50 UN PLAZA

San Francisco, California

Photo by Architectural Resources Group, Inc.

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.

Some key sustainable design elements are:

- 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

- Building space type: Office
- Total square footage: 256,000 sq/ft
- Energy Use Intensity (EUI): 102 kBtu/sf/yr
- Percent CO_2 reduction: 59%
- ENERGY STAR design rating: 97

ANNUAL SAVINGS STATISTICS

(COMPARED TO AN AVERAGE BUILDING EPA RATING OF 50)

- Energy savings: 37,107,202 kBtu
- CO_2 savings: 1,010 Metric Tons CO_2/yr

HKS

DESIGNED TO EARN THE ENERGY STAR

The estimated energy performance for this design meets US EPA criteria. The building will be eligible for ENERGY STAR after maintaining superior performance for one year.