Group
Life Safety - Tuazon Engineering
Geotechnical - Hart Crowser & Associates
Mechanical Subcontractor - University Mechanical
Electrical Subcontractor - Sequoyah Electric
Reclaimed Timbers - GR Plume Company

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# High Performance

## Energy Use Intensity

Energy Use Intensity (EUI) measures a building’s annual energy use per unit area (kBtu/sf/yr). Each project’s EUI is compared to a national average baseline EUI for office buildings of comparable size. A low EUI is an indicator of good energy performance as it represents an energy savings against the baseline.

<table>
<thead>
<tr>
<th>Energy Use Intensity</th>
<th>Aspinall Federal Building and U.S. Courthouse</th>
<th>Edith Green - Wendell Wyatt Federal Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUI before renewables</td>
<td>14</td>
<td>30</td>
</tr>
<tr>
<td>EUI after renewables</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>% energy reduction</td>
<td>84%</td>
<td>71%</td>
</tr>
</tbody>
</table>

## Spatial Daylight Autonomy

Spatial Daylight Autonomy (sDA) describes how much of a space receives sufficient daylight. The metric describes the percentage of the floor area that receives a minimum illumination level, 300 lux, for at least 50% of occupied hours (sDA300/50%). Higher percentages indicate good daylighting performance.

<table>
<thead>
<tr>
<th>Daylight</th>
<th>Aspinall Federal Building and U.S. Courthouse</th>
<th>Edith Green - Wendell Wyatt Federal Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>daylighting - 3 LEED points L6.04 : Daylight   - 3 pts</td>
<td>50%</td>
<td>51%</td>
</tr>
<tr>
<td>daylighting - 2 LEED points L6.04 : Daylight   - 2 pts</td>
<td>50%</td>
<td>51%</td>
</tr>
</tbody>
</table>

## Reduction of Potable Water

Water use reduction is simulated by comparing the amount of water used by a project’s interior fixtures to a baseline (percent reduction). The baseline fixtures are determined by the Energy Policy Act of 1992 fixture requirements. Higher percentages indicate good water performance.

<table>
<thead>
<tr>
<th>Water Cycle</th>
<th>Aspinall Federal Building and U.S. Courthouse</th>
<th>Edith Green - Wendell Wyatt Federal Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable water reduction</td>
<td>40%</td>
<td>61%</td>
</tr>
<tr>
<td>Potable irrigation</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>
Development of Case Study Categories

Project Context
- overview
- budget
- cost
- schedule
- technical complexities
- risks

→ Key Ingredients
- commercial strategies
- leadership strategies
- logistical and process tactics

→ Team Outcomes
- team collaboration
- mutual trust
- respect
- effective communication
- risk management
- effective decision making

→ Building Outcomes
- meeting project scope
- meeting project budget
- meeting project schedule
- meeting high performance goals
- producing a high-quality building
- demonstrating innovation
Development of Case Study Categories

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<table>
<thead>
<tr>
<th>Overview</th>
<th>High Performance</th>
<th>Commercial Strategies</th>
<th>Leadership Strategies</th>
<th>Logistical &amp; Process Tactics</th>
<th>Building Innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Overview</td>
<td>Project Timeline</td>
<td>Team Organization</td>
<td>Energy Performance</td>
<td>Team Selection</td>
<td>Contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Daylight &amp; IAQ</td>
<td></td>
<td>Verification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Water Cycle &amp; Materials</td>
<td></td>
<td>Team Building &amp; Collaborative Culture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RFP Development</td>
<td></td>
<td>Goals &amp; Alignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Team Selection</td>
<td></td>
<td>Role Definition &amp; Accountability</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contract</td>
<td></td>
<td>Managing Schedule &amp; Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Verification</td>
<td></td>
<td>BIM &amp; Design Documentation</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Meetings &amp; Workplace Environment</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>GSA Peer Reviews &amp; Expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Building Innovations</td>
</tr>
</tbody>
</table>

**COMPARATIVE ANALYSIS**

Comparisons & Best Practices

**WAYNE N. ASPINALL FEDERAL BUILDING & U.S. COURTHOUSE**

Historic Renovation
project type
Design-Build
project delivery
Integrated Firms
team culture

**EDITH GREEN - WENDELL WYATT FEDERAL BUILDING**

Renovation
project type
Custom CMC+6
project delivery
Up-Front Team Building
team culture

**FEDERAL CENTER SOUTH BUILDING 1202**

New Construction
project type
Design Build
project delivery
Leverage Project Interactions
team culture
### Project Overview - Projects at a Glance

<table>
<thead>
<tr>
<th>Overview</th>
<th>High Performance</th>
<th>Commercial Strategies</th>
<th>Leadership Strategies</th>
<th>Logistical &amp; Process Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WAYNE N. ASPINALL</strong></td>
<td>• Projects selected by GSA for this report for exemplary team and building outcomes</td>
<td>• Far exceeded ARRA high performance goals</td>
<td>• Aspirational building performance goals unified the team</td>
<td>• Paired tools with needs</td>
</tr>
<tr>
<td><strong>FEDERAL BUILDING &amp; U.S. COURTHOUSE</strong></td>
<td>• Highly complex projects that met or exceeded budget and schedule parameters</td>
<td>• Achieved goal to advance building industry as exemplary projects</td>
<td>• Strong emphasis on team building with formalized team goals, stable core team with fluid roles, and transparency</td>
<td>• Master schedules created buy-in and shared understanding</td>
</tr>
<tr>
<td><strong>Historic Renovation</strong></td>
<td>• ARRA context demanded fixed schedule and high performance</td>
<td>• AIA COTE Top Ten award winners</td>
<td>• Integrated firms with aligned cultures</td>
<td>• BIM and energy modeling</td>
</tr>
<tr>
<td><strong>project type</strong></td>
<td></td>
<td>• Interactive engaged procurement process</td>
<td>• High levels of team member accountability through colocation</td>
<td>• Used GSA Peer Reviewers as a resource</td>
</tr>
<tr>
<td><strong>Design-Build</strong></td>
<td></td>
<td>• Guaranteed maximum price contract</td>
<td>• GSA Project Manager inspired collaboration</td>
<td></td>
</tr>
<tr>
<td><strong>project delivery</strong></td>
<td></td>
<td>• Both primary firms were integrated firms</td>
<td>• Investment in up-front team building and onboarding</td>
<td></td>
</tr>
<tr>
<td><strong>Integrated Firms</strong></td>
<td></td>
<td>• Contract was firm fixed price</td>
<td>• GSA project leadership championed integrated project culture</td>
<td>• Colocation with a shared information room (iRoom)</td>
</tr>
<tr>
<td><strong>team culture</strong></td>
<td></td>
<td>• Project’s high-performance goals incorporated into the scope during procurement</td>
<td>• Subcontractor and manufacturer involvement</td>
<td>• BIM snapshots aligned with design milestones</td>
</tr>
<tr>
<td><strong>EDITH GREEN - WENDELL WYATT</strong></td>
<td><strong>FEDERAL BUILDING</strong></td>
<td>• CMc+6 Custom contract</td>
<td>• Process flowcharts</td>
<td>• Betterments list to track potential project improvements against available funds</td>
</tr>
<tr>
<td><strong>Historic Renovation</strong></td>
<td>• High performance renovation of historically designated building</td>
<td>• Performance goals established by teams but not in contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>project type</strong></td>
<td>• Project had multiple tenant groups</td>
<td>• New construction on brownfield site</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Design-Build</strong></td>
<td>• Project was occupied during renovation</td>
<td>• Single tenant group located nearby during construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>project delivery</strong></td>
<td></td>
<td>• Material reuse from original warehouse as a goal</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Up-Front Team Building</strong></td>
<td></td>
<td>• 29 kbtu/sf/yr net EUI</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>team culture</strong></td>
<td></td>
<td>• 71% energy reduction from national average</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FEDERAL CENTER SOUTH</strong></td>
<td>• Extensive renovation of façade and building perimeter</td>
<td>• 61% potable water reduction from baseline</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BUILDING 1202</strong></td>
<td></td>
<td>• Performance goals established by teams but not in contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Construction</strong></td>
<td></td>
<td>• CMc+6 Custom contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>project type</strong></td>
<td></td>
<td>• Guaranteed maximum price contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Design Build</strong></td>
<td></td>
<td>• Performance-based firm fixed price contract that withheld 0.5% of contract until performance goals were met</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>project delivery</strong></td>
<td></td>
<td>• Transparent contingency</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Leverage Project Interactions</strong></td>
<td><strong>team culture</strong></td>
<td>• Design-build project delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>team culture</strong></td>
<td></td>
<td>• Used onboarding and leveraged project interactions to facilitate team building</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interactions</strong></td>
<td></td>
<td>• Team selection based on trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Building Innovations</strong></td>
<td></td>
<td>• Alignment throughout</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The GSA prepared the RFP based on internal discussions. Prior to the ARRA, the GSA was equipped for traditional design-bid-build delivery, but several GSA regions had been studying the potential use of alternative delivery types. In 2009, the ARRA provided funding for GSA projects, resulting in the requirement for high-performance buildings. To address these new goals, a flexible approach to the scope of work, the open-ended RFP contained goals for economic stimulus and high-performance buildings.

**RFP Development**

The GSA prepared the RFP based on internal discussions. Prior to the ARRA, the GSA was equipped for traditional design-bid-build delivery, but several GSA regions had been studying the potential use of alternative delivery types. In 2009, the ARRA provided funding for GSA projects, resulting in the requirement for high-performance buildings. To address these new goals, a flexible approach to the scope of work, the open-ended RFP contained goals for economic stimulus and high-performance buildings.

**Comparative Analysis**

<table>
<thead>
<tr>
<th>Building</th>
<th>Type</th>
<th>Delivery Type</th>
<th>Cost</th>
<th>Performance</th>
<th>Sustainability</th>
<th>GSA Practices</th>
<th>IPD</th>
<th>Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 1202</td>
<td>New Construction</td>
<td>Design-Build</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>GSA Practices</td>
<td>No</td>
<td>Several teams noted that the GSA should consider compensating short-listed teams to develop comprehensive proposals.</td>
</tr>
<tr>
<td>Federal Center &amp; U.S. Courthouse</td>
<td>Renovation</td>
<td>Custom CMC</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>IPD</td>
<td>No</td>
<td>Several teams noted that the GSA should consider compensating short-listed teams to develop comprehensive proposals.</td>
</tr>
<tr>
<td>Wayne N. Aspinall Federal Building &amp; U.S. Courthouse</td>
<td>Custom CMC</td>
<td>Design-Build</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>GSA Practices</td>
<td>No</td>
<td>Several teams noted that the GSA should consider compensating short-listed teams to develop comprehensive proposals.</td>
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</table>

**Executive Summary**

The GSA prepared the RFP based on internal discussions. Prior to the ARRA, the GSA was equipped for traditional design-bid-build delivery, but several GSA regions had been studying the potential use of alternative delivery types. In 2009, the ARRA provided funding for GSA projects, resulting in the requirement for high-performance buildings. To address these new goals, a flexible approach to the scope of work, the open-ended RFP contained goals for economic stimulus and high-performance buildings.

**Literature Review**

- Comparative Analysis
- Literature Review
- Research Methodology

**Project Overview**

- Building 1202
- Federal Center
- U.S. Courthouse
- Wayne N. Aspinall Federal Building & U.S. Courthouse

**Team Organization**

- Team Building & Collaborative Culture
- Goals & Alignment
- Role Definition & Accountability

**Leadership Strategies**

- Managing Schedule & Budget
- BIM & Design Documentation
- Meetings & Workplace Environment
- GSA Peer Reviews & Expertise

**Logistical & Process Tactics**

- Building Innovations
- Illustrating high performance building innovations
**RFP Development**

The GSA’s procurement team made the important decision early on to use a design-build project-delivery method to renovate the historic building and meet the American Recovery and Reinvestment Act (ARRA)–mandated high-performance goals and project schedule. The procurement schedule was very compressed. The GSA procurement team received approval of their initial scope of work in January 2010 and was given five months to develop a final scope of work, solicit the work, and award the contract. The procurement team hired Jacobs Technology as the construction manager as advisor (CMa) to meet this deadline.

The GSA crafted the procurement process to integrate the clear high-performance goals within a structure that invited open dialogue with participating firms on how to best meet goals. The GSA project manager explained, “What we found to be incredibly helpful going through the procurement process was allowing the teams that were bidding on the project to provide innovative solutions, pushing this project in terms of its sustainability goals. We asked the teams: ‘You’re saying it can make LEED Gold? Can you propose an option to make it LEED Platinum? What would it take to do that?’” This marks the emergence of clear goals around which the team could align. Nurturing a process for developing these goals became a positive leadership strategy throughout the project.

Since the procurement process was intentionally designed to be interactive, the GSA team left open the possibility that the request for proposal (RFP) responses might improve their understanding of project scope as it was developed post-selection. The GSA review panel’s feedback to the competing teams during the procurement process was a form of peer review based on the proposal. A member of the design-build team noted, “With design-build, teams have to do a lot of work at the front end to even compete. Design-build teams that bring proposals to the GSA need to formulate a design that’s progressed far enough along in terms of infrastructure, architecture, and cost. The designs should, and did, receive feedback and challenges by a really excellent GSA source-selection board during the proposal process.”
RFP Development

Work on the EGWW began in 2003, prior to the American Recovery and Reinvestment Act (ARRA). The GSA’s Northwest/Arctic Region, Region 10, hired SERA Architects, with Cutler Anderson Architects, for design services on an extensive modernization of the existing eighteen-level government building, which housed sixteen different federal-tenant groups. The original contract followed a traditional design-bid-build delivery model, but the project was not approved for funding and put on hold in 2007.

In April 2009 the project was funded under the ARRA, which reinstated the project as active but required it to be re-scoped to align with the high-performance green building goals, adding new technical specifications. The ARRA required funding to be committed, or “obligated,” no later than September 2010 and spent before September 2015. This funding goal became a driving factor in determining the collaborative project-delivery type. Market research demonstrated that a general contractor/construction manager delivery method, which the GSA refers to as the construction manager as constructor (CMc), along with a guaranteed maximum price (GMP) contract type were most appropriate for the project scope and constraints—specifically, the securing of project funding by September 2010.

The approved acquisition plan showed the GMP as being established in July/August of 2010. Due to a variety of factors, the GSA changed the obligation-target date for all projects to March 2010, and the acceleration was very disruptive to this project team. Given the schedule and funding constraints, numerous factors led to a decision by the GSA to retain SERA as the architect for this project. SERA was able to engage in the request for proposal (RFP) process. Consideration was given to the following: SERA’s original contract was not closed; SERA demonstrated past positive performance; and SERA had the support of the CMc and expertise in high-performance green buildings. To manage relationship risk for their early commitment to SERA, the GSA also included an option to convert the contract to design-build, although this was never exercised.
Federal Center South’s procurement phase was heavily influenced by the compressed schedule and high-performance goals of the American Recovery and Reinvestment Act (ARRA). The ARRA funding was packaged with a congressional mandate to award the contract by the end of September 2010. The GSA had its own mandated guaranteed maximum price (GMP) date, the end of March 2010. The GSA contracting officer noted, “The goals and objectives were expressed early on in the solicitation documents, including having a collaborative team, achieving high-performing green building initiatives, and creating a twenty-first-century workplace. All of these were expressed in the statement of work and in the solicitation and were used to guide the acquisition-and-selection process.”

The GSA procurement team decided to use a design-build project-delivery approach because they believed the delivery type could be more streamlined than traditional design-bid-build, better equipping them to meet the demanding ARRA schedule. In addition to the ARRA, site concerns were a primary driver in the early stages of this project. The GSA contracted several reports: a poly-seismic study, an environmental assessment, a geotechnical study, and a hazmat study. These reports demonstrated that the site was feasible for construction and identified general areas of site challenges.

Heery, the CMa, was engaged early specifically to assist in writing a statement of work for the design-build request for proposal (RFP) and to develop preliminary energy modeling that set initial project-performance goals.

The GSA crafted the procurement process to combine clear goals with a structure that invited open dialogue with participating firms on how to best meet goals. The GSA’s project manager explained, “During procurement, we were defining what a high-performance building is. We were creating policies. We also looked to the design teams and asked, ‘Are there things we can do to improve the project and make it higher performing? We want you to come back with a list of options to better the building.’ We didn’t want them thinking that the information we provided them is the only way to design a building.”
## Team Selection

Unique to this project, site conditions were a priority and those contracts related to site work were awarded before the primary team was selected. Contracts were awarded to geotechnical consultants for a seismic study, an environmental assessment, and a hazmat study. The CMA, Heery, was also awarded early in the process before the selection of the primary team.

**Primary Team Selection**

The design-build team of Sellen Construction and ZGF Architects was selected through a two-part competition. Phase one was an RFP. Of the many submitted proposals, the GSA selection committee shortlisted three design-build teams and invited them to submit comprehensive design proposals for phase two. No stipend was offered to the shortlisted teams that were not awarded the project, although the GSA is considering a change to this policy in the future to compensate for time invested in developing a comprehensive proposal.

Sellen Construction and ZGF Architects had more than twenty years of experience working together in settings other than design-build and had worked on projects together in the recent past. The contracting officer described how the team was chosen based on alignment with the GSA collaborative goals set forth in the RFP: “The team that got selected was the one that responded to that solicitation and obviously understood it.”

**Consultant and Subcontractor Selections**

The proposals from design-build teams were required to include a full list of consultants. After winning the job, Sellen Construction and ZGF Architects worked with the GSA to finalize consultant selections.

The contractor developed a small-business-subcontracting plan to meet the GSA mandates. Sellen Construction hired a sourcing consultant and held two outreach events to achieve the small-business-subcontracting goals.

Key members of the general contractor, architect, and ownership teams all participated in the final subcontractor selections. After shortlisting subcontractors based on submitted proposals, the design-build team interviewed them to determine if they could meet the design intent and add value. During this process, some subcontractors offered suggestions that resulted in cost savings. For example, one roofing subcontractor advised they could meet design intent at a lower cost by adapting the construction documentation wording, saying, “change this one word in the specification, I’ll give you back $80,000.” While they contributed ideas that led to cost savings, the potential financial incentives from the use of a firm-fixed-price contract did not extend to include subcontractors. The main incentive for the subcontractors was to obtain work during an economically depressed time in the building industry.

The high-performance objectives inspired the primary team to seek specialized expertise from their subconsultants. A team member recalled, “[We wanted to win this job. We hit [the high-performance goals] hard. Those were what drove us. With our mechanical consultant, we felt we needed somebody with international bandwidth that could bring in people with global perspectives to develop a building that was unlike anything in Seattle in terms of energy performance.]”
# Projects at a Glance

<table>
<thead>
<tr>
<th>Overview</th>
<th>High Performance</th>
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</thead>
<tbody>
<tr>
<td>Projects selected by GSA for this report for exemplary team and building outcomes</td>
<td>Far exceeded ARRA high performance goals and were LEED Platinum certified</td>
</tr>
<tr>
<td>Highly complex projects that met or exceeded budget and schedule parameters</td>
<td>Achieved goal to advance building industry as exemplary projects</td>
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<tr>
<td>Edith Green - Wendell Wyatt Federal Building</td>
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<tr>
<td>Federal Center South Building 1202</td>
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<tr>
<td>High performance renovation of historically designated building</td>
<td>AIA COTE Top Ten award winners</td>
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<tr>
<td>Project had multiple tenant groups</td>
<td>First net zero historic preservation project in the United States</td>
</tr>
<tr>
<td>Project was occupied during renovation</td>
<td>84% energy reduction from national average</td>
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<tr>
<td>Wayne N. Aspinall Federal Building &amp; U.S. Courthouse</td>
<td></td>
</tr>
<tr>
<td>84% energy reduction from national average</td>
<td></td>
</tr>
<tr>
<td>40% potable water reduction from baseline</td>
<td></td>
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<tr>
<td>High rise retrofit</td>
<td>29 kbtu/sf/yr net EUI</td>
</tr>
<tr>
<td>Multiple tenant groups (most unknown until late in process)</td>
<td>71% energy reduction from national average</td>
</tr>
<tr>
<td>Extensive renovation of façade and building perimeter</td>
<td>61% potable water reduction from baseline</td>
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<tr>
<td>New construction on brownfield site</td>
<td>26 kbtu/sf/yr net EUI</td>
</tr>
<tr>
<td>Single tenant group located nearby during construction</td>
<td>71% energy reduction from national average</td>
</tr>
<tr>
<td>Material reuse from original warehouse as a goal</td>
<td>79% potable water reduction from baseline</td>
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# Projects at a Glance

<table>
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<tr>
<th>All Three Projects</th>
<th>Wayne N. Aspinall Federal Building &amp; U.S. Courthouse</th>
<th>Edith Green - Wendell Wyatt Federal Building</th>
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<td><strong>Commercial Strategies</strong></td>
<td><strong>Leadership Strategies</strong></td>
<td><strong>Logistical &amp; Process Tactics</strong></td>
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<tr>
<td>• GSA ARRA contracting requirements</td>
<td>• Aspirational building performance goals unified the team</td>
<td>• Paired tools with needs</td>
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<tr>
<td>• Documented performance based goals, post-substantial completion verification</td>
<td>• Strong emphasis on team building with formalized team goals, stable core team with fluid roles, and transparency</td>
<td>• Master schedules created buy-in and shared understanding</td>
</tr>
<tr>
<td>• Interactive engaged procurement process</td>
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<td>• BIM and energy modeling</td>
</tr>
<tr>
<td>• Aspirational building performance goals unified the team</td>
<td>• Integrated firms with aligned cultures</td>
<td>• Used GSA Peer Reviewers as a resource</td>
</tr>
<tr>
<td>• Strong emphasis on team building with formalized team goals, stable core team with fluid roles, and transparency</td>
<td>• High levels of team member accountability through colocation</td>
<td>• Started formal weekly meetings with discussing positive achievements</td>
</tr>
<tr>
<td>• Paired tools with needs</td>
<td>• GSA Project Manager inspired collaboration</td>
<td>• Internal and informal information channels</td>
</tr>
<tr>
<td>• Master schedules created buy-in and shared understanding</td>
<td>• Master and mini-master schedules</td>
<td>• Colocation + Webex</td>
</tr>
<tr>
<td>• BIM and energy modeling</td>
<td>• Colocation with a shared information room (iRoom)</td>
<td>• BIM snapshots aligned with design milestones</td>
</tr>
<tr>
<td>• Used onboarding and leveraged project Interactions to facilitate team building</td>
<td>• Betterments list to track potential project improvements against available funds</td>
<td>• Design work packages matching construction stages</td>
</tr>
<tr>
<td>• Team selection based on trust</td>
<td>• Design-build project delivery</td>
<td>• Investment in up-front team building and onboarding</td>
</tr>
<tr>
<td>• Alignment throughout</td>
<td>• Performance-based firm fixed price contract that withheld 0.5% of contract until performance goals were met</td>
<td>• GSA project leadership championed integrated project culture</td>
</tr>
<tr>
<td>• Transparent contingency</td>
<td>• Performance goals established by teams but not in contract</td>
<td>• Subcontractor and manufacturer involvement</td>
</tr>
<tr>
<td></td>
<td>• CMc+6 Custom contract</td>
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</table>
Can We... Build Upon Integrated Expertise? Design-Build with Integrated Firms
Achieve Historic High Performance? First Net-Zero Building Listed on Nat’l Register
Get Beyond Video Conferencing? On-Site Colocation
Renovate an Occupied Building? BIM-Supported Project Phasing
Incentivize Tenant Behavior? GSA Managed Tenant Energy Targets
We Did...
Can We... Continue to Improve GSA Processes?
Custom CMC+6 Contract Developed for 10 Years

Push Team Alignment to New Heights?
Extensive Pre-Project Planning and Onboarding

Create Buy-in from Subcontractors?
Prominent Lobby Display Plaque of Subcontractors

Manage Schedule Complexity?
Master and Mini-Master Schedules

Reinvest in the Project?
Verification Phase Funded from Contingency
We Did...
Can We... Create a Better Contract?
Performance-Based Contract

Manage Contingency More Effectively?
Transparent Contingency

Fully Support Collaborative Delivery?
Contractor as Owner

Leverage Value Engineering?
’Betterments’ List

Achieve Performance Goals?
Verification Phase
How Do We Do it Again?
How Do We Do it Again?

Planning Strategies

• Examine conventions that inhibit collaborative project delivery
• Budget time and energy to achieve high-performance outcomes
• Assess the level of project risk and prepare appropriately

Commercial Strategies

• Engage teams during the RFP process
• Use performance-based goals in project delivery
• Include a verification process for high-performance goals
• Use transparent contingencies with shared management
How Do We Do it Again?

Leadership Strategies

• Invest in building relationships
• Create time for early planning
• Assess the fit of team participants
• Engage tenants throughout

Logistical & Process Tactics

• Develop process tools proportional to project complexity
• For design-build, time the first peer review early
• Create prioritized lists during VE and find ways to add back to project scope
How Do We Do it Again?

Moving to Performance-based Contracting

• Encouraging innovation and expecting excellence in performance
• Focus on desired outcome
• Describe what you will achieve, not how you achieve it
Thank you!

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