



# P A R A D I G M

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## M E C H A N I C A L C O R P .

### NINE HVAC UNIT REPLACEMENTS

CASA DE BALBOA, SAN DIEGO, CA CONTRACT NUMBER: K-12-5196-DBB-3-B



#### VALUE DELIVERED

Paradigm replaced 9 old box car units, a boiler system and various miscellaneous air conditioning units with new Mc Quay state of the art energy efficient units. The new units incorporated humidity control and included an updated building management control system. New gas and electrical metering systems allow the owner to track each tenant's usage and associated costs and bill these utilities back to the tenant. This project required an effective management and coordination of performance of multiple disciplines in an existing and operational facility without disrupting the daily operations. Paradigm's Quality Control & Safety programs were also effective tools in keeping to the owner's & project's commitments, while maintaining safe work conditions for both occupants and workers. Pedestrian walkways and traffic controls insured that the public access to the park was maintained at all times.

#### OBJECTIVES

- Replace the HVAC units with energy efficient hot and chilled water pumps;
- Provide humidity and temperature control critical to preserving priceless artifacts;
- Perform all work in an existing City-Owned building within required dimensions so as not to be visible above the parapet;
- Maintain historical integrity of facility;
- To support critical current and future business needs by increasing energy capacity and efficiency, and upgrading electrical service;
- To perform all work during regular business hours with minimal to no disruption of normal business operations

#### SOLUTIONS

- Install a temporary cooling set up for portions of the Museum building
- Perform demolition and removal of existing equipment, piping, ductwork, controls, and electrical systems

### HISTORICAL FACILITIES

#### MUSEUM

**General Contractor**  
Paradigm Mechanical Corp.

**Architect**  
Teza Design

**Type**  
Design-Build

**Start Date**  
July 18, 2012

**Year Completed**  
February 28, 2013

**Dollar Value**  
\$965,302.42

**Customer Point of Contact**  
City of San Diego, Purchasing/Contracting  
600 B St., Ste 800  
San Diego, CA 92101

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**Evaluation Rating Received**  
**OUTSTANDING**

- Design Build
- Occupied Facility
- Mechanical Systems
- Electrical Systems
- Plumbing Systems
- Pipefitting/Welding
- Medical Gas
- Test and Balance
- General Construction
- Structural Work
- Roofing
- Demolition
- OSHPD or Special Inspections



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### Continued

- Design and construct structural modifications & replacement of steel supports to accommodate larger equipment
- Installation of nine (9) new Intellipac package rooftop HVAC units
- Installation of three (3) inline steam humidifiers
- Rebuild and replace into full operation twenty-three rooftop Exhaust Fans
- Steel piping & supports for new/modified natural gas piping with separate meters for each unit
- Upgrade existing line voltage electrical service to roof with new feeder conduits, distribution panels, and power supply to each rooftop unit
- Provide electrical sub-metering integrated into Building Management System via Direct Digital Controls
- Low voltage control upgrades & programming to incorporate all new equipment added into existing Building Automation system
- Sheet metal ducting modification and replacement work
- Roofing repairs & patching
- Provided large crane service for rooftop equipment removal/ installation work from multiple pick points via several mobilizations
- Start-up and check-out of new & existing rooftop HVAC equipment
- Certified air balancing
- Removal of temporary equipment at completion of new work

### PROJECT SCOPE

The building required the replacement of nine large rooftop package HVAC units (ranging from 10 to 25,000 CFM) for a high profile 2-story Museum Building in the Historical Balboa Park for the City of San Diego. In order to complete this retrofit work, other building conditions & services were also improved including Building Automation Systems, line voltage electrical, natural gas supply, and structural.

### SUSTAINABLE FEATURES

Paradigm provided comfort, energy efficiency (with an eye on operating cost), life cycle cost, indoor air quality and sound for the occupants. Several strategies were incorporated into the overall “Green” building movement as an integral part of creating synergy between environment, community and economy.

### Sustainable features included:

- Redirecting reusable materials to appropriate sites;
- Incorporating recycled content materials into construction process;
- Establishing a minimum indoor air quality performance for comfort and well-being of occupants;
- Utilizing low or no emitting VOC materials;
- Providing optimal thermal comfort for occupants; and
- Including controllability of systems.

### PROJECT DELIVERY WITH “NO LOOSE ENDS”

Paradigm delivered a finished product by increasing productivity and efficiency when needed to help meet the required goals. We provided

- A Well defined scope
- Extensive early planning
- Good leadership, management and first line supervision
- Positive client relationship with client involvement
- Proper project team chemistry
- Quick response to changes
- Engineering managers concerned with the total project, not just the engineering elements

In managing the project, Paradigm made sure that all details were completed effectively and efficiently. We were actively involved from development & design of plans which required approval by the City of San Diego Planning department through construction completion.

### ABOUT PARADIGM MECHANICAL CORP.

Paradigm Mechanical Corp. is a Woman-Owned Small Business located in San Diego County. Our principals have over 75 years of combined industry experience. We specialize in working with project teams to design and build for government, commercial and industrial facilities in the Southern California region.

Paradigm by definition means “A clear example or model on which all others are based”. At Paradigm, we work hard to ensure we live up to our name and perform accordingly.



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