

Los Angeles Unified School District - Robert F. Kennedy Community Schools




















COMMISSIONING PROCESS DEFINITION

Commissioning Process: A quality-focused process for enhancing the delivery of a project. The process focuses upon verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner's Project Requirements.

ASHRAE Guideline 0-2005: 4. Definitions

KEY SYSTEMS AND FEATURES

-  Chiller Plant Providing 1,220 Tons of Cooling
-  Boiler Plant Providing 12,000 MBH of Heating
-  Cooling Towers with Variable Speed Fans
-  Variable Speed Primary and Secondary Pumping
-  Emergency Back-up Chilled Water System
-  Large Capacity Custom Air Handling Units
-  Variable Flow Displacement Ventilation System
-  Auditorium Under Floor Air Distribution System
-  Science Labs Fume Hood Exhaust Systems
-  Kitchen Ventilation Systems
-  24/7 Cooling Split AC Systems
-  DDC Building Energy Management System
-  Lighting and Daylighting Control Systems
-  Emergency Generators
-  Photovoltaic System
-  Irrigation and Water Features Control Systems
-  Methane Mitigation Systems

PROJECT HIGHLIGHTS

The Robert F. Kennedy Community Schools is a comprehensive K-12 learning center constructed at the site of the historic Ambassador Hotel and Coconut Grove Night Club in the Mid-Wilshire District of Los Angeles.






The project provides new seats for 4,240 students and features more than 170 Classrooms and Science Labs along with Administrative Offices, Multipurpose Rooms, Auditoriums, 20,000 sf Library, Kitchens and Cafeteria, two competition size Gymnasiums, outdoor Swimming Pool, and athletic facilities.

The project also includes construction of a public park, restoration of the Coconut Grove and pylon structures, 320-space parking structure, and site-wide methane mitigation system.

Ultimate improvement of the Coconut Grove includes a 500-seat auditorium, and the restored Paul R. Williams Coffee Shop to be used as the staff/teacher lounge.

Designed to reflect the latest green building methods and materials, the project utilized double- and triple-glazed windows to reduce heat load and traffic noise; reflective white roofing; drought-tolerant landscaping; low VOC emissive interior materials; water-saving plumbing fixtures; renewable materials such as linoleum, rubber and cork flooring; and photovoltaic panels in the park.

Commissioning was planned and budgeted during the design phase, and requirements were included in bid documents.

-  Project Completion Date: August 2010
-  Construction Duration: 36 months
-  Buildings Square Footage: 483,000
-  Construction Cost: \$578,000,000
-  CHPS Score: 36 points

PROJECT COMMISSIONING HIGHLIGHTS

Commissioning process began with Commissioning review of the construction documents. The review identified a number of potential constructability and operational issues. Considering the complexity of the building systems and controls, the commissioning agent initiated collaboration between the design and construction teams. As a result, the construction documents were revised and numerous clarifications provided by the design team. Early start allowed significant savings in avoided first costs due to reduced number of RFI's and change orders.

In the early construction phase, the commissioning agent has performed a detailed review of the contractor's submittals and shop drawings. The reviews and Cx Agent's input proved to be beneficial for the project team; few important findings were addressed in a timely manner and resolved before the project could have been negatively impacted.





Commissioning meetings were regularly held on-site by the Cx Agent and helped facilitate continuous communication between the members of the commissioning team. Field Observations Reports, regularly produced by the Commissioning Agent, have identified a number of installation deficiencies which were tracked and resolved. Proper communications and timely resolution of the installation deficiencies benefited the entire construction process and provided savings in avoided first costs.

Due to the complexity of the controls and sequences of operations, the success of the Functional Performance Testing (FPT) was the key to project's success. Detailed FPT procedures were developed by the CxA early in the project and discussed with Controls Contractor. As a result, FPT process was smooth and delivered fully functional systems without delays so that the schools were opened just in time for the new school year.

The operation of the major systems was optimized per recommendations made by the Commissioning Agent.



SYSTEMS OPTIMIZATION ENERGY SAVINGS

-  Condenser water pumps flow control optimization allowed to reduce total pumps head by 3 psi - **Estimated Annual Savings 10,700 kW**
-  Primary chilled water pumps flow control optimization allowed to reduce total pumps head by 4 psi - **Estimated Annual Savings 7,400 kW**
-  Secondary chilled water pumps flow control optimization allowed to reduce total pumps head by 3 psi - **Estimated Annual Savings 6,100 kW**
-  Optimization of air handlers OA and face-and-bypass dampers control, and duct static pressure control allowed to reduce supply fans total static by 0.4" wc - **Estimated Annual Savings 128,300 kW**

PROJECT PARTNERS

- Owner:** Los Angeles Unified School District
- Architect:** Gonzalez Goodale Architects, Pasadena
- General Contractor:** Hensel Phelps Construction, Irvine
- Commissioning Agent:** Yardley-Zaretsky, Santa Ana

