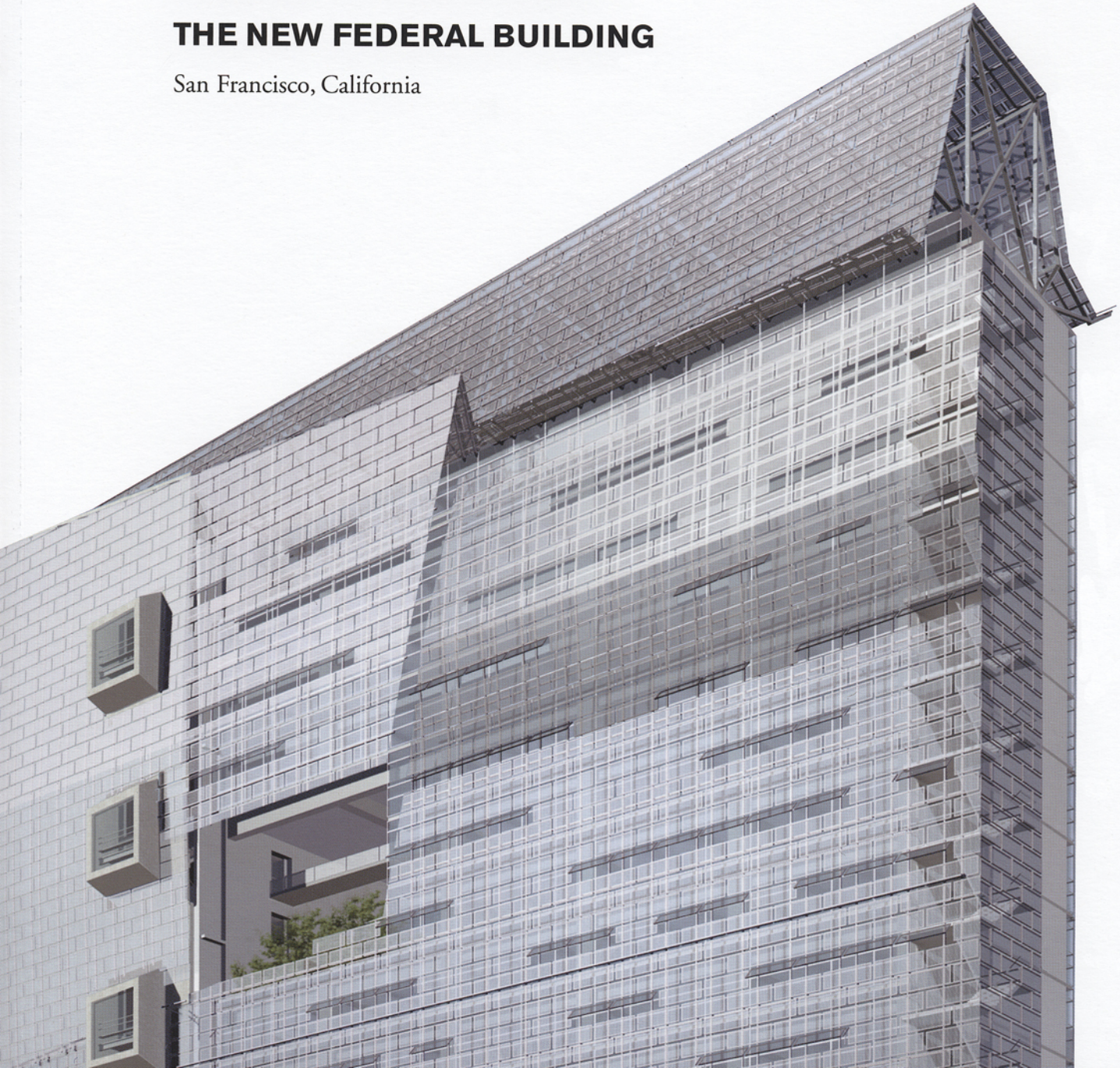


A MODEL OF EXCELLENCE
THE NEW FEDERAL BUILDING

San Francisco, California



A MODEL OF EXCELLENCE THE NEW FEDERAL BUILDING

San Francisco, California

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With only 5 percent of the world's population, the United States consumes 25 percent of the world's energy. The ongoing challenges to the management of resources demand that architects confront the ethics of ecology and the politics of energy. The design for the new San Francisco Federal Building recognizes the problem and poses a solution.

Thom Mayne
Architect, Morphosis



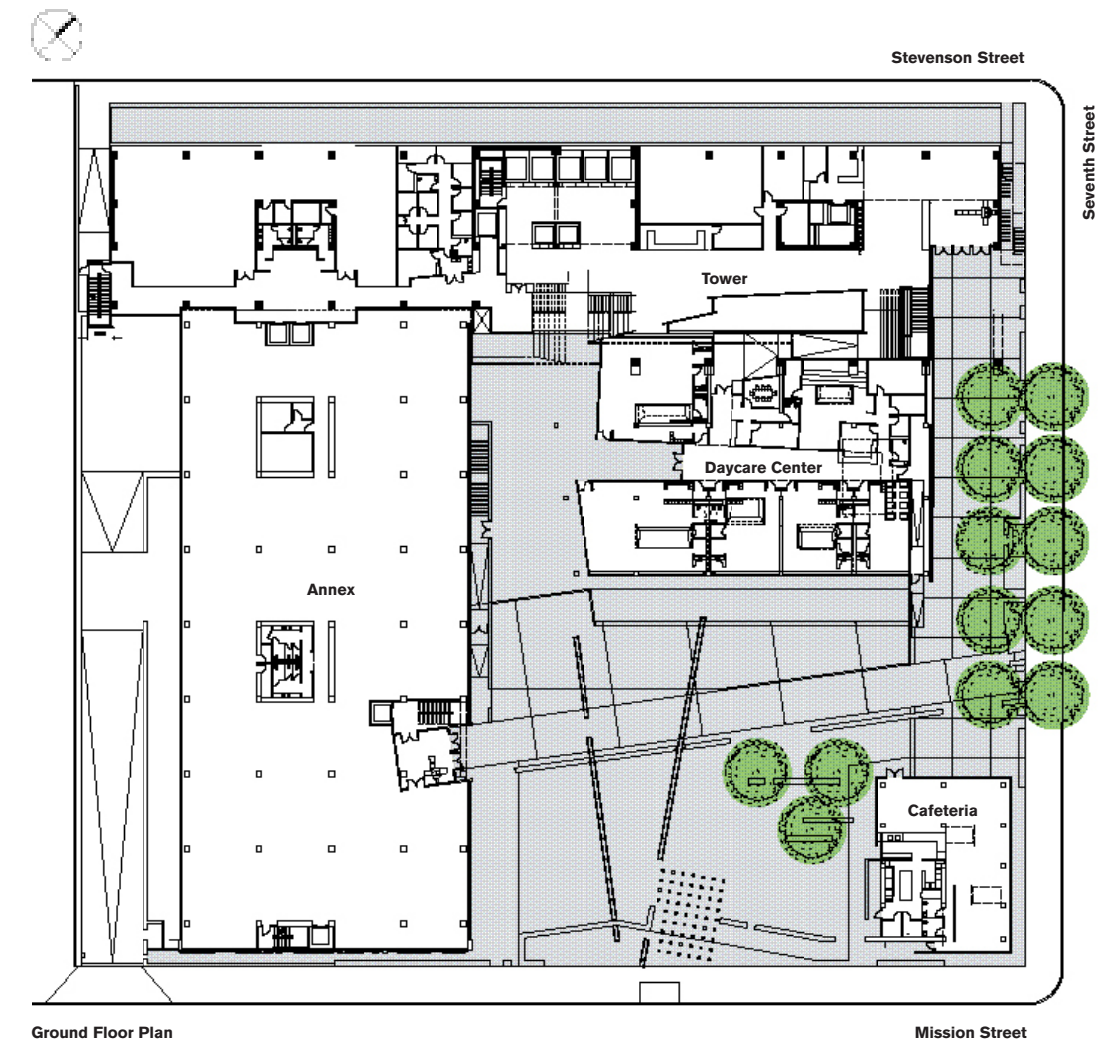
EXCELLENCE AND INNOVATION

When it is completed in 2005, the new Federal Office Building in San Francisco, located at the intersection of Seventh and Mission Streets, will be a landmark. Its aesthetics are bold, making it a design that will stand as a distinctive and compelling addition to the skyline. Its layout and functions celebrate the importance of the city and the urban environment, combining amenities and public space that will enhance the immediate area and the adjacent neighborhood. Its offices will support the energy and spirit of those who work there and those who visit. Its systems will be outstanding examples of integrated engineering and sustainable design, reflecting the wise stewardship of limited resources. Together, these attributes make this a project that will stimulate critical interest for years to come.

The profile of the new San Francisco Federal Building—a long, slender, translucent tower, 60 feet wide, 234 feet high, sheathed with glass and an undulating perforated metal

screen—confidently announces the government's commitment to the diverse South of Market neighborhood and will serve as a portal to the city's Civic Center district. On the southwest portion of the site, a four-story annex will be the home of offices most frequently used by the public, and the building's large south-facing plaza will offer much needed open space and services to the local community.

As a workplace, this Federal complex incorporates design strategies that will make it a model environment with respect to health, productivity, and creativity. Because the tower is narrow and has high ceilings and glass façades, almost all those who work in this building will have an outside view and spaces illuminated with natural light. Above the fifth floor, the tower will have operable windows that admit abundant fresh air. Wiring and communications will be delivered through an underfloor system permitting great flexibility in the layout and reconfiguration of offices and workareas. A three-story sky-garden on the 11th floor will provide a dramatic venue for conversations and



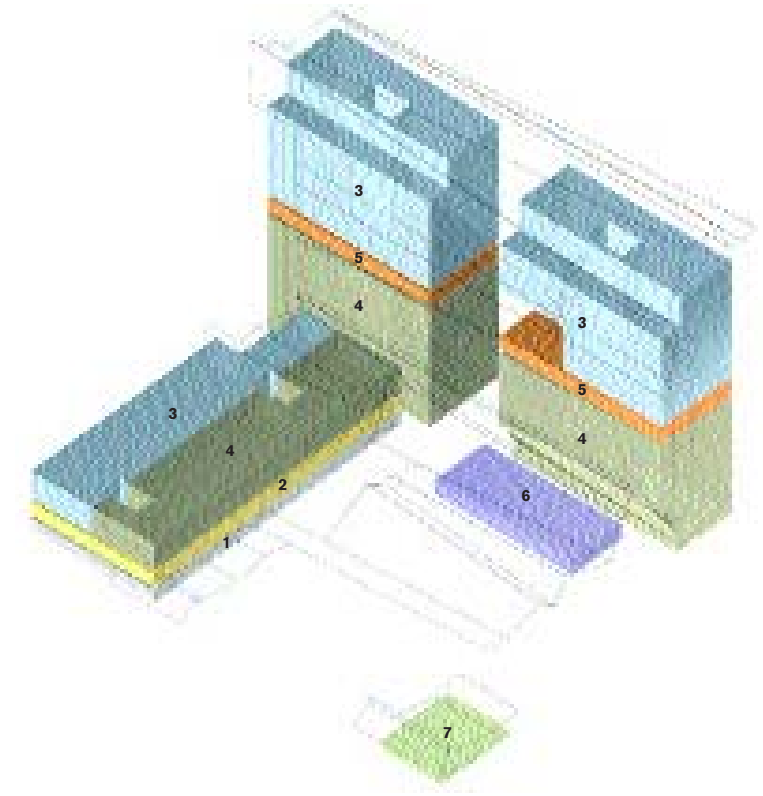
Many of the same design decisions that will provide high quality workspace will also significantly improve energy efficiency. Most of the workspaces will have direct access to sunlight, substantially reducing the need for artificial illumination and, more than 70 percent of the structure will be cooled with natural ventilation rather than air conditioning. Strategies such as these yield large cuts in energy consumption and permit the specification of smaller mechanical systems. The U.S. General Services Administration's (GSA's) national target is to use no more than 55,000 Btu's (British thermal units) of energy per square foot of space per year. (Most GSA buildings today use about 69,000 Btu's.) Remarkably, this Federal office will require only 27,000 Btu's per square foot per year, enough of a savings to power 750 residences and to qualify for a \$300,000 award from Pacific Gas and Electric.

Programmatically, the new San Francisco Federal Building is divided into several components. The 18-story tower along the northwestern boundary of the site is designated as offices for

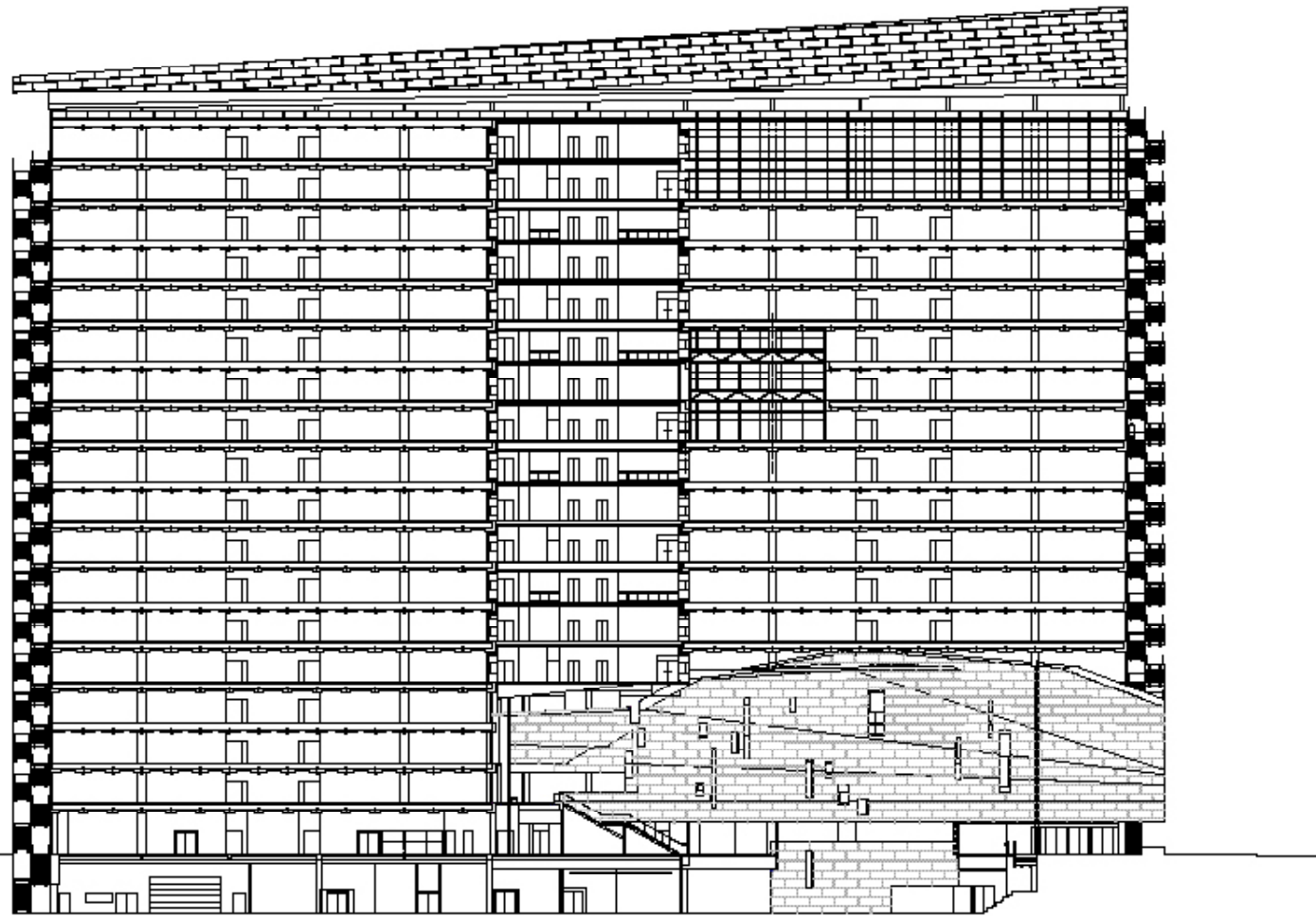
the U.S. Departments of Health and Human Services, Agriculture, and Labor as well as the location of a conference facility and fitness center for use by Federal tenants and the general public. Perpendicular to this slender volume—to the southwest—a broader four-story structure will provide space for the Department of State and the Social Security Administration, agencies that generate a good deal of pedestrian traffic as people come to apply for passports, visas, retirement and disability benefits. Adjacent to the base of the tower, just off its main entrance and filling some of the building's plaza, the folded plates of the tower screen will unfurl as the dynamic roof over a daycare center, a facility available to employees and local residents. A free-standing cafeteria, which like the daycare facility will be open to the public and will have a roof of folded planes, will anchor the corner at Seventh and Mission Streets. The remaining area will be a landscaped plaza with flexible space for outdoor dining, concerts, and a market. The goal is to have the form and location of spaces used by tenants and the public

serve as a bridge between the building and the community, breaking down the formality of the Federal presence. It is an architectural solution made richer because of its valuable social agenda.

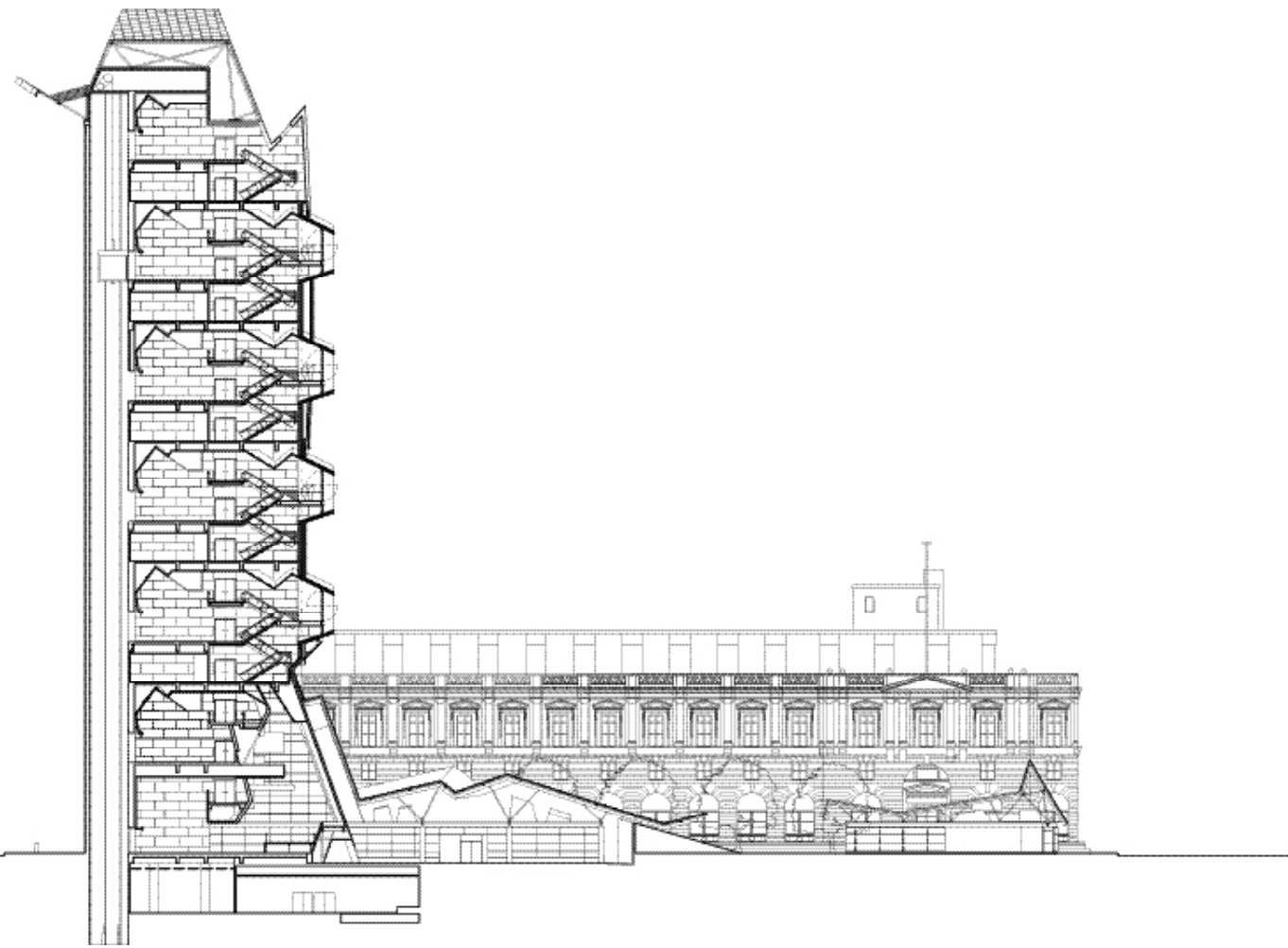
Looking simply at a list of functions, this project is fairly ordinary. In this case, however, the designers and GSA have addressed community and user needs in a special way, creating an extraordinary design. From the perspectives of architecture, urban design, workplace quality, and sustainability, this is an undertaking that thoughtfully and innovatively carries forward the tradition of excellence in Federal buildings.



1. Social Security Administration
2. Department of State
3. Department of Labor
4. Department of Health and Human Services
5. Department of Agriculture
6. Daycare
7. Plaza Cafeteria



Section



Section



Many of the San Francisco citizens on the U.S. General Services Administration's advisory committee for the building support it as a bold and novel structure for the east side of Market Street. I find it a refreshing approach that will tie Seventh Street to the Civic Center in a very creative way.

James W. Haas
Chairman, Civic Pride



**A SENSITIVE RESPONSE TO A COMPLEX
URBAN DESIGN CONTEXT**

The new San Francisco Federal Building will sit on a three-acre site in the low-rise South of Market neighborhood. It will be a ten minute walk from downtown and is sited just east of City Hall and the historic Beaux Arts Civic Center district. Filling about a third of a large block, its boundaries are Seventh Street to the northeast, Mission Street to the southeast, and Stevenson Street to the northwest (a secondary road that dead ends mid-block). The southwestern edge of the project is in the middle of the block between Seventh and Eighth Streets.

The primary entrance to the complex will be on Seventh Street across from another important Federal building, the U.S. Court of Appeals for the Ninth Circuit, a Beaux Arts edifice constructed in 1905. There will be a strong axial relationship between the ornate, four-story courthouse and the entry to the slender Federal Building tower. Service and parking access is mid-block off Mission Street. The plaza—a 37,000-square-foot

public space—faces east and south. The site is well served by public transportation, including a Bay Area Rapid Transit station.

A priority shaping the form and uses of the scheme has been a desire to create a building and public spaces that are good neighbors to the South of Market community at the same time that they fulfill the needs and aspirations of tenant agencies and GSA. The community—which is a rich social and ethnic enclave of Filipinos, Vietnamese, Mexicans and other minority groups—wanted a building that would not overwhelm the modest two- and three-story light industrial, commercial, and residential structures (including artist studios, senior housing, and single room occupancy units) that hallmark the eclectic character of the neighborhood. Groups sought assurances that the project would not be a fortress, and they asked for open space and activities that would improve the quality and vitality of the area. Federal agencies expected the best possible workspace—secure, efficiently organized, and flexible enough to

accommodate change without major expense. GSA looked for outstanding architecture within its budget of \$144 million.

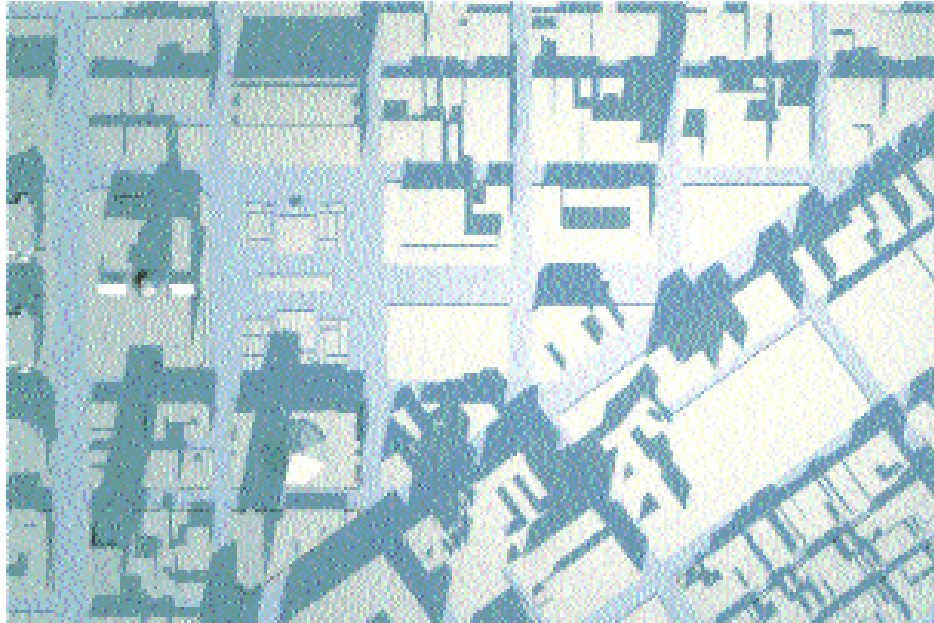
The proposed complex responds to all these concerns. Placing the majority of the offices in a tower allows a large portion of the site to be developed as an urban plaza. This open space will be filled with sunlight and public amenities. The tower is narrow and pushed to the back of the site. It is distinctive but not dominating. Locating the Department of State and Social Security Administration in a four-story building perpendicular to the tower plays down the height of the tower and will enliven the plaza with a stream of visitors to these offices. An open-looking but secure perimeter will be outlined with setbacks and reinforced street furniture. The offices themselves will be light, airy, and designed to enhance productivity and save energy in buildings that are aesthetically distinguished and imaginative.

As part of the design process, there has been a noteworthy dialogue about the height and massing of the complex. Current zoning outlines a maximum building envelope that steps down several times from a mid-block height of 240 feet to 90 feet in front of the Court of Appeals. The tower rises to the limit, but instead of stepping down, maintains its 240-foot height for 354 feet along the entire the northwest property line even as it approaches Seventh Street and the Court of Appeals. While this departs from the zoning regulations, it reduces the footprint of the building and allows for the creation of a large, open plaza—a valuable asset in the South of Market district that the city has identified as deficient in public space. The main office is tall. However, it will not overwhelm its surroundings with either its size or its shadow. It is intentionally narrow and carefully sited to preserve existing pedestrian views of both City Hall and the Court of Appeals. To define the street edge, the lower annex



This is a unique and attractive design, an appropriate addition to the skyline of our world class city. It conveys a sense of grandness. At the same time, it is a positive contribution to the South of Market neighborhood. It will be a catalyst for future development that, I believe, will greatly enrich our community.

Benny Yee, President
San Francisco Redevelopment
Agency Commission



Winter Solstice 12pm
Without Federal Building



Winter Solstice 12pm
With Federal Building

I see this building as having two faces. From the north, it is a backdrop and defining edge of the Civic Center. From the south, it is an open space and gateway to the city center. The height of the tower strengthens these perceptions. With the tower's shadow falling on the roofs of adjacent buildings, it leaves the plaza and surrounding streets filled with sunlight.

John Petkewich
Assistant Regional Administrator
GSA, Pacific Rim Region

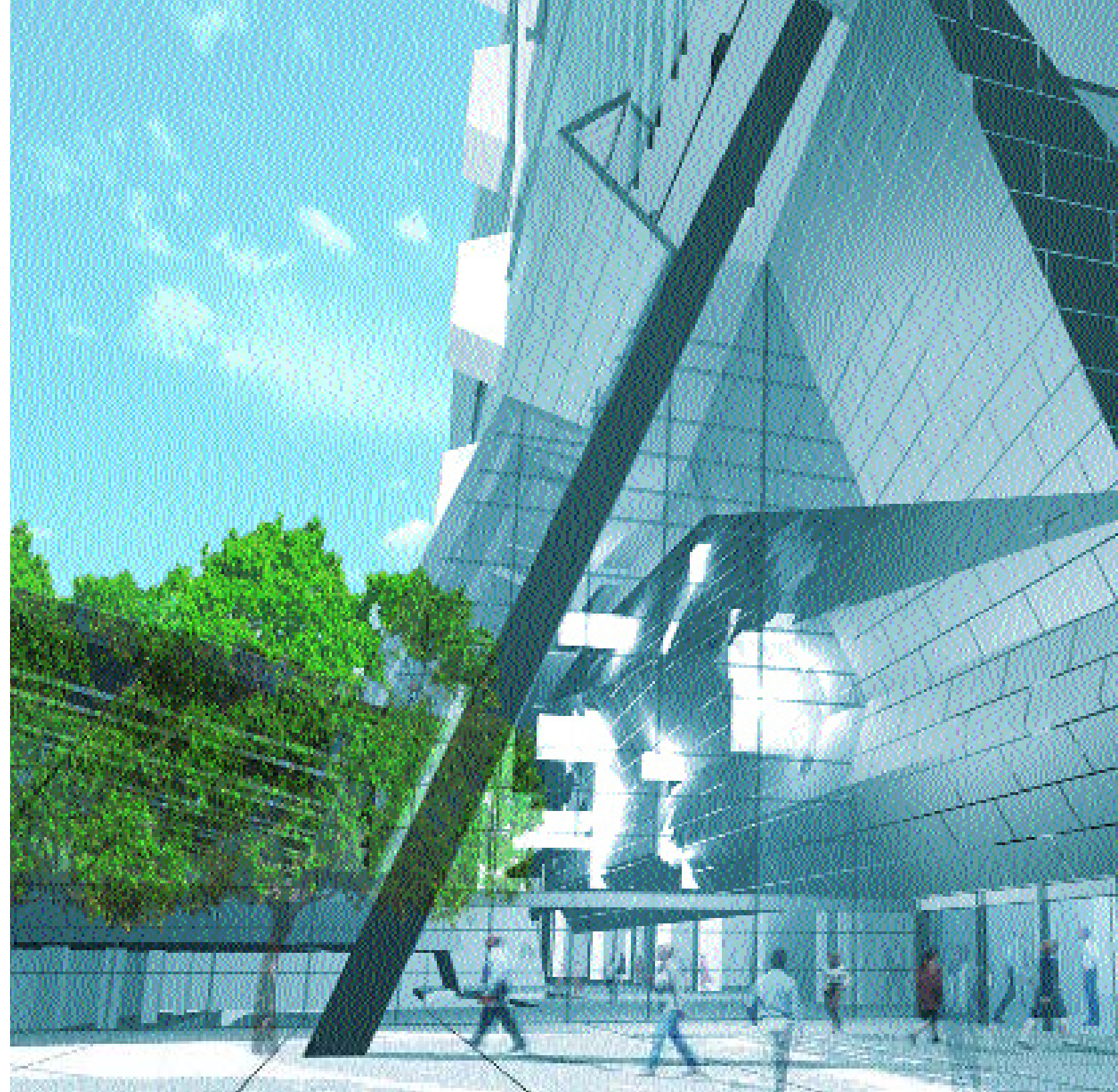
**A COMMITMENT TO THE INTEGRATED
WORKPLACE AND SUSTAINABLE DESIGN**

In the new San Francisco Federal Building, GSA will link workplace design with each client agency's mission and performance goals. While the details related to this objective will be developed in the future, the framework for this achievement is a flexible office module that is attractive and healthy, and that can be configured to enhance communication and instill a sense of pride, purpose, dedication. There will be ample natural light and fresh air. Personal control will be the norm, and the ability to rearrange functions with a minimum of effort will help assure effective communications.

This project has also been marked by an intense commitment to sustainable design, preserving resources, and improving the quality of the nearby communities. This structure, and for that matter all other GSA buildings constructed from 2003 on, will have to be certified under the U.S. Green Building Council's rigorous Leadership in Energy and Environmental Design (LEED) criteria. To receive this recognition,

projects will have to meet minimum standards in such areas as: siting, landscaping, water efficiency, energy efficiency, materials selection, construction waste management, and indoor environmental quality.

Because the strategies for creating quality integrated workplaces and sustainable design are highly complementary, the discussion of these two topics is combined. In many very specific ways, the new San Francisco Federal Building is an exemplar in both arenas.



Offices Filled with Daylight

The new San Francisco Federal Building will be filled with daylight. This is especially the case in the 18-story office tower. The floor slab is only 65 feet wide, and exterior walls have floor-to-ceiling glazing. The floor-to-floor height is 13 feet so light will penetrate deep into the space. Reversing the traditional hierarchy, the perimeter of each floor is reserved for open offices with 52-inch high partitions to minimize the amount of light that is blocked. Meeting rooms and enclosed offices (when these are necessary) will be located in the middle “spine” of the floor and, maintaining the commitment to natural light, will have translucent and clear glass panels with blinds to provide privacy when needed.

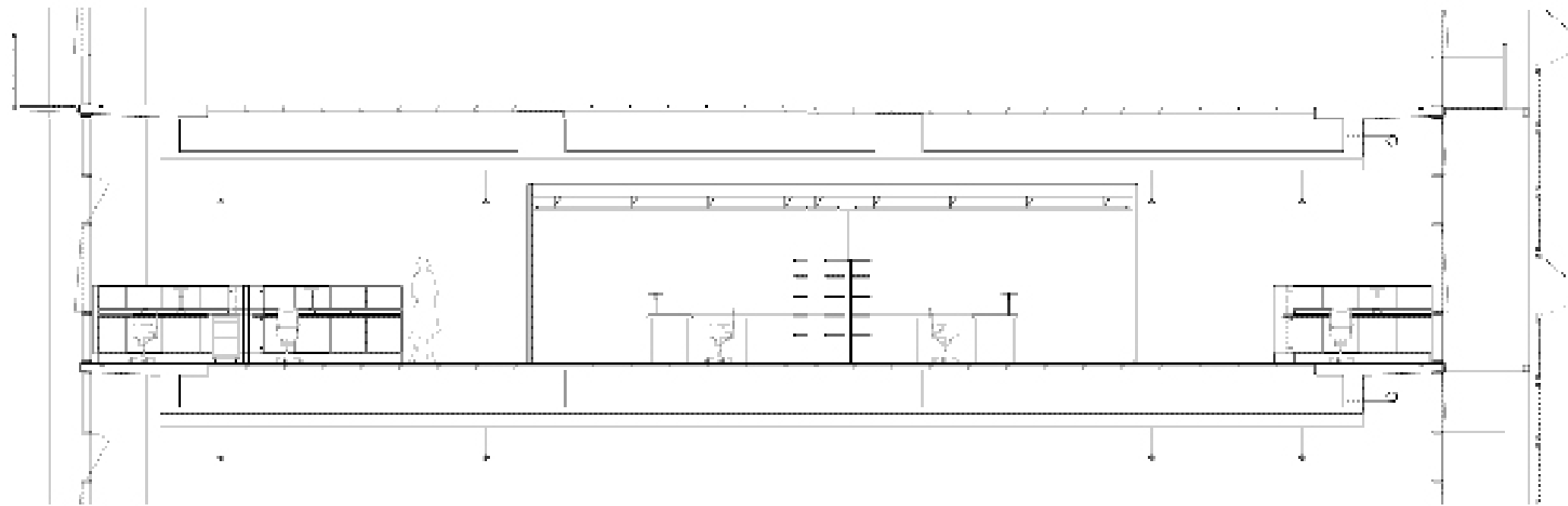
The lighting in individual offices will be comfortable and foster productivity, helping to establish environments that lift the spirit and support effective work. The majority of spaces—80 percent—will be illuminated with natural light, and all will have task lighting that can be

adjusted to suit different activities. Views to the outside will be the norm, and on the southeast façade of the tower, which is layered with a sun screen, perforated metal panels will rotate both to deflect light and to reveal unobstructed views across the city.

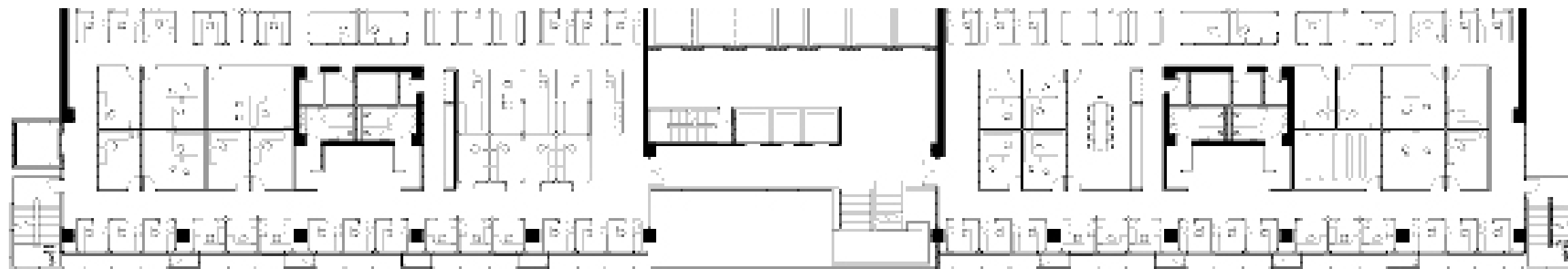
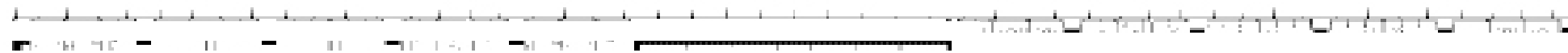
Since lighting is the largest single energy factor for an office in San Francisco, representing up to 40 percent of a facility’s total energy load, the new Federal Building’s lighting strategies not only improve the workplace but are also a critical facet of this project’s sustainable design. Considerable savings accrue when daylight is substituted for artificial illumination.

In this structure, artificial ambient lighting—the general illumination in an office—will be bounced off the ceiling to extend its reach with minimum glare and intensity. Sensors will turn off lights when interior daylight reaches a certain level or when rooms and spaces are unoccupied, and task lights will only be





Workspace Cross Section



Workspace Plan

Fresh Air and Natural Ventilation

In San Francisco, average daily temperatures range between 49 and 65 degrees during the year. For many months, the prevailing winds—which come from the northwest—provide a pleasant breeze and offer the potential to be exploited for cooling. The new San Francisco Federal Building takes advantage of these opportunities.

In the tower, above the fifth floor, people will be able to open their windows. Horizontal awnings on the northwest and southeast façades will slide out up to four inches so employees can let in fresh air. They can enjoy having some control over their work environment and have yet another link (in addition to natural light and views) with the world beyond the building's glass walls. In terms of health and air quality, opening the windows will help clean out chemicals and bacteria that build up in enclosed spaces.

The manually controlled windows are also part of a larger energy conservation strategy that will cool 70 percent of the work area without mechanical air conditioning and reduce annual operating costs for cooling by 86 percent. In this design, the long walls of the tower are conceived of as a "living skin" that will breathe to cool the interior with prevailing winds and air currents. More specifically, a sophisticated building management system will monitor interior temperatures and air changes, information it will use to open and close floor-level vents to maintain a comfortable and healthy work space. Breezes will be admitted through openings on the northwest façade and be vented through the southeast wall. Open offices will be designed so that they do not impede the airflow, and enclosed offices and meeting rooms (in the center of each level) will have ceilings that stop below the next higher floor so that air can move between the ceiling and the floor. The system will operate even at night when breezes will

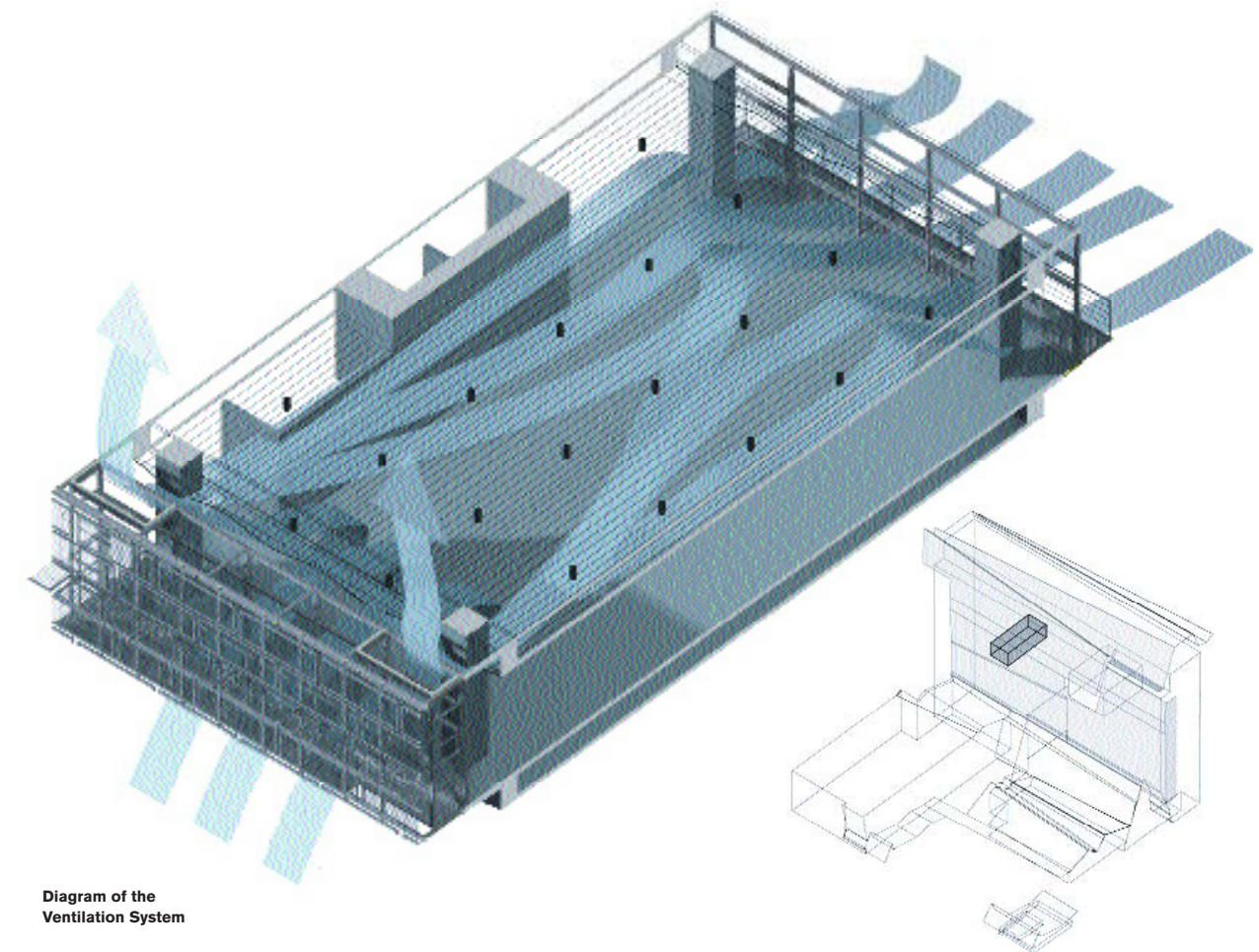


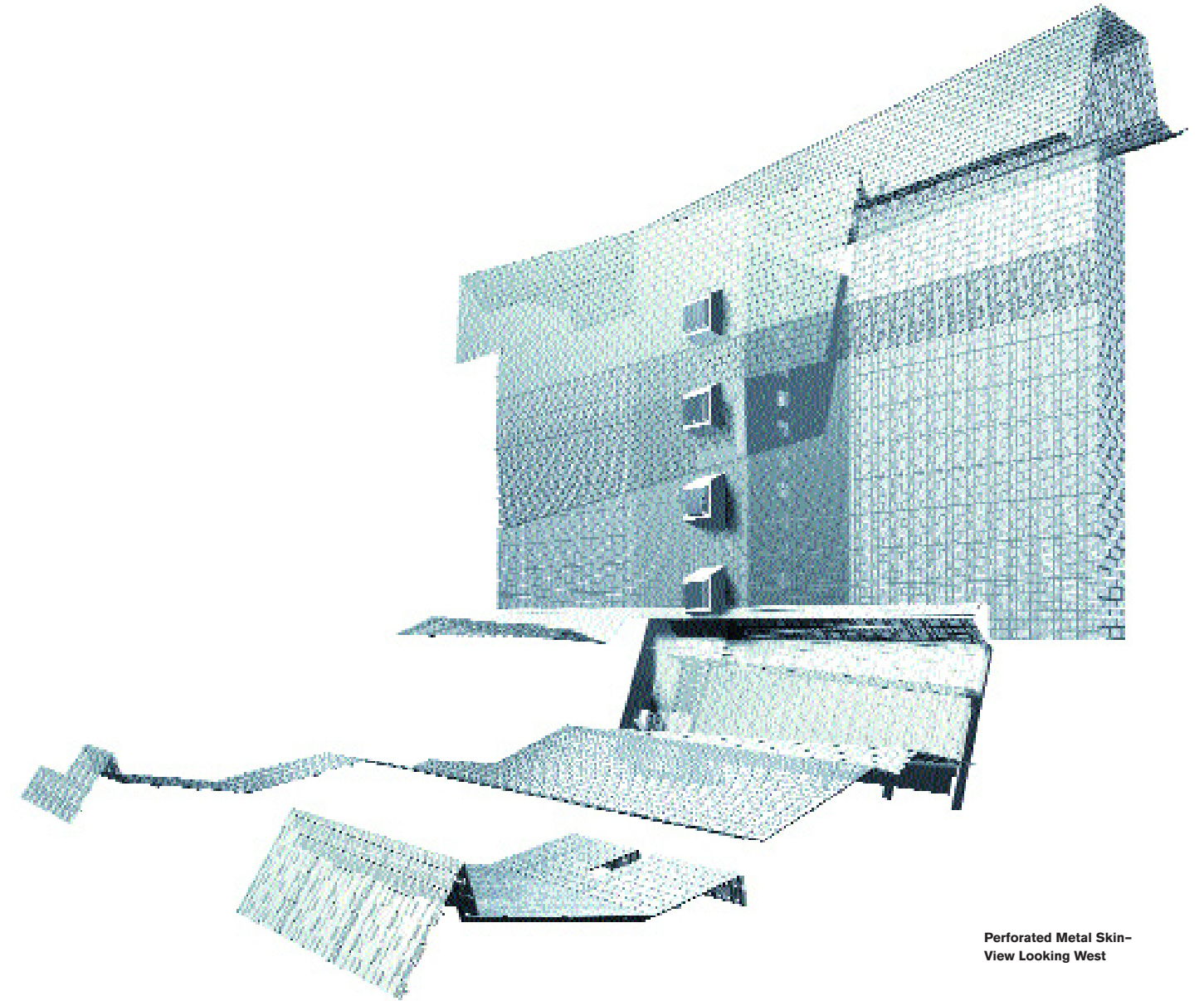
Diagram of the Ventilation System

and up the “stack” of space between the glass and the metal scrim. The narrow tower façades—to the northeast and southwest—are the locations for fire stairs and will have solid walls behind those elements to minimize heat gain and avoid the impact of extreme sun angles. On the lower levels of the tower, along the spines of the tower floors, and in the annex, temperature control and ventilation will be handled mechanically. Here, innovative under-floor air distribution will greatly enhance the efficiency of traditional heat pump units.

Natural ventilation will cool most of the building from mid-April through mid-October. In November and March, interiors should be pleasant with the windows closed and no active heating. In December, January, and February, a radiant floor slab system will provide whatever heat is needed. It is estimated that this scheme will save a minimum of \$500,000 annually in fuel costs. It also allows funds that would otherwise be spent on mechanical equipment to be reallocated to the development of

The exterior envelope of the new building is a sophisticated, metabolic skin, developed in direct response to light and climate conditions. In lieu of a conventional mechanical plant, the building actually “wears” the air conditioning like a jacket.

Thom Mayne
Architect, Morphosis

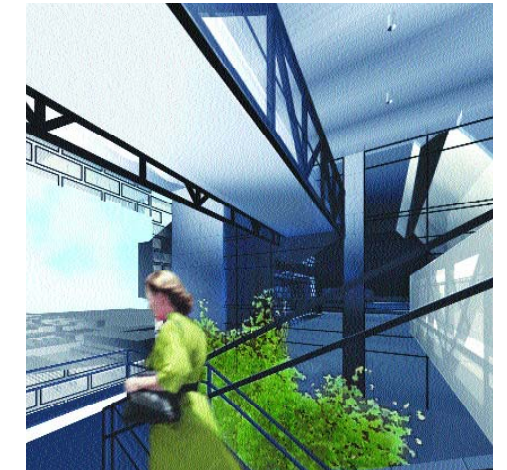


Perforated Metal Skin—
View Looking West



**Transparent, naturally lit, airy,
the skygarden is a space that opens to
the San Francisco skyline and promotes
collaboration and social interaction within
the building.**

Thom Mayne
Architect, Morphosis



Flexible Interiors, Interaction, and a Skygarden

With views of the plaza and San Francisco skyline, sun-filled interiors, and the ability to open windows and adjust task lighting,

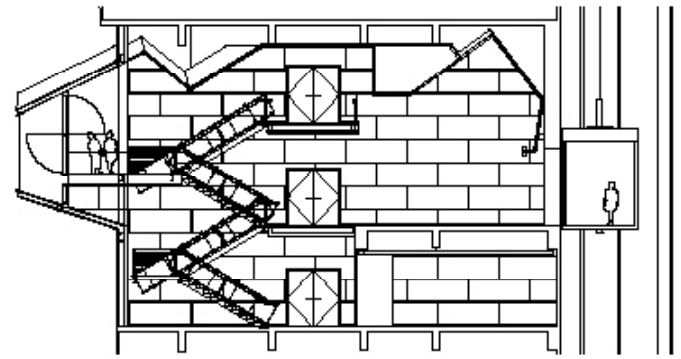
this Federal office building will be a highly desirable workplace, one that can be adapted and personalized in several ways. As teams and tenants change, a raised floor and an easily reconfigurable furniture system will make this a responsive, flexible office environment where stations can be arranged as a series of single units or in gridded clusters. The center “spine” of each floor can be treated as open offices or as enclosed rooms. Each floor is modular in nature—subdivided by circulation and support areas. As a result, the space requirements of agencies and the divisions within them can be accommodated with great efficiency.

The design of new San Francisco Federal Building also promotes teamwork and collaboration. Starting on level three, the primary tower elevators will only stop at every third floor. At each of those points, there will be a striking multi-story

lo
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to

and circulation areas will bring people together and provide opportunities to catch up on news and share ideas. Formal gatherings and scheduled meetings will take place in conference rooms located on the lowest level of each three-floor grouping. When combined with the open offices, it is evident that this structure has been laid out to stimulate dialogue and the exchange of information.

The skygarden is yet another, quite dramatic dimension of this principle. It is envisioned as an aerial retreat, a three-story exterior green space that fills the entire width of the tower starting on the 11th floor. It will be landscaped and have a variety of seating. It will be a place with beautiful vistas and quiet corners, inviting workers to come for inspiration or for a thoughtful conversation. On the 12th and 13th floors, passersby will be able to look across the city and down on the garden from bridges.



Cross Section—
Skip Stop Lobby

- 18 17
- 15 14
- 12 11
- 9 8
- 6 5
- 3 4





**MAKING IT HAPPEN—THE DESIGN,
RESEARCH, AND CONSTRUCTION TEAM**

The success of a structure as innovative as the new San Francisco Federal Building requires an integrated design approach with contributions from many experts and professionals. The general concepts, urban design strategies, and architectural direction of the project are being developed by Thom Mayne, designer and principal of the award-winning and internationally respected Morphosis architectural firm based in Santa Monica, California. Complementing this effort, the Smith Group, from San Francisco is responsible for the details of tenant design and space planning.

Research and design supporting the sustainability and energy goals is being provided by three principle groups. The Los Angeles office of Ove Arup is taking the lead integrating structural and mechanical engineering. Lighting is being handled by a design team from the Culver City, California, firm Horton Lees Brogden, a group that has made significant contributions to understanding

the daylighting characteristics of this office environment. And the Building Technologies Department of the Lawrence Berkeley National Laboratory has been modeling air flows to ensure the accuracy of predictions related to natural ventilation.

Because the building incorporates some distinctive design features, GSA is using what it calls a “design-assist” strategy for the construction contract. As design development nears completion during Spring 2002, construction bids will be solicited. GSA will interview at least five respondents, after which one contractor will be selected to help prepare the construction documents. This team approach will help ensure quality construction at a price within the project budget.

**FACTS ABOUT THE NEW SAN FRANCISCO
FEDERAL BUILDING**

Size

575,000 Gross Square Feet
430,000 Net Usable Square Feet

Program Elements

Offices
Department of Health and Human
Services
Social Security Administration
Department of State
Department of Labor
Department of Agriculture

Facilities Shared with the Public
Cafeteria
Health and Fitness Center
Child Care Center
Conference and Auditorium Facilities

Budget

\$144 Million

Project Schedule

Design Award August 2000
Anticipated Completion
of Design Spring 2002
Anticipated Initiation
of Construction Summer 2002
Anticipated Completion
of Construction Fall 2005

Design Team

Lead Design Architect
Morphosis
Santa Monica, CA

Executive Architect
Smith Group Inc.
San Francisco, CA

Structural, Mechanical & Electrical
Engineers
Ove Arup
Los Angeles, CA

Civil Engineer
Brian Kangas Foulk
Redwood City, CA

Landscape Architect
Richard Haag Associates
Seattle, WA

Geotechnical Consultant
Geomatrix
Oakland, CA

Lighting Design
Horton Lees Brogden Lighting Design
Culver City, CA

Signage

Kate Keating Associates
San Francisco, CA

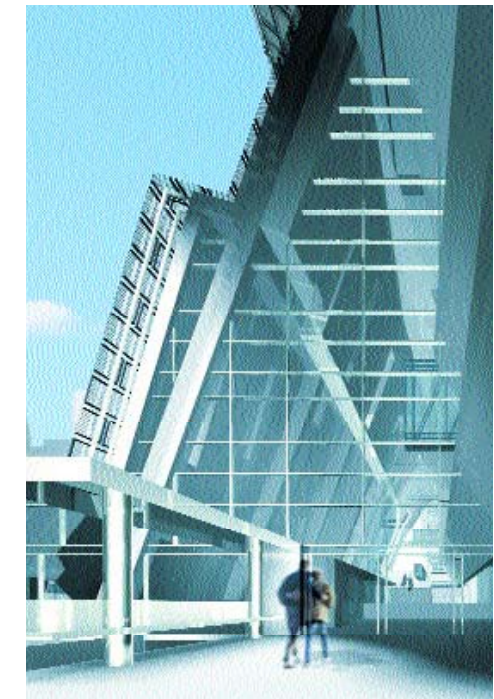
Curtain Wall
Curtain Wall Design & Consulting, Inc.
Dallas, TX

Security
Hinman Consulting Engineers
San Francisco, CA

Acoustics
Thornburn Associates
Castro Valley, CA

Vertical Transportation
HKA Elevator Consulting, Inc.
Laguna Hills, CA

Natural Ventilation Modeling
Lawrence Berkeley National Laboratory
Berkeley, CA





BIOGRAPHY: THE ARCHITECT

Thom Mayne founded the Santa Monica, California, architectural firm Morphosis in 1972. The firm has been the recipient of 29 American Institute of Architects awards, 16 Progressive Architecture awards, as well as numerous other awards. Morphosis has won many design competitions, including the new U.S. Courthouse in Eugene, Oregon; Diamond Ranch High School in California; Alpe-Adria Hypothekenbank in Austria; and the University of Toronto Graduate Student Housing in Canada. Morphosis' work has been the subject of 20 monographs including *Morphosis Buildings and Projects 1993–1997* (Rizzoli Publications) and *Morphosis* (C3 Publications). The firm's designs have been exhibited at the Walker Art Center in Minneapolis, Minnesota; the Pacific Design Center in Los Angeles; the GA Gallery in Tokyo; the Royal Academy of Arts in London; and the Mak Center for Art and Architecture in Vienna, Austria.

In 1968, Mayne helped create the

Southern California Institute of Architecture, or Sci Arc, where he continues to serve on the Board of Directors. He holds a faculty position at the UCLA School of Arts and Architecture and has taught at Columbia University, Harvard University (Elliot Noyes Chair, 1998), Yale University (Eero Saarinen Chair, 1991), the Berlage Institute in Holland, and The Bartlett School of Architecture in London. He has been honored with a Rome Prize Fellowship (1987) from the American Academy of Design in Rome and is a Member Elect (1992) of the American Academy of Arts and Letters.

Mayne received a Bachelor of Architecture degree from the University of Southern California and a Master of Architecture degree from the Graduate School of Design at Harvard University.

**U.S. GENERAL SERVICES ADMINISTRATION
AND THE DESIGN EXCELLENCE PROGRAM**

Public buildings are part of a nation's legacy. They are symbolic of what Government is about, not just places where public business is conducted.

The U.S. General Services Administration is responsible for providing work environments and all the products and services necessary to make these environments healthy and productive for Federal employees and cost-effective for the American taxpayers. As builder for the Federal civilian Government and steward of many of our nation's most valued architectural treasures that house Federal employees, GSA is committed to preserving and adding to America's architectural and artistic legacy.

GSA established the Design Excellence Program in 1994 to change the course of public architecture in the Federal Government. Under this program, administered by the Office of the Chief Architect, GSA has engaged many of the finest architects, designers, engineers, and artists working in America today to design the future landmarks of our nation.

Through collaborative partnerships, GSA is implementing the goals of the 1962 Guiding Principles for Federal Architecture:

(1) producing facilities that reflect the dignity, enterprise, vigor, and stability of the Federal Government, emphasizing designs that embody the finest contemporary architectural thought; (2) avoiding an official style; and (3) incorporating the work of living artists in public buildings. In this effort, each building is to be both an individual expression of design excellence and part of a larger body of work representing the best that America's designers and artists can leave to later generations.

To find the best, most creative talent, the Design Excellence Program has simplified the way GSA selects architects and engineers for construction and major renovation projects and opened up opportunities for emerging talent, small, small disadvantaged, and women-owned businesses. The Program recognizes and celebrates the creativity and diversity of the American people.