Safeguarding Our Civic Icon for Future Generations
Project Overview - Pasadena City Hall
Seismic Upgrade & Rehabilitation

PROJECT FACTS:

- Largest Public Works Capital Project in City’s History!
- $117.5 million total project cost
- $84M Construction Cost
- $33.5M for design, engineering, off-site leases, tenant improvements

CITY GOALS:

- Safeguard the building from Earthquake Activity
- Update Building Systems & Technology
- Restore Historic Building
City Hall History

- Designed as part of an Architectural competition for a new Civic Center
- Architects: Bennett & Brown also designed San Francisco City Hall
- Built in 1927 in the Beaux-Arts, City Beautiful Planning style. One of the last, and best examples of the Beaux-Arts style civic centers in the US
- Designed to be the Icon (Focal Point) of the City and Civic Center

- Listed in the National Register of Historic Places in 1980
- Originally Constructed for $1.3 MILLION
- Damaged by earthquakes, Sierra Madre (1991); Northridge (1994)
Earthquake Effects on City Hall Building

Modeling studied completed following 1994 Northridge Earthquake showed how the City Hall dome moved in different direction from the wings and stair towers.

Non-isolated building: Earthquake Movement with Building Affixed to Ground: Dome, Building Wings & Stair Towers move *Independently* - Greatest Potential for Structural Damage

Base Isolated Building: Structure moves "As One" horizontally.
Seismic Studies & Alternatives for Designing a Historic Building Retrofit

**Base Isolation – Expensive Alternative**
- Ties all the building elements together
- Provides **Maximum Protection** during earthquake
- Maintains Historic Building Integrity: Little physical change to building exterior

**Shear Walls – Less Expensive Alternative**
- Provides Moderate earthquake protection
- Would alter the Historic Building Fabric *(not recommended for Historic Preservation Purposes)*
Community Support & Management of a Very Complex, Expensive Project

- **Involve the Community** in the Planning Process and throughout the Project!

- Use **Community Resources and Local Experts**. Example: Caltech, Parsons

- Establish an **Oversight Committee** – the “Eyes and Ears” of the City Council, Professionals with Specialized Expertise

- **Monthly Meetings** to identify and discuss any outstanding issues/costs

- **Quarterly Updates** to City Council
CITY FUNDING SOURCES

A. Certificates of Participation: $ 66.4 million
B. City W&P Power Funds $ 23.8 million
C. City General Fund/Parking, Maintenance/Information Technology Funds $ 14.6 million
D. Grants (FEMA:PDM & HMGP) & California State Grants: $ 10.5 million
E. Project Contingency Savings & Fund Raising: $ 2.2 million

TOTALS: $117.5 million
PROJECT COMPONENTS

- SEISMIC STRENGTHENING
- NEW INTERIOR BUILDING & LIFE SAFETY SYSTEMS
- TECHNOLOGY UPGRADES
- EXTERIOR & INTERIOR BUILDING RESTORATION
- SITE WORK & LANDSCAPING
- GRANTS & FUNDRAISING
SEISMIC STRENGTHENING

BASE ISOLATION
**WHAT IS SEISMIC ISOLATION?**

Seismic isolation is the "separation" of the building from the ground, severing the rigid structure-to-ground connection with mechanical devices located between the structure and the foundation. The isolator is designed to relieve most of the destructive earthquake movement, thus protecting the building.
240 Base Isolators.

Designed Off-grid on building wings, and beneath existing steel beams under the City Hall Dome.
Stages of Base Isolator Installation
Stages of Base Isolator Installation
Stages of Base Isolator Installation

1. DEMOLITION OF BASEMENT SLAB

2. EXCAVATION OF EXISTING PYRAMID FOOTINGS
Stages of Base Isolator Installation

Building Wings

Installation of Basement Foundations and Base Isolators
Stages of Base Isolator Installation

Construction of New Basement Slab and PT Beams for Base Isolators
Stages of Base Isolator Installation
Main Dome Area
Base Isolator Moat Construction

Construction of Perimeter Moat Surrounding City Hall Building
Arcade Replacement

Demolition, Excavation and Installation of Base Isolators & Structural Steel Framing for New Arcade
East Arcade Replacement

Construction of New Arcade Structure to Match Original Design & Materials
INTERIOR BUILDING SYSTEMS

HVAC - ELECTRICAL - PLUMBING
FIRE/LIFE-SAFTETY - ADA
ELEVATORS
Interior Building Systems - HVAC

Piecemealed HVAC Systems
Prior to Building Renovation
Interior Building Systems - New HVAC Units

New Energy - Efficient HVAC System
New Electrical & Plumbing Systems

MAIN ELECTRICAL ROOM AND PANELS

PLUMBING SYSTEMS
Interior Building Systems – New Fire Life Safety System and New/Restored Elevators

**Elevators:**
- 1 Restored Historic Cab
- 2 New Elevators
- 1 Updated Cab

**Fire Life-Safety Improvements:**
New Sprinkler and Fire Alarm System; Exiting & Directional Signage
Updated Historic Building with New Accessible Features:
Ramps, Automatic Doors, Elevators, Tactile Signage, Restroom Facilities, Drinking Fountains; Visual & Auditory Alarms; & Universal Design Amenities
Interior Building Rehabilitation

New, Environmentally Sustainable Building Furnishings
Interior Rehabilitation - Historic Building Areas

The Historic Offices & Areas in the Building were Restored to their Original Condition.
EXTERIOR RESTORATION
Restoration of Dome & Stair Towers

Main Dome Restoration

Stair Tower Restoration
Restoration of Exterior Building Details

Before & After Photographs
Restoration of Exterior Building Details

Before & After Photographs
Restoration of Main Vault Area and Loggias

Restored Main Vault Area @ Garfield Entry

Restored Loggias Areas

Photo by Victor Muschetto
Exterior Site Work: Stairs and Paving

New Stairs

New Sidewalk Paving

New Stairs
Landscaping - Historic Courtyard

COURTYARD RESTORATION ELEMENTS:
• Original Oak Trees Safeguarded
• New Trees, Shrubs, Planter
• Pots, and Ground Cover
• Restored Historic Fountain
• Replaced Missing Urns
• New Planter Curbs, Benches and Trash Receptacles

Oak Trees Protected During Construction
Landscaping - Building Perimeter

Existing and New Perimeter Landscaping Surrounding City Hall
Preservation Issues Requiring Consultation with FEMA and State Preservation Office

- Collector Steel Conflict with Existing Ceiling at the Stair Towers
- HVAC could not be Accommodated in Existing Ceiling – required roof vents on Courtyard Side
- Council Chambers Ceiling - Fire Sprinklers
- Demolition of Arcade for Base Isolation
Historic Preservation - Restoration Issues
City Council Chambers Ceiling

Original Council Chambers Ceiling with Wood Framing
New Ceiling & Fire Sprinklers
New Metal Ceiling Framing
Artist Recreating Original Decorative Ceiling Stencil

RESTORED CITY COUNCIL CHAMBERS CEILING WITH ORIGINAL PENDANT LIGHTS
Technology Upgrades

Transportation Management Center

New Technology Equipment:
- Updated Building-wide Computer Technology, IDF Rooms and Cabling
- New Council Chambers Computers/Televisions & Broadcast Camera Equipment
- Transportation Management Center Improvements
“LEED® ing” by Example – Sustainable Building Features

PASADENA’S LEED PROGRAM:

- Original Plans did Not Include LEED
- Pasadena Adopted a Green City Initiative and Sustainability Ordinance
- LEED Base Certification Goal adopted by City, however the project Achieved ‘Gold’ Status.

LEED ‘GOLD’ CERTIFIED BUILDING AMENITIES:

- Energy Efficient Central Plant
- Water Efficient Fixtures & Aerators
- Low VOC Paint, Furnishings, Flooring
- 100% Green Power Purchased
- Green Cleaning Products Used
- Tree Shade and Highly Sun-Reflective Sidewalks/Ramps and Stairs
- Recycling & Waste Mgt. Program
- Reduce Car Trips, Increase in Bike Parking and Employee Showers
- Green Building Educational Display
PARTNERSHIPS
Collaborative Partnerships

PARTNERSHIPS and TRUST Established with Contractors and Community was a KEY TO THE PROJECT’S SUCCESS!

- Successful Staff, Design, Engineering & Construction Management Project Team Collaboration

- Contractor worked Successfully with Community in Local Outreach Efforts
  - 82 Local Residents Employed on Job
  - 31 Local Union Apprenticeships
  - $1 million in Local Business/Suppliers

- Subcontractors Educated in the Building’s Community importance and Historic Nature
Community Updates

Keeping the Community Informed was an Essential Component for this Successful Project!

- Local Newspapers and Trade Publications
- Pasadena In-Focus – City Bi-monthly Newsletter
- City and Contractor’s City Hall Project Websites with Monthly Photographs
- Local Television Reports/Updates
FINAL PROJECT RESULTS
Final Project Results

Pasadena City Hall – Main Dome

فيلم The Pride of Pasadena

A BEAUTIFULLY RESTORED CIVIC ICON, THE PRIDE OF PASADENA
Final Project Results

A CAPITAL PROJECT COMPLETED WITHIN ALLOTTED BUDGET!
Final Project Results

A SEISMICALLY SAFE BUILDING FOR CURRENT AND FUTURE GENERATIONS TO USE AND ENJOY!
Final Project Results

Photos Courtesy of Pasadena Police Department

- PROJECT COMPLETED 2.5 MONTHS AHEAD OF SCHEDULE!
Pasadena’s Civic Icon
Safeguarded for Future Generations