WAYNE N. ASPINALL FEDERAL BUILDING & US COURTHOUSE MODERNIZATION

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GSA
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Wayne N. Aspinall Federal Building & US Courthouse

- **1915** - Designed by Architect of the Treasury James A. Wetmore as a Post Office & US Courthouse
- **1918** - Original construction completed
- **1938** - Funds from the Works Project Administration (WPA) allowed for building expansion.
- **1972** - Grand Junction US Post Office & Courthouse was rededicated the Wayne N. Aspinall Federal Building & US Courthouse
- **1980** - Listed on the National Register of Historic Places
Wayne N. Aspinall Federal Building & US Courthouse
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Pre-Renovation Conditions:

1. Poor Lighting
2. Widow Coverings Limit Views Outside
3. Low Ceilings
4. Poor Ventilation and Filtration Conditions
Pre-Renovation Conditions:

1. Poor First Impressions
2. Historical 1st Floor Windows Covered
3. Poor Finishes
4. Poor Lighting & Minimal Daylighting
Wayne N. Aspinall Federal Building & US Courthouse

Sustainability & Energy Goals:

1. Net-Zero Energy Building
2. LEED Platinum
3. Improved Indoor Environmental Quality & Thermal Comfort
4. Water Use Reduction
5. Sustainable Construction Practices
6. Effective Use of Technology for Sustainable Design & Historic Preservation
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![Bar Chart]

- **PV Production (KWH per Watt)**
- **Cities**: Grand Junction, Phoenix, Washington DC, Miami

- Grand Junction: 1.5 KWH per Watt
- Phoenix: 1.6 KWH per Watt
- Washington DC: 1.2 KWH per Watt
- Miami: 1.3 KWH per Watt
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1. Optimize Building Envelope

2. Reduce Internal Loads

3. Design Highly Efficient Systems

4. Match Load with On-site Renewable Energy
Optimize Building Envelope:

1. Spray Foam Insulation
2. Interior Storm Windows with High Performance Solar Film
3. Upgrade to R-30 Roof Insulation
4. White Membrane Roof
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Wayne Aspinall Federal Building  Grand Junction, Colorado

November 8, 2010
Wayne N. Aspinall Federal Building & US Courthouse

Reduce Internal Loads:

1. Energy Efficient Lighting
2. Wireless Lighting Controls
3. High Controllability of Lighting
4. Increased Daylighting
5. Graphical Display of Building Consumption
6. Plug Load Reduction

LED Fluorescent Tubes

Daylighting Analysis
Wayne N. Aspinall Federal Building & US Courthouse

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Energy Exchange: Connect • Collaborate • Conserve

- VRF 36%
- Pumps 6%
- DOAS 4%
- Other 4%
- Light 13%
- DHW 1%
- Elev 2%
- WWHP 2%
- Fans 2%
- Misc 31%

Current Week Electricity Use

Electricity Use Breakdown
Design High Efficiency System:

1. Water-Source Variable Refrigerant Flow (VRF) System
2. Air Quality Monitoring
3. Advanced Controls System
4. Evaporative Cooling
5. Airside Free Cooling
6. Passive Solar Gain
Geo-Exchange System:

Use the consistent temperature of the earth to provide heating, cooling and hot water.

Installed:

1. 32 vertical wells with well depth of 475 feet.
2. Water pumped between heat pumps, water-cooled condensing units and well-field.
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Energy Exchange: Connect • Collaborate • Conserve
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