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Case Study

ECI Project - Columns of Cortez Apartment Complex Site Lighting

ECI (Atlanta, Georgia) Chief Executive Officer, Henry Hirsch requested an energy efficient site lighting design layout for this project located in Bradenton, Florida. ECI staff engineers did not want to use typical inefficient "post" type lighting found in many of the area apartment projects, or glaring HID wallpacks. Utility rentals were not economical or feasible for this project, and did not fit in with the desired design requirements. Mr. Hirsch contacted Larry Leetzow, a lighting consultant, and President of the Magnaray[®] International Division of the World Institute of Lighting and Development Corporation (Bradenton, Florida) to assist.

ECI wanted reduced glare, building mounted lighting that would provide excellent coverage for the parking area, walkways, and landscape/entry lighting. Design considerations included 1) high quality products 2) that used minimal energy amounts, 3) provided good maintenance costs (long lamp, ballast and product life), 4) used "white" light, that would not bother residents, and 5) of primary concern, provided safety of residents for all parking and walkway areas.

The Magnaray[®] product line accomplished all of the goals. Management loves the uniform light levels, and extremely low utility cost. At around \$.08/kwhr, the Magnaray[®] site lighting portion of the "house" electric bill is less than \$.44/hour, (\$155/month) for the entire 450 units. Incorporating Universal Lighting Technologies electronic, programmed start ballasts into the fixtures, provides for at least 20,000 hours of lamp life.

The Philips PL36/4100°K lamps maintain nearly 90% light output, until 90% life is reached. The balanced R,G,B phosphor content allows the eye, which has R,G,B photoreceptors, to function very efficiently. Each lamp provides 2900 initial lumens, and when incorporated into the Magnaray[®] reflector system equals visual light output of more than 150 watt metal halide wallpack, but with much less glare, and very little up light. Tenants report that they are very comfortable, and secure at the same time, with zero complaints about glare, or dark areas. Exercise (walk/jog) is done at all hours without fear.

Landscape, breezeway, and ingress/egress gate lighting also utilized other Magnaray[®] models, and wattages. The single lamped, 13 watt bug/dirt proof, breezeway luminaire, uses a white opal molded "DR" acrylic lens that mates to the housing to keep insects, and dirt on the outside. This unit comes standard with stainless steel tamper-resistant screws, with a tool furnish for each fixture. The 13 watt, 4100° K twin tube (not quad) lamp was used here for the same visual reasons. There was no need for dual lamped units for the breezeways because of the highly polished internal aluminum reflector.

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Landscape lighting is comprised mainly of 18 twin tube floodlights (same 4100° K), for small (6'-15') trees/shrubs, and the 36watt floodlights are used for tree and shrub groups up to 25' in height. These weatherproof, CSA listed fixtures can be mounted in any direction of aim (straight up through straight down).

Housings are made from anodized aluminum, with stainless steel hardware throughout. The highly polished aluminum reflector will never lose its luster, under normal atmospheric conditions (Florida's salt air, and other coastal environments are considered normal). Housings can be powder coated in Hunter green, white, black or bronze, at a small extra cost.

Adjustable swivels and end castings are injection-molded aluminum, and powder coated.

Acrylic lens protect the lamps and reflector, while allowing simple, easy access for lamp replacement, estimated for this application, every 4 years.

Some of the lighting parameters* are listed below.

Site lighting for the 450 unit, 35.5 acre apartment complex uses only 135 - Magnaray® #W1PL36 floods. Mounting under the eave helps keep up light to a minimum and provides a very uniform result. There are no pole/post lights anywhere!

Wattage per apartment unit =12;

Wattage per acre = 152.1;

Wattage per square foot = 3.5 watts/1000 total project square feet.

Lamp life for 36 watt twin tube fluorescent lamp = 24,000 hours, when burned 12 hours/day

Ballast life is warranted for 5 years, with a life expectancy of 20-25 years, and has End of Lamp Life circuit.

Fixture useful life is 20-25 years when maintained properly.

*Does not include breezeway, landscape, garage or entry lighting.

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"Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many."