

**Encina Wastewater Treatment Facility**  
**6114 Avenida Encinas, Carlsbad, CA 92008**  
**Owner – Encina Wastewater Authority**  
**Architect – Platt/Whitelaw Architects, Inc.**  
**Landscape Architect – ONA, Jack Nakawatase**

**Project Synopsis:**

Encina Wastewater Authority provides wastewater treatment to 300,000+ San Diego County residents. This 44,000 sf project houses operations, maintenance, administration, laboratory, and environmental compliance departments for the 40 million gallon/day wastewater treatment plant, while adhering to EWA's comprehensive sustainable site philosophy to provide an energy efficient and environmentally responsive facility.

“Design elegant buildings that still reflect our facility’s industrial nature.”

EWA staff participation in the design process proved essential to the ultimate project solution. A needs assessment identified necessary facilities; provided first steps toward budgeting, design, and construction; and established detailed references throughout the design process. Staff identified pertinent criteria:

- Sustainable/energy efficient facilities
- Minimize construction impacts
- Optimize land use
- Consolidate staff
- Balance security/public access
- Durable, maintainable facilities
- Accommodate future growth
- Operationally efficient, high quality working environments
- Future flexibility

EWA emphasized integrating informal meeting spaces, environments with natural light, and a multi-use boardroom/training room.

Adjacent plant facilities and buried utility systems constrain the site. Staff workshops generated the initial facilities concepts. Results locate the Operations Building to the north with ocean views and exterior spaces introduced throughout. Multi-use boardroom and closed session room occupy a one-story wing. The glass lobby buffers this - joining administration, operations control, and the south wellness/locker rooms. Laboratory, source control, and lunchroom with adjacent dining terrace offering spectacular ocean views, comprise the second floor. Intersecting the lobby, an uninterrupted balcony defines the building’s main pedestrian spine.

In like manner, a central gallery divides the Maintenance Building serving pedestrian circulation from the Operations Building to staff parking. Machine shops with drive-through access are to the east; offices and meeting spaces to the west - reducing the building’s scale from the street. The structure encases an existing pump station.

The resulting solution reflects effective documentation of staff needs, providing a working environment that imparts pride, comfort and efficiency.

### **Sustainable Features:**

Designed to last more than 100 years, this facility follows the owner's sustainable site philosophy. EWA mandated that LEED guidelines be followed, without pursuing certification. 38 qualifying credits were identified.

The Operations Building's lobby is designed as an unconditioned space. A thermostatically controlled system opens low windows and high louvers at a set temperature providing stack ventilation. On hot days, louvers close and an auxiliary exhaust fan adds comfort. Radiant heating is restricted to receptionist areas. The boardroom incorporates a similar passive cooling option.

Natural ventilation is provided throughout. Site cogeneration plant, using treatment-processed methane, further reduces utility loads.

Numerous sustainable concepts enhance the innovative features previously cited (passive stack ventilation, site cogeneration).

Using masonry reduces energy consumption by reflecting sunlight and providing thermal mass for natural heating and cooling. Thermal comfort, daylight and views are achieved via large operable windows that capture on-shore breezes, high-efficiency glazing, skylights, and light shelves. Exterior balconies, shading devices, and cool roof protect from solar heat.

Structures incorporate recycled/recyclable content and local/regional materials. Buildings are pre-plumbed for future recycled water currently used only for irrigation. Low-flow toilet fixtures have automatic controls.

Alternative transportation access includes bus and train routes within walking distance, bicycle storage/changing rooms, and vehicle recharge stations. The compact site's storm water is fully contained and treated before dispersal to the ocean.

A construction waste management plan, including recycling materials from the demolished building, was implemented. Spaces to store/collect recyclables are provided.

Building commissioning, low emitting materials, and IAQ management enhance indoor air quality and building performance.

These high-performance facilities are expected to consume 25+% less energy than code allows, saving \$45,500± per year in utility costs. Facilities accommodate the maximum anticipated staff needed for final plant expansion. Project scope also includes a follow-up facilities performance review for feedback and verification.