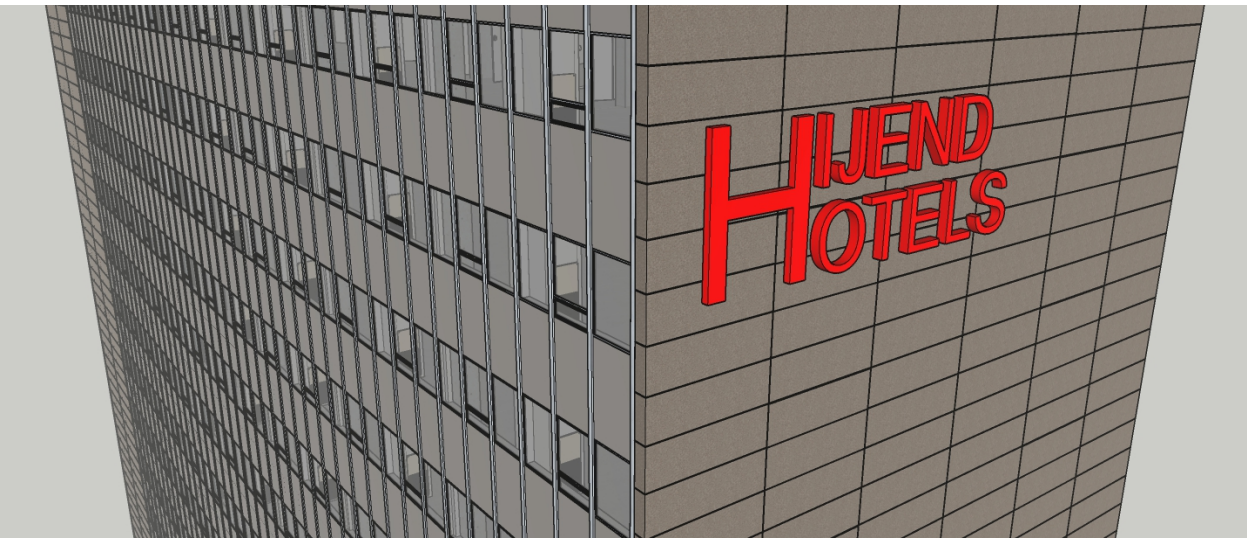

The Bayview Marquis Hotel and Marina

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Setting the Scene

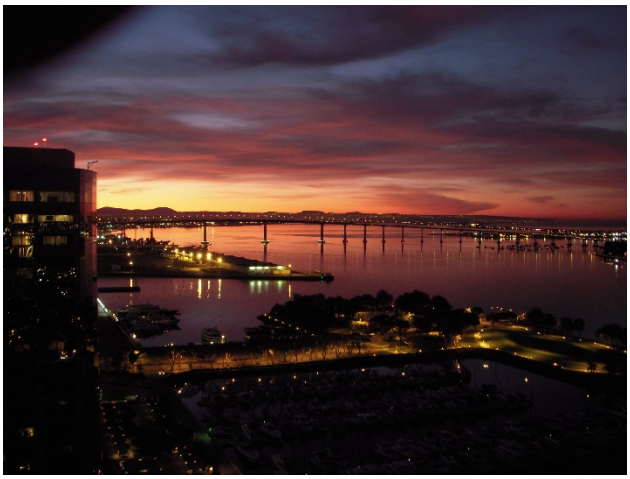

Figure 1 - Sunrise from the Balcony of one of the Marquis' nicer rooms

The Bayview Marquis Hotel and Marina is a full-service hotel owned and operated by two different divisions of Hijend Hospitality International, a major player in the hospitality industry. The company was started by Sven Hijend in the late 1920's and is now run by his son Sven Jr. The Bayview facility was designed by the renowned architectural firm of Morgan, Wright, Jungermann and Kelly and is a favorite of both the Senior and Junior Hijend.

Known for its spectacular views of San Diego Bay, the facility served its first guests in early January of 2006 and has become a flagship for the company. Eighty percent occupancy is a slow day for them, and their average occupancy for the past two years has been 84%.

Building Metrics

The hotel is a nominal 356,000 square foot, 25 story/312 foot tall, full service hotel with a reinforce concrete structure enclosed by a curtain wall system.

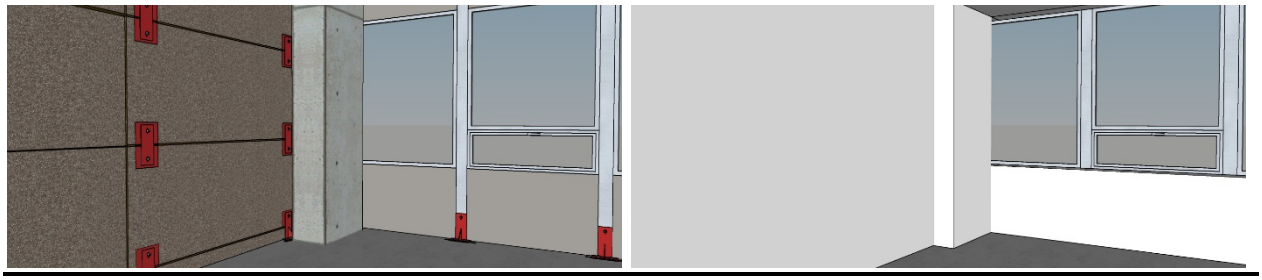

Figure 2 – Curtain Wall Details (left – exposed, right with typical guest room finishes in place)

The 43,140 square foot first floor includes:

- Lobby and registration
- Administration offices
- Main restaurant
- Coffee shop
- Gift shop
- Laundry
- Employee break room
- Facilities engineering office
- Central plant
- Air handling system mechanical spaces (three total)

The 31,575 square foot second floor includes:

- Main ball room
- Junior ball room
- Meeting rooms
- Kitchen

Floors 3 through 25 accommodate the 566 guest room. Each guest room floor is 13,920 square feet.

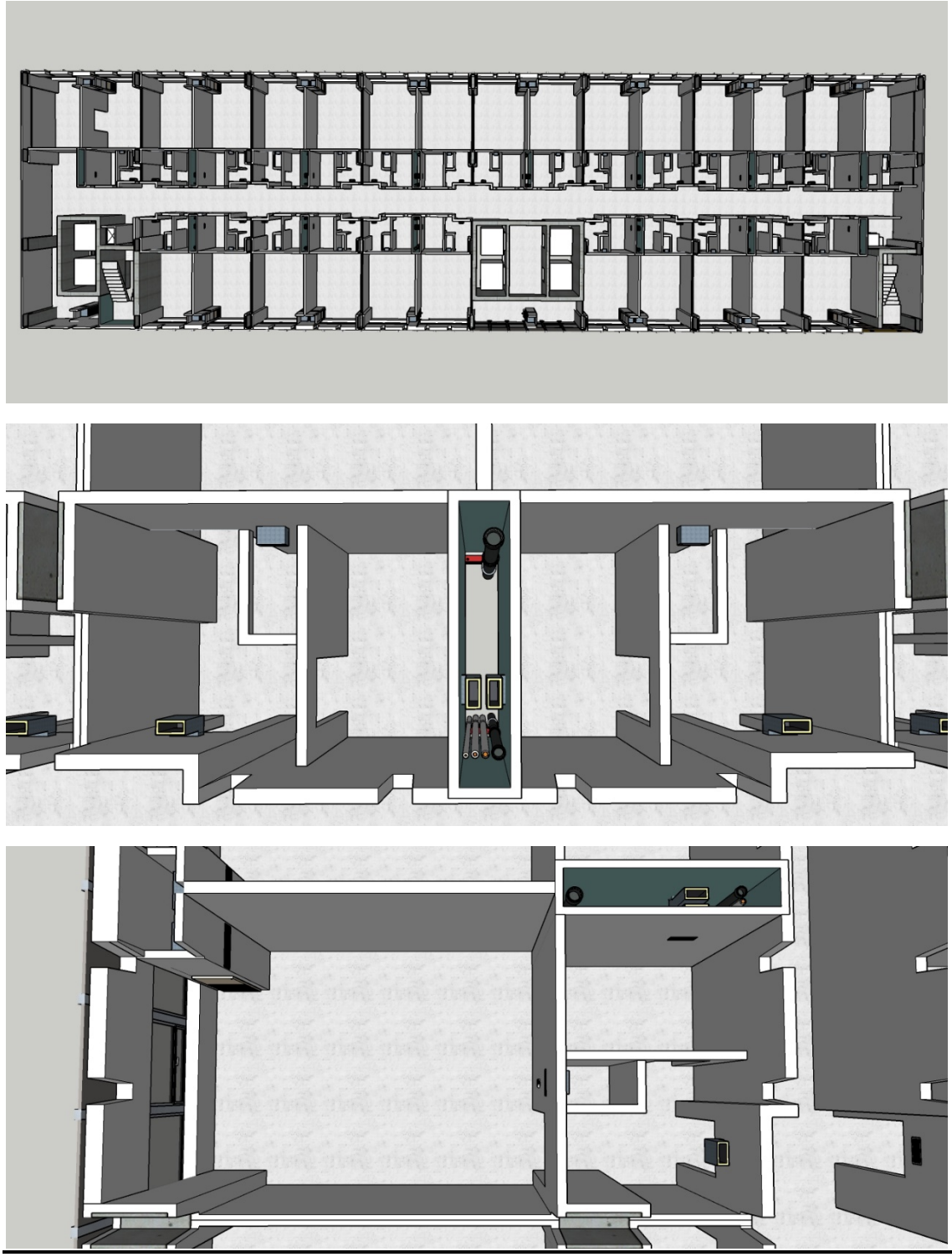

Figure 3 - Typical Guest Room Floor Plan and Details

A shaft between guest rooms accommodates chilled water, condensate, hot water and plumbing (domestic cold water, domestic hot water, domestic hot water return, sanitary, and storm) risers and serves as a bathroom exhaust shaft.

Roof level mechanical rooms house the corridor make up air systems and the elevator machine rooms. There are three banks of elevators, two of which are for guests and one of which is for guest services.

Air cooled ice machines are provided on each guest room floor and through out the 1st and 2nd floor as needed to support guest services. Food coolers and freezers are air cooled, rejecting their heat to the space in which they are located.

Building Systems

Central Plant

The building is served by a central heating and cooling plant which generates hot and chilled water that is then distributed to the various mechanical spaces and guestrooms.

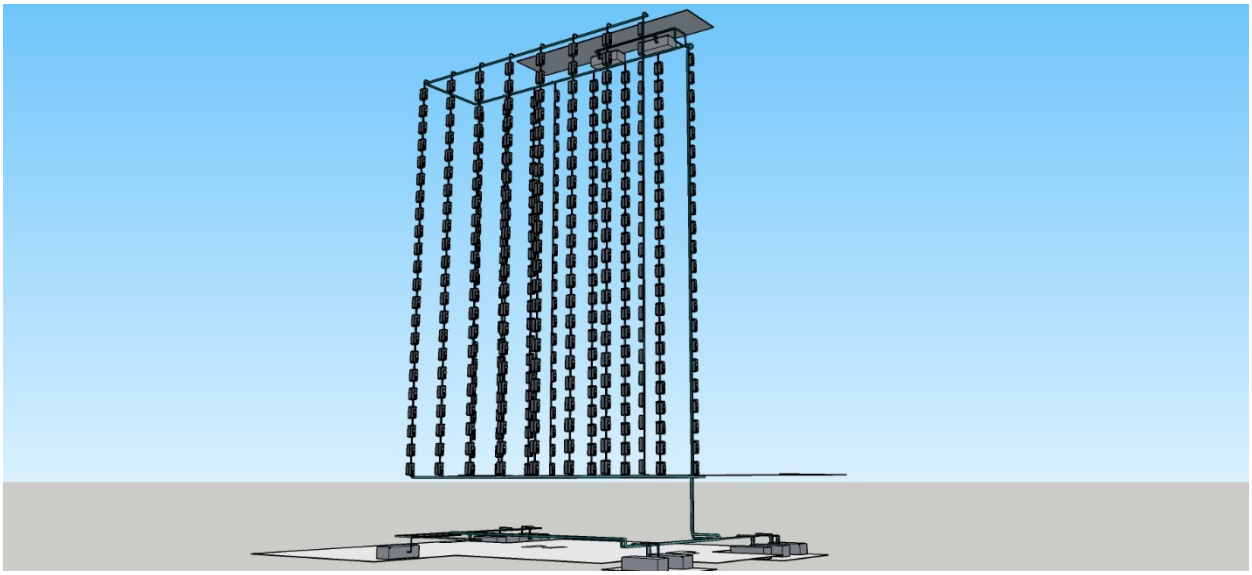

Figure 4 - Chilled Water Distribution Overview

The guest room tower has chilled and hot water supply headers that run around the perimeter of the 2nd floor in the ceiling space. The headers up-feed supply water to the guest room fan coil units and roof mounted mechanical systems.

A reverse return system begins at the second floor and up-feeds return water to the ceiling of the 23rd floor, where a return header collects the return water and

brings it back to the central plant via a down feed running in a shaft near the guest service elevators.

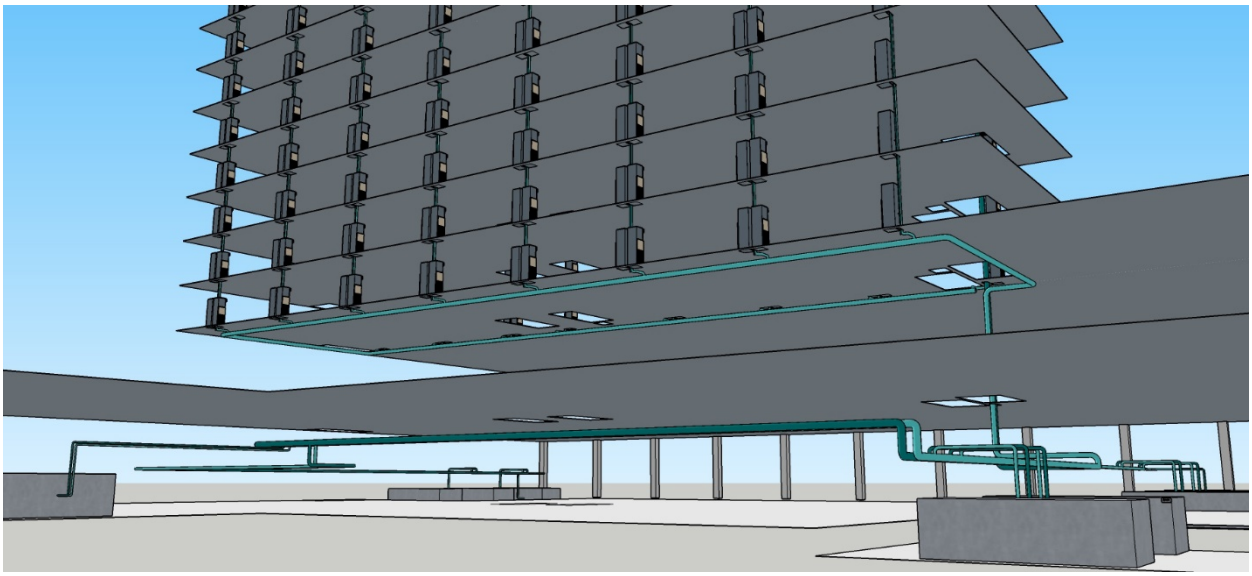

Figure 5 - Fan Coil Riser Distribution Detail

Chilled water is generated by two water cooled electric centrifugal chillers. The original design anticipated adding an absorption chiller at some point. Piping taps and structural support for an additional cooling tower cell were provided to accommodate it in the original design.

The heating system and domestic hot water system is served by district steam from the local utility. The steam system was also sized to accommodate the future absorption chiller.

Domestic water for the first through 5th floor and the cooling towers is provided at the delivery pressure from the utility system. Booster pumps increase the pressure for the domestic water serving 6th floor and above.

Guest Room HVAC

Heating, ventilating and air conditioning (HVAC) is provided by fan coil units and make up air systems for the guest rooms. Fan coils are provided with MERV8 filters.

Each guest room is provided with a fan coil unit that has a chilled and hot water coil. A thermostat in the guest room operates valves on the fan coil units as well

as the fan to maintain guest room temperature. Guests have control of the operation of the fan and the set point for their room.

Corridor make up air systems AHU-5 and AHU-6 are 100% outdoor air systems that deliver supply air via two risers at each end of the guest room tower. Outlets on each floor deliver make-up air to the corridor. Filtration is MERV 11 with prefilters provided

From there, the make-up air moves through a series of transfer grills and ceiling plenums into the guest room and then through the guest room bathroom to a transfer duct that allows it to enter the exhaust shaft running between guest rooms.

Two roof mounted exhaust fans pull air from the guest room exhaust shafts and discharge it to atmosphere.

The corridor make up air systems also provide HVAC for the elevator machine rooms.

Other HVAC Systems

The remainder of the facility is served by 9 major air handling systems. Filtration levels are MERV 11 and prefilters are provided on all filter banks.

AHU1 - Hotel Lobby and Administration

This nominal 26,000 cfm system is a variable air volume reheat system equipped with an integrated economizer cycle.

AHU2 - Main Ball Room

This nominal 20,000 cfm system is a constant volume reheat system equipped with an integrated economizer cycle. The ball room can be divided in half via a movable partition and a zone is provided for each half of the ball room.

AHU3 - Junior Ball Room

This nominal 15,000 cfm system is a constant volume reheat system equipped with an integrated economizer cycle. The ball room can be divided into quarters via a movable partition and a zone is provided for each quarter of the ball room.

AHU4 - Meeting Rooms

AHU7 - Back of House

This nominal 10,000 cfm system is a variable air volume reheat system equipped with an integrated economizer cycle. Zones are provided by function. For instance, the facilities engineering office is a zone and the employee break room is a zone.

AHU8 - Breakfast/Lunch Café

This nominal 6.500 cfm system is a single zone variable volume reheat system equipped with an integrated economizer cycle.

AHU9 - Restaurant and Lounge

This nominal 11,500 cfm system is a variable air volume reheat system equipped with an integrated economizer cycle. Three zones are provided.

AHU10 - Main Kitchen

This nominal 19,000 cfm system is a constant volume single zone reheat system equipped with an integrated economizer cycle.

VF1 - Plant Ventilation System

Plant ventilation is provided by a two zone, double duct, variable volume, integrated economizer equipped air handling system. A dedicated exhaust fan is operated to maintain the minimum code required ventilation rate for the chiller room and to provide the emergency, code required ventilation rate for the chiller room if a refrigerant leak is detected.

The electrical room zone is served by the cold deck, which is provided with a chilled water coil. The zone is designed to maintain the electrical room at 80°F. Chilled water is not used until the fan system is operating at full speed.

The plant is served by the bypass deck. Under normal operation, flow is varied as needed to maintain the minimum code required ventilation rate and a minimum space temperature of 60°F.

Fan speed is controlled based on the space temperature requirements of the electrical room or chiller room, whichever is higher.

During a refrigerant leak event, the entire system operates at design flow.

Controls

The control system was heavily value engineered during the bidding process due to budget issues. The central systems were provided with DDC controls while zone control is pneumatic, including the guest room fan coil units.

Since then, the operating team has been working to improve the control system. Details of the improvements can be found in the Control System History document.