

## Folsom/Dore Apartments



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Folsom/Dore Apartments is an example of a transit-oriented urban infill affordable housing development that integrates sustainable materials and design features. Folsom/Dore creates a community that promotes the economic and social welfare of its special-needs residents through onsite services. Citizens Housing Corporation (CHC) partnered with the City and County of San Francisco to create a model of sustainable supportive housing in San Francisco's South of Market (SoMa) neighborhood. The development provides 98 new units for a wide variety of households, including many with a range of special needs. The building is designed to create a healthy living environment and a positive environmental footprint in the larger community. The project received support from a variety of community organizations. The apartments also integrate recycled-content building materials, incorporate durable and sustainable materials to decrease long-term maintenance, and reduce water use for landscaping by using drought-tolerant plants.

#### Integrated Design Process:

CHC set forth the goals of sustainable development and a sustainable design consultant guided the team in working through an integrated process throughout the development of the project design. The owner, architect and general contractor team were the driving force behind the green building features implemented in this project. Team and community charrettes were held during the design development process. The planning and design discussions included the design team members as well as the property management team who provided programmatic feedback and design input based on their experience from their existing buildings. Community charrettes included city agency representatives, local residents and businesses.

#### Project at a Glance

**Location:** San Francisco, California

**Project Type:** New Construction

**Ownership/Rental:** Rental

**Size:**

98 units (studios, 1 & 2 BR)

86,998 sq. ft.

0.58 acre site, 169 units/acre

**Project Completion Date:** August 2005

**Affordability:**

- 26 units for households making less than 27.5% of the area median income (AMI)
- 50 units for households making less than 60% of AMI
- 2 manager's units

**Project Team:**

- Developers: Citizens Housing Corporation, City and County of San Francisco
- Architect: David Baker + Partners
- Contractors: Cahill Contractors, Inc.

**Development Cost:**

Acquisition cost:	\$5,700,000
Hard costs:	\$14,400,000
Soft costs:	\$6,400,000
Total:	\$26,500,000

**Cost/Savings of Greening:**

The costs and/or savings associated with greening this project were not broken out from general costs.

**Standards Used:**

LEED Green Building Rating System  
Energy Star Homes

**Key Green Features:**

- Building is 20% more efficient than CA State Energy Code requirements
- Energy Star appliances and high-performing thermally-broken aluminum windows were installed
- Healthy building materials including low- and no-VOC paints and sealants, recycled content sheet vinyl, non off-gassing wheatboard cabinets, high fly ash content concrete, and recycled tire play lot surfacing were incorporated

## Green Features



### Greening Goals:

The goals of Folsom/Dore Apartments are to decrease the building's energy consumption, lower the occupants' energy consumption and costs, and maintain a healthy indoor environment by reducing off-gassing of building materials.

### Site Design/Landscape Planning:

Since 1889, the site has been occupied by various types of buildings including residential dwellings, a machinery and supply store, a retail store, and a grocery warehouse. The most recent use of the site was for a laundry service and parking lot, which has operated since 1978. Considered a brownfield, a site assessment and engineering analyses was conducted to confirm that the construction of the building was feasible from a geotechnical standpoint. The subsurface investigations of the property influenced the design of the project and resulted in use of a mat-slab shallow foundation to avoid groundwater and for seismic protection.

### Location & Linkages:

The property is located in the SoMa (South of Market) neighborhood of San Francisco, a flat area comprising urban infill sites, low-rise residential buildings, small businesses and light industrial establishments. While SoMa retains some of its industrial and commercial heritage, it has been largely transformed in recent years. The area is now home to many upscale live/work lofts, retail shops, bars and restaurants. Since Folsom/Dore is located in a very urban neighborhood in San Francisco, the project has access to all the existing city infrastructure and services. For example, the Folsom Dore apartments are within one block of three bus transit lines and three blocks of the regional subway operated by the San Francisco transit system. As part of its transit-oriented design strategy, parking was limited to 30 spaces (instead of one per unit or 98 total), and four spaces are for City CarShare vehicles, a service with fuel-efficient rentals. Moreover, there is on-site secure bicycle parking. The property is located within one mile of several indoor and outdoor recreation opportunities, including a large park, performing and visual arts facilities, a bowling alley, an ice skating rink, and a children's art museum.

### Building Design Greening:

**Energy:** Energy efficiency is a key focus at Folsom/Dore and is achieved through numerous measures. The roof and wall assemblies include insulation with high R-values and were designed to increase energy efficiency by almost 20% above the energy standards in Title 24, the California Energy Code. The building was designed to maximize the benefits of natural ventilation, thereby eliminating the need for air conditioning, except in community spaces. All apartments and offices above the concrete podium

### Green Highlights

- Use of a brownfield site
- Received LEED Silver Certification from the US Green Building Council
- Water conserving landscaping
- Creation of green space within a dense urban environment
- Plantings in the courtyard gardens are drought tolerant and water-efficient
- Fly ash in concrete
- Play lot surface made from recycled tires
- Recycled paper gypsum board
- Recycled content cement board, cement plaster, sheet metal, carpet pad, and sheet vinyl
- Re-use of brick façade of existing building
- Recycled 65% of demolition debris
- High energy efficiency roof and wall assemblies
- 13 kW rooftop photovoltaics
- High efficiency re-circulating hot water system
- High efficiency gas fueled boilers
- Apartment ventilation is provided by operable windows, Z-ducts and exhaust fans
- Energy Star rated, GreenGuard rated and formaldehyde free insulation
- Energy efficient window assemblies
- Refrigerators and laundry equipment are all Energy Star rated

## Green Features



are individually controlled hydronic baseboard heaters that are powered by high efficiency gas-fired hot water heaters. A hydronic system was chosen over an electric system because of its efficiency. These and other design elements reduce the building's energy consumption and the energy costs for residents and the property management.

**Indoor Environmental Air Quality:** With the health and safety of the residents in mind, the building was designed to maximize natural ventilation and maintain a high level of indoor air quality. Green and sustainable products and practices were selected to minimize potential sources of off-gassing of pollutants.

**Water Conservation:** Per California standards, the bathrooms incorporate low-flow faucets, low-flow showerheads, 1.6 gallon pressure-assisted toilets. Landscaping is drought tolerant, has water-efficient plantings, and uses a bubbler irrigation system.

**Commissioning:** Commissioning was performed for the heating system in

10% of the apartments. The installation of the fin tube radiators (hydronic baseboards), their thermostats, control valves, and piping were evaluated individually after the hot water heaters/boilers passed the functional testing as a whole system.

**Operations and Maintenance:** The roofing and exterior cladding materials, as well as the windows and flooring in the community space and first floor residential hallway were chosen for their durability, which helps reduce long-term maintenance costs.

**Resident Education:** Residents are informed of the different sustainable features and measures in their building when they receive their initial orientation to the property. Instructions on the proper use of energy saving appliances are also given during this orientation. A booklet for residents that describes all of the building's sustainable features and provides tips on how to maximize energy and cost savings is currently being developed. In addition, all maintenance staff are trained on the building's sustainability goals, and all mechanical, plumbing, and electrical systems.

### **Project Financing:**

The Folsom/Dore Apartments project utilized state housing funds through the Multifamily Housing Program (MHP), as well as 4% tax credits, tax-exempt bonds credit-enhanced by Citibank, a Federal Home Loan Bank Affordable Housing Program (AHP) grant and local gap financing provided by HOME funds from the Mayor's Office of Housing in San Francisco. The MHP funds provided the deeper levels of affordability necessary to make the units available to special-needs residents, including developmen-

## Measurable Benefits

### **Energy Efficiency:**

The building is 20% more efficient than CA State Energy Code requirements. The rooftop 13 kW solar photovoltaic system provides approximately 15% of the common space electricity. The project has purchased 58,906 kWh of renewable energy credits per year for two years, which offsets the building's environmental impact. Additionally, compact fluorescent bulbs are used for at least 75% of the lighting. As a result, an estimated 81,997 pounds of carbon dioxide is prevented from entering the atmosphere.

### **Parking:**

Parking variance was obtained to reduce parking requirements by 70% (30 spaces instead of 98). Secure bicycle parking is provided for over 15% of the units.

### **Water Conservation:**

The courtyard gardens feature a combination of limited drought tolerant and water-efficient plantings with a bubbler irrigation system, which reduce water usage by 50%.

tally disabled adults and formerly homeless families.

### **Occupant Satisfaction:**

*"I am so thankful there are programs that embrace all walks of life. I have been there for about six months now and daily I am impressed with management. Everything I have brought to their attention, good or bad has been addressed with an amazing sense of urgency. I am so pleased at how well tenants engage, interact and befriend each other. Thank you for the opportunity to be part of this community."*

– Folsom/Dore Housing Resident



## 2007 Awards of Excellence

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# Looking Ahead

#### Challenges:

CHC faced four key challenges in completing Folsom/Dore: community opposition, design, parking regulations, and the lack of suppliers for green and sustainable materials. The project is located on the site of a former industrial building in the South of Market district. Despite the great need for affordable housing in San Francisco, surrounding property owners objected to locating new housing at this site out of concern for preserving space for light industry in San Francisco. CHC thus worked closely with the neighborhood and civic leaders to reach a compromise plan that would provide support to local businesses. CHC also worked with the architect to create an architectural design that would fit into the existing lively art scene, yet not conflict visually with the industrial environment. Existing San Francisco parking regulations would have required one parking space per unit or reduced the number of units that were built to match the available parking. However, because the site is well-served by transit, CHC proposed a significant reduction in parking requirements along with reserving four spaces for car-sharing as a way to meet travel demand, and the City ultimately agreed. CHC also had difficulty finding a source in the area for wood cabinets that did not contain urea-formaldehyde, a suspected carcinogen, as an adhesive. After much effort, this problem was solved when CHC, together with the contractor, finally located a supplier.

#### Partnerships:

CHC worked with the City of San Francisco, a disability advocacy non-profit called The Arc of San Francisco, the Episcopal Community Services (ECS), and Lutheran Social Services of Northern California to develop Folsom/Dore Apartments. This project also received support from a variety of community organizations, including Urban Ecology, Walk San Francisco, San Francisco Bicycle Coalition, Housing Action Coalition, City CarShare, and the San Francisco Aids Foundation.

#### Policy/Practice Implications:

As a pioneering affordable housing development, Folsom/Dore Apartments integrates mixed-income affordable housing, supportive housing with on-site services for people with disabilities, and a strong commitment to sustainable design and green construction practices.



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*“In Folsom/Dore Apartments, Citizens Housing Corporation has created one of the most innovative, multi-dimensional green affordable housing projects in the country. Redeveloping a brownfield site in an up-and-coming neighborhood and creating a transit-oriented development that provides efficient, healthy and affordable apartments to low- and very low-income residents with special needs is a noteworthy accomplishment. To do so while sensitively addressing community concerns and achieving LEED Silver certification is truly remarkable.”*

-Member, Awards Advisory Committee

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## Contacts



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