8. Fire Alarm

Overview
Site visits to review the fire alarm system were performed from February 9 through February 11, 2009 on typical floors 10, 15, 21; restricted floors 2, 3, 5, 17, 19; floor 1, and the parking garage. The engineering team visually assessed these floors for fire alarm requirements per the 2007 California Building Code (CBC), the 2007 California Fire Code (CFC), the 2007 California Electrical Code (CEC), and the City of Sacramento code for high rise buildings.

As-built record drawings for the fire alarm system were reviewed and evaluated for general code compliance and used to facilitate the review of the building. These drawings included building core drawings prepared by Koch, Chun, Knobloch & Associates, Inc. and dated November 5, 1990, tenant improvements drawings prepared by E.M. Kado Associates dated June 22, 1992, and as-built drawings produced by Cupertino Electric Incorporated dated March 16, 1993.

A. Fire Alarm System Review

1. The fire alarm system appears to comply with the building codes in effect at the time of construction. The following items were observed to not be in compliance with the 2007 codes indicated above:
    a. The existing fire command center appears to be approximately 72 square feet. The fire command center shall be a minimum of 96 square feet in accordance with 2007 CFC 509.1 and 100 square feet in accordance with 15.100.310 of the City of Sacramento code.
    b. Fire department communication system connection devices were not provided at the generator room, the fire pump room, and in the mechanical equipment rooms. Connection devices for the fire department communication system need to be provided for the emergency power room and the fire pump room in accordance with 2007 CFC 907.2.12.3. The City of Sacramento code for high rise buildings, 15.100.210.C.2, also requires connection devices in the mechanical equipment rooms.
    c. The building is served by only one fire pump. The City of Sacramento code, 15.100.740, requires two primary fire pumps, one electric and one diesel.
    d. The extinguishing agent for the Halon system is no longer allowed and should be upgraded.
    e. The spacing of the speaker/strobes in the open office areas appears to be close to the maximum limits of the system.
2. The fire alarm system control and communication equipment utilize nearly 20-year-old technology and processing equipment. The existing equipment has come to the end of its useful life. Simplex representatives have indicated that maintenance support is currently available but parts may not be available. The replacement of a major component may be possible with its current counterpart

but the compatibility of the new equipment to the old may result in replacement of entire panels and not just components.

B. Fire Alarm System Description

The fire alarm system consists of an addressable monitoring and control system with associated communication panels as manufactured by Simplex, see Photos Nos. 1 and 2. The system utilized the latest electronic technology available at the time of the construction of the facility. The main system control is located in the Fire Command Center room located on the first floor. The system is connected to each of the floors through a communication device transponder. The main system and the communication transponder have a 10-20 year useful life. Addressable smoke detectors, speaker/strobes, and smoke detectors are monitored and controlled through the communication device transponders. The manual pull stations and fireman's telephone jacks at the stairwells and elevator lobbies, and the fire sprinkler tamper switches and flow switches at each floor are monitored by the communication device transponder located in the main electrical room located on the first floor. Local Halon fire suppression systems were provided in the Printer Room on the first floor of the parking garage and in the fifth floor computer room.

Fire Alarm Photographs

Photo No. 1 – Fire Command Center Room: Fire Alarm Simplex 2120 CPU

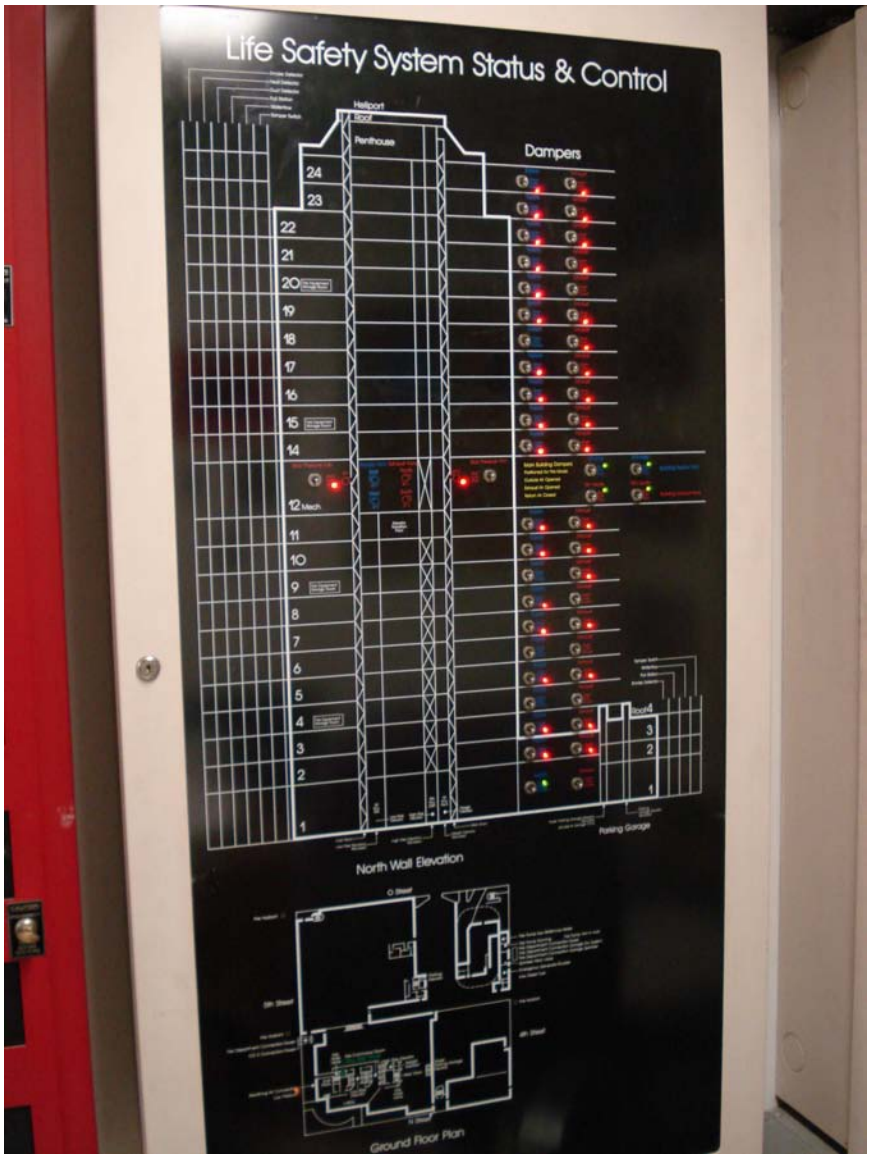

Photo No. 2 – Fire Command Center Room: Fire Alarm Monitoring Panel

Photo No. 3 – Fire Command Center Room: Fire Alarm Voice Command Center