



# 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 .

### USD VARIOUS BUILDING BOILER UPGRADES

UNIVERSITY SAN DIEGO, SAN DIEGO, CA CONTRACT NUMBER: 17125.17126.17269



#### VALUE DELIVERED

This project involved the removal of existing Heating Hot Water & Domestic Hot Water systems on three different buildings from a campus wide central plant system, which was outdated and could no longer provide the needed heated water as required. Since all three buildings were to be completed simultaneously during the summer break, scheduling & coordination of all work was very detailed and efficient. Techniques that were used included accelerated submittal process, expedited shipping, and offsite prefabrication. With careful review of the existing conditions and the various university's student services provided throughout each building, we were able to develop a practical solutions with very minimal impact to the daily operations of the faculties & students while still achieving the intent of the project and not sacrificing quality of work. We were actively involved from development & design of plans through equipment start up and commissioning. 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.

#### OBJECTIVES

- Installed three heating hot water plants and one domestic hot water plants simultaneously at three different locations throughout the campus.
- Integrate new high efficiency boilers into existing HVAC Energy Management System
- Complete all work during summer break without disruption to students or buildings still in service. CPM scheduling.
- To support critical current and future business needs by increasing energy capacity and efficiency, and upgrading electrical service;

#### SOLUTIONS

- Expedited processing of permitted plans which were approved by the City of San Diego Planning/Inspection Department.
- Advanced scheduling of inspections to avoid stoppage of work.
- Disconnect and removal three buildings from underground hot water loop.

### SCHOOLS & UNIVERSITIES

#### HHW BOILER UPGRADES

**General Contractor**  
Paradigm Mechanical Corp.

**Engineer**  
SC Engineers, Inc.  
17075 Via Del Campo  
San Diego, CA 92127

**Type**  
Plan & Specification

**Start Date**  
July 2013

**Year Completed**  
September 2013

**Dollar Value**  
\$890,000.00

**Customer Point of Contact**  
University San Diego  
5998 Alcala Park  
San Diego, CA 92110

Conley Robinson  
T. 619.260-4568  
F. 619.260-4634  
[robinsonc@sandiego.edu](mailto:robinsonc@sandiego.edu)

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

- Accelerated Schedule
- Occupied Facility
- Mechanical Systems
- Heating Hot Water Boilers
- Pipefitting/Welding
- Test and Balance
- Structural Work
- Demolition
- Special Inspections



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6550 Federal Blvd. | Lemon Grove, CA 91945  
T. (619) 456-4562 F. (619) 456-4754  
[www.pmccontracting.com](http://www.pmccontracting.com)  
CAGE: 62HY1 DUNS: 9621591732 LIC: #947497

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### Continued

- Set up and installation of temporary Domestic Hot Water Boiler services during construction.
- Modification and installation of line voltage electrical services to new equipment.
- Trenching and backfill work for new underground CHW, HHW, and natural gas piping lines
- Paving & asphalt repairs to street and sidewalk areas
- Landscaping repairs & irrigation piping modifications to allow for new underground piping lines to buildings
- Modifying and adding to existing building roof of new structural equipment platform and supports
- Installation of five (5) high efficiency HHW Boilers with pumps, air separators, expansion tanks, and related equipment
- Installation of two (2) high efficiency DHW Boilers with pumps and related equipment.
- Welded steel & brazed copper piping for new water lines at each of the three buildings.
- Framing & drywall repairs to conceal new piping & conduits installed into rooms & stairwells.
- Modification & programming of new HVAC controls to operate & network all new boiler equipment into existing campus control system for operation & monitoring from central plant.
- Roofing repairs to seal new penetrations and equipment pads.
- Fiberglass insulation with metal jacketing for all new piping and accessories.
- Start-up and check-out of new CHW plan system for proper operation.
- Water balance to confirm proper heating & cooling loads and flows through each building on each completed system.
- Removal of temporary equipment at completion of new work

### PROJECT SCOPE

Work included the installation of six new high efficiency boiler systems in various locations which included pumps and piping, that were integrated into the university's existing HVAC energy management systems. This project also included upgrading the Chilled Water (CHW) service to one of the existing buildings from the recently installed new underground central plant campus loop system. In managing the project, Paradigm made sure that all details were completed effectively and efficiently.

### SUSTAINABLE FEATURES

Paradigm provided comfort, energy efficiency (with a focus 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. LEED certifiable project.

Sustainable features included:

- Redirecting reusable materials to appropriate sites;
- Incorporating recycled content materials into construction process;
- 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

### ABOUT PARADIGM MECHANICAL CORP.

Paradigm Mechanical Corp. is a Woman-Owned Small Business located in San Diego County. Our principals have over 100 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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