

## ENERGY STAR Building Design Profile

50 UN Plaza  
San Francisco, CA 94111



The renovation of the Federal Building at 50 UN Plaza is funded by the American Recovery and Reinvestment Act, intended to help convert the federal building stock into high-performing sustainable structures.

Operating as a federal building since its opening in 1936, it will be the future home of GSA Region 9, the landlords and builders for the federal branch of government on the Pacific Rim, and a showcase for appropriate sustainable measures in a significant historic building.

Built before the advent of air-conditioning, 50 UN Plaza takes advantage of free natural resources such as abundant daylight and fresh air. A central courtyard ensures that no workspace is more than 20 feet from a daylight source, and all exterior windows are operable to allow fresh air and cooling into the building. Steam radiators that have been in operation since the building opened will be re-used and equipped with individual controls for heating. Ceiling fans and operable windows complete the fine-grained user control of the interior environment.

Lighting circuits will be equipped with both daylight and occupancy sensors wirelessly connected to electronic dimming ballasts, providing the correct levels of electric light to match the prevailing conditions and reducing energy use through lighting by more than half.

For GSA, the building is a proving ground, a demonstration to its employees, consultants and clients of the approaches and technologies that can make any facility more comfortable and reduce its carbon footprint. It answers basic questions about how to approach historic buildings and outfit them to function in the 21st century without losing the essential character that gives them value and connects us to our heritage.

### Talking Points:

- Projects that achieve the Designed to Earn the ENERGY STAR certification are designed to reduce energy and CO<sub>2</sub> emissions.
- It was important that our project achieve Designed to Earn the ENERGY STAR because it signals to the market that the project is intended to perform in the top 25% of the nation's most energy efficient buildings. **HKS** is also helping the environment by delivering a low energy design to our client, which in turn sets the stage for operating the building to actually earn the ENERGY STAR label. ENERGY STAR buildings have a proven track record and yield average annual energy savings of 30 percent.
- Projects that achieve the Designed to Earn the ENERGY STAR also promote future financial benefits from reduced energy costs over the life of the building.



**Architect of Record:**  
HKS

**Engineering Firm:**

**Building Owner:**  
U.S. General Services  
Administration

**Design Energy Rating:**  
97

**Percent Energy and CO<sub>2</sub>  
Reduction\*:**  
59

**Design Year/ Estimated  
Occupancy Date:**

**Space Type:**  
Office

**Floor Space:**  
256,000 sq ft

**Estimated Energy Use Intensity:**  
102 kBtu/sf/yr

**Estimated Total Annual Energy  
Use:**  
7,786,679 kBtu/yr

**Estimated Annual Energy Cost:**  
\$ 276,116

### Technologies Specified:

- Operable windows for thermal conditioning and ventilation
- Daylight and occupancy sensors to significantly reduce electric lighting loads and commensurate heating of occupied space
- Life-cycle analysis to determine efficacy of retaining steam radiator system
- Green roof for habitat to reduce urban heat island and provide storm water treatment

- Target Finder was helpful in evaluating how various design strategies affected the energy estimates for the project.

Suggested Details:

- The projected annual energy and CO<sub>2</sub> savings of the design is **59 percent** as compared to the median building.
- The estimated total annual energy savings for this project is **37,107,202 kBtu** with an estimated cost savings of **\$ 393,958**.

**For More Information**

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\*Percent Energy and CO<sub>2</sub> Reductions are based on comparison to a median building of similar type.

EPA wants to feature your projects on the [Architects and Projects](#) Web page and in ENERGY STAR program materials. We encourage the AOR to submit a completed Profile with the certification application or by e-mail to [buildingdesign@cadmusgroup.com](mailto:buildingdesign@cadmusgroup.com)